Teel Crossing One

Main Street (FM 720) @ Teel Parkway
Frisco, Texas 75033
Denton County

Metal Coping PacClad Sandstone

EIFS Coping Dryvit 456 Oyster Shell

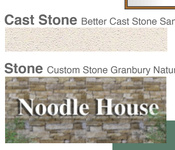
Stucco Dryvit 110 Van Dyke

Storefront Bronze w/ Clear Glazing

Brick Pine Hall Tuscany

Cast Stone Better Cast Stone Sand

Stone Custom Stone Granbury Natural Chopped



Awning Berridge Hemlock Green

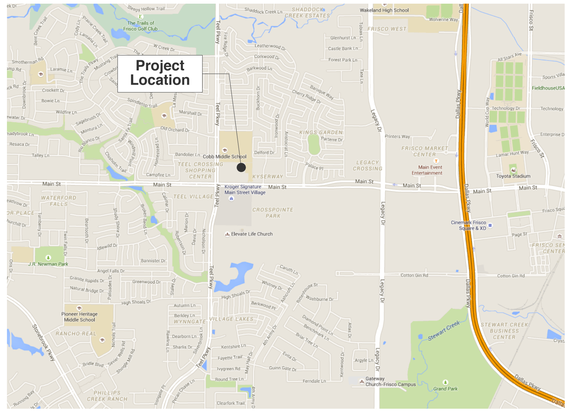
8 Jan 2015

Teel Crossing Shopping Center 1

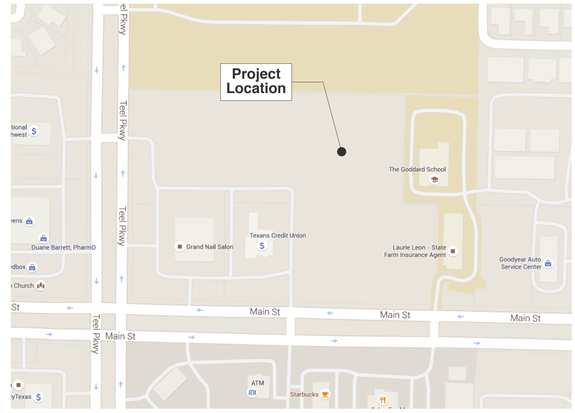
20,020 Leasable Square Feet
Main Street @ Teel Parkway (NE Corner)

Block A, Lot 4

VANCE C. MILLER DEVELOPMENT



Vicinity Map



Local Map

Aerial View

GOVERNMENTAL AGENCIES

http://www.friscotexas.gov/departments/planningDevelopment/buildingInspections/Pages/default.aspx

Code Enforcement

Steve Covington Chief Building Official
Phillip Climer, Assistant Chief Building Official
6101 Frisco Square Blvd., 3rd Floor West
Frisco, Texas 75034
Phone: 972.292.5301
Fax: 972.292.5313

City of Frisco Building Codes

2012 International Building Code (IBC), with local amendments (ORDINANCE 13-10-68)
2012 International Residential Code (IRC), with local amendments (ORDINANCE 13-10-69) and (ORDINANCE 13-10-73)
2006 International Fire Code (IFC), with local amendments (ORDINANCE 08-04-39)
2011 National Electrical Code, with local amendments (ORDINANCE 13-10-67)
2012 International Energy Conservation Code (IECC), with local amendments (ORDINANCE 13-10-63)
2012 International Mechanical Code, with local amendments (ORDINANCE 13-10-65)
2012 International Plumbing Code, with local amendments (ORDINANCE 13-10-66)
2012 International Property Maintenance Code, with local amendments (ORDINANCE 13-12-78)
2012 International Fuel Gas Code, with local amendments (ORDINANCE 13-10-64)
2011 ACI Manual of Concrete Practice, ACI318
2012 Annual Book of ASTM Standards, Volume 04.02 Concrete and Aggregates

IBC Code Requirements

Occupancy Classification:	M (Mercantiles) SHELL BLDG ONLY	
Type of Construction:	Type II-B/sprinklered	
	Allowable	**Project**
Building Area Mercantile:	12,500 SF tabular	
Allowable Area Increase: Open Area 7,812 SF Sprinkler 25,500 SF	45,812 SF	20,020 sf
Building Height in Stories:	2	1
Building Height in Feet:	55 ft	27' - 4"
No. of Exits Required per Tenant:	2	2
Tenant Separation:	varies per use	TBD

Project Directory

OWNER
Teel Crossing Partners LTD
25 Highland Park Village, Suite 100-451
Dallas, TX 75205

Owner's Contact
Vaughn Miller
VCM Development Group
vaughn@vcmdevelopment.com
214.533.5411

ARCHITECT
Duane Meyers Architect
560 PR 2422
Uncertain, TX 75661
903.484.4040
drmeyers@mac.com

STRUCTURAL
Fenner Consulting LLC
1543 Grimmett Drive
Shreveport, LA 71107
318.222.2600
Texas Firm Registration F-2532
Gary Fenner

MP
Steve Dunn
Scepter Engineering
7110 Town Center Way, Suite 203
Brentwood, TN 37027
(615) 373-8882
P.E. TX No. 119221
sdunn@scepterengineering.com

E
Rodney Runion P.E. 100609
Parsons Engineering
210 12th Avenue South, Suite 209
Nashville TN 37203
Texas Firm Registration F-5319
jwork@parsonsengineering.com

CIVIL (under separate Contract)
Clay Moore Engineering
1903 Central Drive, Suite 406
Bedford, TX 76021
817.281.0572

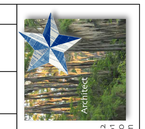
GEOTECH (under separate Contract)
Alpha Testing, Inc.
2209 Wisconsin Street, Suite 100
Dallas, TX 75229

Construction Document Index

Contractor's Required Check List

Contractor Responsibilities

project documents	**Contractor shall have on desk in job site a copy of the City/County approved plans.**
	Contractor shall have on desk in job site a copy of the Fire Marshall approved plans (if separate from City documents).
	Submit all ALL written comments issued by the City jurisdiction to the Architect and the Civil.
	Contractor shall remove any Drawings not sealed by the Architect or Engineers of record from the site.
	Contractor shall ceate a Construction Documents (CD) log listing each document and posting the effective date. Include Addendae, Change Orders and Clarification Drawings. Send copy monthly or as it changes for review by Architect.
tenant documents	**Tenant Lease Exhibits are contained in the Project Manual, become familiar with these documents to understand the required level of finish for each Tenant. Notify Architect immediately of any discrepancies noted between Lease Exhibit, Architectural Plans and Tenant Finish Plans**
	keep CD Log of all pertinent Tenant Finish Drawings, send copy to Architect for verification
	DO NOT initiate construction on any Tenant space until you have a set of checked Tenant Finish Drawings distributed from Architect's Office.
geotechnical	**The Geotechnical Report is contained in the Project Manual, become familiar with it to understand the required level of subgrade preparation required for this project. Notify Architect, Civil Engineer & Geotechnical Engineer immediately of any discrepancies or subgrade issues at the site that are different than noted in the report.**
	DO NOT vary from Subgrade Preparation as documented in the Geotechnical Report, Structural Drawings, Civil Drawings and Specifications w/o written authorization from the Architect, Civil Engineer and Structural Engineer
	General Contractor to provide testing per Specifications. Submit copies of all Construction Testing Reports to Architect, Structural and Civil Engineer immediately upon their publication. DO NOT submit duplicate reports.
changes	**Submit RFI's in writing to the Architect or Civil. Maintain a log of RFI's indicating their status.**
	Submit all Change Requests in writing to Architect and/or Civil for evaluation. DO NOT proceed with any changes to the Work until written authorization has been granted by the Architect and/or Civil and the Owner.
pay applications	**Submit a Schedule of Values to the Architect and Civil Engineer prior to Construction per Specifications**
	DO NOT front load Pay Applications. G703 shall be consistent with Subcontractors/Suppliers Contracts and Lien Waivers
	Submit accurate Pay Applications of Work exectued, inaccurate Pay Applications will be rejected, not adjusted
subcontractors	**Submit a list, including all contact information, of Subcontractors and Suppliers to be used on the project. If Subs or Suppliers change during the course of the Work notify the Architect of the change.**
submittals	**Submit a minimum of 4 Shop Drawings or Submittals for each category of Work.**
	Review and stamp the Shop Drawings or Submittals with your comments before submitting them to the Architect for review.
	DO NOT proceed with any phase of construction without approved Shop Drawings or Submittals.
	Submit substitutions for approval if work components vary from those items specified.
	Provide a 4' x 8' mock up of exterior wall for approval by Owner and Architect.
	Architect will prepare a color board for the approval of the Owner from the color samples submitted by the Contractor.
	DO NOT proceed with color selections without the written approval of the Architect.
project management	**Provide and maintain an experienced and qualified Project Superintendent on site throughout the duration of construction.**
	Provide and maintain an experienced and qualified Project Manger in the office throughout the duration of construction.
	Follow the procedures set up in the Project Manual.
	Submit electronic project photos with captions and progress summary reports weekly to the Owner, the Architect and the Civil.



Duane Meyers
560 PR 2422
Uncertain, TX 75661
903.484.4040
drmeyers@mac.com

Construction Documents

Teel Crossing One
Frisco, TX

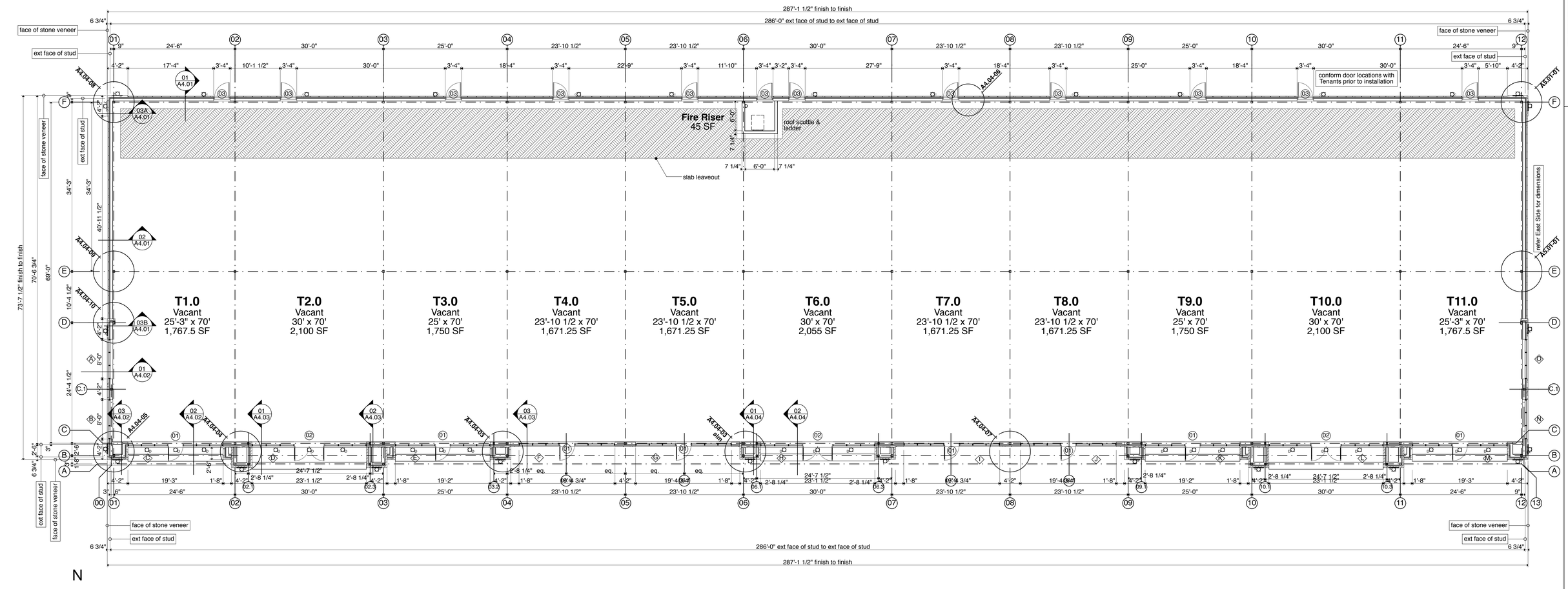
Revisions

REGISTERED ARCHITECT
DUANE R. MEYERS
STATE OF TEXAS

22 May 2015

A1.01

22 May 2015



01 Master Floor Plan
SCALE: 1/8" = 1'-0"

Duane Meyers
Architect
360 PR 3423
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903.484.4040
dmeyers@mac.com

Teel Crossing One
Frisco, TX

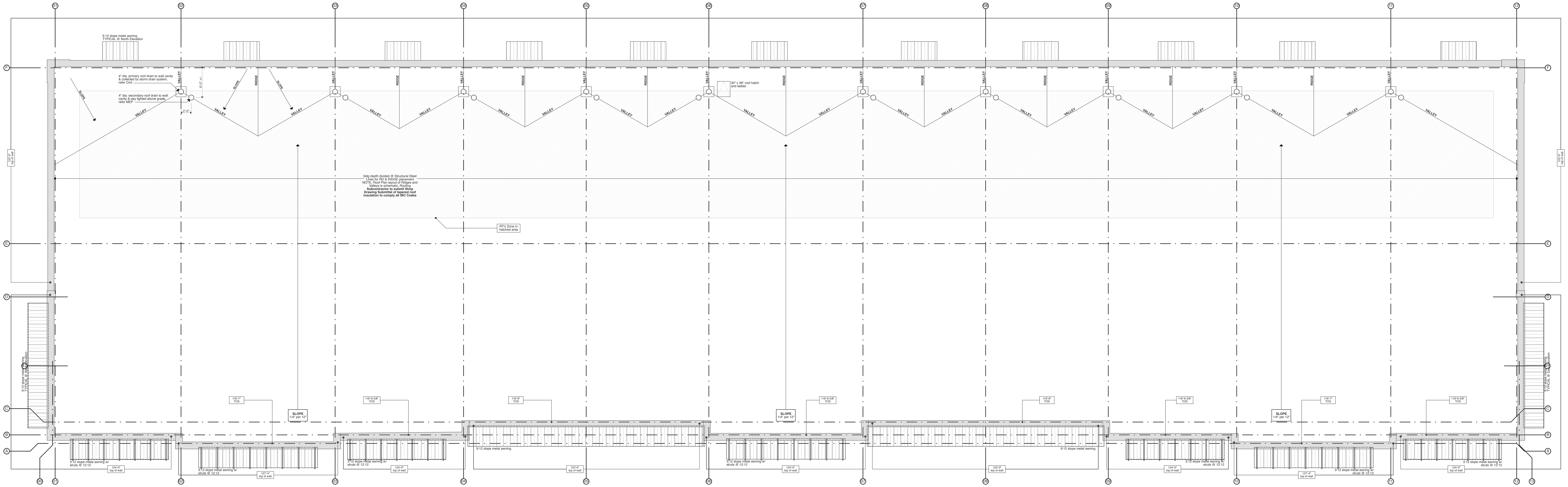
Construction Documents

Revisions

REGISTERED ARCHITECT DUANE R. MEYERS STATE OF TEXAS
22 May 2015

A2.01

22 May 2015



General Notes Roof Plan :

1. TPO Roofing:
   Equal to Firestone 60 mil TPO roofing over 1/4" Dens Deck over R-23.6 rigid polyiso insulation (4" thick)
   COLOR: white

2. Roof Drains:
   Firestone 4" dia.
   refer Civil & MEP drawings for discharge details

3. All future roof mounted equipment, locations & weights to be approved by Landlord's Architect/Engineer prior to installation.

4. Pre-finished metal coping to be equal to PacClad Sandstone

5. Metal Awnings to be equal to Berridge Hemlock Green

Structural RTU Mechanical Zones

1. RTU's may be placed in this area from a structural load standpoint.
2. RTU's **MAYNOT** be placed in consecutive joist bays.
3. All future RTU locations & weights to be approved by Landlord's Architect/Engineer prior to installation.

01 Roof Plan
SCALE: 1/8" = 1'-0"

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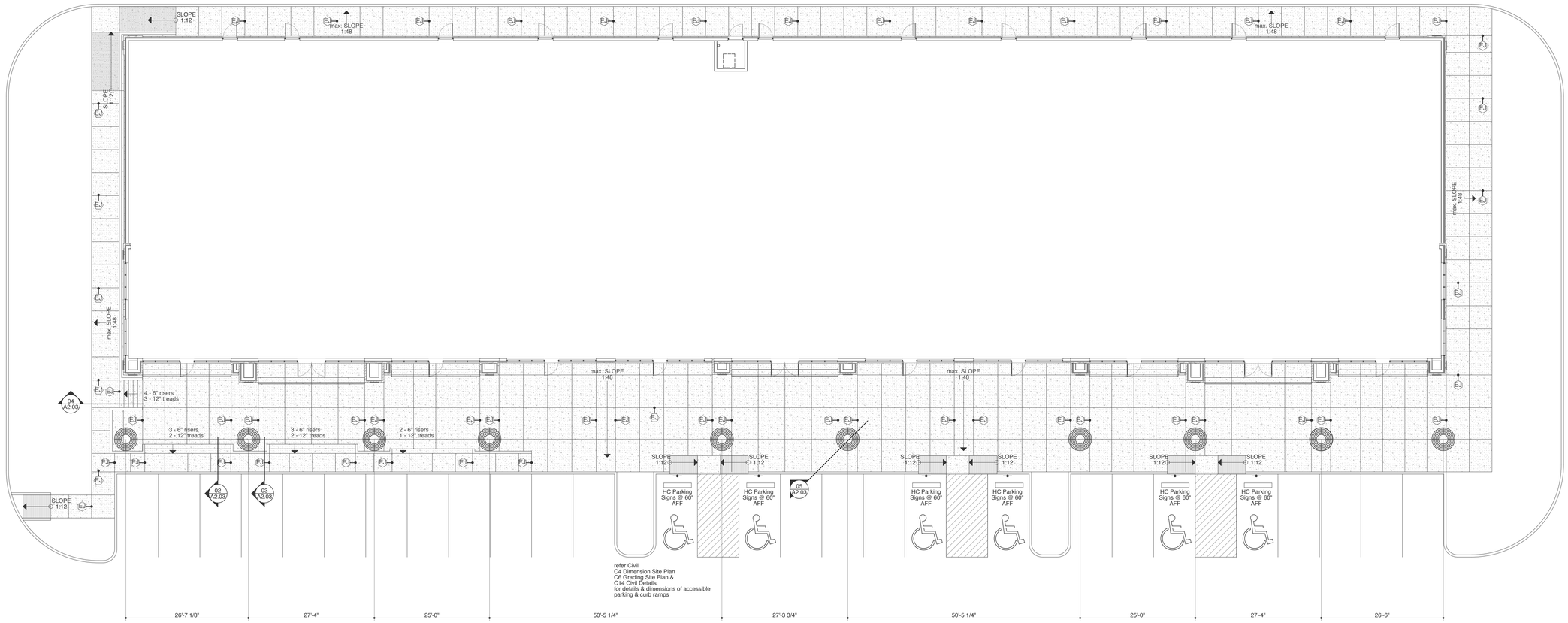
Teel Crossing One
Frisco, TX
Construction Documents

Revisions

22 May 2015

A2.02

22 May 2015



General Flatwork Notes:

1. Relative Finish Floor Elevation (FFE) 100'-0", refer to Civil Drawings for Datum FFE.
2. Refer to Civil Drawings for all paving and flatwork dimensions and elevations.
3. Denotes "Sidewalk Expansion Joint", refer A4.03-10. Note that all other sidewalk joints shown to be Sidewalk Control Joints.
4. Accessible Details to conform to TAS specifications, refer ADA1 through ADA4.
5. For sill conditions refer
   A4.02 - 04/05/06

01 Flatwork Plan
SCALE: 1" = 10'

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Teel Crossing One
Frisco, TX

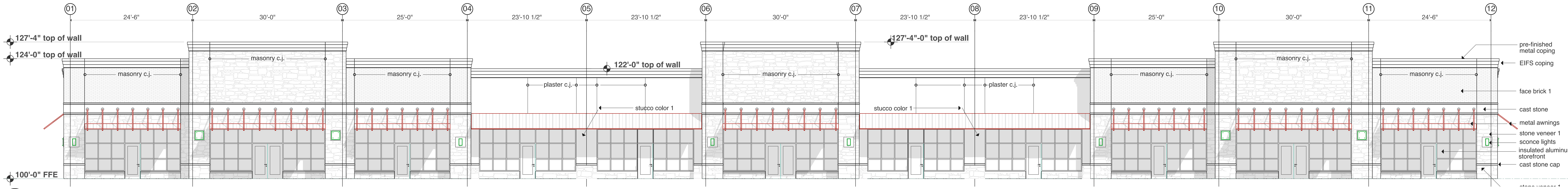
Construction Documents

Revisions

REGISTERED ARCHITECT
DUANE M. MEYERS
STATE OF TEXAS
22 May 2015

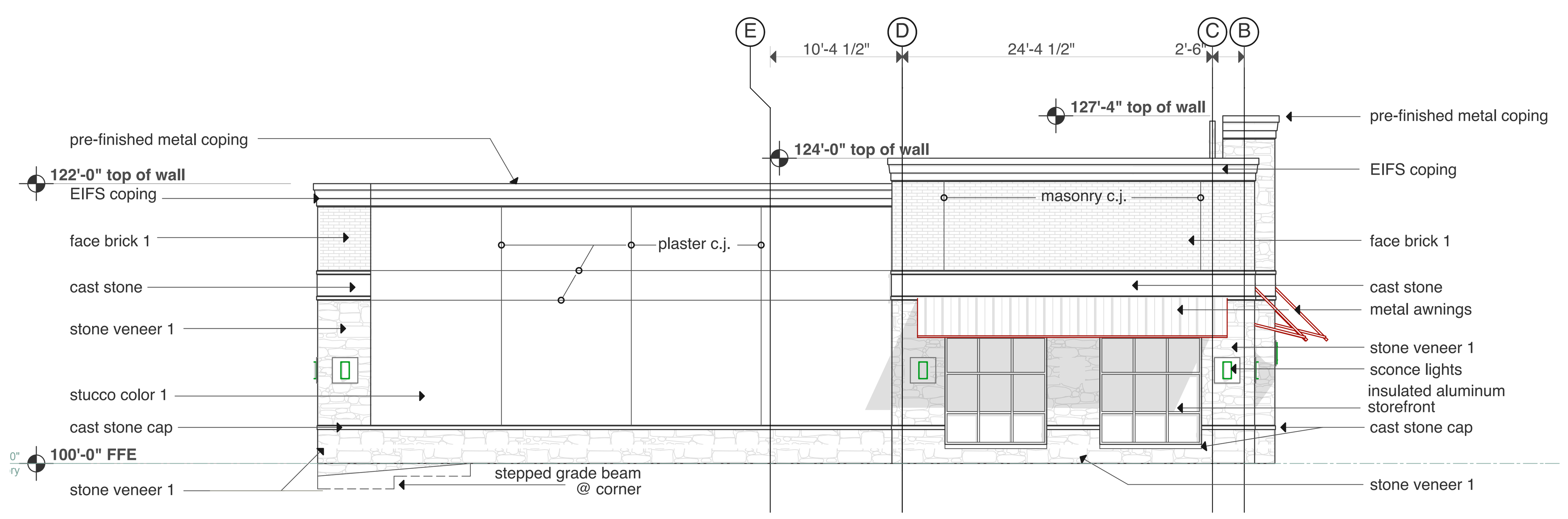
A2.03

22 May 2015

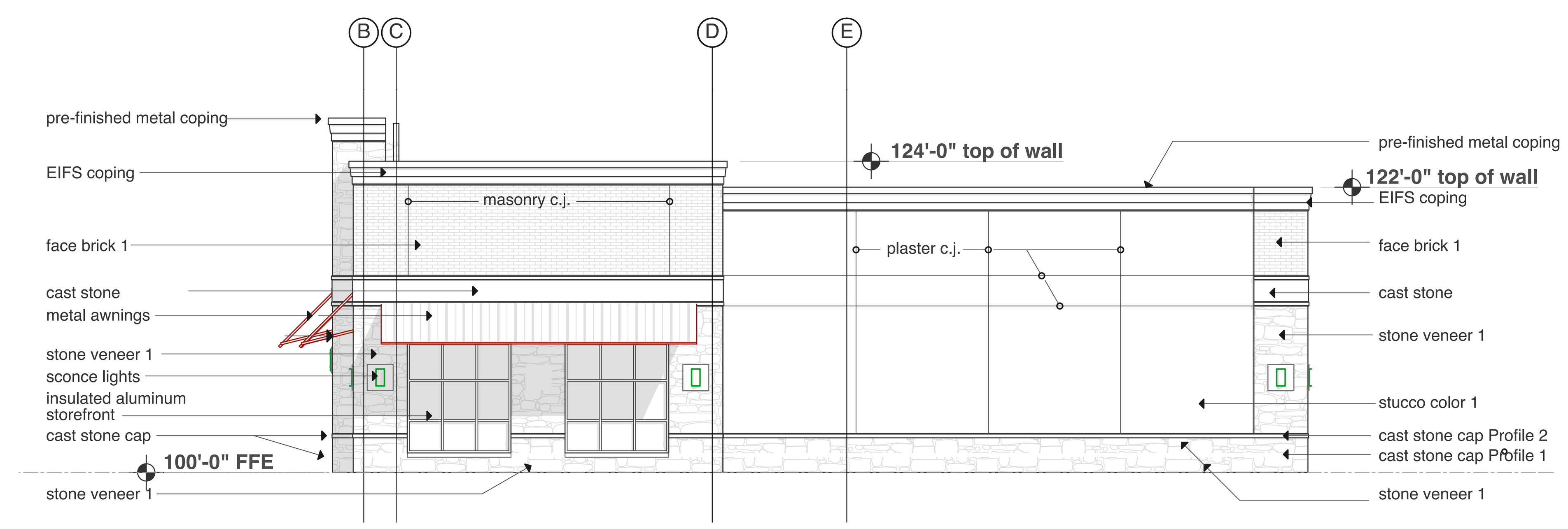


01 South Elevation
SCALE: 1/8" = 1'-0"

02 North Elevation
SCALE: 1/8" = 1'-0"

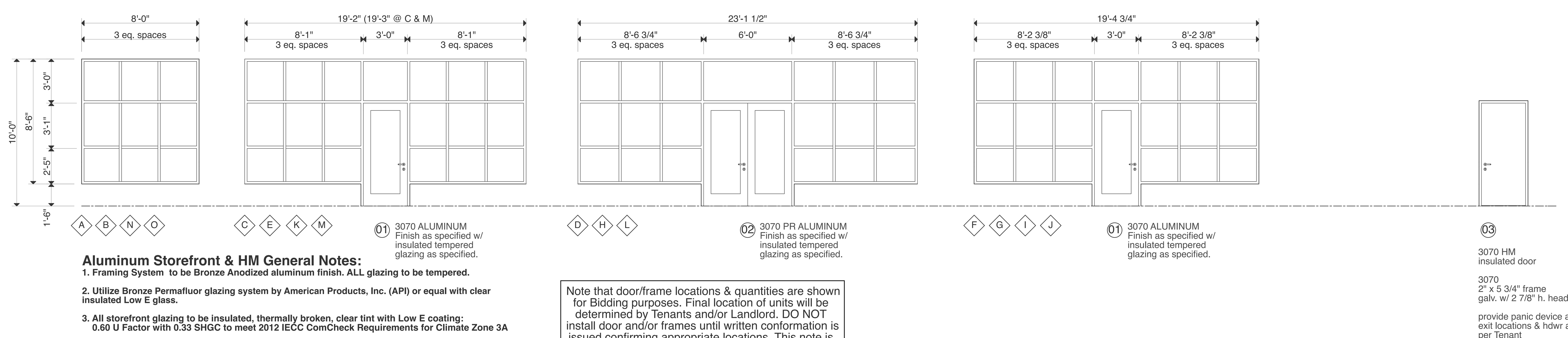


03 West Elevation
SCALE: 1/8" = 1'-0"



04 East Elevation
SCALE: 1/8" = 1'-0"

			01 South Elevation (front)		02 North Elevation (rear)		03 West Elevation (left)		04 East Elevation (right)	
Material	**Mfg.**	**Color**	**Area**	**Percentage**	**Area**	**Percentage**	**Area**	**Percentage**	**Area**	**Percentage**
stone veneer	Custom Stone	Granbury Natural Chopped (blend)	1,376	18.9%	802	12.0%	249	15.0%	249	15.0%
cast stone	Better Cast Stone	Sand	852	11.7%	194	2.9%	95	5.7%	95	5.7%
brick veneer	Pine Hall	Tuscany	920	12.6%	0	0.0%	199	12.0%	199	12.0%
stucco	Dryvit	110 Van Dyke	1,046	14.4%	4779	71.5%	700	42.2%	700	42.2%
aluminum storefront	US Aluminum	bronze frame clear glass	1,926	26.4%	0	0.0%	134	8.1%	134	8.1%
metal awning	Berridge	Hemlock Green	428	5.9%	231	3.5%	82	4.9%	82	4.9%
metal coping	Pac Clad	Sandstone	150	2.1%	150	2.2%	65	3.9%	65	3.9%
EIFS (coping)	Dryvit	456 Oyster Shell	588	8.1%	526	7.9%	135	8.1%	135	8.1%
Totals			**7,286**	**100.0%**	**6,682**	**100.0%**	**1,659**	**100.0%**	**1,659**	**100.0%**



Aluminum Storefront & HM General Notes:

1. Framing System to be Bronze Anodized aluminum finish. ALL glazing to be tempered.
2. Utilize Bronze Permafluor glazing system by American Products, Inc. (API) or equal with clear insulated Low E glass.
3. All storefront glazing to be insulated, thermally broken, clear tint with Low E coating: 0.60 U Factor with 0.33 SHGC to meet 2012 IECC ComCheck Requirements for Climate Zone 3A
4. All storefront door to be: 0.90 U Factor with 0.25 SHGC to meet 2012 IECC ComCheck Requirements for Climate Zone 3A
5. All HM Doors to be insulated with galvanized frame: 0.70 U Factor to meet 2009 IECC ComCheck Requirements for Climate Zone 3A

Note that door/frame locations & quantities are shown for Bidding purposes. Final location of units will be determined by Tenants and/or Landlord. DO NOT install door and/or frames until written conformation is issued confirming appropriate locations. This note is applicable to both Aluminum Storefront and Hollow Metal units.

05 Storefront Door & Frame Elevations
SCALE: 1/4" = 1'-0"

Architect
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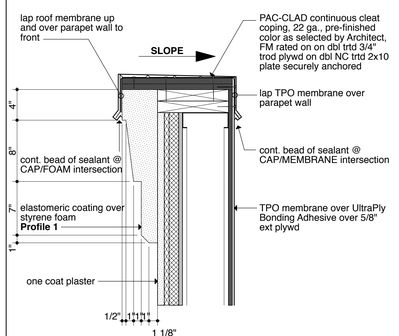
Teel Crossing One
Frisco, TX
Construction Documents

Revisions

22 May 2015

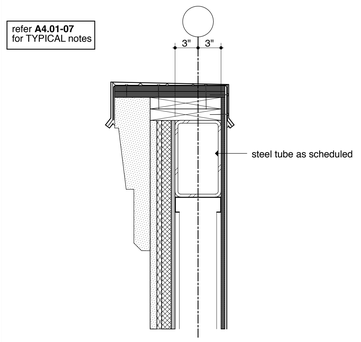
A3.01

22 May 2015



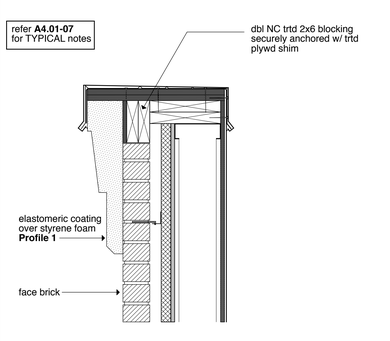
07 Metal Coping @ Plaster Wall Detail

scale: 1 1/2" = 1'-0"



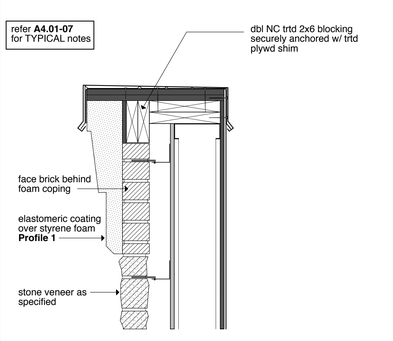
08 Metal Coping @ Plaster Wall Detail

scale: 1 1/2" = 1'-0"



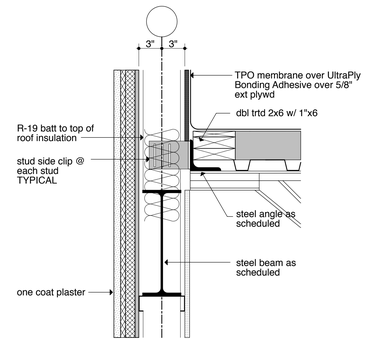
09 Metal Coping @ Brick Wall Detail

scale: 1 1/2" = 1'-0"



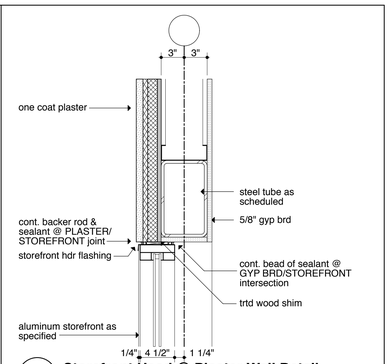
10 Metal Coping @ Stone Wall Detail

scale: 1 1/2" = 1'-0"



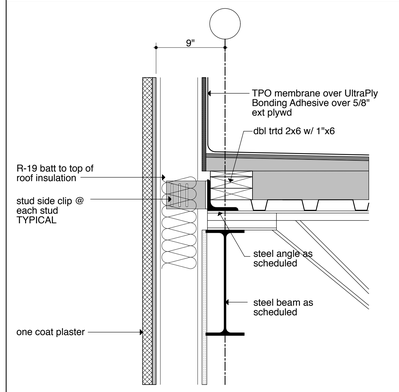
11 Joist Bearing @ Plaster Wall Detail

scale: 1 1/2" = 1'-0"



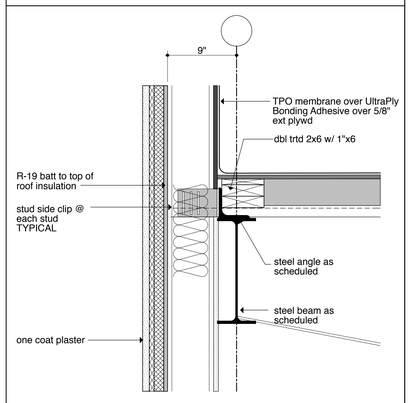
12 Storefront Head @ Plaster Wall Detail

scale: 1 1/2" = 1'-0"



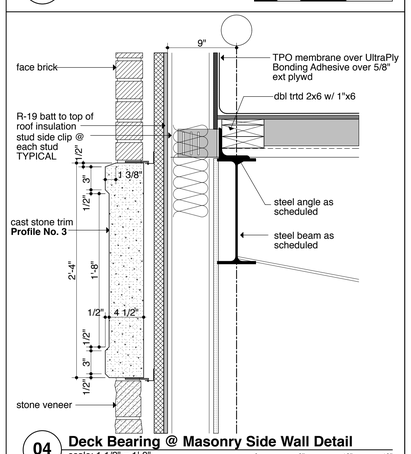
06 Joist Bearing @ Plaster Wall Detail

scale: 1 1/2" = 1'-0"



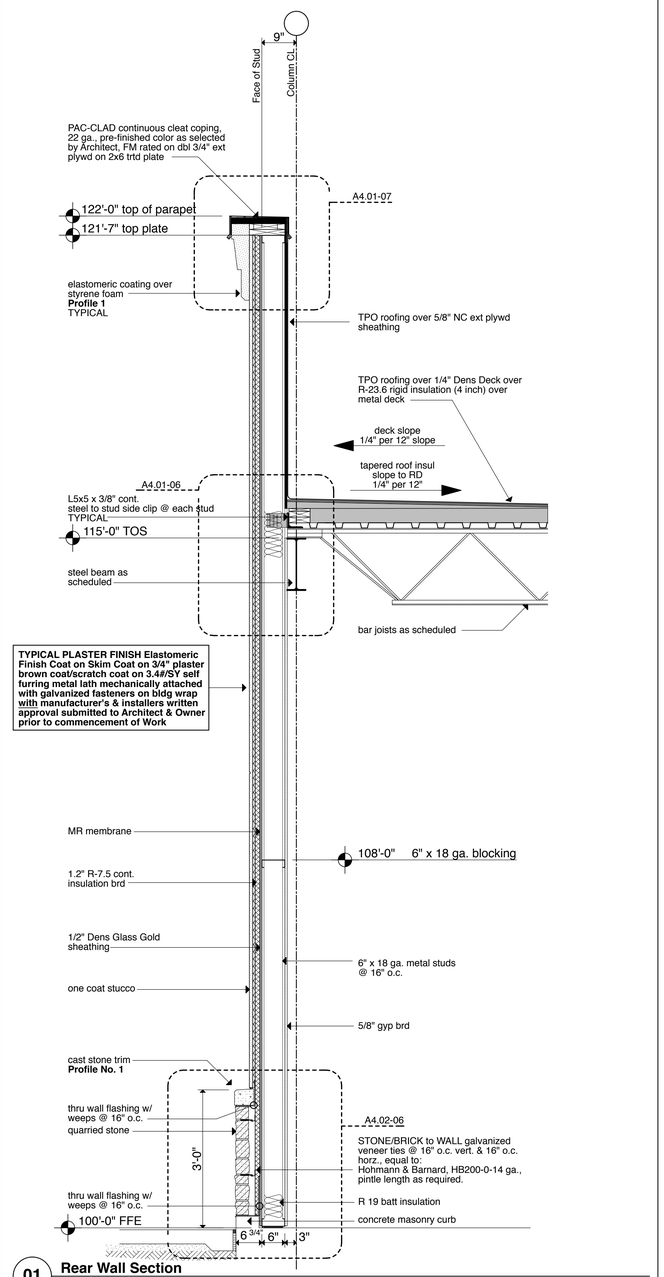
05 Deck Bearing @ Plaster Side Wall Detail

scale: 1 1/2" = 1'-0"



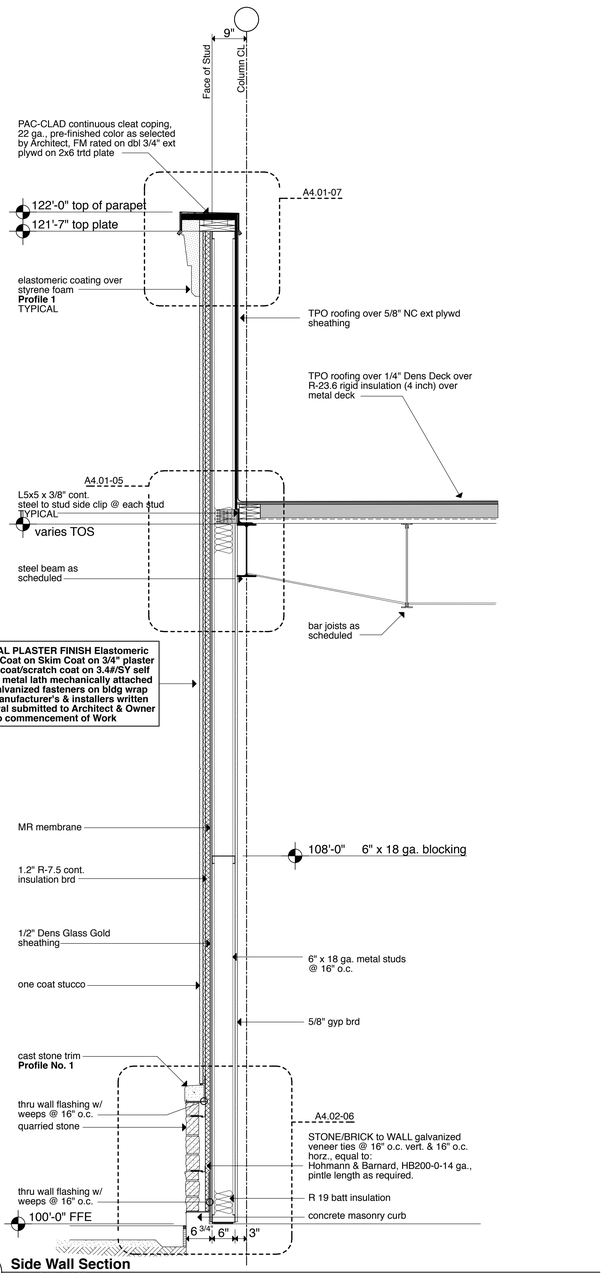
04 Deck Bearing @ Masonry Side Wall Detail

scale: 1 1/2" = 1'-0"



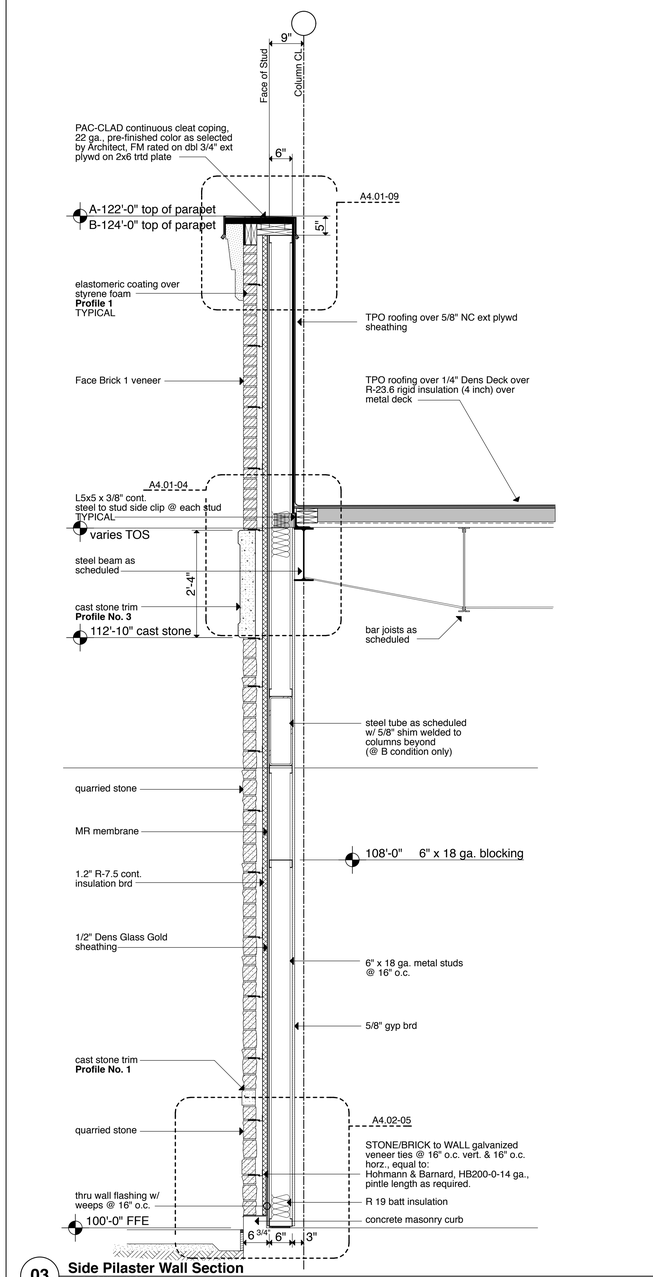
01 Rear Wall Section

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



02 Side Wall Section

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



03 Side Pilaster Wall Section

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

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Construction Documents

Teel Crossing One

Frisco, TX

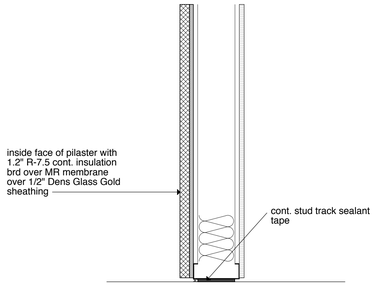
Revisions

REGISTERED ARCHITECT DUANE R. MEYERS STATE OF TEXAS

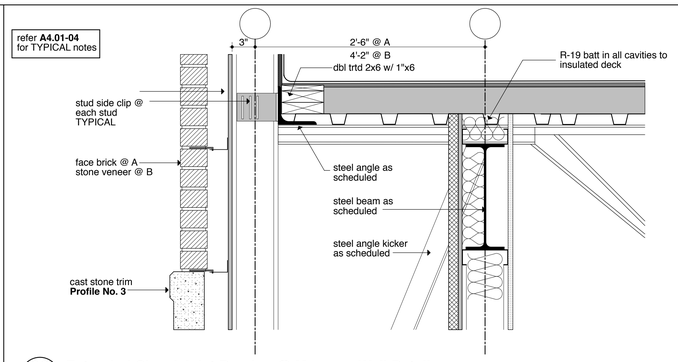
22 May 2015

A4.01

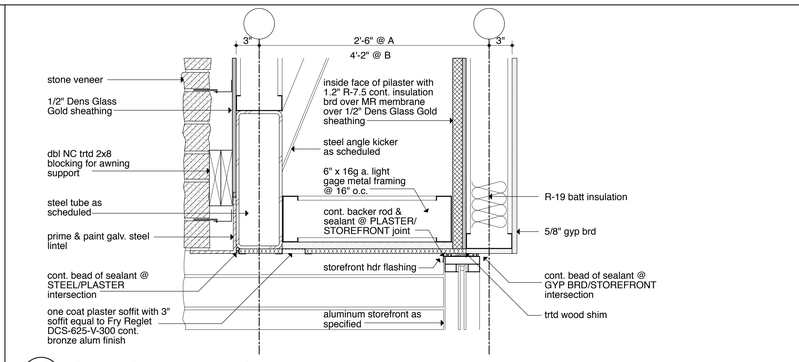
22 May 2015



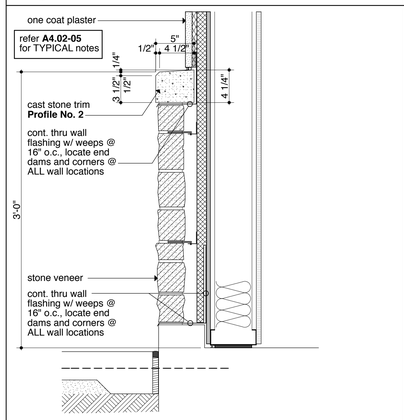
07 Pilaster Sill Wall Detail
scale: 1 1/2" = 1'-0"



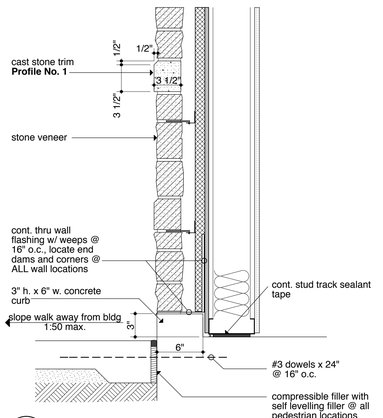
08 AB Extended Chord Joist Bearing @ Masonry Wall Detail
scale: 1 1/2" = 1'-0"



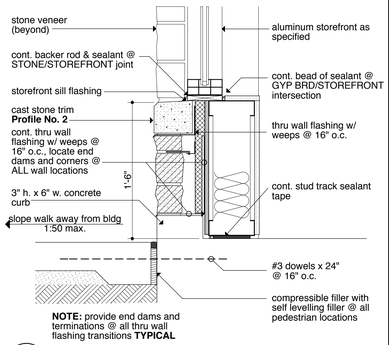
09 AB Storefront Header Wall Detail
scale: 1 1/2" = 1'-0"



06 Masonry Sill & Wainscot Wall Detail
scale: 1 1/2" = 1'-0"

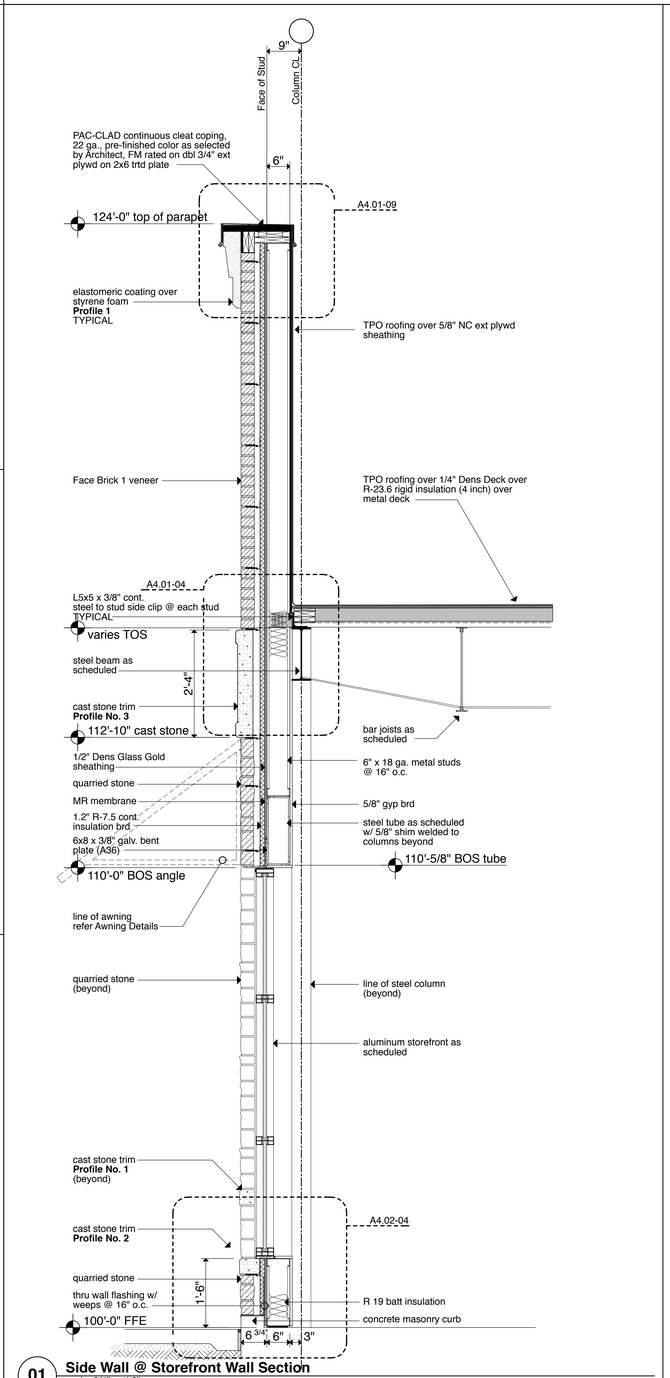


05 Masonry Sill Wall Detail
scale: 1 1/2" = 1'-0"

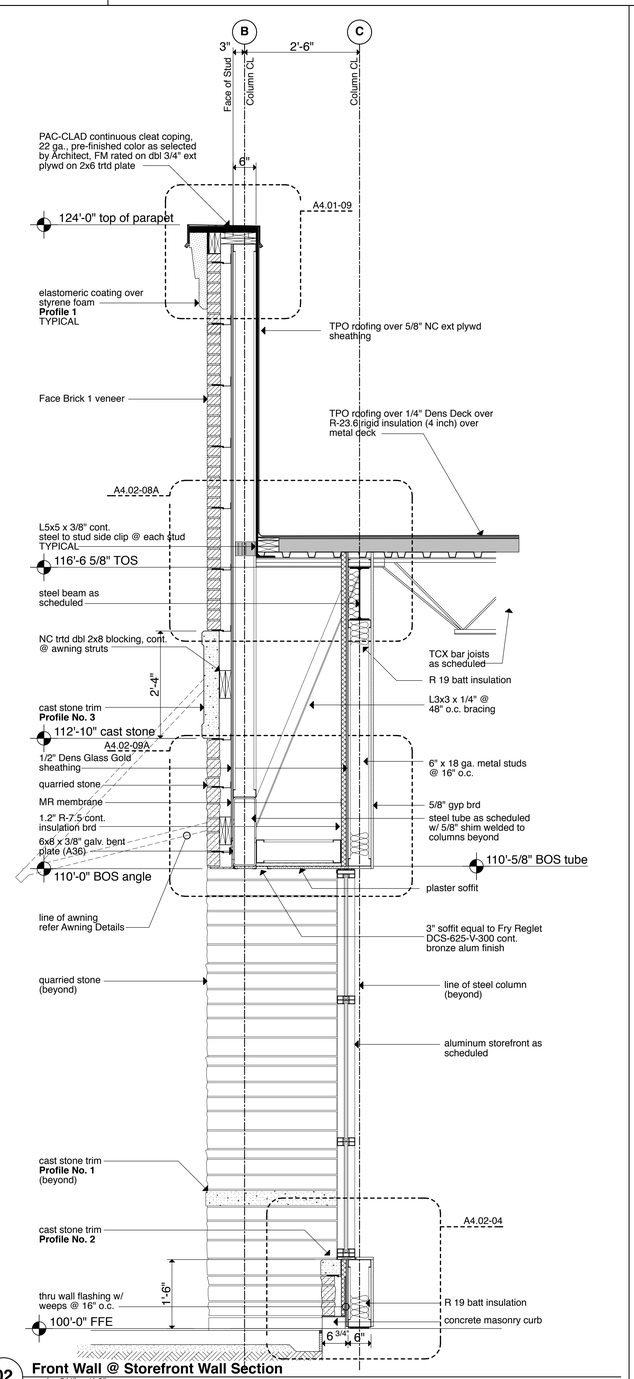


NOTE: provide end dams and terminations @ all thru wall flashing transitions **TYPICAL**

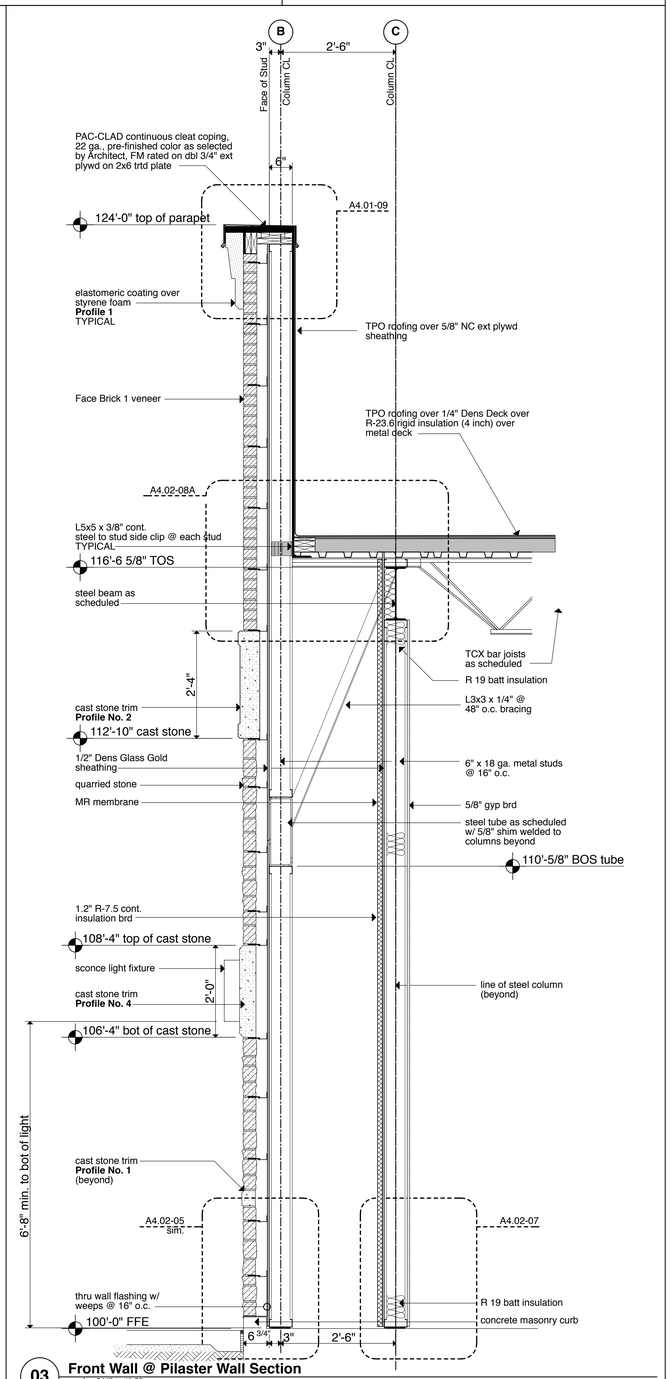
04 Storefront Sill Wall Detail
scale: 1 1/2" = 1'-0"



01 Side Wall @ Storefront Wall Section
scale: 3/4" = 1'-0"



02 Front Wall @ Storefront Wall Section
scale: 3/4" = 1'-0"



03 Front Wall @ Pilaster Wall Section
scale: 3/4" = 1'-0"

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Construction Documents

Teel Crossing One
Frisco, TX

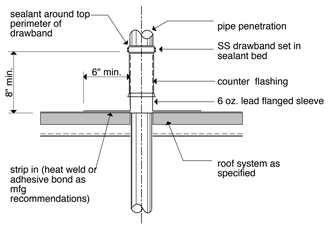
Revisions

REGISTERED ARCHITECT DUANE R. MEYERS STATE OF TEXAS

22 May 2015

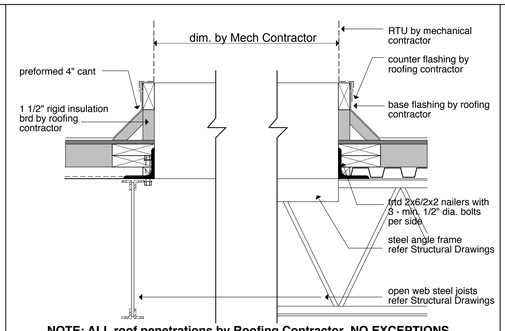
A4.02

22 May 2015



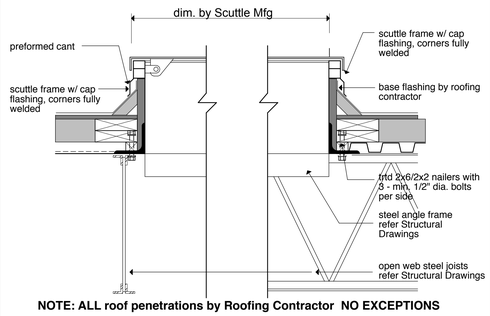
NOTE: ALL roof penetrations by Roofing Contractor NO EXCEPTIONS

07 Typical Roof Penetration - Cylindrical
scale: NTS



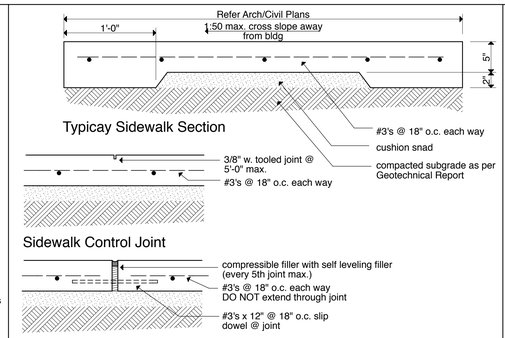
NOTE: ALL roof penetrations by Roofing Contractor NO EXCEPTIONS

08 Typical Roof Equipment Curb Detail
scale: NTS

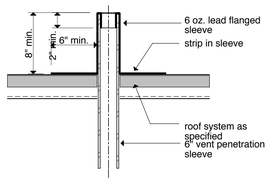


NOTE: ALL roof penetrations by Roofing Contractor NO EXCEPTIONS

09 Typical Roof Scuttle Detail
scale: NTS

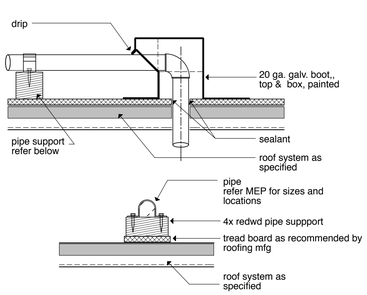


10 Typical Flatwork Details
scale: NTS



NOTE: ALL roof penetrations by Roofing Contractor NO EXCEPTIONS

06 Typical Sanitary Roof Vent
scale: NTS



NOTE: ALL roof penetrations by Roofing Contractor NO EXCEPTIONS

Detail included in case a Tenant has a requirement for roof jack. This detail is not applicable at time of original publication.

