

ADDENDUM NO. 1

January 22, 2019

PROJECT: St. Paul Street Improvement Project
BID DUE DATE: **Revised to Monday, February 11, 2019 at 9:00 AM**
BIDDER QUESTIONS: **Revised to January 29, 2019 at 5:00 PM**
RESPONSES TO BIDDER QUESTIONS: To be posted on city website by 5:00 PM February 1, 2019
FROM: Nina Safavi, City of Burlington Parks, Recreation & Waterfront, Project Manager

To All Bidders:

This addendum forms a part of the bidding documents and will be incorporated into the Contract Documents, as applicable. Insofar as the original Contract Documents, Specifications, and Drawings are inconsistent, this Addendum shall govern. Please acknowledge receipt of this Addendum on the Bid Proposal Form submitted to the City of Burlington. **FAILURE TO ACKNOWLEDGE RECEIPT OF ADDENDA ON THE BID FORM MAY BE CAUSE FOR DISQUALIFICATION.**

CONTRACT DOCUMENTS:

1. **BID PROPOSAL FORM:** The Bid Proposal Form shall be replaced in the Contract Documents with the attached. The changes to the Bid Proposal Form include the following:
 - a. Item 629.42 Transfer to New System, Water System has been added
 - b. Item 630.10 Uniformed Traffic Officer quantity has been changed to 416 hours
 - c. Item 630.15 Flaggers quantity has been changed to 4,160 hours.
 - d. Item 900.620 Special Provision (Bulbs) quantity has been changed to 800 EA
 - e. Item 900.645 Special Provision (Curb Inlet & Trench Drain) with Lump Sum units has been changed to Item 900.620 Special Provision (Curb Inlet & Trench Drain) with Each units
 - f. Item 900.620 Special Provision (Catch Basin Vapor Trap Pipe Elbow) has been added
 - g. Item 900.640 Special Provision (Vertical Granite Curb Type A, B,C, **and Flush**) description has been modified and quantity changed to 975 linear feet
 - h. Item 900.640 Special Provision (Trench Drain) (12") has been added
 - i. Item 900.670 Special Provision (City Hall Foundation Repair) has been added
 - j. Item 900.670 Special Provision (Chittenden County Trust Foundation) has been added
 - k. Item 900.620 Special Provision (Screen Fence System)(Option D) has been added under Alternate Bid Item No. 1 – Screen Fence System
2. **SPECIFICATIONS:**
 - a. The following specification sections have been removed from the Contract Documents
 - i. Section 900 - Soil Cells Installation (page 73)
 - ii. Section 900 - Metal Screen Fence System (pages 148-150)

- b. The following specification sections have been added to the Contract Documents
- i. Section 900 – Horticultural Soil
 - ii. Section 900 – Foundation Sealing
 - iii. Section 900 – Curb Inlet & Trench Drain
 - iv. Section 900 – Backflow Prevention Vault
 - v. Section 900 – Union Company Switch
 - vi. Section 900 – Electrical & Communications Ground Boxes
 - vii. Section 900 – Drainage Structures
 - viii. Section 900 – Arch Pipe Detention
- c. The following specification section has been modified.
- i. Section 900 – Exterior Lighting. Replace “Basis of Payment” paragraph on P. 102 with the following
- XX. BASIS OF PAYMENT. The accepted quantity of Special Provision (Light Pole with Post Top Luminaire) will be paid for at the Contract unit price for each. Payment will be full compensation for furnishing, transporting, handling, assembling, and placing the materials specified, including poles, banner mounts, fixtures, lamps, anchors, grounding, receptacles, wiring, photocells, and accessories; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.**
- The accepted quantity of ~~Special Provision (Light Pole with Post Top Luminaire)~~, Special Provision (Post Top Luminaire), Special Provision (In-Grade Uplight), Special Provision (Bracket Mounted Luminaire) will be paid for at the Contract unit price for each. Payment will be full compensation for furnishing, transporting, handling, assembling, and placing the materials specified, including poles, fixtures, lamps, anchors, grounding, receptacles, wiring, photocells, and accessories; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.
- ii. Section 900 – Restroom Facility. Replace specification Restroom Facility (p 242) in its entirety with the attached specification

3. **APPENDICES:** The following has been added to the Contract Documents
- a. Figure 1: Banner Orientation for Type P1 Poles
 - b. Portland Loo Structural/Architectural Drawings

CONSTRUCTION DRAWINGS:

- 1. Sheet L200
 - a. Replace with Addendum #1 revised drawing which updates locations for Electrical & Communications Ground Boxes
- 2. Sheet L201
 - a. Replace with Addendum #1 revised drawing which updates Electrical & Communications Ground Boxes

3. Sheet L300
 - a. Replace with Addendum #1 revised drawing which updates planting plan to incorporate bulbs

ANSWERS TO BIDDERS' QUESTIONS

During the advertisement phase of this project all questions shall be addressed solely to the Municipal Project Manager (MPM): Nina Safavi, Burlington Parks Comprehensive Planner, (802) 865-7248, 645 Pine Street, Burlington, VT 05401. Questions may also be sent to nsafavi@burlingtonvt.gov.

Written questions submitted prior to January 18, 2019 are included herein. Any additional written questions prior to the question submittal date will be answered under separate response.

A) Written questions submitted prior to January 18, 2019 are included herein.

SPECIAL PROVISIONS SPECIFICATIONS:

1. On Page 73 is the "Soil Cells Installation" specification whereas the City provides the soil cells. On Page 151 is the "Soil Cells" specification whereas the Contractor provides soil cell. Please clarify which of these two specifications are correct.
RESPONSE: Soil Cells Installation specification (p. 73) had been removed from contract documents. Refer to Soil Cells specification (p. 151)
2. On Page 145 is the "Metal Screen Fence System" specification which lists Options A-D. On Page 148 is the "Metal Screen Fence System" specification which lists Options A-C. Please clarify which of these two specifications are correct.
RESPONSE: Metal Screen Fence System specification (pages 148-150) has been removed from contract documents. Refer to Section 900 - Metal Screen Fence System (pages 145-147)
4. There is not a specification for item 900.608 – Horticultural Soil which is listed on the bid form.
RESPONSE: Refer to Section 900 – Horticultural Soil specification added to bid documents
3. There is not a specification for item 900.620 – Yard Drain which is listed on the bid form.
RESPONSE: Refer to Section 900 – Drainage Structures specification added to bid documents
4. There is not a specification for item 900.620 – Bioretention Overflow Drain which is listed on the bid form.
RESPONSE: Refer to Section 900 – Drainage Structures specification added to bid documents
5. There is not a specification for item 900.620 – Bioretention B Outlet Structure which is listed on the bid form.
RESPONSE: Refer to Section 900 – Drainage Structures specification added to bid documents
6. There is not a specification for item 900.620 – Union Company Switch which is listed on the bid form.
RESPONSE: Refer to Section 900 – Union Company Switch specification added to bid documents

7. There is not a specification for item 900.620 – Outdoor Electrical & Communications Ground Boxes which is listed on the bid form.
RESPONSE: Refer to Section 900 – Electrical & Communications Ground Boxes specification added to bid documents
8. There is not a specification for item 900.645 – Arch Pipe Detention System which is listed on the bid form.
RESPONSE: Refer to Section 900 – Arch Pipe Detention specification added to bid documents
9. There is not a specification for item 900.645 – Curb Inlet and Trench Drain which is listed on the bid form.
RESPONSE: Refer to Section 900 – Curb Inlet & Trench Drain specification added to bid documents
10. There is not a specification for item 900.645 – Water Backflow Prevention and Vault which is listed on the bid form.
RESPONSE: Refer to Section 900 – Backflow Prevention Vault specification added to bid documents

BID FORM:

1. Item 900.620 – SP – Bulbs have 0 for a quantity. Is this a misprint?
RESPONSE: Quantity for Item 900.620 Special Provision (Bulbs) has been updated on revised Bid Form.
2. There is not any item on the bid form for 900.620 – SP – Trench Drain 12” or 900.620 – SP – Trench Drain 6”. There is a specification provided on page 155 of the special provisions.
RESPONSE: Items 900.640 Special Provision (Trench Drain) (12”) has been added to bid form. Item 900.640 Special Provision (Trench Drain) (8”) is not required

GENERAL QUESTIONS:

1. Please clarify what is inclusive for the Soil Cell item i.e. soil cells, horticultural soil, excavation, backfill, fabric, geogrid, zip ties, temp. post spacers and spikes.
RESPONSE: See Soil Cells Specification Basis of Payment paragraph P.151. Excavation and horticultural soils will be paid separately under appropriate contract items.
2. Are tree guards required to be ordered along with the tree grates? If so, please provide a specification for those.
RESPONSE: Tree guards are not required
3. Please clarify what is inclusive in the Rain Garden item i.e. excavation, drainage aggregate, bioretention soil, underdrain, fabric.
RESPONSE: Item 900.645 Special Provision (Rain Garden A), Item 900.645 Special Provision (Rain Garden B), Item 900.645 Special Provision (Rain Garden C), shall incorporate payment for furnishing and installing concrete inlet pad, grate, concrete inlet structure, granite weirs, granite stepping stones, and concrete splash pad for the associated Rain Gardens. Excavation, drainage aggregate, bioretention soil, underdrain, and fabric will be paid separately under appropriate contract items.

B) Written questions submitted January 21 are included herein.

1. Sheet L201 shows a 12" wide trench drain. There is not a pay item on the bid form for this item.
RESPONSE: Item 900.640 Special Provision (Trench Drain) (12") has been added to bid form.
2. Sheet L200 is missing spot grades for curbs and concrete paving South and West of Rain Garden C.
RESPONSE: This curb should not have a spot grade as it runs with the slope of the adjacent sidewalk. Also, it is a 6" tall free standing curb that is detailed on Sheet L500.
3. Sheet L200 shows granite stepping stones. There is not a pay item on the bid form for this item.
RESPONSE: Granite stepping stones as shown on L200 and detailed on L501 shall be incidental to Item 900.645 Special Provision (Rain Garden C).
4. Sheet L200 does not detail the size or thickness of the concrete pad under the trash receptacles near Main Street. What item will this concrete pad be paid under?
RESPONSE: Provide concrete pad and aggregate base material with depths matching concrete sidewalk as detailed on sheet C501. Work shall be paid under the following respective items: Item 618.30 Portland Cement Concrete Sidewalk, 6 inch; Item 301.26 Subbase of Crushed Gravel, Fine Graded; Item 301.35 Subbase of Dense Graded Crushed Stone
5. Sheet L200, General Note #4 states that subgrade below is topsoil is 6", Sheet C503 shows 4" topsoil thickness in various details. Please confirm what thickness of topsoil is required under grassed areas.
RESPONSE: Proposed topsoil depths are in accordance with Sheet L301 Soil Amendment Plan and associated zones as noted (Specifically Zone A). Reference to topsoil on sheet C503 refers to depth below finished grade for various drain concrete rings.
6. Sheet L201 shows a flush granite radial band. Please provide a separate bid item and specification for this item.
RESPONSE: Item 900.640 Special Provision (Flush Granite Radial Band) has been added to bid form. Flush granite radial band shall meet requirements under specification "Granite Curb Edging" and associated plans.
7. Sheet L201, please provide a foundation and connection detail for under the Portland Loo.
RESPONSE: See Portland Loo Structural/Architectural Drawings attached as part of this addendum.
8. Sheet L502, Detail 6, shows flush granite curb. There is not a bid item for this.
RESPONSE: Flush granite curb shall be paid under item 900.640 Special Provision (Vertical Granite Curb, Type A, B, C)
9. Sheet C212, Note 5, states that item 629.42, Transfer to New System, Water System would be a pay item. There is not currently a pay item for this.
RESPONSE: Item 629.42 Transfer to New System, Water System has been added to bid form.

10. Sheet C212. Please show sizes and types of water line piping on this plan sheet.

RESPONSE: See Backflow Prevention Vault detail sheet C509 and below summary.

- Main Service from College Street Water: 6" diameter; Item 629.24 Ductile Iron Pipe, Cement Lined
- Portland Loo Service: 1" diameter: Item 629.23 Seamless Copper Water Tube
- Fountain Service: 1" diameter: Item 629.23 Seamless Copper Water Tube
- Irrigation Service: To be determined as part of and incidental to Item 900.645 Special Provision(Irrigation System)

11. Sheet C504, Details "City Hall Foundation Service Penetration Repair Detail" & "Chittenden County Trust Foundation Detail". What pay items should be used for this work, i.e., excavation, pressure washing, waterproofing, sand backfill.

RESPONSE: Item 900.670 Special Provision (City Hall Foundation Repair) and Item 900.670 Special Provision (Chittenden County Trust Foundation) have been added to bid form

C) Electrical written questions received January 21, 2019 shall be answered under separate cover

D) Verbal questions received during pre-bid meeting held January 17,2019

1. Who is purchasing the trees, who is storing them, taking care of them, and why

RESPONSE: The City will provide a list of acceptable nurseries for pricing by Friday February 1st. Trees will be tagged by the City arborist. The contractor is responsible for purchasing, planting, storing and maintaining the trees with a 1 year warranty period from the project completion date.

2. What are is the expectation on the 3 year special provision on the grass.

RESPONSE:

Grass Maintenance: The maintenance period shall begin immediately after each area is seeded and continue until final acceptance of entire project, which is one year from date of accepted substantial completion. During this time, the Contractor shall be responsible for watering, mowing, spraying, weeding, aerating, fertilizing, and all related work as necessary to ensure that seeded areas are in a vigorous growing condition. Furnish all supervision, labor, material and equipment to maintain turf areas, including winterization and start-up procedures. Seed shall be visibly germinated in twenty days, with 50% coverage in 45 days and 90% coverage in 60 days. Any deficiency shall be reseeded or re-sodded until a suitable coverage is achieved.

Re-seeding and re-sodding: All grass areas are to be assured of obtaining a satisfactory stand of growth. The total lawn area occupied by bare spots must not exceed ten percent (10%) of the total area. All grass areas which do not meet the satisfactory stand of growth qualification shall be reseeded or re-sodded. Re-seed or Re-sod areas in May following initial seeding that in the opinion of the Resident Engineer are not adequately established.

3. Soil cells pay item say each, discrepancy one also says CY
RESPONSE: Soil Cells Installation specification (p. 73) had been removed from contract documents. Refer to Soil Cells specification (p. 151)
4. Separate bid schedule of soil cells.
RESPONSE: See Soil Cells Specification Basis of Payment paragraph P.151. Excavation and horticultural soils will be paid separately under appropriate contract items.
5. Rain garden B weirs - is that incidental to rain garden
RESPONSE: Yes
6. Bioretention soil paid separate in the rain gardens
RESPONSE: Yes
7. What happens to the existing fountain.
RESPONSE: The City shall be notified 1 week prior to the relocation of the fountain and delivered to the North Beach Campground maintenance facility. See also Misc. Demolition and Salvage specification (p. 236)

END OF ADDENDUM NO. 1

BID PROPOSAL FORM
Great Streets BTV – City Hall Park Improvement Project

Proposal of _____ (hereinafter called Bidder),
organized and existing under the laws of the State of Vermont doing business as

(a corporation, a partnership, of an individual)

To the City of Burlington, Vermont (hereinafter called Owner)

The Bidder represents that this bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation. The bidder has not directly or indirectly induced or solicited any other bidder to submit a false bid. Bidder has not solicited or induced any person, firm or corporation to refrain from bidding and the bidder has not sought by collusion to obtain for himself any advantage over any other bidder or Owner.

The undersigned bidder proposed and agrees, if this bid is accepted, to enter into an agreement with Owner to furnish all materials and to complete all work as specified or indicated in the Contract Documents for the contract price and within the contract time indicated in this bid and in accordance with the Contract Documents.

Bidder hereby agrees to commence Work under this contract on the date of issuance of the Notice to Proceed and that the Final Completion date for this contract is May 21st, 2020.

Bidder acknowledges receipt of the following Addenda:

Bidder agrees to perform all the Work described in the Contract Documents for the following schedule of prices. Unqualified bids will not be accepted.

The Total Base Bid is the basis for contract award. All unit prices for the same item description shall be the same unit cost, no matter whether the quantities are in the Base Bid or Add Alternates. The City shall determine whether to include the Add Alternates in the contract based on final bid results and local funding limits.