05 Typical Roof Jack/Support Detail
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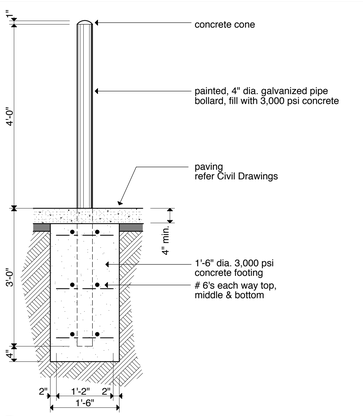
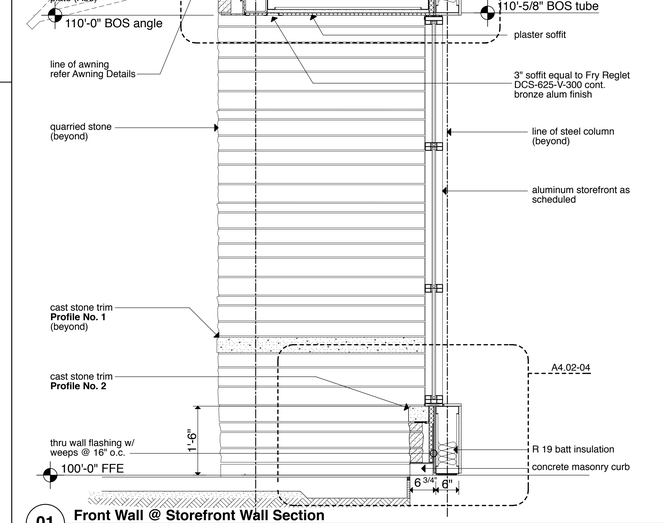


04 Typical Bollard @ Building Detail
scale: NTS



01 Front Wall @ Storefront Wall Section
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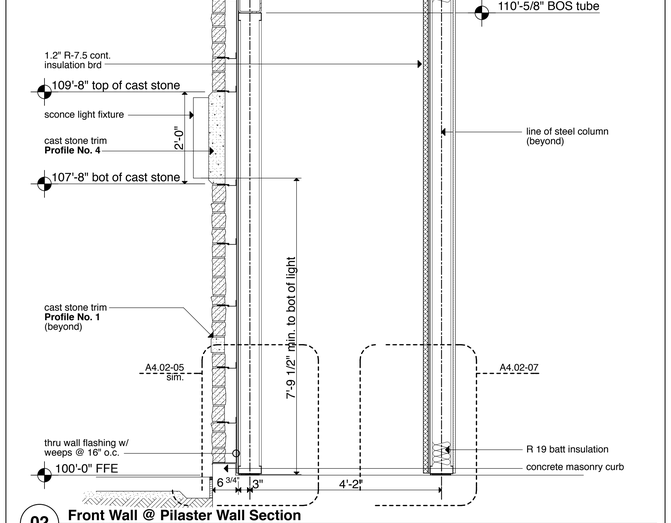

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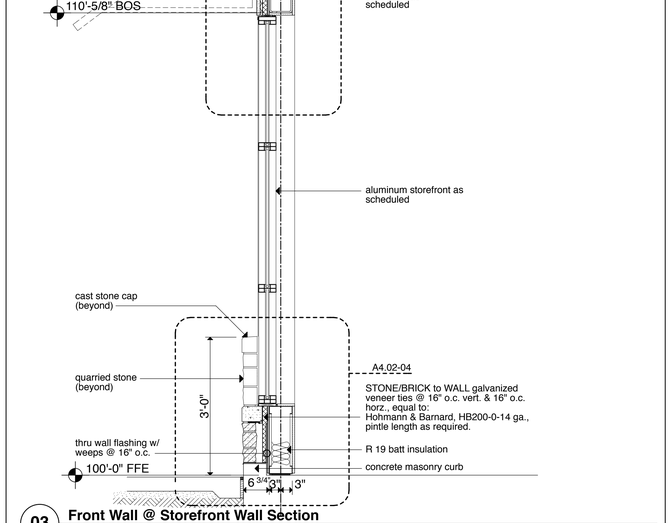

03 Front Wall @ Storefront Wall Section
scale: 3/4" = 1'-0"

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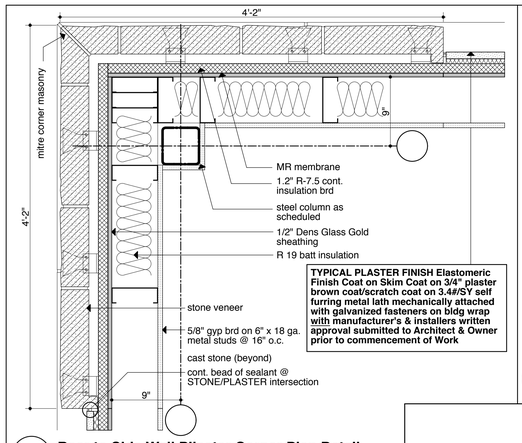
22 May 2015

A4.03

22 May 2015



08 Rear to Side Wall Pilaster Corner Plan Detail

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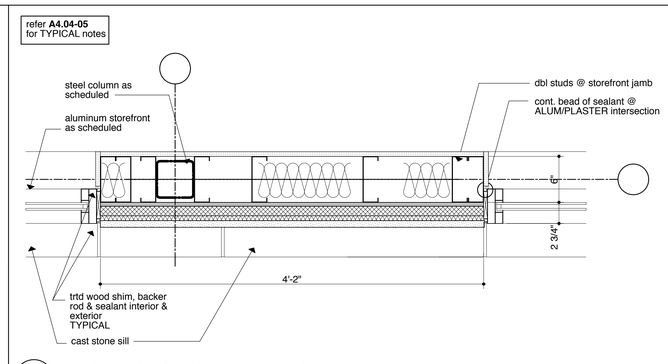
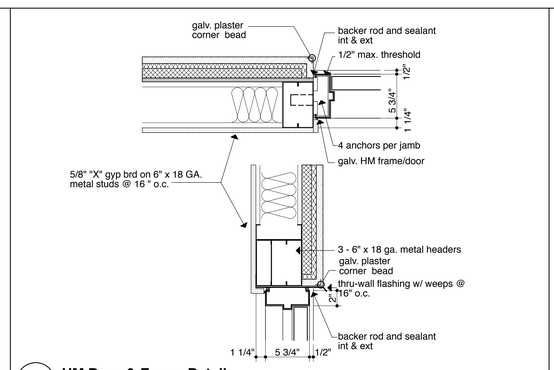


07 Front Wall Plaster Pilaster Plan Detail

scale: 1 1/2" = 1'-0"



06 HM Door & Frame Detail

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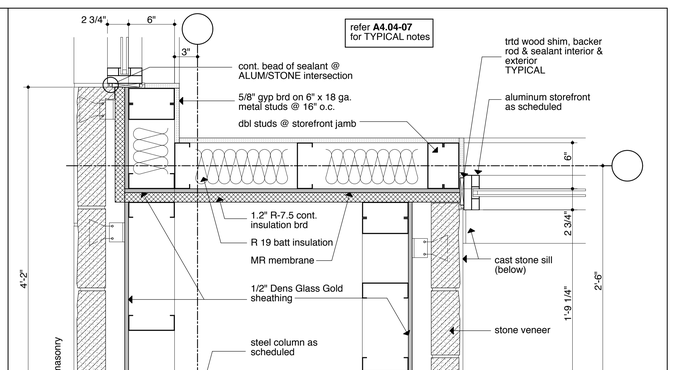

05 Front to Side Wall Corner Pilaster Plan Detail

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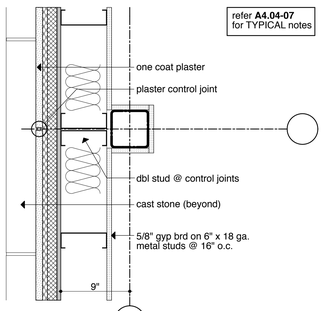

09 Side Wall Column Plan Detail

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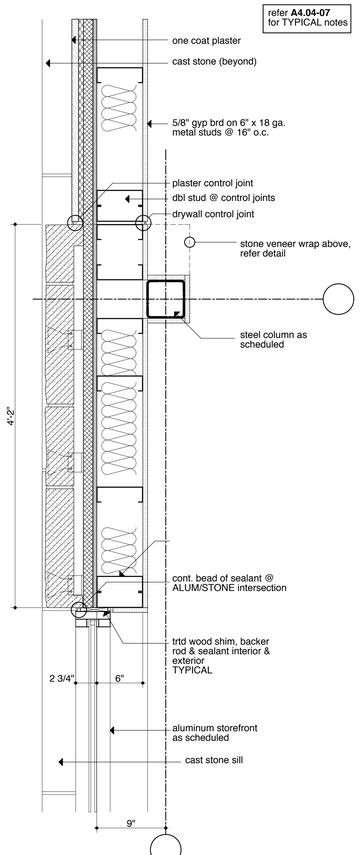

10 Side Wall Column @ Storefront Plan Detail

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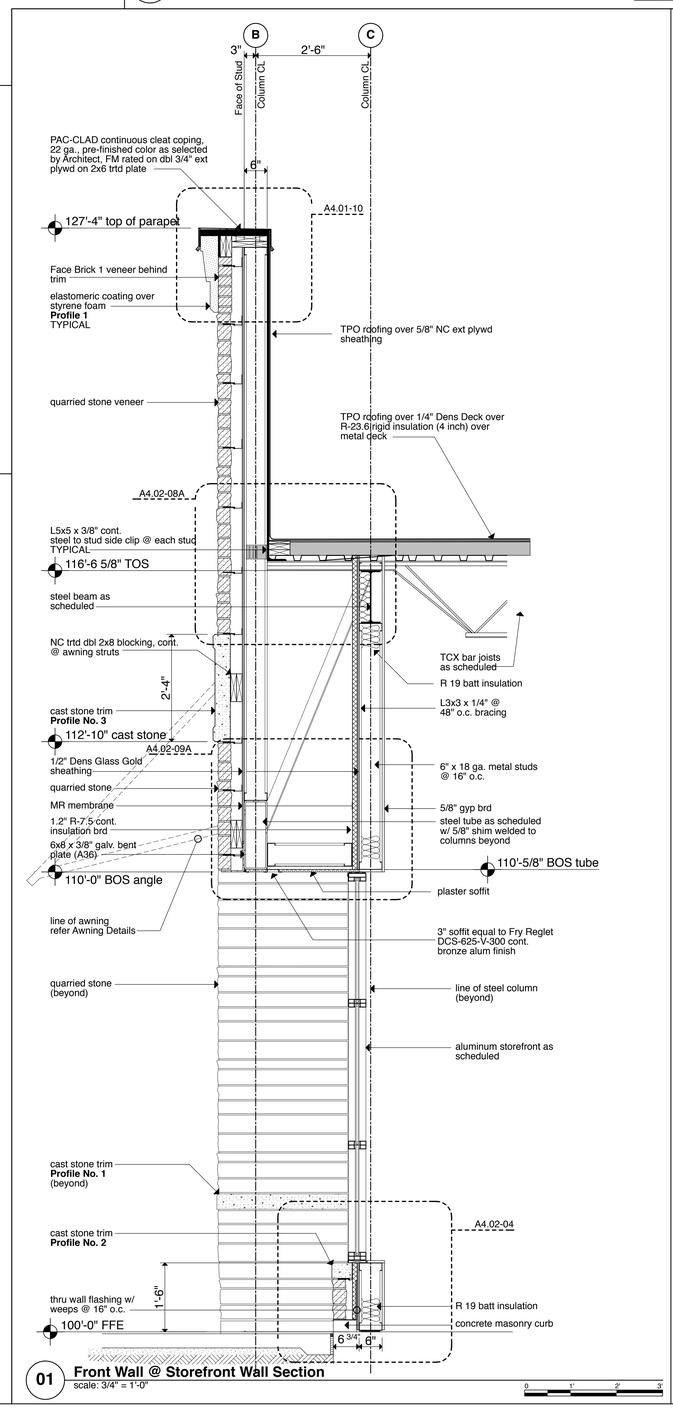

01 Front Wall @ Storefront Wall Section

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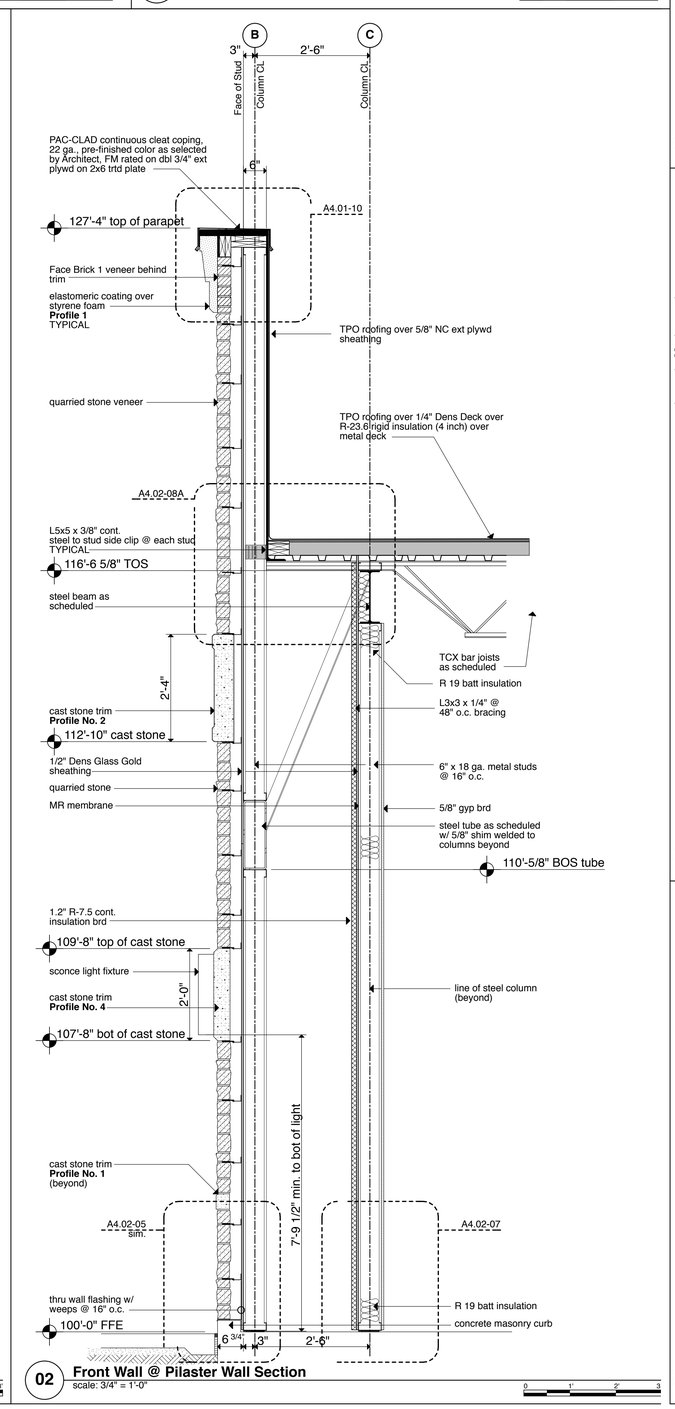
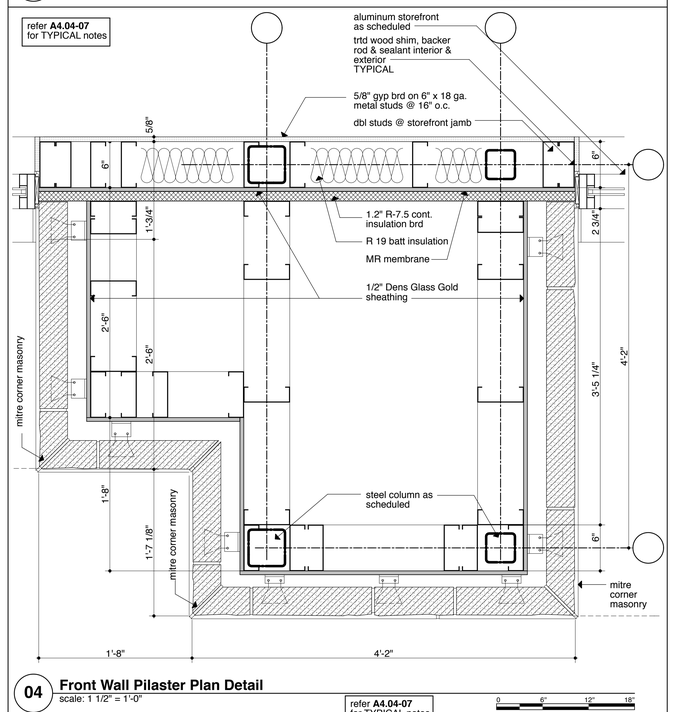


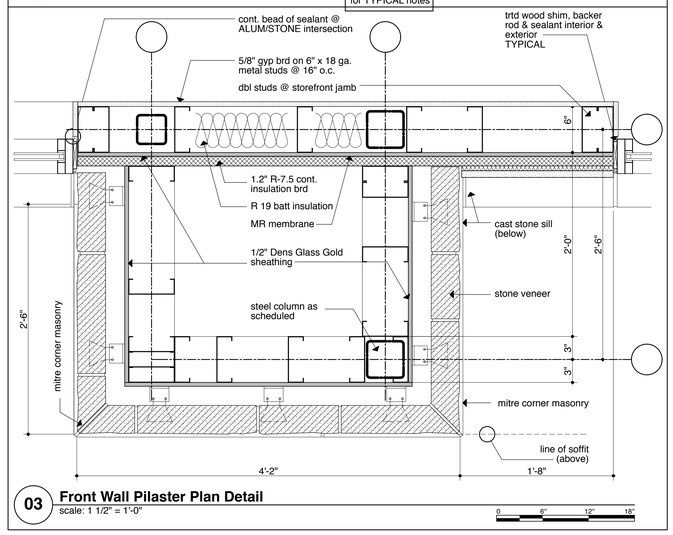
02 Front Wall @ Pilaster Wall Section

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



04 Front Wall Pilaster Plan Detail

scale: 1 1/2" = 1'-0"



03 Front Wall Pilaster Plan Detail

scale: 1 1/2" = 1'-0"

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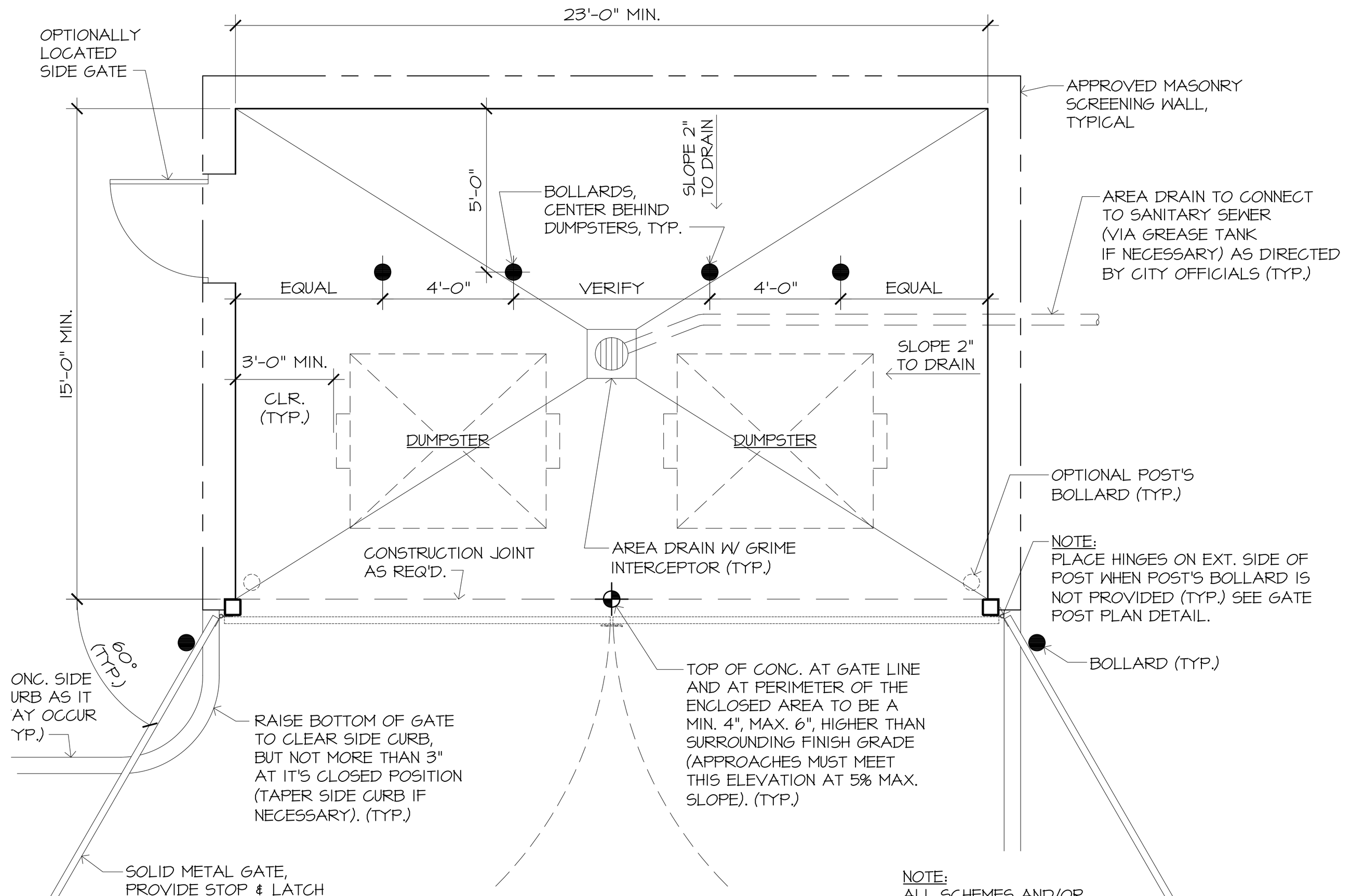
Revisions

22 May 2015

A4.04

22 May 2015



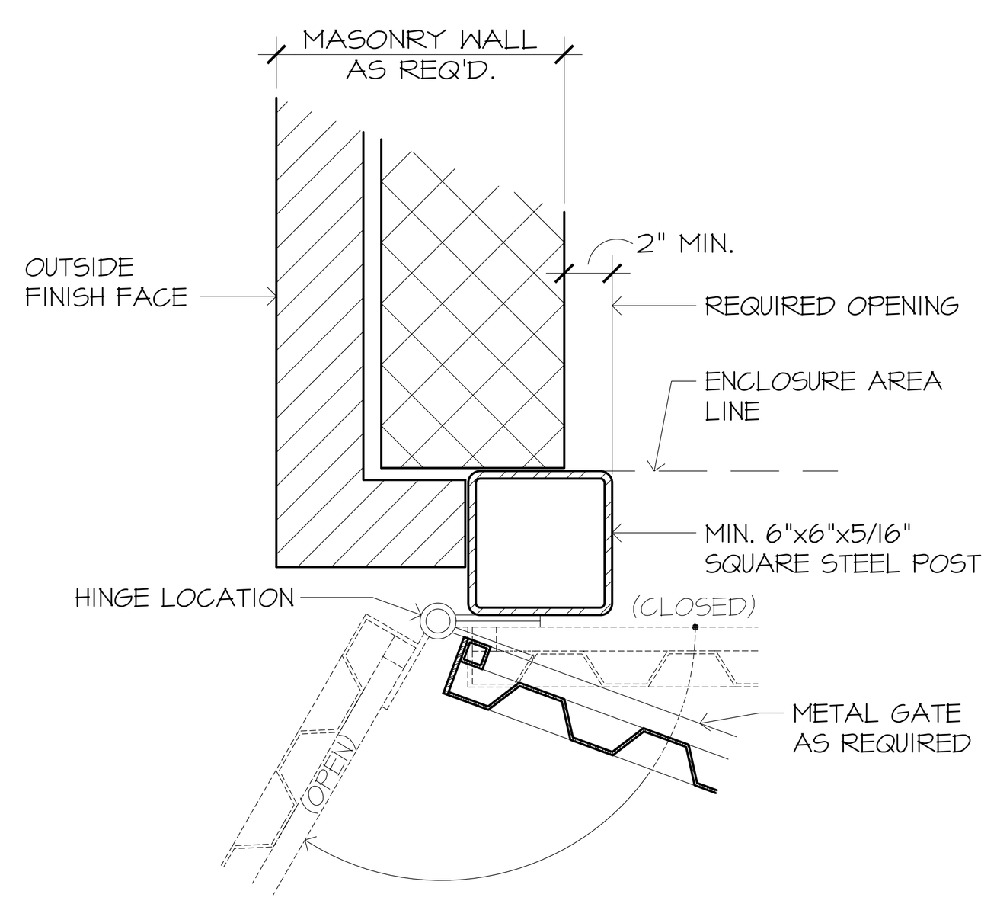
DOUBLE CONTAINER

(SCHEMES MAY COMBINE FOR LARGER SYSTEMS)
SCALE: 1/4" = 1'-0"

OTE: HIS SHEET MUST BE PRINTED UT IN LANDSCAPE FORMAT O INCLUDE ALL INFORMATION.

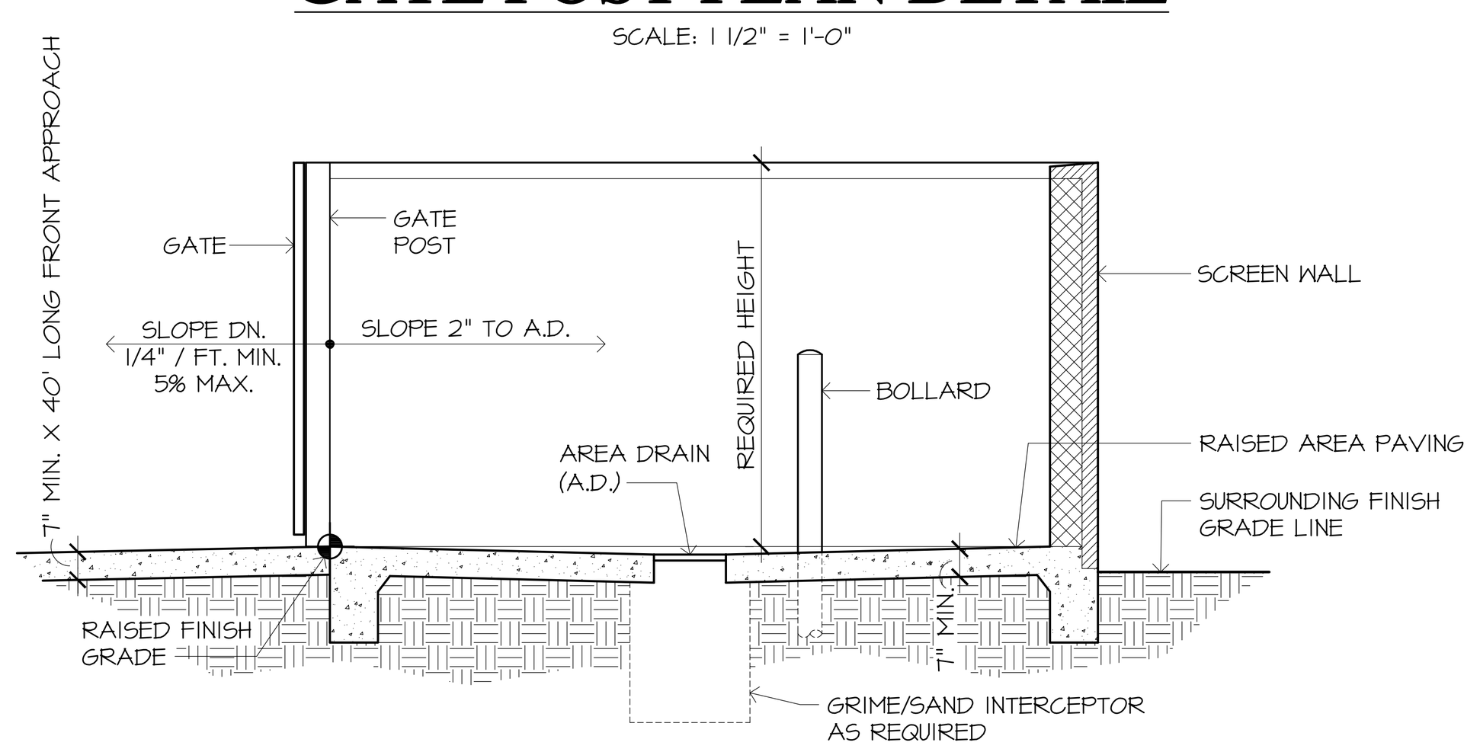
SEE GENERAL NOTES FOR ALL ENCLOSURES ON THE SINGLE CONTAINER SPEC SHEET

REV. 10-26-C



GATE POST PLAN DETAIL

SCALE: 1 1/2" = 1'-0"



ENCLOSED AREA CROSS SECTION

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

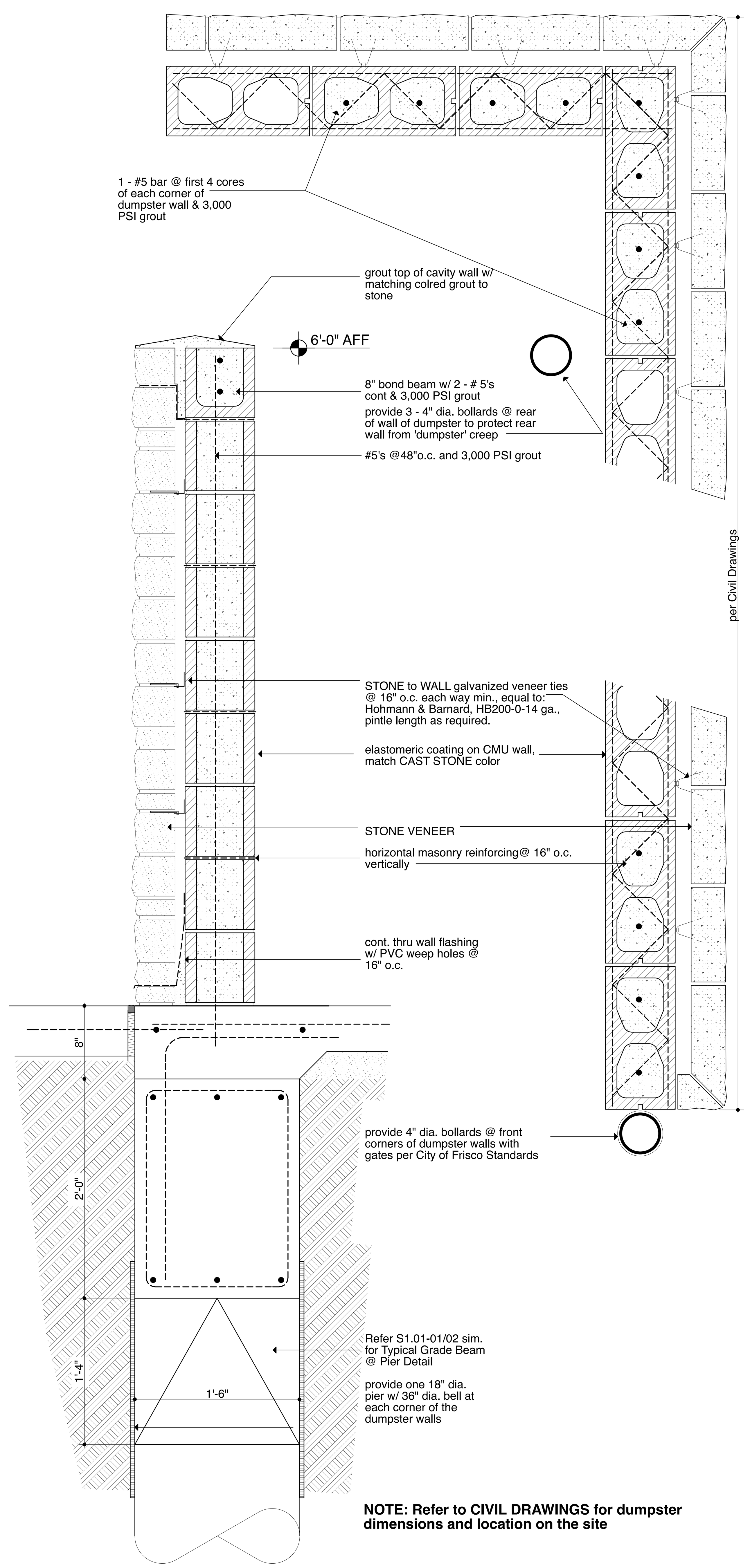
SOLID WASTE VEHICLE OPERATION SCHEMATIC TYPICAL ROUTE CONDITIONS AND TRUCK MANEUVERING SPACE CLEARANCES REQUIREMENTS

GENERAL NOTES:

1. ALL CURBS ARE TO BE ALIGNED ON THE OUTSIDE OF ENCLOSURE WALLS. THE CURBS SHALL NOT INTERFERE WITH THE ROUTE OF THE SOLID WASTE COLLECTION VEHICLE.
2. ALL SOLID WASTE COLLECTION ROUTES SHALL MEET ENGINEERING DESIGN CRITERIA (WIDTHS, TURNING RADII, ETC.), SITE SHALL BE DESIGNED TO PROVIDE SOLID WASTE COLLECTION VEHICLES WITH SAFE APPROACH TO DUMPSTER ENCLOSURES AND LIFT EACH CONTAINER WITHOUT GROUND LEVEL OR AERIAL OBSTRUCTIONS AS REQUIRED.
3. FOR THE SAFETY OF OTHERS, ROUTE LAYOUT AND OPERATION CLEARANCES SHALL BE SUCH THAT SOLID WASTE VEHICLES WILL NOT NEED TO BACK UP MORE THAN 50 FEET TO EXIT THE SITE AFTER SERVICING A DUMPSTER.
4. NO AWNING OR BUILDING PROJECTIONS ARE TO ENCROACH THE SOLID WASTE COLLECTION VEHICLE'S OPERATION AREA AND/OR SPACE. MINIMUM OVERHEAD CLEARANCE OF 14 FEET IS REQUIRED IN DRIVE AND 25 FEET OVER AND ABOUT THE DUMPSTER ENCLOSURE AREA FROM STEEL SAFETY BOLLARDS BACK 50 FEET.
5. ROUTES SHALL BE CLEAR OF ALL OBSTRUCTIONS (CURBS, WALLS, OVERHEAD WIRES, AWNINGS, ROOF PROJECTIONS, ETC.) TO PREVENT DAMAGE FROM THE COLLECTION VEHICLE.
6. IDEALLY, THE MOST DESIRED SITE PLANNING SHALL BE WHENEVER IS POSSIBLE TO SELECT A ROUTE FOR THE COLLECTION VEHICLE TO TRAVEL THE SITE WITHOUT BACKTRACKING. MULTIPLE FACILITIES SHOULD BE LOCATED IN SEQUENCE TO ALLOW CONSECUTIVE SERVICING ON ONE-WAY TRUCK ROUTE AS MUCH AS POSSIBLE (TYPICAL, UNLESS OTHERWISE APPROVED BY ENVIRONMENTAL SERVICES).
7. ALL DUMPSTER ENCLOSURES MUST BE ORIENTED TO FACE 90 FEET LONG OF OPEN SPACE. THE ONLY EXCEPTION IS FOR DUMPSTER ENCLOSURES PLACED ALONG A STRAIGHT COLLECTION VEHICLE ROUTE WHERE THE ENCLOSURES NEED TO BE ANGLED WITH NOT MORE THAN 30 DEGREES DEVIATION FROM THE ROUTE DIRECTION LINE AND PLACED DEEP ENOUGH TO ALLOW THE TYPICAL 50 FEET BACK UP FOR THE VEHICLE TO RESUME IT'S ROUTE.
8. DUMPSTER ENCLOSURES SHALL BE LOCATED AWAY FROM ENTRANCES AND EXISTS SO SOLID WASTE COLLECTION VEHICLES DO NOT CREATE A SAFETY HAZARD BY BLOCKING IN-COMING OR OUT-GOING TRAFFIC.
9. FOR WHERE SINGLE, DOUBLE OR TRIPLE-WIDE DUMPSTER ENCLOSURES ARE REQUIRED, SEE CITY ORDINANCE # 01-02-14. ALL DESIGNS MUST BE APPROVED BY THE ENVIRONMENTAL SERVICES DEPARTMENT (972-292-5915).
10. FOR GENERAL INFORMATION AND TYPICAL REQUIREMENTS ON DUMPSTER ENCLOSURE DESIGN LAYOUT SEE AVAILABLE CITY STANDARD CRITERIA DETAILS.

01 **City of Frisco Dumpster Requirements**

0 6" 12" 18"



NOTE: Refer to CIVIL DRAWINGS for dumpster dimensions and location on the site

02 **Dumpster Details**
scale: 1 1/2" = 1'-0"

0 6" 12" 18"

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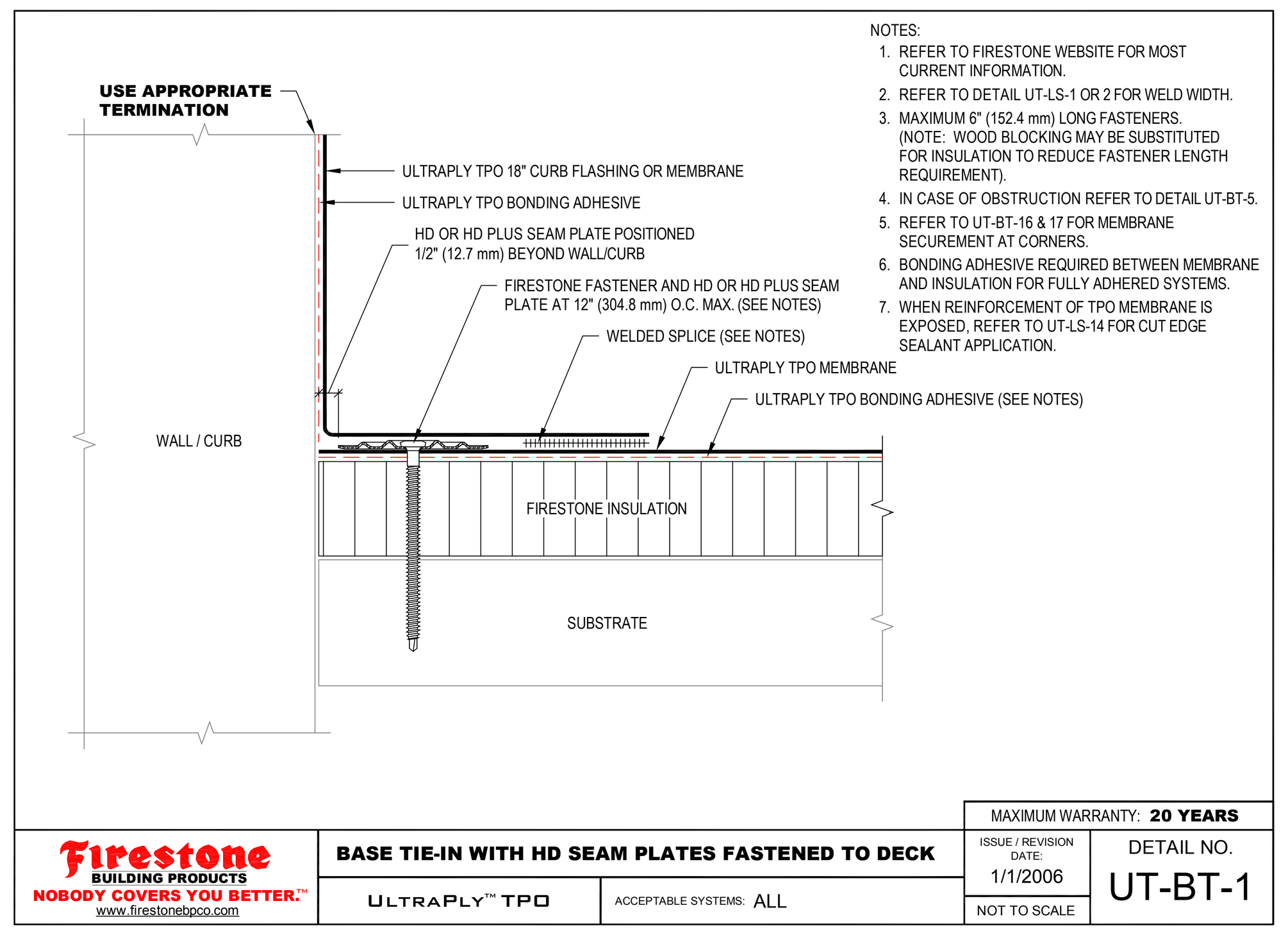
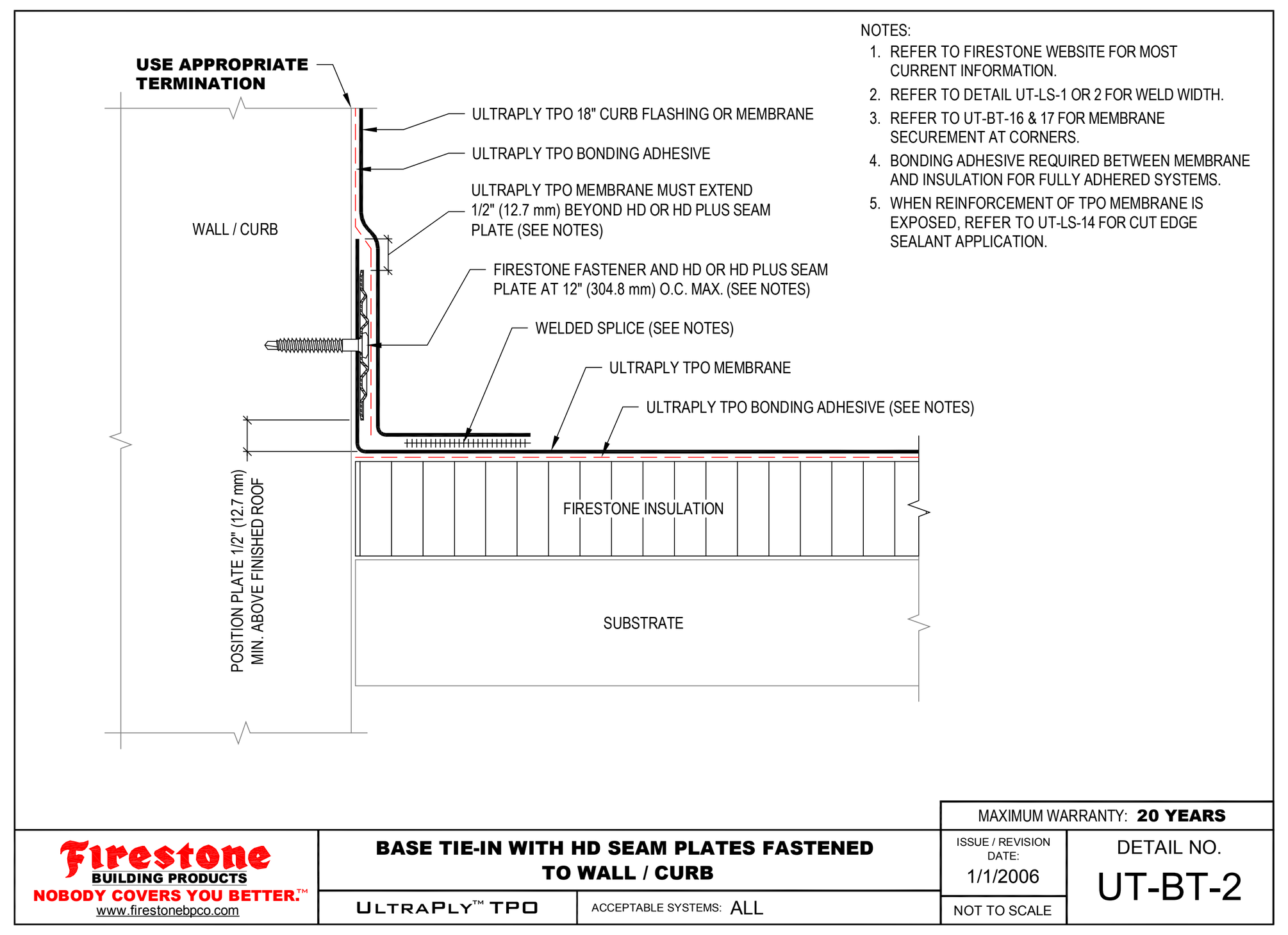
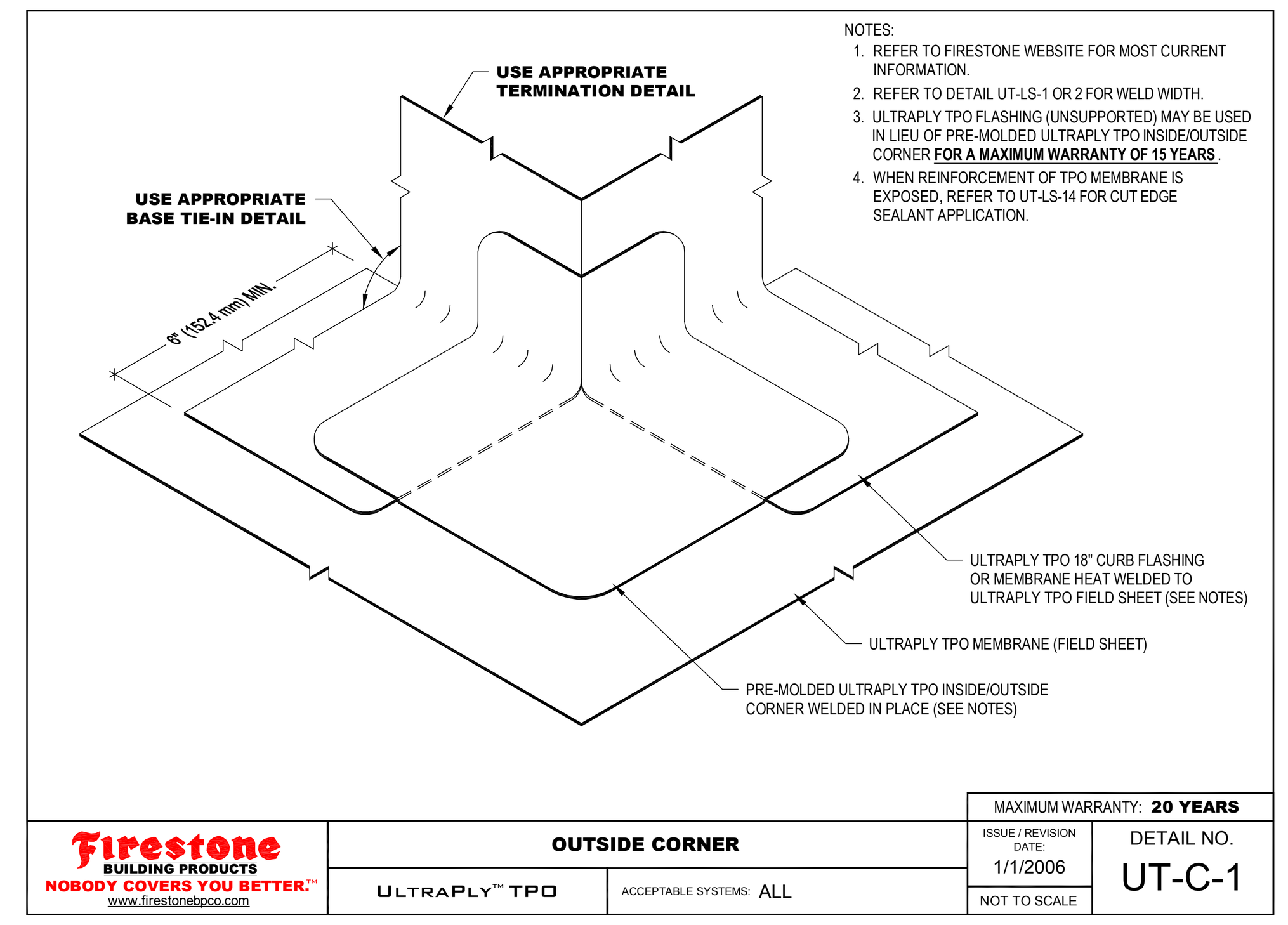
22 May 2015

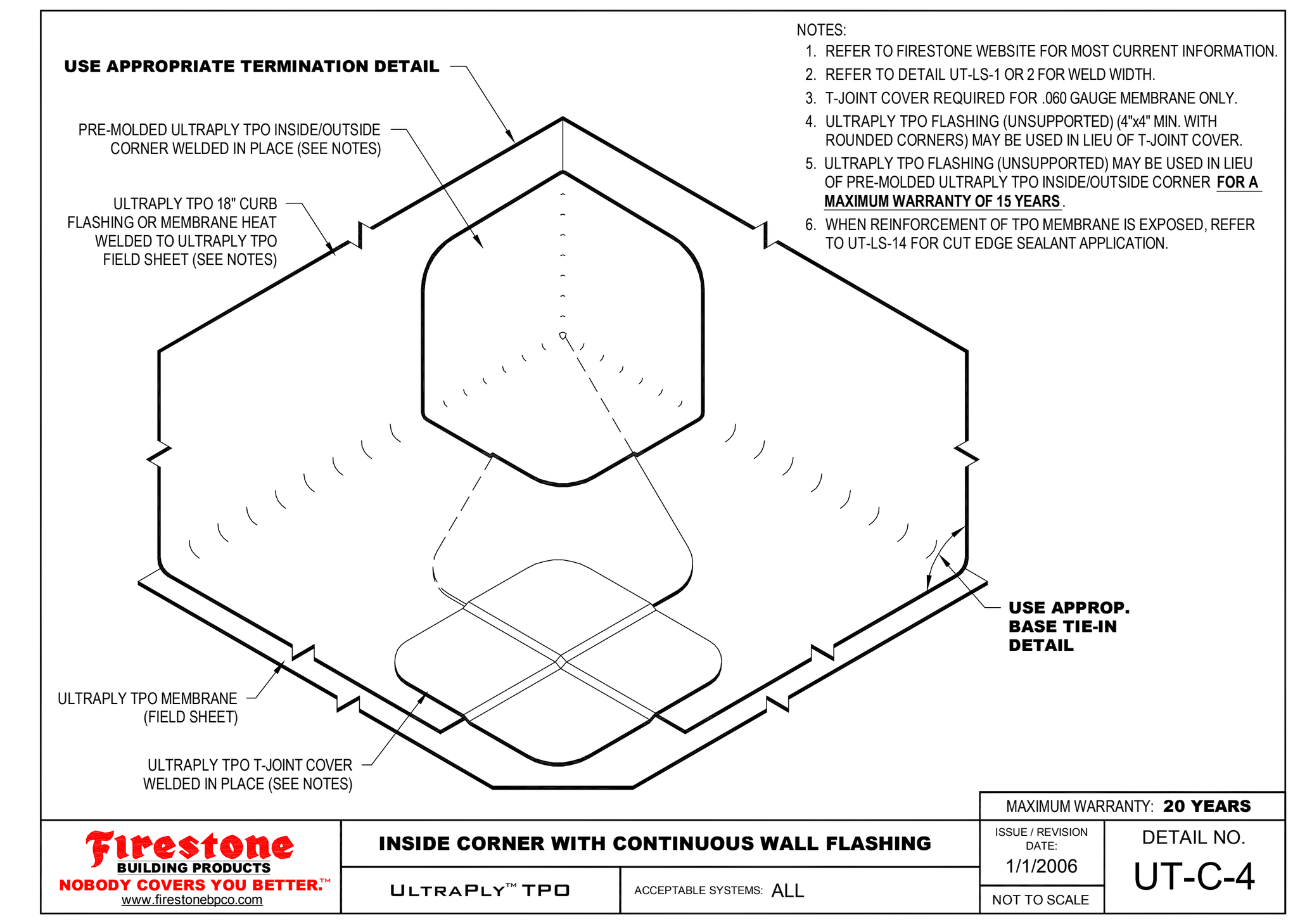
A4.05

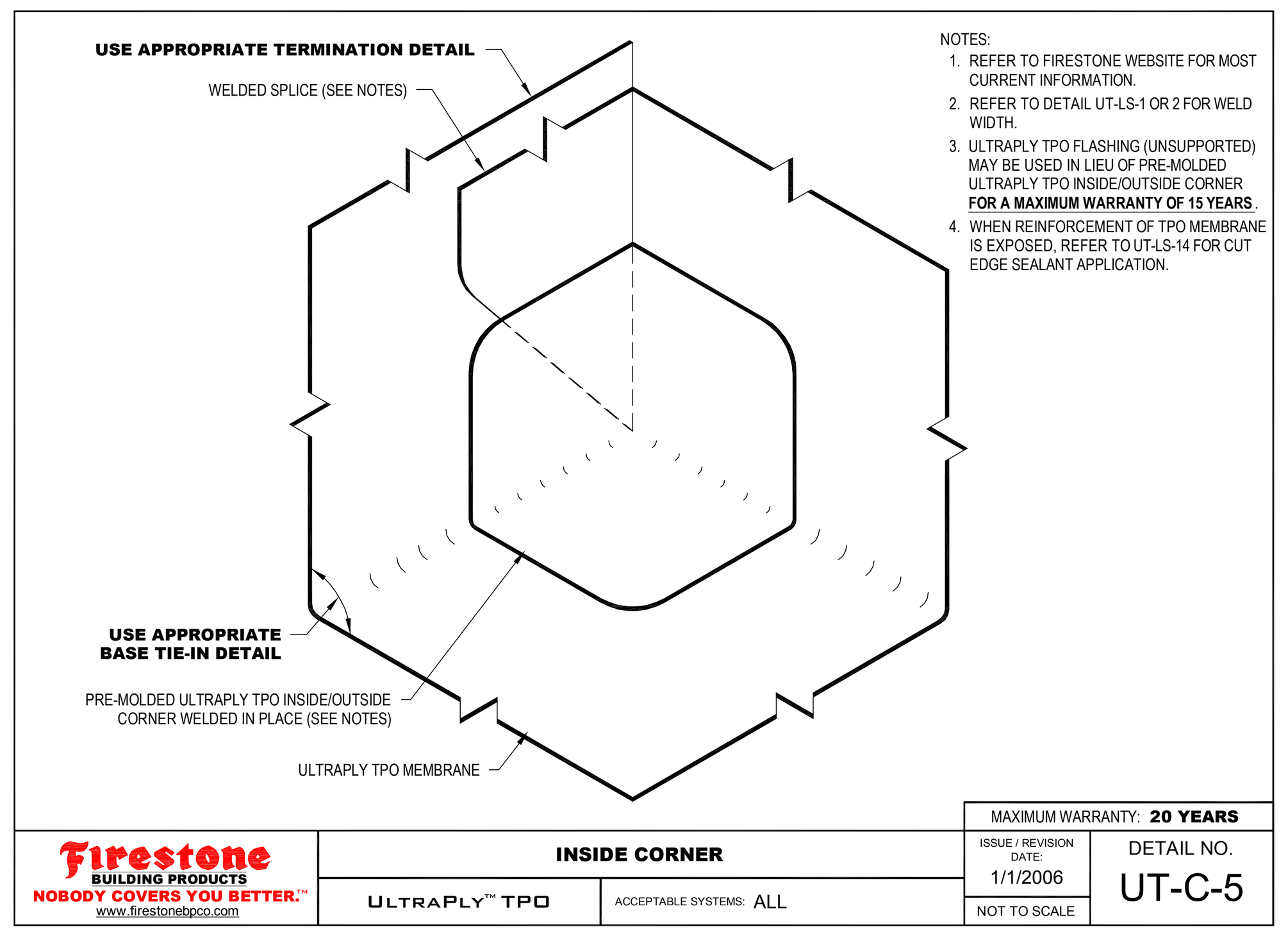
22 May 2015

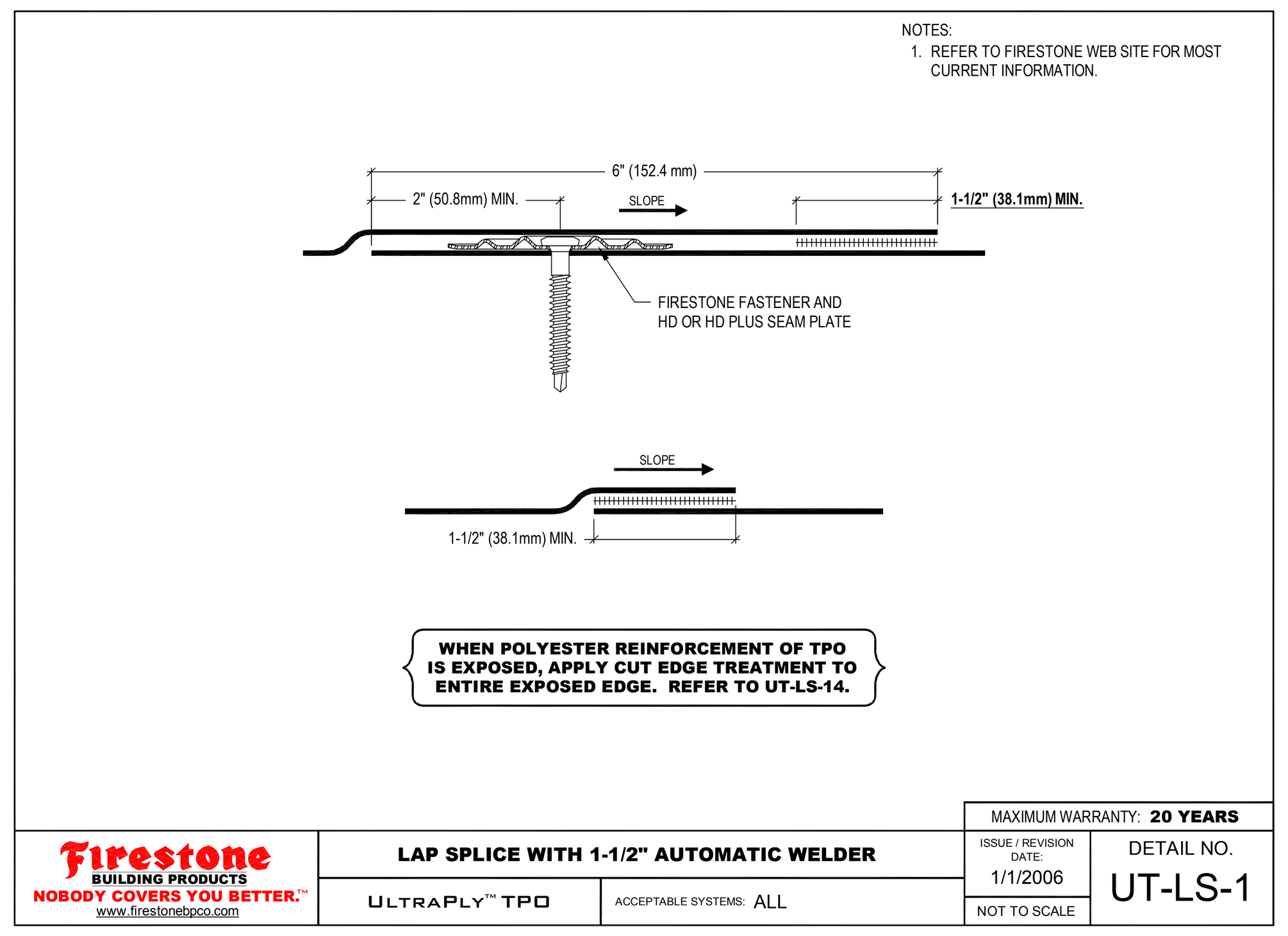


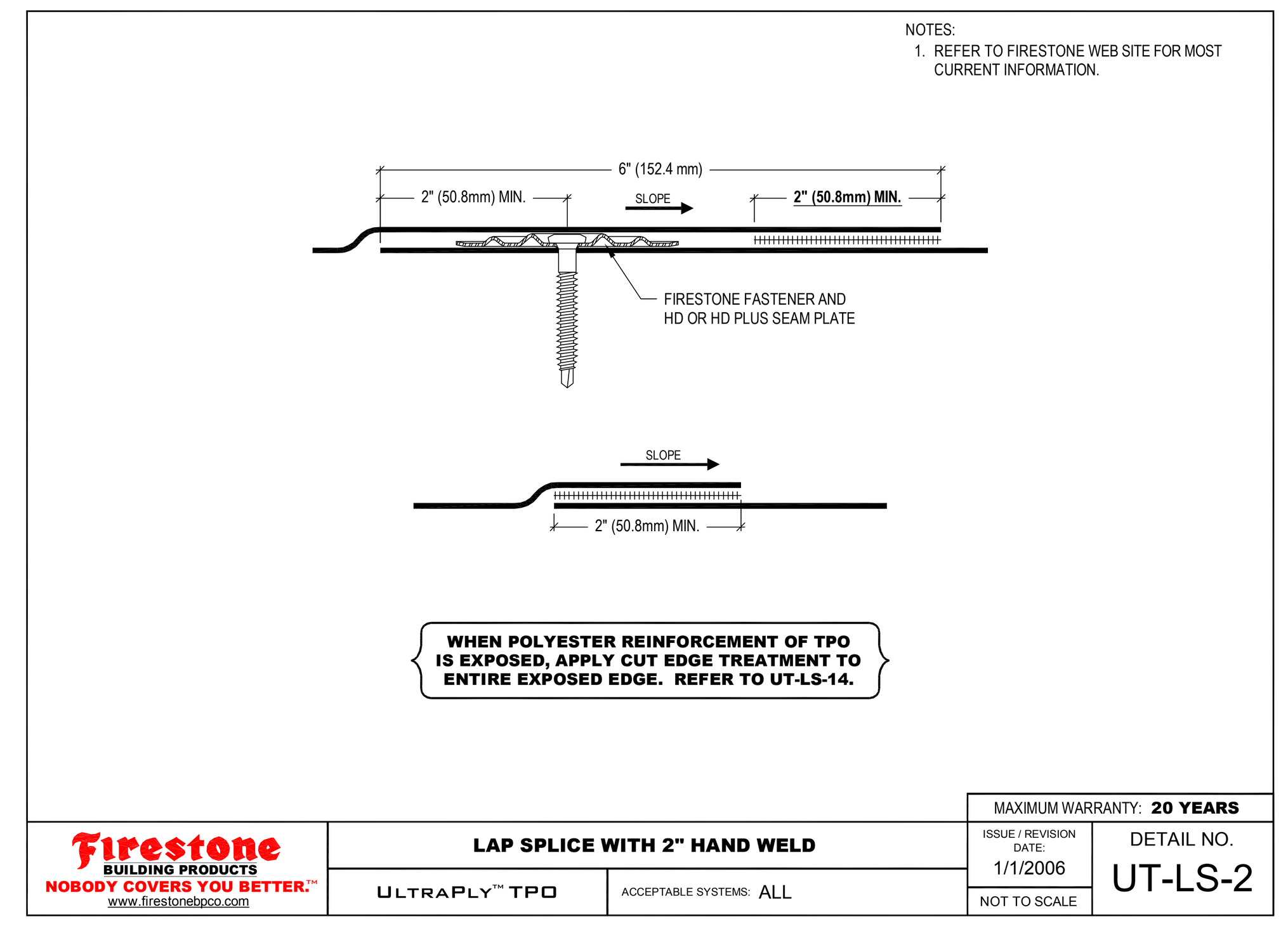


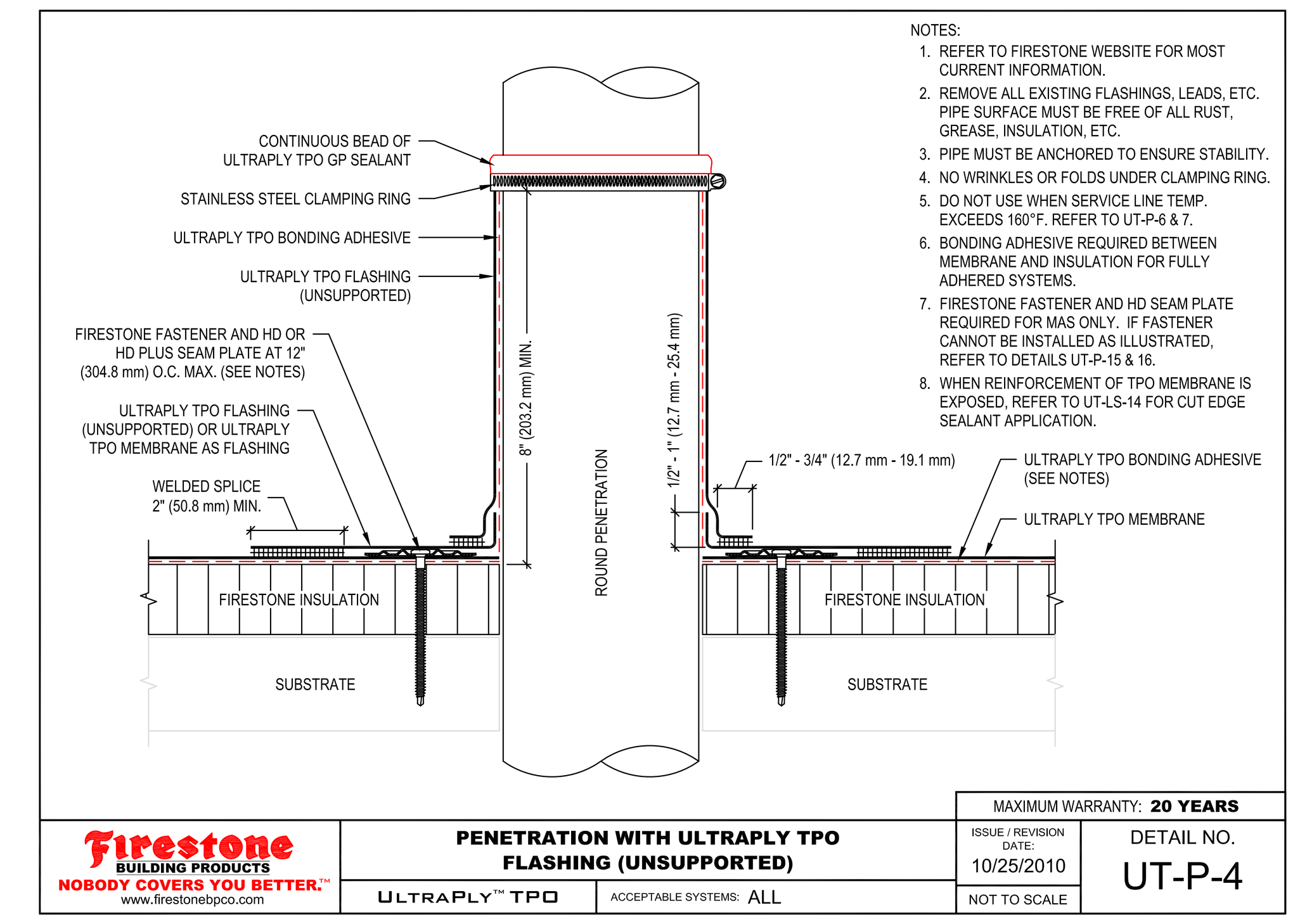


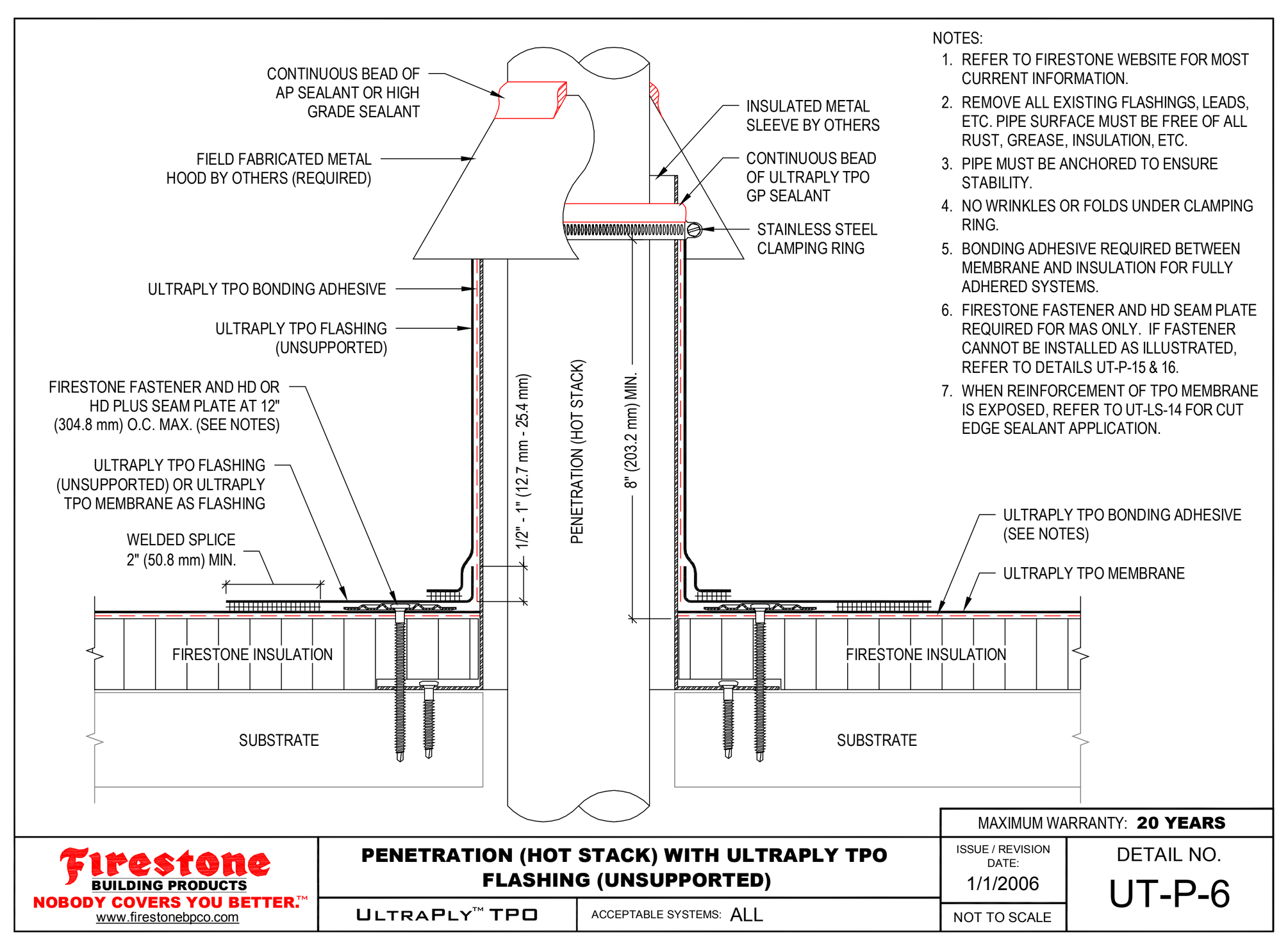


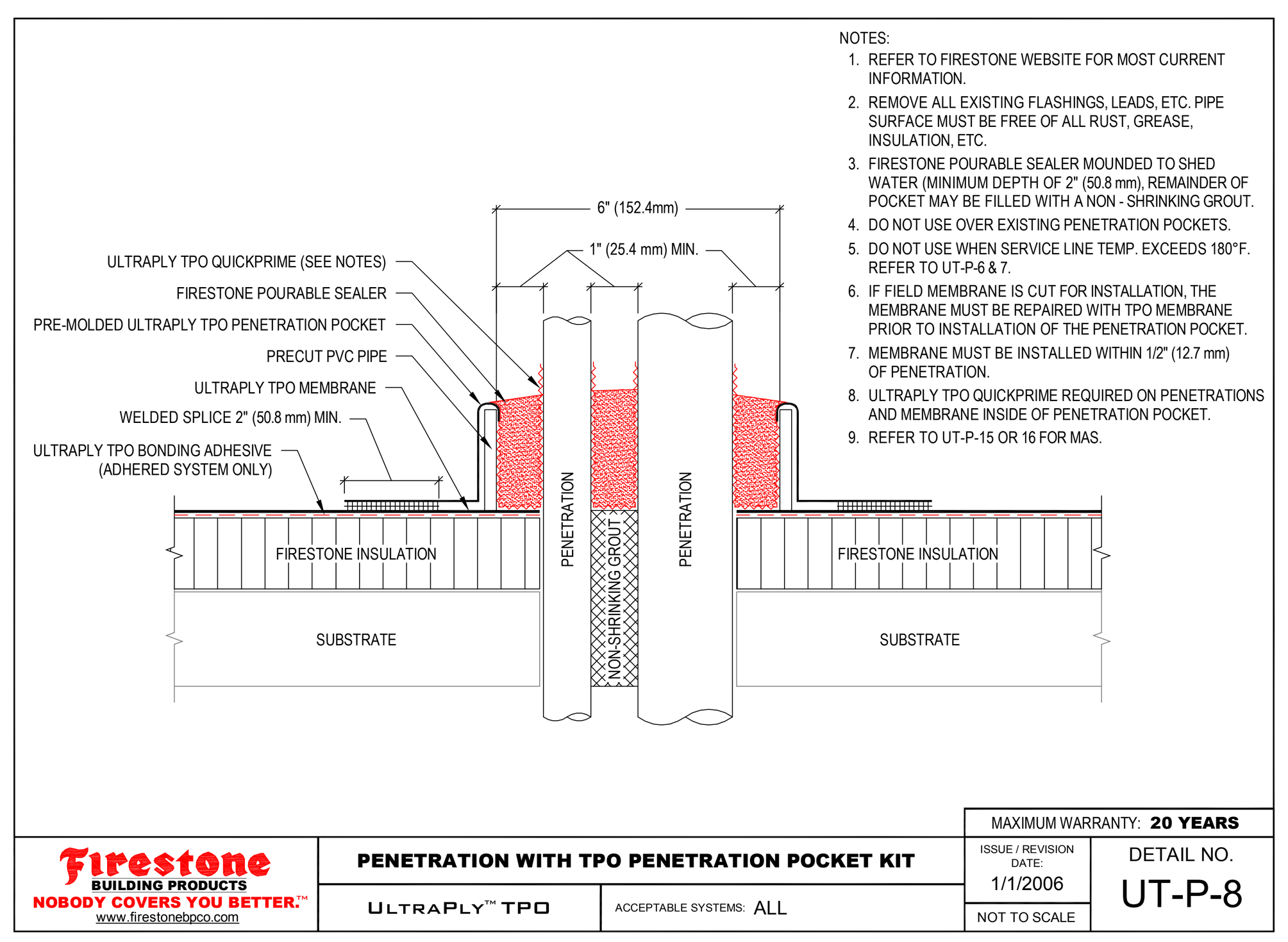


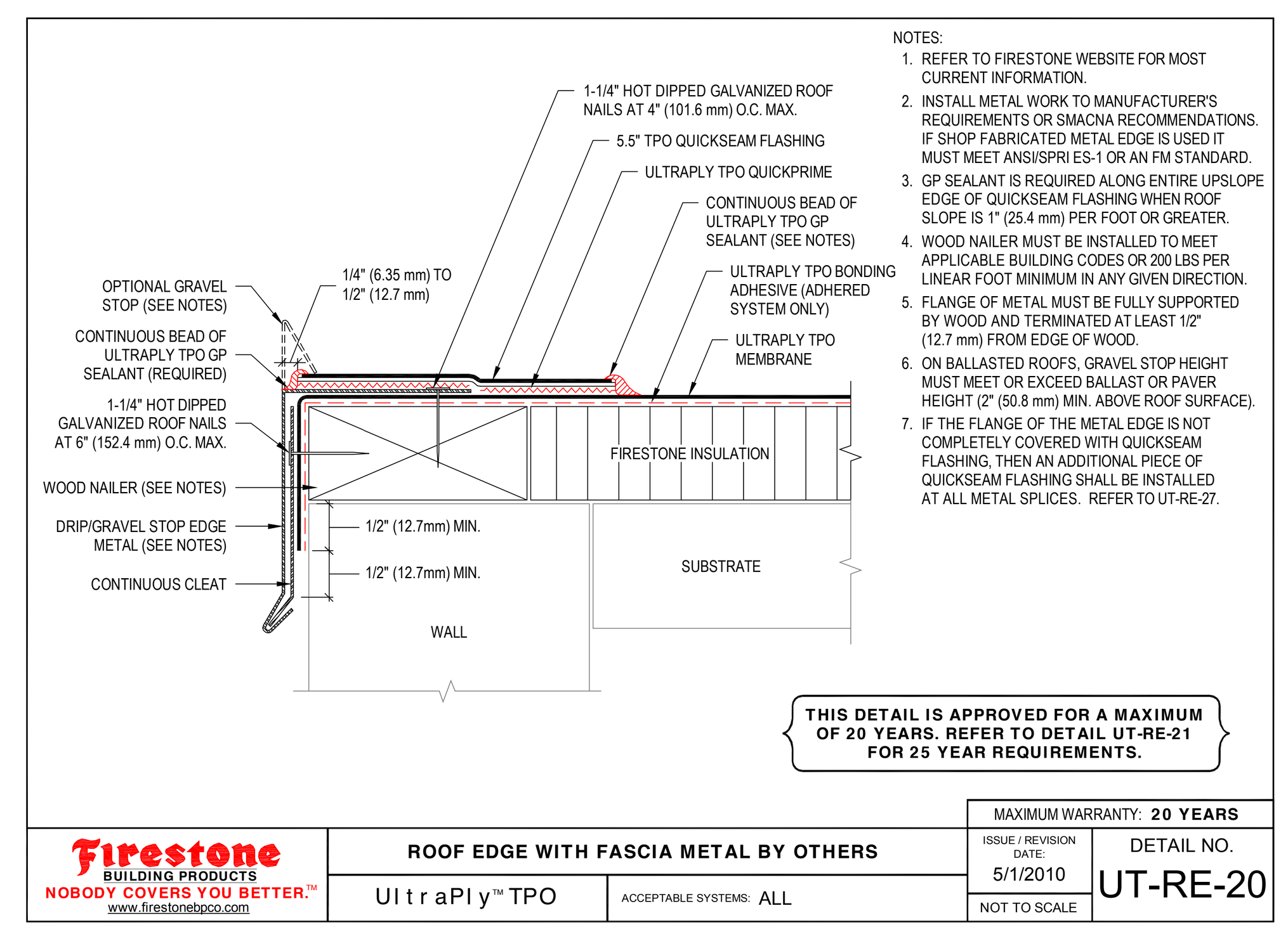


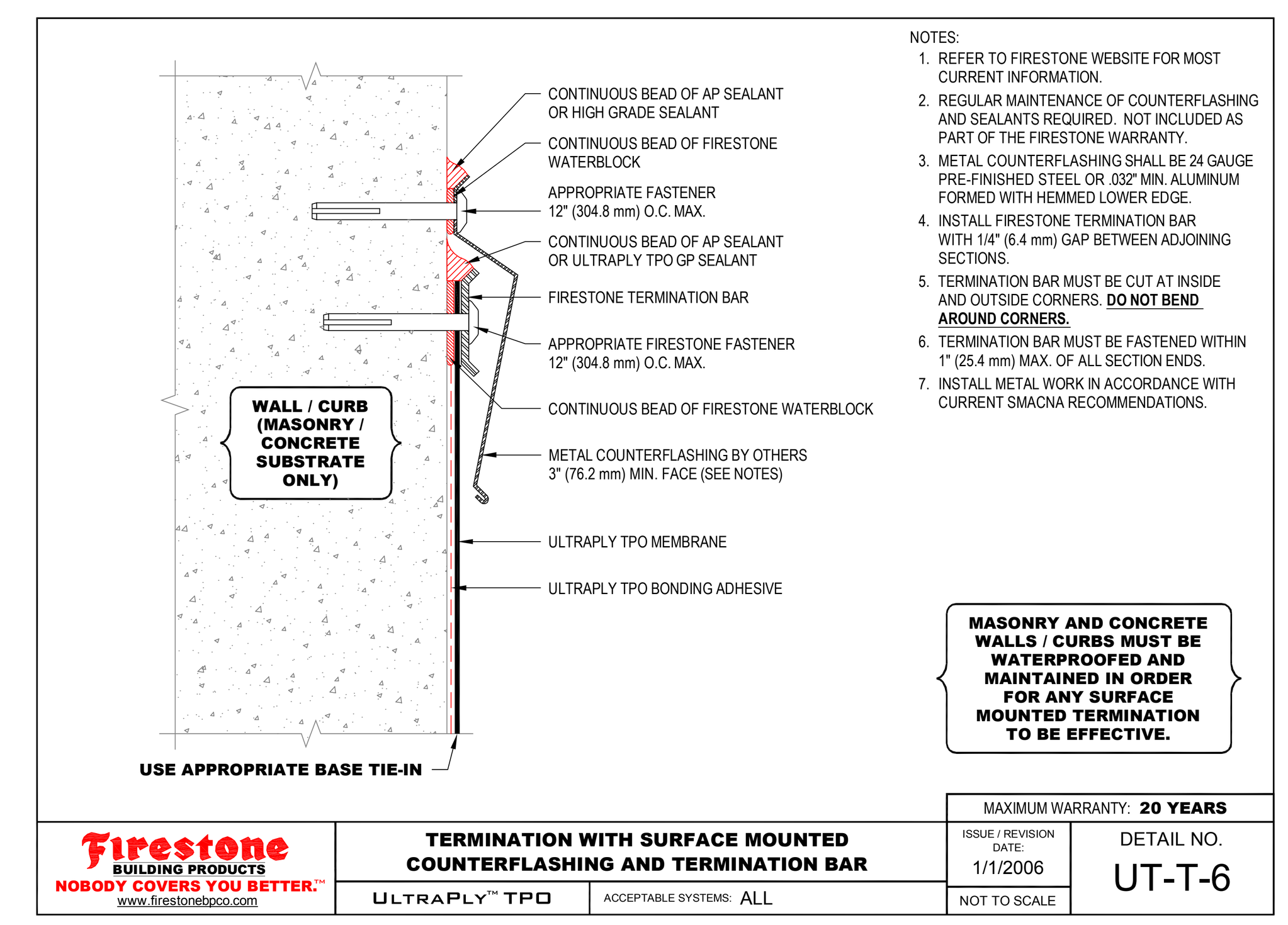


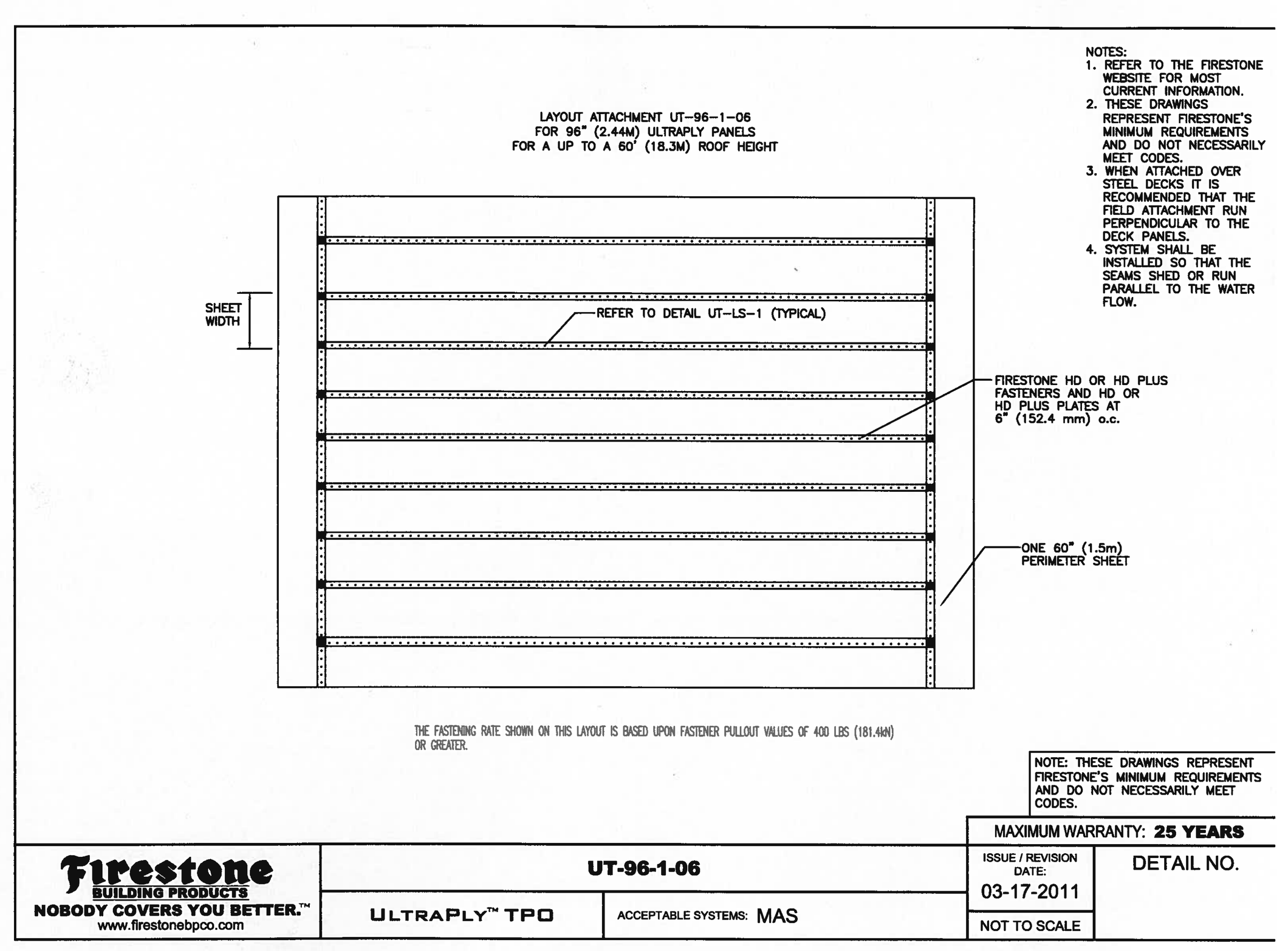


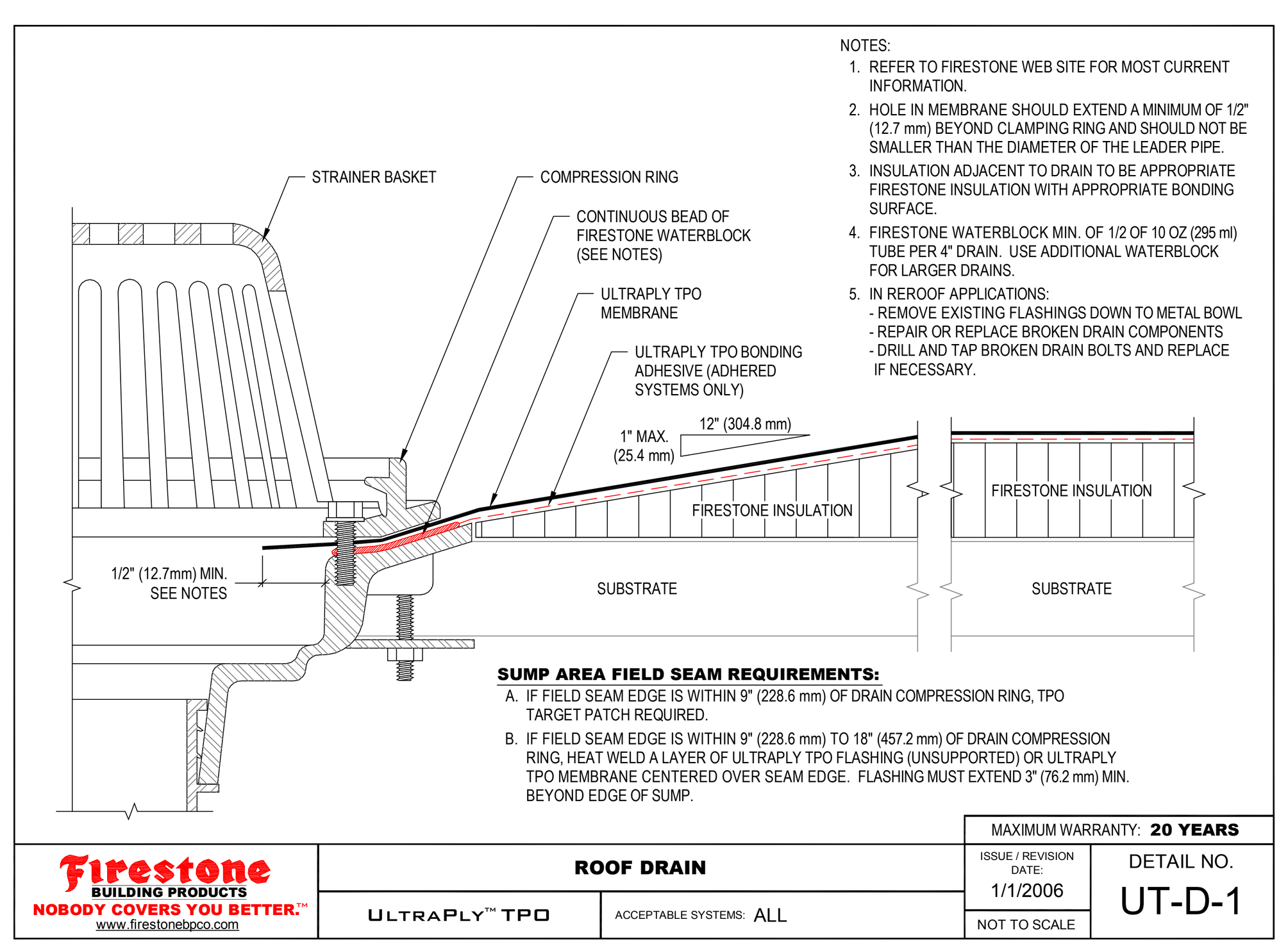












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Revisions

22 May 2015

A4.06

22 May 2015

2010 ADA Standards for Accessible Design
for Public Accommodations and Commercial Facilities: Title III

CHAPTER 3: BUILDING BLOCKS

301 General
301.1 Scope. The provisions of Chapter 3 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

302 Floor or Ground Surfaces
302.1 General. Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with 302.
EXCEPTIONS:
1. Within animal containment areas, floor and ground surfaces shall not be required to be stable, firm, and slip resistant.
2. Areas of sport activity shall not be required to comply with 302.

302.2 Carpet. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be 1/2 inch (13 mm) maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge. Carpet edge trim shall comply with 303.

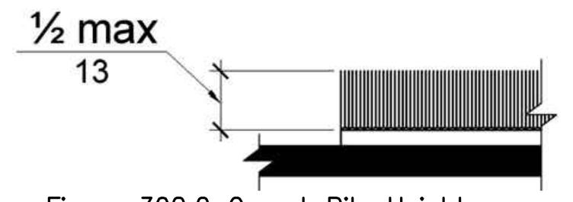


Figure 302.2 Carpet Pile Height

302.3 Openings. Openings in floor or ground surfaces shall not allow passage of a sphere more than 1/2 inch (13 mm) diameter except as allowed in 407.4.3, 409.4.3, 410.4, 810.5.3 and 810.10. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

303 Changes in Level
303.1 General. Where changes in level are permitted in floor or ground surfaces, they shall comply with 303.
EXCEPTIONS:
1. Animal containment areas shall not be required to comply with 303.
2. Areas of sport activity shall not be required to comply with 303.

303.2 Vertical. Changes in level of 1/4 inch (6.4 mm) high maximum shall be permitted to be vertical.

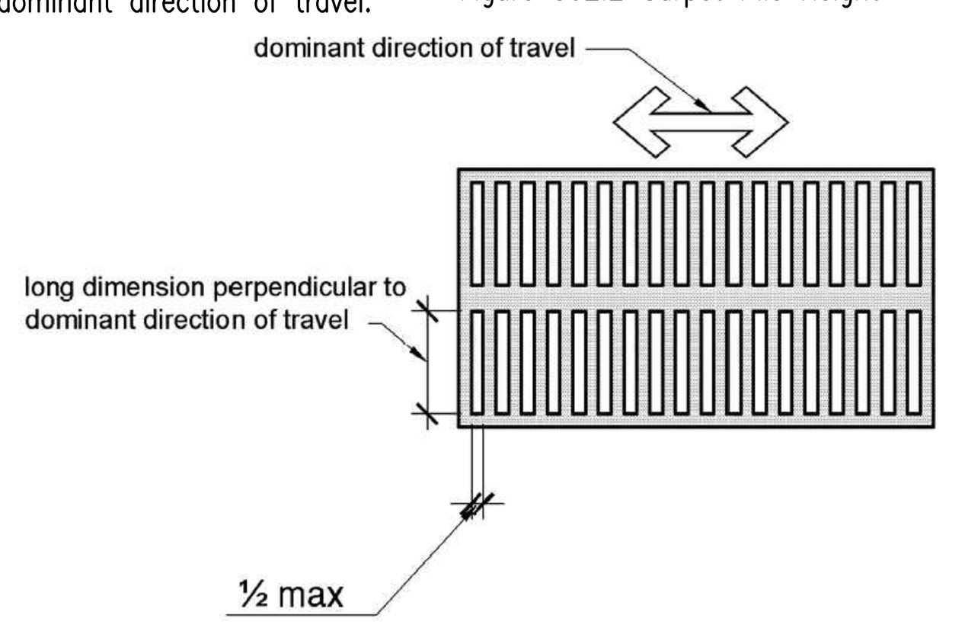


Figure 302.3 Elongated Openings in Floor or Ground Surfaces

303.3 Beveled. Changes in level between 1/4 inch (6.4 mm) high minimum and 1/2 inch (13 mm) high maximum shall be beveled with a slope not steeper than 1:2.

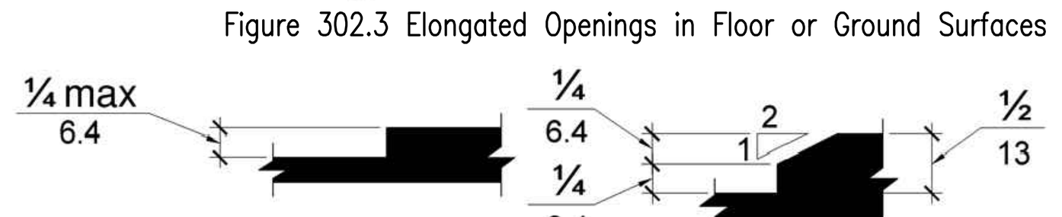


Figure 303.2 Vertical Change in Level
Figure 303.3 Beveled Change in Level

303.4 Ramps. Changes in level greater than 1/2 inch (13 mm) high shall be ramped, and shall comply with 405 or 406.

304 Turning Space
304.1 General. Turning space shall comply with 304.

304.2 Floor or Ground Surfaces. Floor or ground surfaces of a turning space shall comply with 302. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

304.3 Size. Turning space shall comply with 304.3.1 or 304.3.2.

304.3.1 Circular Space. The turning space shall be a space of 60 inches (1525 mm) diameter minimum. The space shall be permitted to include knee and toe clearance complying with 306.

304.3.2 T-Shaped Space. The turning space shall be a T-shaped space within a 60 inch (1525 mm) square minimum with arms and base 36 inches (915 mm) wide minimum. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction and the base shall be clear of obstructions 24 inches (610 mm) minimum. The space shall be permitted to include knee and toe clearance complying with 306 only at the end of either the base or one arm.

304.4 Door Swing. Doors shall be permitted to swing into turning spaces.

305 Clear Floor or Ground Space
305.1 General. Clear floor or ground space shall comply with 305.

305.2 Floor or Ground Surfaces. Floor or ground surfaces of a clear floor or ground space shall comply with 302. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

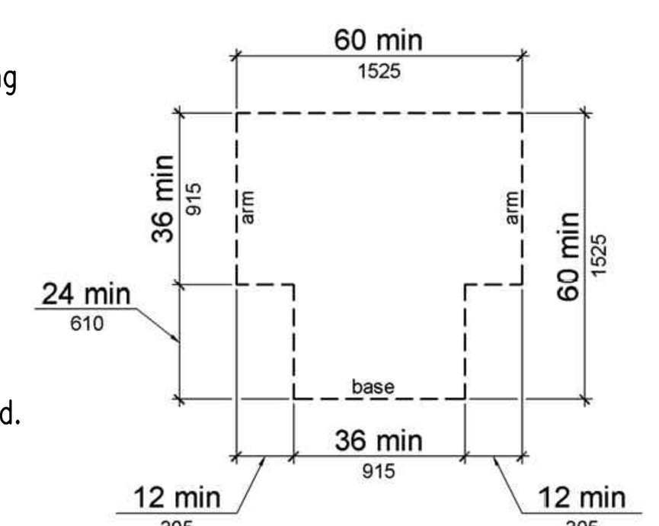


Figure 304.3.2 T-Shaped Turning Space

305.3 Size. The clear floor or ground space shall be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

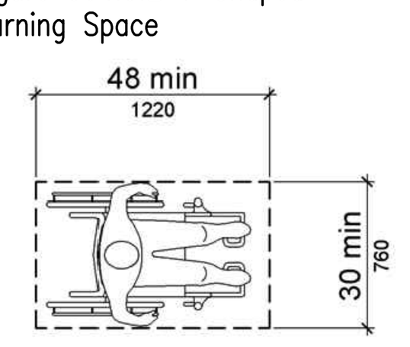


Figure 305.3 Clear Floor or Ground Space

305.4 Knee and Toe Clearance. Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clearance complying with 306.

305.5 Position. Unless otherwise specified, clear floor or ground space shall be positioned for either forward or parallel approach to an element.

305.6 Approach. One full unobstructed side of the clear floor or ground space shall adjoin an accessible route or adjoin another clear floor or ground space.

305.7 Maneuvering Clearance. Where a clear floor or ground space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with 305.7.1 and 305.7.2.

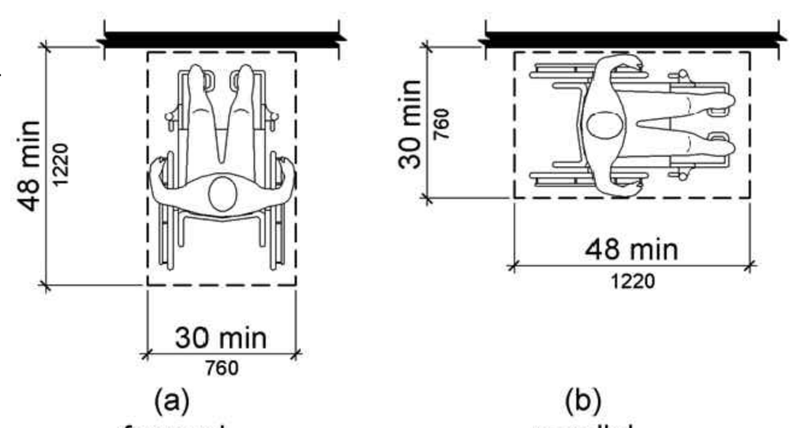


Figure 305.5 Position of Clear Floor or Ground Space

305.7.1 Forward Approach. Alcoves shall be 36 inches (915 mm)wide minimum where the depth exceeds 24 inches (610 mm).

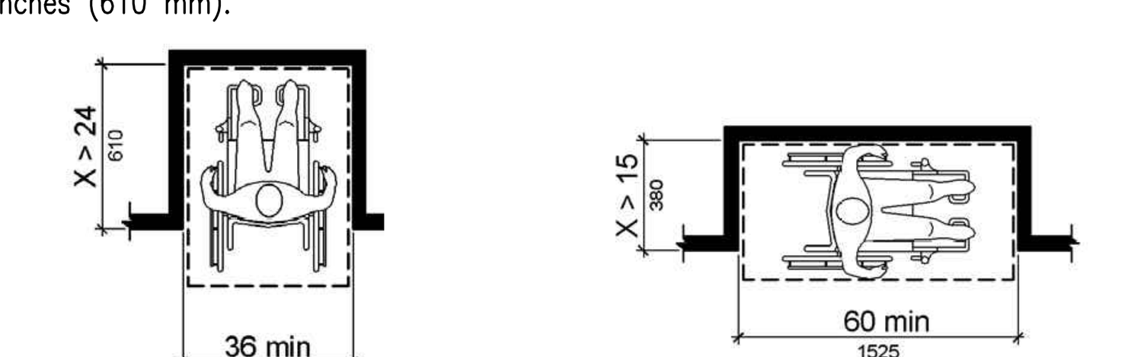


Figure 305.7.1 Maneuvering Clearance in an Alcove, Forward Approach
Figure 305.7.2 Maneuvering Clearance in an Alcove, Parallel Approach

305.7.2 Parallel Approach. Alcoves shall be 60 inches (1525 mm) wide minimum where the depth exceeds 15 inches (380 mm).

306 Knee and Toe Clearance
306.1 General. Where space beneath an element is included as part of clear floor or ground space or turning space, the space shall comply with 306. Additional space shall not be prohibited beneath an element but shall not be considered as part of the clear floor or ground space or turning space.

306.2 Toe Clearance.
306.2.1 General. Space under an element between the finish floor or ground and 9 inches (230 mm) above the finish floor or ground shall be considered toe clearance and shall comply with 306.2.

306.2.2 Maximum Depth. Toe clearance shall extend 25 inches (635 mm) maximum under an element.

306.2.3 Minimum Required Depth. Where toe clearance is required at an element as part of a clear floor space, the toe clearance shall extend 17 inches (430 mm) minimum under the element.

306.2.4 Additional Clearance. Space extending greater than 6 inches (150 mm) beyond the available knee clearance at 9 inches (230 mm) above the finish floor or ground shall not be considered toe clearance.

306.2.5 Width. Toe clearance shall be 30 inches (760 mm) wide minimum.

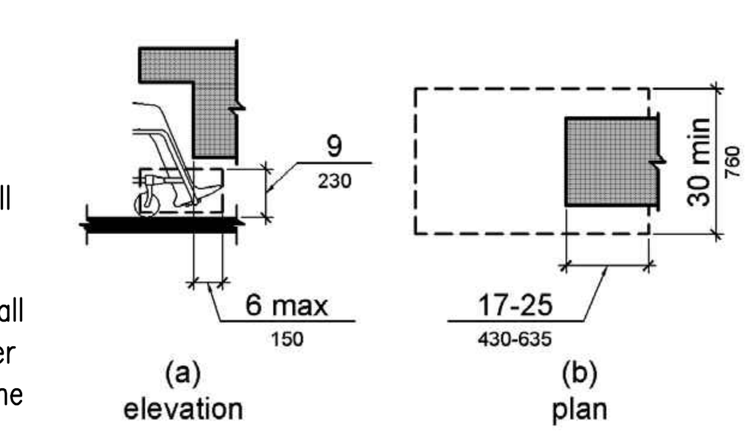


Figure 306.2 Toe Clearance

306.3 Knee Clearance.
306.3.1 General. Space under an element between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground shall be considered knee clearance and shall comply with 306.3.

306.3.2 Maximum Depth. Knee clearance shall extend 25 inches (635 mm) maximum under an element at 9 inches (230 mm) above the finish floor or ground.

306.3.3 Minimum Required Depth. Where knee clearance is required under an element as part of a clear floor space, the knee clearance shall be 11 inches (280 mm) deep minimum at 9 inches (230 mm) above the finish floor or ground, and 8 inches (205 mm) deep minimum at 27 inches (685 mm) above the finish floor or ground.

306.3.4 Clearance Reduction. Between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground, the knee clearance shall be permitted to reduce at a rate of 1 inch (25 mm) in depth for each 6 inches (150 mm) in height.

306.3.5 Width. Knee clearance shall be 30 inches (760 mm) wide minimum.

307 Protruding Objects
307.1 General. Protruding objects shall comply with 307.

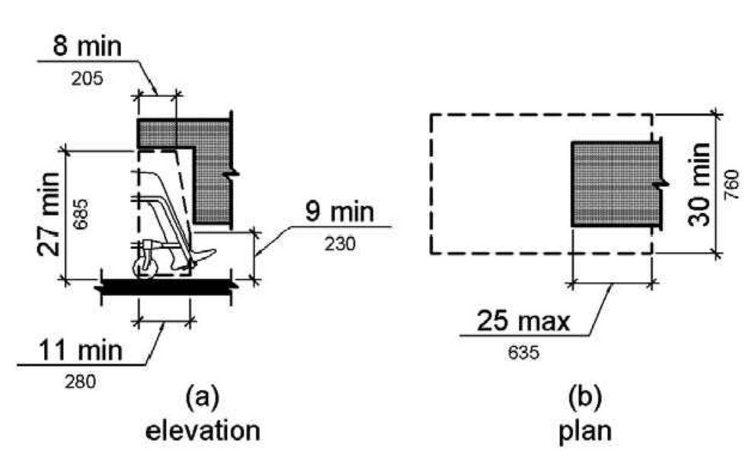


Figure 306.3 Knee Clearance

307.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.
EXCEPTION: Handrails shall be permitted to protrude 4 1/2 inches (115 mm) maximum.

307.3 Post-Mounted Objects. Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches (305 mm) maximum when located 27 inches (685 mm) minimum and 80 inches (2030 mm) maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finish floor or ground.
EXCEPTION: The sloping portions of handrails serving stairs and ramps shall not be required to comply with 307.3.

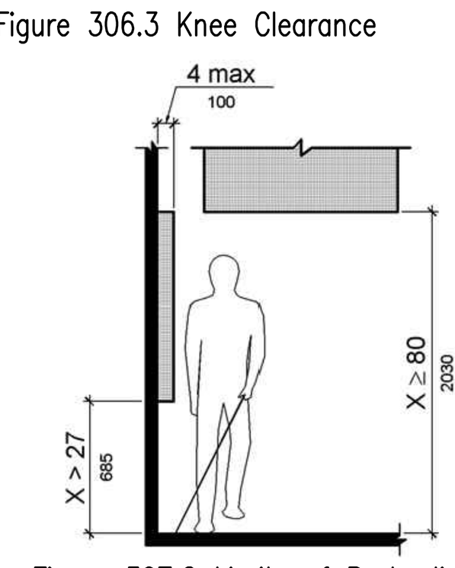


Figure 307.2 Limits of Protruding Objects

307.4 Vertical Clearance. Vertical clearance shall be 80 inches (2030 mm) high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (685 mm) maximum above the finish floor or ground.
EXCEPTION: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.

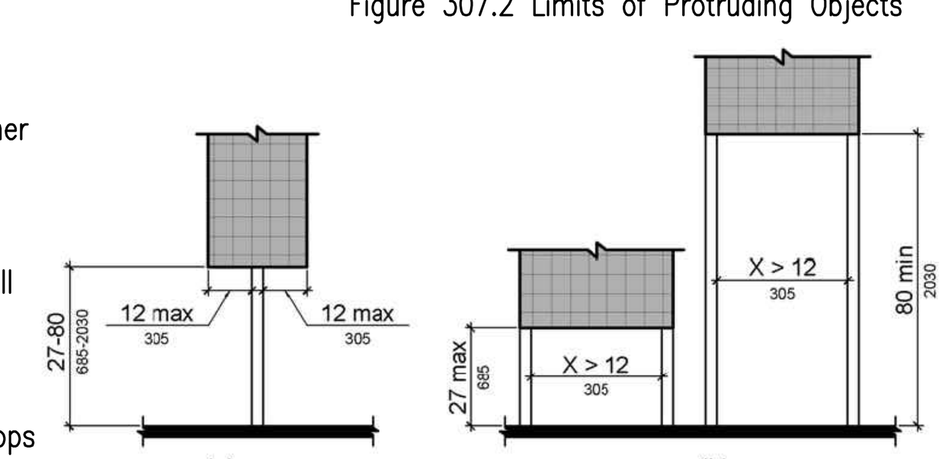


Figure 307.3 Post-Mounted Protruding Objects

307.5 Required Clear Width. Protruding objects shall not reduce the clear width required for accessible routes.

308 Reach Ranges
308.1 General. Reach ranges shall comply with 308.

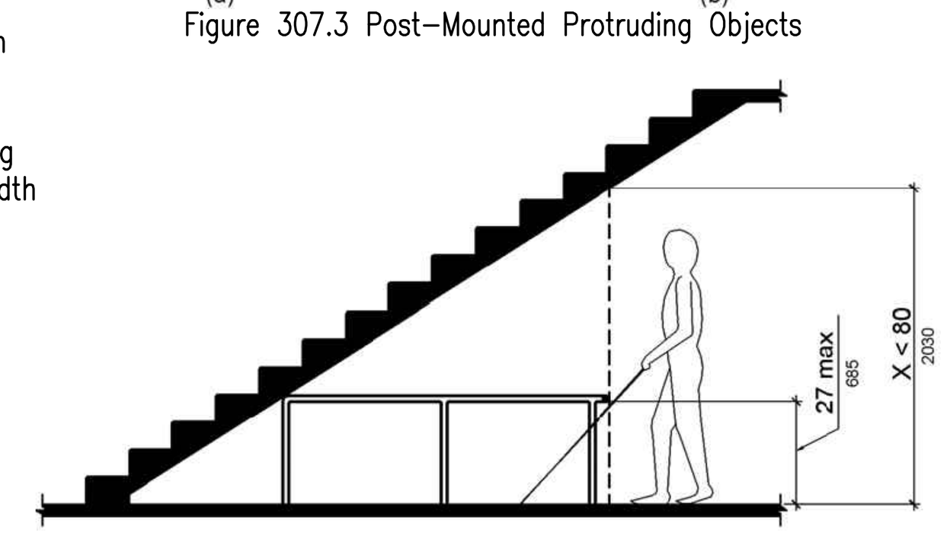


Figure 307.4 Vertical Clearance

308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

Children's Reach Ranges

Forward or Side Reach	High (maximum)	Low (minimum)
Ages 3 and 4	36 in (915 mm)	20 in (510 mm)
Ages 5 through 8	40 in (1015 mm)	18 in (455 mm)
Ages 9 through 12	44 in (1120 mm)	16 in (405 mm)

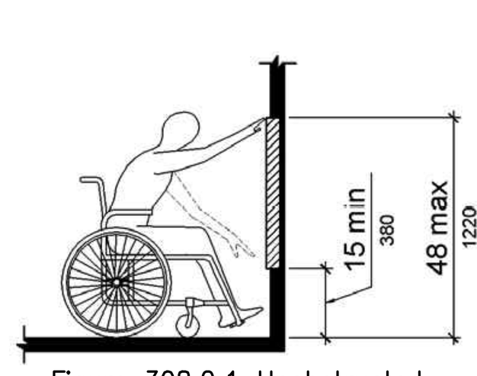


Figure 308.2.1 Unobstructed Forward Reach

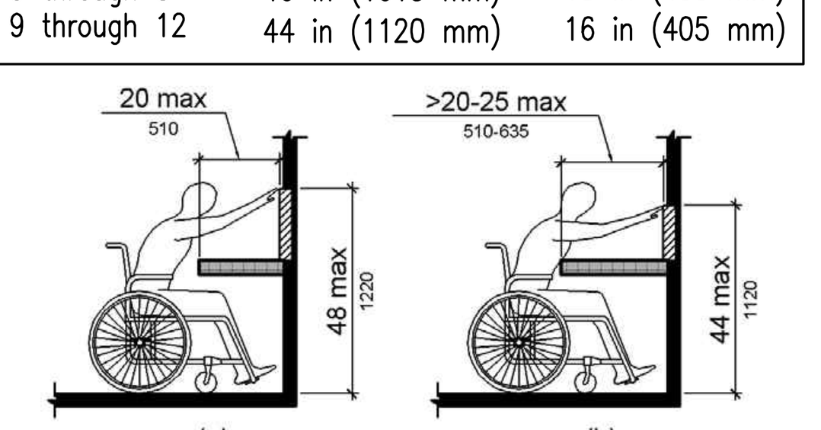


Figure 308.2.2 Obstructed High Forward Reach

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear floor space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches (1220 mm) maximum where the reach depth is 20 inches (510 mm) maximum. Where the reach depth exceeds 20 inches (510 mm), the high forward reach shall be 44 inches (1120 mm) maximum and the reach depth shall be 25 inches (635 mm) maximum.

308.3 Side Reach.
308.3.1 Unobstructed. Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) minimum above the finish floor or ground.
EXCEPTIONS:
1. An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10 inches (255 mm) maximum.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

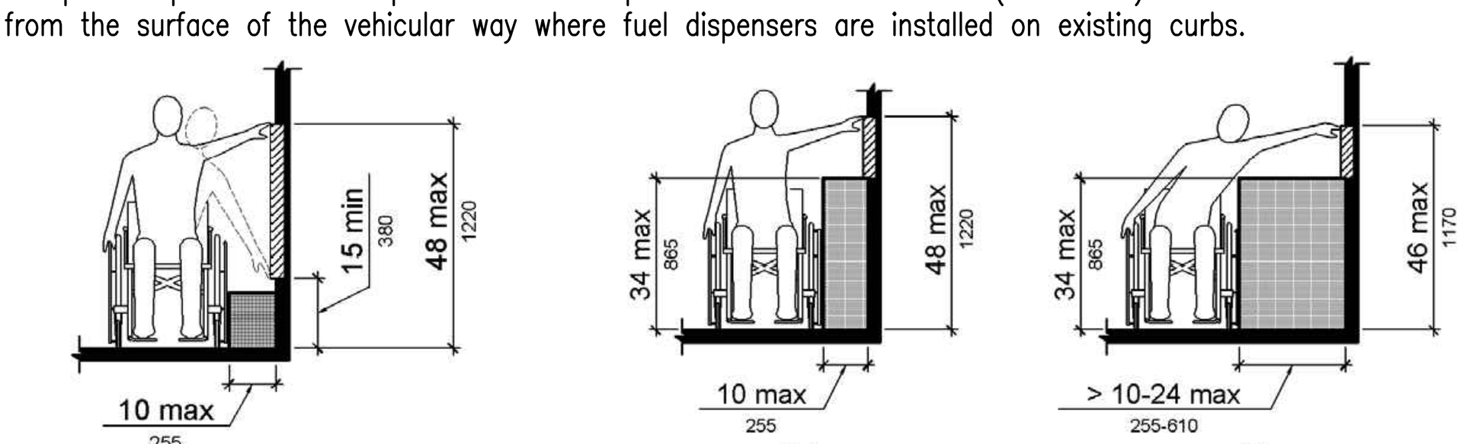


Figure 308.3.1 Unobstructed Side Reach
Figure 308.3.2 Obstructed High Side Reach

308.3.2 Obstructed High Reach. Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (865 mm) maximum and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum for a reach depth of 10 inches (255 mm) maximum. Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum for a reach depth of 24 inches (610 mm) maximum.

308.3.2 EXCEPTIONS:
1. The top of washing machines and clothes dryers shall be permitted to be 36 inches (915 mm) maximum above the finish floor.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

309 Operable Parts
309.1 General. Operable parts shall comply with 309.

309.2 Clear Floor Space. A clear floor or ground space complying with 305 shall be provided.

309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in 308.

309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.
EXCEPTION: Gas pump nozzles shall not be required to provide operable parts that have an activating force of 5 pounds (22.2 N) maximum.

CHAPTER 4: ACCESSIBLE ROUTES

401 General
401.1 Scope. The provisions of Chapter 4 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

402 Accessible Routes
402.1 General. Accessible routes shall comply with 402.

402.2 Components. Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts. All components of an accessible route shall comply with the applicable requirements of Chapter 4.

403 Walking Surfaces
403.1 General. Walking surfaces that are a part of an accessible route shall comply with 403.

403.2 Floor or Ground Surface. Floor or ground surfaces shall comply with 302.
403.3 Slope. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.
403.4 Changes in Level. Changes in level shall comply with 303.

403.5 Clearances. Walking surfaces shall provide clearances complying with 403.5.
EXCEPTION: Within employee work areas, clearances on common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

403.5.1 Clear Width. Except as provided in 403.5.2 and 403.5.3, the clear width of walking surfaces shall be 36 inches (915 mm) minimum.
EXCEPTION: The clear width shall be permitted to be reduced to 32 inches (815 mm) minimum for a length of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

403.5.2 Clear Width at Turn. Where the accessible route makes a 180 degree turn around an element which is less than 48 inches (1220 mm) wide, clear width shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.
EXCEPTION: Where the clear width at the turn is 60 inches (1525 mm) minimum compliance with 403.5.2 shall not be required.

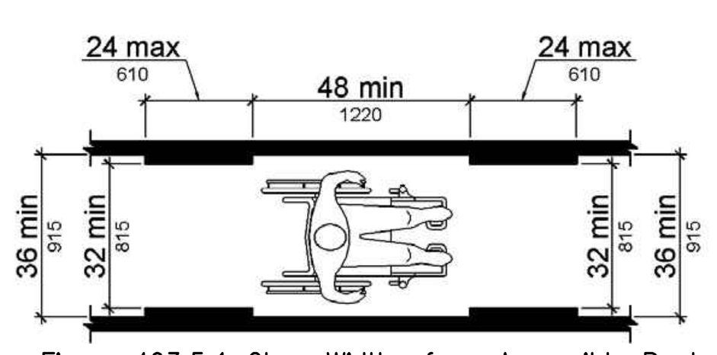


Figure 403.5.1 Clear Width of an Accessible Route

403.5.3 Passing Spaces. An accessible route with a clear width less than 60 inches (1525 mm) shall provide passing spaces at intervals of 200 feet (61 m) maximum. Passing spaces shall be either: a space 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped space complying with 304.3.2 where the base and arms of the T-shaped space extend 48 inches (1220 mm) minimum beyond the intersection.

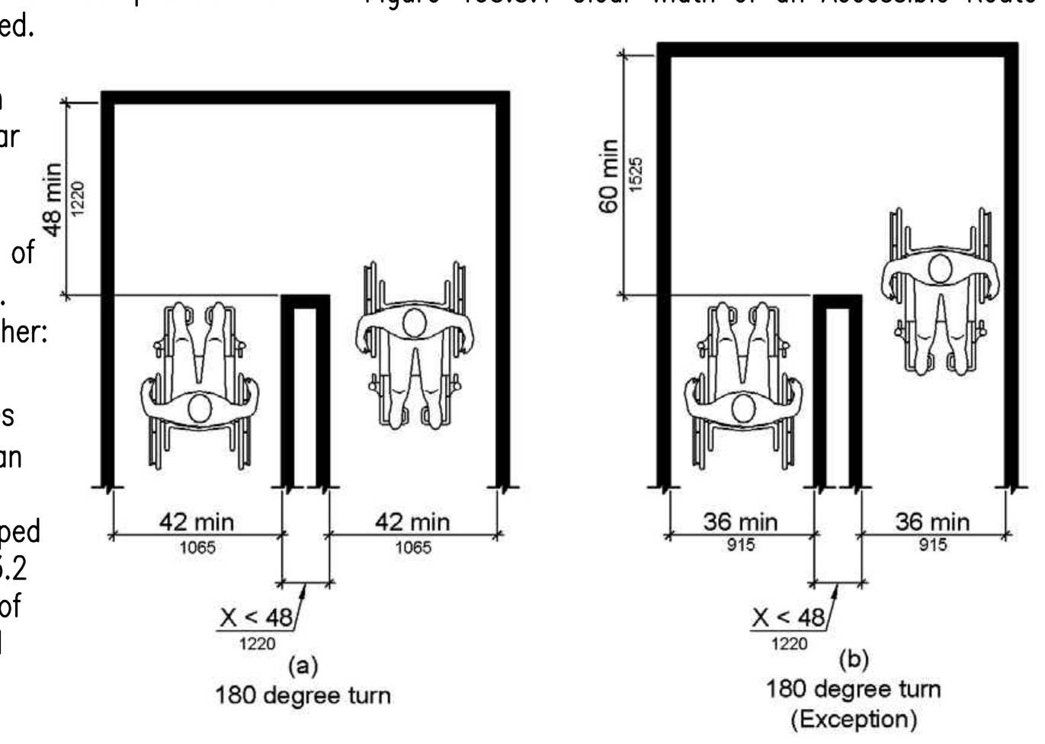


Figure 403.5.2 Clear Width at Turn

403.6 Handrails. Where handrails are provided along walking surfaces with running slopes not steeper than 1:20 they shall comply with 505.