BASE BID – BASIS OF CONTRACT AWARD

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
201.10	Clearing and Grubbing, Including Individual Trees and Stumps	LS	1	\$_____	\$_____
Unit Price in Words:					
201.15	Removing Medium Trees	EA	3	\$_____	\$_____
Unit Price in Words:					
201.15	Removing Large Trees	EA	16	\$_____	\$_____
Unit Price in Words:					
201.20	Removing Medium Stumps	EA	3	\$_____	\$_____
Unit Price in Words:					
201.21	Removing Large Stumps	EA	16	\$_____	\$_____
Unit Price in Words:					
203.15	Common Excavation	CY	4270	\$_____	\$_____
Unit Price in Words:					
203.32	Granular Borrow	CY	124	\$_____	\$_____
Unit Price in Words:					
204.20	Trench Excavation of Earth	CY	1800	\$_____	\$_____
Unit Price in Words:					
204.25	Structure Excavation	CY	22	\$_____	\$_____
Unit Price in Words:					
204.30	Granular Backfill for Structures	CY	70	\$_____	\$_____
Unit Price in Words:					
301.25	Subbase of Crushed Gravel, Coarse Graded	CY	46	\$_____	\$_____
Unit Price in Words:					
301.26	Subbase of Crushed Gravel, Fine Graded	CY	875	\$_____	\$_____
Unit Price in Words:					

Burlington City Hall Park
Bid Documents

December 2018

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
301.35	Subbase of Dense Graded Crushed Stone	CY	900	\$_____	\$_____
Unit Price in Words:					
404.65	Emulsified Asphalt	CWT	1	\$_____	\$_____
Unit Price in Words:					
406.25	Marshall Bituminous Concrete Pavement	TON	30	\$_____	\$_____
Unit Price in Words:					
514.10	Water Repellant, Silane	GAL	95	\$_____	\$_____
Unit Price in Words:					
541.25	Concrete, Class B	CY	47	\$_____	\$_____
Unit Price in Words:					
601.2601	6" Drainage Pipe (SDR35 PVC)	LF	17	\$_____	\$_____
Unit Price in Words:					
601.2603	8" Drainage Pipe (SDR35 PVC)	LF	50	\$_____	\$_____
Unit Price in Words:					
601.2605	12" Drainage Pipe (SDR35 PVC)	LF	247	\$_____	\$_____
Unit Price in Words:					
601.2615	18" Drainage Pipe (SDR35 PVC)	LF	78	\$_____	\$_____
Unit Price in Words:					
604.20	Precast Reinforced Concrete Catch Basin with Cast Iron Grate	EA	2	\$_____	\$_____
Unit Price in Words:					
604.22	Sanitary Sewer Manhole	EA	3	\$_____	\$_____
Unit Price in Words:					
604.40	Changing Elevation of Drop Inlets, Catch Basins or Manholes	EA	1	\$_____	\$_____
Unit Price in Words:					
605.20	Underdrain Carrier Pipe (4 Inches)	LF	210	\$_____	\$_____
Unit Price in Words:					
605.95	Underdrain Flushing Basin	EA	2	\$_____	\$_____
Unit Price in Words:					

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
609.10	Dust Control with Water	MGAL	25	\$_____	\$_____
Unit Price in Words:					
609.15	Dust and Ice Control with Calcium Chloride	TON	1	\$_____	\$_____
Unit Price in Words:					
613.16	Riprap, Light Type	CY	2	\$_____	\$_____
Unit Price in Words:					
616.41	Removal of Existing Curb	LF	1311	\$_____	\$_____
Unit Price in Words:					
618.10	Portland Cement Concrete Sidewalk, 6 Inch	SY	775	\$_____	\$_____
Unit Price in Words:					
618.30	Detectable Warning Surface	SF	80	\$_____	\$_____
Unit Price in Words:					
620.55	Removal of Existing Fence	LF	164	\$_____	\$_____
Unit Price in Words:					
628.35	PVC Sewer Pipe(SDR35)	LF	300	\$_____	\$_____
Unit Price in Words:					
629.23	Seamless Copper Water Tube	LF	260	\$_____	\$_____
Unit Price in Words:					
629.24	Ductile Iron Pipe, Cement-Lined	LF	360	\$_____	\$_____
Unit Price in Words:					
629.35	Tapping Sleeve and Valve Box	EA	1	\$_____	\$_____
Unit Price in Words:					
629.42	Transfer to New System, Water System	LS	1	\$_____	\$_____
Unit Price in Words:					
630.10	Uniformed Traffic Officer	HR	416	\$_____	\$_____
Unit Price in Words:					
630.15	Flaggers	HR	4160	\$_____	\$_____
Unit Price in Words:					
631.10	Field Office, Engineers	LS	1	\$_____	\$_____
Unit Price in Words:					
635.11	Mobilization/ Demobilization	LS	1	\$_____	\$_____
Unit Price in Words:					

Burlington City Hall Park
Bid Documents

December 2018

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
641.15	Portable Changeable Message Sign	EA	4	\$_____	\$_____
Unit Price in Words:					
649.11	Geotextile for Roadbed Separator	SY	80	\$_____	\$_____
Unit Price in Words:					
649.41	Geotextile for Underdrain Trench Lining	SY	410	\$_____	\$_____
Unit Price in Words:					
653.35	Stabilized Construction Entrance	CY	25	\$_____	\$_____
Unit Price in Words:					
653.40	Inlet Protection Device, Type I	SY	5	\$_____	\$_____
Unit Price in Words					
653.41	Inlet Protection Device, Type II	EA	6	\$_____	\$_____
Unit Price in Words					
653.20	Rolled Erosion Control Product, Type I	SY	50	\$_____	\$_____
Unit Price in Words:					
653.475	Silt Fence, Type 1	LF	948	\$_____	\$_____
Unit Price in Words:					
656.30	Deciduous Trees (Planting & Staking Only)	EA	18	\$_____	\$_____
Unit Price in Words:					
656.35	Deciduous Shrubs	EA	330	\$_____	\$_____
Unit Price in Words:					
656.41	Perennials	EA	770	\$_____	\$_____
Unit Price in Words:					
656.65	Landscape Watering	MGAL	267	\$_____	\$_____
Unit Price in Words:					
678.23	Wired Conduit (Ethernet/Event Power)	LF	2,750	\$_____	\$_____
Unit Price in Words:					
678.23	Wired Conduit (Site and Lighting Electrical)	LF	640	\$_____	\$_____
Unit Price in Words:					

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
678.25	Pull Box, Standard (10"x15")	EA	20	\$_____	\$_____
Unit Price in Words:					
678.25	Pull Box, Standard (18"x24")	EA	5	\$_____	\$_____
Unit Price in Words:					
900.608	Special Provision (Bioretention Soil)	CY	385	\$_____	\$_____
Unit Price in Words:					
900.608	Special Provision (Compost Mulch)	CY	75	\$_____	\$_____
Unit Price in Words:					
900.608	Special Provision (Horticultural Soil)	CY	255	\$_____	\$_____
Unit Price in Words:					
900.608	Special Provision (Landscape Mineral Mulch)	CY	10	\$_____	\$_____
Unit Price in Words:					
900.608	Special Provision (Peastones)	CY	10	\$_____	\$_____
Unit Price in Words:					
900.608	Special Provision (Stonedust)	CY	2	\$_____	\$_____
Unit Price in Words:					
900.608	Special Provision (Subbase of Drainage Aggregate)	CY	260	\$_____	\$_____
Unit Price in Words:					
900.608	Special Provision (Washed River Rock)	CY	10	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Soil Cells)	EA	136	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Yard Drain)	EA	3	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Bioretention Overflow Drain)	EA	2	\$_____	\$_____
Unit Price in Words:					

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.620	Special Provision (Bioretention B Outlet Structure)	EA	1	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Runnel Drain)	EA	3	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Bench)	EA	23	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Bike Rack) In-Ground	EA	5	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Bike Rack) Surface Mount	EA	8	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Dog Waste Bag Dispenser Posts)	EA	2	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Drinking Fountain)	EA	1	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Current Transformer Cabinet)	EA	1	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Current Rated Meter)	EA	1	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Event Distribution Panel)	EA	1	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Main Distribution Panel)	EA	1	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Union Company Switch)	EA	2	\$ _____	\$ _____
Unit Price in Words:					
900.620	Special Provision (Light Pole Base)	EA	17	\$ _____	\$ _____
Unit Price in Words:					

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.620	Special Provision (Light Pole with Post Top Luminaire, Type P1)	EA	17	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Post Top Luminaire, Type P1A)	EA	2	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (In-Grade Uplight, Type P3)	EA	4	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (In-Grade Uplight, Type P4)	EA	5	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Bracket Mounted Luminaire, Type P5)	EA	1	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Lighting Control System)	EA	1	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Message Board Base Bid)	EA	1	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Tent Tie Down Hardware)	EA	24	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Big Belly Receptacles)	EA	2	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Tree Grates)	EA	4	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Outdoor Electrical & Communications Ground Boxes)	EA	20	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Grasses)	EA	693	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Bulbs)	EA	800	\$_____	\$_____
Unit Price in Words:					

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.620	Special Provision (Rain Gardens A, B & C Planting)	EA	2121	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Art Disc Placement)	EA	120	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Curb Inlet & Trench Drain)	EA	2	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Catch Basin Vapor Trap Pipe Elbow)	EA	2	\$_____	\$_____
Unit Price in Words:					
900.640	Special Provision (Metal Landscape Edging)	LF	800	\$_____	\$_____
Unit Price in Words:					
900.640	Special Provision (Temporary Chain-Link Fence, 6 Feet)	LF	1725	\$_____	\$_____
Unit Price in Words:					
900.640	Special Provision (Vertical Granite Curb Type A, B, C, and Flush)	LF	975	\$_____	\$_____
Unit Price in Words:					
900.640	Special Provision (Trench Drain) (12")	LF	55	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Arch Pipe Detention System)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Bollard & Rail Fence System)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Demolition and Salvage Existing Fountain & Amphitheater Wall)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Granite Block Seatwall at Ellipse)	LS	1	\$_____	\$_____
Unit Price in Words:					

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.645	Special Provision (Granite Stair)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Granite Veneer Wall Central Rain Garden)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Granite Veneer Wall College St. Terrace)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Granite Veneer Retaining Wall Main St & SW Corner)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Interactive Fountain System)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Irrigation System)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Lawn Restoration)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Misc Demolition)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Moveable Tables and Chairs)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Restroom Facilities)	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Relocate Monument & Install New Flagpole)	LS	1	\$_____	\$_____
Unit Price in Words:					

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.645	Special Provision (Rain Garden A)	LS	1	\$ _____	\$ _____
Unit Price in Words:					
900.645	Special Provision (Rain Garden B)	LS	1	\$ _____	\$ _____
Unit Price in Words:					
900.645	Special Provision (Rain Garden C)	LS	1	\$ _____	\$ _____
Unit Price in Words:					
900.645	Special Provision (Tree Protection)	LS	1	\$ _____	\$ _____
Unit Price in Words:					
900.645	Special Provision (Traffic Control, All-Inclusive)	LS	1	\$ _____	\$ _____
Unit Price in Words:					
900.645	Special Provision (Water Backflow Prevention and Vault)	LS	1	\$ _____	\$ _____
Unit Price in Words:					
900.645	Special Provision (Weathered Steel Seatwall)	LS	1	\$ _____	\$ _____
Unit Price in Words:					
900.645	Special Provision (Contaminated Soils Management) N.A.B.I.	LS	1	<u>\$ 225,000</u>	<u>\$ 225,000</u>
Unit Price in Words:					
900.670	Special Provision (Paver Type 2 and Type 3)	SF	4820	\$ _____	\$ _____
Unit Price in Words:					
900.670	Special Provision (Paver Type 4 and Type 5)	SF	3880	\$ _____	\$ _____
Unit Price in Words:					
900.670	Special Provision (Paver Type 6)	SF	410	\$ _____	\$ _____
Unit Price in Words:					
900.670	Special Provision (Pervious Pavers)	SF	3648	\$ _____	\$ _____
Unit Price in Words:					
900.670	Special Provision (City Hall Foundation Repair)	SF	100	\$ _____	\$ _____
Unit Price in Words:					

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.670	Special Provision (Chittenden County Trust Foundation)	SF	140	\$ _____	\$ _____
Unit Price in Words:					
900.675	Special Provision (Granite Drainage Runnel)	SY	140	\$ _____	\$ _____
Unit Price in Words:					

Total Base Bid \$ _____

Total Base Bid Words (Basis of Contract Award) _____

Bidders must bid on all pay items in each set of Alternate Bid Items as well as Add Alternate Items. Add Alternate Item pricing shall include costs for additional work beyond that outlined in the base bid as described under each Add Alternate.

Alternate Bid Item No. 1 – Screen Fence System

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.645	Special Provision (Screen Fence System) Option A	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Screen Fence System) Option B	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Screen Fence System) Option C	LS	1	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Screen Fence System) Option D	LS	1	\$_____	\$_____
Unit Price in Words:					

Add Alternate No. 1 – City Hall Uplights

Add Alternate No. 1 – City Hall Uplights will be full compensation for furnishing, transporting, handling, assembling, and placing the additional materials specified as described under special provision (Exterior Lighting). Work shall be in conjunction with other Special Provision (Exterior Lighting) items.

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.620	Special Provision (Bracket Mounted Luminaire, Type P2 and P2A)	EA	4	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (In-Grade Uplight, Type P3A)	EA	16	\$_____	\$_____
Unit Price in Words:					

Total Add Alternate No 1- City Hall Uplights \$_____

Total Add Alternate No. 1 Words_____

Add Alternate No. 2 – Terrace Pavers

Add Alternate No. 2 – Terrace Pavers will be full compensation for furnishing, transporting, handling, assembling, and placing Special Provision (Paver Type 2) materials as described under special provisions. This work shall be in lieu of placing Special Provision (Concrete With Integral

Color A and B) as described in special provisions at the location specified on plans. The quantity for Item 900.675 Special Provision (Concrete With Integral Color A and B) below is a reduction and should be accounted as such in the Add Alternate total.

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.675	Special Provision (Concrete With Integral Color A and B)	SF	(109)	\$_____	\$_____
Unit Price in Words:					
900.670	Special Provision (Paver Type 2)	SF	980	\$_____	\$_____
Unit Price in Words:					

Total Add Alternate No. 2- Terrace Pavers \$ _____

Total Add Alternate No. 2 Words _____

Add Alternate Bid Item No. 3 – Lawn Restoration- Sodding

Add Alternate No. 3 – Lawn Restoration – Sodding will be full compensation for preparing, maintaining, implementing lawn restoration, including but not limited to preparation of area, coordination with city arborist, removal of mulch, aeration, application of amendments, scarifying subgrade, topsoil, sodding, and watering, and for furnishing all labor, tools, materials, equipment, and incidentals to complete the work under Special Provision (Lawn Restoration - Sodding) as described under special provisions. This work shall be in lieu of placing Special Provision (Lawn Restoration – Topsoil & Hydroseed) as described in special provisions at the location specified on plans. The quantity for Item 900.645 Special Provision (Lawn Restoration – Topsoil & Seed) below is a reduction and should be accounted as such in the Add Alternate total.

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.645	Special Provision (Lawn Restoration – Topsoil & Hydroseed)	LS	(1)	\$_____	\$_____
Unit Price in Words:					
900.645	Special Provision (Lawn Restoration – Sodding)	LS	1	\$_____	\$_____
Unit Price in Words:					

Total Add Alternate No. 3- Lawn Restoration- Sodding \$ _____

Total Add Alternate No. 3 Words _____

Add Alternate No. 4 – Message Board

Add Alternate No. 4 – Message Board will be full compensation for furnishing and installation of message board (s) including furnishing all labor, tools, materials, equipment, and incidentals to complete the work under Special Provision (Message Board Add Alt) as described under special provisions. This work shall be in lieu of placing Special Provision (Message Board Base Bid) as described in special provisions at the location specified on plans. The quantity for Item 900.620 Special Provision (Message Board Base Bid) below is a reduction and should be accounted as such in the Add Alternate total.

Vtrans Item #	ITEM DESCRIPTION	UNITS	BID QTY	UNIT PRICE	TOTAL PRICE
900.620	Special Provision (Message Board Base Bid)	EA	(1)	\$_____	\$_____
Unit Price in Words:					
900.620	Special Provision (Message Board Add Alt.)	EA	1	\$_____	\$_____
Unit Price in Words:					

Total Add Alternate No. 4 – Message Board \$_____

Total Add Alternate No. 4 Words_____

The lowest responsive and responsible bidder will be determined by the Total Base Bid. The above unit prices shall include all labor, materials, removal, overhead, profit, insurance, etc. to cover the finished work of the several kinds called for on the drawings and specifications.

THE ABOVE PROPOSAL IS HEREBY RESPECTFULLY SUBMITTED BY:

Contractor

By

Title

Business Address

City

State

Date

ATTEST _____

LS = lump sum

EA = each

SY = square yard

SF = square feet

CWT = hundredweight

GAL = gallon

HR = hour

LU = lump unit

CY = cubic yard

LF = linear foot

TON = ton

MGAL = thousand gallons

LB = pound

MFBM = thousand feet, board measure

HORTICULTURAL SOIL

- xx. DESCRIPTION. This work shall consist of furnishing and placing horticultural soil at the location(s) indicated in the Plans and as directed by the Engineer.
- xx. GENERAL. The intent of this item is to provide trees, turf and groundcover plantings with a soil that allows them to thrive and live out their longest possible healthy life in urban conditions.

Horticultural soils will fill the entire area of the tree frame grates, tree wells as shown on plans. These soils will also be used in structural soil cells and will provide the top 18" of the soil profile in turf belts. Horticultural Soil is not intended for use in Bio-retention Plantings.

- xx. MATERIALS. The horticultural soil shall meet the requirements as follows:
- (a) Topsoil: Unscreened Imported Topsoil or Existing Site Soil
 - Soil Texture: USDA loam, sandy clay loam, or sandy loam.
 - Soil Structure: Retain Peds of min 2" in size prior to mixing.
 - Organic Matter & Soil Chemistry: Suitable for growing the plants specified at the designed location
 - Soil Objects: < 5% of total topsoil volume: Clumps of Clay; Debris; Refuse; Roots; Stones; Sticks; Brush; or other litter. Remove all soil objects >8" in their longest dimension.
 - Contaminants. The soil should have no herbicides, heavy metals, biological toxins, or hydrocarbons that will impact plant growth or are at levels exceeding the EPA's standards for soil contaminants.
 - Source: Unscreened Imported Topsoil must be harvested within 50 miles of Burlington, Vermont. Unscreened Imported Topsoil may not contain soils from sources defined by the United States Natural Resources Conservation Service as prime farmland, unique farmland, or farmland of statewide or local importance.
 - (b) Organics: Compost shall be commercially prepared Pine Fines or an equivalent compost and must meet US Compost Council STA/TMECC criteria for "Compost as a Landscape Backfill Mix Component" and must not be derived from human waste or animal waste sources.
 - (c) Coarse Sand: Clean, washed, natural sand, free of toxic materials, limestone, salt, shale, and slate particles. Must meet ASTM-C33 Standards.
 - (d) Fertilizer: If noted by soil test recommendations, add slow-release, organic fertilizer based on soil test and plant requirements.
 - (e) Biological Amendments: Amendments such as Mycorrhizal additives, compost tea or other products intended to change the soil biology, as required based on Soil Foodweb Analysis by a qualified soil testing lab.
 - (f) Horticultural Soil Mix Requirements: Blend Topsoil, Organics, Coarse Sand, Fertilizer & Biological Amendments to make a new soil that meets the Project goals for the indicated planting area.