404 Doors, Doorways, and Gates
404.1 General. Doors, doorways, and gates that are part of an accessible route shall comply with 404.
EXCEPTION: Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with 404.2.7, 404.2.8, 404.2.9, 404.3.2 and 404.3.7.
404.2 Manual Doors, Doorways, and Manual Gates. Manual doors and doorways and manual gates intended for user passage shall comply with 404.2.

404.2.1 Revolving Doors, Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

404.2.2 Double-Leaf Doors and Gates. At least one of the active leaves of doorways with two leaves shall comply with 404.2.3 and 404.2.4.

404.2.3 Clear Width. Door openings shall provide a clear width of 32 inches (815 mm) minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (915 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground shall not exceed 4 inches (100 mm).
EXCEPTIONS: 1. In alterations, a projection of 5/8 inch (16 mm) maximum into the required clear width shall be permitted for the latch side stop.
2. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.

404.2.4 Maneuvering Clearances.
Minimum maneuvering clearances at doors and gates shall comply with 404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

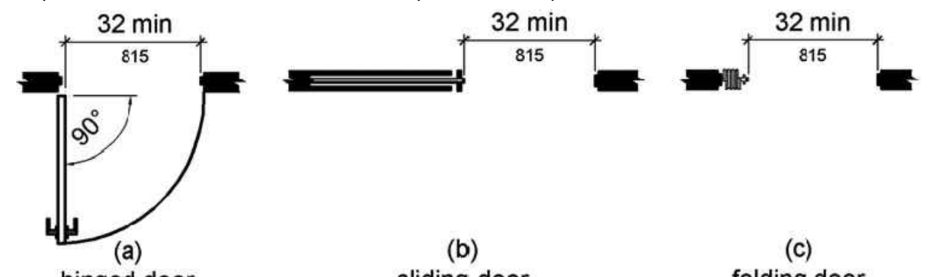


Figure 404.2.3 Clear Width of Doorways

EXCEPTION: Entry doors to hospital patient rooms shall not be required to provide the clearance beyond the latch side of the door.
404.2.4.1 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.4.1. (as illustrated on Figures 404.2.4.1)

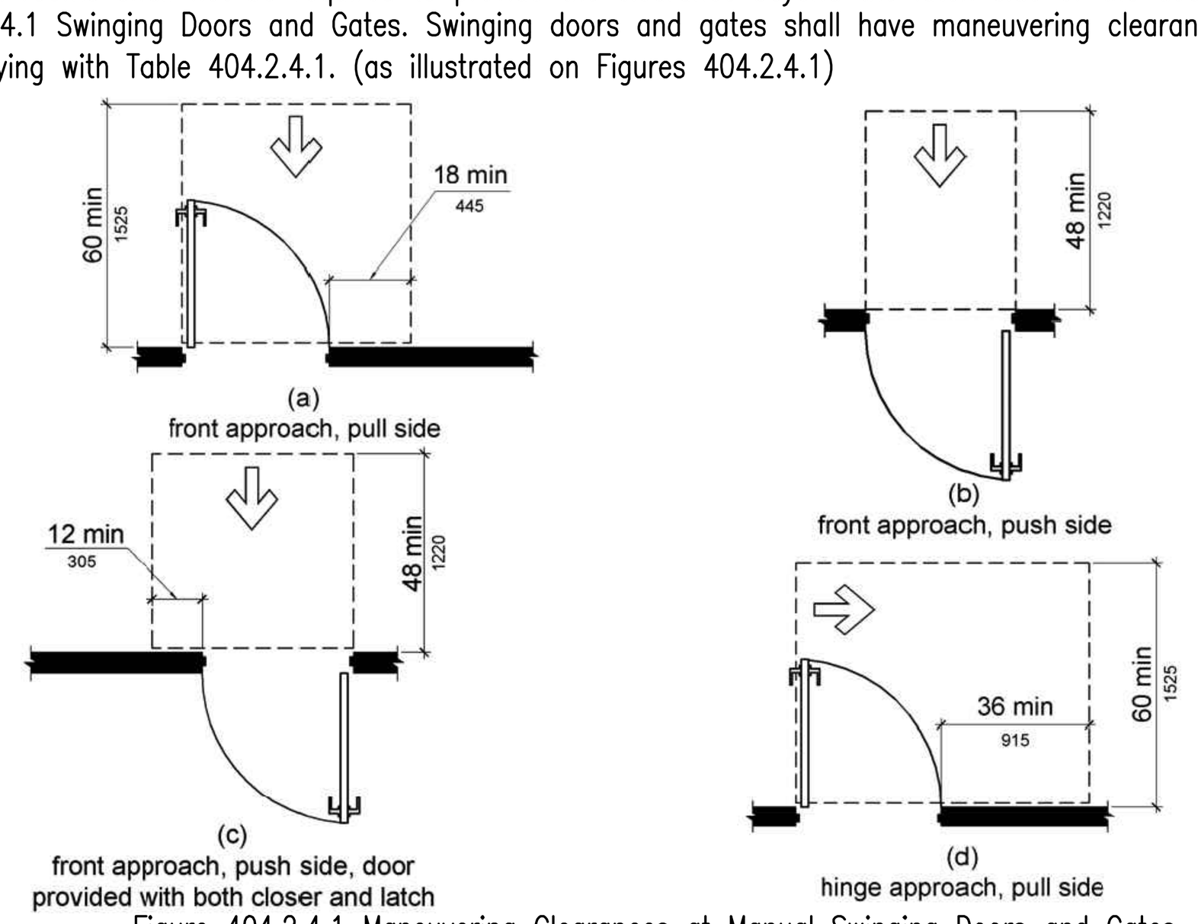


Figure 404.2.4.1 Maneuvering Clearances at Manual Swinging Doors and Gates

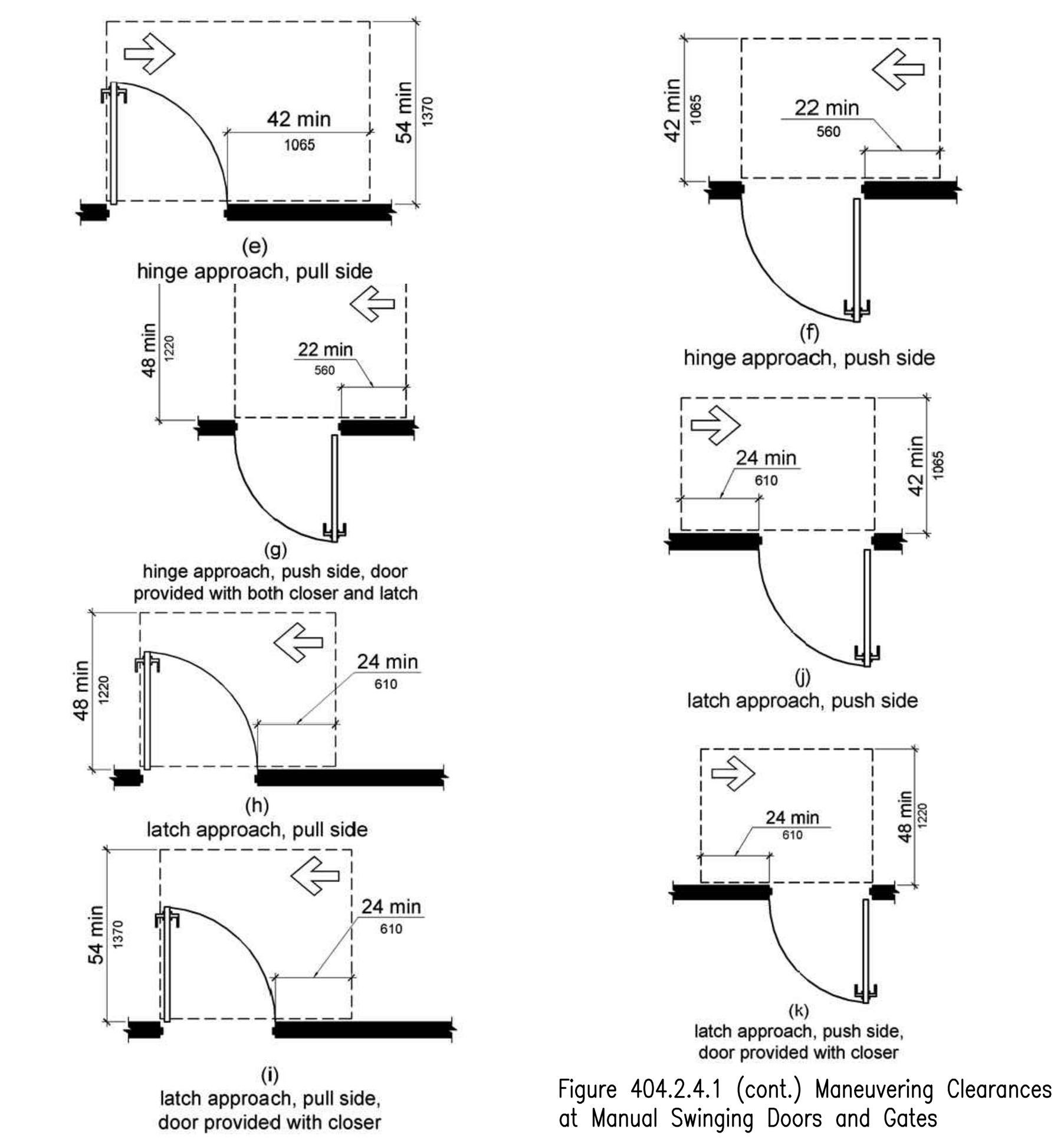


Figure 404.2.4.1 (cont.) Maneuvering Clearances at Manual Swinging Doors and Gates

404.2.4.2 Doorways without Doors or Gates, Sliding Doors, and Folding Doors. Doorways less than 36 inches (915 mm) wide without doors or gates, sliding doors, or folding doors shall have maneuvering clearances complying with Table 404.2.4.2. (as illustrated on Figure 404.2.4.2)

404.2.4.3 Recessed Doors and Gates. Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches (455 mm) of the latch side of a doorway projects more than 8 inches (205 mm) beyond the face of the door, measured perpendicular to the face of the door or gate.

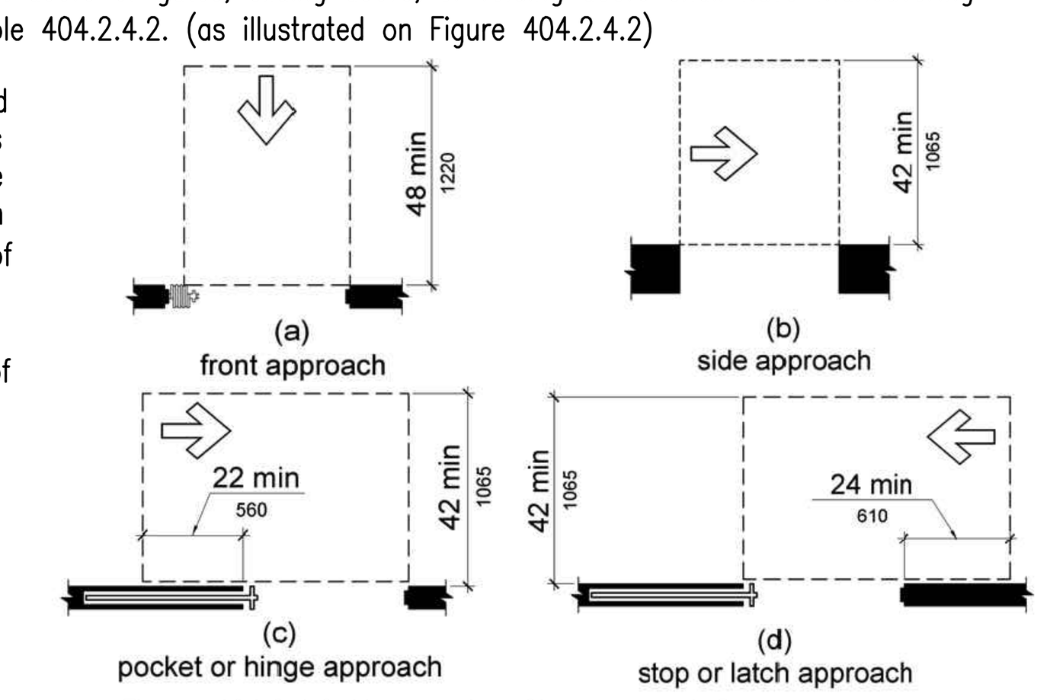


Figure 404.2.4.2 Maneuvering Clearances at Doorways without Doors, Sliding Doors, Gates, and Folding Doors

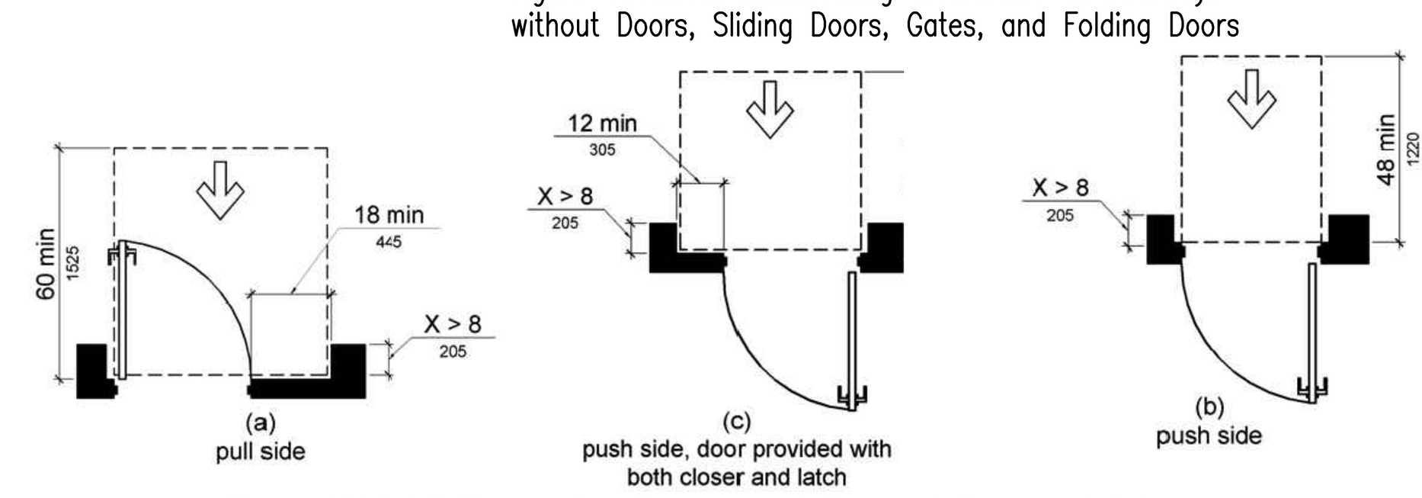


Figure 404.2.4.3 Maneuvering Clearances at Recessed Doors and Gates

404.2.4.4 Floor or Ground Surface. Floor or ground surface within required maneuvering clearances shall comply with 302. Changes in level are not permitted.
EXCEPTIONS:
1. Slopes not steeper than 1:48 shall be permitted.
2. Changes in level at thresholds complying with 404.2.5 shall be permitted.

404.2.5 Thresholds. Thresholds, if provided at doorways, shall be 1/2 inch (13 mm) high maximum. Raised thresholds and changes in level at doorways shall comply with 302 and 303.
EXCEPTION: Existing or altered thresholds 3/4 inch (19 mm) high maximum that have a beveled edge on each side with a slope not steeper than 1:2 shall not be required to comply with 404.2.5.

404.2.6 Doors in Series and Gates in Series. The distance between two hinged or pivoted doors in series and gates in series shall be 48 inches (1220 mm) minimum plus the width of doors or gates swinging into the space.

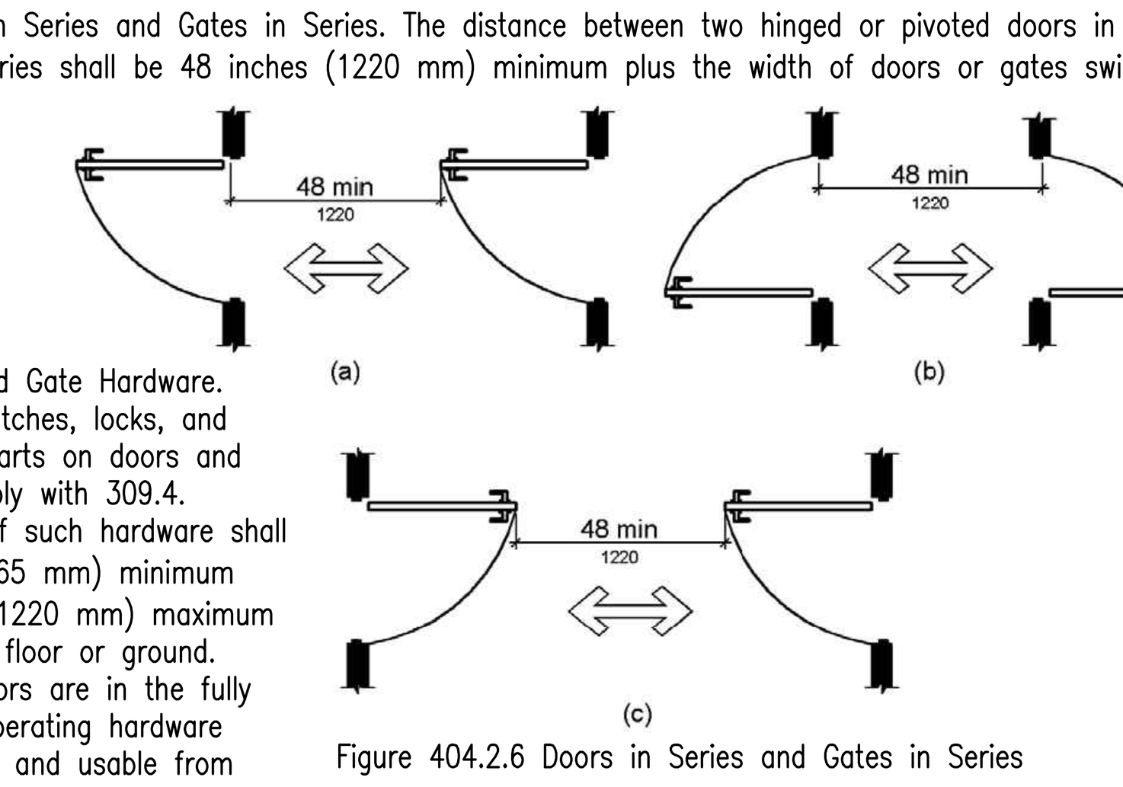


Figure 404.2.6 Doors in Series and Gates in Series

404.2.7 Door and Gate Hardware. Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with 309.4. Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1220 mm) maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.
EXCEPTIONS:
1. Existing locks shall be permitted in any location at existing glazed doors without stiles, existing overhead rolling doors or grilles, and similar existing doors or grilles that are designed with locks that are activated only at the top or bottom rail.
2. Access gates in barrier walls and fences protecting pools, spas, and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finish floor or ground provided the self-latching devices are not also self-locking devices and operated by means of a key, electronic opener, or integral combination lock.

404.2.8 Closing Speed. Door and gate closing speed shall comply with 404.2.8.

404.2.8.1 Door Closers and Gate Closers. Door closers and gate closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.

404.2.8.2 Spring Hinges. Door and gate spring hinges shall be adjusted so that from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.

404.2.9 Door and Gate Opening Force. Fire doors shall have a minimum opening force allowable by the appropriate administrative authority. The force for pushing or pulling open a door or gate other than fire doors shall be as follows:
1. Interior hinged doors and gates: 5 pounds (22.2 N) maximum.
2. Sliding or folding doors: 5 pounds (22.2 N) maximum.
These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door or gate in a closed position.

404.2.10 Door and Gate Surfaces. Swinging door and gate surfaces within 10 inches (255 mm) of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within 1/16 inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped.
EXCEPTIONS:
1. Sliding doors shall not be required to comply with 404.2.10.
2. Tempered glass doors without stiles and having a bottom rail or shoe with the top leading edge tapered at 60 degrees minimum from the horizontal shall not be required to meet the 10 inch (255 mm) bottom smooth surface height requirement.
3. Doors and gates that do not extend to within 10 inches (255 mm) of the finish floor or ground shall not be required to comply with 404.2.10.
4. Existing doors and gates without smooth surfaces within 10 inches (255 mm) of the finish floor or ground shall not be required to provide smooth surfaces complying with 404.2.10 provided that if added kick plates are installed, cavities created by such kick plates are capped

404.2.11 Vision Lights. Doors, gates, and side lights adjacent to doors or gates, containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one glazed panel located 43 inches (1090 mm) maximum above the finish floor.
EXCEPTION: Vision lights with the lowest part more than 66 inches (1675 mm) from the finish floor or ground shall not be required to comply with 404.2.11.

404.3 Automatic and Power-Assisted Doors and Gates. Automatic doors and automatic gates shall comply with 404.3. Full-powered automatic doors shall comply with ANSI/BHMA A156.10 (incorporated by reference, see "Referenced Standards" in Chapter 1). Low-energy and power-assisted doors shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

404.3.1 Clear Width. Doorways shall provide a clear opening of 32 inches (815 mm) minimum in power-on and power-off mode. The minimum clear width for automatic door systems in a doorway shall be based on the clear opening provided by all leaves in the open position.

404.3.2 Maneuvering Clearance. Clearances at power-assisted doors and gates shall comply with 404.2.4. Clearances at automatic doors and gates without standby power and serving an accessible means of egress shall comply with 404.2.4.

EXCEPTION: Where automatic doors and gates remain open in the power-off condition, compliance with 404.2.4 shall not be required.

404.3.3 Thresholds. Thresholds and changes in level at doorways shall comply with 404.2.5.

404.3.4 Doors in Series and Gates in Series. Doors in series and gates in series shall comply with 404.2.6.

404.3.5 Controls. Manually operated controls shall comply with 309. The clear floor space adjacent to the control shall be located beyond the arc of the door swing.

404.3.6 Break Out Opening. Where doors and gates without standby power are a part of a means of egress, the clear break out opening at swinging or sliding doors and gates shall be 32 inches (815 mm) minimum when operated in emergency mode.
EXCEPTION: Where manual swinging doors and gates comply with 404.2 and serve the same means of egress compliance with 404.3.6 shall not be required.

404.3.7 Revolving Doors, Revolving Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

405 Ramps
405.1 General. Ramps on accessible routes shall comply with 405.
EXCEPTION: In assembly areas, aisle ramps adjacent to seating and not serving elements required to be on an accessible route shall not be required to comply with 405.

405.2 Slope. Ramp runs shall have a running slope not steeper than 1:12.
EXCEPTION: In existing sites, buildings, and facilities, ramps shall be permitted to have running slopes steeper than 1:12 complying with Table 405.2 where such slopes are necessary due to space limitations.

Table 405.2 Maximum Ramp Slope and Rise for Existing Sites, Buildings, and Facilities

Slope (A slope steeper than 1:8 is prohibited.)	Maximum Rise
Steeper than 1:10 but not steeper than 1:8	3 inches (75 mm)
Steeper than 1:12 but not steeper than 1:10	6 inches (150 mm)

405.3 Cross Slope. Cross slope of ramp runs shall not be steeper than 1:48.

405.4 Floor or Ground Surfaces. Floor or ground surfaces of ramp runs shall comply with 302. Changes in level other than the running slope and cross slope are not permitted on ramp runs.

405.5 Clear Width. The clear width of a ramp run and, where handrails are provided, the clear width between handrails shall be 36 inches (915 mm) minimum.
EXCEPTION: Within employee work areas, the required clear width of ramps that are a part of common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

405.6 Rise. The rise for any ramp run shall be 30 inches (760 mm) maximum.

405.7 Landings. Ramps shall have landings at the top and the bottom of each ramp run. Landings shall comply with 405.7.

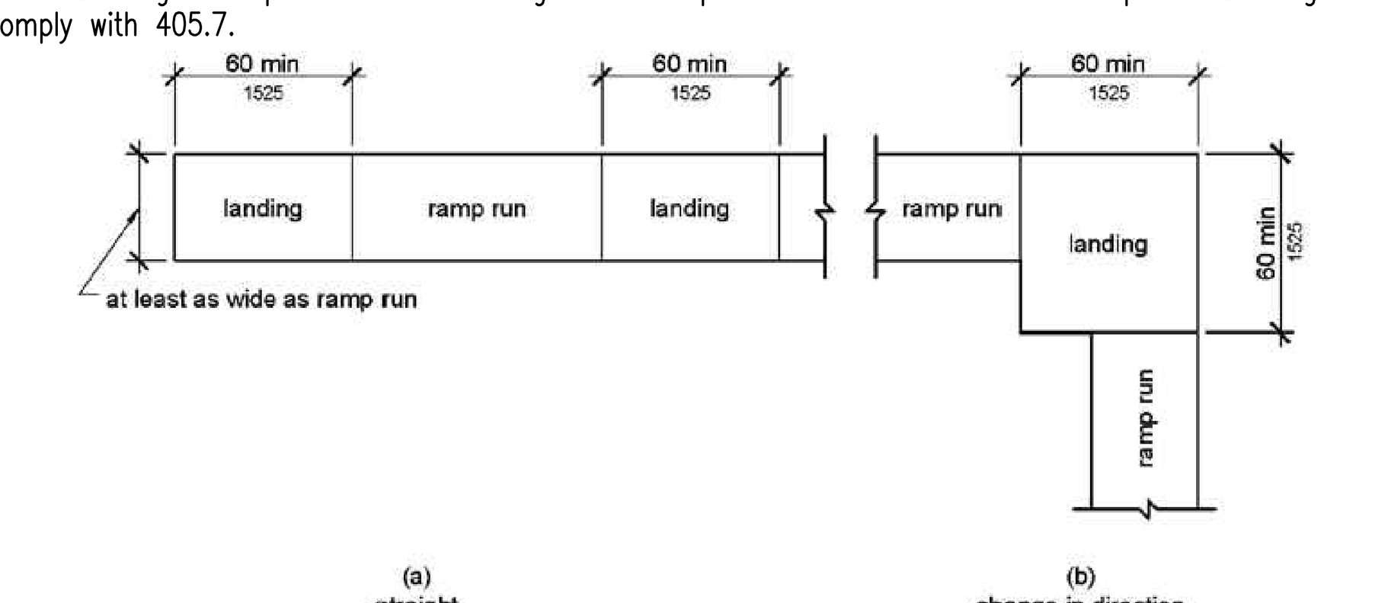


Figure 405.7 Ramp Landings

405.7.1 Slope. Landings shall comply with 302. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

405.7.2 Width. The landing clear width shall be at least as wide as the widest ramp run leading to the landing.

405.7.3 Length. The landing clear length shall be 60 inches (1525 mm) long minimum.

405.7.4 Change in Direction. Ramps that change directi on between runs at landings shall have a clear landing 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum.

405.7.5 Doorways. Where doorways are located adjacent to a ramp landing, maneuvering clearances required by 404.2.4 and 404.3.2 shall be permitted to overlap the required landing area.

405.8 Handrails. Ramp runs with a rise greater than 6 inches (150 mm) shall have handrails complying with 505.
EXCEPTION: Within employee work areas, handrails shall not be required where ramps that are part of common use circulation paths are designed to permit the installation of handrails complying with 505. Ramps not subject to the exception to 405.5 shall be designed to maintain a 36 inch (915 mm) minimum clear width when handrails are installed.

405.9 Edge Protection. Edge protection complying with 405.9.1 or 405.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.
EXCEPTIO1. Edge protection shall not be required on ramps that are not required to have handrails and have sides complying with 406.3.
2. Edge protection shall not be required on the sides of ramp landings serving an adjoining ramp run or stairway.
3. Edge protection shall not be required on the sides of ramp landings having a vertical drop-off of 1/2 inch (13 mm) maximum within 10 inches (255 mm) horizontally of the minimum landing area specified in 405.7.

405.9.1 Extended Floor or Ground Surface. The floor or ground surface of the ramp run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with 505.

405.9.2 Curb or Barrier. A curb or barrier shall be provided that prevents the passage of a 4 inch (100 mm) diameter sphere, where any portion of the sphere is within 4 inches (100 mm) of the finish floor or ground surface.

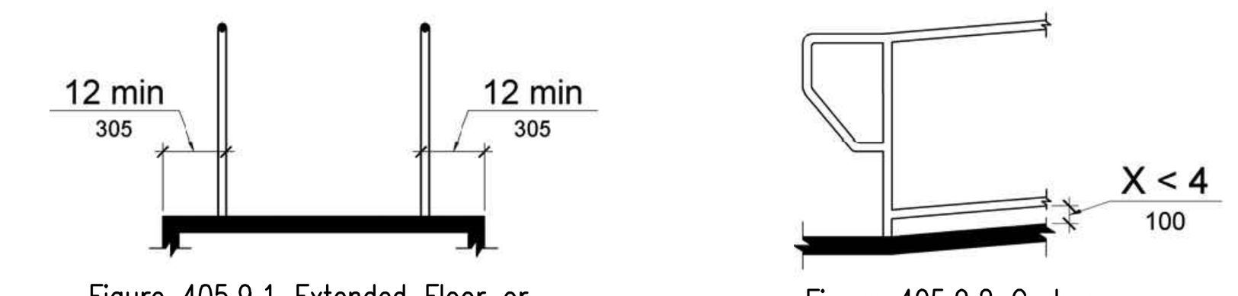
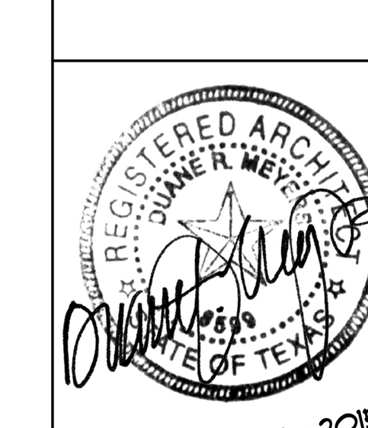


Figure 405.9.1 Extended Floor or Ground Surface Edge Protection
Figure 405.9.2 Curb or Barrier Edge Protection

Duane Meyers
560 FR 3432
Uncertain, TX 75661
903-684-4040
drmeyers@mac.com

Teel Crossing One
Frisco, TX
Construction Documents

Revisions



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22 May 2015

2010 ADA Standards for Accessible Design for Public Accommodations and Commercial Facilities: Title III

CHAPTER 4: ACCESSIBLE ROUTES (cont.)

405.10 Wet Conditions. Landings subject to wet conditions shall be designed to prevent the accumulation of water.

406 Curb Ramps
406.1 General. Curb ramps on accessible routes shall comply with 406, 405.2 through 405.5, and 405.10.

406.2 Counter Slope. Counter slopes of adjoining gutters and road surfaces immediately adjacent to the curb ramp shall not be steeper than 1:20. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.

406.3 Sides of Curb Ramps. Where provided, curb ramp flares shall not be steeper than 1:10.

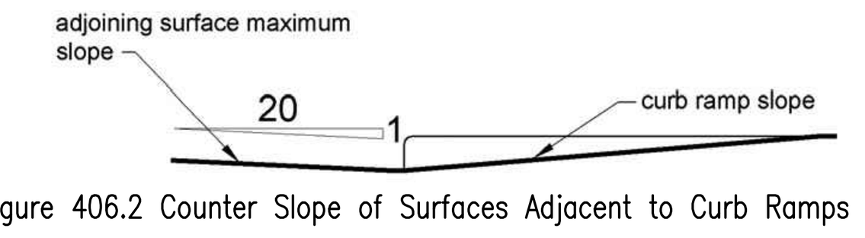

Figure 406.2 Counter Slope of Surfaces Adjacent to Curb Ramps

406.4 Landings. Landings shall be provided at the tops of curb ramps. The landing clear length shall be 36 inches (915 mm) minimum. The landing clear width shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing.
EXCEPTION: In alterations, where there is no landing at the top of curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:12.

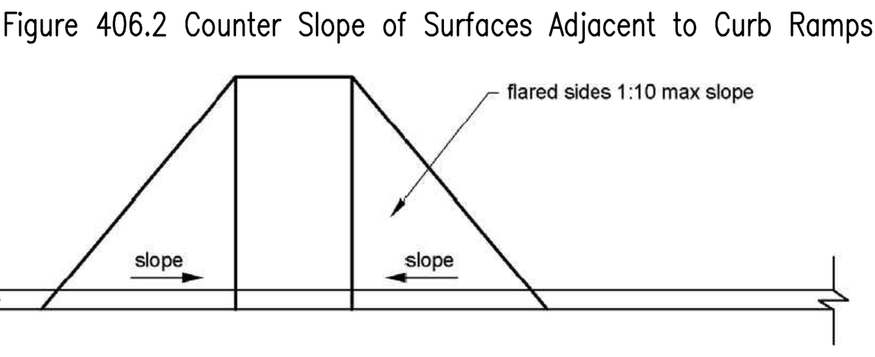

Figure 406.3 Sides of Curb Ramps

406.5 Location. Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.

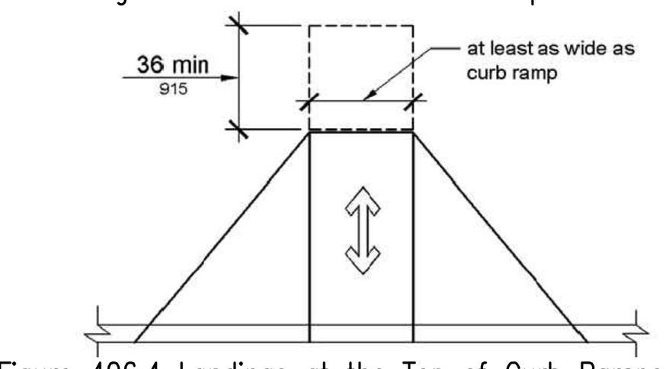

Figure 406.4 Landings at the Top of Curb Ramps

406.6 Diagonal Curb Ramps. Diagonal or corner type curb ramps with returned curbs or other well–defined edges shall have the edges parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have a clear space 48 inches (1220 mm) minimum outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches (1220 mm) minimum clear space within the markings. Diagonal curb ramps with flared sides shall have a segment of curb 24 inches (610 mm) long minimum located on each side of the curb ramp and within the marked crossing.

406.7 Islands. Raised islands in crossings shall be cut through level with the street or have curb ramps at both sides. Each curb ramp shall have a level area 48 inches (1220 mm) long minimum by 36 inches (915 mm) wide minimum at the top of the curb ramp in the part of the island intersected by the crossings. Each 48 inch (1220 mm) minimum by 36 inch (915 mm) minimum area shall be oriented so that the 48 inch (1220 mm) minimum length is in the direction of the running slope of the curb ramp it serves. The 48 inch (1220 mm) minimum by 36 inch (915 mm) minimum areas and the accessible route shall be permitted to overlap.

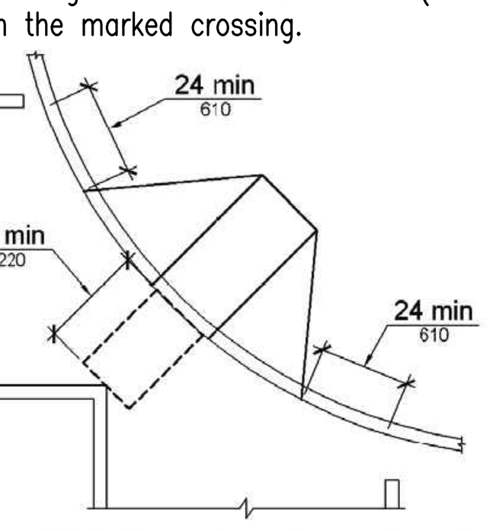

Figure 406.6 Diagonal or Corner Type Curb Ramps

407 Elevators
407.1 General. Elevators shall comply with 407 and with ASME A17.1 (incorporated by reference, see "Referenced Standards" in Chapter 1). They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

407.2 Elevator Landing Requirements. Elevator landings shall comply with 407.2.

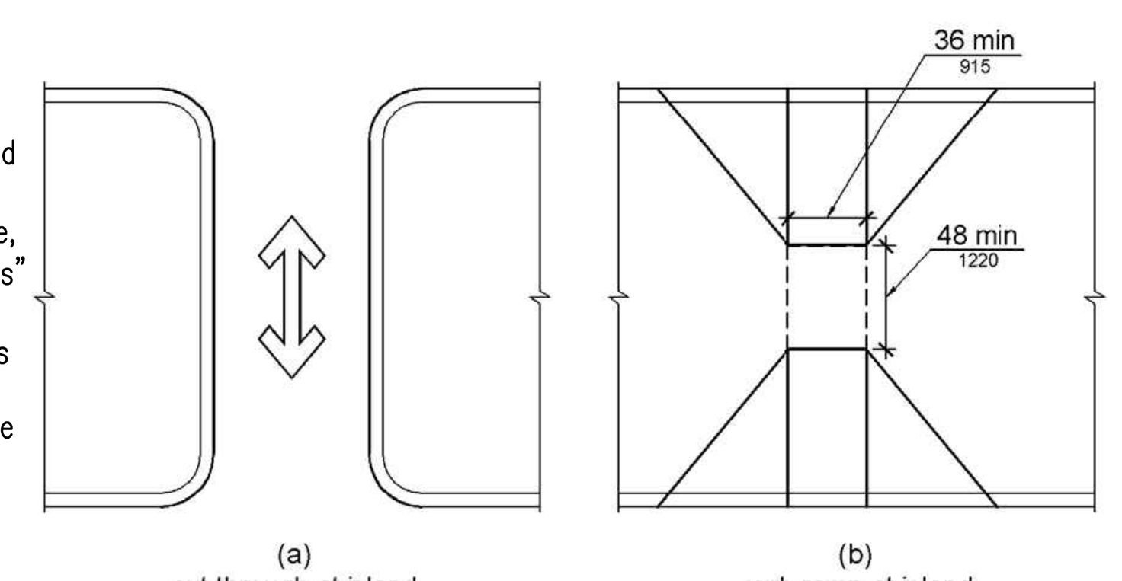

Figure 406.7 Islands in Crossings

407.2.1 Call Controls. Where elevator call buttons or keypads are provided, they shall comply with 407.2.1 and 309.4. Call buttons shall be raised or flush.
EXCEPTION: Existing elevators shall be permitted to have recessed call buttons.

407.2.1.1 Height. Call buttons and keypads shall be located within one of the reach ranges specified in 308, measured to the centerline of the highest operable part.
EXCEPTION: Existing call buttons and existing keypads shall be permitted to be located at 54 inches (1370 mm) maximum above the finish floor, measured to the centerline of the highest operable part.

407.2.1.2 Size. Call buttons shall be 3/4 inch (19 mm) minimum in the smallest dimension.
EXCEPTION: Existing elevator call buttons shall not be required to comply with 407.2.1.2.

407.2.1.3 Clear Floor or Ground Space. A clear floor or ground space complying with 305 shall be provided at call controls.

407.2.1.4 Location. The call button that designates the up direction shall be located above the button that designates the down direction.
EXCEPTION: Destination–oriented elevators shall not be required to comply with 407.2.1.4.

407.2.1.5 Signals. Call buttons shall have visible signals to indicate when each call is registered and when each call is answered.
EXCEPTIONS:
1. Destination–oriented elevators shall not be required to comply with 407.2.1.5 provided that visible and audible signals complying with 407.2.2 indicating which elevator car to enter are provided.
2. Existing elevators shall not be required to comply with 407.2.1.5.

407.2.1.6 Keypads. Where keypads are provided, keypads shall be in a standard telephone keypad arrangement and shall comply with 407.4.7.2.

407.2.2 Hall Signals. Hall signals, including in–car signals, shall comply with 407.2.2.

407.2.2.1 Visible and Audible Signals. A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call and the car's direction of travel. Where in–car signals are provided, they shall be visible from the floor area adjacent to the hall call buttons.
EXCEPTIONS:
1. Visible and audible signals shall not be required at each destination–oriented elevator where a visible and audible signal complying with 407.2.2 is provided indicating the elevator car designation information.
2. In existing elevators, a signal indicating the direction of car travel shall not be required.

407.2.2.2 Visible Signals. Visible signal fixtures shall be centered at 72 inches (1830 mm) minimum above the finish floor or ground. The visible signal elements shall be 2 1/2 inches (64 mm) minimum measured along the vertical centerline of the element. Signals shall be visible from the floor area adjacent to the hall call button.
EXCEPTIONS:
1. Destination–oriented elevators shall be permitted to have signals visible from the floor area adjacent to the hoistway entrance.
2. Existing elevators shall not be required to comply with 407.2.2.2.

407.2.2.3 Audible Signals. Audible signals shall sound once for the up direction and twice for the down direction, or shall have verbal annunciators that indicate the direction of elevator car travel. Audible signals shall have a frequency of 1500 Hz maximum. Verbal annunciators shall have a frequency of 300 Hz minimum and 3000 Hz maximum. The audible signal and verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the hall call button.
EXCEPTIONS:
1. Destination–oriented elevators shall not be required to comply with 407.2.2.3 provided that the audible tone and verbal announcement is the same as those given at the call button or call button keypad.
2. Existing elevators shall not be required to comply with the requirements for frequency and dB range of audible signals.

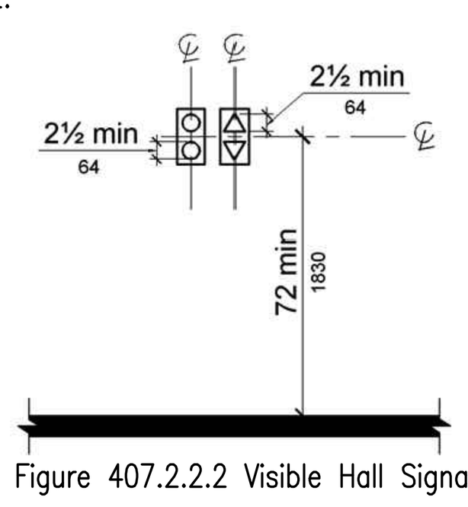

Figure 407.2.2.2 Visible Hall Signals

407.2.2.4 Differentiation. Each destination–oriented elevator in a bank of elevators shall have audible and visible means for differentiation.

407.2.3 Hoistway Signs. Signs at elevator hoistways shall comply with 407.2.3.

407.2.3.1 Floor Designation. Floor designations complying with 703.2 and 703.4.1 shall be provided on both jambs of elevator hoistway entrances. Floor designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum. A tactile star shall be provided on both jambs at the main entry level.

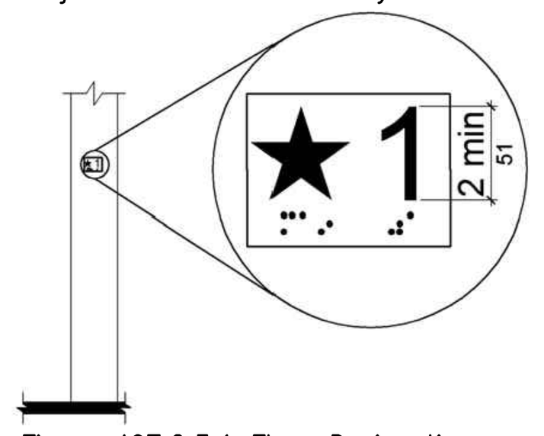

Figure 407.2.3.1 Floor Designations on Jambs of Elevator Hoistway Entrances

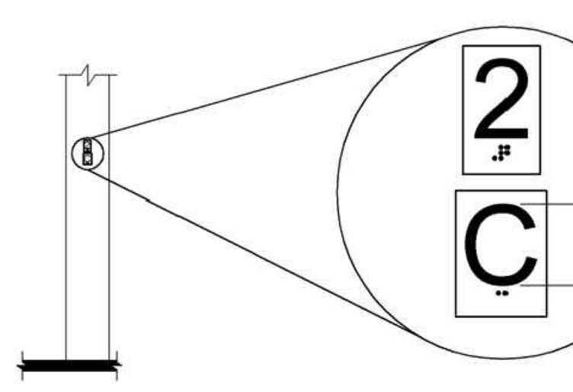

Figure 407.2.3.2 Car Designations on Jambs of Destination–Oriented Elevator Hoistway Entrances

407.2.3.2 Car Designations. Destination–oriented elevators shall provide tactile car identification complying with 703.2 on both jambs of the hoistway immediately below the floor designation. Car designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum.

407.3 Elevator Door Requirements. Hoistway and car doors shall comply with 407.3.

407.3.1 Type. Elevator doors shall be the horizontal sliding type. Car gates shall be prohibited.

407.3.2 Operation. Elevator hoistway and car doors shall open and close automatically.
EXCEPTION: Existing manually operated hoistway swing doors shall be permitted provided that they comply with 404.2.3 and 404.2.9. Car door closing shall not be initiated until the hoistway door is closed.

407.3.3 Reopening Device. Elevator doors shall be provided with a reopening device complying with 407.3.3 that shall stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.
EXCEPTION: Existing elevators with manually operated doors shall not be required to comply with 407.3.3.

407.3.3.1 Height. The device shall be activated by sensing an obstruction passing through the opening at 5 inches (125 mm) nominal and 29 inches (735 mm) nominal above the finish floor.

407.3.3.2 Contact. The device shall not require physical contact to be activated, although contact is permitted to occur before the door reverses.

407.3.3.3 Duration. Door reopening devices shall remain effective for 20 seconds minimum.

407.3.4 Door and Signal Timing. The minimum acceptable time from notification that a car is answering a call or notification of the car assigned at the means for the entry of destination information until the doors of that car start to close shall be calculated from the following equation:

T = D/(1.5 ft/s) or T = D/(455 mm/s) = 5 seconds minimum where T equals the total time in seconds and D equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (1525 mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door.
EXCEPTIONS:
1. For cars with in–car lanterns, T shall be permitted to begin when the signal is visible from the point 60 inches (1525 mm) directly in front of the farthest hall call button and the audible signal is sounded.
2. Destination–oriented elevators shall not be required to comply with 407.3.4.

407.3.5 Door Delay. Elevator doors shall remain fully open in response to a car call for 3 seconds minimum.

407.3.6 Width. The width of elevator doors shall comply with Table 407.4.1.
EXCEPTION: In existing elevators, a power–operated car door complying with 404.2.3 shall be permitted.

407.4 Elevator Car Requirements. Elevator cars shall comply with 407.4.

407.4.1 Car Dimensions. Inside dimensions of elevator cars and clear width of elevator doors shall comply with Table 407.4.1 (Table 407.4.1).
EXCEPTION: Existing elevator car configurations that provide a clear floor area of 16 square feet (1.5 m2) minimum and also provide an inside clear depth 54 inches (1370 mm) minimum and a clear width 36 inches (915 mm) minimum shall be permitted.

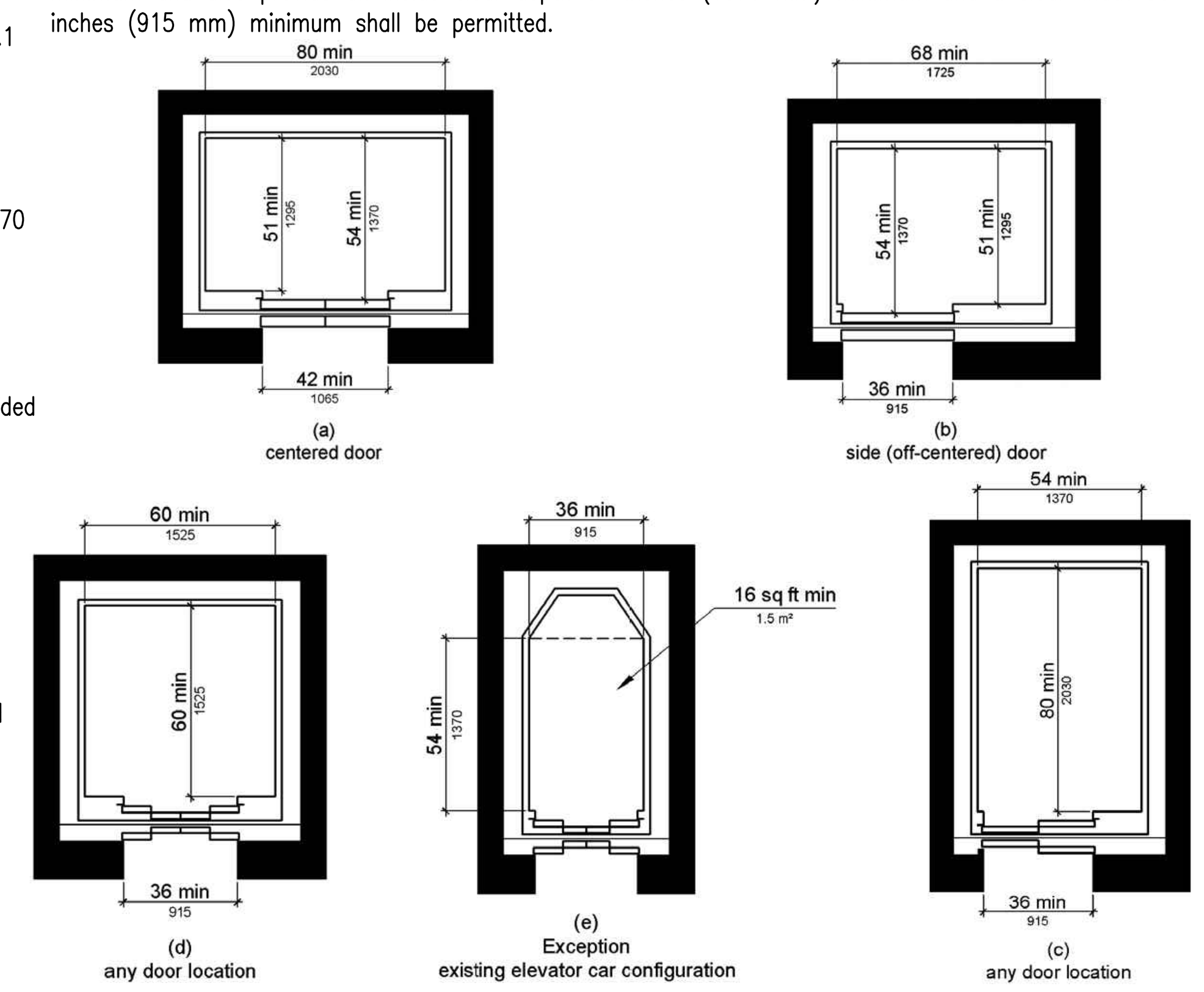

Figure 407.4.1 Elevator Car Dimensions

407.4.2 Floor Surfaces. Floor surfaces in elevator cars shall comply with 302 and 303.

407.4.3 Platform to Hoistway Clearance. The clearance between the car platform sill and the edge of any hoistway landing shall be 1 1/4 inch (32 mm) maximum.

407.4.4 Leveling. Each car shall be equipped with a self–leveling feature that will automatically bring and maintain the car at floor landings within a tolerance of 1/2 inch (13 mm) under rated loading to zero loading conditions.

407.4.5 Illumination. The level of illumination at the car controls, platform, car threshold and car landing sill shall be 5 foot candles (54 lux) minimum.

407.4.6 Elevator Car Controls. Where provided, elevator car controls shall comply with 407.4.6 and 309.4.
EXCEPTION: In existing elevators, where a new car operating panel complying with 407.4.6 is provided, existing car operating panels shall not be required to comply with 407.4.6.

407.4.6.1 Location. Controls shall be located within one of the reach ranges specified in 308.
EXCEPTIONS:
1. Where the elevator panel serves more than 16 openings and a parallel approach is provided, buttons with floor designations shall be permitted to be 54 inches (1370 mm) maximum above the finish floor.
2. In existing elevators, car control buttons with floor designations shall be permitted to be located 54 inches (1370 mm) maximum above the finish floor where a parallel approach is provided.

407.4.6.2 Buttons. Car control buttons with floor designations shall comply with 407.4.6.2 and shall be raised or flush.
EXCEPTION: In existing elevators, buttons shall be permitted to be recessed.

407.4.6.2.1 Size. Buttons shall be 3/4 inch (19 mm) minimum in their smallest dimension.
407.4.6.2.2 Arrangement. Buttons shall be arranged with numbers in ascending order. When two or more columns of buttons are provided they shall read from left to right.

407.4.6.3 Keypads. Car control keypads shall be in a standard telephone keypad arrangement and shall comply with 407.4.7.2.

407.4.6.4 Emergency Controls. Emergency controls shall comply with 407.4.6.4.

407.4.6.4.1 Height. Emergency control buttons shall have their centerlines 35 inches (890 mm) minimum above the finish floor.

407.4.6.4.2 Location. Emergency controls, including the emergency alarm, shall be grouped at the bottom of the panel.
407.4.7 Designations and Indicators of Car Controls. Designations and indicators of car controls shall comply with 407.4.7.
EXCEPTION: In existing elevators, where a new car operating panel complying with 407.4.7 is provided, existing car operating panels shall not be required to comply with 407.4.7.

407.4.7.1 Buttons. Car control buttons shall comply with 407.4.7.1.

407.4.7.1.1 Type. Control buttons shall be identified by tactile characters complying with 703.2.

407.4.7.1.2 Location. Raised character and braille designations shall be placed immediately to the left of the control button to which the designations apply.
EXCEPTION: Where space on an existing car operating panel precludes tactile markings to the left of the controls, markings shall be placed as near to the control as possible.

407.4.7.1.3 Symbols. The control button for the emergency stop, alarm, door open, door close, main entry floor, and phone, shall be identified with tactile symbols as shown in Table 407.4.7.1.3
(refer to 2010 ADA for table).

407.4.7.1.4 Visible Indicators. Buttons with floor designations shall be provided with visible indicators to show that a call has been registered. The visible indication shall extinguish when the car arrives at the designated floor.
407.4.7.2 Keypads. Keypads shall be identified by characters complying with 703.5 and shall be centered on the corresponding keypad button. The number five key shall have a single raised dot. The dot shall be 0.118 inch (3 mm) to 0.120 inch (3.05 mm) base diameter and in other aspects comply with Table 703.3.1.

407.4.8 Car Position Indicators. Audible and visible car position indicators shall be provided in elevator cars.

407.4.8.1 Visible Indicators. Visible indicators shall comply with 407.4.8.1.

407.4.8.1.1 Size. Characters shall be 1/2 inch (13 mm) high minimum.

407.4.8.1.2 Location. Indicators shall be located above the car control panel or above the door.

407.4.8.1.3 Floor Arrival. As the car passes a floor and when a car stops at a floor served by the elevator, the corresponding character shall illuminate.
EXCEPTION: Destination–oriented elevators shall not be required to comply with 407.4.8.1.3 provided that the visible indicators extinguish when the call has been answered.
407.4.8.1.4 Destination Indicator. In destination–oriented elevators, a display shall be provided in the car with visible indicators to show car destinations.

407.4.8.2 Audible Indicators. Audible indicators shall comply with 407.4.8.2.

407.4.8.2.1 Signal Type. The signal shall be an automatic verbal annunciator which announces the floor at which the car is about to stop.
EXCEPTION: For elevators other than destination–oriented elevators that have a rated speed of 200 feet per minute (1 m/s) or less, a non–verbal audible signal with a frequency of 1500 Hz maximum which sounds as the car passes or is about to stop at a floor served by the elevator shall be permitted.
407.4.8.2.2 Signal Level. The verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the annunciator.

407.4.8.2.3 Frequency. The verbal annunciator shall have a frequency of 300 Hz minimum to 3000 Hz maximum.

407.4.9 Emergency Communication. Emergency two–way communication systems shall comply with 308. Tactile symbols and characters shall be provided adjacent to the device and shall comply with 703.2.

408 Limited–Use/Limited–Application Elevators

408.1 General. Limited–use/limited–application elevators shall comply with 408 and with ASME A17.1 (incorporated by reference, see "Referenced Standards" in Chapter 1). They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

408.2 Elevator Landings. Landings serving limited–use/limited–application elevators shall comply with 408.2.

408.2.1 Call Buttons. Elevator call buttons and keypads shall comply with 407.2.1.

408.2.2 Hall Signals. Hall signals shall comply with 407.2.2.

408.2.3 Hoistway Signs. Signs at elevator hoistways shall comply with 407.2.3.1.

408.3 Elevator Doors. Elevator hoistway doors shall comply with 408.3.

408.3.1 Sliding Doors. Sliding hoistway and car doors shall comply with 407.3.1 through 407.3.3 and 408.4.1.

408.3.2 Swinging Doors. Swinging hoistway doors shall open and close automatically and shall comply with 404, 407.3.2 and 408.3.2.

408.3.2.1 Power Operation. Swinging doors shall be power–operated and shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1).

408.3.2.2 Duration. Power–operated swinging doors shall remain open for 20 seconds minimum when activated.

408.4 Elevator Cars. Elevator cars shall comply with 408.4.
408.4.1 Car Dimensions and Doors. Elevator cars shall provide a clear width 42 inches (1065 mm) minimum and a clear depth 54 inches (1370 mm) minimum. Car doors shall be positioned at the narrow ends of cars and shall provide 32 inches (815 mm) minimum clear width.
EXCEPTIONS:
1. Cars that provide a clear width 51 inches (1295 mm) minimum shall be permitted to provide a clear depth 51 inches (1295 mm) minimum provided that car doors provide a clear opening 36 inches (915 mm) wide minimum.
2. Existing elevator cars shall be permitted to provide a clear width 36 inches (915 mm) minimum, clear depth 54 inches (1370 mm) minimum, and a net clear platform area 15 square feet (1.4 m2) minimum.

408.4.2 Floor Surfaces. Floor surfaces in elevator cars shall comply with 302 and 303.

408.4.3 Platform to Hoistway Clearance. The platform to hoistway clearance shall comply with 407.4.3.

408.4.4 Leveling. Elevator car leveling shall comply with 407.4.4.

408.4.5 Illumination. Elevator car illumination shall comply with 407.4.5.

408.4.6 Car Controls. Elevator car controls shall comply with 407.4.6. Control panels shall be centered on a side wall.

408.4.7 Designations and Indicators of Car Controls. Designations and indicators of car controls shall comply with 407.4.7.