- Clay content: 15-25% by weight
- Organic matter: 5-10% by weight
- Coarse Sand: 30-65% by weight
- Silt: 15-25% by weight
- Gravel content shall not exceed 10% by weight
- Soluble Salt: < 2 dS/m
- Cation Exchange Capacity: 7-15
- Water Permeability: 1-2 inches per hour when compacted to 85% of maximum dry density
- pH: 6.0-6.5

- xx. INSTALLATION. Horticultural soil shall not be placed when the soil or ground is frozen, excessively wet, or otherwise in a condition detrimental to the work, as determined by the Engineer.

The horticultural soil shall be spread evenly to the depth as shown in the Plans. Horticultural soil shall be compacted to 70-80% proctor. Over-compaction will reduce the potential for seed-soil contact and germination success.

At the time of soil installation, add fertilizer or biological amendments, if required, to the planting soil mix at rates recommended by soil testing results for the plants to be grown.

- xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Horticultural Soil) to be measured for payment will be the number cubic yards complete in place in the accepted work, measure within the limits specified on the Plans or as directed by the Engineer.

- xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Horticultural Soil) will be paid for at the Contract unit price per cubic yard. Payment will be full compensation for performing the work specified and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.608 Special Provision (Horticultural Soil)	Cubic Yard

UNION COMPANY SWITCH

- XX. DESCRIPTION. This work shall consist of furnishing, installing, and testing event company switch panel (s) including foundations, supports, internal electrical components, and wiring, as shown in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 679 of the Standard Specifications.

- XX. MATERIALS. Provide free standing, stainless steel, NEMA 3R Enclosures. Materials shall meet the requirements of Section 679, requirements in the Plans, and the following:

- XX. MANUFACTURERS. The following manufacturers are capable of event company switch panel (s) that meet the requirements for this project (or approved equal):

Union Connector
2229 Vinson Lane
Jacksonville, FL 32207
Product: Union Connector CSC-2010-CL-3R
Tel.; 631-753-9550
Website: www.unionconnector.com

- XX. SUBMITTALS. Prior to ordering any components, the Contractor shall submit Working Drawings in accordance with Section 105. The submittal shall contain, as a minimum, the following information:

- (a) Size, manufacturer, model, accessories, material, locking mechanism, and finish.
- (b) Mounting post configuration
- (c) Electrical Components and Controls. Make, model, and applicable electrical capacities and settings.

- XX. CONSTRUCTION REQUIREMENTS. Prior to ordering materials, the Contractor shall coordinate with the electrical design to accommodate the electrical supply.

Contractor shall be responsible for obtaining all permits, certificates and inspections required. All work shall be in accordance with the National Electric Code, local codes and requirements, and the requirements of Burlington Electric Department.

- XX. METHOD OF MEASUREMENT. The quantity of Special Provision (Union Company Switch) to be measured for payment will be the number of each unit installed in the complete and accepted work.

- XX. BASIS OF PAYMENT. The accepted quantity of Special Provision (Union Company Switch) will be paid for at the Contract unit price per each. Payment will be full compensation for furnishing, transporting, handling, assembling, testing, and placing the materials specified, including foundations, anchors, grounding, receptacles, panel and enclosure, mounting and supports, wood posts, internal electrical components, conduit and wiring, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Union Company Switch)	Each

CURB INLET & TRENCH DRAINS

XX. DESCRIPTION. This work shall consist of furnishing and installing street curb inlets and associated trench drains at the locations indicated in the Plans and as directed by the Engineer.

XX. MATERIALS. Materials shall conform to the requirements of the respective section 543 and/or section 540 and as specified in the Plans and as specified in the following subsections:

Portland Cement	701.02
Fine Aggregate for Cement	704.01
Coarse Aggregate for Concrete	704.02
Reinforcing Steel	713.01
Epoxy Coating	713.07(b)
Granular Backfill for Structures	704.08

xx. SUBMITTALS. Working Drawings, calculations and pertinent data shall be submitted to the Engineer in accordance with Section 105.

Working Drawings shall provide layout and dimensions of all pieces to be fabricated. Proposed cover shall be detailed on the Working Drawings, including proposed mounting details to provide a flush cover with the top of the curb flow channel and adjacent sidewalk.

XX. CONSTRUCTION REQUIREMENTS. Construction requirements shall be in accordance with section 543 and the following:

Penetrations required shall be completed by the manufacturer and not in the field. The vault placement shall be as shown in the Plans or directed by the Engineer, and as approved by the affected utility companies.

The curb flow channels shall be placed on level aggregate base. Precast components to be joined shall have mechanical connection capable of developing the required strength due to loadings specified. All joints shall be sealed with butyl rubber as indicated in the Plans.

XX. METHOD OF MEASUREMENT. The quantities of Special Provision (Curb Inlet & Trench Drains) to be measured for payment will be the number of units of the respective types used in the complete and accepted work in the complete and accepted work.

XX. BASIS OF PAYMENT. The accepted quantities of Special Provision (Curb Inlet & Trench Drains) will be paid for at the Contract Unit Price per each. Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified, including curb inlet casting, precast and/or cast in place concrete trench, frame and cover and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Water Backflow Prevention And vault)	Each

ELECTRICAL & COMMUNICATIONS GROUND BOXES

- XX. DESCRIPTION. This work shall consist of furnishing, installing, and Electrical & Communications Ground Boxes and wiring, as shown in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 679 of the Standard Specifications.

- XX. MATERIALS. Provide ground mount NEMA 3R Enclosures. Materials shall meet the requirements of Section 679, requirements in the Plans, and the following:

- XX. MANUFACTURERS. The following manufacturers are capable of Electrical & Communications Ground Boxes (s) that meet the requirements for this project (or approved equal):

Legrand
60 Woodlawn Street
West Hartford, CT 06110
Electrical Product: 2 Gang 20 Amp Lockable outdoor ground box
Communications Product: 2 Gang Low Voltage Assembly outdoor ground
Tel.; 1.877.295.3472
Website: www.legrand.us

- XX. SUBMITTALS. Prior to ordering any components, the Contractor shall submit Working Drawings in accordance with Section 105. The submittal shall contain, as a minimum, the following information:

- (a) Size, manufacturer, model, accessories, material, locking mechanism, and finish.
- (b) Mounting post configuration
- (c) Electrical Components and Controls. Make, model, and applicable electrical capacities and settings.

- XX. CONSTRUCTION REQUIREMENTS. Prior to ordering materials, the Contractor shall coordinate with the electrical design to accommodate the electrical supply.

Contractor shall be responsible for obtaining all permits, certificates and inspections required. All work shall be in accordance with the National Electric Code, local codes and requirements, and the requirements of Burlington Electric Department.

- XX. METHOD OF MEASUREMENT. The quantity of Special Provision (Outdoor Electrical & Communications Ground Boxes) to be measured for payment will be the number of each unit installed in the complete and accepted work.

- XX. BASIS OF PAYMENT. The accepted quantity of Special Provision (Outdoor Electrical & Communications Ground Boxes) will be paid for at the Contract unit price per each. Payment will be full compensation for furnishing, transporting, handling, assembling, testing, and placing the materials specified, grounding, receptacles, internal electrical components, conduit and wiring, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Outdoor Electrical & Communications Ground Boxes)	Each

DRAINAGE STRUCTURES

XX. DESCRIPTION. This work shall consist of furnishing, excavation, installing and backfill for PVC drainage structures; and the furnishing and placing of cast iron grates or covers at the locations indicated in the Plans and as directed by the Engineer.

XX. MATERIALS. Materials shall conform to the requirements as specified in the Plans and as specified in the following subsections:

Granular Backfill for Structures	704.08
Polyvinyl Chloride (PVC) Pipe	710.06

xx. SUBMITTALS. Working Drawings, calculations and pertinent data shall be submitted to the Engineer in accordance with Section 105.

Proposed cover shall be detailed on the Working Drawings, including proposed mounting details.

XX. CONSTRUCTION REQUIREMENTS. In accordance with section 604 and manufacturer requirements.

Penetrations required shall be completed by the manufacturer and not in the field.

The sump shall be placed on level subgrade. Crushed stone pad shall be constructed as shown in the Plans, to required elevation level with the sump top to allow for joining of the sump.

XX. METHOD OF MEASUREMENT. The quantities of new structures to be measured for payment will be the number of units of the respective types used in the complete and accepted work in the complete and accepted work.

XX. BASIS OF PAYMENT. The accepted quantities of Drainage Structures will be paid for at the Contract Unit Price per each for each of the specified types. Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified, including PVC Riser, PVC Tees, excavation, granular backfill, boots, PVC tees, top sections, frames, grates, covers, base sections, coatings, pipe stubs, and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Yard Drain)	Each
900.620 Special Provision (Bioretention Overflow Drain)	Each
900.620 Special Provision (Bioretention B Outlet Structure)	Each

BACKFLOW PREVENTION VAULT

XX. DESCRIPTION. This work shall consist of furnishing and installing backflow prevention fitting, piping, and precast concrete vault at the locations indicated in the Plans and as directed by the Engineer.

XX. MATERIALS. Materials shall conform to the requirements of the respective section 543, section 629, City of Burlington Water Construction Standards/Code as specified in the Plans and as specified in the following subsections:

Portland Cement	701.02
Fine Aggregate for Cement	704.01
Coarse Aggregate for Concrete	704.02
Reinforcing Steel	713.01
Epoxy Coating	713.07(b)
Granular Backfill for Structures	704.08
Ductile Iron Pipe, Cement Lined	740.07
Polystyrene Insulation Board	735.01

Concrete vaults shall conform to ASTM C890 and C913 specifications.

xx. SUBMITTALS. Working Drawings, calculations and pertinent data shall be submitted to the Engineer in accordance with Section 105. Vault and cover shall be designed for AASHTO H20 loading. Type A Certification per Subsection 700.02 is required.

Working Drawings shall provide layout and dimensions of all pieces to be fabricated. Detailed information on penetrations, connections, reinforcement size and spacing, sealing procedures and materials shall also be included on the Working Drawings and design calculations. Description of quality control procedures shall also be included.

Proposed cover shall be detailed on the Working Drawings, including proposed mounting details to provide a flush cover with the top surface of the vault. Locking mechanism shall be specified.

Submittal shall be signed, stamped and dated by a qualified registered Professional Engineer licensed in the appropriate discipline in the State of Vermont, or eligible to practice said engineering discipline in the State of Vermont under transient practice provisions of Title 26 VSA, Section 1181a.

XX. CONSTRUCTION REQUIREMENTS. Construction requirements shall be in accordance with section 543, section 629 and the following:

Penetrations required shall be completed by the manufacturer and not in the field. The vault placement shall be as shown in the Plans or directed by the Engineer, and as approved by the affected utility companies.

The vault shall be placed on level aggregate base. Crushed stone pad shall be constructed as shown in the Plans, to required elevations to maintain water system 5.5 ft minimum bury depth. Precast vault components to be joined shall have mechanical connection capable of developing the required

strength due to loadings specified. All joints shall be sealed with butyl rubber as indicated in the Plans.

- XX. METHOD OF MEASUREMENT. The quantities of Special Provision (Water Backflow Prevention And Vault) to be measured for payment will be on a lump sum basis for system placed in the complete and accepted work.
- XX. BASIS OF PAYMENT. The accepted quantities of Special Provision (Water Backflow Prevention And vault) will be paid for at the Contract lump sum price. Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified, including precast vault, concrete risers, stairs, ductile iron pipe and fittings, gate valves, water meters, double check valves, plate strainers, pressure reducing valves, rigid insulation, access hatch and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Water Backflow Prevention And vault)	Lump Sum

ARCH PIPE DETENTION

XX. DESCRIPTION. This work shall consist of furnishing and installing geotextile, for arch pipe detention system; and the furnishing and placing of cast iron grates or covers at the locations indicated in the Plans and as directed by the Engineer.

XX. MATERIALS. Materials shall conform to the requirements as specified in the Plans and as specified in the following subsections:

Granular Backfill for Structures	704.08
Polyvinyl Chloride (PVC) Pipe	710.06
Corrugated Polypropylene Pipe	710.07
Geotextiles	720.01A

xx. SUBMITTALS. Working Drawings, calculations and pertinent data shall be submitted to the Engineer in accordance with Section 105.

Proposed cover shall be detailed on the Working Drawings, including proposed mounting details.

XX. CONSTRUCTION REQUIREMENTS. In accordance with section 604, section 649 and manufacturer requirements.

Penetrations required shall be completed by the manufacturer and not in the field.

The sump shall be placed on level subgrade. Crushed stone pad shall be constructed as shown in the Plans, to required elevation level with the sump top to allow for joining of the sump.

XX. METHOD OF MEASUREMENT. The quantities of Special Provision (Arch Pipe Detention) to be measured for payment will be on a lump sum basis for system placed in the complete and accepted work.

XX. BASIS OF PAYMENT. The accepted quantities of Special Provision (Arch Pipe Detention) will be paid for at the Contract lump sum price. Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified, including arch corrugated polypropylene pipe, corrugated polypropylene risers, isolation row non-woven geotextile, base woven geotextile, inspection ports end caps, boots, PVC tees, top sections, frames, grates, covers, base sections, coatings, pipe stubs, and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Arch Pipe Detention)	Lump Sum

RESTROOM FACILITIES

- XX. DESCRIPTION. This work shall consist of furnishing, installing, providing service connections, and foundation for a prefabricated restroom facility in accordance with the Plans and as directed by the Engineer.
- XX. MATERIALS. Restroom facility shall be as specified by the manufacturer and shall meet the specifications outlined in the Plans.
- XX. MANUFACTURERS. The following manufacturers are capable of prefabricated restroom facility that meet the requirements for this project (or approved equal):

The Portland Loo
2550 NW 25th Place
Portland, OR 97210
P(503)226-3968
C(503)481-9722
www.PortlandLoo.com

Product Specifications: Portland Loo- Single occupant public toilet. Basic unit carbon steel posts and 304 SS panels, louvers, door & roof. 40W heat trace, interior and exterior LED lighting with photoeye and motion sensor control and occupancy counter. AC power option. (LH/RH door swing and LH/RH hand wash basin to be determined later) including following options:

- Loo Template
- Foundation Mounting Hardware
- Hand Wash Basin
- Baby changing Table
- Trash Can
- Sharps Container
- Aluminum Front Door Upgrade
- Cold Weather Toilet Upgrade
- Shipping & Handling

- XX. INSTALLATION. All work shall be free of blemishes or defects which could affect durability, strength, or appearance. The restroom facility shall be installed true to line and grade as shown on the Plans or as directed by the Engineer.

The restroom facility shall be installed at the location indicated in the Plans, to the configuration shown in the Plans, and in accordance with the manufacturer's recommendations. All locations shall be field approved by the Engineer prior to installation.

The Contractor shall protect all parts of the restroom facility and maintain them in an undamaged condition until they are installed and accepted for payment.

- XX. METHOD OF MEASUREMENT. The quantity of Special Provision (Restroom Facility) to be measured for payment will be the number of each Restroom Facility furnished and installed in the complete and accepted work.

- XX. BASIS OF PAYMENT. The accepted quantity of Special Provision (Restroom Facility) will be paid for at the Contract lump sum price for each. Payment will be full compensation for furnishing and installing a complete Restroom Facility system and necessary foundation, service connections, and anchoring materials and labor in accordance with the Contract Documents, and for furnishing all labor, materials, equipment, tools, and incidentals necessary to complete the work including but not limited to any materials required for anchoring and any concrete required for anchor footings.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Restroom Facility)	LS

FOUNDATION SEALING

- xx. DESCRIPTION. This work shall consist of furnishing and placing a window well. This shall include designing, detailing, fabricating, furnishing, and erecting all the items required for the window well, including but not limited to a concrete concrete masonry unit wall and metal grate at the location(s) specified and in conformance with the lines and grades shown on the Plans or as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Sections 501 and 707 of the Standard Specifications.