408.4.8 Emergency Communications. Car emergency signaling devices complying with 407.4.9 shall be provided.

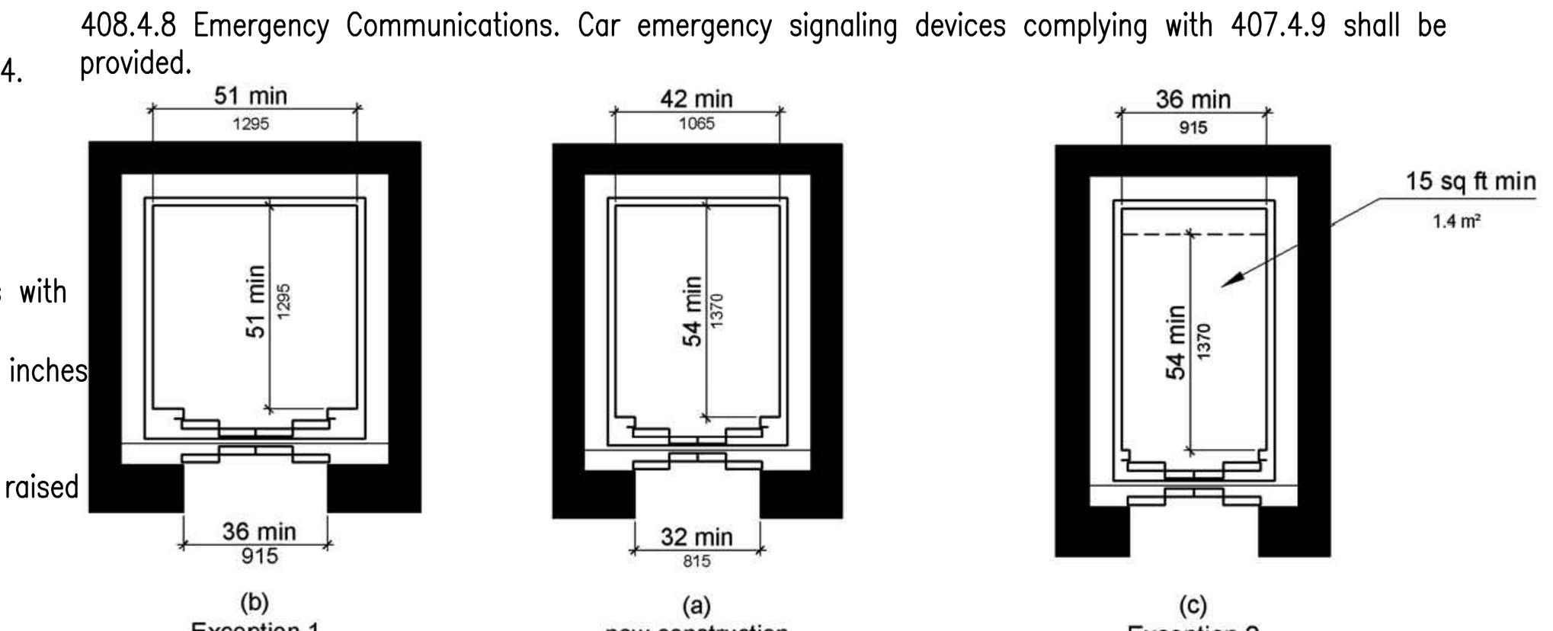

Figure 408.4.1 Limited–Use/Limited–Application (LULA) Elevator Car Dimensions

410 Platform Lifts
410.1 General. Platform lifts shall comply with ASME A18.1 (1999 edition or 2003 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1). Platform lifts shall not be attendant–operated and shall provide unassisted entry and exit from the lift.

410.2 Floor Surfaces. Floor surfaces in platform lifts shall comply with 302 and 303.

410.3 Clear Floor Space. Clear floor space in platform lifts shall comply with 305.

410.4 Platform to Runway Clearance. The clearance between the platform sill and the edge of any runway landing shall be 1 inch (32 mm) maximum.

410.5 Operable Parts. Controls for platform lifts shall comply with 309.

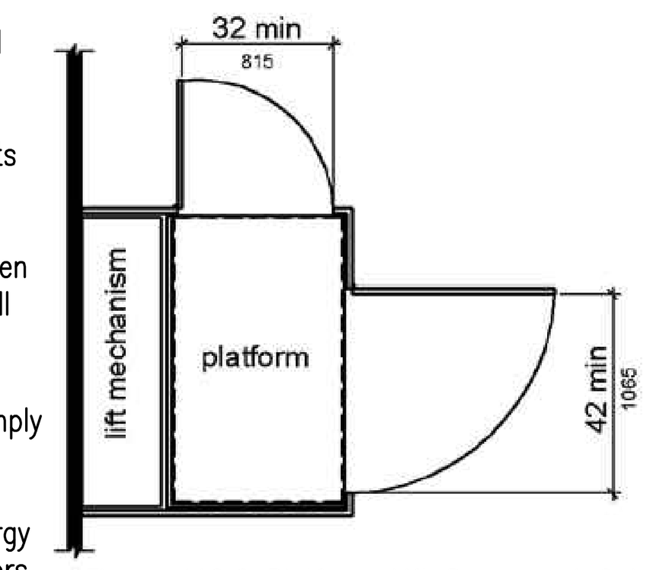

Figure 410.6 Platform Lift Doors and Gates

410.6 Doors and Gates. Platform lifts shall have low–energy power–operated doors or gates complying with 404.3. Doors shall remain open for 20 seconds minimum. End doors and gates shall provide a clear width 32 inches (815 mm) minimum. Side doors and gates shall provide a clear width 42 inches (1065 mm) minimum.
EXCEPTION: Platform lifts serving two landings maximum and having doors or gates on opposite sides shall be permitted to have self–closing manual doors or gates.

CHAPTER 5: GENERAL SITE AND BUILDING ELEMENTS

501 General
501.1 Scope. The provisions of Chapter 5 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

502 Parking Spaces

502.1 General. Car and van parking spaces shall comply with 502. Where parking spaces are marked with lines, width measurements of parking spaces and access aisles shall be made from the centerline of the markings.
EXCEPTION: Where parking spaces or access aisles are not adjacent to another parking space or access aisle, measurements shall be permitted to include the full width of the line defining the parking space or access aisle.

502.2 Vehicle Spaces. Car parking spaces shall be 96 inches (2440 mm) wide minimum and van parking spaces shall be 132 inches (3350 mm) wide minimum, shall be marked to define the width, and shall have an adjacent access aisle complying with 502.3.
EXCEPTION: Van parking spaces shall be permitted to be 96 inches (2440 mm) wide minimum where the access aisle is 96 inches (2440 mm) wide minimum.

502.3 Access Aisle. Access aisles serving parking spaces shall comply with 502.3. Access aisles shall adjoin an accessible route. Two parking spaces shall be permitted to share a common access aisle.

502.3.1 Width. Access aisles serving car and van parking spaces shall be 60 inches (1525 mm) wide minimum.

502.3.2 Length. Access aisles shall extend the full length of the parking spaces they serve.

502.3.3 Marking. Access aisles shall be marked so as to discourage parking in them.

502.3.4 Location. Access aisles shall not overlap the vehicular way. Access aisles shall be permitted to be placed on either side of the parking space except for angled van parking spaces which shall have access aisles located on the passenger side of the parking spaces.

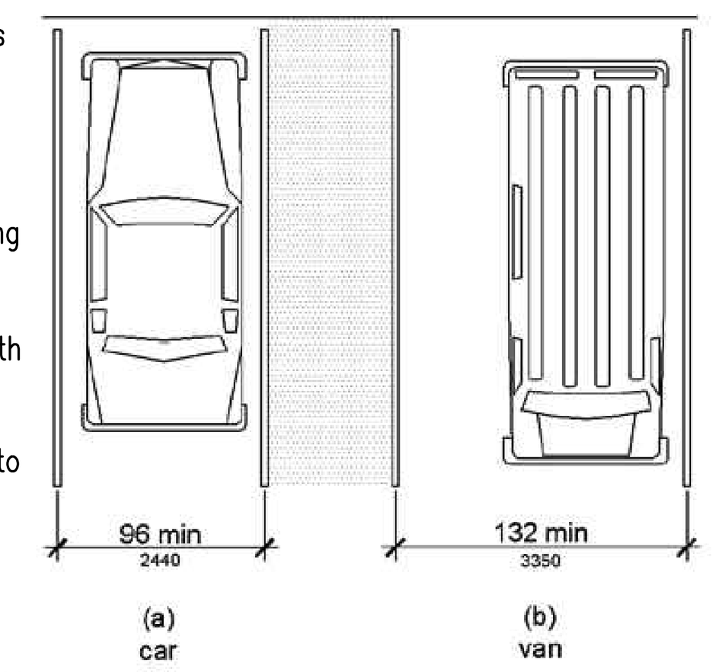

Figure 502.2 Vehicle Parking Spaces

502.4 Floor or Ground Surfaces. Parking spaces and access aisles serving them shall comply with 302. Access aisles shall be at the same level as the parking spaces they serve. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

502.5 Vertical Clearance. Parking spaces for vans and access aisles and vehicular routes serving them shall provide a vertical clearance of 98 inches (2490 mm) minimum.

502.6 Identification. Parking space identification signs shall include the International Symbol of Accessibility complying with 703.7.2.1. Signs identifying van parking spaces shall contain the designation "van accessible." Signs shall be 60 inches (1525 mm) minimum above the finish floor or ground surface measured to the bottom of the sign.

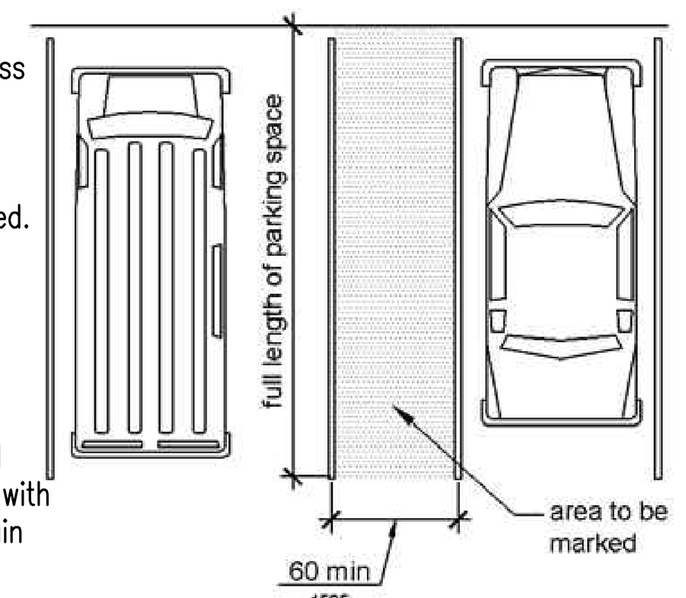

Figure 502.3 Parking Space Access Aisle

502.7 Relationship to Accessible Routes. Parking spaces and access aisles shall be designed so that cars and vans, when parked, cannot obstruct the required clear width of adjacent accessible routes.
503 Passenger Loading Zones
503.1 General. Passenger loading zones shall comply with 503.

503.2 Vehicle Pull–Up Space. Passenger loading zones shall provide a vehicular pull–up space 96 inches (2440 mm) wide minimum and 20 feet (6100 mm) long minimum.

503.3 Access Aisle. Passenger loading zones shall provide access aisles complying with 503 adjacent to the vehicle pull–up space. Access aisles shall adjoin an accessible route and shall not overlap the vehicular way.
503.3.1 Width. Access aisles serving vehicle pull–up spaces shall be 60 inches (1525 mm) wide minimum.

503.3.2 Length. Access aisles shall extend the full length of the vehicle pull–up spaces they serve.

503.3.3 Marking. Access aisles shall be marked so as to discourage parking in them.

503.4 Floor and Ground Surfaces. Vehicle pull–up spaces and access aisles serving them shall comply with 302. Access aisles shall be at the same level as the vehicle pull–up space they serve. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

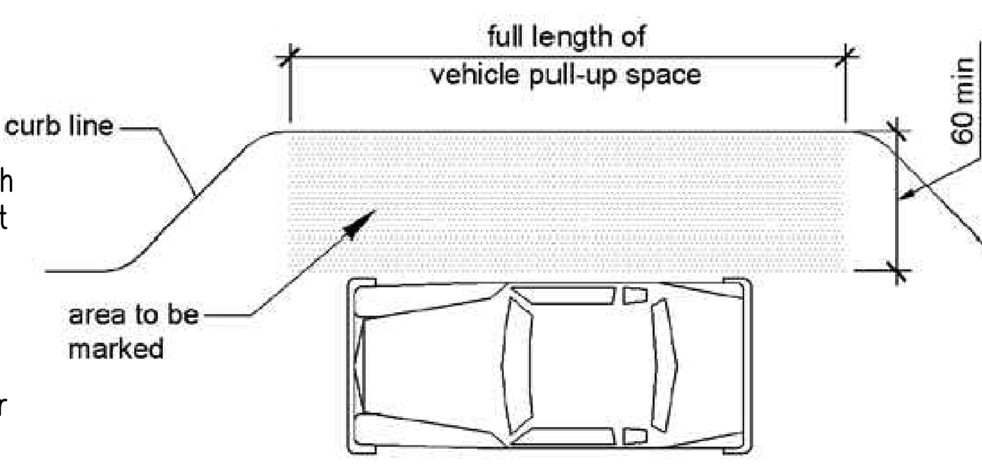

Figure 503.3 Passenger Loading Zone Access Aisle

503.5 Vertical Clearance. Vehicle pull–up spaces, access aisles serving them, and a vehicular route from an entrance to the passenger loading zone, and from the passenger loading zone to a vehicular exit shall provide a vertical clearance of 114 inches (2895 mm) minimum.

504 Stairways
504.1 General. Stairs shall comply with 504.

504.2 Treads and Risers. All steps on a flight of stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches (100 mm) high minimum and 7 inches (180 mm) high maximum. Treads shall be 11 inches (280 mm) deep minimum.

504.3 Open Risers. Open risers are not permitted.

504.4 Tread Surface. Stair treads shall comply with 302. Changes in level are not permitted.
EXCEPTION: Treads shall be permitted to have a slope not steeper than 1:48.

504.5 Nosings. The radius of curvature at the leading edge of the tread shall be 1/2 inch (13 mm) maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1 1/2 inches (38 mm) maximum over the tread below.

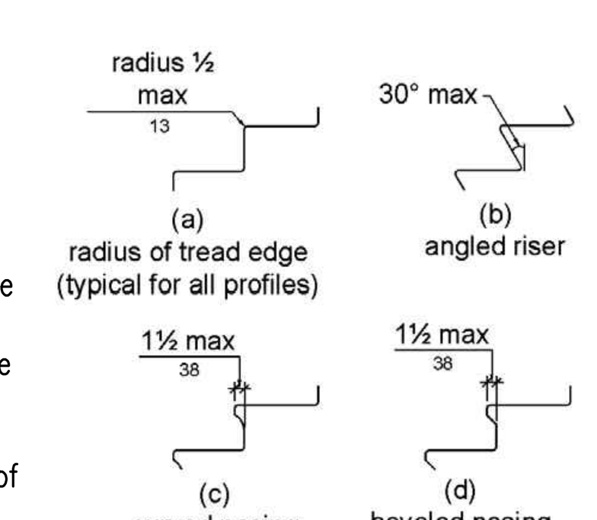

Figure 504.5 Stair Nosings

504.6 Handrails. Stairs shall have handrails complying with 505.

504.7 Wet Conditions. Stair treads and landings subject to wet conditions shall be designed to prevent the accumulation of water.

505 Handrails
505.1 General. Handrails provided along walking surfaces complying with 403, required at ramps complying with 405, and required at stairs complying with 504 shall comply with 505.

505.2 Where Required. Handrails shall be provided on both sides of stairs and ramps.
EXCEPTION: In assembly areas, handrails shall not be required on both sides of aisle ramps where a handrail is provided at either side or within the aisle width.

505.3 Continuity. Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs and ramps shall be continuous between flights or runs.
EXCEPTION: In assembly areas, handrails on ramps shall not be required to be continuous in aisles serving seating.

505.4 Height. Top of gripping surfaces of handrails shall be 34 inches (865 mm) minimum and 38 inches (965 mm) maximum vertically above walking surfaces, stair nosings, and ramp surfaces. Handrails shall be at a consistent height above walking surfaces, stair nosings, and ramp surfaces.

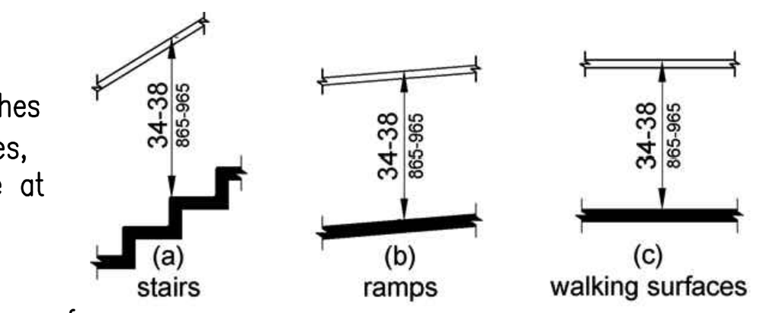

Figure 505.4 Handrail Height

505.5 Clearance. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1 1/2 inches (38 mm) minimum.

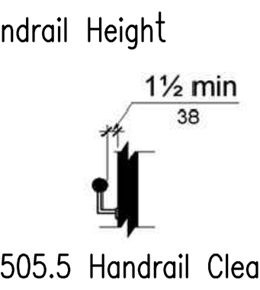

Figure 505.5 Handrail Clearance

505.6 Gripping Surface. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1 1/2 inches (38 mm) minimum below the bottom of the handrail gripping surface.
EXCEPTIONS:
1. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.
2. The distance between horizontal projections and the bottom of the gripping surface shall be permitted to be reduced by 1/8 inch (3.2 mm) for each 1/2 inch (13 mm) of additional handrail perimeter dimension that exceeds 4 inches (100 mm).

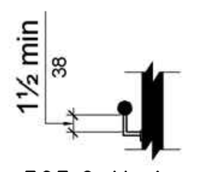

Figure 505.6 Horizontal Projections Below Gripping Surface

505.7 Cross Section. Handrail gripping surfaces shall have a cross section complying with 505.7.1 or 505.7.2.
505.7.1 Circular Cross Section. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1 1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum.

505.7.2 Non–Circular Cross Sections. Handrail gripping surfaces with a non–circular cross section shall have a perimeter dimension of 4 inches (100 mm) minimum and 6 1/4 inches (160 mm) maximum, and a cross–section dimension of 2 1/4 inches (57 mm) maximum.

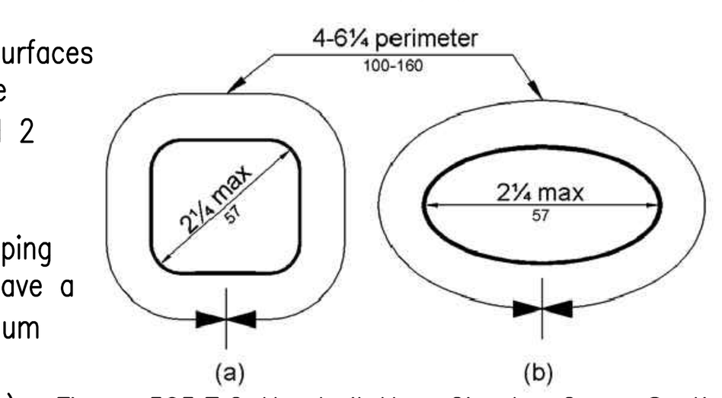

Figure 505.7.2 Handrail Non–Circular Cross Section

505.8 Surfaces. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.

505.9 Fittings. Handrails shall not rotate within their fittings.

505.10 Handrail Extensions. Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and ramp runs in accordance with 505.10.
EXCEPTIONS:
1. Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg stairs and ramps.
2. In assembly areas, extensions shall not be required for ramp handrails in aisles serving seating where the handrails are discontinuous to provide access to seating and to permit crossovers within aisles.
3. In alterations, full extensions of handrails shall not be required where such extensions would be hazardous due to plan configuration.

505.10.1 Top and Bottom Extension at Ramps. Ramp handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.

505.10.2 Top Extension at Stairs. At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.

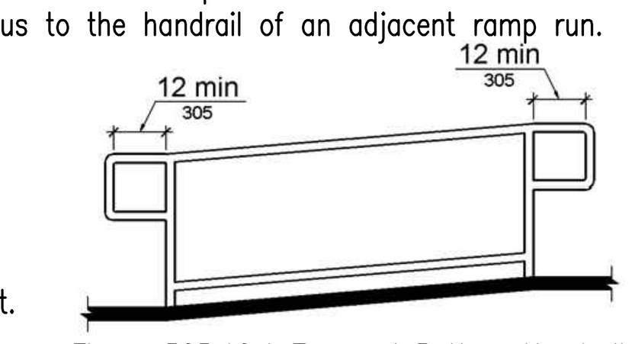

Figure 505.10.1 Top and Bottom Handrail Extension at Ramps

505.10.3 Bottom Extension at Stairs. At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance at least equal to one tread depth beyond the last riser nosing. Extension shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.

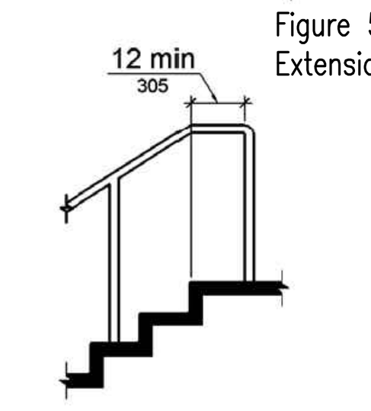

Figure 505.10.2 Top Handrail Extension at Stairs

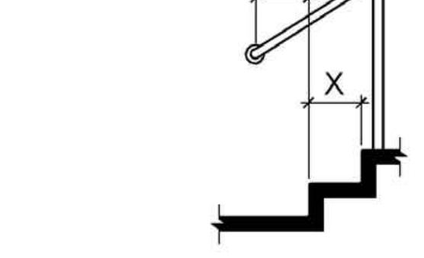

Figure 505.10.3 Bottom Handrail Extension at Stairs

CHAPTER 6: PLUMBING ELEMENTS & FACILITIES

601 General
601.1 Scope. The provisions of Chapter 6 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

602 Drinking Fountains
602.1 General. Drinking fountains shall comply with 307 and 602.

602.2 Clear Floor Space. Units shall have a clear floor or ground space complying with 305 positioned for a forward approach and centered on the unit. Knee and toe clearance complying with 306 shall be provided.
EXCEPTION: A parallel approach complying with 305 shall be permitted at units for children's use where the spout is 30 inches (760 mm) maximum above the finish floor or ground and is 3 1/2 inches (90 mm) maximum from the front edge of the unit, including bumpers.

602.3 Operable Parts. Operable parts shall comply with 309.

602.4 Spout Height. Spout outlets shall be 36 inches (915 mm) maximum above the finish floor or ground.

602.5 Spout Location. The spout shall be located 15 inches (380 mm) minimum from the vertical support and 5 inches (125 mm) maximum from the front edge of the unit, including bumpers.

602.6 Water Flow. The spout shall provide a flow of water 4 inches (100 mm) high minimum and shall be located 5 inches (125 mm) maximum from the front of the unit. The angle of the water stream shall be measured horizontally relative to the front face of the unit. Where spouts are located less than 3 inches (75 mm) of the front of the unit, the angle of the water stream shall be 30 degrees maximum. Where spouts are located between 3 inches (75 mm) and 5 inches (125 mm) maximum from the front of the unit, the angle of the water stream shall be 15 degrees maximum.

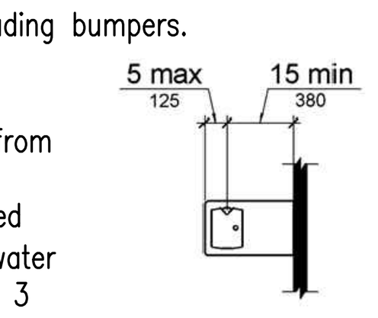

Figure 602.5 Drinking Fountain Spout Location

602.7 Drinking Fountains for Standing Persons. Spout outlets of drinking fountains for standing persons shall be 38 inches (965 mm) minimum and 43 inches (1090 mm) maximum above the finish floor or ground.

603 Toilet and Bathing Rooms
603.1 General. Toilet and bathing rooms shall comply with 603.

603.2 Clearances. Clearances shall comply with 603.2.

603.2.1 Turning Space. Turning space complying with 304 shall be provided within the room.

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Construction Documents

Revisions

22 May 2015

ADA2

22 May 2015

2010 ADA Standards for Accessible Design for Public Accommodations and Commercial Facilities: Title III

CHAPTER 6: PLUMBING ELEMENTS & FACILITIES (CONT.)

603.2.2 Overlap. Required clear floor spaces, clearance at fixtures, and turning space shall be permitted to overlap.

603.2.3 Door Swing. Doors shall not swing into the clear floor space or clearance required for any fixture. Doors shall be permitted to swing into the required turning space.
EXCEPTIONS:
1. Doors to a toilet room or bathing room for a single occupant accessed only through a private office and not for common use or public use shall be permitted to swing into the clear floor space or clearance provided the swing of the door can be reversed to comply with 603.2.3.
2. Where the toilet room or bathing room is for individual use and a clear floor space complying with 305.3 is provided within the room beyond the arc of the door swing, doors shall be permitted to swing into the clear floor space or clearance required for any fixture.

603.3 Mirrors. Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1015 mm) maximum above the finish floor or ground. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 35 inches (890 mm) maximum above the finish floor or ground.

603.4 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor.

604 Water Closets and Toilet Compartments

604.1 General. Water closets and toilet compartments shall comply with 604.2 through 604.8.
EXCEPTION: Water closets and toilet compartments for children's use shall be permitted to comply with 604.9.

604.2 Location. The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16 inches (405 mm) minimum to 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the ambulatory accessible toilet compartment specified in 604.8.2. Water closets shall be arranged for a left-hand or right-hand approach.

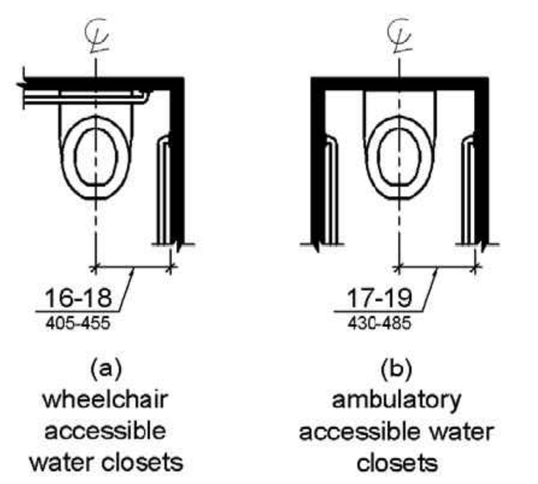
Figure 604.2 Water Closet Location

604.3 Clearance. Clearances around water closets and in toilet compartments shall comply with 604.3.

604.3.1 Size. Clearance around a water closet shall be 60 inches (1525 mm) minimum measured perpendicular from the side wall and 56 inches (1420 mm) minimum measured perpendicular from the rear wall.

604.3.2 Overlap. The required clearance around the water closet shall be permitted to overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear floor space and clearances required at other fixtures, and the turning space. No other fixtures or obstructions shall be located within the required water closet clearance.

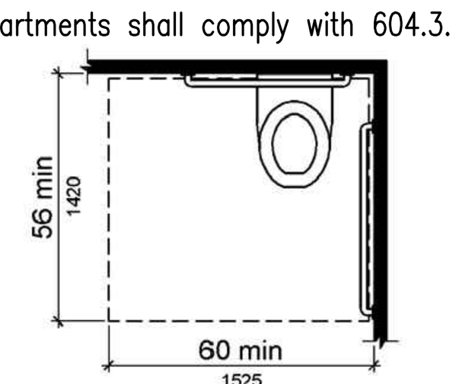
Figure 604.3.1 Size of Clearance at Water Closets

604.4 Seats. The seat height of a water closet above the finish floor shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.
EXCEPTIONS:
1. A water closet in a toilet room for a single occupant accessed only through a private office and not for common use or public use shall not be required to comply with 604.4.

604.5 Grab Bars. Grab bars for water closets shall comply with 609. Grab bars shall be provided on the side wall closest to the water closet and on the rear wall.
EXCEPTIONS:
1. Grab bars shall not be required to be installed in a toilet room for a single occupant accessed only through a private office and not for common use or public use provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 604.5.

3. In detention or correction facilities, grab bars shall not be required to be installed in housing or holding cells that are specially designed without protrusions for purposes of suicide prevention.

604.5.1 Side Wall. The side wall grab bar shall be 42 inches (1065 mm) long minimum, located 12 inches (305 mm) maximum from the rear wall and extending 54 inches (1370 mm) minimum from the rear wall.

604.5.2 Rear Wall. The rear wall grab bar shall be 36 inches (915 mm) long minimum and extend from the centerline of the water closet 12 inches (305 mm) minimum on one side and 24 inches (610 mm) minimum on the other side.
EXCEPTIONS:
1. The rear grab bar shall be permitted to be 24 inches (610 mm) long minimum, centered on the water closet, where wall space does not permit a length of 36 inches (915 mm) minimum due to the location of a recessed fixture adjacent to the water closet.
2. Where an administrative authority requires flush controls for flush valves to be located in a position that conflicts with the location of the rear grab bar, then the rear grab bar shall be permitted to be split or shifted to the open side of the toilet area.

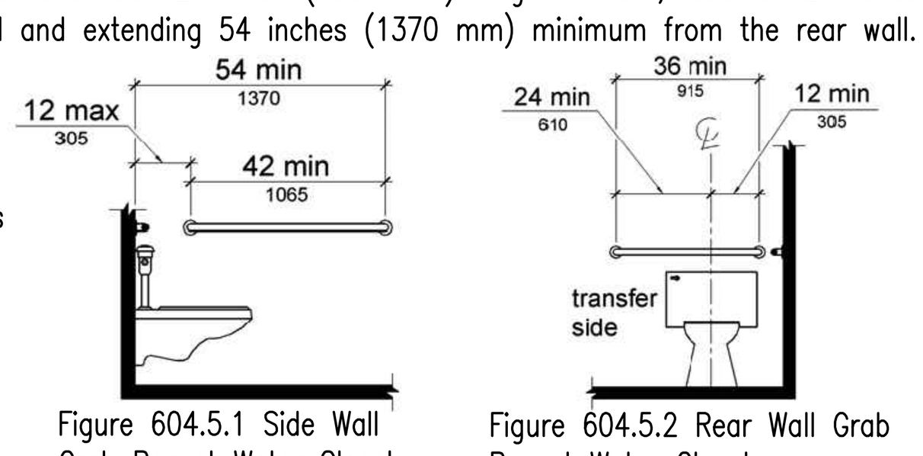
Figure 604.5.1 Side Wall Grab Bar at Water Closets

Figure 604.5.2 Rear Wall Grab Bar at Water Closets

604.6 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with 604.8.2.

604.7 Dispensers. Toilet paper dispensers shall comply with 309.4 and shall be 7 inches (180 mm) minimum and 9 inches (230 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 15 inches (380 mm) minimum and 48 inches (1220 mm) maximum above the finish floor and shall not be located behind grab bars. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

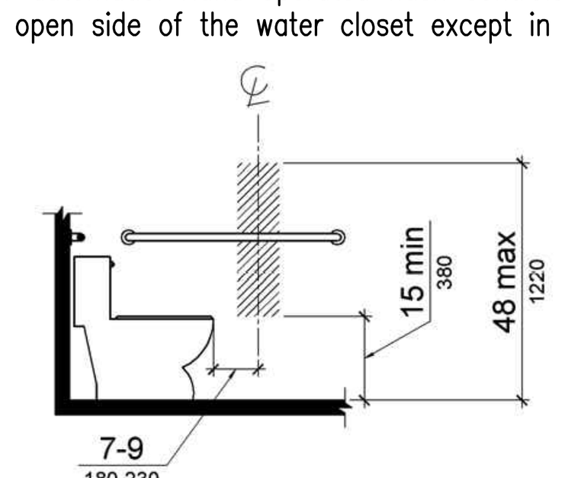
Figure 604.7 Dispenser Outlet Location

604.8 Toilet Compartments. Wheelchair accessible toilet compartments shall meet the requirements of 604.8.1 and 604.8.3. Compartments containing more than one plumbing fixture shall comply with 603. Ambulatory accessible compartments shall comply with 604.8.2 and 604.8.3.

604.8.1 Wheelchair Accessible Compartments. Wheelchair accessible compartments shall comply with 604.8.1.

604.8.1.1 Size. Wheelchair accessible compartments shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 56 inches (1420 mm) deep minimum for wall hung water closets and 59 inches (1500 mm) deep minimum for floor mounted water closets measured perpendicular to the rear wall. Wheelchair accessible compartments for children's use shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 59 inches (1500 mm) deep minimum for wall hung and floor mounted water closets measured perpendicular to the rear wall.

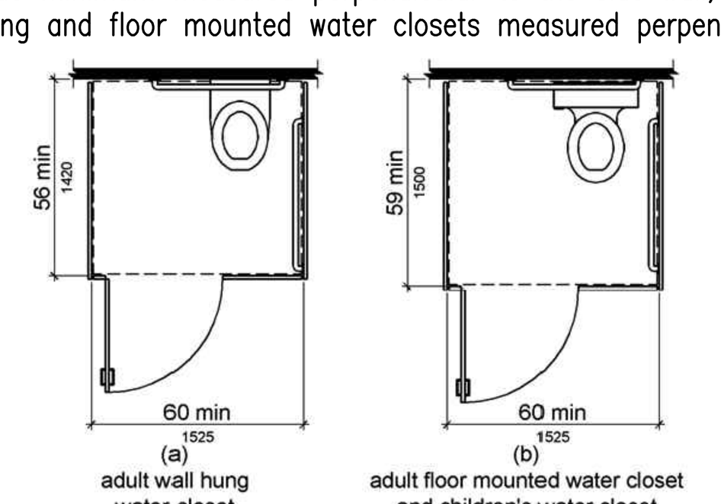
Figure 604.8.1.1 Size of Wheelchair Accessible Toilet Compartment

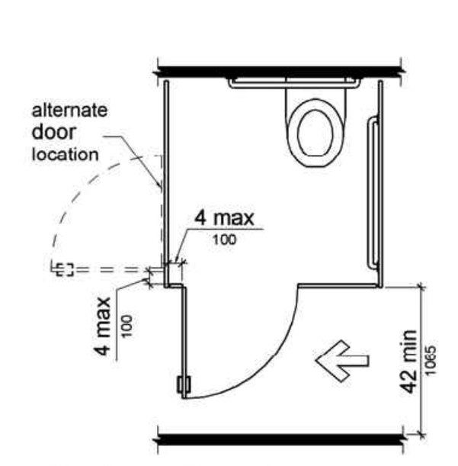
Figure 604.8.1.1 Size of Wheelchair Accessible Toilet Compartment

604.8.1.2 Doors. Toilet compartment doors, including door hardware, shall comply with 404 except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. Doors shall be located in the front partition or in the side wall or partition farthest from the water closet. Where located in the front partition, the door opening shall be 4 inches (100 mm) maximum from the side wall or partition farthest from the water closet. Where located in the side wall or partition, the door opening shall be 4 inches (100 mm) maximum from the front partition. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

604.8.1.3 Approach. Compartments shall be arranged for left-hand or right-hand approach to the water closet.

604.8.1.4 Toe Clearance. The front partition and at least one side partition shall provide a toe clearance of 9 inches (230 mm) minimum above the finish floor and 6 inches (150 mm) deep minimum beyond the compartment-side face of the partition, exclusive of partition support members. Compartments for children's use shall provide a toe clearance of 12 inches (305 mm) minimum above the finish floor.
EXCEPTION: Toe clearance at the front partition is not required in a compartment greater than 62 inches (1575 mm) deep with a wall-hung water closet or 65 inches (1650 mm) deep with a floor-mounted water closet. Toe clearance at the side partition is not required in a compartment greater than 66 inches (1675 mm) wide. Toe clearance at the front partition is not required in a compartment for children's use that is greater than 65 inches (1650 mm) deep.

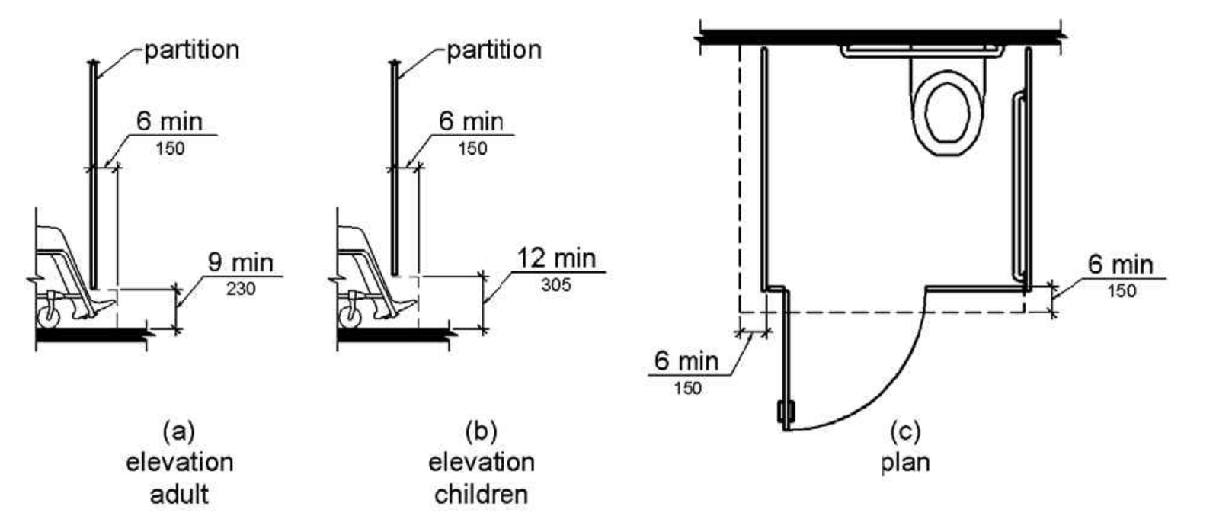
Figure 604.8.1.4 Wheelchair Accessible Toilet Compartment Toe Clearance

604.8.1.5 Grab Bars. Grab bars shall comply with 609. A side-wall grab bar complying with 604.5.1 shall be provided and shall be located on the wall closest to the water closet. In addition, a rear-wall grab bar complying with 604.5.2 shall be provided.

604.8.2 Ambulatory Accessible Compartments. Ambulatory accessible compartments shall comply with 604.8.2.

604.8.2.1 Size. Ambulatory accessible compartments shall have a depth of 60 inches (1525 mm) minimum and a width of 35 inches (890 mm) minimum and 37 inches (940 mm) maximum.

604.8.2.2 Doors. Toilet compartment doors, including door hardware, shall comply with 404, except that if the approach is to the latch side of the compartment door the clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

604.8.2.3 Grab Bars. Grab bars shall comply with 609. A side-wall grab bar complying with 604.5.1 shall be provided on both sides of the compartment.

604.8.3 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor.

604.9 Water Closets and Toilet Compartments for Children's Use. Water closets and toilet compartments for children's use shall comply with 604.9

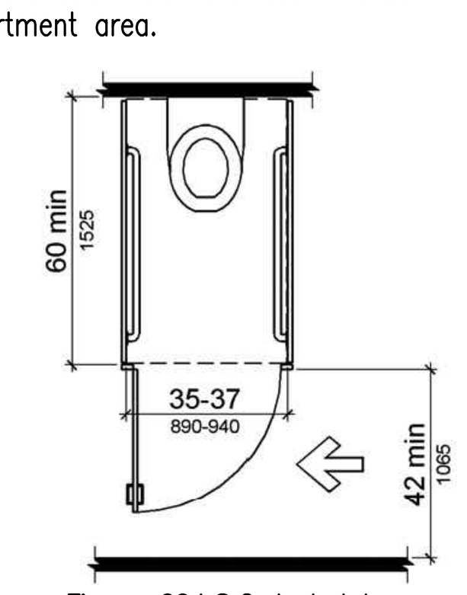
Figure 604.8.2 Ambulatory Accessible Toilet Compartment

Advisory Specifications for Water Closets Serving Children Ages 3 through 12			
	Ages 3 and 4	Ages 5 through 8	Ages 9 through 12
Water Closet Centerline	12 inches	12 to 15 inches	15 to 18 inches
Toilet Seat Height	11 to 12 inches	12 to 15 inches	15 to 17 inches
Grab Bar Height	18 to 20 inches	20 to 25 inches	25 to 27 inches
Dispenser Height	14 inches	14 to 17 inches	17 to 19 inches

604.9.1 Location. The water closet shall be located with a wall or partition to the rear and to one side. The centerline of the water closet shall be 12 inches (305 mm) minimum and 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the ambulatory accessible toilet compartment specified in 604.8.2. Compartments shall be arranged for left-hand or right-hand approach to the water closet.

604.9.2 Clearance. Clearance around a water closet shall comply with 604.3.

604.9.3 Height. The height of water closets shall be 11 inches (280 mm) minimum and 17 inches (430 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

604.9.4 Grab Bars. Grab bars for water closets shall comply with 604.5.

604.9.5 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309.2 and 309.4 and shall be installed 36 inches (915 mm) maximum above the finish floor. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with 604.8.2.

604.9.6 Dispensers. Toilet paper dispensers shall comply with 309.4 and shall be 7 inches (180 mm) minimum and 9 inches (230 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 14 inches (355 mm) minimum and 19 inches (485 mm) maximum above the finish floor. There shall be a clearance of 1 1/2 inches (38 mm) minimum below the grab bar. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

604.9.7 Toilet Compartments. Toilet compartments shall comply with 604.8.

605 Urinals

605.1 General. Urinals shall comply with 605.

605.2 Height and Depth. Urinals shall be the stall-type or the wall-hung type with the rim 17 inches (430 mm) maximum above the finish floor or ground. Urinals shall be 13 1/2 inches (345 mm) deep minimum measured from the outer face of the urinal rim to the back of the fixture.

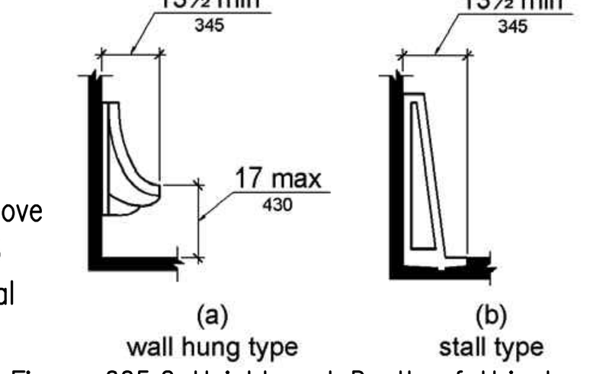
Figure 605.2 Height and Depth of Urinals

605.3 Clear Floor Space. A clear floor or ground space complying with 305 positioned for forward approach shall be provided.

605.4 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309.

606 Lavatories and Sinks
606.1 General. Lavatories and sinks shall comply with 606.

606.2 Clear Floor Space. A clear floor space complying with 305, positioned for a forward approach, and knee and toe clearance complying with 306 shall be provided.
EXCEPTIONS:
1. A parallel approach complying with 305 shall be permitted to a kitchen sink in a space where a cook top or conventional range is not provided and to wet bars.
2. A lavatory in a toilet room or bathing facility for a single occupant accessed only through a private office and not for common use or public use shall not be required to provide knee and toe clearance complying with 306.
3. Residential requirements not included.
4. A knee clearance of 24 inches (610 mm) minimum above the finish floor or ground shall be permitted at lavatories and sinks used primarily by children 6 through 12 years where the rim or counter surface is 31 inches (785 mm) maximum above the finish floor or ground.
5. A parallel approach complying with 305 shall be permitted to lavatories and sinks used primarily by children 5 years and younger.
6. The dip of the overflow shall not be considered in determining knee and toe clearances.
7. No more than one bowl of a multi-bowl sink shall be required to provide knee and toe clearance complying with 306.

606.3 Height. Lavatories and sinks shall be installed with the front of the higher of the rim or counter surface 34 inches (865 mm) maximum above the finish floor or ground.
EXCEPTIONS:
1. A lavatory in a toilet or bathing facility for a single occupant accessed only through a private office and not for common use or public use shall not be required to comply with 606.3.

606.4 Faucets. Controls for faucets shall comply with 309. Hand-operated metering faucets shall remain open for 10 seconds minimum.

606.5 Exposed Pipes and Surfaces. Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.

607 Bathtubs

607.1 General. Bathtubs shall comply with 607.

607.2 Clearance. Clearance in front of bathtubs shall extend the length of the bathtub and shall be 30 inches (760 mm) wide minimum. A lavatory complying with 606 shall be permitted at the control end of the clearance. Where a permanent seat is provided at the head end of the bathtub, the clearance shall extend 12 inches (305 mm) minimum beyond the wall at the head end of the bathtub.

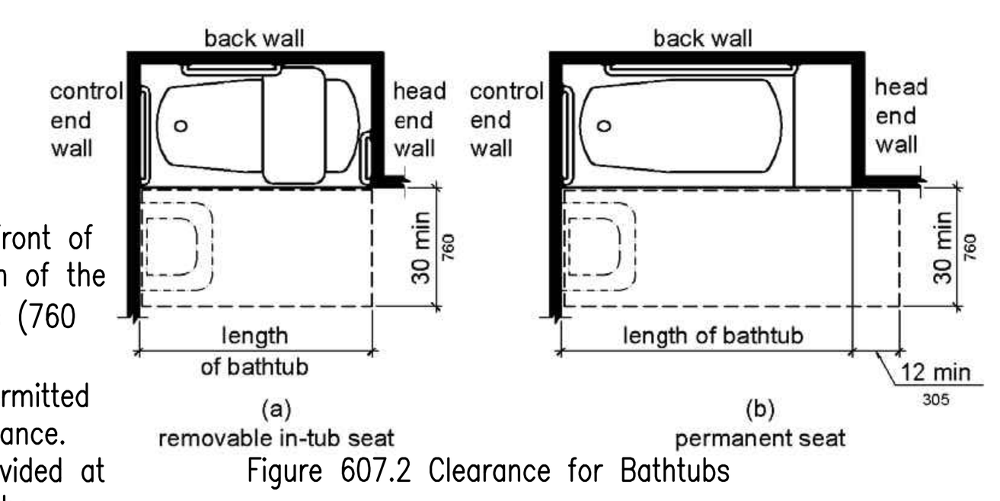
Figure 607.2 Clearance for Bathtubs

607.3 Seat. A permanent seat at the head end of the bathtub or a removable in-tub seat shall be provided. Seats shall comply with 610.

607.4 Grab Bars. Grab bars for bathtubs shall comply with 609 and shall be provided in accordance with 607.4.1 or 607.4.2.
EXCEPTIONS:
1. Grab bars shall not be required to be installed in a bathtub located in a bathing facility for a single occupant accessed only through a private office and not for common use or public use provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 607.4.

607.4.1 Bathtubs With Permanent Seats. For bathtubs with permanent seats, grab bars shall be provided in accordance with 607.4.1.

607.4.1.1 Back Wall. Two grab bars shall be installed on the back wall, one located in accordance with 609.4 and the other located 8 inches (205 mm) minimum and 10 inches (255 mm) maximum above the rim of the bathtub. Each grab bar shall be installed 15 inches (380 mm) maximum from the head end wall and 12 inches (305 mm) maximum from the control end wall.

607.4.1.2 Control End Wall. A grab bar 24 inches (610 mm) long minimum shall be installed on the control end wall at the front edge of the bathtub.

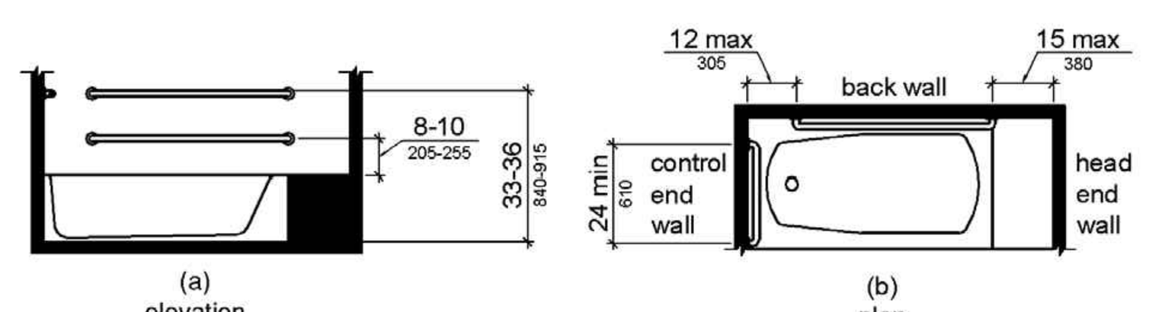
Figure 607.4.1 Grab Bars for Bathtubs with Permanent Seats

607.4.2 Bathtubs Without Permanent Seats. For bathtubs without permanent seats, grab bars shall comply with 607.4.2.

607.4.2.1 Back Wall. Two grab bars shall be installed on the back wall, one located in accordance with 609.4 and other located 8 inches (205 mm) minimum and 10 inches (255 mm) maximum above the rim of the bathtub. Each grab bar shall be 24 inches (610 mm) long minimum and shall be installed 24 inches (610 mm) maximum from the head end wall and 12 inches (305 mm) maximum from the control end wall.

607.4.2.2 Control End Wall. A grab bar 24 inches (610 mm) long minimum shall be installed on the control end wall at the front edge of the bathtub.

607.4.2.3 Head End Wall. A grab bar 12 inches (305 mm) long minimum shall be installed on the head end wall at the front edge of the bathtub.

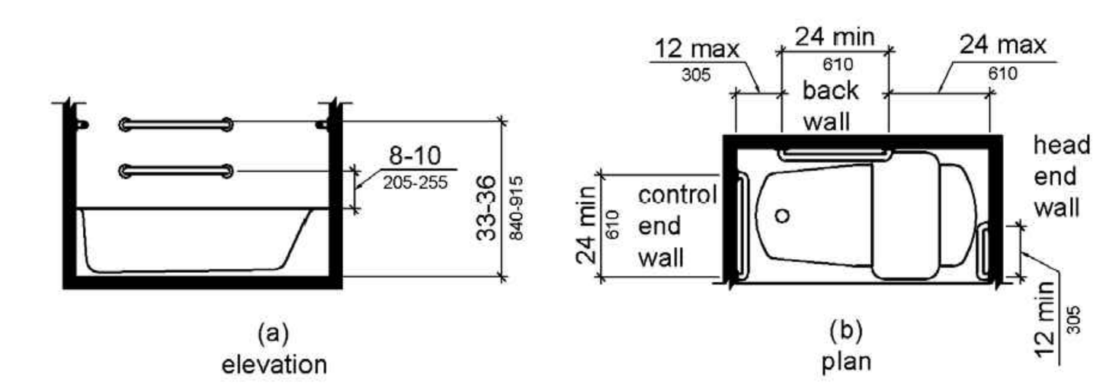
Figure 607.4.2 Grab Bars for Bathtubs with Removable In-Tub Seats

607.5 Controls. Controls, other than drain stoppers, shall be located on an end wall. Controls shall be between the bathtub rim and grab bar, and between the open side of the bathtub and the centerline of the width of the bathtub. Controls shall comply with 309.4.

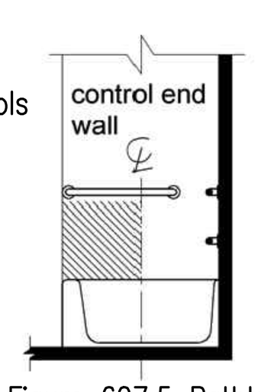
Figure 607.5 Bathtub Control Location

607.6 Shower Spray Unit and Water. A shower spray unit with a hose 59 inches (1500 mm) long minimum that can be used both as a fixed-position shower head and as a hand-held shower shall be provided. The shower spray unit shall have an on/off control with a non-positive shut-off. If an adjustable-height shower head on a vertical bar is used, the bar shall be installed so as to not obstruct the use of grab bars. Bathtub shower spray units shall deliver water that is 120°F (49°C) maximum.

607.7 Bathtub Enclosures. Enclosures for bathtubs shall not obstruct controls, faucets, shower and spray units or obstruct transfer from wheelchairs onto bathtub seats or into bathtubs. Enclosures on bathtubs shall not have tracks installed on the rim of the open face of the bathtub.

608 Shower Compartments

608.1 General. Shower compartments shall comply with 608.

608.2 Size and Clearances for Shower Compartments. Shower compartments shall have sizes and clearances complying with 608.2.

608.2.1 Transfer Type Shower Compartments. Transfer type shower compartments shall be 36 inches (915 mm) by 36 inches (915 mm) clear inside dimensions measured at the center points of opposing sides and shall have a 36 inch (915 mm) wide minimum entry on the face of the shower compartment. Clearance of 36 inches (915 mm) wide minimum by 48 inches (1220 mm) long minimum measured from the control wall shall be provided.

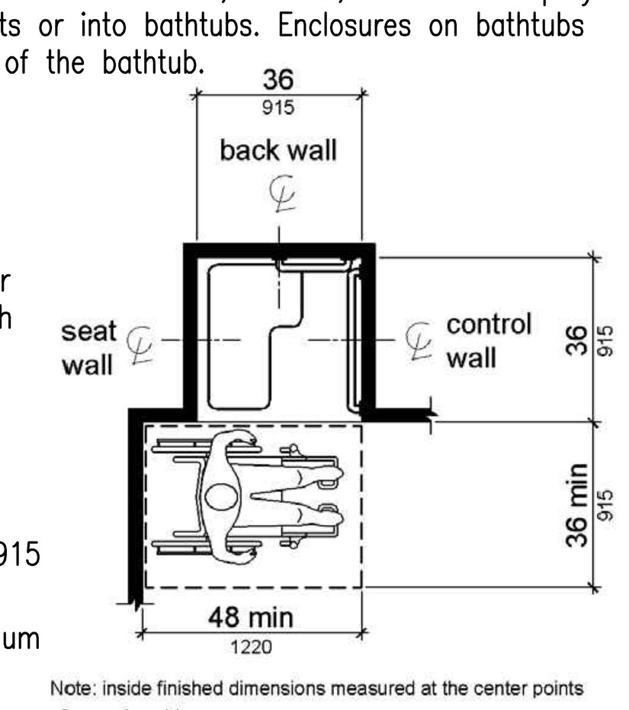
Figure 608.2.1 Transfer Type Shower Compartment Size and Clearance

608.2.2 Standard Roll-In Type Shower Compartments. Standard roll-in type shower compartments shall be 30 inches (760 mm) wide minimum by 60 inches (1525 mm) deep minimum clear inside dimensions measured at center points of opposing sides and shall have a 60 inches (1525 mm) wide minimum entry on the face of the shower compartment.

608.2.2.1 Clearance. A 30 inch (760 mm) wide minimum by 60 inch (1525 mm) long minimum clearance shall be provided adjacent to the open face of the shower compartment.
EXCEPTION: A lavatory complying with 606 shall be permitted on one 30 inch (760 mm) wide minimum side of the clearance provided that it is not on the side of the clearance adjacent to the controls or, where provided, not on the side of the clearance adjacent to the shower seat.

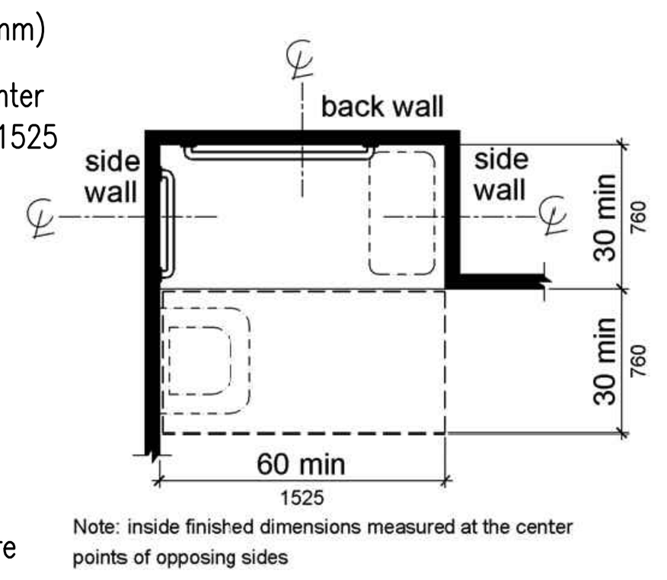
Figure 608.2.2 Standard Roll-In Type Shower Compartment Size and Clearance

608.2.3 Alternate Roll-In Type Shower Compartments. Alternate roll-in type shower compartments shall be 36 inches (915 mm) wide and 60 inches (1525 mm) deep minimum clear inside dimensions measured at center points of opposing sides. A 36 inch (915 mm) wide minimum entry shall be provided at one end of the long side of the compartment.

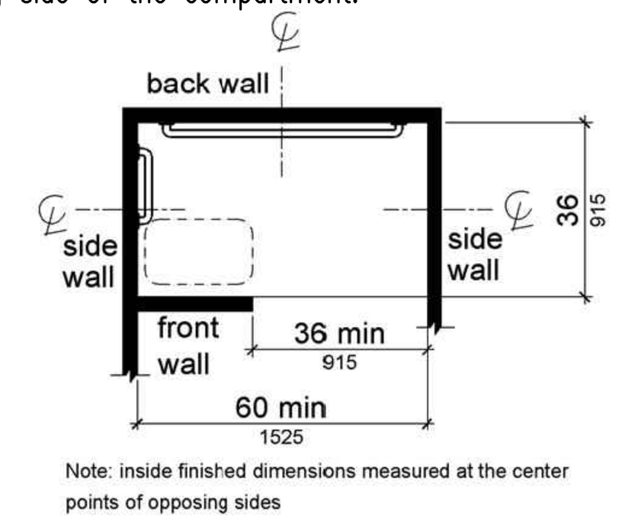
Figure 608.2.3 Alternate Roll-In Type Shower Compartment Size and Clearance

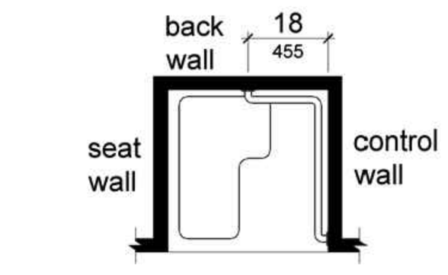
Figure 608.3.1 Grab Bars for Transfer Type Showers

608.3 Grab Bars. Grab bars shall comply with 609 and shall be provided in accordance with 608.3. Where multiple grab bars are used, required horizontal grab bars shall be installed at the same height above the finish floor.
EXCEPTIONS:
1. Grab bars shall not be required to be installed in a shower located in a bathing facility for a single occupant accessed only through a private office, and not for common use or public use provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 608.3.

608.3.1 Transfer Type Shower Compartments. In transfer type compartments, grab bars shall be provided across the control wall and back wall to a point 18 inches (455 mm) from the control wall.

608.3.2 Standard Roll-In Type Shower Compartments. Where a seat is provided in standard roll-in type shower compartments, grab bars shall be provided on the back wall and the side wall opposite the seat. Grab bars shall not be provided above the seat. Where a seat is not provided in standard roll-in type shower compartments, grab bars shall be provided on three walls. Grab bars shall be installed 6 inches (150 mm) maximum from adjacent walls.

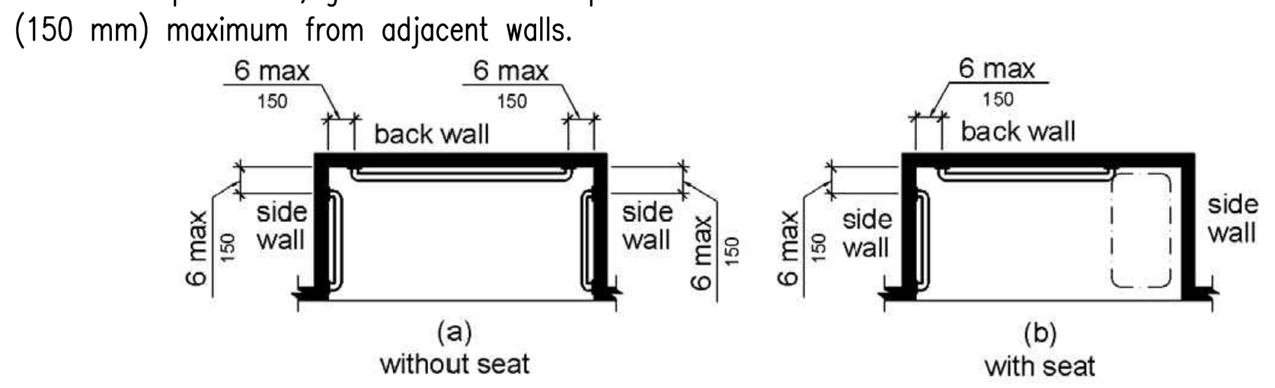
Figure 608.3.2 Grab Bars for Standard Roll-In Type Showers

608.3.3 Alternate Roll-In Type Shower Compartments. In alternate roll-in type shower compartments, grab bars shall be provided on the back wall and the side wall farthest from the compartment entry. Grab bars shall not be provided above the seat. Grab bars shall be installed 6 inches (150 mm) maximum from adjacent walls.

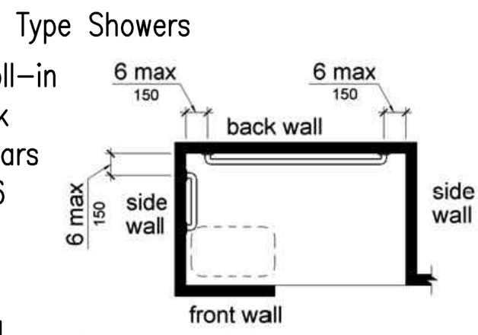
Figure 608.3.3 Grab Bars for Alternate Roll-In Type Showers

608.4 Seats. A folding or non-folding seat shall be provided in transfer type shower compartments. A folding seat shall be provided in roll-in type showers required in transient lodging guest rooms with mobility features complying with 806.2. Seats shall comply with 610.

608.5 Controls. Controls, faucets, and shower spray units shall comply with 309.4.

608.5.1 Transfer Type Shower Compartments. In transfer type shower compartments, the controls, faucets, and shower spray unit shall be installed on the side wall opposite the seat 38 inches (965 mm) minimum and 48 inches (1220 mm) maximum above the shower floor and shall be located on the control wall 15 inches (380 mm) maximum from the centerline of the seat toward the shower opening.

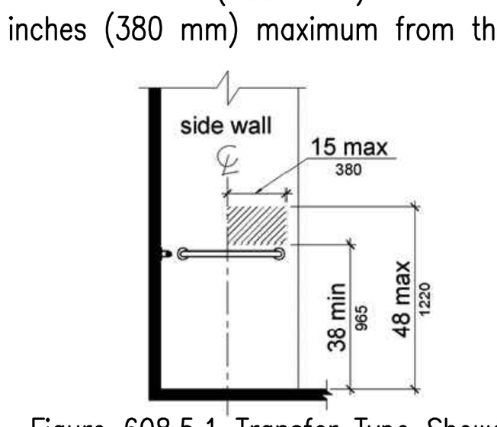
Figure 608.5.1 Transfer Type Shower Compartment Control Location

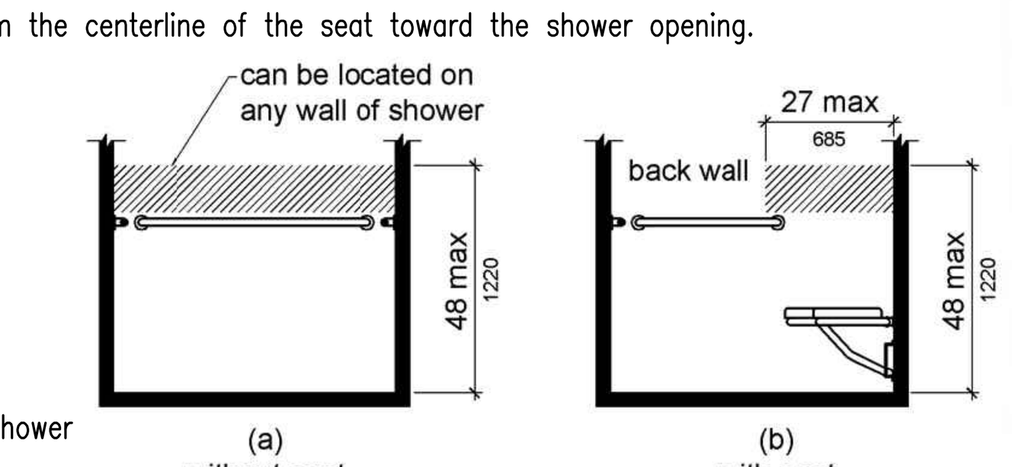
Figure 608.5.2 Standard Roll-In Type Shower Compartment Control Location

608.5.2 Standard Roll-In Type Shower Compartments. In standard roll-in type shower compartments, the controls, faucets, and shower spray unit shall be located above the grab bar, but no higher than 48 inches (1220 mm) above the shower floor. Where a seat is provided, the controls, faucets, and shower spray unit shall be installed on the back wall adjacent to the seat wall and shall be located 27 inches (685 mm) maximum from the seat wall.

608.5.3 Alternate Roll-In Type Shower Compartments. In alternate roll-in type shower compartments, the controls, faucets, and shower spray unit shall be located above the grab bar, but no higher than 48 inches (1220 mm) above the shower floor. Where a seat is provided, the controls, faucets, and shower spray unit shall be located on the side wall adjacent to the seat 27 inches (685 mm) maximum from the side wall behind the seat or shall be located on the back wall opposite the seat 15 inches (380 mm) maximum, left or right, of the centerline of the seat. Where a seat is not provided, the controls, faucets, and shower spray unit shall be installed on the side wall farthest from the compartment entry.

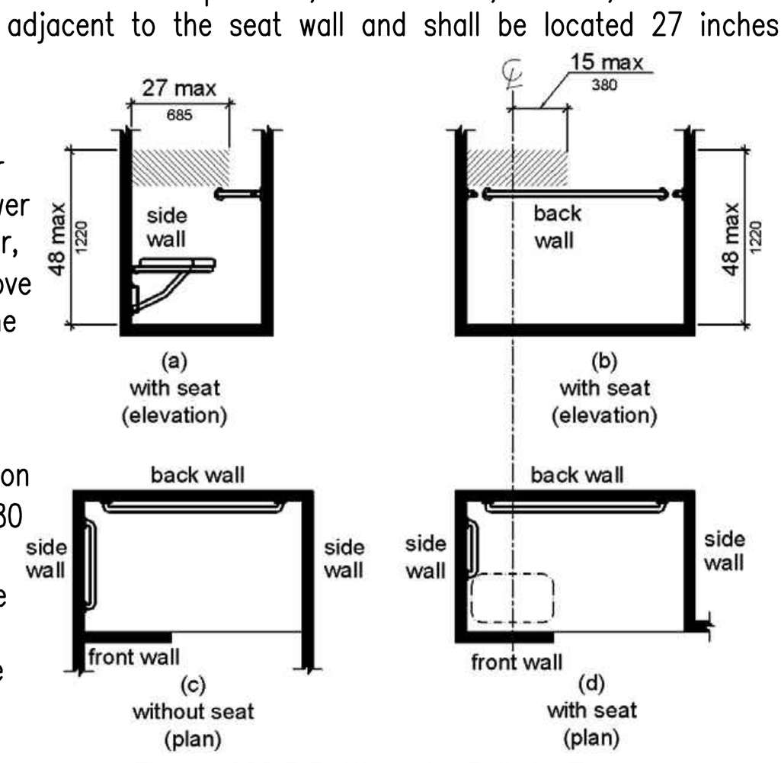
Figure 608.5.3 Alternate Roll-In Type Shower Compartment Control Location

608.6 Shower Spray Unit and Water. A shower spray unit with a hose 59 inches (1500 mm) long minimum that can be used both as a fixed-position shower head and as a hand-held shower shall be provided. The shower spray unit shall have an on/off control with a non-positive shut-off. If an adjustable-height shower head on a vertical bar is used, the bar shall be installed so as to not obstruct the use of grab bars. Shower spray units shall deliver water that is 120°F (49°C) maximum.
EXCEPTION: A fixed shower head located at 48 inches (1220 mm) maximum above the shower finish floor shall be permitted instead of a hand-held spray unit in facilities that are not medical care facilities, long-term care facilities, transient lodging guest rooms, or residential dwelling units.

608.7 Thresholds. Thresholds in roll-in type shower compartments shall be 1/2 inch (13 mm) high maximum in accordance with 303. In transfer type shower compartments, thresholds 1/2 inch (13 mm) high maximum shall be beveled, rounded, or vertical.
EXCEPTION: A threshold 2 inches (51 mm) high maximum shall be permitted in transfer type shower compartments in existing facilities where provision of a 1/2 inch (13 mm) high threshold would disturb the structural reinforcement of the floor slab.

608.8 Shower Enclosures. Enclosures for shower compartments shall not obstruct controls, faucets, and shower spray units or obstruct transfer from wheelchairs onto shower seats.

609 Grab Bars
609.1 General. Grab bars in toilet facilities and bathing facilities shall comply with 609.

609.2 Cross Section. Grab bars shall have a cross section complying with 609.2.1 or 609.2.2.

609.2.1 Circular Cross Section. Grab bars with circular cross sections shall have an outside diameter of 1 1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum.

609.2.2 Non-Circular Cross Section. Grab bars with non-circular cross sections shall have a cross-section dimension of 2 inches (51 mm) maximum and a perimeter dimension of 4 inches (100 mm) minimum and 4.8 inches (120 mm) maximum.

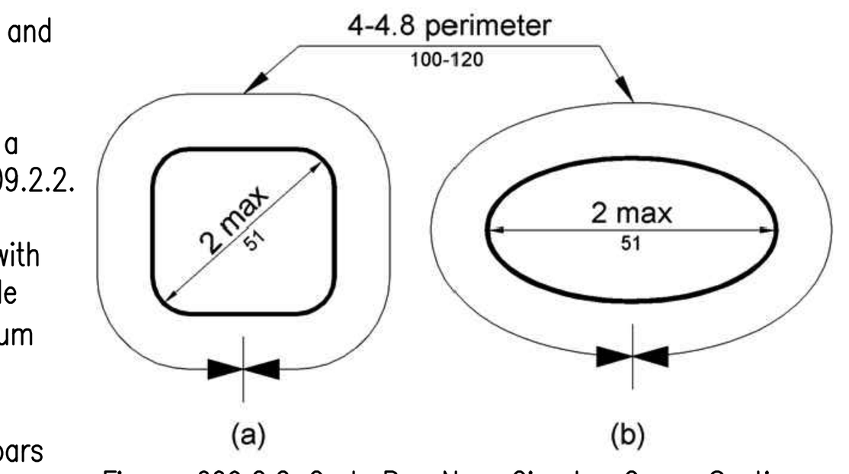
Figure 609.2.2 Grab Bar Non-Circular Cross Section

609.3 Spacing. The space between the wall and the grab bar shall be 1 1/2 inches (38 mm). The space between the grab bar and projecting objects below and at the ends shall be 1 1/2 inches (38 mm) minimum. The space between the grab bar and projecting objects above shall be 12 inches (305 mm) minimum.
EXCEPTION: The space between the grab bars and shower controls, shower fittings, and other grab bars above shall be permitted to be 1 1/2 inches (38 mm) minimum.

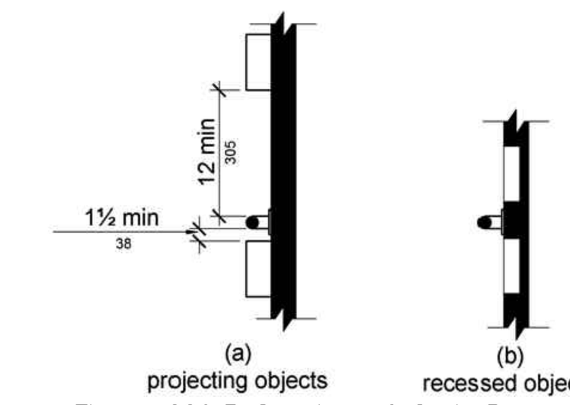
Figure 609.3 Spacing of Grab Bars

609.4 Position of Grab Bars. Grab bars shall be installed in a horizontal position, 33 inches (840 mm) minimum and 36 inches (915 mm) maximum above the finish floor measured to the top of the gripping surface, except that at water closets for children's use complying with 604.9, grab bars shall be installed in a horizontal position 18 inches (455 mm) minimum and 27 inches (685 mm) maximum above the finish floor measured to the top of the gripping surface. The height of the lower grab bar on the back wall of a bathtub shall comply with 607.4.1.1 or 607.4.2.1.

609.5 Surface Hazards. Grab bars and any wall or other surfaces adjacent to grab bars shall be free of sharp or abrasive elements and shall have rounded edges.
609.6 Fittings. Grab bars shall not rotate within their fittings.
609.7 Installation. Grab bars shall be installed in any manner that provides a gripping surface at the specified locations and that does not obstruct the required clear floor space.

609.8 Structural Strength. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the grab bar, fastener, mounting device, or supporting structure.

610 Seats

610.1 General. Seats in bathtubs and shower compartments shall comply with 610.
610.2 Bathtub Seats. The top of bathtub seats shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish floor. The depth of a removable in-tub seat shall be 15 inches (380 mm) minimum and 16 inches (405 mm) maximum. The seat shall be capable of secure placement. Permanent seats at the head end of the bathtub shall be 15 inches (380 mm) deep minimum and shall extend from the back wall to or beyond the outer edge of the bathtub.

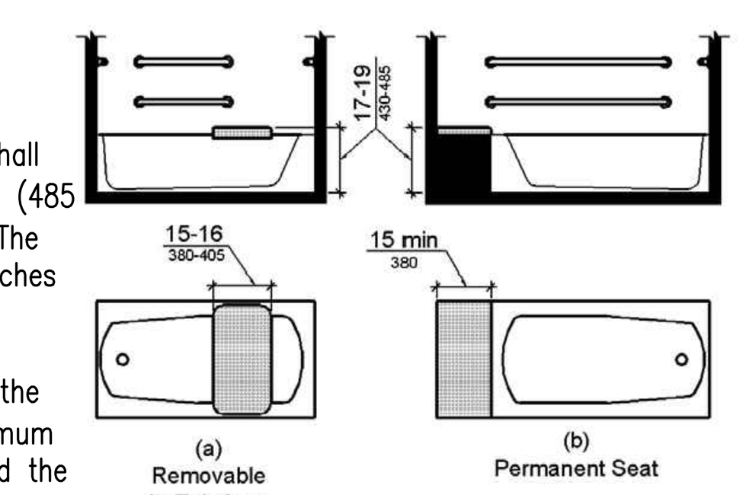
Figure 610.2 Bathtub Seats

610.3 Shower Compartment Seats. Where a seat is provided in a standard roll-in shower compartment, it shall be a folding type, shall be installed on the side wall adjacent to the controls, and shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. Where a seat is provided in an alternate roll-in type shower compartment, it shall be a folding type, shall be installed on the front wall opposite the back wall, and shall extend from the adjacent side wall to a point within 3 inches (75 mm) of the compartment entry. In transfer-type showers, the seat shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. The top of the seat shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish floor. Seats shall comply with 610.3.1 or 610.3.2.

610.3.1 Rectangular Seats. The rear edge of a rectangular seat shall be 2 1/2 inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from the seat wall. The side edge of the seat shall be 1 1/2 inches (38 mm) maximum from the adjacent wall.

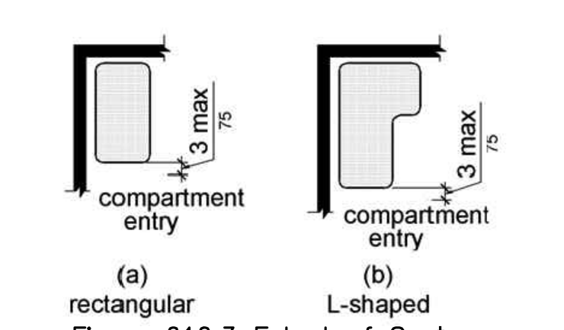
Figure 610.3 Extent of Seat

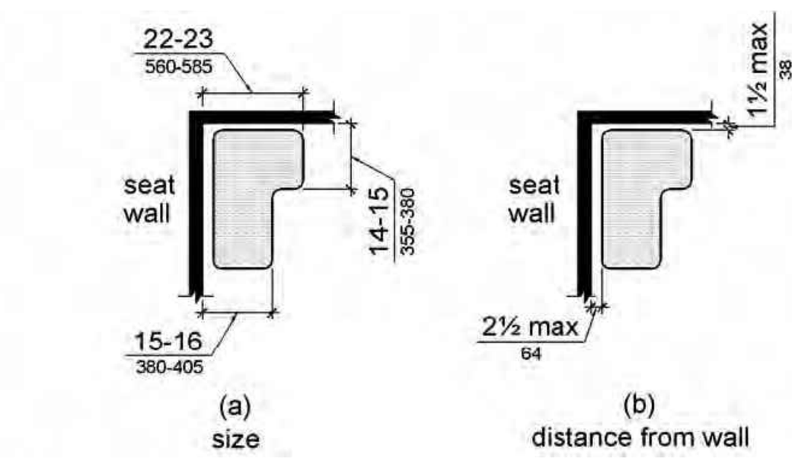
Figure 610.3.2 L-Shaped Shower Seat

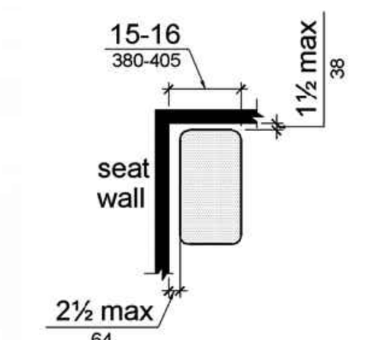
Figure 610.3.1 Rectangular Shower Seat

610.3.2 L-Shaped Seats. The rear edge of an L-shaped seat shall be 2 1/2 inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 1/2 inches (38 mm) maximum from the wall and the front edge shall be 14 inches (355 mm) minimum and 15 inches (380 mm) maximum from the wall. The end of the "L" shall be 22 inches (560 mm) minimum and 23 inches maximum (585 mm) from the main seat wall.

610.4 Structural Strength. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the seat, fastener, mounting device, or supporting structure.

611 Washing Machines and Clothes Dryers

611.1 General. Washing machines and clothes dryers shall comply with 611.

611.2 Clear Floor Space. A clear floor or ground space complying with 305 positioned for parallel approach shall be provided. The clear floor or ground space shall be centered on the appliance.

611.3 Operable Parts. Operable parts, including doors, lint screens, and detergent and bleach compartments shall comply with 309.

611.4 Height. Top loading machines shall have the door to the laundry compartment located 36 inches (915 mm) maximum above the finish floor. Front loading machines shall have the bottom of the opening to the laundry compartment located 15 inches (380 mm) minimum and 36 inches (915 mm) maximum above the finish floor.

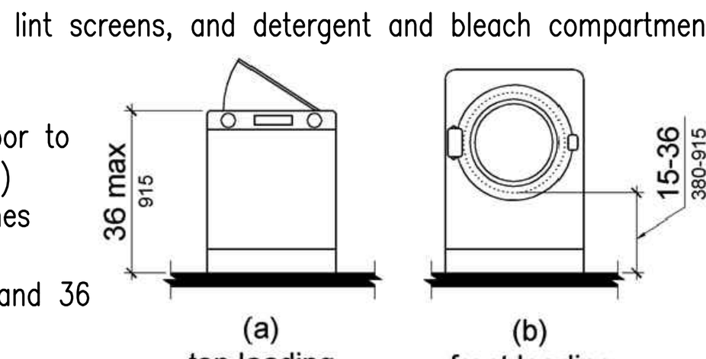
Figure 611.4 Height of Laundry Compartment Opening

612 Saunas and Steam Rooms

612.1 General. Saunas and steam rooms shall comply with 612.

612.2 Bench. Where seating is provided in saunas and steam rooms, at least one bench shall comply with 903. Doors shall not swing into the clear floor space required by 903.2.
EXCEPTION: A readily removable bench shall be permitted to obstruct the turning space required by 612.3 and the clear floor or ground space required by 903.2.

612.3 Turning Space. A turning space complying with 304 shall be provided within saunas and steam rooms.

22 May 2015

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Teel Crossing One
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Construction Documents

Revisions

ADA3

22 May 2015

2010 ADA Standards for Accessible Design for Public Accommodations and Commercial Facilities: Title III

CHAPTER 7: COMMUNICATION ELEMENTS AND FEATURES

701 General
701.1 Scope. The provisions of Chapter 7 shall apply where required by Chapter 2 or where referenced by a requirement in this document.
702 Fire Alarm Systems
702.1 General. Fire alarm systems shall have permanently installed audible and visible alarms complying with NFPA 72 (1999 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1), except that the maximum allowable sound level of audible notification appliances complying with section 4-3.2.1 of NFPA 72 (1999 edition) shall have a sound level no more than 110 dB at the minimum hearing distance from the audible appliance. In addition, alarms in guest rooms required to provide communication features shall comply with sections 4-3 and 4-4 of NFPA 72 (1999 edition) or sections 7.4 and 7.5 of NFPA 72 (2002 edition).
EXCEPTION: Fire alarm systems in medical care facilities shall be permitted to be provided in accordance with industry practice.

703 Signs
703.1 General. Signs shall comply with 703. Where both visual and tactile characters are required, either one sign with both visual and tactile characters, or two separate signs, one with visual, and one with tactile characters, shall be provided.

703.2 Raised Characters. Raised characters shall comply with 703.2 and shall be duplicated in braille complying with 703.3. Raised characters shall be installed in accordance with 703.4.

703.2.1 Depth. Raised characters shall be 1/32 inch (0.8 mm) minimum above their background.

703.2.2 Case. Characters shall be uppercase.

703.2.3 Style. Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.2.4 Character Proportions. Characters shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I".

703.2.5 Character Height. Character height measured vertically from the baseline of the character shall be 5/8 inch (16 mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter "I".
EXCEPTION: Where separate raised and visual characters with the same information are provided, raised character height shall be permitted to be 1/2 inch (13 mm) minimum.

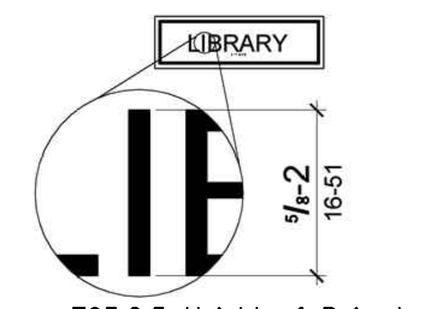
Figure 703.2.5 Height of Raised Characters

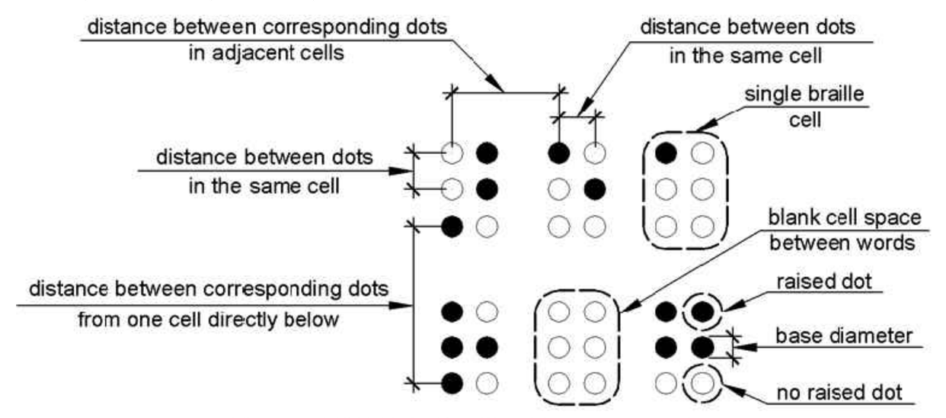

Figure 703.3.1 Braille Measurement

703.2.6 Stroke Thickness. Stroke thickness of the uppercase letter "I" shall be 15 percent maximum of the height of the character.

703.2.7 Character Spacing. Character spacing shall be measured between the two closest points of adjacent raised characters within a message, excluding word spaces. Where characters have rectangular cross sections, spacing between individual raised characters shall be 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum. Where characters have other cross sections, spacing between individual raised characters shall be 1/16 inch (1.6 mm) minimum and 4 times the raised character stroke width maximum at the base of the cross sections, and 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum at the top of the cross sections. Characters shall be separated from raised borders and decorative elements 3/8 inch (9.5 mm) minimum.

703.2.8 Line Spacing. Spacing between the baselines of separate lines of raised characters within a message shall be 135 percent minimum and 170 percent maximum of the raised character height.

703.3 Braille. Braille shall be contracted (Grade 2) and shall comply with 703.3 and 703.4.

703.3.1 Dimensions and Capitalization. Braille dots shall have a domed or rounded shape and shall comply with Table 703.3.1. The indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, and acronyms.

Table 703.3.1 Braille Dimensions

Measurement Range	Minimum in Inches to Maximum in Inches
Dot base diameter	0.059 (1.5 mm) to 0.063 (1.6 mm)
Distance between two dots in the same cell	0.090 (2.3 mm) to 0.100 (2.5 mm) measured center to center
Distance between corresponding dots in adjacent cells	0.241 (6.1 mm) to 0.300 (7.6 mm) measured center to center
Dot height	0.025 (0.6 mm) to 0.037 (0.9 mm)
Distance between corresponding dots from one cell directly below	0.395 (10 mm) to 0.400 (10.2 mm) measured center to center

703.3.2 Position. Braille shall be positioned below the corresponding text. If text is multi-lined, braille shall be placed below the entire text. Braille shall be separated 3/8 inch (9.5 mm) minimum from any other tactile characters and 3/8 inch (9.5 mm) minimum from raised borders and decorative elements.
EXCEPTION: Braille provided on elevator car controls shall be separated 3/16 inch (4.8 mm) minimum and shall be located either directly below or adjacent to the corresponding raised characters or symbols.

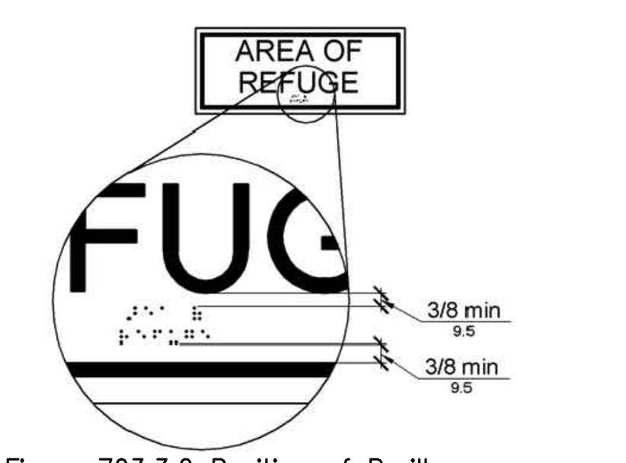

Figure 703.3.2 Position of Braille

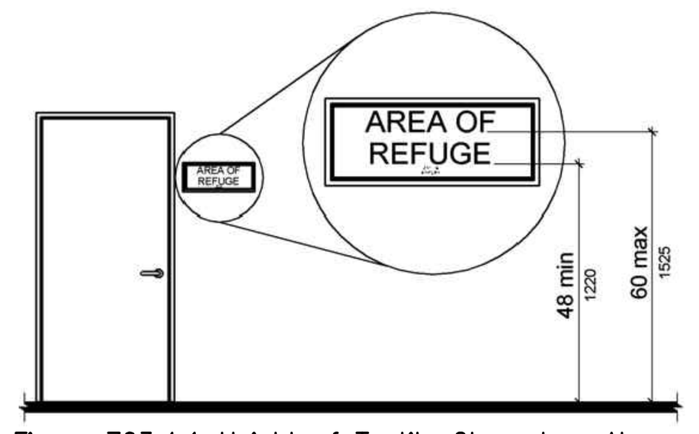

Figure 703.4.1 Height of Tactile Characters Above Finish Floor or Ground

703.4 Installation Height and Location. Signs with tactile characters shall comply with 703.4.

703.4.1 Height Above Finish Floor or Ground. Tactile characters on signs shall be located 48 inches (1220 mm) minimum above the finish floor or ground surface, measured from the baseline of the lowest tactile character and 60 inches (1525 mm) maximum above the finish floor or ground surface, measured from the baseline of the highest tactile character.
EXCEPTION: Tactile characters for elevator car controls shall not be required to comply with 703.4.1.

703.4.2 Location. Where a tactile sign is provided at a door, the sign shall be located alongside the door at the latch side. Where a tactile sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a tactile sign is provided at double doors with two active leafs, the sign shall be located to the right of the right hand door. Where there is no wall space at the latch side of a single door or at the right side of double doors, signs shall be located on the nearest adjacent wall. Signs containing tactile characters shall be located so that a clear floor space of 18 inches (455 mm) minimum by 18 inches (455 mm) minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 degree open position.
EXCEPTION: Signs with tactile characters shall be permitted on the push side of doors with closers and without hold-open devices.

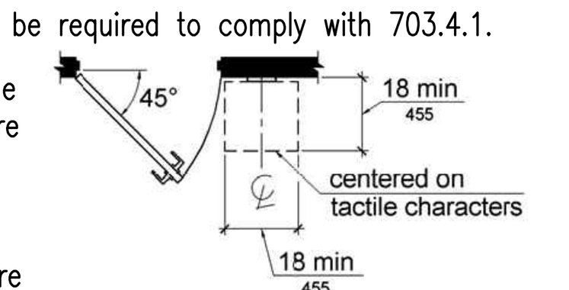

Figure 703.4.2 Location of Tactile Signs at Doors

703.5 Visual Characters. Visual characters shall comply with 703.5.
EXCEPTION: Where visual characters comply with 703.2 and are accompanied by braille complying with 703.3, they shall not be required to comply with 703.5.2 through 703.5.9.

703.5.1 Finish and Contrast. Characters and their background shall have a non-glare finish. Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

703.5.2 Case. Characters shall be uppercase or lowercase or a combination of both.

703.5.3 Style. Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.5.4 Character Proportions. Characters shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I".

703.5.5 Character Height. Minimum character height shall comply with Table 703.5.5. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign. Character height shall be based on the uppercase letter "I".

Table 703.5.5 Visual Character Height

Height to Finish Floor or Ground From Baseline of Character	Horizontal Viewing Distance	Minimum Character Height
40 inches (1015 mm) to less than or equal to 70 inches (1780 mm)	less than 72 inches (1830 mm)	5/8 inch (16 mm)
	72 inches (1830 mm) and greater	5/8 inch (16 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1830 mm)
Greater than 70 inches (1780 mm) to less than or equal to 120 inches (3050 mm)	less than 180 inches (4570 mm)	2 inch (51 mm)
	180 inches (4570 mm) and greater	2 inches (51 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4570 mm)
Greater than 120 inches (3050 mm)	less than 20 feet (6400 mm)	3 inch (75 mm)
	21 feet (6400 mm) and greater	3 inches (75 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6400 mm)

703.5.6 Height From Finish Floor or Ground. Visual characters shall be 40 inches (1015 mm) minimum above the finish floor or ground.
EXCEPTION: Visual characters indicating elevator car controls shall not be required to comply with 703.5.6.

703.5.7 Stroke Thickness. Stroke thickness of the uppercase letter "I" shall be 10 percent minimum and 30 percent maximum of the height of the character.

703.5.8 Character Spacing. Character spacing shall be measured between the two closest points of adjacent characters, excluding word spaces. Spacing between individual characters shall be 10 percent minimum and 35 percent maximum of character height.

703.5.9 Line Spacing. Spacing between the baselines of separate lines of characters within a message shall be 135 percent minimum and 170 percent maximum of the character height.

703.6 Pictograms. Pictograms shall comply with 703.6.

703.6.1 Pictogram Field. Pictograms shall have a field height of 6 inches (150 mm) minimum. Characters and braille shall not be located in the pictogram field.

703.6.2 Finish and Contrast. Pictograms and their field shall have a non-glare finish. Pictograms shall contrast with their field with either a light pictogram on a dark field or a dark pictogram on a light field.

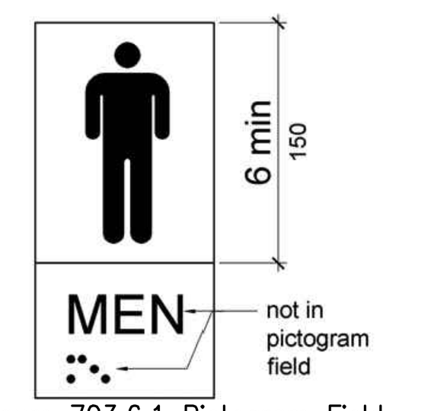

Figure 703.6.1 Pictogram Field

703.6.3 Text Descriptors. Pictograms shall have text descriptors located directly below the pictogram field. Text descriptors shall comply with 703.2, 703.3 and 703.4.

703.7 Symbols of Accessibility. Symbols of accessibility shall comply with 703.7.

703.7.1 Finish and Contrast. Symbols of accessibility and their background shall have a non-glare finish. Symbols of accessibility shall contrast with their background with either a light symbol on a dark background or a dark symbol on a light background.

703.7.2 Symbols.

703.7.2.1 International Symbol of Accessibility. The International Symbol of Accessibility shall comply with Figure 703.7.2.1.

703.7.2.2 International Symbol of TTY. The International Symbol of TTY shall comply with Figure 703.7.2.2.

703.7.2.3 Volume Control Telephones. Telephones with a volume control shall be identified by a pictogram of a telephone handset with radiating sound waves on a square field such as shown in Figure 703.7.2.3.

703.7.2.4 Assistive Listening Systems. Assistive listening systems shall be identified by the International Symbol of Access for Hearing Loss complying with Figure 703.7.2.4.


Figure 703.7.2.1 International Symbol of Accessibility

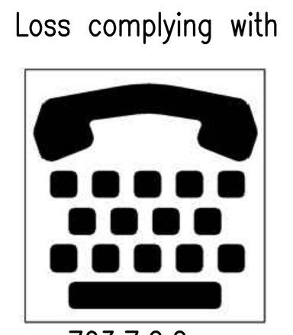
Figure 703.7.2.2 International Symbol of TTY


Figure 703.7.2.3 Volume Control Telephone


Figure 703.7.2.4 International Symbol of Access for Hearing Loss

704 Telephones

704.1 General. Public telephones shall comply with 704.

704.2 Wheelchair Accessible Telephones. Wheelchair accessible telephones shall comply with 704.2.

704.2.1 Clear Floor or Ground Space. A clear floor or ground space complying with 305 shall be provided. The clear floor or ground space shall not be obstructed by bases, enclosures, or seats.

704.2.1.1 Parallel Approach. Where a parallel approach is provided, the distance from the edge of the telephone enclosure to the face of the telephone unit shall be 10 inches (255 mm) maximum.

704.2.1.2 Forward Approach. Where a forward approach is provided, the distance from the front edge of a counter within the telephone enclosure to the face of the telephone unit shall be 20 inches (510 mm) maximum.

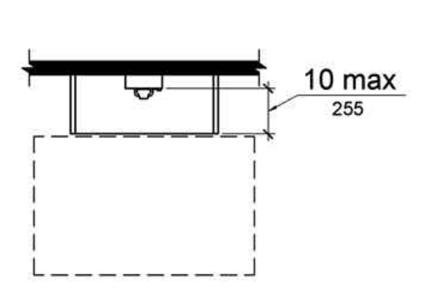

Figure 704.2.1.1 Parallel Approach to Telephone

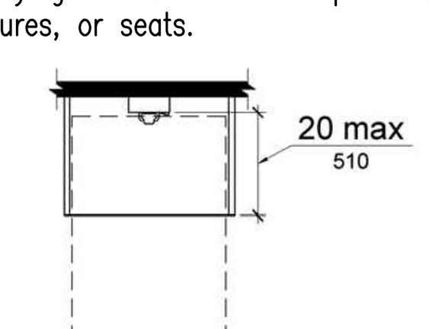

Figure 704.2.1.2 Forward Approach to Telephone

704.2.2 Operable Parts. Operable parts shall comply with 309. Telephones shall have push-button controls where such service is available.

704.2.3 Telephone Directories. Telephone directories, where provided, shall be located in accordance with 309.

704.2.4 Cord Length. The cord from the telephone to the handset shall be 29 inches (735 mm) long minimum.

704.3 Volume Control Telephones. Public telephones required to have volume controls shall be equipped with a receive volume control that provides a gain adjustable up to 20 dB minimum. For incremental volume control, provide at least one intermediate step of 12 dB of gain minimum. An automatic reset shall be provided.

704.4 TTYs. TTYs required at a public pay telephone shall be permanently affixed within, or adjacent to, the telephone enclosure. Where an acoustic coupler is used, the telephone cord shall be sufficiently long to allow connection of the TTY and the telephone receiver.

704.4.1 Height. When in use, the touch surface of TTY keypads shall be 34 inches (865 mm) minimum above the finish floor.
EXCEPTION: Where seats are provided, TTYs shall not be required to comply with 704.4.1.

704.5 TTY Shelf. Public pay telephones required to accommodate portable TTYs shall be equipped with a shelf and an electrical outlet within or adjacent to the telephone enclosure. The telephone handset shall be capable of being placed flush on the surface of the shelf. The shelf shall be capable of accommodating a TTY and shall have 6 inches (150 mm) minimum vertical clearance above the area where the TTY is to be placed.

705 Detectable Warnings

705.1 General. Detectable warnings shall consist of a surface of truncated domes and shall comply with 705.

705.1.1 Dome Size. Truncated domes in a detectable warning surface shall have a base diameter of 0.9 inch (23 mm) minimum and 1.4 inches (36 mm) maximum, a top diameter of 50 percent of the base diameter minimum to 65 percent of the base diameter maximum, and a height of 0.2 inch (5.1 mm).

705.1.2 Dome Spacing. Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 inches (41 mm) minimum and 2.4 inches (61 mm) maximum, and a base-to-base spacing of 0.65 inch (17 mm) minimum, measured between the most adjacent domes on a square grid.

705.1.3 Contrast. Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark, or dark-on-light.

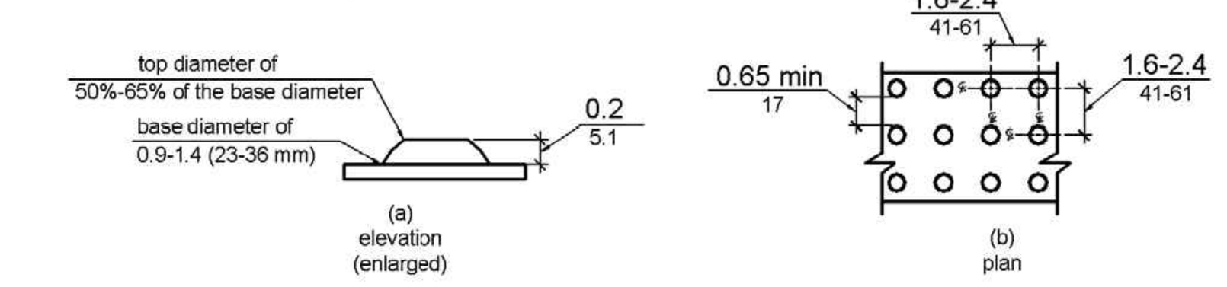

Figure 705.1 Size and Spacing of Truncated Domes

705.2 Platform Edges. Detectable warning surfaces at platform boarding edges shall be 24 inches (610 mm) wide and shall extend the full length of the public use areas of the platform.

706 Assistive Listening Systems
706.1 General. Assistive listening systems required in assembly areas shall comply with 706.

706.2 Receiver Jacks. Receivers required for use with an assistive listening system shall include a 1/8 inch (3.2 mm) standard mono jack.

706.3 Receiver Hearing-Aid Compatibility. Receivers required to be hearing-aid compatible shall interface with telecoils in hearing aids through the provision of neckloops.

706.4 Sound Pressure Level. Assistive listening systems shall be capable of providing a sound pressure level of 110 dB minimum and 118 dB maximum with a dynamic range on the volume control of 50 dB.

706.5 Signal-to-Noise Ratio. The signal-to-noise ratio for internally generated noise in assistive listening systems shall be 18 dB minimum.

706.6 Peak Clipping Level. Peak clipping shall not exceed 18 dB of clipping relative to the peaks of speech.

707 Automatic Teller Machines and Fare Machines

707.1 General. Automatic teller machines and fare machines shall comply with 707.

707.2 Clear Floor or Ground Space. A clear floor or ground space complying with 305 shall be provided.
EXCEPTION: Clear floor or ground space shall not be required at drive-up only automatic teller machines and fare machines.

707.3 Operable Parts. Operable parts shall comply with 309. Unless a clear or correct key is provided, each operable part shall be able to be differentiated by sound or touch, without activation.
EXCEPTION: Drive-up only automatic teller machines and fare machines shall not be required to comply with 309.2 and 309.3.

707.4 Privacy. Automatic teller machines shall provide the opportunity for the same degree of privacy of input and output available to all individuals.

707.5 Speech Output. Machines shall be speech enabled. Operating instructions and orientation, visible transaction prompts, user input verification, error messages, and all displayed information for full use shall be accessible to and independently usable by individuals with vision impairments. Speech shall be delivered through a mechanism that is readily available to all users, including but not limited to, an industry standard connector or a telephone handset. Speech shall be recorded or digitized human, or synthesized.
EXCEPTIONS:
1. Audible tones shall be permitted instead of speech for visible output that is not displayed for security purposes, including but not limited to, asterisks representing personal identification numbers.

2. Advertisements and other similar information shall not be required to be audible unless they convey information that can be used in the transaction being conducted.

3. Where speech synthesis cannot be supported, dynamic alphabetic output shall not be required to be audible.

707.5.1 User Control. Speech shall be capable of being repeated or interrupted. Volume control shall be provided for the speech function.
EXCEPTION: Speech output for any single function shall be permitted to be automatically interrupted when a transaction is selected.

707.5.2 Receipts. Where receipts are provided, speech output devices shall provide audible balance inquiry information, error messages, and all other information on the printed receipt necessary to complete or verify the transaction.
EXCEPTIONS:
1. Machine location, date and time of transaction, customer account number, and the machine identifier shall not be required to be audible.
2. Information on printed receipts that duplicates information available on-screen shall not be required to be presented in the form of an audible receipt.
3. Printed copies of bank statements and checks shall not be required to be audible.

707.6 Input. Input devices shall comply with 707.6.

707.6.1 Input Controls. At least one tactilely discernible input control shall be provided for each function. Where provided, key surfaces not on active areas of display screens, shall be raised above surrounding surfaces. Where membrane keys are the only method of input, each shall be tactilely discernable from surrounding surfaces and adjacent keys.

707.6.2 Numeric Keys. Numeric keys shall be arranged in a 12-key ascending or descending telephone keypad layout. The number five key shall be tactilely distinct from the other keys.

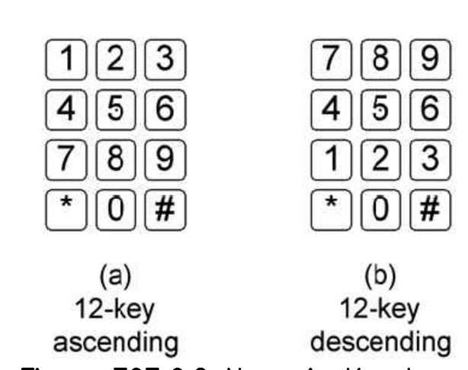

Figure 707.6.2 Numeric Key Layout

707.6.3 Function Keys. Function keys shall comply with 707.6.3.

707.6.3.1 Contrast. Function keys shall contrast visually from background surfaces. Characters and symbols on key surfaces shall contrast visually from key surfaces. Visual contrast shall be either light-on-dark or dark-on-light.
EXCEPTION: Tactile symbols required by 707.6.3.2 shall not be required to comply with 707.6.3.1.

707.6.3.2 Tactile Symbols. Function key surfaces shall have tactile symbols as follows: Enter or Proceed key: raised circle; Clear or Correct key: raised left arrow; Cancel key: raised letter ex; Add Value key: raised plus sign; Decrease Value key: raised minus sign.

707.7 Display Screen. The display screen shall comply with 707.7.
EXCEPTION: Drive-up only automatic teller machines and fare machines shall not be required to comply with 707.7.1.

707.7.1 Visibility. The display screen shall be visible from a point located 40 inches (1015 mm) above the center of the clear floor space in front of the machine.

707.7.2 Characters. Characters displayed on the screen shall be in a sans serif font. Characters shall be 3/16 inch (4.8 mm) high minimum based on the uppercase letter "I". Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

707.8 Braille Instructions. Braille instructions for initiating the speech mode shall be provided. Braille shall comply with 703.3.

708 Two-Way Communication Systems
708.1 General. Two-way communication systems shall comply with 708.

708.2 Audible and Visual Indicators. The system shall provide both audible and visual signals.

708.3 Handsets. Handset cords, if provided, shall be 29 inches (735 mm) long minimum.

CHAPTER 8: SPECIAL ROOMS, SPACES AND ELEMENTS

801 General

801.1 Scope. The provisions of Chapter 8 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

802 Wheelchair Spaces, Companion Seats, and Designated Aisle Seats
802.1 Wheelchair Spaces. Wheelchair spaces shall comply with 802.1.

802.1.1 Floor or Ground Surface. The floor or ground surface of wheelchair spaces shall comply with 302. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

802.1.2 Width. A single wheelchair space shall be 36 inches (915 mm) wide minimum. Where two adjacent wheelchair spaces are provided, each wheelchair space shall be 33 inches (840 mm) wide minimum.

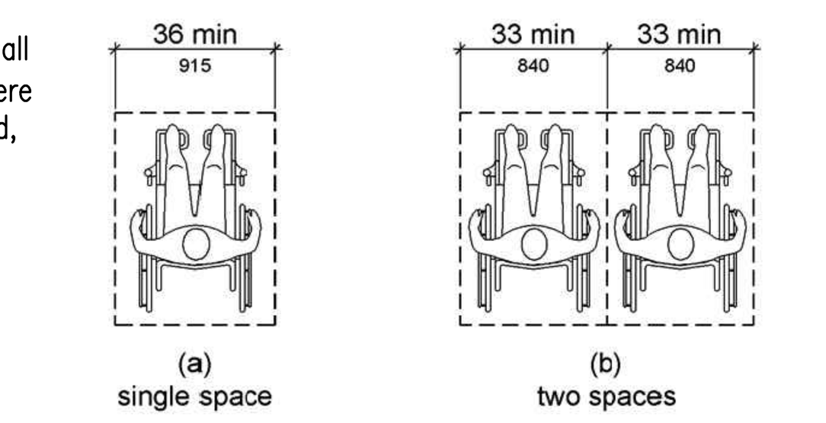

Figure 802.1.2 Width of Wheelchair Spaces in Assembly Areas

802.1.3 Depth. Where a wheelchair space can be entered from the front or rear, the wheelchair space shall be 48 inches (1220 mm) deep minimum. Where a wheelchair space can be entered only from the side, the wheelchair space shall be 60 inches (1525 mm) deep minimum.

802.1.4 Approach. Wheelchair spaces shall adjoin accessible routes. Accessible routes shall not overlap wheelchair spaces.
802.1.5 Overlap. Wheelchair spaces shall not overlap circulation paths.

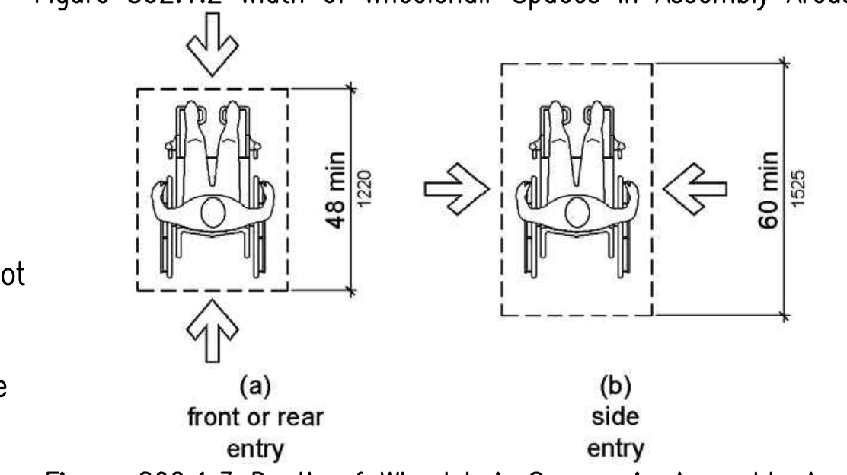

Figure 802.1.3 Depth of Wheelchair Spaces in Assembly Areas

802.2 Lines of Sight. Lines of sight to the screen, performance area, or playing field for spectators in wheelchair spaces shall comply with 802.2.

802.2.1 Lines of Sight Over Seated Spectators. Where spectators are expected to remain seated during events, spectators in wheelchair spaces shall be afforded lines of sight complying with 802.2.1.

802.2.1.1 Lines of Sight Over Heads. Where spectators are provided lines of sight over the heads of spectators seated in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the heads of seated spectators in the first row in front of wheelchair spaces.

802.2.1.2 Lines of Sight Between Heads. Where spectators are provided lines of sight over the shoulders and between the heads of spectators seated in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the shoulders and between the heads of seated spectators in the first row in front of wheelchair spaces.

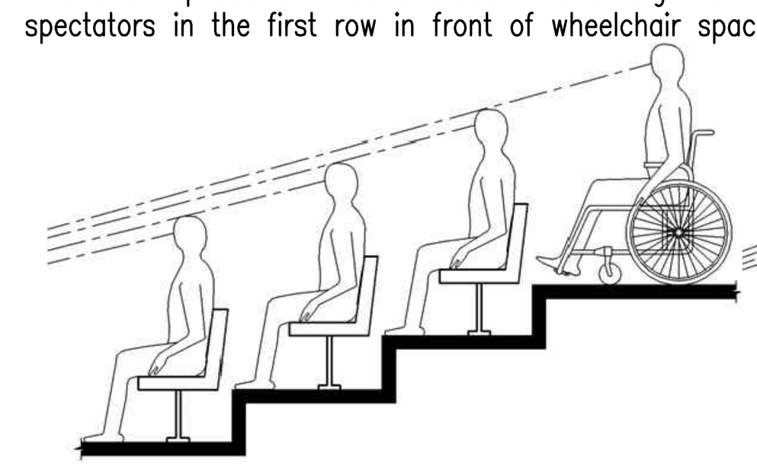
Figure 802.2.1.1 Lines of Sight Over the Heads of Seated Spectators

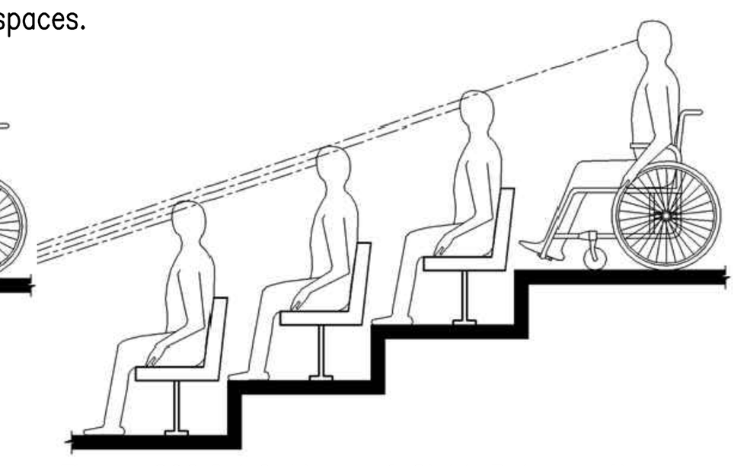
Figure 802.2.1.2 Lines of Sight Between the Heads of Seated Spectators

802.2.2 Lines of Sight Over Standing Spectators. Where spectators are expected to stand during events, spectators in wheelchair spaces shall be afforded lines of sight complying with 802.2.2.

802.2.2.1 Lines of Sight Over Heads. Where standing spectators are provided lines of sight over the heads of spectators standing in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the heads of standing spectators in the first row in front of wheelchair spaces.

802.2.2.2 Lines of Sight Between Heads. Where standing spectators are provided lines of sight over the shoulders and between the heads of spectators standing in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the shoulders and between the heads of standing spectators in the first row in front of wheelchair spaces.

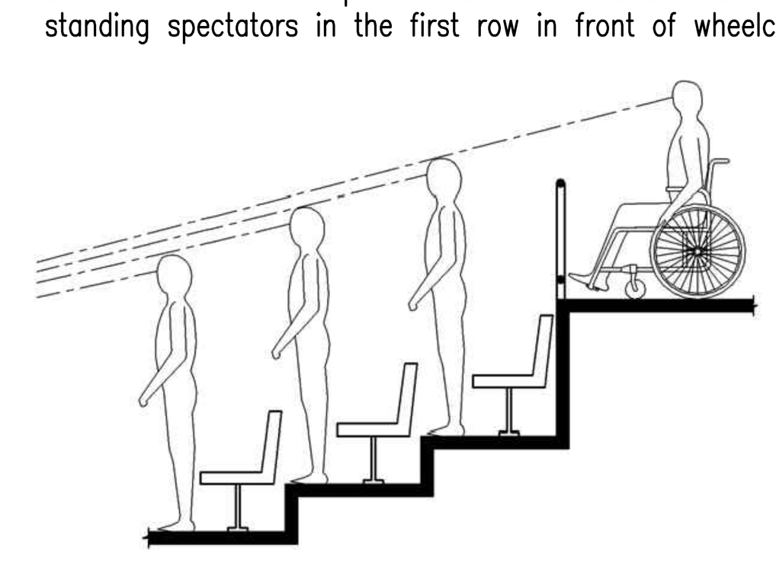
Figure 802.2.2.1 Lines of Sight Over the Heads of Standing Spectators

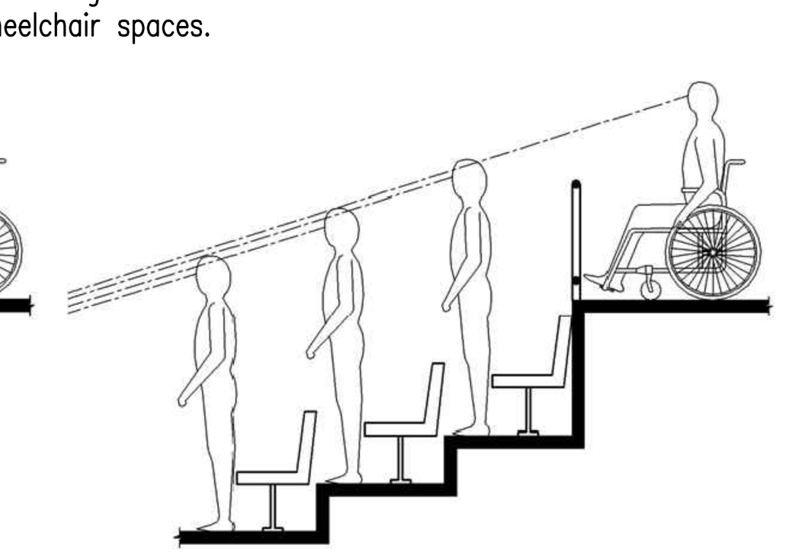
Figure 802.2.2.2 Lines of Sight Between the Heads of Standing Spectators

802.3 Companion Seats. Companion seats shall comply with 802.3.

802.3.1 Alignment. In row seating, companion seats shall be located to provide shoulder alignment with adjacent wheelchair spaces. The shoulder alignment point of the wheelchair space shall be measured 36 inches (915 mm) from the front of the wheelchair space. The floor surface of the companion seat shall be at the same elevation as the floor surface of the wheelchair space.

802.3.2 Type. Companion seats shall be equivalent in size, quality, comfort, and amenities to the seating in the immediate area. Companion seats shall be permitted to be movable.

802.4 Designated Aisle Seats. Designated aisle seats shall comply with 802.4.

802.4.1 Armrests. Where armrests are provided on the seating in the immediate area, folding or retractable armrests shall be provided on the aisle side of the seat.

802.4.2 Identification. Each designated aisle seat shall be identified by a sign or marker.

803 Dressing, Fitting, and Locker Rooms
803.1 General. Dressing, fitting, and locker rooms shall comply with 803.

803.2 Turning Space. Turning space complying with 304 shall be provided within the room.

803.3 Door Swing. Doors shall not swing into the room unless a clear floor or ground space complying with 305.3 is provided beyond the arc of the door swing.

803.4 Benches. A bench complying with 903 shall be provided within the room.

803.5 Coat Hooks and Shelves. Coat hooks provided within the room shall be located within one of the reach ranges specified in 308. Shelves shall be 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor or ground.

804 Kitchens and Kitchenettes

804.1 General. Kitchens and kitchenettes shall comply with 804.

804.2 Clearance. Where a pass through kitchen is provided, clearances shall comply with 804.2.1. Where a U-shaped kitchen is provided, clearances shall comply with 804.2.2.
EXCEPTION: Spaces that do not provide a cooktop or conventional range shall not be required to comply with 804.2.

Advisory 804.2 Clearance. Clearances are measured from the furthest projecting face of all opposing base cabinets, counter tops, appliances, or walls, excluding hardware.

804.2.1 Pass Through Kitchen. In pass through kitchens where counters, appliances or cabinets are on two opposing sides, or where counters, appliances or cabinets are opposite a parallel wall, clearance between all opposing base cabinets, counter tops, appliances, or walls within kitchen work areas shall be 40 inches (1015 mm) minimum. Pass through kitchens shall have two entries.

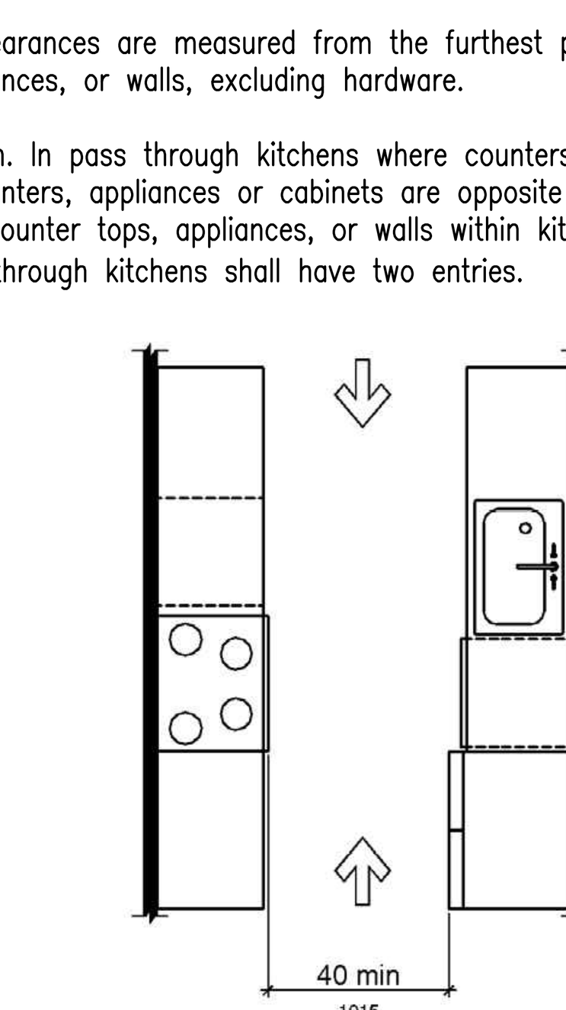

Figure 804.2.1 Pass Through Kitchens

804.2.2 U-Shaped. In U-shaped kitchens enclosed on three contiguous sides, clearance between all opposing base cabinets, counter tops, appliances, or walls within kitchen work areas shall be 60 inches (1525 mm) minimum.