- xx. MATERIALS. Materials shall conform to the requirements of the respective section 541 as specified in the Plans and as specified in the following subsections:

Portland Cement	701.02
Fine Aggregate for Cement	704.01
Coarse Aggregate for Concrete	704.02
Polystyrene Insulation Board	735.01
Sand Borrow	703.03

(a) Water proofing per plans

- xx. METHOD OF MEASUREMENT. The quantity of Special Provision (City Hall Foundation Repair) and Special Provision (Chittenden Trust Foundation) to be measured for payment will be a square footage of wall sealing in the complete and accepted work.
- xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (City Hall Foundation Repair) and Special Provision (Chittenden Trust Foundation) will be paid for at the Contract unit price on a square foot basis. Payment will be full compensation for furnishing, transporting, handling, assembling and placing materials specified, including waterproof membrane, grout for wall penetrations, sand borrow, geotextile filter fabric, polystyrene insulation board all incidental parts, hardware, and for removing all materials after use and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.670 Special Provision (City Hall Foundation Repair)	SF
900.670 Special Provision (Chittenden Trust Foundation)	SF

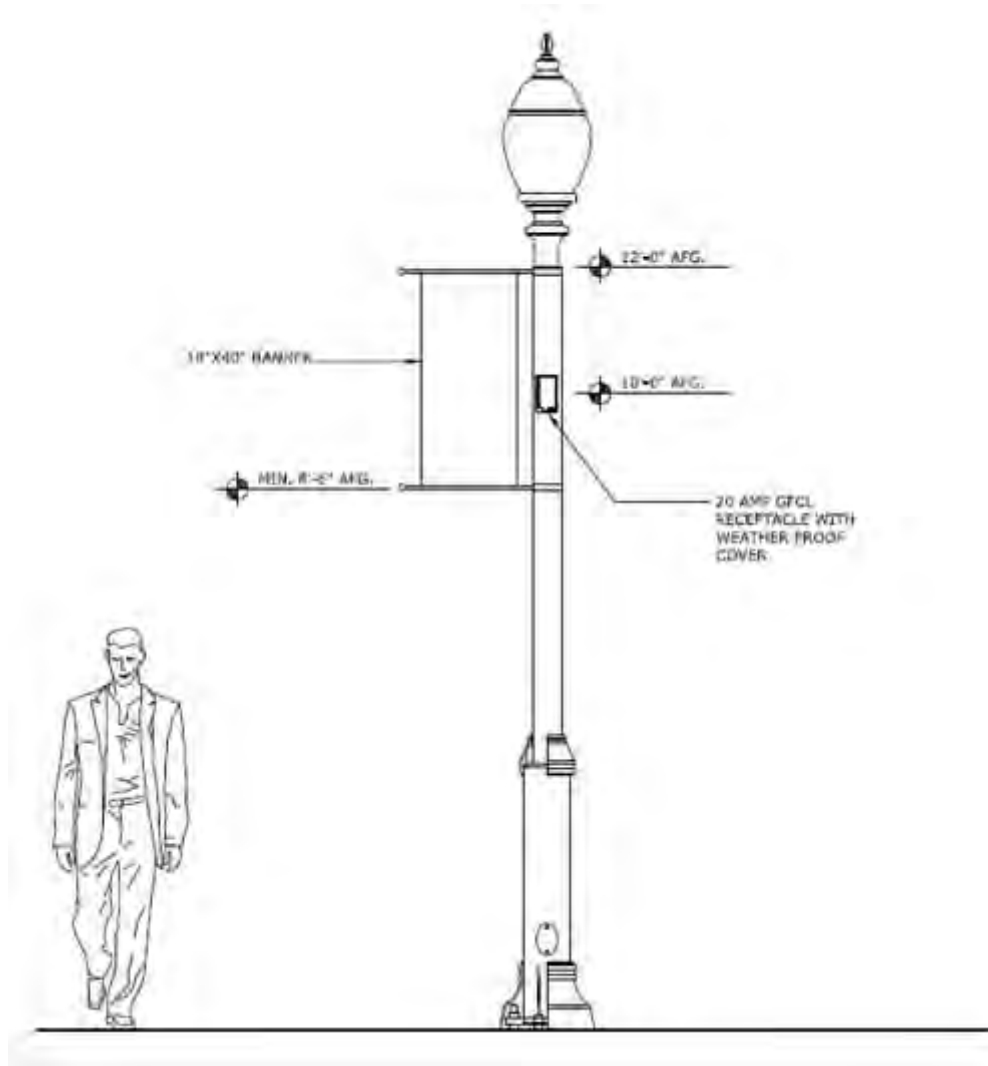


Figure 1: Banner Orientation for Type P1 Poles

THE PORTLAND LOO

STRUCTURAL/ARCHITECTURAL DRAWINGS

GENERAL NOTES

- 1. WEIGHT : 6,013 lbs
- 2. SQUARE FOOTAGE : 51.5
- 3. ALL STRUCTURAL STEEL TO BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC MANUAL 9th EDITION & A.W.S. ALL PANELS, LOUVERS, AND ROOF TO BE 304 STAINLESS STEEL,
- 4. STRUCTURAL TUBING ASTM 500 GR. B
- 5. ANCHOR BOLTS 1/2" X 5" TITENS
- 6. ALL WELDING TO BE DONE BY CERTIFIED WELDERS.
- 7. ALL EXPOSED BOLTS AND SCREWS TO BE TAMPER RESISTANT FOR HEX PIN BITS.
- 8. RIVET NUTS TO BE C.F.T. SERIES AND STAINLESS STEEL 302.
- 9. ALL MATERIALS TO BE SAND BLASTED AND POWDER COATED
- 10. ALL STRUCTURES TO BE FABRICATED OFF SITE SHALL BE DONE IN SHOPS OR FABRICATORS LICENSED OR APPROVED BY THE BUILDING AND ENGINEERING DIVISION OF THE CITY FOR WHICH IT IS INTENDED FOR

DESIGN INFORMATION

- 1. DESIGN IS BASED ON INTERNATIONAL BUILDING COLD IRC 2012 EDITION AND ASCE7-10
- 2. SNOW LOAD=25 PSF MAX
- 3. WIND DESIGN CRITERIA: 140 MPH (3-SECOND GUST) EXPOSURE C
- 4. SEISMIC DESIGN CRITERIA: SDS=1.0 MAXIMUM, R-6.5 (LIGHT FRAME SHEAR WALL), IMPORTANCE FACTOR=1
- 5. SEISMIC DESIGN CATEGORY: D
- 6. SITE CLASS D
- 7. CONTRACTOR TO VERIFY DESIGN PARAMETERS SHOWN WITH ACTUAL SITE CONDITIONS AND INSURE ACTUAL SITE PARAMETERS NOT EXCEED DESIGN

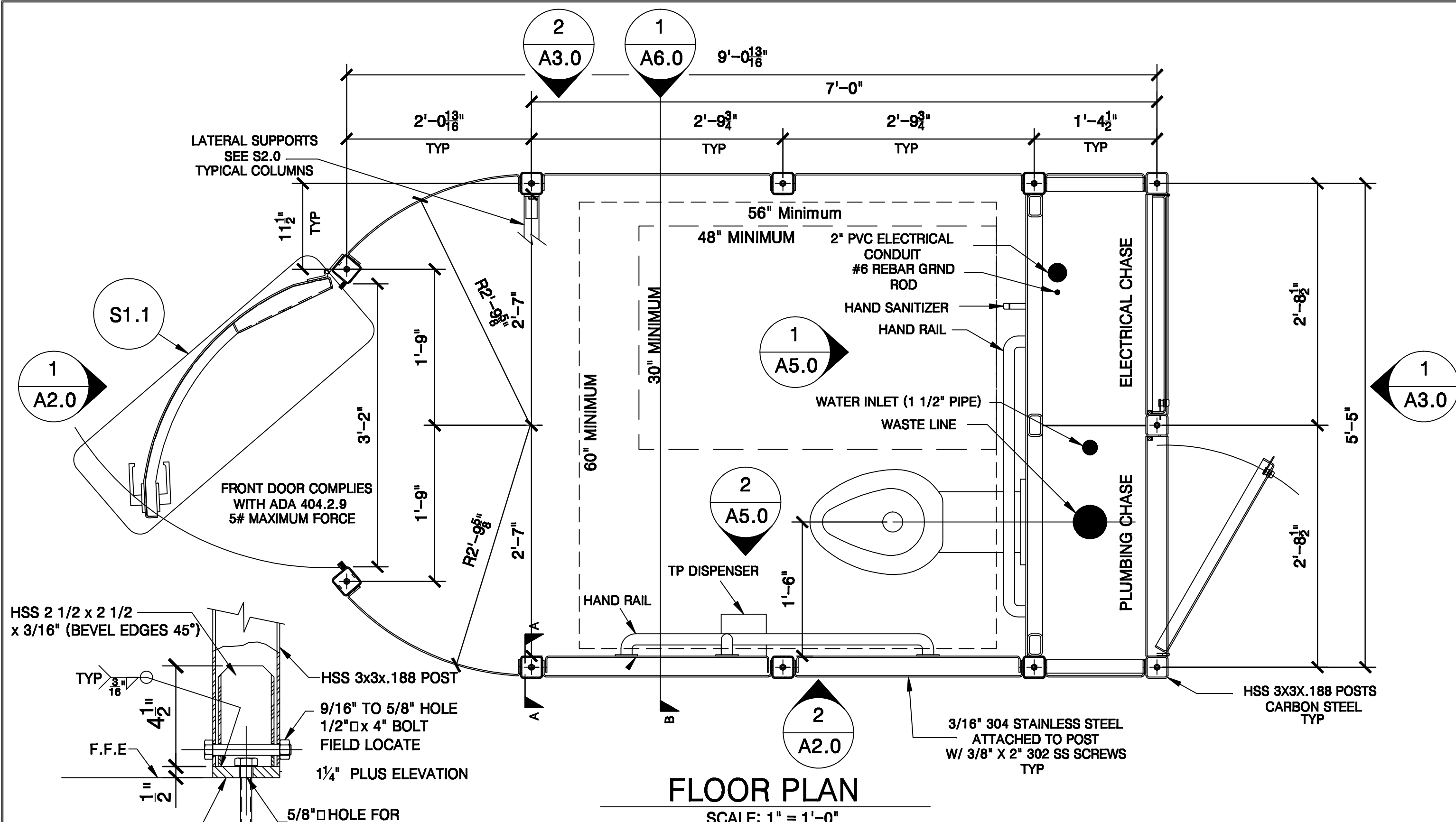
SHEET INDEX

A0.0	COVER SHEET
A1.0	FLOOR PLAN
A2.0	EXTERIOR ELEVATIONS FRONT & RIGHT SIDE
A3.0	EXTERIOR ELEVATIONS BACK & LEFT SIDE
A4.0	ROOF LAYOUT
A5.0	INTERIOR SECTION VIEWS
A6.0	INTERIOR SECTION VIEW
S1.0	COLUMN AND BEAM LAYOUT
S2.0	FRONT DOOR
S3.0	FOUNDATION & ANCHOR BOLT LOCATIONS
S4.0	STANDARD OPTIONS
P1.0	PLUMBING FLOOR PLAN
P2.0	PLUMBING DETAIL
E1.0	ELECTRICAL SCHEMATIC

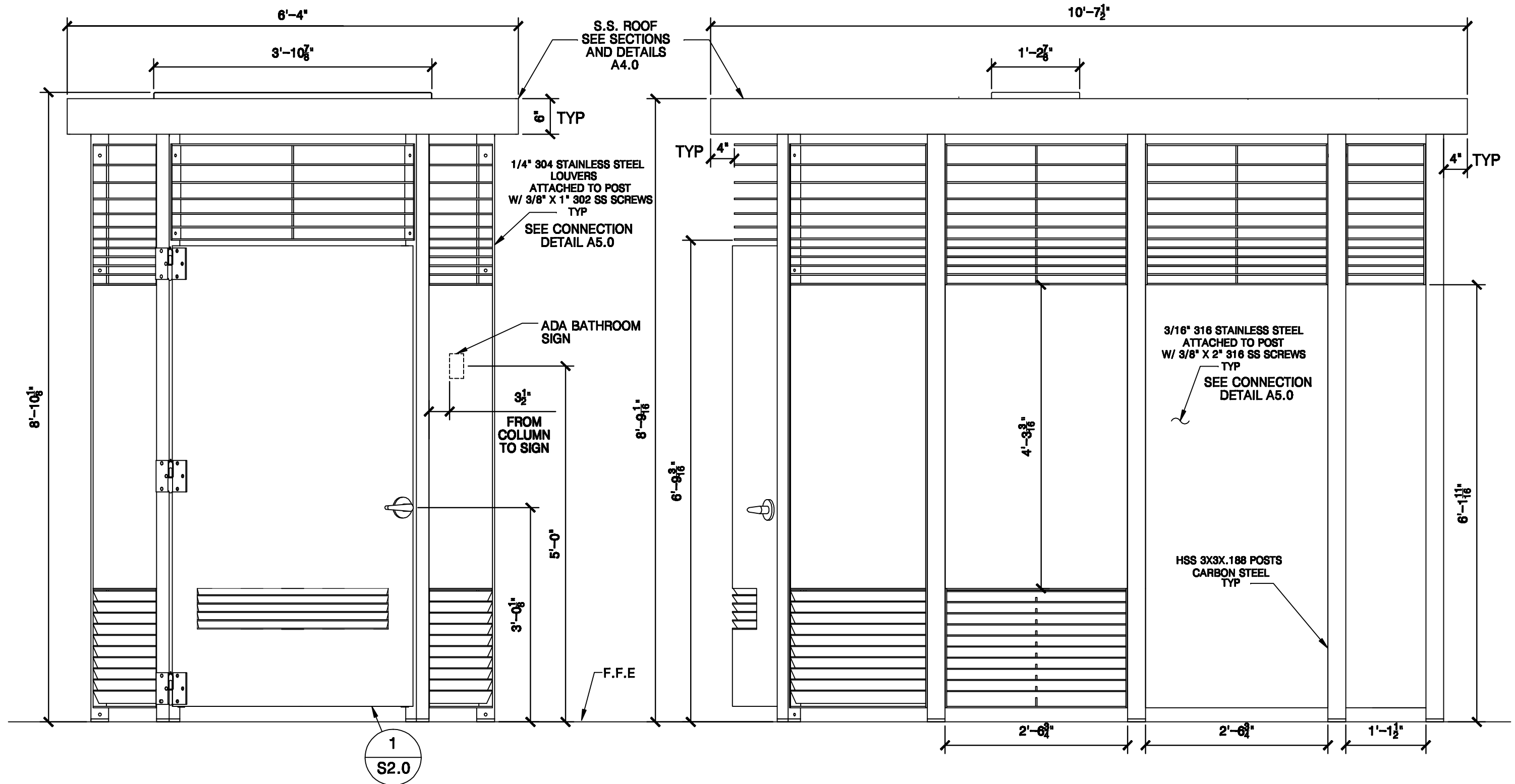
SPECIAL INSPECTIONS

- 1. AN INDEPENDENT TESTING COMPANY OR SPECIAL INSPECTOR RETAINED BY THE OWNER AND APPROVED BY THE BUILDING OFFICIAL SHALL INSPECT THE FOLLOWING.
 - A. FOUNDATION REINFORCING STEEL PLACEMENT
 - B. VERIFY USE OF REQUIRED CONCRETE MIX DESIGN
 - C. CONCRETE PLACEMENT
 - D. ANCHOR BOLTS-TITENS (INSTALLED AFTER CONCRETE HAS HARDENED)

					MADDEN FABRICATION 2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446	PORTLAND LOO			
						COVER SHEET			
						NAME	DATE	SERIAL NO.	DRW. NO.
						LEO	4/16/2015		A0.0
REV	DATE	DESCRIPTION	DRN	APP'D					



					MADDEN FABRICATION		PORTLAND LOO			
							FLOOR PLAN			
REV	DATE	DESCRIPTION	DRN	APPD	2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446		NAME	DATE	SERIAL NO.	DRW. NO.
							LEO	4/16/2015		A1.0



1
A2.0

FRONT ELEVATION VIEW

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

2
A2.0

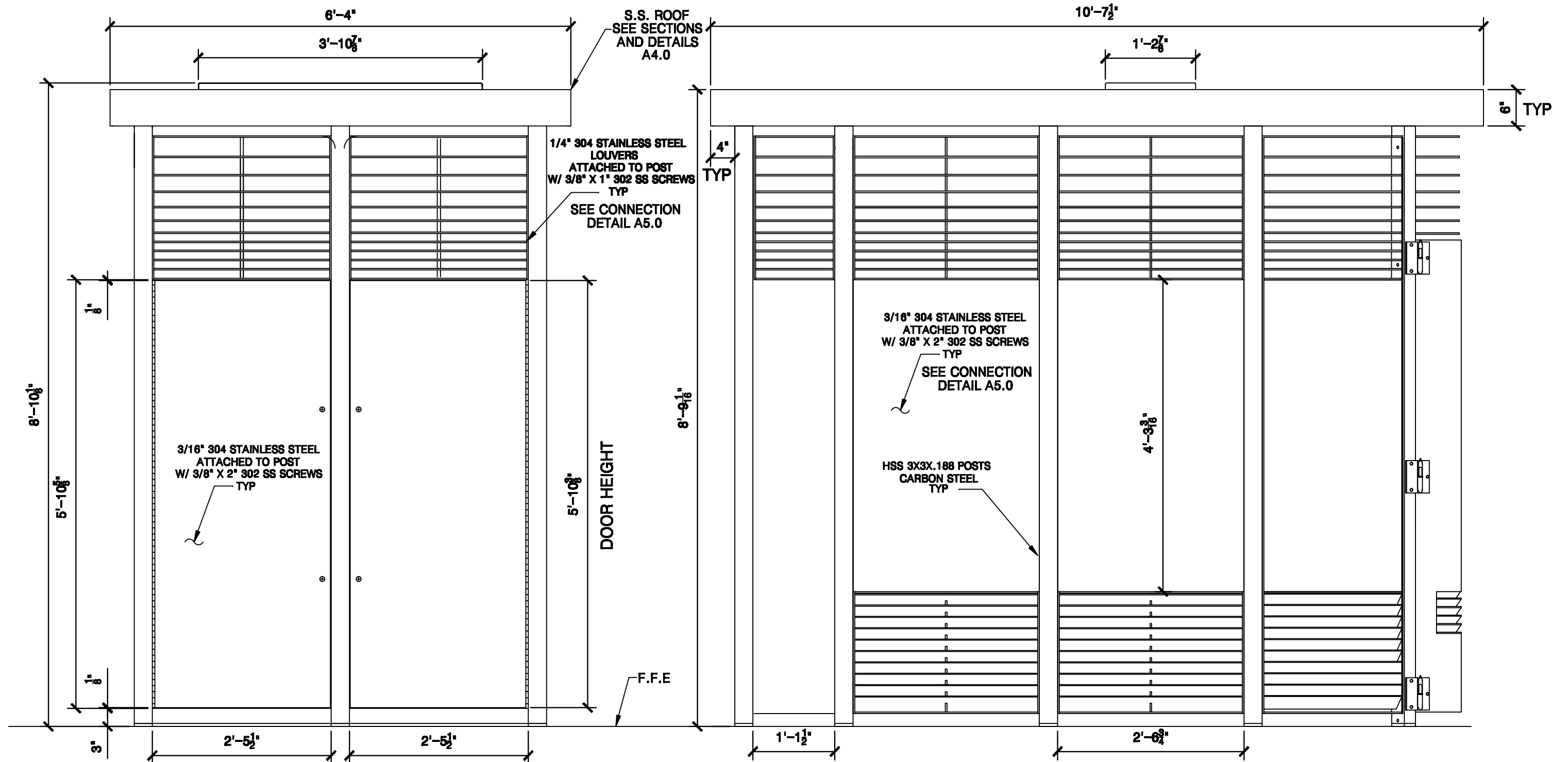
RIGHT ELEVATION VIEW

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

					PORTLAND LOO			
					EXTERIOR ELEVATIONS FRONT AND RIGHT SIDE			
					NAME	DATE	SERIAL NO.	DRW. NO.
					LEO	4/16/2015		A2.0
REV	DATE	DESCRIPTION	DRN	APP'D				