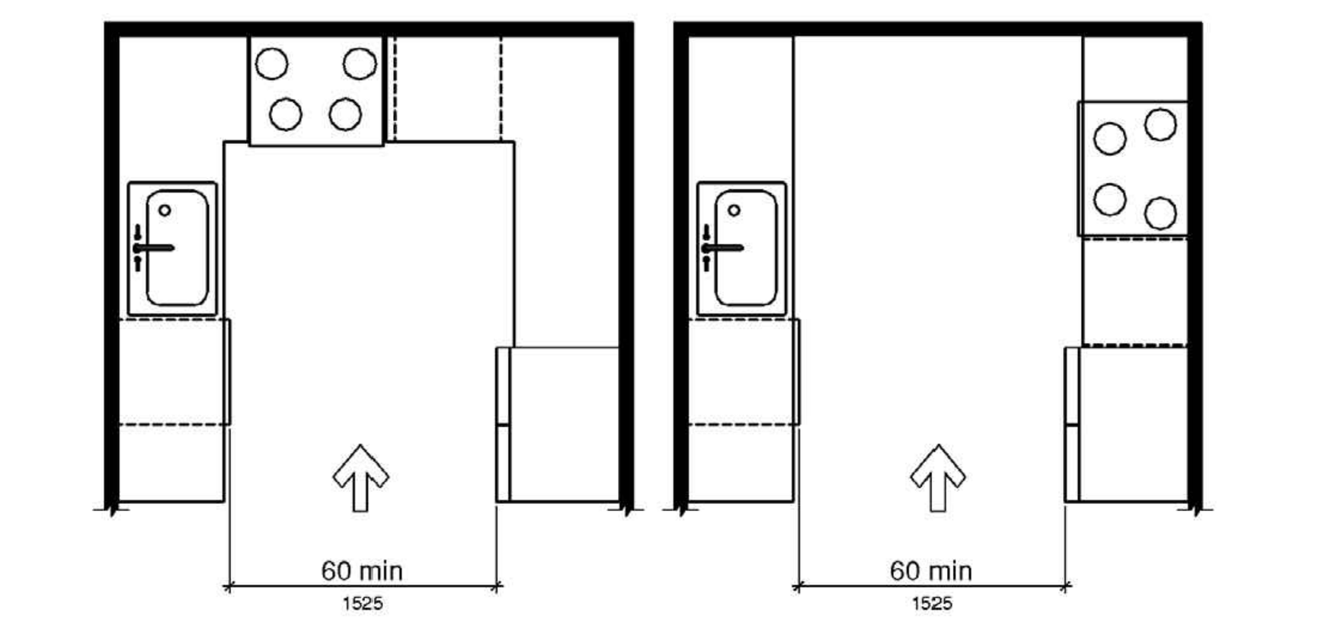

Figure 804.2.2 U-Shaped Kitchens

804.3 Kitchen Work Surface. In residential dwelling units required to comply with 809, at least one 30 inches (760 mm) wide minimum section of counter shall provide a kitchen work surface that complies with 804.3.
804.3.1 Clear Floor or Ground Space. A clear floor space complying with 305 positioned for a forward approach shall be provided. The clear floor or ground space shall be centered on the kitchen work surface and shall provide knee and toe clearance complying with 306.
EXCEPTION: Cabinetry shall be permitted under the kitchen work surface provided that all of the following conditions are met:
(a) the cabinetry can be removed without removal or replacement of the kitchen work surface;
(b) the finish floor extends under the cabinetry; and
(c) the walls behind and surrounding the cabinetry are finished.

804.3.2 Height. The kitchen work surface shall be 34 inches (865 mm) maximum above the finish floor or ground.
EXCEPTION: A counter that is adjustable to provide a kitchen work surface at variable heights, 29 inches (735 mm) minimum and 36 inches (915 mm) maximum, shall be permitted.

804.3.3 Exposed Surfaces. There shall be no sharp or abrasive surfaces under the work surface counters.
804.4 Sinks. Sinks shall comply with 606.
804.5 Storage. At least 50 percent of shelf space in storage facilities shall comply with 811.

804.6 Appliances. Where provided, kitchen appliances shall comply with 804.6.

804.6.1 Clear Floor or Ground Space. A clear floor or ground space complying with 305 shall be provided at each kitchen appliance. Clear floor or ground spaces shall be permitted to overlap.

804.6.2 Operable Parts. All appliance controls shall comply with 309.
EXCEPTIONS:
1. Appliance doors and door latching devices shall not be required to comply with 309.4.

2. Bottom-hinged appliance doors, when in the open position, shall not be required to comply with 309.3.

804.6.3 Dishwasher. Clear floor or ground space shall be positioned adjacent to the dishwasher door. The dishwasher door, in the open position, shall not obstruct the clear floor or ground space for the dishwasher or the sink.

804.6.4 Range or Cooktop. Where a forward approach is provided, the clear floor or ground space shall provide knee and toe clearance complying with 306. Where knee and toe space is provided, the underside of the range or cooktop shall be insulated or otherwise configured to prevent burns, abrasions, or electrical shock. The location of controls shall not require reaching across burners.

804.6.5 Oven. Ovens shall comply with 804.6.5.

804.6.5.1 Side-Hinged Door Ovens. Side-hinged door ovens shall have the work surface required by 804.3 positioned adjacent to the latch side of the oven door.

804.6.5.2 Bottom-Hinged Door Ovens. Bottom-hinged door ovens shall have the work surface required by 804.3 positioned adjacent to one side of the door.

804.6.5.3 Controls. Ovens shall have controls on front panels.

804.6.6 Refrigerator/Freezer. Combination refrigerators and freezers shall have at least 50 percent of the freezer space 54 inches (1370 mm) maximum above the finish floor or ground. The clear floor or ground space shall be positioned for a parallel approach to the space dedicated to a refrigerator/freezer with the centerline of the clear floor or ground space offset 24 inches (610 mm) maximum from the centerline of the dedicated space.

805 Medical Care and Long-Term Care Facilities
805.1 General. Medical care facility and long-term care facility patient or resident sleeping rooms required to provide mobility features shall comply with 805.

805.2 Turning Space. Turning space complying with 304 shall be provided within the room.

805.3 Clear Floor or Ground Space. A clear floor space complying with 305 shall be provided on each side of the bed. The clear floor space shall be positioned for parallel approach to the side of the bed.

805.4 Toilet and Bathing Rooms. Toilet and bathing rooms that are provided as part of a patient or resident sleeping room shall comply with 603. Where provided, no fewer than one water closet, one lavatory, and one bathtub or shower shall comply with the applicable requirements of 603 through 610.

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Teel Crossing One
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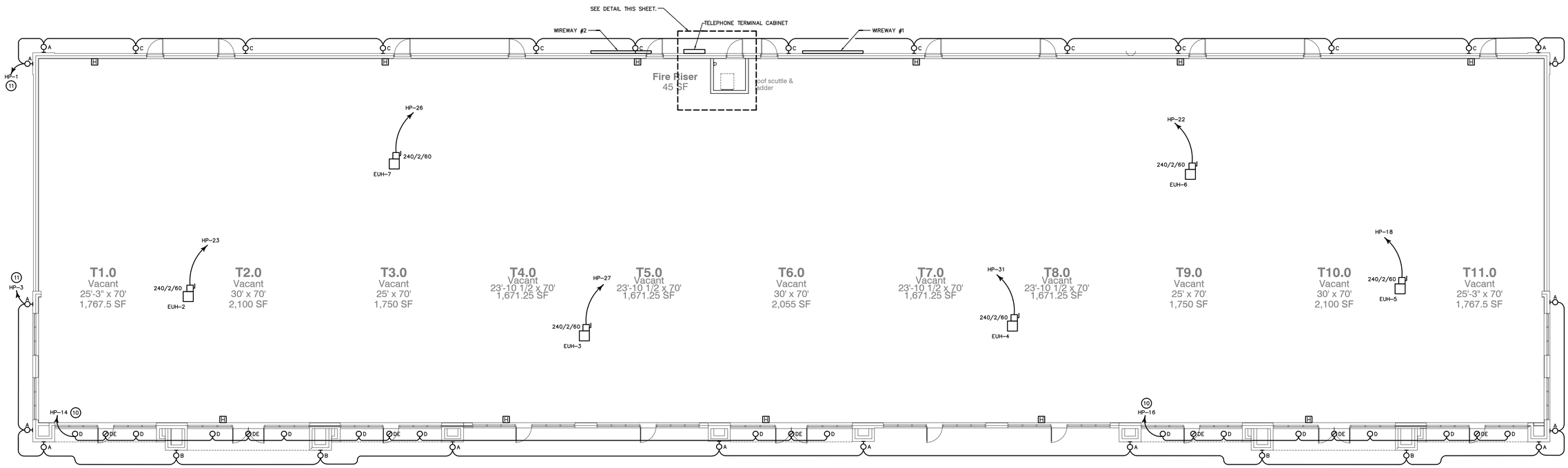
Construction Documents

Revisions

22 May 2015

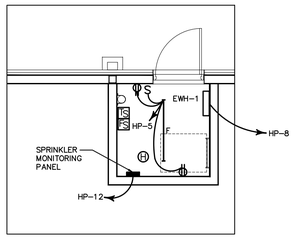
ADA4

22 May 2015

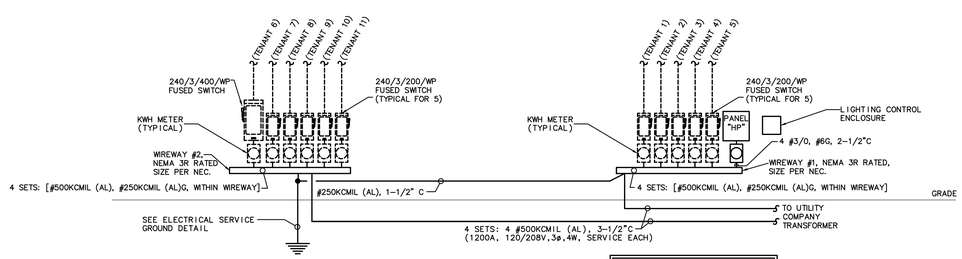


POWER PLAN
SCALE:1/8" = 1'-0"

CONTRACTOR SHALL LABEL ALL METERS WITH TENANT'S ADDRESS.



RISER ROOM DETAIL
SCALE:1/4" = 1'-0"



POWER RISER DIAGRAM
NO SCALE

NEW
FUTURE

CONDUCTOR SIZES ARE FOR COPPER UNLESS NOTED OTHERWISE.

VOLTAGE: 208/120V., 3PH., 4W.				MAIN BKR: 200 AMP		BUS: 225 AMP ---			A.I.C.: 21 K			SURFACE MOUNTED
NOTES: SE RATED, NEMA 3R												
DESCRIPTION	KVA/PHASE A	KVA/PHASE B	KVA/PHASE C	WIRE SIZE	BKR AMPS	CKT #	CKT #	BKR AMPS	WIRE SIZE	KVA/PHASE A	KVA/PHASE B	KVA/PHASE C	DESCRIPTION
EXTERIOR LIGHTS-N	0.8			10	20	1	2	30	6	1.2			PYLON SIGN
EXTERIOR LIGHTS-S		0.8		10	20	3	4		6		1.2		
RISER ROOM-LTG/PWR			0.4	12	20	5	6		6			1.2	
SITE LIGHTING	1.0			10	20	7	8	20	12	1.3			EWH-1
		1.0		10		9	10		12		1.2		
SITE LIGHTING			1.0	10	20	11	12	20	12			0.2	SPRINKLER
	1.0			10		13	14	20	10	1.2			EXTERIOR LIGHTS-W
SITE LIGHTING		1.3		10	20	15	16	20	10		1.0		EXTERIOR LIGHTS-E
			1.2	10		17	18	40	8			2.8	EUH-5
SITE LIGHTING	1.5			10	20	19	20		8	2.8			
		1.5		10		21	22	40	8		2.8		EUH-6
EUH-2			2.8	8	40	23	24		8			2.8	
	2.8			8		25	26	40	8	2.8			EUH-7
EUH-3		2.8		8	40	27	28		8		2.8		
			2.8	8		29	30	20	---			0	SPARE
EUH-4	2.8			8	40	31	32	20	---	0			SPARE
		2.8		8		33	34	20	---		0		SPARE
SPARE			0	---	20	35	36	20	---			0	SPARE
SPARE	0			---	20	37	38	20	---	0			SPARE
SPARE		0		---	20	39	40	20	---		0		SPARE
SPARE			0	---	20	41	42	20	---			0	SPARE
	9.9			PANEL "HP"						9.3			A: 19.2 KVA
		10.2									9.0		B: 19.2 KVA
			8.2									7.0	C: 15.2 KVA
												TOTAL:	53.6 KVA

EQUIPMENT SIZES *			
DISCONNECT SWITCH			
FRAME SIZE	HEIGHT	WIDTH	WIDTH W/ HANDLE
100A.	22.0"	9.0"	11.0"
200A.	28.0"	14.0"	15.0"
400A.	51.0"	28.0"	28.0"
600A.	49.13"		25.13"
1200A.	70.0"	37.0"	37.0"
METER BASE			
100A.	19.0"	13.0"	---
200A.	19.0"	13.0"	---
400A.	43.0"	21.0"	---
PANELBOARD			
---	35.0"	20.0"	---
CT ENCLOSURE			
---	36.0"	36.0"	---

* TYPICAL SIZE, VERIFY WITH SUBMITTED MANUFACTURER ACTUAL SIZES

GENERAL ELECTRICAL NOTES

1. VISIT PROJECT SITE BEFORE SUBMISSION OF BID AND BECOME FAMILIAR WITH EXISTING CONDITIONS, LOCATIONS OF UTILITIES, AND EXTENT OF DEMOLITION REQUIRED.

2. COORDINATE INSTALLATION OF NEW SERVICES WITH LOCAL ELECTRIC UTILITY COMPANY. PROVIDE TRENCHING, CONDUIT, METER BASE, CONCRETE PAD, AND OTHER ITEMS AS REQUIRED. INSTALL SERVICES IN ACCORDANCE WITH CURRENT UTILITY COMPANY REQUIREMENTS.

3. COORDINATE INSTALLATION OF TELEPHONE SERVICE CONDUIT WITH LOCAL TELEPHONE COMPANY. INSTALL (2) 4" CONDUITS FROM TELEPHONE SERVICE POINT TO TELEPHONE TERMINAL CABINET. INSTALL A 2" CONDUIT WITH PULLSTRING FROM TELEPHONE TERMINAL CABINET INTO EACH FUTURE TENANT SPACE AT REAT OF SPACE.

4. PROVIDE A TELEPHONE TERMINAL CABINET WITH A #6 COPPER GROUND WIRE TO THE SERVICE ENTRANCE GROUND. COORDINATE CABINET SIZE WITH UTILITY.

5. MAINTAIN CODE REQUIRED WORKING CLEARANCE AT ALL ELECTRICAL PANELS, DISCONNECT SWITCHES, AND STARTERS.

6. PROVIDE DISCONNECT SWITCH FOR ANY HARDWIRED EQUIPMENT NOT SUPPLIED WITH DISCONNECTING MEANS. DISCONNECT SHALL BE RATED FOR LOCATION INSTALLED.

7. COORDINATE EXACT LOCATION OF ALL CEILING MOUNTED LIGHT FIXTURES WITH ARCHITECTURAL DRAWINGS. PROVIDE FIXTURES COMPATIBLE WITH CEILING TYPE INSTALLED.

8. SEE ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION OF EXTERIOR WALL-MOUNTED LIGHTING FIXTURES.

9. ALL RECEPTACLES ON DEDICATED CIRCUITS SHALL BE RATED NO LESS THAN CIRCUIT OVERCURRENT DEVICE.

10. PROVIDE PHOTOCELL ON/TIMESWITCH OFF CONTROL FOR EXTERIOR LIGHTS AS INDICATED. SEE DETAIL. COORDINATE TIME SCHEDULE WITH OWNER.

11. PROVIDE PHOTOCELL ON/TIMESWITCH OFF CONTROL FOR SECURITY LIGHTING AS INDICATED. SEE DETAIL. COORDINATE TIME SCHEDULE WITH OWNER.

12. INSTALL FIRE RATED ELECTRICAL BOXES LOCATED ON OPPOSITE SIDES OF RATED WALLS SUCH THAT THEY ARE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES

13. GENERAL CONTRACTOR TO CONFIRM LOCATION WITH OWNER AND CITY.

14. LIGHTING FIXTURES FOR EMERGENCY USE SHALL BE PROVIDED WITH INTEGRAL BATTERY. THOSE FIXTURES SHALL BE CIRCUITED SUCH THAT THEY AUTOMATICALLY SWITCH TO BATTERY OPERATION UPON FAILURE OF POWER TO CIRCUIT.

ELECTRICAL LEGEND

MOUNTING HEIGHTS MEASURED TO ℄

- CONDUIT RUN CONCEALED IN WALL, CEILING, OR FLOOR
- HOMERUN TO PANEL INDICATED
- RECEPTACLE, DUPLEX, 120V, 15A. UNO, @ 18" AFF TO BOTTOM
- S — SWITCH, SINGLE POLE, 120/277V, 20A, 45" AFF TO BOTTOM
- LIGHTING FIXTURES SEE FIXTURE SCHEDULE
- FS TS — SPRINKLER SYSTEM FLOW AND TAMPER SWITCHES
- (H) — FIRE ALARM CEILING MTD HEAT DETECTOR
- (P) — PHOTOCELL
- (1) — REFER TO NOTE INDICATED
- AFF — ABOVE FINISHED FLOOR
- AFG — ABOVE FINISHED GRADE
- BRKR — BREAKER
- ℄ — CENTERLINE
- CL'G — CEILING
- EX — EXISTING
- GFI — GROUND FAULT INTERRUPTER
- MTD — MOUNTED
- RTU — ROOF TOP UNIT
- SMH — SPECIAL MOUNTING HEIGHT (4" ℄ ABOVE CASEWORK/BACKSPLASH OR 45" ℄ AFF IF NO CASEWORK/BACKSPLASH)
- UNO — UNLESS NOTED OTHERWISE
- WH — WATER HEATER
- WP — WEATHERPROOF
- H — FIRE ALARM HORN/LIGHT COMBINATION

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	VOLTS	MANUFACTURER
A	FLUORESCENT, 16" WALL SCONCE, (2) 26 WATT LAMPS, COLD WEATHER EMERGENCY BALLAST, WET LOCATION LISTED, BRONZE FINISH, MOUNTING HEIGHT TO BE VERIFIED WITH ARCHITECT	120	ECLIPSE LIGHTING #WR-XL-120-(2)/13-BZ-EL52 (OR APPROVED EQUAL)
B	FLUORESCENT, 21" WALL SCONCE, (2) 32 WATT LAMPS, COLD WEATHER EMERGENCY BALLAST, WET LOCATION LISTED, BRONZE FINISH, MOUNTING HEIGHT TO BE VERIFIED WITH ARCHITECT	120	ECLIPSE LIGHTING #WR-XL1-120-(2)/13-BZ-EL52 (OR APPROVED EQUAL)
C	SURFACE MOUNTED, WALL PACK, LED, ELECTRONIC DRIVER, 12LED, 29W, 1800 LUMENS, 3000K, WET LOCATION LISTED, INTEGRAL EMERGENCY BATTERY, BRONZE FINISH, MOUNTING 10 FEET ABOVE FINISHED GRADE	120	HUBBELL LNC2 SERIES #LNC2-12L1-3K-3-1-BBU (OR APPROVED EQUAL)
D	RECESSED CAN, 6" APERTURE, LED, 25W 1500 LUMENS, MEDIUM DISTRIBUTION WET LOCATION LISTED, CLEAR SPECULAR FINISH	120	GOTHAM LIGHTING #EVO-27/15/6CR/WMD/LS/MV/ (OR APPROVED EQUAL)
DE	SAME AS TYPE "D" WITH INTEGRAL EMERGENCY BALLAST AND INTEGRAL TEST SWITCH	120	
F	FLUORESCENT, 4 FT. STRIP, (2) 4 FT T8 LAMPS, STEM MTD., ELECTRONIC BALLAST, SPEC. GRADE, VERIFY MNTG HEIGHT W/ OWNER'S REPRESENTATIVE	120	LITHONIA C SERIES METALUX SSF SERIES COLUMBIA CS4 SERIES WILLIAMS 76 SERIES CRESCENT SCF SERIES
SL1	SITE LIGHT, POLE MOUNTED, TWO 400 WATT METAL HALIDE FIXTURES, 30 FT. SQUARE STEEL POLE, DARK BRONZE POLE AND FIXTURES, TYPE "V" DISTRIBUTION	120	WSL FVM SERIES
SL2	SITE LIGHT, POLE MOUNTED, ONE 400 WATT METAL HALIDE FIXTURE, 30 FT. SQUARE STEEL POLE, DARK BRONZE POLE AND FIXTURE, TYPE "V" DISTRIBUTION	120	WSL FVM SERIES
SL3	SITE LIGHT, POLE MOUNTED, TWO 400 WATT METAL HALIDE FIXTURES, 30 FT. SQUARE STEEL POLE, DARK BRONZE POLE AND FIXTURES, TYPE "III" DISTRIBUTION	120	WSL FVM SERIES

- ALL FIXTURES TO BE SUPPLIED WITH LAMPS.
- FIXTURES SHALL BE COMPATIBLE WITH CEILING TYPE. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING FIRE RATING.
- ALL FIXTURES INSTALLED IN AN INSULATED CEILING SHALL BE I.C. RATED.

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Revisions

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E1.0

22 May 2015

ELECTRICAL SPECIFICATIONS

SECTION 16000 GENERAL PROVISIONS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. NFPA 70 NATIONAL ELECTRICAL CODE

B. NFPA 101 LIFE SAFETY CODE

C. NFPA 72 NATIONAL FIRE ALARM CODE

D. NFPA 110 EMERGENCY AND STANDBY POWER SYSTEMS

E. ALL OTHER APPLICABLE STATE AND LOCAL CODES.

1.02 SUBMITTALS

A. SHOP DRAWINGS:

1. SUBMIT FOR APPROVAL, PRIOR TO INSTALLATION, SIX COPIES OF COMPLETE DESCRIPTIVE DATA ON ALL EQUIPMENT AND SYSTEMS AS REQUIRED BY OTHER SECTIONS OF THIS SPECIFICATION. CLEARLY INDICATE ALL PROPOSED SUBSTITUTIONS AND DEVIATIONS FROM DRAWINGS AND SPECIFICATIONS.

2. CHECK ALL SUBMITTALS FOR CLEARANCES AND COORDINATION WITH OTHER TRADES. SUBMITTALS SHALL BE CERTIFIED, BY THE CONTRACTOR'S APPROVAL STAMP, THAT ALL CONDITIONS HAVE BEEN CHECKED AND THAT NO CONFLICTS EXIST.

B. RECORD DRAWINGS

1. SUBMIT, TO THE OWNER, RECORD DRAWINGS SHOWING FIELD CHANGES MARKED IN RED.

1.03 COORDINATION

A. UTILITY COMPANIES

1. COORDINATE WITH UTILITY COMPANIES FOR SPECIFIC REQUIREMENTS FOR ELECTRICAL POWER AND TELEPHONE SERVICE.

2. INSTALL ELECTRICAL SERVICE IN ACCORDANCE WITH CURRENT UTILITY COMPANY REQUIREMENTS.

B. OTHER TRADES

1. COORDINATE WITH MECHANICAL DRAWINGS FOR POWER AND CONTROL REQUIREMENTS FOR THE SPECIFIC EQUIPMENT TO BE INSTALLED AND FOR EQUIPMENT SUCH AS STARTERS AND DISCONNECT SWITCHES THAT MAY BE FURNISHED WITH THE EQUIPMENT.

1.04 WORK INCLUDED

A. THE WORK OF THIS SECTION INCLUDES FURNISHING OF LABOR AND MATERIALS AS REQUIRED FOR INSTALLATION OF A NEW ELECTRICAL DISTRIBUTION SYSTEM INCLUDING SERVICE, FEEDERS, PANELBOARDS, BRANCH CIRCUITS, LIGHTING, AND CONNECTIONS TO ALL EQUIPMENT REQUIRING ELECTRICAL POWER.

B. INSTALLATION OF CONDUIT FOR TELEPHONE AND DATA WIRING.

C. INSTALLATION OF SPRINKLER MONITORING SYSTEM AND OTHER SYSTEMS AS INDICATED ON DRAWINGS.

1.05 DRAWINGS

A. THE DRAWINGS ARE PARTLY DIAGRAMMATIC AND DO NOT SHOW IN DETAIL ALL REQUIRED FEATURES OF THE WORK NOR CONCEALED CONDITIONS. THEY SHALL BE SUPPLEMENTED BY THE CONTRACTOR'S KNOWLEDGE AND EXPERIENCE.

PART 2 PRODUCTS

2.01 GENERAL

A. ALL ELECTRICAL EQUIPMENT INSTALLED SHALL BEAR THE UL LABEL EXCEPT WHERE UL DOES NOT LABEL SUCH EQUIPMENT.

2.02 GUARANTEE

A. FURNISH A WRITTEN GUARANTEE THAT ALL EQUIPMENT FURNISHED AND INSTALLED WILL BE FREE OF DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF 1 YEAR FROM DATE OF ACCEPTANCE OF THE WORK BY THE OWNER. PROMPTLY REPLACE AND REPAIR ALL DEFECTIVE EQUIPMENT AND ALL OTHER EQUIPMENT DAMAGED THEREBY AT NO ADDITIONAL COST TO THE OWNER.

PART 3 EXECUTION

3.01 GENERAL

A. VISIT PROJECT SITE BEFORE SUBMISSION OF BID AND BECOME FAMILIAR WITH EXISTING CONDITIONS AND LOCATIONS OF EXISTING UTILITIES.

B. THE ENTIRE INSTALLATION SHALL BE MADE IN A NEAT MANNER BY PERSONS SKILLED IN THE ELECTRICAL TRADE AND SHALL BE IN ACCORDANCE WITH THE REFERENCE STANDARDS LISTED ABOVE.

3.02 TESTING

A. ALL SYSTEMS AND EQUIPMENT INSTALLED SHALL BE COMPLETELY TESTED AND SHALL BE LEFT IN GOOD WORKING ORDER.

SECTION 16050 BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

NOT APPLICABLE

PART 2 PRODUCTS

2.01 RACEWAYS

A. RIGID STEEL CONDUIT

B. ELECTRICAL METALLIC TUBING

C. POLYVINYLCHLORIDE CONDUIT

2.02 WIRES AND CABLES

A. SERVICE AND FEEDERS: COPPER, 600 VOLT, TYPE THHN OR THWN INSULATION OR ALUMINUM CONDUCTOR, 600 VOLT, TYPE XHHW-2 INSULATION. SIZES INDICATED ON DRAWINGS ARE FOR COPPER.

B. BRANCH CIRCUIT WIRES: COPPER CONDUCTOR, 600 VOLT, TYPE THHN OR THWN INSULATION.

C. BRANCH CIRCUIT CABLES: COPPER CONDUCTOR, 600 VOLT, TYPE MC WITH INSULATED EQUIPMENT GROUNDING CONDUCTOR.

D. CONTROL CIRCUIT CABLES: COPPER CONDUCTOR, NO.14 AWG, TYPE THHN, OR AS REQUIRED BY EQUIPMENT MANUFACTURER.

2.03 WIRING DEVICES

A. WALL SWITCHES: AC GENERAL USE SNAP SWITCH WITH TOGGLE HANDLE, SPECIFICATION GRADE, 20 AMPERES, 120-277 VOLTS. DEVICE COLOR TO BE SELECTED BY ARCHITECT.

B. RECEPTACLES: TYPE 5-15R, UNLESS INDICATED OTHERWISE, SPECIFICATION GRADE. DUPLEX RECEPTACLES ON DEDICATED CIRCUITS SHALL BE NEMA TYPE 5-20R. DEVICE COLOR TO BE SELECTED BY ARCHITECT.

C. COVERPLATES

1. INDOOR: NYLON, COLOR TO BE SELECTED BY ARCHITECT.

2. OUTDOOR: GALVANIZED STEEL, WEATHERPROOF WHILE IN USE TYPE.

2.04 IDENTIFICATION

A. PROVIDE LAMINATED PLASTIC TAGS FOR ALL PANELBOARDS AND DISCONNECT SWITCHES. TAGS SHALL COMPLETELY IDENTIFY EQUIPMENT MARKED OR CONTROLLED.

PART 3 EXECUTION

3.01 RACEWAYS

A. ALL RACEWAYS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS.

B. PERMITTED USAGE:

1. ALL INTERIOR RACEWAYS SHALL BE GALVANIZED ELECTRICAL METALLIC TUBING (EMT).

2. RACEWAYS UNDERGROUND, EXPOSED TO EXTERIOR, OR CAST IN CONCRETE SHALL BE GALVANIZED RIGID STEEL CONDUIT (RGS) OR SCHEDULE 80 PVC.

C. INSTALLATION:

1. IN LONG RACEWAYS FURNISH AND INSTALL THE PROPER NUMBER AND SIZE PULL BOXES TO FACILITATE INSTALLATION OF CONDUCTORS.

2. INSTALL SEPARATE GROUNDING CONDUCTOR IN EACH RACEWAY.

3. PROVIDE RIGID GALVANIZED STEEL ELBOWS AND VERTICAL SECTIONS FOR RUNS OF PVC CONDUIT ENTERING GROUND OR FLOOR IN UNPROTECTED LOCATIONS.

3.02 WIRES AND CABLES

A. CONDUCTORS SHOWN ON DRAWINGS AS SIZED FOR COPPER UNLESS NOTED OTHERWISE. WHEN USING ALUMINUM, SIZE FOR EQUAL OR GREATER AMPACITY, AND RESIZE CONDUIT AS REQUIRED.

B. ALL POWER WIRING SHALL BE INSTALLED IN CONDUIT EXCEPT AS PERMITTED BELOW.

C. BRANCH CIRCUITS RUN CONCEALED IN WALLS OR CEILINGS AND RATED AT 20 AMPS MAY BE TYPE MC CABLE.

D. LOW VOLTAGE CONTROL AND SIGNAL CABLE MAY BE RUN OPEN. CABLES AND CABLE SUPPORTS INSTALLED IN AIR PLENUMS MUST BE PLENUM RATED. OPEN WIRING SHALL BE SUPPORTED FROM STRUCTURE.

SECTION 16400 SERVICE AND DISTRIBUTION

PART 1 GENERAL

1.01 SUBMITTALS

A. PANELBOARDS

B. DISCONNECT SWITCHES

C. FUSES

PART 2 PRODUCTS

2.01 PANELBOARDS

A. CIRCUIT BREAKER TYPE AS DESCRIBED ON THE PANEL SCHEDULES. PANELBOARDS SHALL BE RATED FOR THE SHORT CIRCUIT INTERRUPTING CAPACITY INDICATED AND SERIES COMBINATION RATINGS MUST BE UL RECOGNIZED. LOAD CENTER TYPE PANELBOARDS ARE NOT ACCEPTABLE. APPROVED MANUFACTURERS ARE CUTLER-HAMMER, GENERAL ELECTRIC, SIEMENS, AND SQUARE D.

2.02 DISCONNECT SWITCHES

A. FUSIBLE OR NONFUSIBLE QUICK-MAKE, QUICK-BREAK, LOAD INTERRUPTER ENCLOSED KNIFE SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN "ON" POSITION. APPROVED MANUFACTURERS ARE CUTLER-HAMMER, GENERAL ELECTRIC, SIEMENS, AND SQUARE D.

2.03 FUSES

A. FUSES RATED ABOVE 600 AMPS SHALL BE UL CLASS L EQUAL TO BUSSMAN LOW-PEAK KRP-C. FUSES RATED AT 600 AMPS AND BELOW SHALL BE UL CLASS RK1 EQUAL TO BUSSMAN LOW-PEAK LPN-RK (250 VOLT) OR LPS-RK (600 VOLT).

PART 3 EXECUTION

3.01 GENERAL

A. MAINTAIN CODE REQUIRED WORKING CLEARANCES AROUND ALL ELECTRICAL EQUIPMENT. COORDINATE INSTALLATION WITH ARCHITECTURAL FEATURES, PIPING LOCATIONS, AND DUCTWORK.

3.02 PANELBOARDS

A. INSTALL NEW PANELBOARDS AS INDICATED.

B. ALL PANELS SHALL HAVE ENGRAVED PLASTIC LABELS AND TYPEWRITTEN DIRECTORIES. DIRECTORIES SHALL IDENTIFY EVERY CIRCUIT AS TO IT'S CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE.

SECTION 16500 LIGHTING

PART 1 GENERAL

1.01 SUBMITTALS

A. LIGHTING FIXTURES

PART 2 PRODUCTS

2.01 GENERAL

A. PROVIDE LIGHTING FIXTURES AS SPECIFIED ON LIGHTING FIXTURE SCHEDULE OF SIZES, TYPES, RATINGS, AND WITH FEATURES INDICATED. SUBSTITUTIONS SHALL BE EQUAL IN PERFORMANCE AND APPEARANCE TO FIXTURES LISTED.

B. SUBSTITUTE LIGHTING FIXTURES SHALL NOT INCREASE TOTAL LIGHTING LOAD IN WATTS.

C. FIXTURES SHALL BE COMPLETE WITH LAMPS, BALLASTS, AND ALL PARTS, HARDWARE, AND ACCESSORIES FOR INSTALLATION AND PROPER OPERATION.

2.02 LAMPS

A. FLUORESCENT LAMPS: T8 TYPE BY GENERAL ELECTRIC OR PHILIPS.

B. HIGH INTENSITY DISCHARGE LAMPS:

1. METAL HALIDE - PULSE START WITH UV REDUCTION COATING BY GENERAL ELECTRIC OR PHILIPS. LAMPS IN OPEN FIXTURES SHALL BE RATED FOR OPEN USE.

2.03 FLUORESCENT BALLASTS

A. ELECTRONIC TYPE, BY ADVANCE OR UNIVERSAL.

2.04 FLUORESCENT EMERGENCY BATTERY SYSTEMS

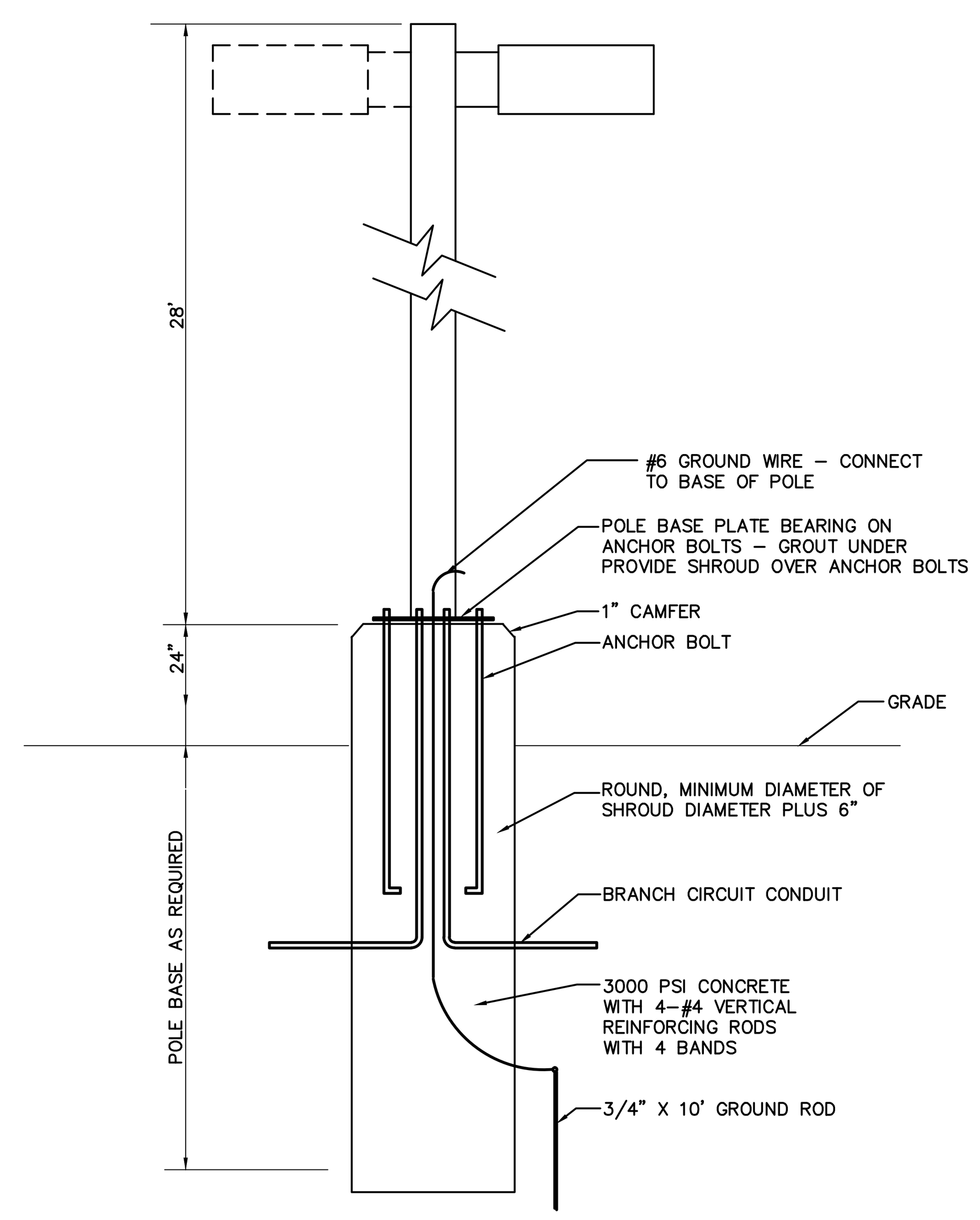
A. MINIMUM 1000 LUMENS.

PART 3 EXECUTION

3.01 GENERAL

A. INSTALL FIXTURES AS INDICATED ON DRAWINGS. REFER TO REFLECTED CEILING PLAN FOR EXACT LOCATIONS.

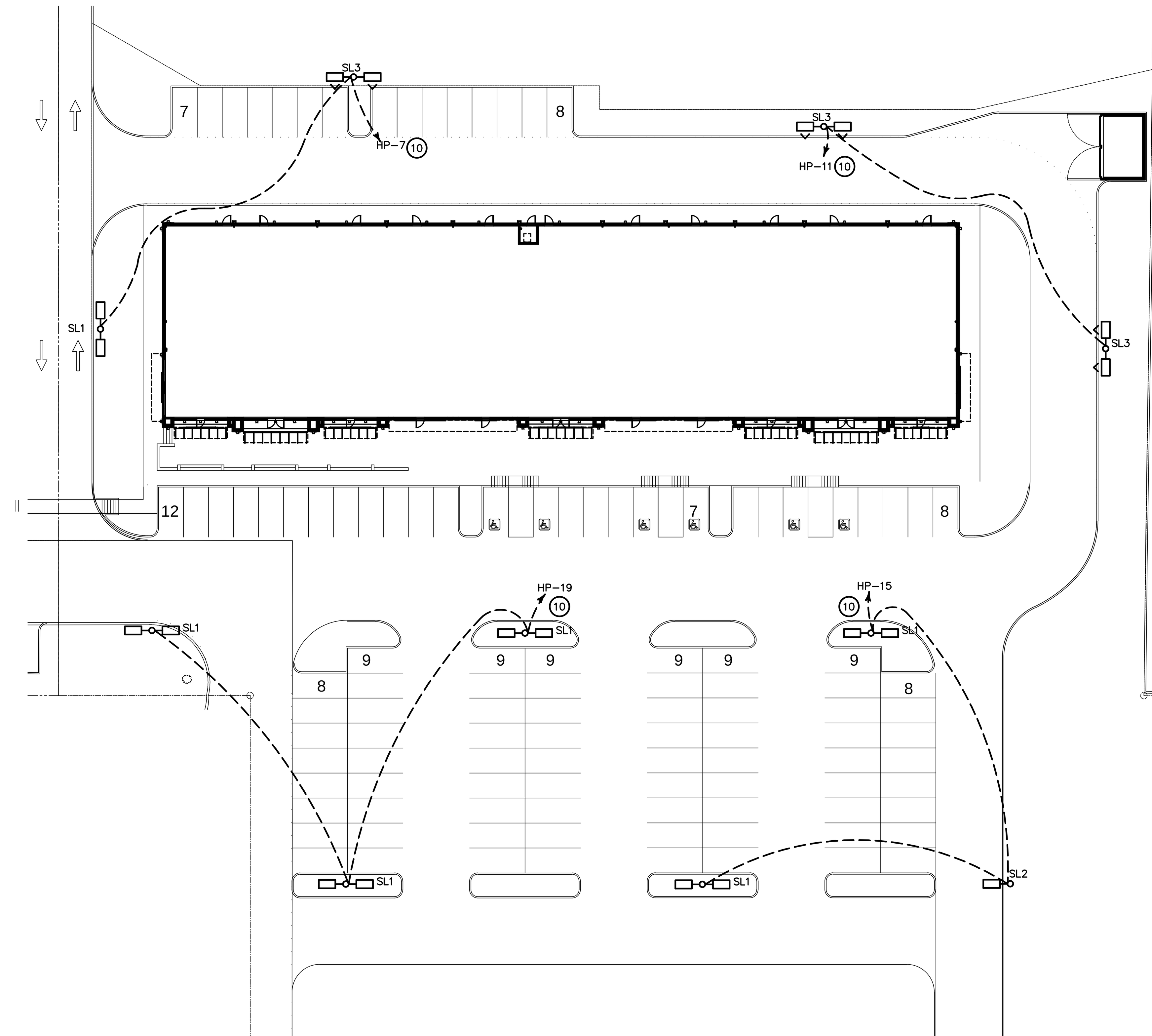
END OF ELECTRICAL SPECIFICATIONS



POLE BASE/PARKING LOT LIGHT FIXTURE DETAIL

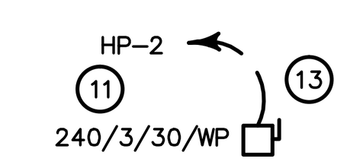
NO SCALE

(POLE BASE SHOWN FOR BASIS OF BID. SUBMIT POLE BASE DESIGNED BY STRUCTURAL ENGINEER THAT IS APPROPRIATE FOR LOCAL SOIL CONDITIONS.)



SITE ELECTRICAL

SCALE:1" = 30'-0"

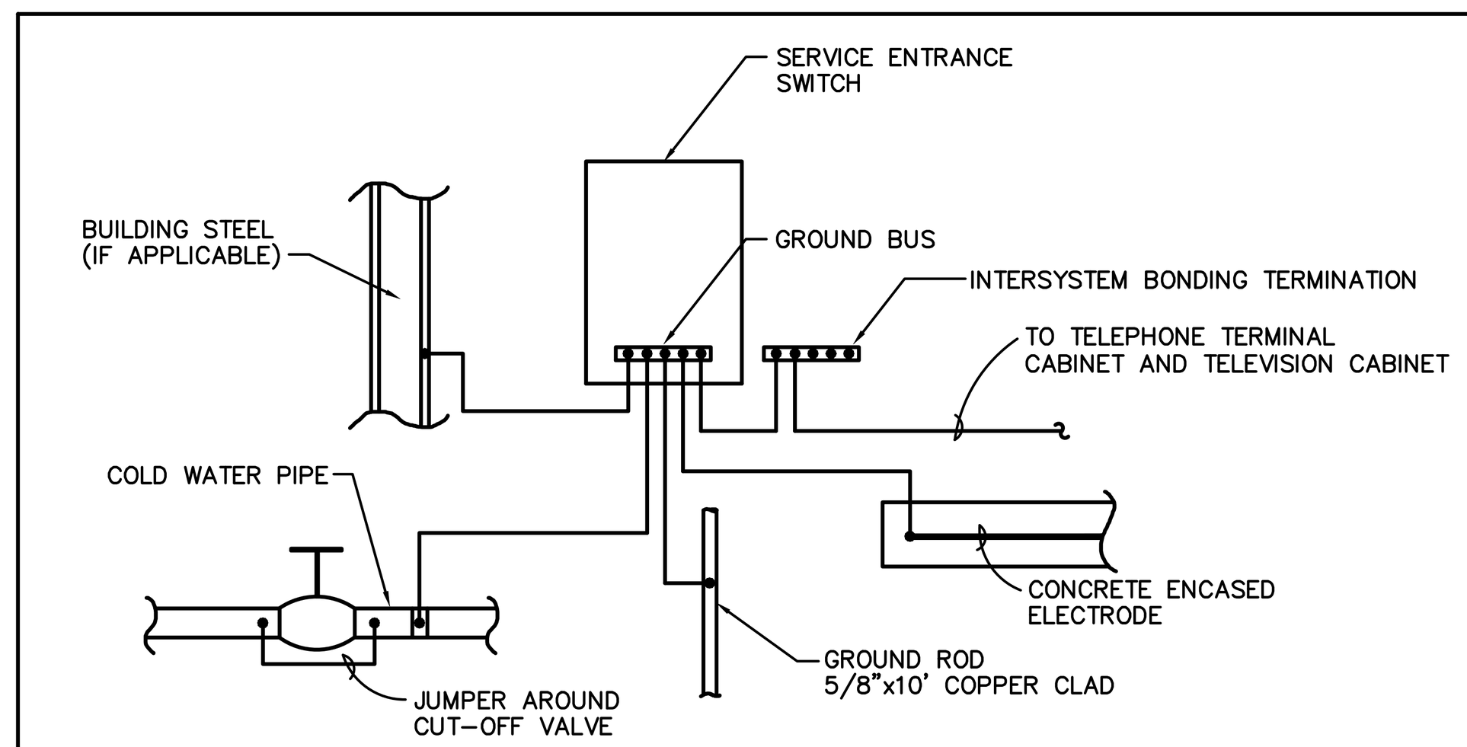


PYLON SIGN DETAIL

-VERIFY EXACT LOCATION WITH CIVIL PLANS PRIOR TO INSTALLATION

-PROVIDE PHOTOCELL ON/TIMESWTCH OFF CONTROL.

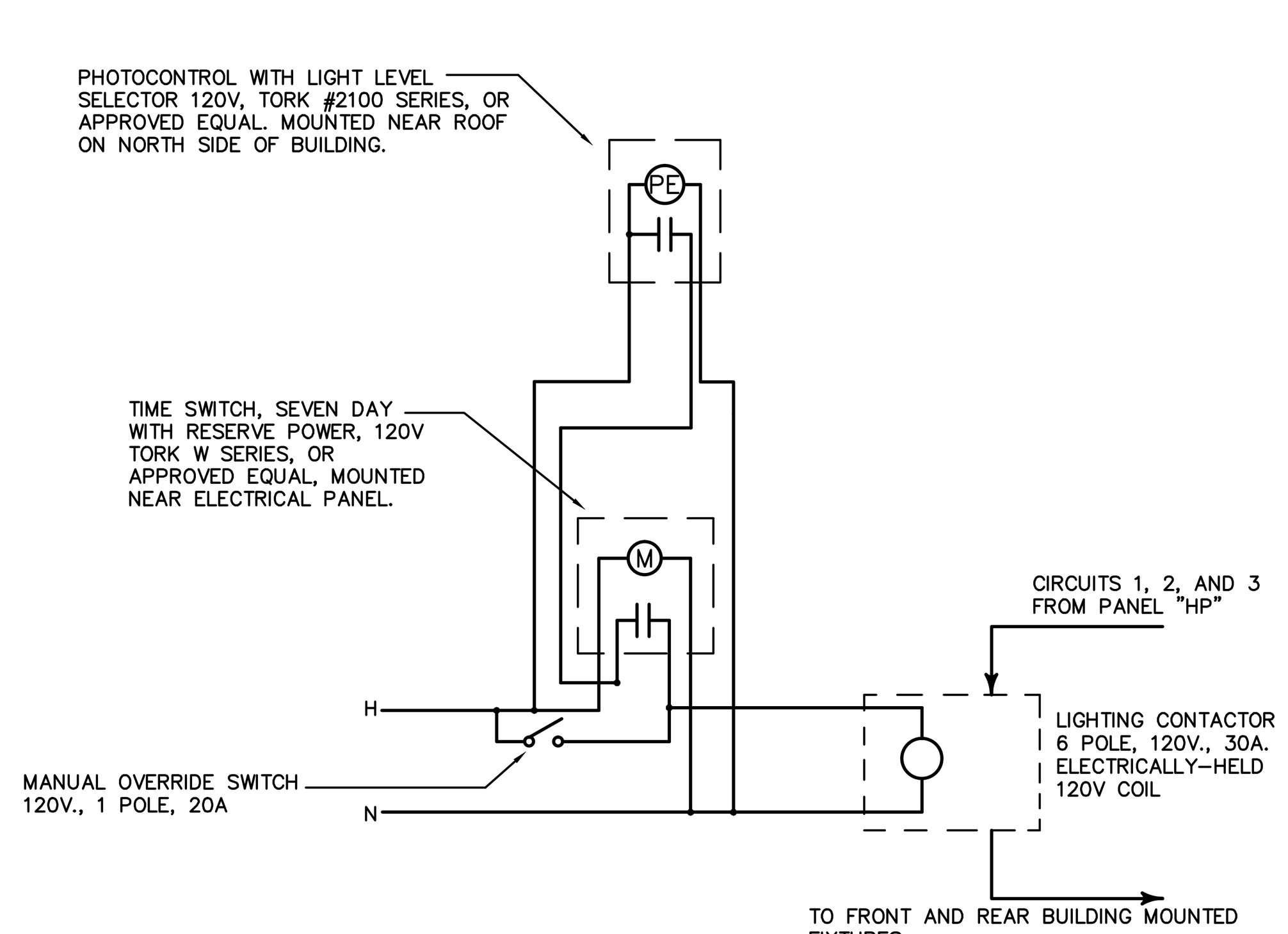
APPROXIMATE LOCATION OF PYLON SIGN.



ELECTRICAL SERVICE GROUND DETAIL

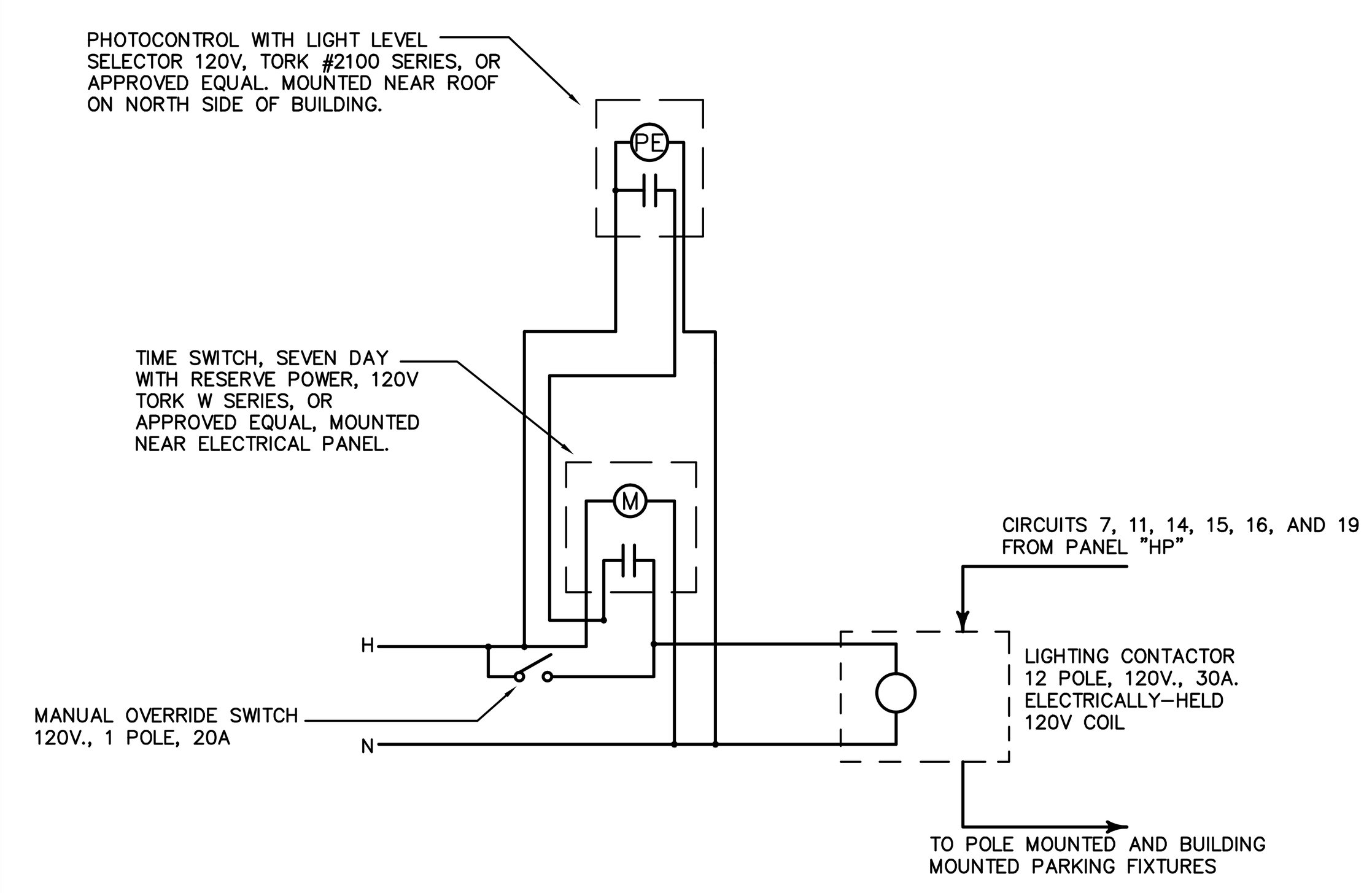
NO SCALE

NOTE: ALL GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED PER NEC 250.66.



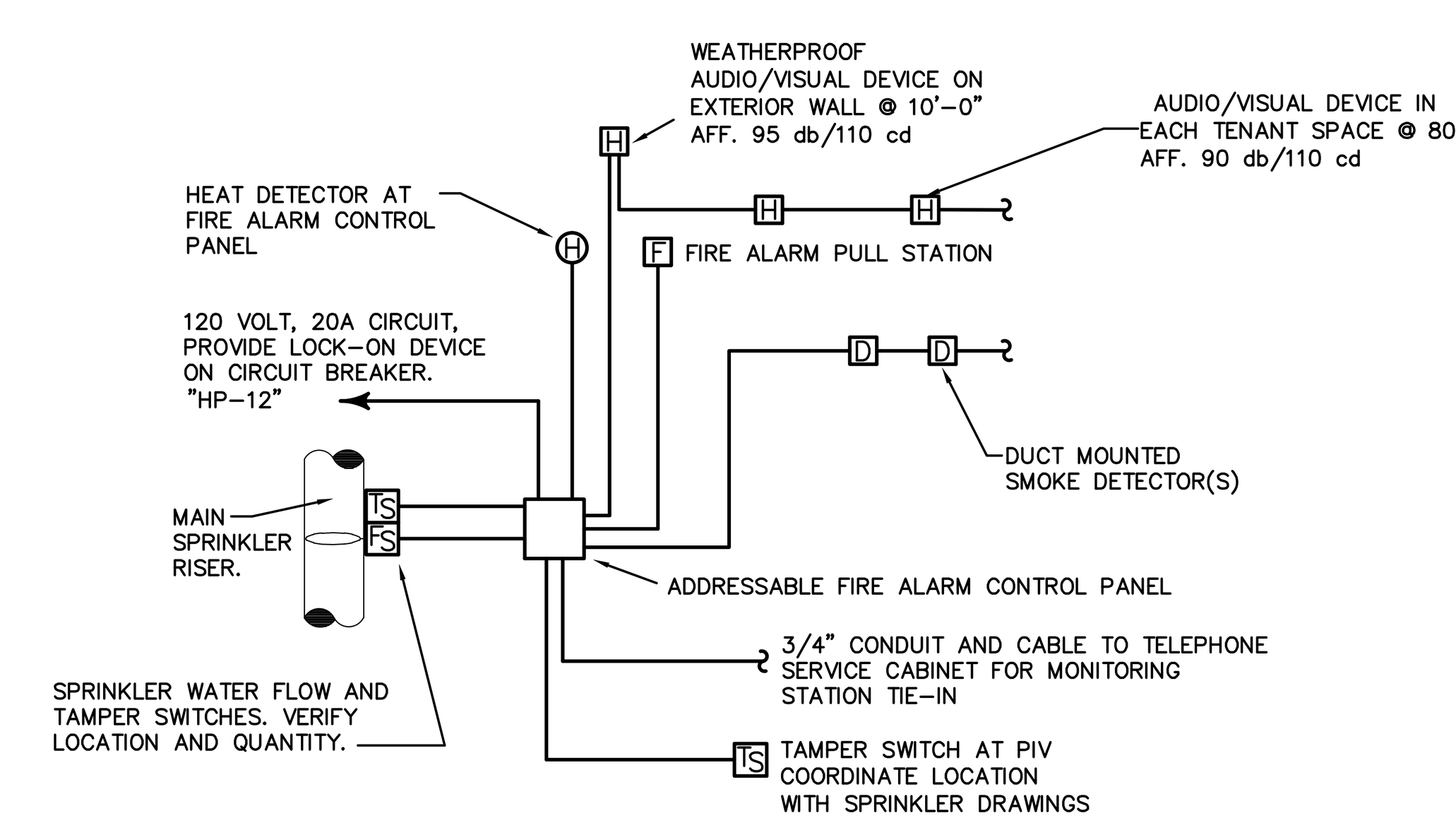
EXTERIOR SECURITY LIGHTING CONTROL DIAGRAM

PROVIDE NEMA 3R ENCLOSURES FOR EXTERIOR EQUIPMENT



EXTERIOR LIGHTING CONTROL DIAGRAM

PROVIDE NEMA 3R ENCLOSURES FOR EXTERIOR EQUIPMENT



SPRINKLER MONITOR DETAIL

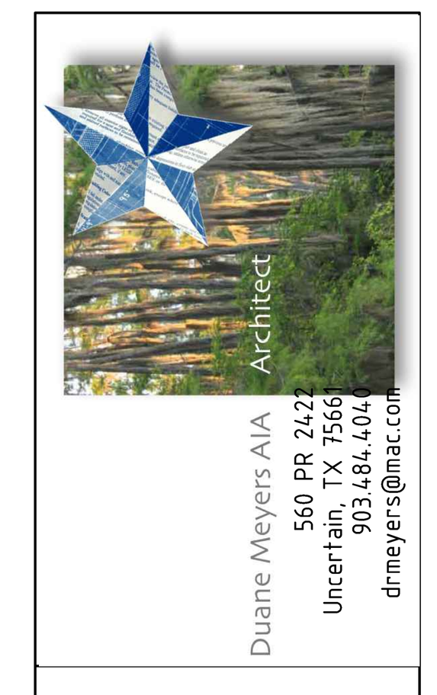
NO SCALE

NOTES:

1. COORDINATE WITH SPRINKLER SYSTEM DRAWINGS FOR QUANTITY AND LOCATIONS OF ALL FLOW AND TAMPER SWITCHES INCLUDING TAMPER SWITCH AT EXTERIOR POST INDICATOR VALVE.

2. OPERATION OF ANY SPRINKLER TAMPER SWITCH OR DUCT MOUNTED SMOKE DETECTOR SHALL CAUSE "SUPERVISORY" ALARM AT FIRE ALARM CONTROL PANEL.