MADDEN
FABRICATION

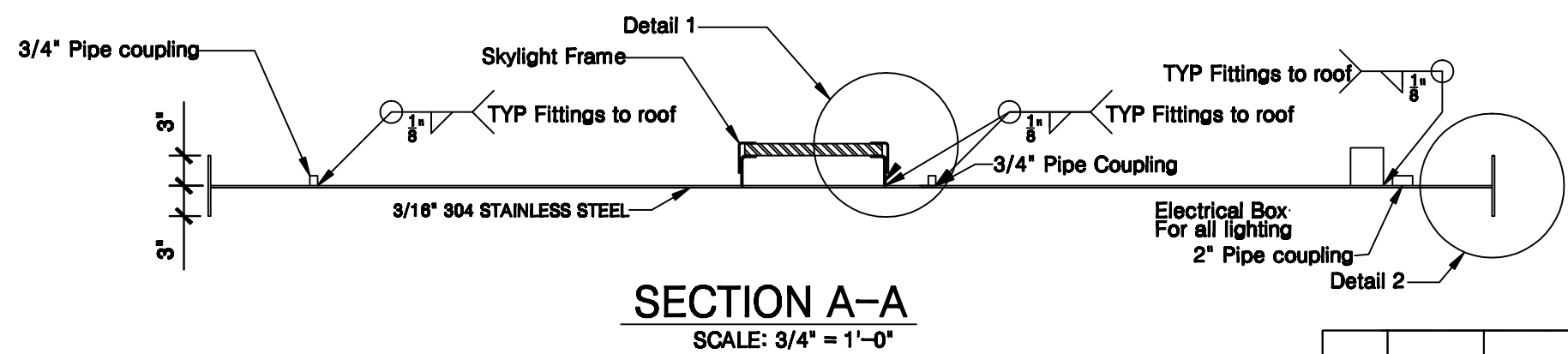
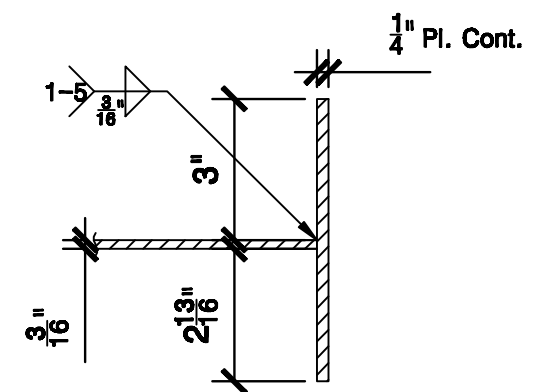
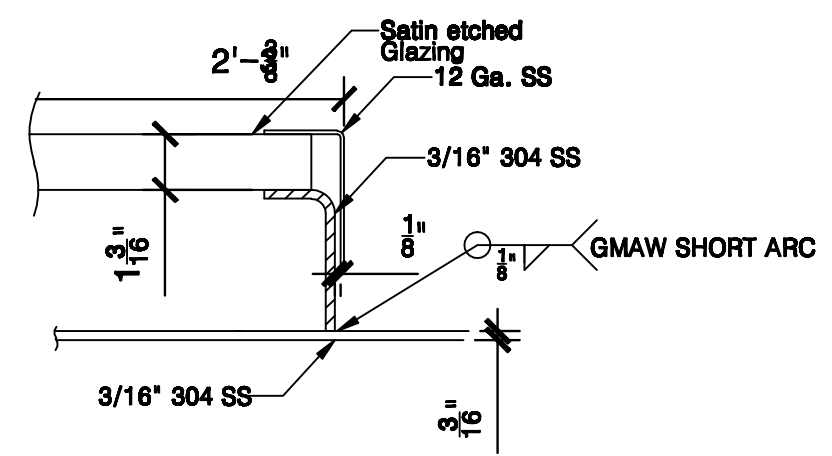
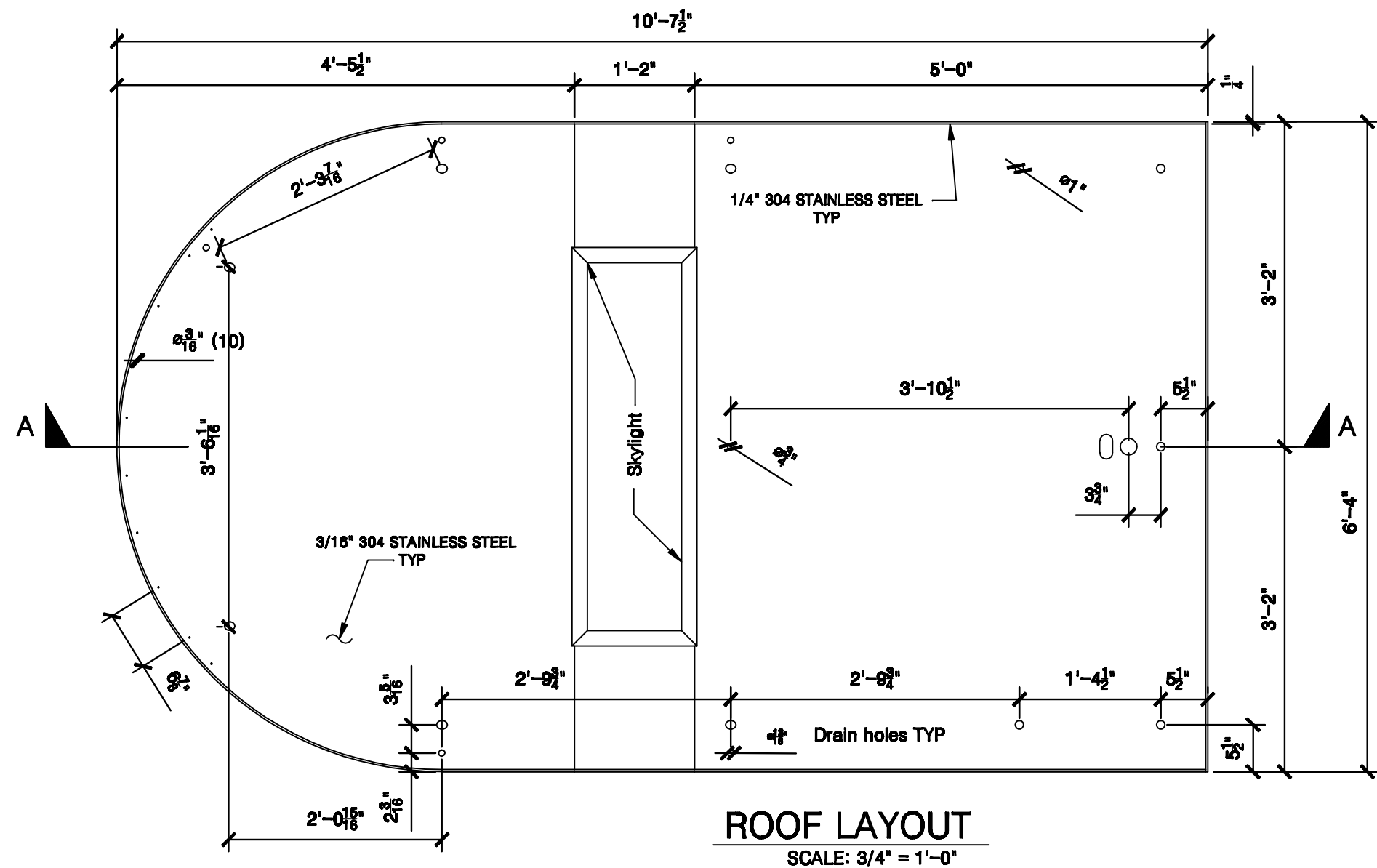
2550 NW 25th Place • Portland, OR. 97210
Phone: (503) 226-3968 Fax (503) 242-2446



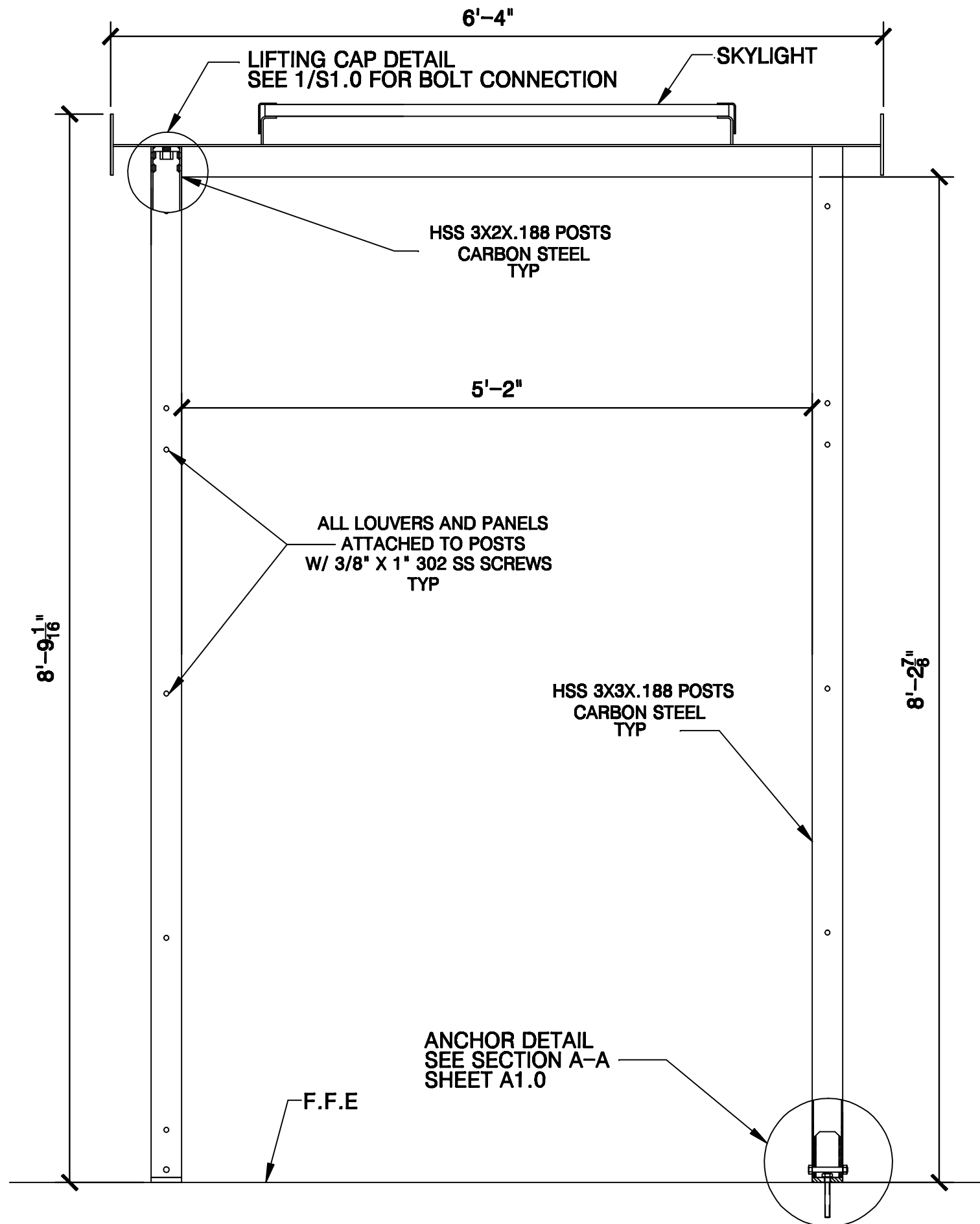
1 BACK ELEVATION VIEW
A3.0
SCALE: 3/4" = 1'-0"

2 LEFT ELEVATION VIEW
A3.0
SCALE: 3/4" = 1'-0"

					MADDEN FABRICATION	PORTLAND LOO			
						EXTERIOR ELEVATIONS BACK AND LEFT SIDE			
						NAME	DATE	SERIAL NO.	DRW. NO.
REV	DATE	DESCRIPTION	DRN	APPD		LEO	4/16/2015		A3.0



					MADDEN FABRICATION		PORTLAND LOO			
							ROOF LAYOUT			
					2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446		NAME	DATE	SERIAL NO.	DRW. NO.
REV	DATE	DESCRIPTION	DRN	APP'D			LEO	4/16/2015		A4.0

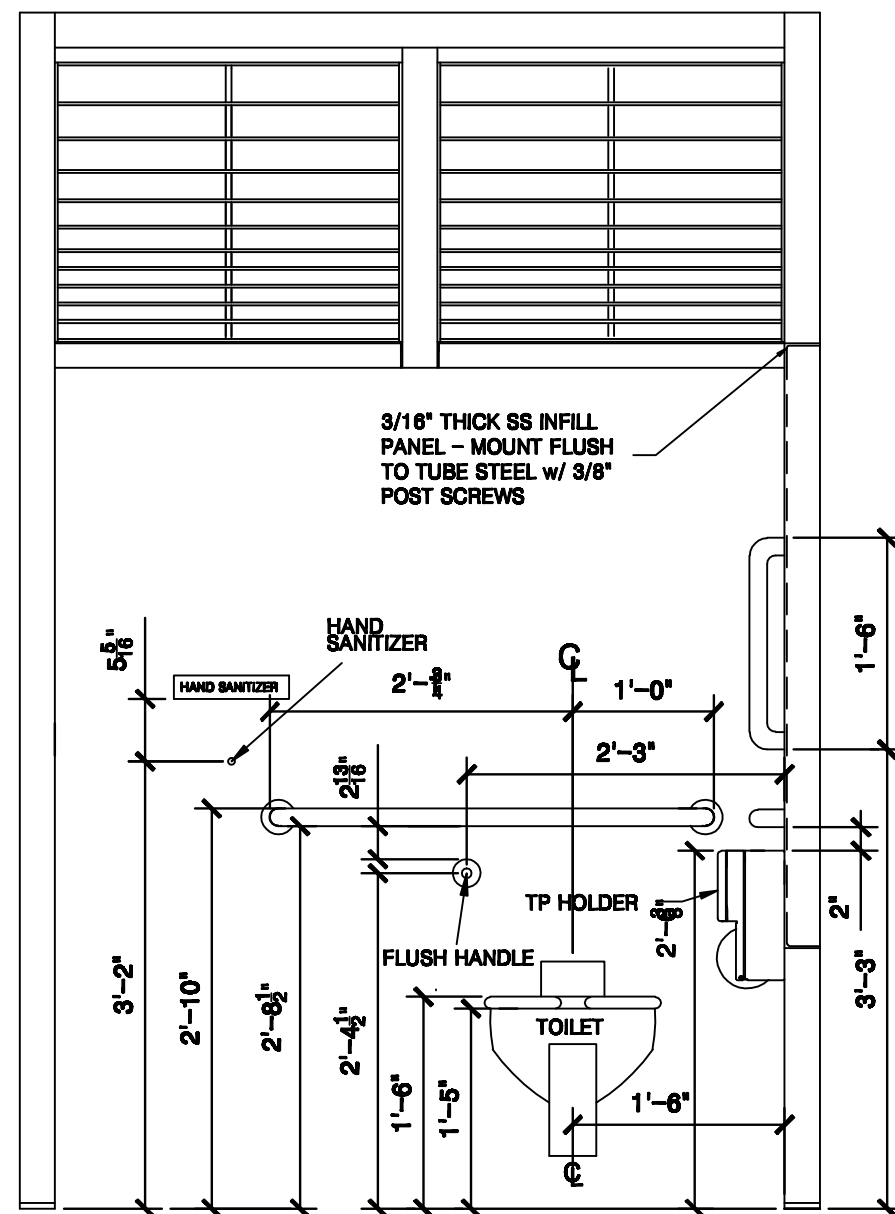


B-B
A1.0

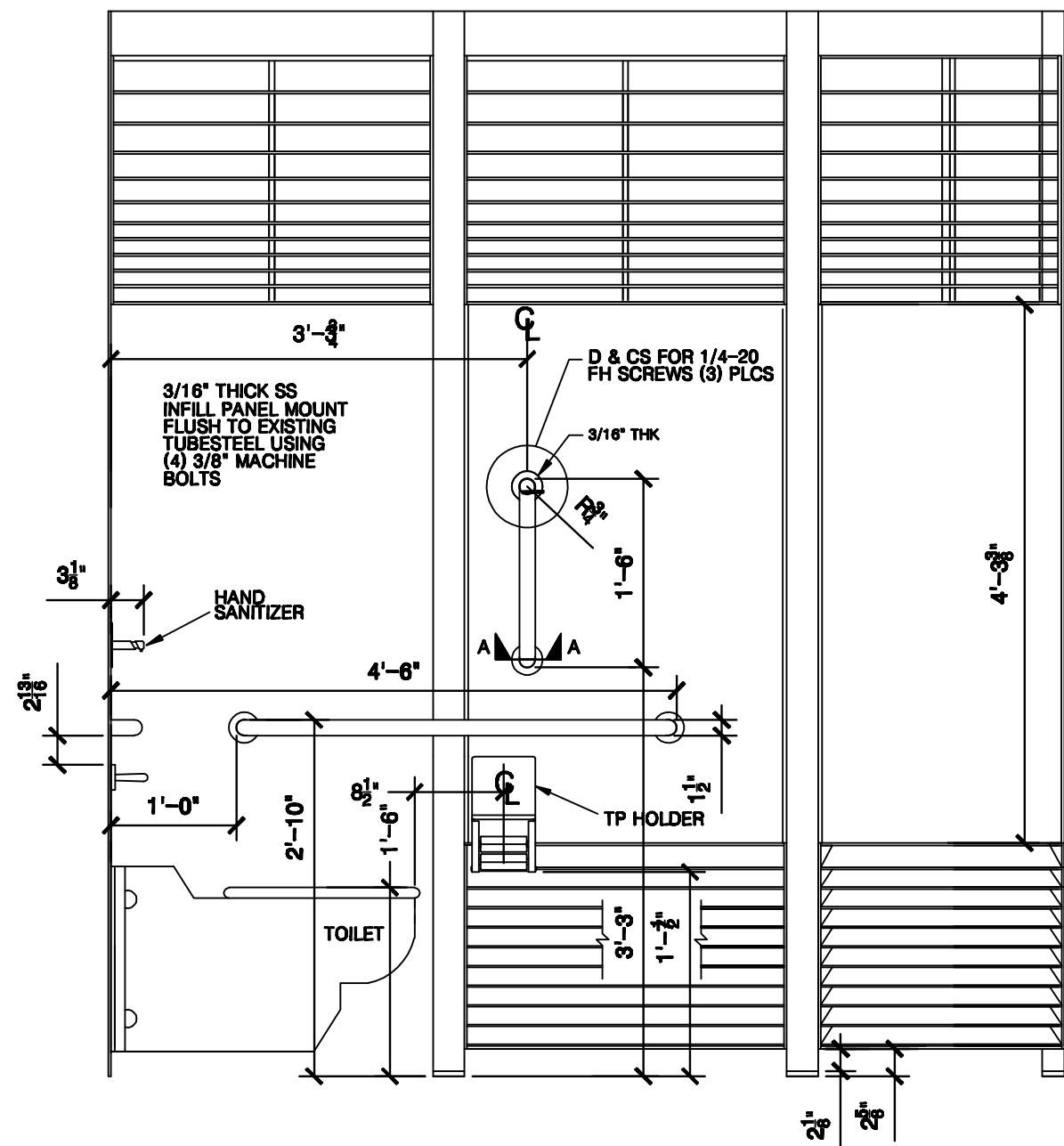
INTERIOR ELEVATION VIEW

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

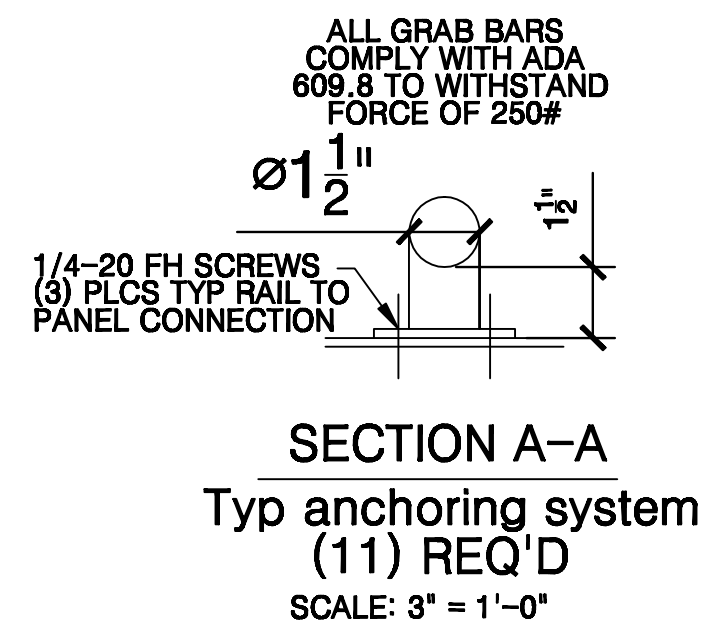
					MADDEN FABRICATION	PORTLAND LOO			
						INTERNAL SECTION VIEW			
					2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446	NAME	DATE	SERIAL NO.	DRW. NO.
REV	DATE	DESCRIPTION	DRN	APP'D		LEO	4/16/2015		A5.0



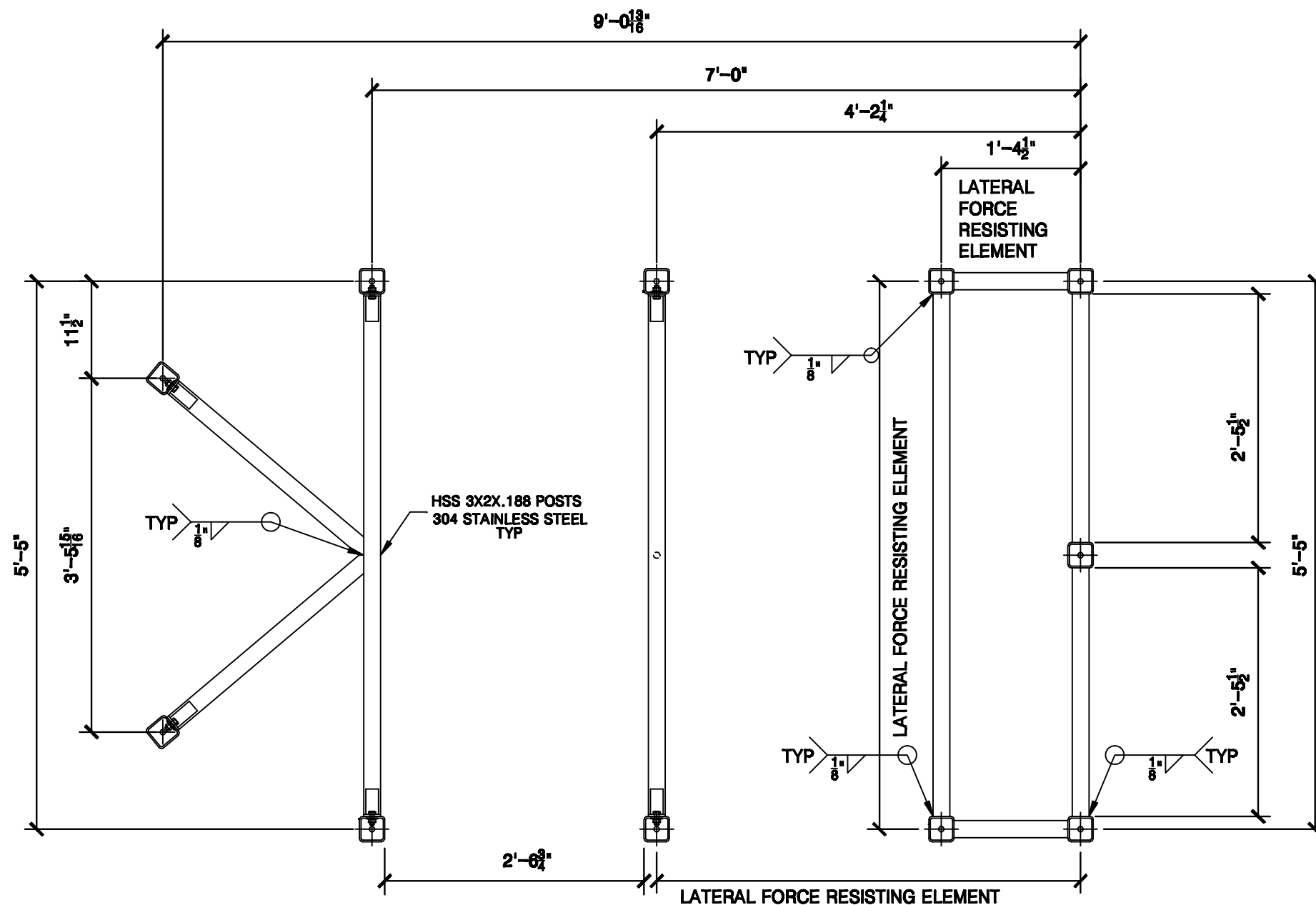
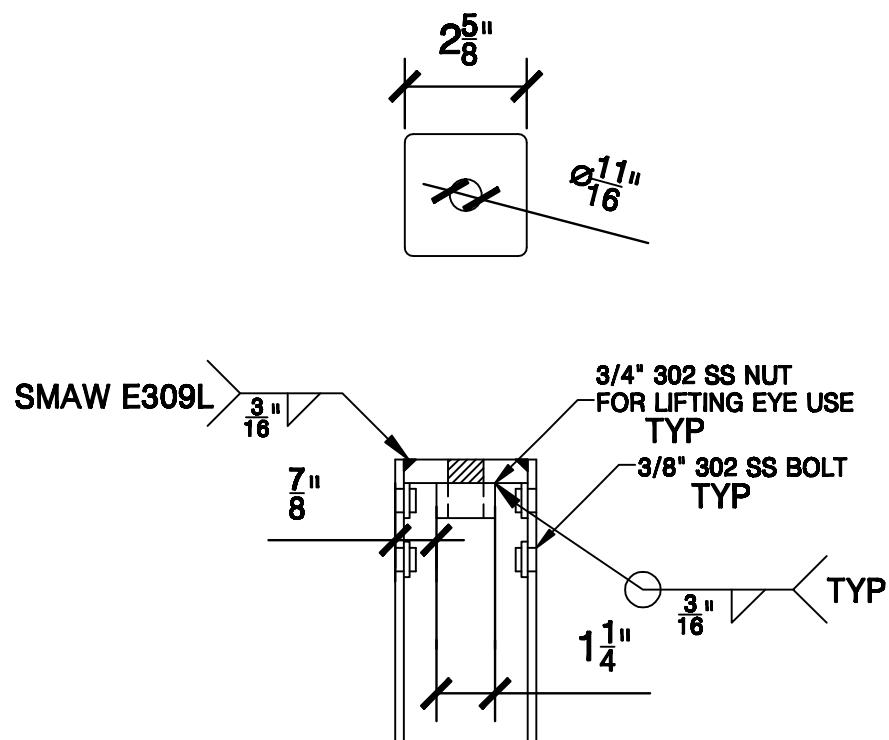
1 WATER CLOSET RAILING
 A5.0 1 1/2" Dx. 120" wall ss Plate 3/16" ss
 (1) Assm REQ'D SCALE: 3/4" = 1'-0"



2 WATER CLOSET RAILING
 A5.0 1 1/2" Dx. 120" wall ss Plate 3/16" ss
 (1) Assm REQ'D SCALE: 3/4" = 1'-0"



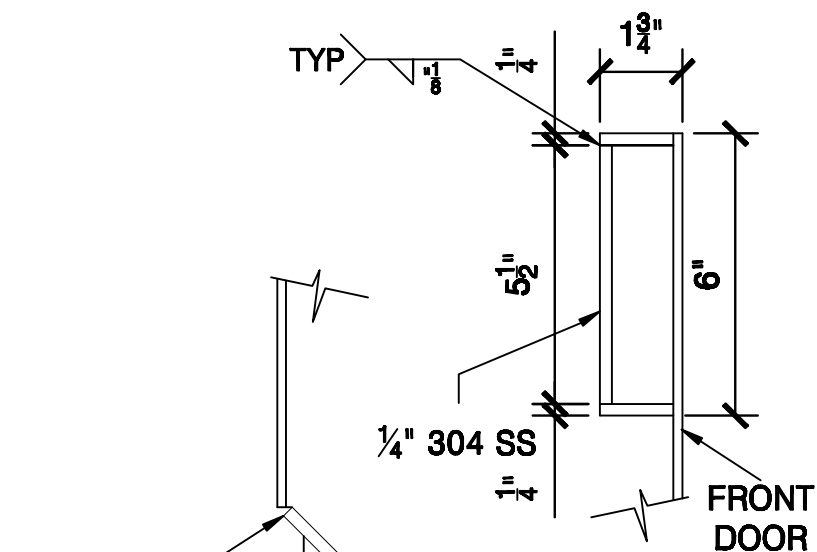
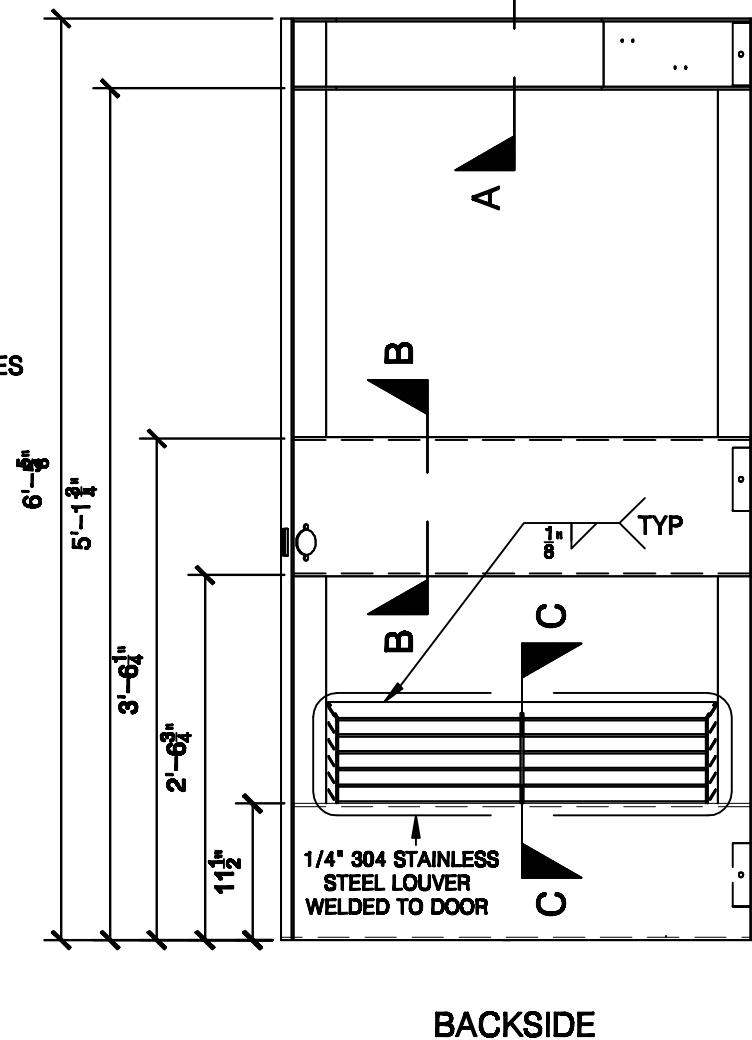
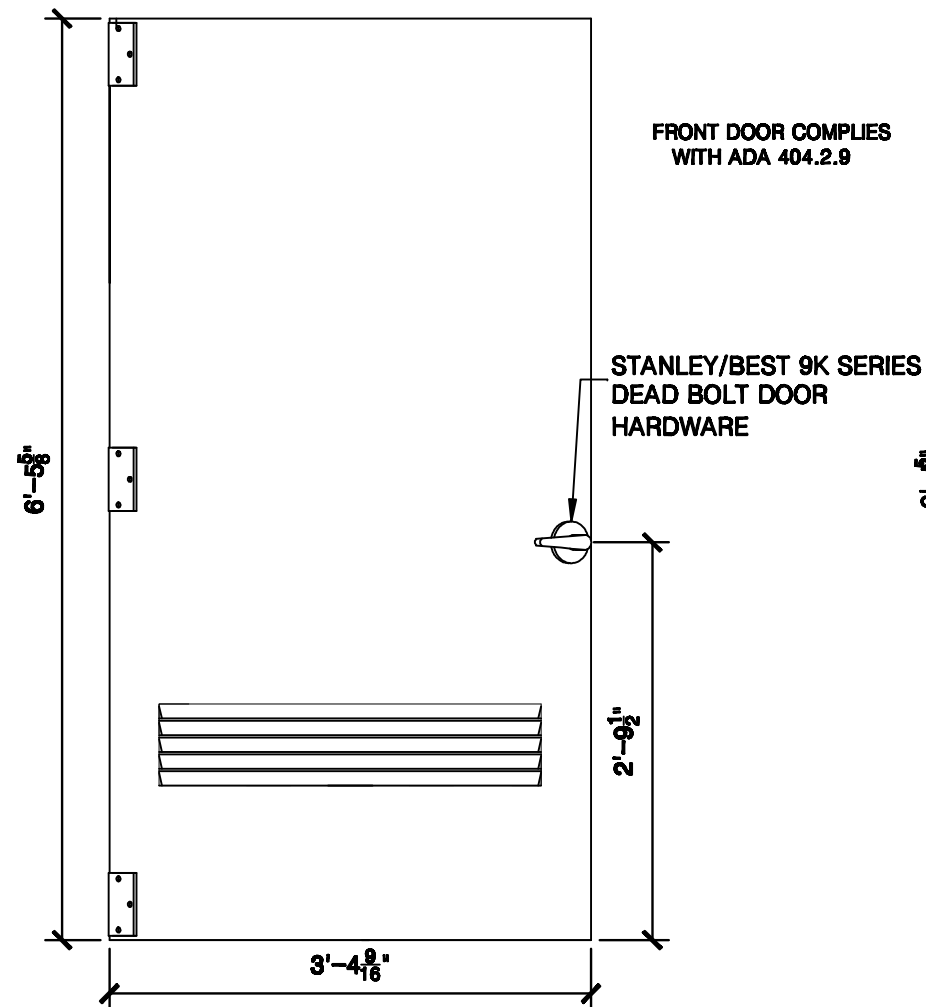
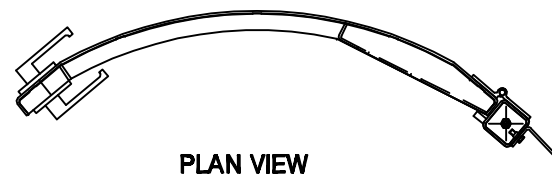
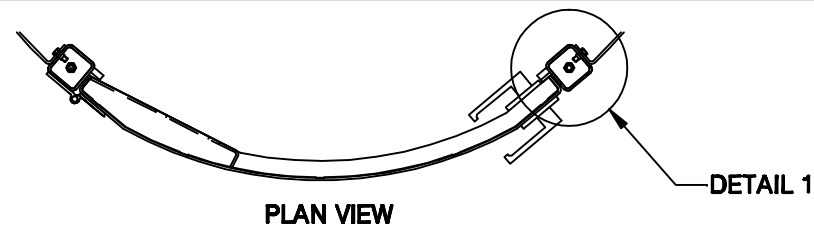
					MADDEN FABRICATION		PORTLAND LOO			
							INTERNAL SECTION VIEWS			
					2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446		NAME	DATE	SERIAL NO.	DRW. NO.
REV	DATE	DESCRIPTION	DRN	APP'D			LEO	4/16/2015		A6.0



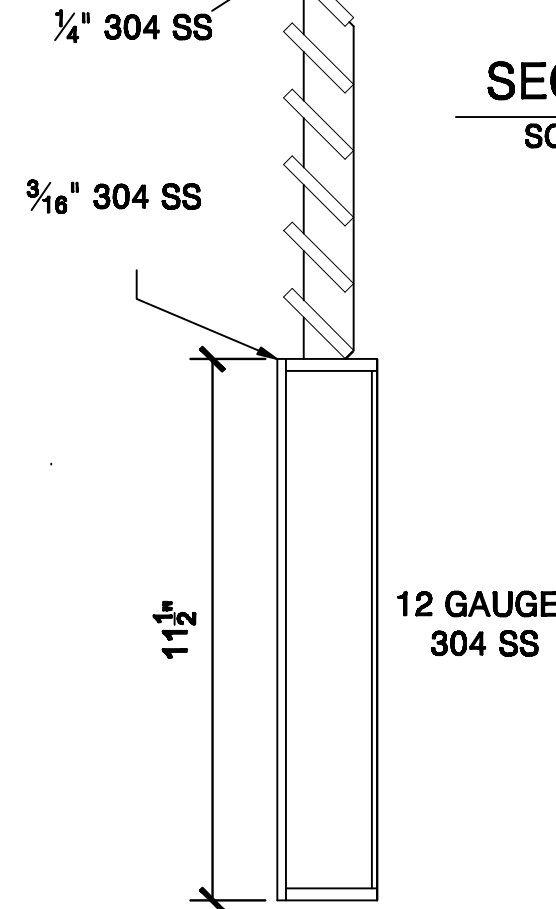
COLUMN AND BEAM LAYOUT
 SCALE: 3/4" = 1'-0"

1
 S1.0
COLUMN LIFTING CAP
 1/2" 304 SS
 TAP FOR 3/4-10 Bolt
 (11) REQ'D
 SCALE: 3" = 1'-0"

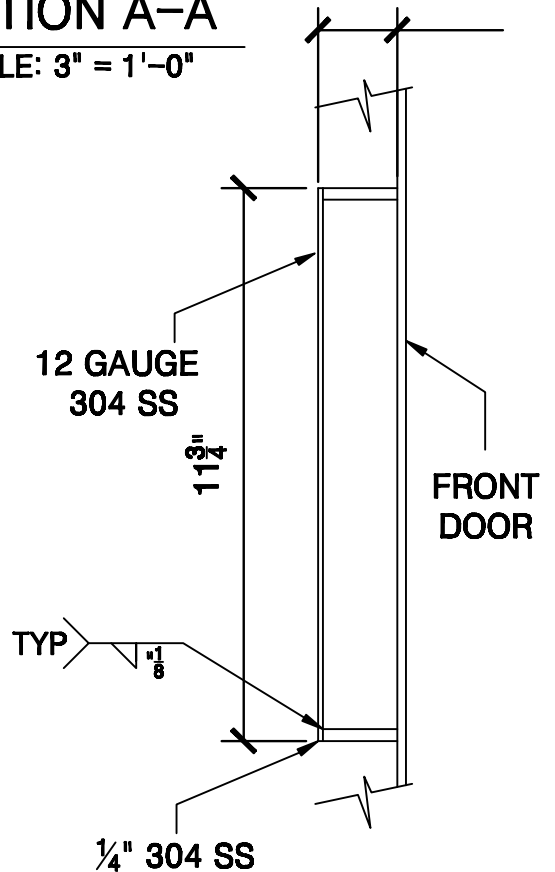
					MADDEN FABRICATION		PORTLAND LOO			
							COLUMN AND BEAM LAYOUT			
REV	DATE	DESCRIPTION	DRN	APP'D	2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446	NAME LEO	DATE	SERIAL NO.	DRW. NO.	
							4/16/2015		S1.0	



SECTION A-A
SCALE: 3" = 1'-0"

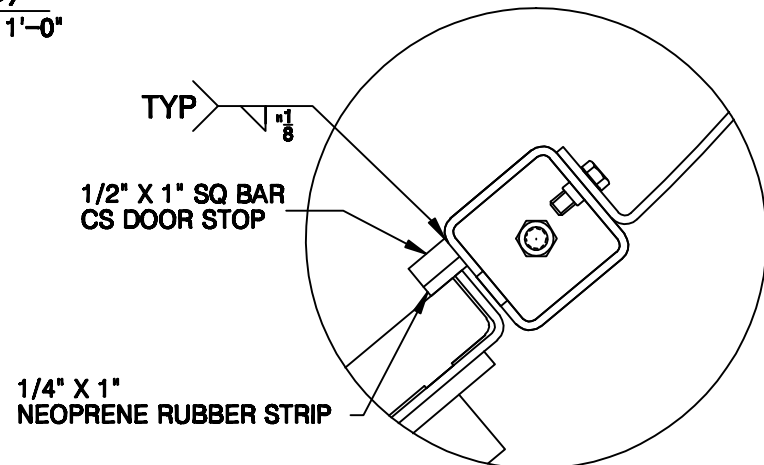


SECTION C-C
SCALE: 3" = 1'-0"



SECTION B-B
SCALE: 3" = 1'-0"

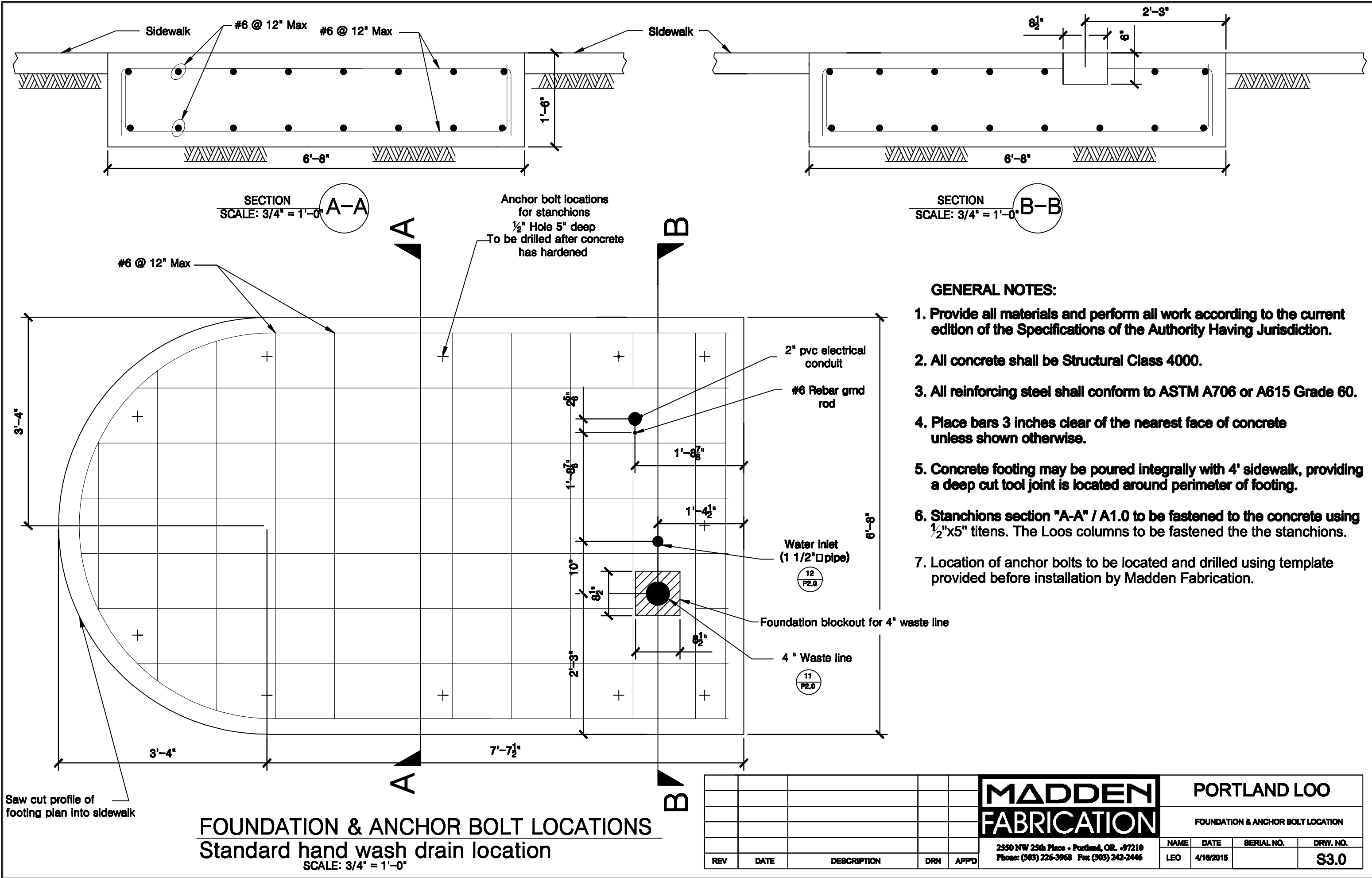
1 RIGHT HAND ENTRY DOOR (STANDARD)
PL 3/16" 304 STAINLESS STEEL SCALE: 3/4" = 1'-0"
(1) REQ'D

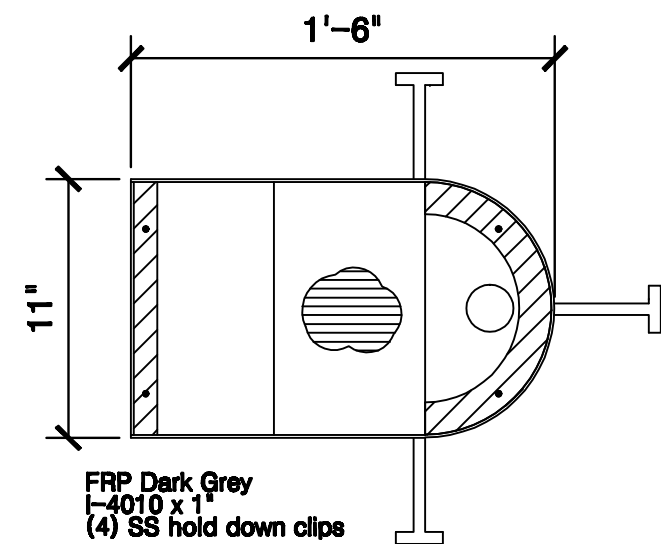


DETAIL 1
SCALE: 3" = 1'-0"

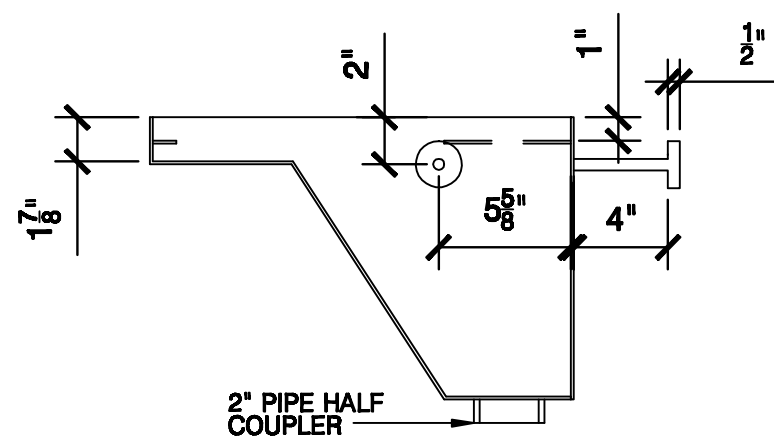
					PORTLAND LOO			
					FRONT DOOR			
					NAME	DATE	SERIAL NO.	DRW. NO.
					LEO	4/16/2015		S2.0

					MADDEN FABRICATION			
					2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446			
REV	DATE	DESCRIPTION	DRN	APPD				

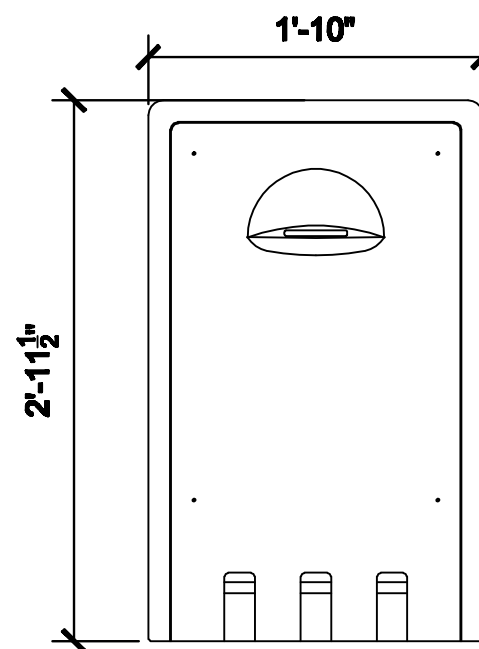
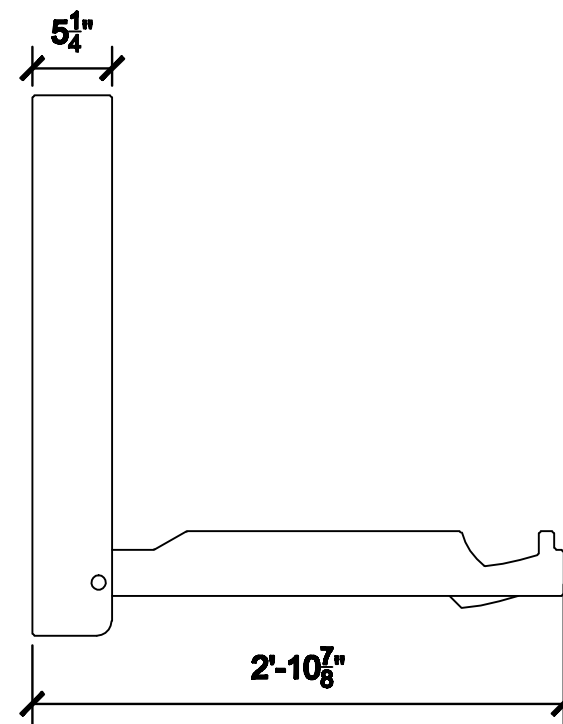




PLAN VIEW



5 WASH BASIN
Sheet 12 GA SS
(1) Assembly REQ'D

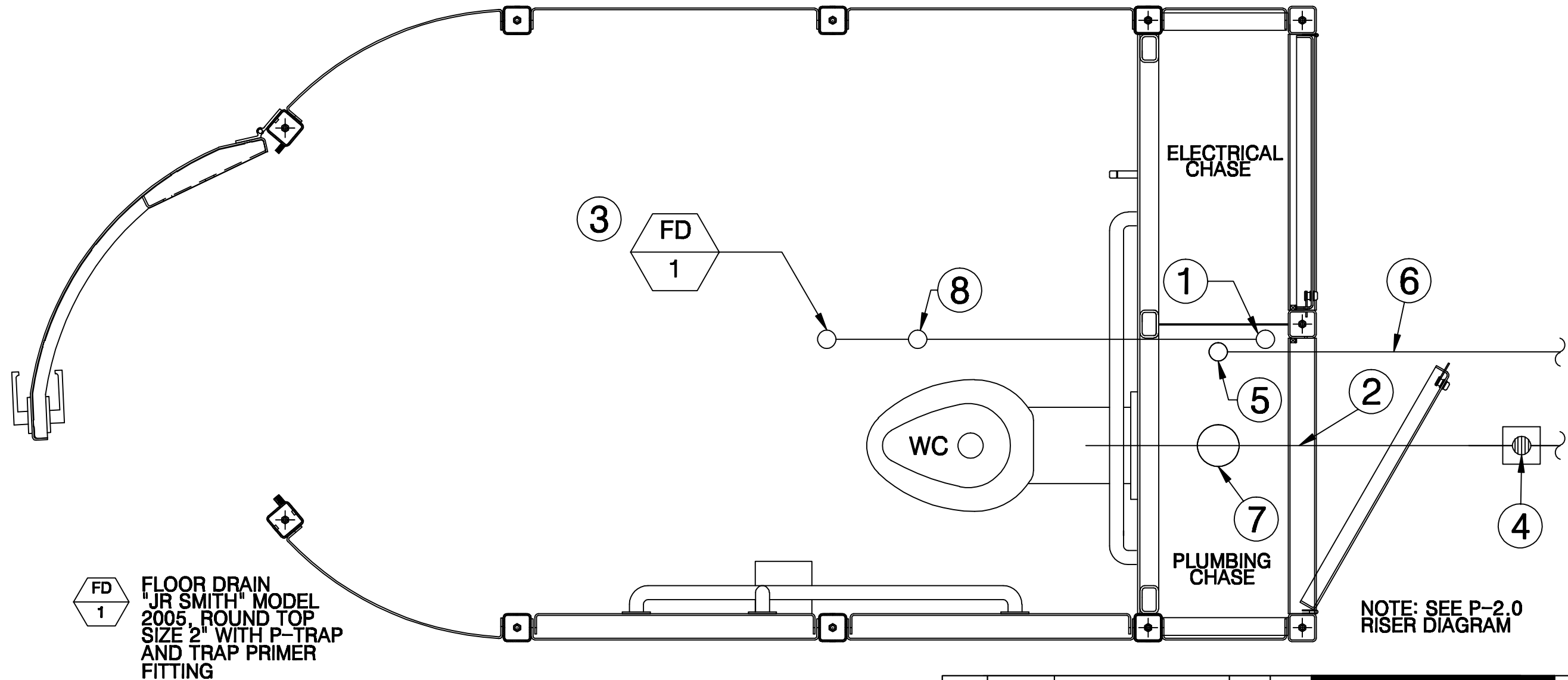


6 BABY CHANGING TABLE
KOALA KB101-05
(1) REQ'D

NOTE: TO BE MOUNTED
ON INTERIOR INFILL
PANEL

					MADDEN FABRICATION	PORTLAND LOO			
						STANDARD OPTIONS			
					2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446	NAME	DATE	SERIAL NO.	DRW. NO.
REV	DATE	DESCRIPTION	DRN	APP'D		LEO	4/16/2015		S4.0

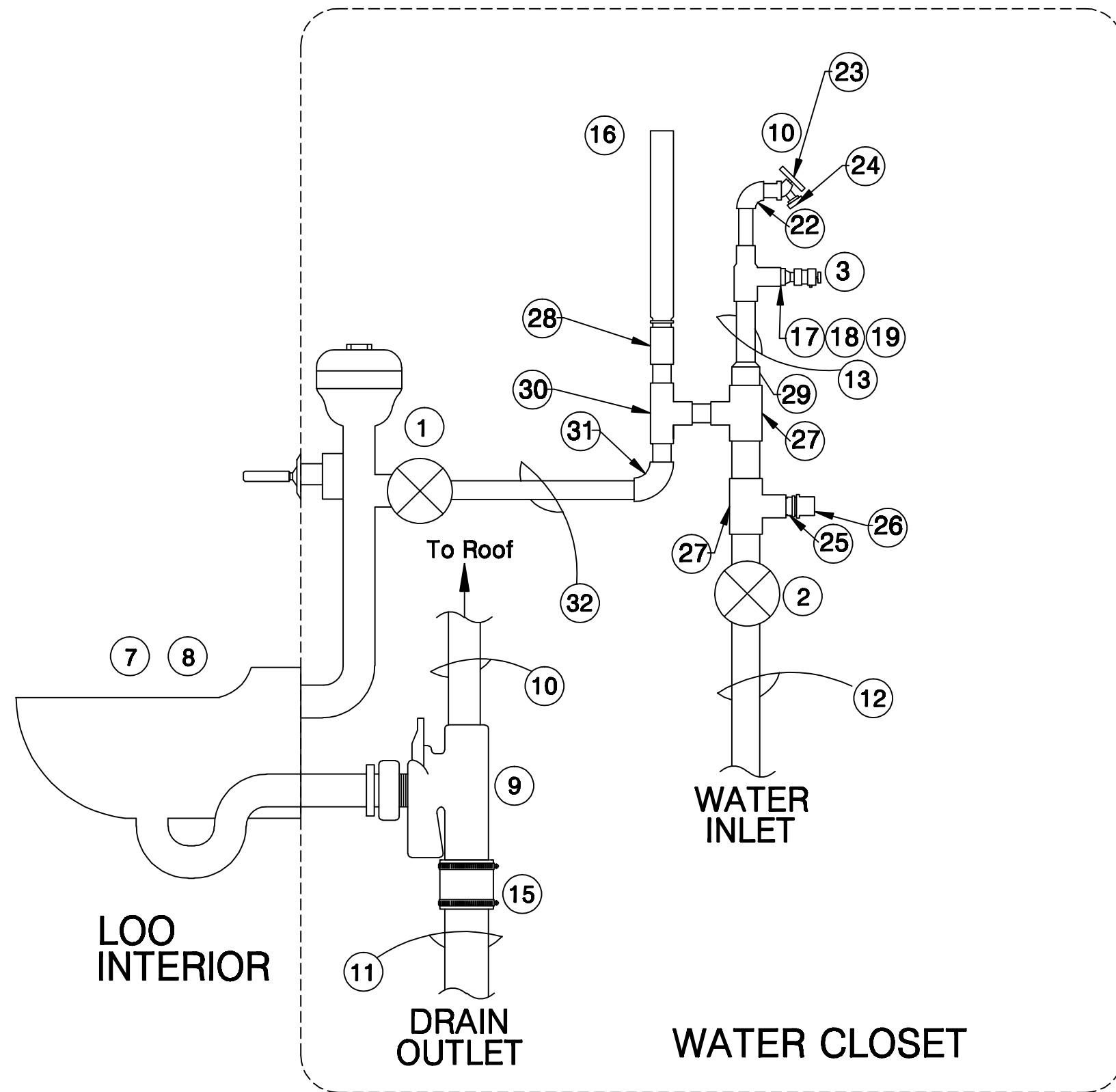
BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	MFG.
1	ONE	2" VENT PIPE TUBE TO ROOF	VARIOUS
2	ONE	WASTE PIPING 4" SDR 35 PVC SEWER LINE TO P.O.C.	VARIOUS
3	ONE	ROUTE CW SUPPLY TO FLOOR DRAIN P-TRAP FROM TRAP PRIMING LOCATED IN PLUMBING CHASE	JAY R. SMITH
4	ONE	4" GRADE CLEAN-OUT IN YARD BOX	VARIOUS
5	ONE	WATER INLET 1-1/2" C.W. SUPPLY SHOWN ON SHEET 7	VARIOUS
6	ONE	1-1/2" C.W. SUPPLY TO SOV SHOWN ON SHEET 7	VARIOUS
7	ONE	4" SEWER LINE CARRIER SHOW ON P2.0	VARIOUS
8	ONE	TRAP PRIMER VALVE	PRIME-RIGHT



PLUMBING FLOOR PLAN

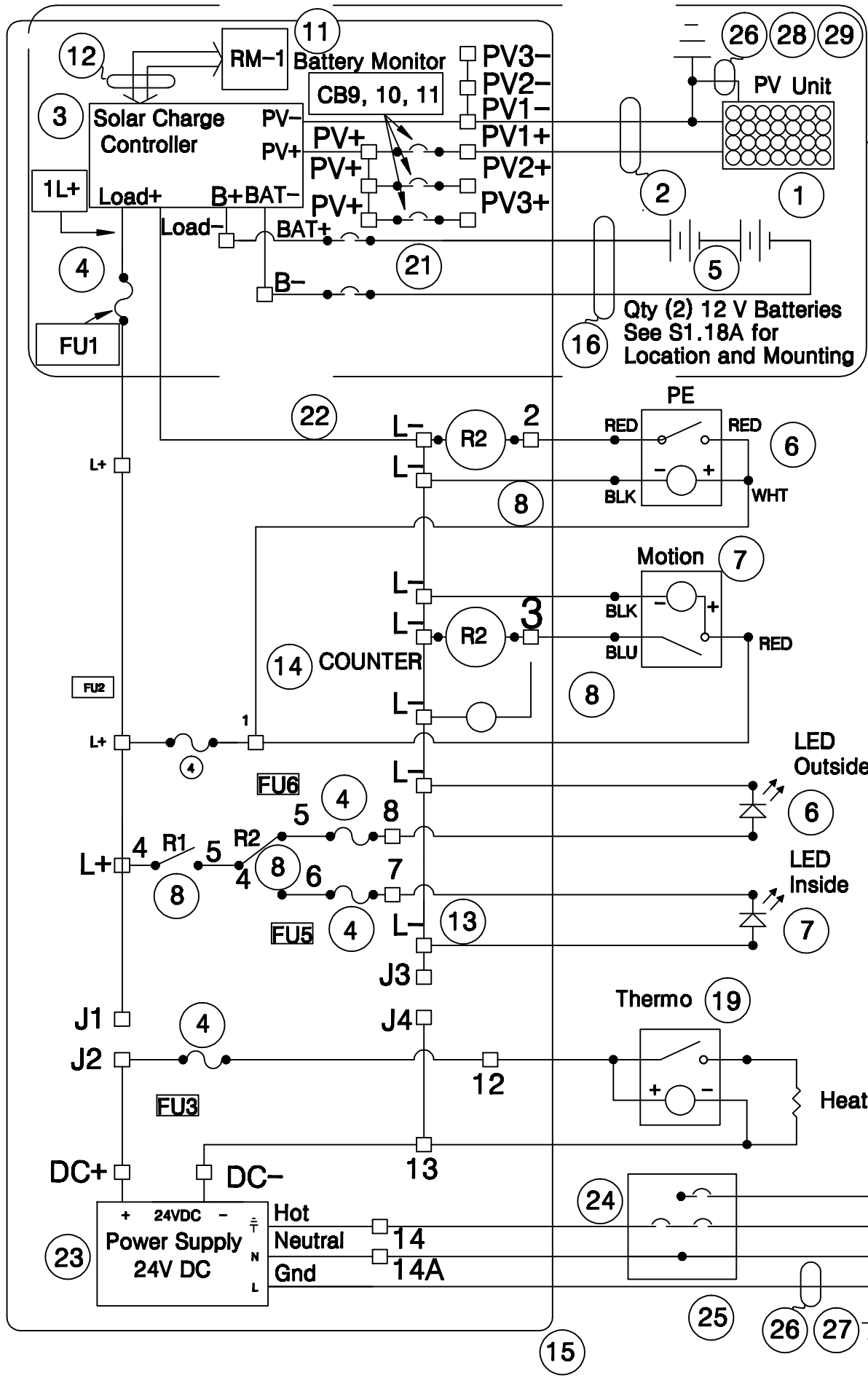
SCALE: 1" = 1'-0"

					MADDEN FABRICATION	PORTLAND LOO			
						PLUMBING FLOOR PLAN			
						NAME	DATE	SERIAL NO.	DRW. NO.
REV	DATE	DESCRIPTION	DRN	APP'D	2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446	LEO	4/16/2015		P1.0



BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	MFG.
1	ONE	140-1.28 w/ MBFW FLOW UNIT	SLOAN
2	ONE	1 1/2" MAIN SHUT OFF VALVE	VARIOUS
3	ONE	1" - 1/4 TURN SHUT OFF VALVE	VARIOUS
7	ONE	2105-W-1-CN DURA-WARE TOILET	ACORN
8	ONE	DURABLE PLASTIC TOILET SEAT	ACORN
9	ONE	440 Y CARRIER	JAY R. SMITH
10	ONE	2-1/2" SS Sch 40 PIPE	VARIOUS
11	ONE	4" SEWER DRAIN	OTHERS
12	ONE	1-1/2" CU SUPPLY	OTHERS
13	ONE	3/4" IPS CU PIPE	VARIOUS
15	ONE	4" RUBBER COUPLING	FERNCO
16	ONE	EXPANSION HAMMER DEVICE	VARIOUS
17	ONE	1" TO 3/4" DOUBLE REDUCING TEE	VARIOUS
18	ONE	3/4" TO 1/2" THREADED REDUCER	VARIOUS
19	ONE	3/4" TO 1/2" REDUCER	VARIOUS
	ONE	1/8" PLASTIC AIR LINE	ACORN
22	ONE	3/4" 90 DEGREE ELBOW PIPE	VARIOUS
23	ONE	HOSE BIB	VARIOUS
24	ONE	ANTI SIPHON	VARIOUS
25	ONE	SOLDERED THREADED FITTING	VARIOUS
26	ONE	1" THREADED CAP	VARIOUS
27	TWO	1 1/2" TO 1" REDUCING TEE	VARIOUS
28	ONE	1" TO 1" FEMALE THREADED COUPLER	VARIOUS
29	ONE	1 1/2" TO 1" REDUCER	VARIOUS
30	ONE	1" TEE	VARIOUS
31	ONE	1" 90 DEGREE ELBOW PIPE	VARIOUS
32	ONE	1" CU PIPE	VARIOUS
33	ONE	1 1/2" TO 1" REDUCING TEE	VARIOUS
34	ONE	1 1/2" TO 1" REDUCING TEE	VARIOUS
35	ONE	1 1/2" TO 1" REDUCING TEE	VARIOUS
	ONE	TRAP PRIMER VALVE	PRIME-RITE

					MADDEN FABRICATION	PORTLAND LOO			
						PLUMBING DETAIL			
					2550 NW 25th Place • Portland, OR. 97210 Phone: (503) 226-3968 Fax (503) 242-2446	NAME LEO	DATE 4/16/2015	SERIAL NO.	DRW. NO. P2.0
REV	DATE	DESCRIPTION	DRN	APPD					



1-3 panel solar
Stand alone or backup
power option

FUSE/BREAKER DESCRIPTION

FU1	MAIN LOAD
FU2	PE/MOTION
FU3	HEAT TRACE
FU4	NOT USED
FU5	INSIDE LED LIGHT
FU6	OUTSIDE LED LIGHT
CB8	MAIN 24VDC BREAKER
CB9	PV1 BREAKER
CB10	PV2 BREAKER
CB11	PV3 BREAKER

TERMINAL DETAIL

SoH
SoH
SoL
SoL
L-
L-
L-
L-
L-
L-
L+
L+
1
1
1
2
3
3
7
8
12
13
13
13
14
14A
J1
J2
J3
J4

Jumper Power Configuration

	J1 to J2	J3 to J4
Solar Powered only (3 panels)	Yes	Yes
AC Power Only	Yes	Yes
Hybrid AC/Solar Powered (1-2 panels)	No	No

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	MFG.
1	1 - 3	Grape Solar 160W PV Module (or equal)	GRAPE SOLAR
2	1 - 3	MC 4 Cable 30' #10AWG	RLH INDUSTRIES
3	ONE	SS-MPPT-15L SOLAR CHARGE CONTROLLER	MORNINGSTAR CORP
4	5-7	6A-600V Fuse LPCC-6	Buss
5	TWO	MK 8A24 LTP Sealed AGM Battery	MK Battery
6	ONE	24V Photocell EM-24A2	Watt Stopper
7	ONE	Occupancy Sensor WPIR-24	Watt Stopper
8	TWO	24V DC relay RH1B-U-DC24V	IDEC
9	ONE	24V LED Light Rope, White 3W/Ft x 4ft	Flexlight
10	TWO	20", 24V,5W LED Blue light - SALF-QU	Outwater
11	ONE	Battery system monitor RM-1	Morningstar
12	ONE	RJ-11 Meter Cable	VARIOUS
13	ONE	Ground Bus 44CONN-AL	ITE
14	ONE	V8-4816 6 DIGIT COUNTER	REDINGTON COUNTERS
15	ONE	NEMA1 Enclosure 20"x20" 20206-1	BENC
16	ONE	6ga Battery Harness cable	ALLBATTERY
17	Lot	14ga Cu wire THHN-14-19STR-CU	VARIOUS
18	Lot	10ga Cu wire Varies	VARIOUS
19	ONE	Solstat 2-20 Solid State Thermostat	ENGENITY
20	ONE	Heat trace - 10 ft, 24V, 3W/ft Kompensator	HEATLINE
21	THREE	15 Amp, 150V DC Breaker	ALTEC CORP
22	ONE	63 Amp, 125V DC Breaker	ALTEC CORP
23	ONE	Sola Power Supply SDN-10-24-100C	Sola Inc
24	ONE	110V - 15amp Breaker QO120-15A	SQUARE D
25	ONE	LOAD CENTER, 70A QO24L70S 2 BRKR	SQUARE D
26	ONE	Approved UFER ground connection to rebar Sht S2.0	BY OTHERS
27	ONE	4ga Cu wire insulated	VARIOUS
28	LOT	6ga Cu wire insulated	VARIOUS
29	1-3	6ga crimp eyelet and mechanical fastener to PV	VARIOUS

Items not shown on schematic

A	Lot	Din Rail 2M - 2 ft	WEIDMULLER
B	EIGHT	Modular Fuse Holder CHCC1DI	BUSS
C	TWO	Relay Pin Base 70-459	MAGNECRAFT
D	20	Terminal splice unit	WEIDMULLER
E	TWO	1-5/8" x 1-5/8" x 69" B22SH strut	B-Line or Equal
F	FOUR	3/8" Spring Nut N228	B-Line or Equal
G	FOUR	10-1/2" Shelf Bracket S-205	B-Line or Equal
H	ONE	NEMA1 Panel 20"x20" AW2020	BENC

**MADDEN
FABRICATION**

PORTLAND LOO

ELECTRICAL SCHEMATIC

REV	DATE	DESCRIPTION	DRN	APPD	NAME	DATE	SERIAL NO.	DRW. NO.
					LEO	4/16/2015		E1.0

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Phone: (503) 226-3968 Fax (503) 242-2446