3. PROVIDE SYSTEM CAPACITY FOR (1) ADDITIONAL HORN/STROBE DEVICE PER TENANT SPACE.



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Revisions

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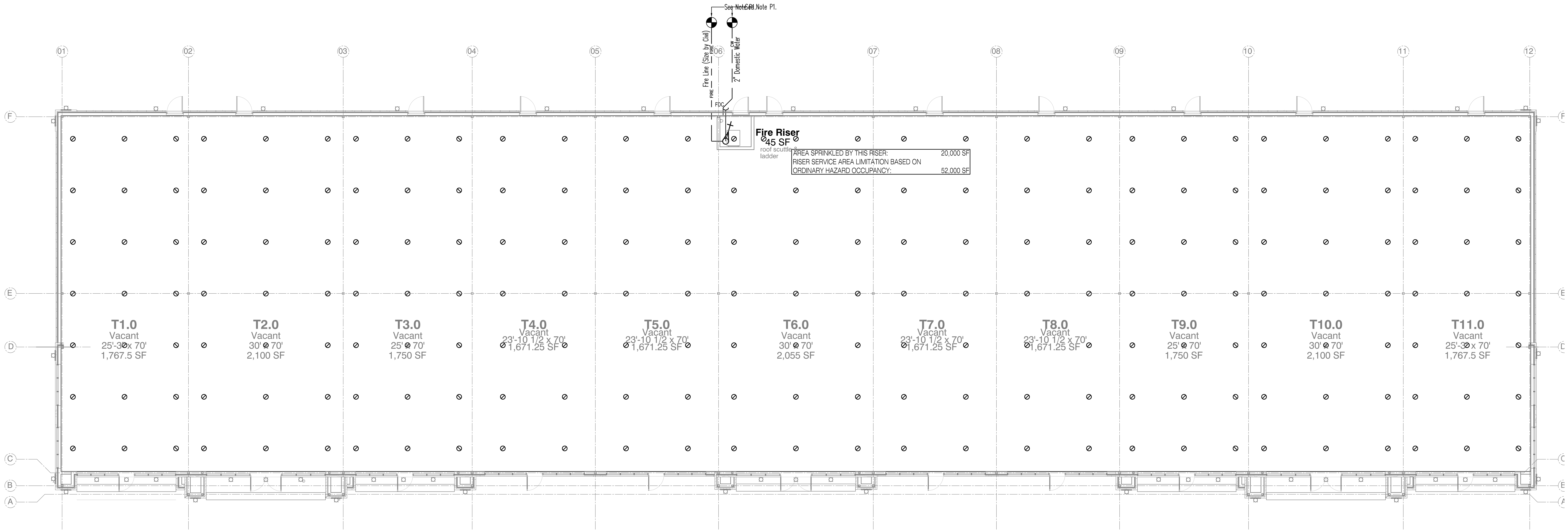
E2.0

22 May 2015



SPRINKLER PLAN

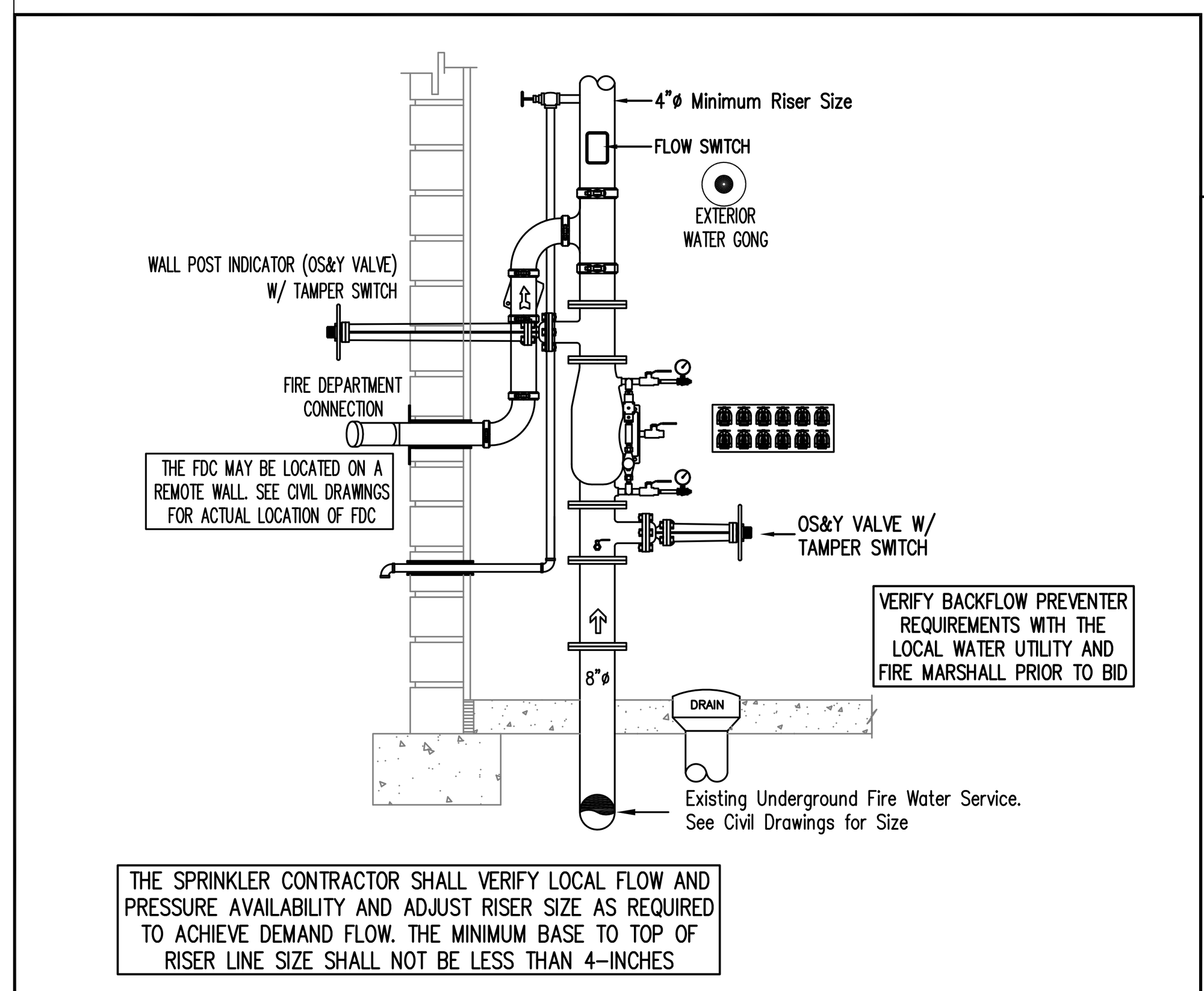
0' 4' 8' 16' 32'

SCALE: 1/8" = 1'-0"

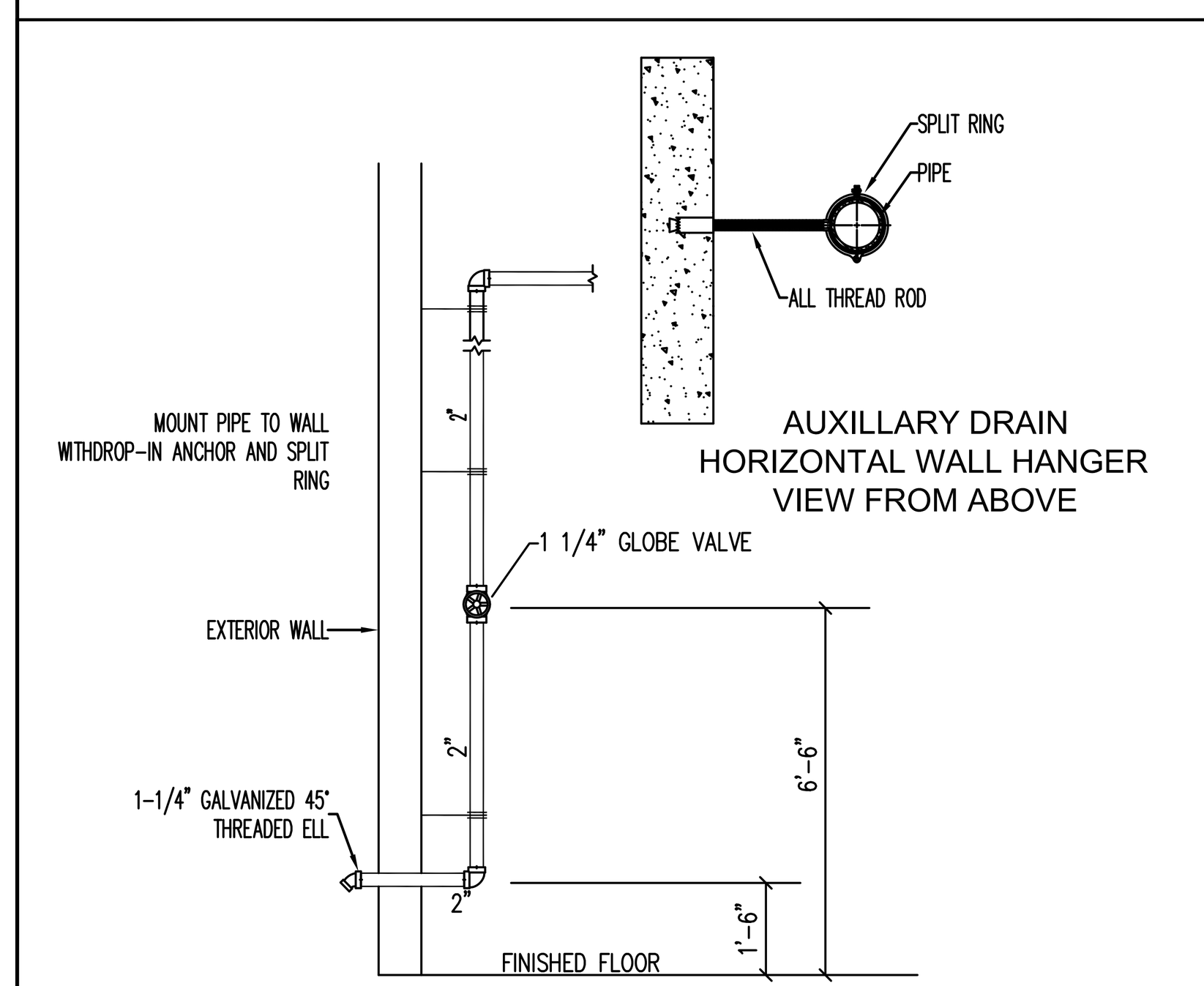
SPRINKLER SPECIFICATIONS
Teel Crossing One
Frisco, Texas

May 22, 2015

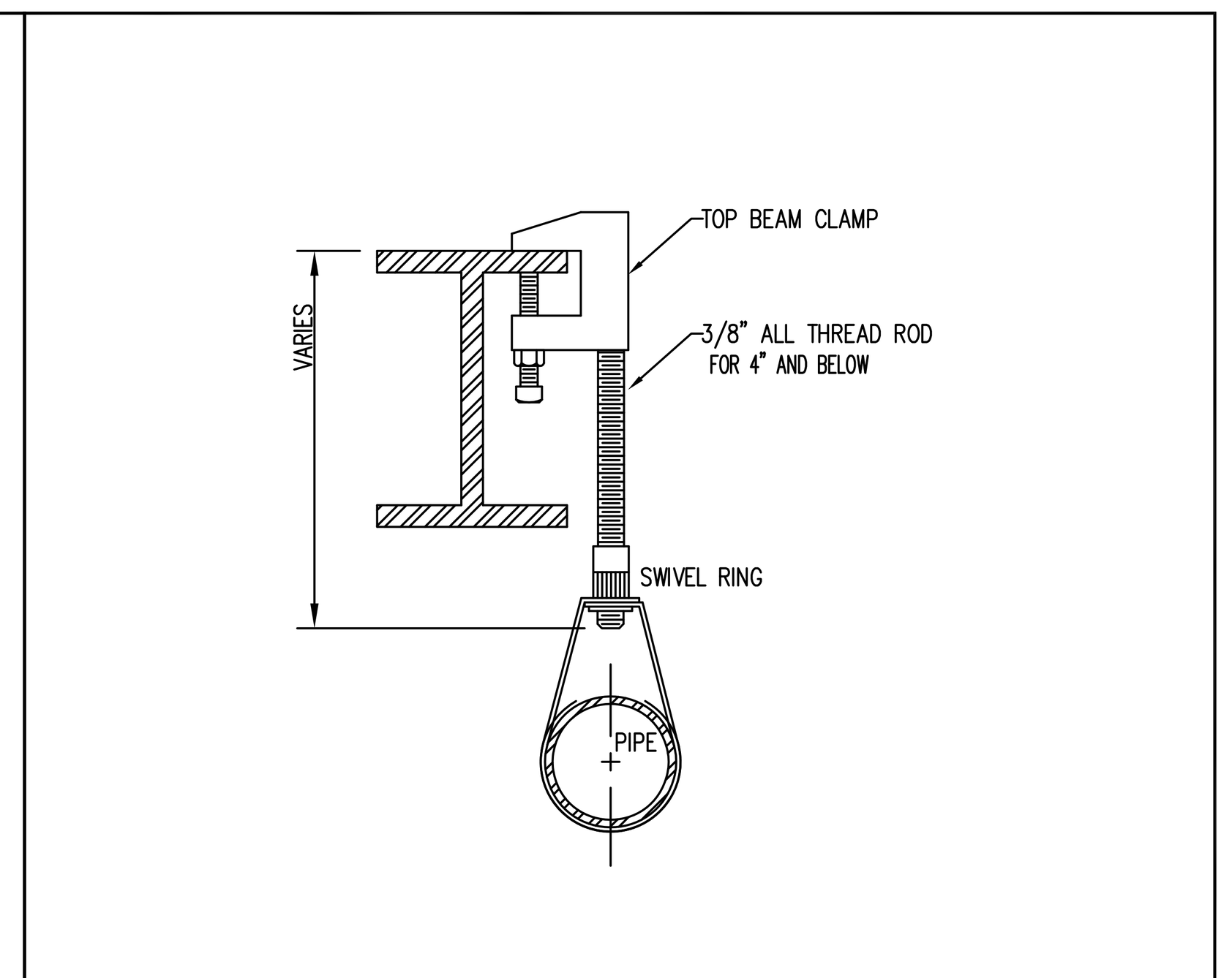
1. The Sprinkler Contractor shall be currently licensed in the State of Texas and shall retain a State of Texas licensed Professional Engineer to seal the design documents along with the Sprinkler Contractor.
2. The Sprinkler Contractor shall furnish and install a complete hydraulically calculated wet sprinkler system. Design shall be in accordance with the Codes indicated above and the authority having jurisdiction.
3. Occupancy Classification: Mercantile Ordinary Hazard Group 2, 0.20 GPM/SF.
4. All sprinkler mains and branches shall be routed in the webs of the bar joist tight to deck above the ceiling. If wide flange beams are utilized in construction, the mains and branches shall be clamped tight to the highest level of steel. Mains and branches shall elbow around or below lower supporting beams. That is, elevations of mains and branches shall not be set based on the lowest structural steel member, but shall follow the contour of the structure in order to provide the maximum floor to ceiling height.
5. The sprinkler contractor shall coordinate with the mechanical contractor prior to submittal of shop drawings or fabrication of piping spools.
6. Sprinkler heads in finished ceiling areas shall be semi-recessed chrome with escutcheon. All sprinkler heads shall be centered in the 2'x2' section of ceiling tiles.
7. Sprinkler heads in unfinished and exposed ceiling areas shall be upright with a 'tee and plug' for future turn-down.
8. The minimum sprinkler riser size shall be 4", from the base of the riser to the top of the riser, including all valves, backflow preventer, etc.
9. All sprinkler piping that is threaded shall be schedule 40, ASTM A53 or A106. All sprinkler piping less than 2-1/2 inches in diameter shall be schedule 40, ASTM A53 or A106. Sprinkler piping 2-1/2 inch and larger shall be schedule 10 or thicker, ASTM A53 or A106. All sprinkler supply piping from the street main to the sprinkler riser shall be schedule 40.
10. The contractor shall obtain new flow test data on the closest city water main and submit data with calculations.
11. Provide the following flow test data on the plans for hydrant(s) used to meet the 500 feet or less hose lay requirement in accordance with the local authority having jurisdiction. <u>Show flow test data next to the hydrant tested</u>. Flow test shall have been conducted within the last six months.
    a. Flow and Pressure
    b. Static pressure: __________ psi
    c. Residual pressure: __________ psi (20 psi minimum)
    d. Flow: __________ gpm
    e. Party responsible for taking test (name and address)
    f. Date test taken: __________& Time test taken: _____ a.m./p.m.
    g. Elevation of test hydrant: ____________
12. The sprinkler contractor shall review locations of fire hydrants and fire department connections with the local authority having jurisdiction prior to routing any pipe.
13. All drawings and calculations shall be submitted to owners insurance carrier, the local Fire Marshall and to Scepter Engineering and receive approval from all three, prior to installation.
14. Fire extinguishers shall be furnished and installed by the fire protection contractor.



TYPICAL SPRINKLER RISER DETAIL 1



TYPICAL INSPECTOR'S TEST CONNECTION 2

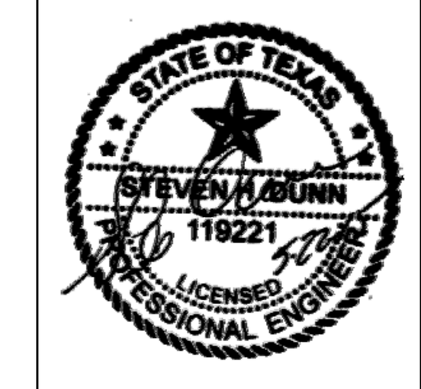


TYPICAL HANGER DETAIL 3

Associated Drawings:

M1.01 - Mechanical Floor Plan & Details
P1.01 - Plumbing Floor Plan & Details
MP1.01 - Mechanical & Plumbing Roof Plan & Details
MP2.01 - Mechanical & Plumbing Specifications
F1.01 - Sprinkler Plan & Specifications

SCEPTER ENGINEERING, PC



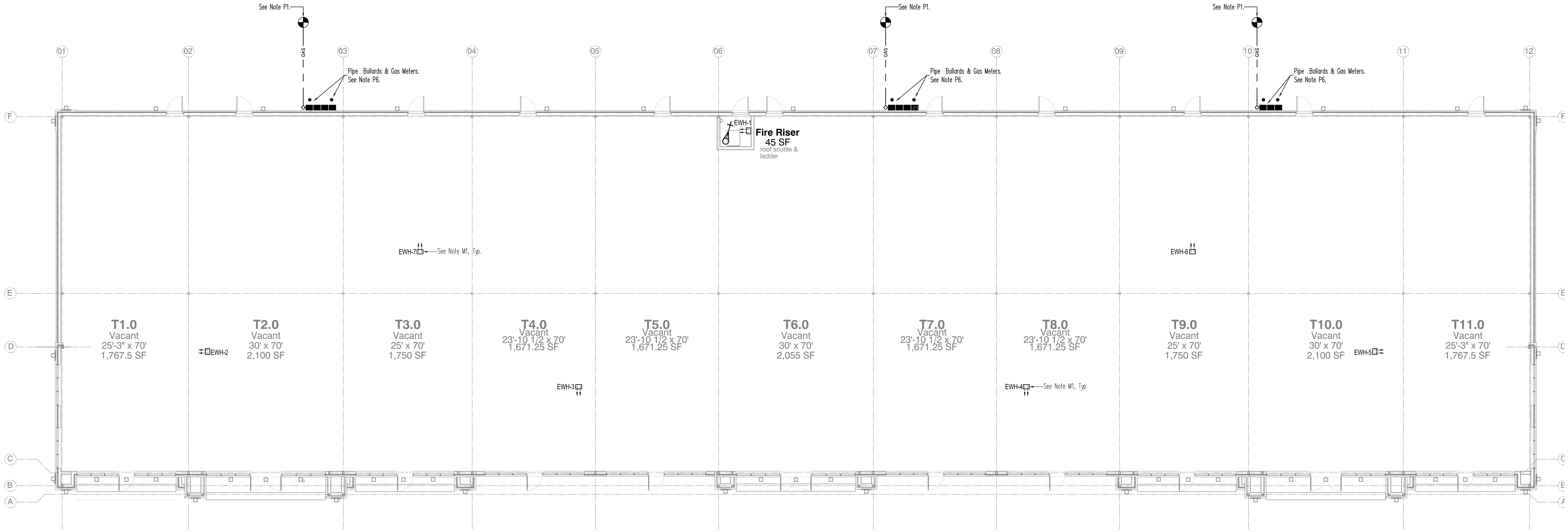
Firm Registration Pending

Teel Crossing One
Frisco, TX

Revisions

F1.01

22 May 2015



MECHANICAL FLOOR PLAN

0' 4' 8' 16' 32'

SCALE: 1/8" = 1'-0"

MECHANICAL KEYED NOTES (Designated Note M1, M2, etc.):

1. Locate the Temporary Space Heaters (EUH-2,-3,-4,-5,-6,-7) below the bar joists at approximately 78" above finished floor. Provide rigid supports.

MECHANICAL GENERAL NOTES

1. See associated Mechanical, Plumping, and Sprinkler drawings for specifications and additional requirements.

ELECTRIC HEATER SCHEDULE 5/20/2012; 4:00 PM

EQUIP. No.	SERVICE	HEATING CFM	MANUFACTURER / MODEL	KW	VOLTS/ PHASE	FAN HP	WEIGHT	COMMENTS & NOTES
EUH-1	As Shown	N/A	QMARK MN: MWUH-5004	2.5	208/1	INCL.	50	NOTE REFS: 1,3 .
EUH-2,3,4 EUH-5,6,7	As Shown	270	QMARK MN: MWUH-7504	5.6	208/1	N/A	100	NOTE REFS: 1,2 .

NOTES:
1. PROVIDE INTEGRAL T'STAT.
2. SUSPEND FROM BAR JOISTS. LOCATE BOTTOM OF HEATER AT 78" ABOVE FINISHED FLOOR.
3. PROVIDE FACTORY WALL MOUNT BRACKET AND LOCATE BOTTOM OF HEATER 72" ABOVE FINISHED FLOOR.

Duane Meyers
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Uncertain, TX 75661
903.484.4040
Architect
Texas badlands & beyond
drmeyers@mac.com

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SCEPTER PN: 15009

STATE OF TEXAS
STEVEN H. DUNN
119221
LICENSED
PROFESSIONAL ENGINEER

Firm Registration Pending

Teel Crossing One
Frisco, TX

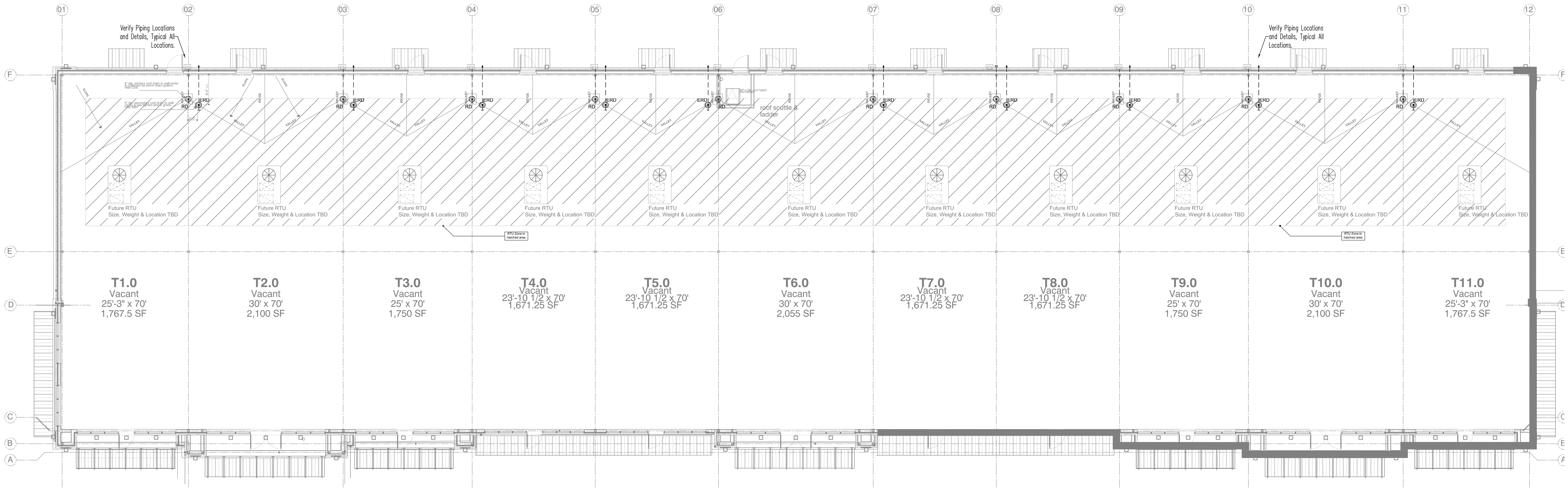
Revisions

Associated Drawings:

M1.01 - Mechanical Floor Plan & Details
P1.01 - Plumbing Floor Plan & Details
MP1.01 - Mechanical & Plumbing Roof Plan & Details
MP2.01 - Mechanical & Plumbing Specifications
F1.01 - Sprinkler Plan & Specifications

M1.01

22 May 2015



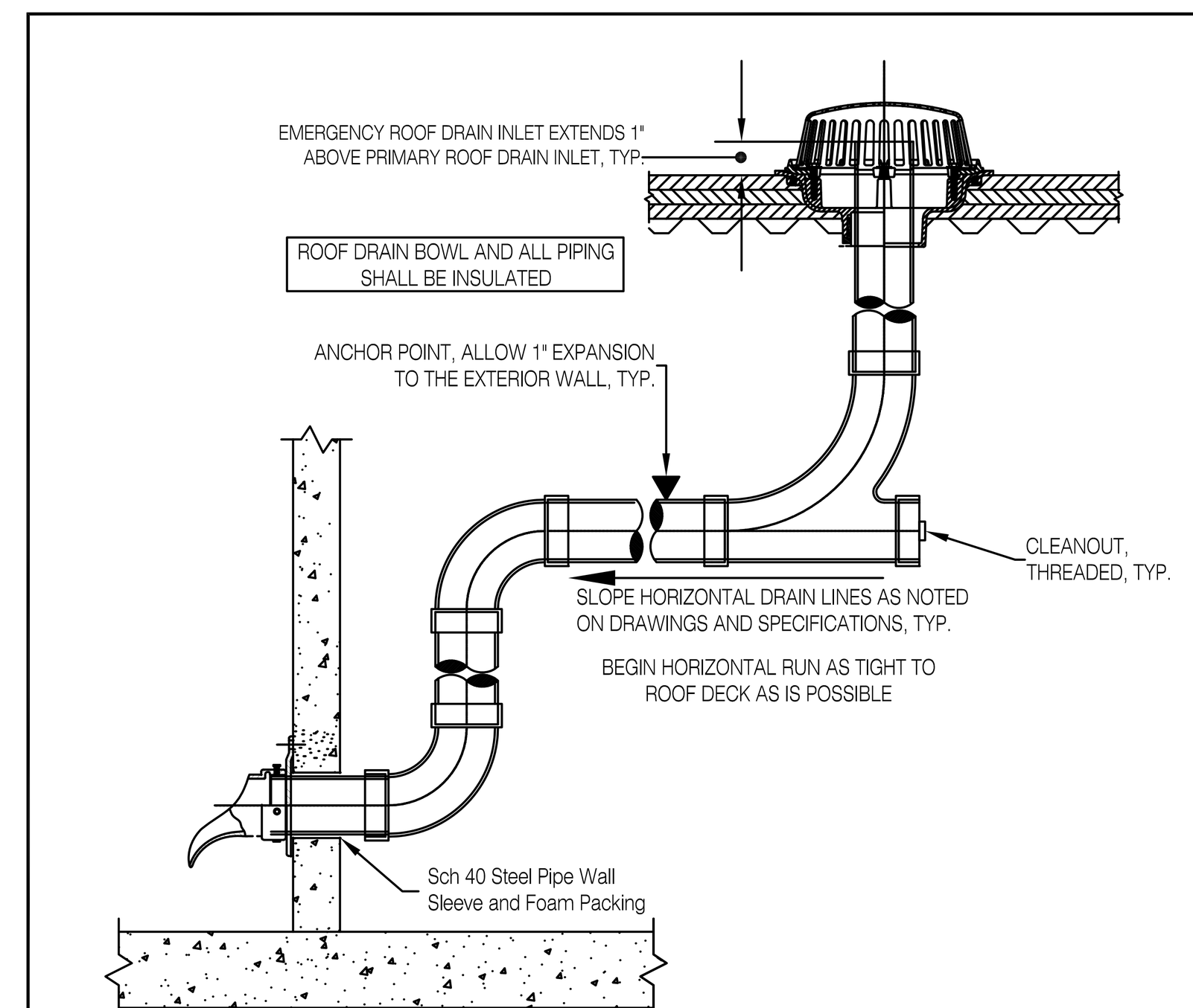
MECHANICAL and PLUMBING ROOF PLAN

0' 4' 8' 16' 32'

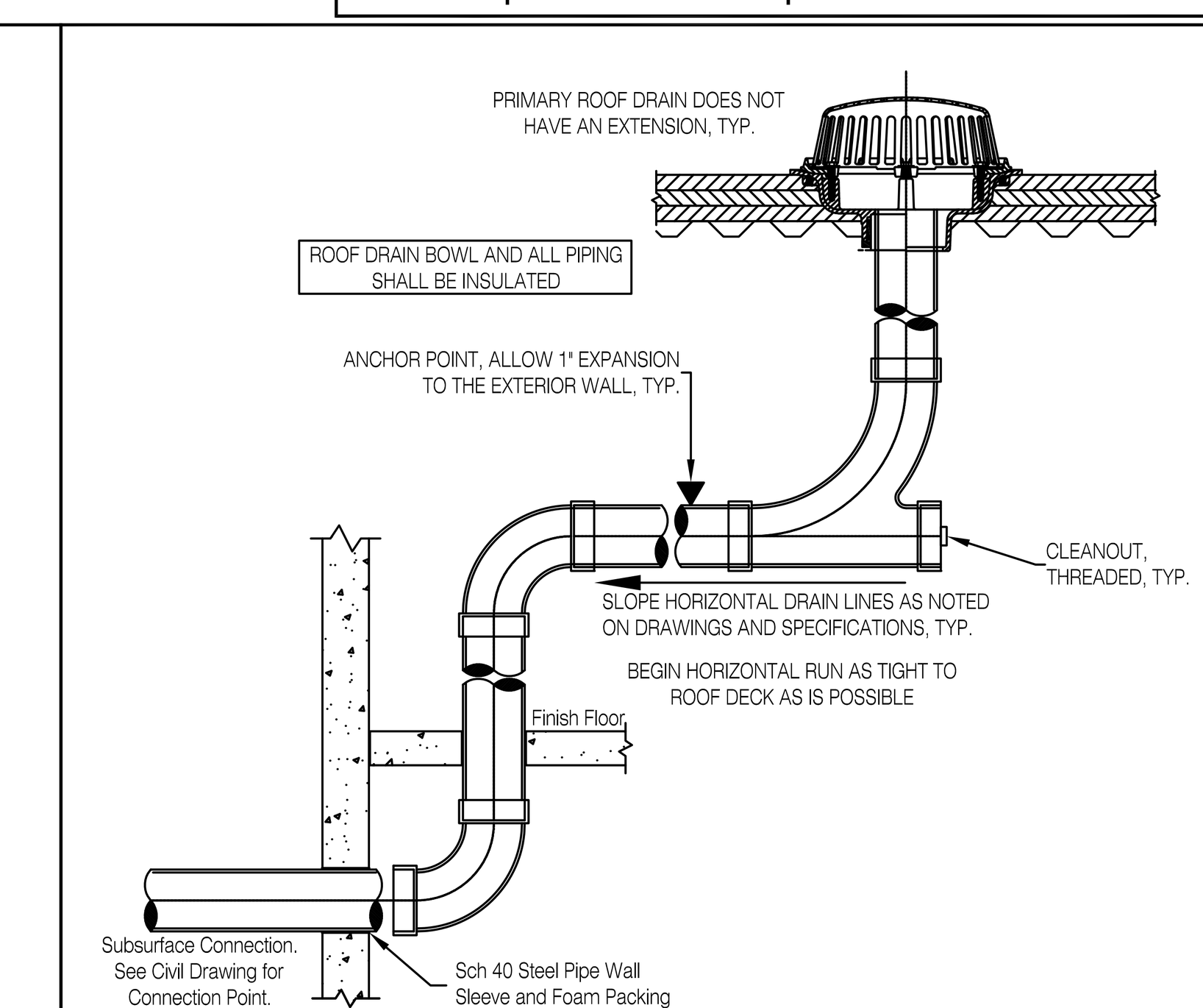
SCALE: 1/8" = 1'-0"

Associated Drawings:

M1.01 - Mechanical Floor Plan & Details
P1.01 - Plumbing Floor Plan & Details
MP1.01 - Mechanical & Plumbing Roof Plan & Details
MP2.01 - Mechanical & Plumbing Specifications
F1.01 - Sprinkler Plan & Specifications



EMERGENCY ROOF DRAIN DETAIL (ERD) | 2



PRIMARY ROOF DRAIN DETAIL (RD) | 1

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Teel Crossing One
Frisco, TX

Revisions

MP1.01

22 May 2015

SECTION 15000
MECHANICAL (HVAC AND PLUMBING) GENERAL SPECIFICATIONS

1. All work shall comply with applicable codes and laws, including referenced regulations. The requirements of the authority having jurisdiction shall prevail unless the requirements of the architect/engineer and these design documents are more stringent.

   The governing codes for this project are:
   - **Frisco, Texas**
   - 2012 International Building Code (IBC), with Local Amendments
   - 2012 International Plumbing Code (IPC), with Local Amendments
   - 2012 International Mechanical Code (IMC) with Local Amendments
   - 2012 International Fuel Gas Code (IFGC), with Local Amendments
   - 2012 International Energy Conservation Code (IECC), with Local Amendments
   - 2006 International Fire Code (IFC), with local Amendments
2. Additional applicable standards are:
   - Sheet Metal and Air-conditioning Contractors National Association (SMACNA)
   - American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE)
   - National Fire Protection Association (NFPA).
3. The contractor shall obtain and pay for all permits, connection fees, licenses, documents and services related to installation of work. The contractor shall review all plans and specifications for all trades and shall visit the site to become familiar with site conditions prior to submitting a bid. The contractor shall coordinate bid preparation with other trades to assure the intent of this project is maintained and interferences in work and schedule are minimized.
4. The mechanical and plumbing contractors shall coordinate electrical characteristics with the electrical drawings and electrical contractor to assure equipment matches building power and wiring.
5. The location of ducts, piping, fixtures and equipment on the drawings are schematic and diagrammatic. The contractor shall field verify all locations and potential interferences and coordinate work with other crafts and trades. Verify existing building and site conditions prior to bid or fabrication. All work shall be located to avoid conflicts with other trades. Provide adequate clearance and access for equipment service. Make no cuts or holes in the structure without first gaining written approval of the general contractor.
6. The contractor shall provide a complete and operational system meeting the intent and requirements of the owner. Completion of the work shall include all required labor, materials, subcontractors, coordination, and supervision necessary to provide properly functioning systems in accordance with these specifications, drawings, and schedule.
7. Specific warranty requirements may be required and are listed in schedules and elsewhere in these contract documents. Otherwise, all contractors work as well as equipment furnished and installed shall be warranted for at least one year including labor and materials. The start date shall be the date of official opening to the public.
8. All equipment and apprentices required to complete the intent of these specifications and drawings shall be furnished new and in the original packaging. Air-conditioning units must have been manufactured within the past twelve months and stored under cover since manufacture. All work deemed unacceptable to the engineer of record or the architect of record shall be replaced, repaired or reworked until acceptable to the engineer and architect.
9. All utility piping, natural gas, water, sprinkler, sanitary, grease, etc., penetrating rated walls, footings, foundation walls and exterior walls must be sleeved and sealed. Sleeving shall be schedule 40 steel pipe, two whole pipes sizes larger than the service pipe. The annular space between the sleeve and service pipe shall be sealed with rigid foam or insulation meeting the fire and smoke limiting criteria of NFPA 90a.
10. Submittals shall be provided for all materials. Submittal data shall be arranged in a binder. Binders shall have a description of equipment including sizes, capacities, operation characteristics, brand names, motor horsepowers, accessories, materials, gauges, manufacturer's maintenance instructions and other pertinent information required to establish the quality of the product and construction method.
11. After all testing and adjustments have been made and all systems pronounced satisfactory for permanent operation by the architect, the contractor shall clean exposed piping, ductwork, equipment and fixtures installed under this contract. He shall refinish any damaged finish and leave everything in proper working order and of intended appearance for final completion of the building.
12. Upon completion of installation and approval by the architect, furnish a "red line" set of record drawings to the architect clearly marked in red with the changes authorized during construction. Also, provide three complete sets of operating manuals including all equipment provided or installed by the mechanical and plumbing contractors to the architect.
13. Refer to additional specifications on these drawings specific to HVAC, plumbing and fire protection.

HVAC SPECIFICATIONS

1. Verify adequate duct clearances exist for placement and routing of duct prior to duct fabrication. Verify finish ceiling height and bottom of steel elevations and if adequate clearance does not exist, notify Scepter Engineering prior to bid or fabrication.
2. Furnish and install all sheet metal and ductwork as shown on the drawings. All sheet metal and ductwork shall be manufactured, fabricated and installed in accordance with SMACNA HVAC construction standards for both metal and flexible duct. All ductwork shall be galvanized sheet metal gauged in accordance with SMACNA standards. All duct elbows and bends shall have turning vanes in accordance with SMACNA.
3. Hangers and supports: Plastic condensate piping shall be supported on 4 foot centers and copper piping shall be supported on 6 foot centers. All duct shall be supported in accordance with SMACNA standards and guidelines. Duct hangers for horizontal ductwork shall not be over 8 feet on center. Hangers shall be 24 gauge, 1" galvanized continuous beneath the duct bottom. Hangers shall be installed prior to insulating the duct.
4. Insulation: All internally insulated ductwork shall be insulated with Knauf 'Greenguard' certified insulation or approved equal, except as noted elsewhere on drawings. Insulation material submittals shall be provided and approved prior to purchase or fabrication of ductwork. Duct sizes shown are clear inside dimensions. All insulation shall comply with NFPA 90a and 90b. All insulation materials shall be fire resistant, they shall have a flame spread rating no higher than 25 without evidence of continued progressive combustion and a smoke developed rating no higher than 50.
5. Smoke detectors: Listed smoke detectors shall be installed in an accessible location in the supply air duct and the return air duct prior to any exhausting from the building or mixing with fresh air makeup. The air handling unit shall shut down upon activation of the smoke detector and shall not restart until the fire / smoke safety control has been manually reset.
6. Air handling unit fresh air intakes shall not be located closer than ten feet from any chimney or vent outlet, or sanitary sewer outlet, or within ten feet of any other potentially unpleasant or objectionable odors or vapors or environmentally detrimental substances.
7. Flexible connectors: All equipment, machinery, and appliances containing any rotating, vibrating or moving parts shall be isolated from connecting piping, duct, structural supports, conduit, etc., by flexible connectors located as near as practicable to the equipment. Piping and ducts outboard of connectors shall be anchored securely to adjacent structures. Flexible connectors shall be UL 181 listed, and comply with NFPA 90a.
8. All sheet metal joints and seams, both circumferential and longitudinal, from the package unit supply to the package unit return shall be sealed with water proof mastic rated for use from 0 to 160 degrees Fahrenheit.
9. Natural gas piping: Natural gas piping shall be routed as shown on the drawings. Piping materials shall be schedule 40 ASTM A53 or ASTM A106. The mechanical contractor shall provide a natural gas regulator when the utility company does not provide gas at pressures required by the HVAC unit. 2 inch and larger natural gas lines shall be all welded construction in accordance will applicable codes. All gas piping shall be clearly labeled with yellow and black ANSI labels at six-foot intervals, where entering the building and on both sides of all interior building walls. All gas piping exposed to the building exterior shall be primed and topcoated after inspection. Materials and colors shall be suitable to the architect.

PLUMBING SPECIFICATIONS

1. Excavation and backfilling: Trenches for underground piping shall be excavated to the required depths. Bottom of trenches shall be undisturbed earth or compacted soil, graded to obtain required slope. Rocks trash and debris shall be removed prior to laying and covering pipe. No trenches shall be cut near or under any footings without first consulting the architect. Backfilling in those areas shall be conducted in accordance with his instructions. Backfill shall be free from wood, concrete, blocks, brick, pipe and any other debris. Piping shall be laid on a 6 inch bed of sand, backfilled with 6 inches of sand, and then backfilled to grade with number 3/4 inch crushed stone. Waste piping 3 inches and smaller shall be sloped 1/4 inch per foot run. Waste piping 4 inches and larger shall be sloped 1/8 inch per foot run. Contractor shall verify invert elevations of sewers to which new waste lines are to be connected before fabrication and installation of new water and waste lines.
2. All utility piping, natural gas, water, sprinkler, sanitary, grease, etc., penetrating rated walls, footings, foundation walls and exterior walls must be sleeved and sealed. Sleeving shall be schedule 40 steel pipe, two whole pipes sizes larger than the service pipe. The annular space between the sleeve and service pipe shall be sealed with rigid foam or insulation meeting the fire and smoke limiting criteria of NFPA 90a.
3. Domestic water pipe and fittings: Domestic hot and cold water piping inside the building shall be hard drawn copper type "L" with wrought copper fittings and solder joints. Water piping below grade shall be type "L" soft annealed tempered copper tubing. Soldered connections shall be made with no lead solder. Underground piping crossing other utilities, large stones, rocks or foundations shall be protected from deformation by schedule 40 steel sleeving two
4. PVC Sanitary waste drain, vent pipe and fittings: waste lines and fittings shall schedule 40 PVC piping, unless indicated otherwise. Cleanouts shall be provided in all bends and in all main turns and every 80 feet, unless codes, laws or conditions require otherwise. All fittings shall be long sweep or sanitary "Y" fittings. Plugs shall be heavy cast bronze located and installed so they are readily accessible. PVC materials shall not be used in return air plenums. All floor drains and clean-outs shall be cast iron as specified unless otherwise noted.
5. The contractor my reroute code equivalent plumbing so as to reduce installed cost and/or avoid interferences, provided approval is first obtained from the Scepter Engineering (615) 373-8882.
6. Pipe insulation: Piping insulation shall be Owens-Corning fiberglass or approved equal. Insulation methods shall be in accordance with the manufacturer's recommendations. All cold water piping, including that under lavatories shall be insulated with 1/2-inch thick heavy density sectional pipe insulation with a vapor barrier jacket. All hot water piping shall be insulated with 1-inch insulation having a conductivity not exceeding 0.27 BTU per in/h SF F.
7. Pipe hangers and supports: Suspended piping shall be securely supported from floor or ceiling at not more than 10 foot centers for 1-1/4 inch and larger, and 6 foot centers for 1 inch and smaller. Additional supports shall be installed as required for all special or unusual conditions. Provide weight-distributing pads at all hangers in contact with insulation. Provide seismic bracing as required.
8. Dielectric unions: Dielectric unions or couplings shall be installed whenever copper pipe is connected to steel pipe.
9. The entire potable water system shall be disinfected by a method approved by the plumbing official.
10. Natural gas piping: The natural gas piping shall be routed as shown on the drawing. Piping materials shall be schedule 40 ASTM A53 or ASTM A106. The mechanical contractor shall provide a natural gas regulator when the utility company does not provide gas at pressures required by the HVAC unit. 2 inch and larger natural gas lines shall be all welded construction in accordance will applicable codes. All natural gas piping routed within a return air plenum shall be welded. All gas piping shall be clearly labeled with yellow and black ANSI labels at six-foot intervals, where entering the building and on both sides of all interior building walls. All gas piping exposed to the building exterior shall be primed and topcoated after inspection. Materials and colors shall be suitable to the architect.

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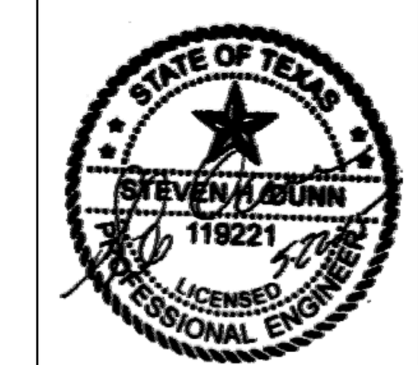


Firm Registration Pending

Teel Crossing One
Frisco, TX

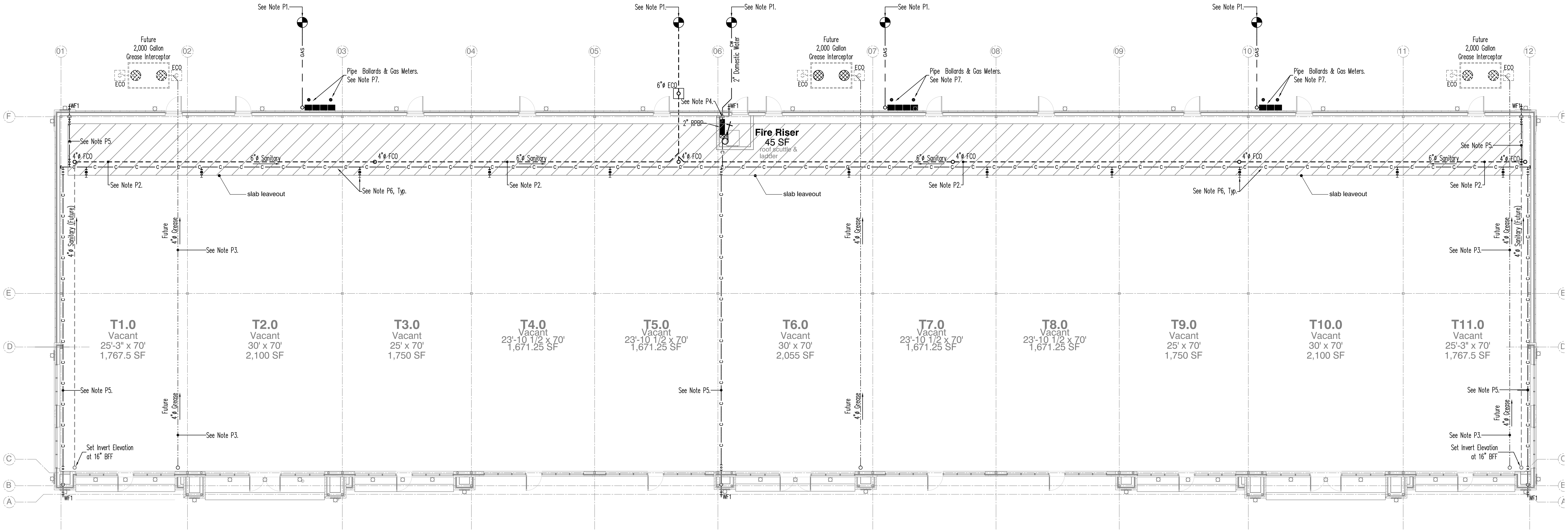
Revisions

Associated Drawings:

M1.01 - Mechanical Floor Plan & Details
P1.01 - Plumbing Floor Plan & Details
MP1.01 - Mechanical & Plumbing Roof Plan & Details
MP2.01 - Mechanical & Plumbing Specifications
F1.01 - Sprinkler Plan & Specifications

MP2.01

22 May 2015



PLUMBING FLOOR PLAN

0' 4' 8' 16' 32'

SCALE: 1/8" = 1'-0"

PLUMBING FIXTURE SPECIFICATIONS	
SUBMITTALS FOR ALL PLUMBING FIXTURES SHALL BE PROVIDED TO THE TENANT AND APPROVED BY THE TENANT PRIOR TO PURCHASE OR INSTALLATION.	
WF1	HOSE BIBB, WALL FAUCET: Woodford MN: MB67 Backflow Preventer Freezeless Boxed.
FCO	FLOOR CLEANOUT (general finished areas): Zurn MN: 1400, 4 inch adjustable height with anchor flange, bronze plug and solid cast bronze cover.
ECO	EXTERIOR CLEANOUT (see detail on drawing): Jay R Smith MN: 4291 push-on body with countersunk plug and Jay R Smith MN: 4261 heavy duty cast iron cover.
RD	ROOF DRAIN: ZURN ZC-100 15 inch diameter roof drain with 4-inch outlet, dura-coated cast iron body with cast iron dome and combination membrane flashing clamp/gravel guard. Match drain type to roof type.
ERD	EMERGENCY ROOF DRAIN: ZURN ZC-100 15 inch diameter roof drain with 4-inch outlet with 3 inch extension, dura-coated cast iron body with cast iron dome and combination membrane flashing clamp/gravel guard. Match drain type to roof type. Provide 4" downspout nozzle Jay R. Smith MN: 1771.

PLUMBING KEYED NOTES (Designated Note P1, P2, etc.):

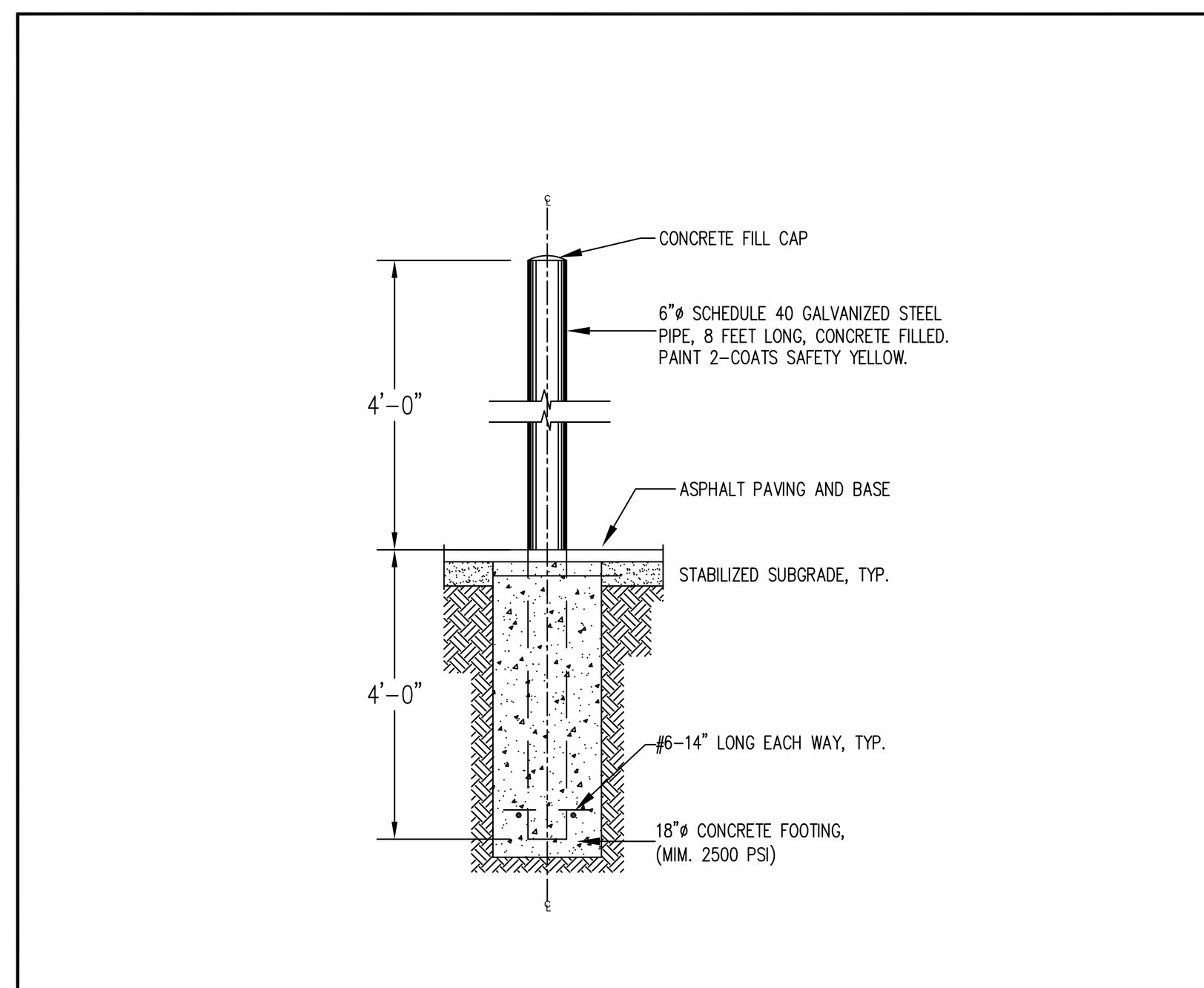
1. See civil drawings for connection point locations.
2. The sanitary sewer line shall be routed as low as possible from the most remote location in the building, while providing minimum fall to meet codes. See civil drawings for exact location of sanitary sewer connection point.
3. The grease sewer line is shown for reference only. The main sanitary sewer line shall be set low enough for future installation of this line, beginning at 16" below finished floor.
4. Provide a new 2" Ball Valve 18" above finished floor. Provide a new 2" Pressure Reducing Valve downstream of the ball valve and provide a new 4" diameter glycerin filled 0-to-120 PSI pressure gauge downstream of the pressure reducing valve. Provide a gauge cock for the gauge.
5. Provide a 3/4" insulated type 'L' copper water line routed overhead to the wall faucet. Provide 3/4" ball valves at the 2" header and above the ceiling over the wall faucet. Typical all locations.
6. Route a 2" Type 'L' insulated copper water line overhead in the bar joists. Support at each jar joists. Provide 1" Teflon seat ball valves as shown with a nipple and cap at the discharge side of each ball valve.
7. Coordinate the location of the gas meter with the gas utility and Civil drawings. The actual location may be different from what is shown on these design documents.

PLUMBING GENERAL NOTES

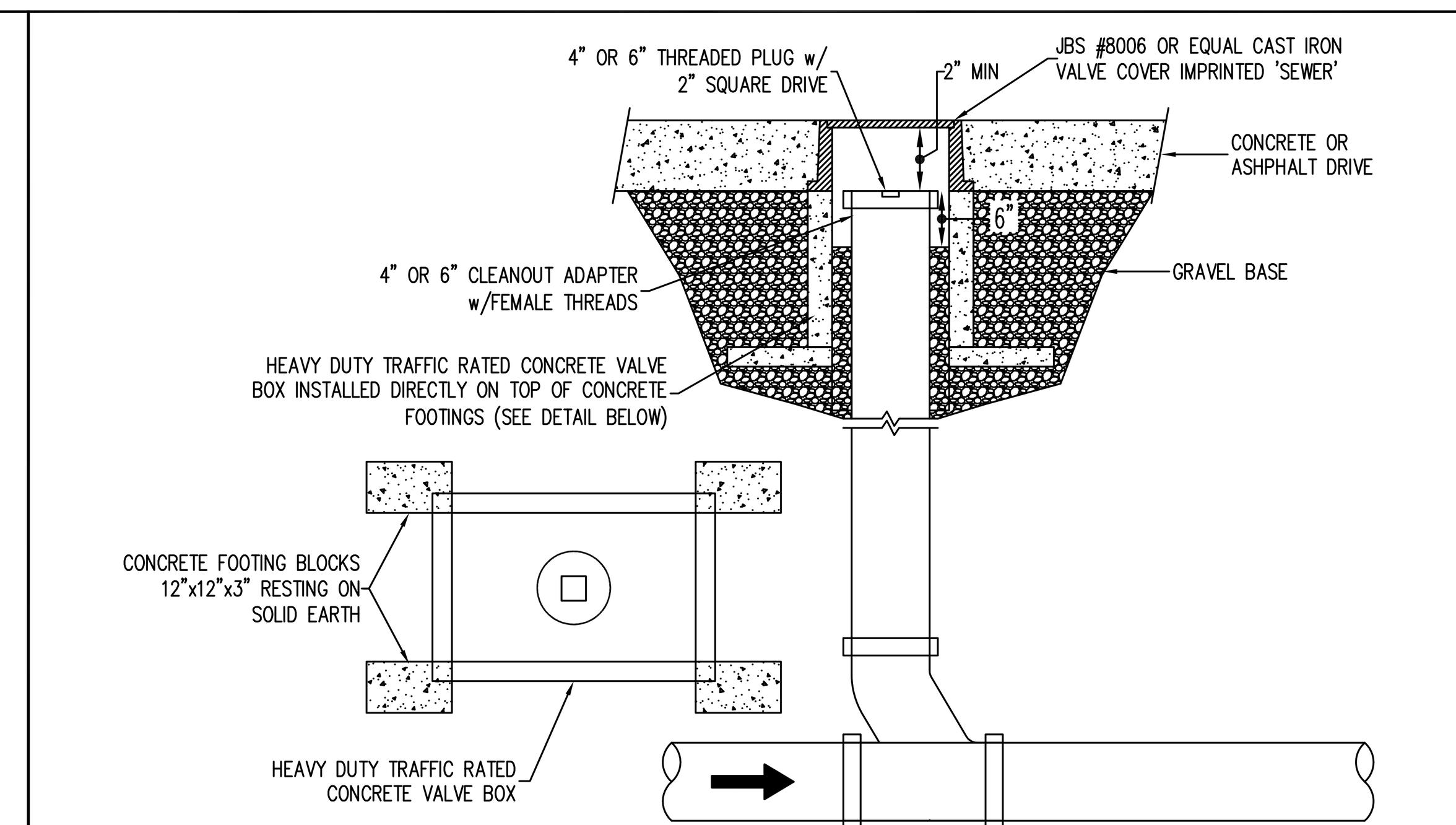
1. See associated Mechanical, Plumping, and Sprinkler drawings for additional requirements.
2. All cold water lines shall be type 'L' copper insulated in accordance with the specifications. All piping insulation shall be in accordance with the plumbing specifications.

Associated Drawings:

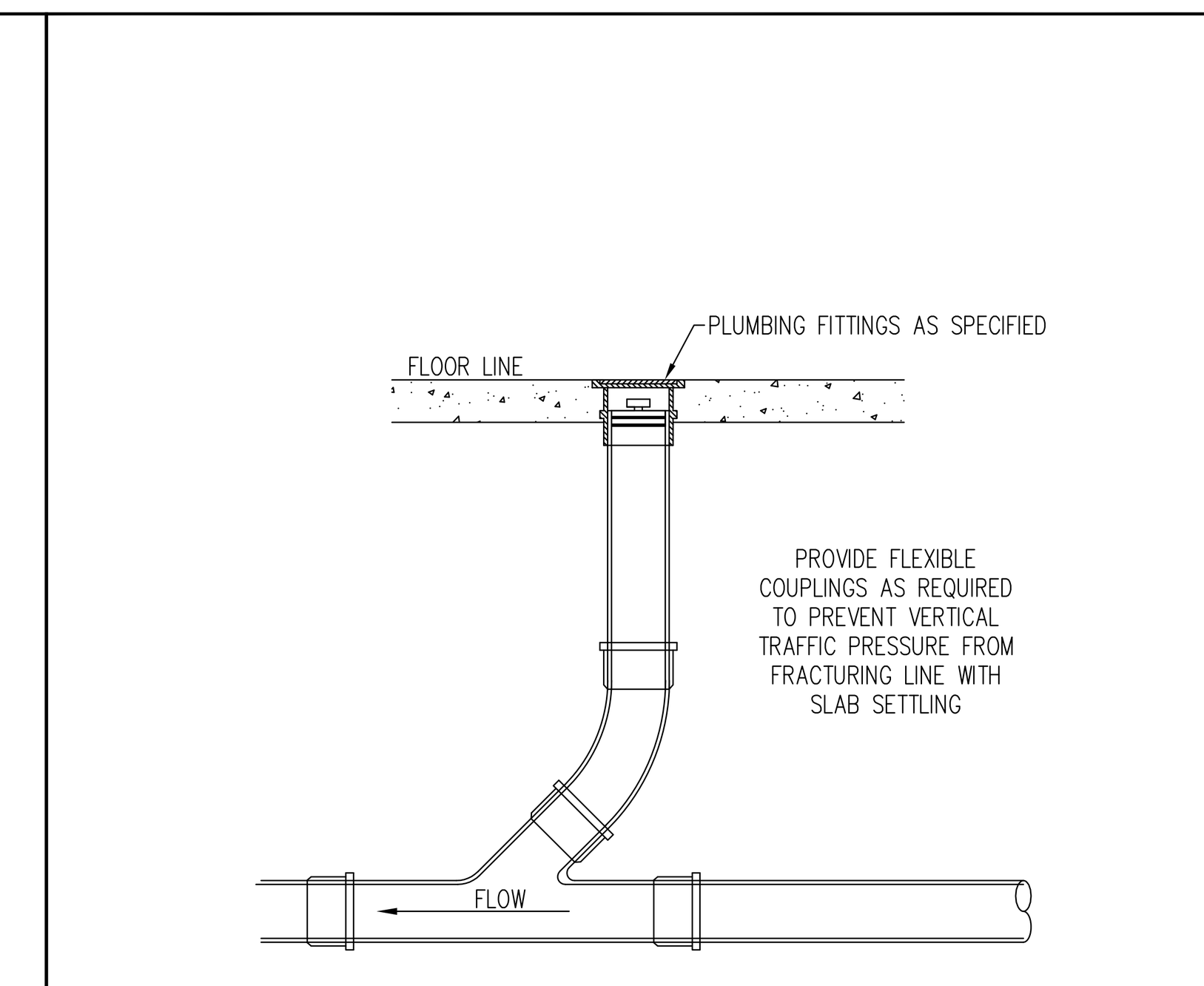
M1.01 - Mechanical Floor Plan & Details
P1.01 - Plumbing Floor Plan & Details
MP1.01 - Mechanical & Plumbing Roof Plan & Details
MP2.01 - Mechanical & Plumbing Specifications
F1.01 - Sprinkler Plan & Specifications



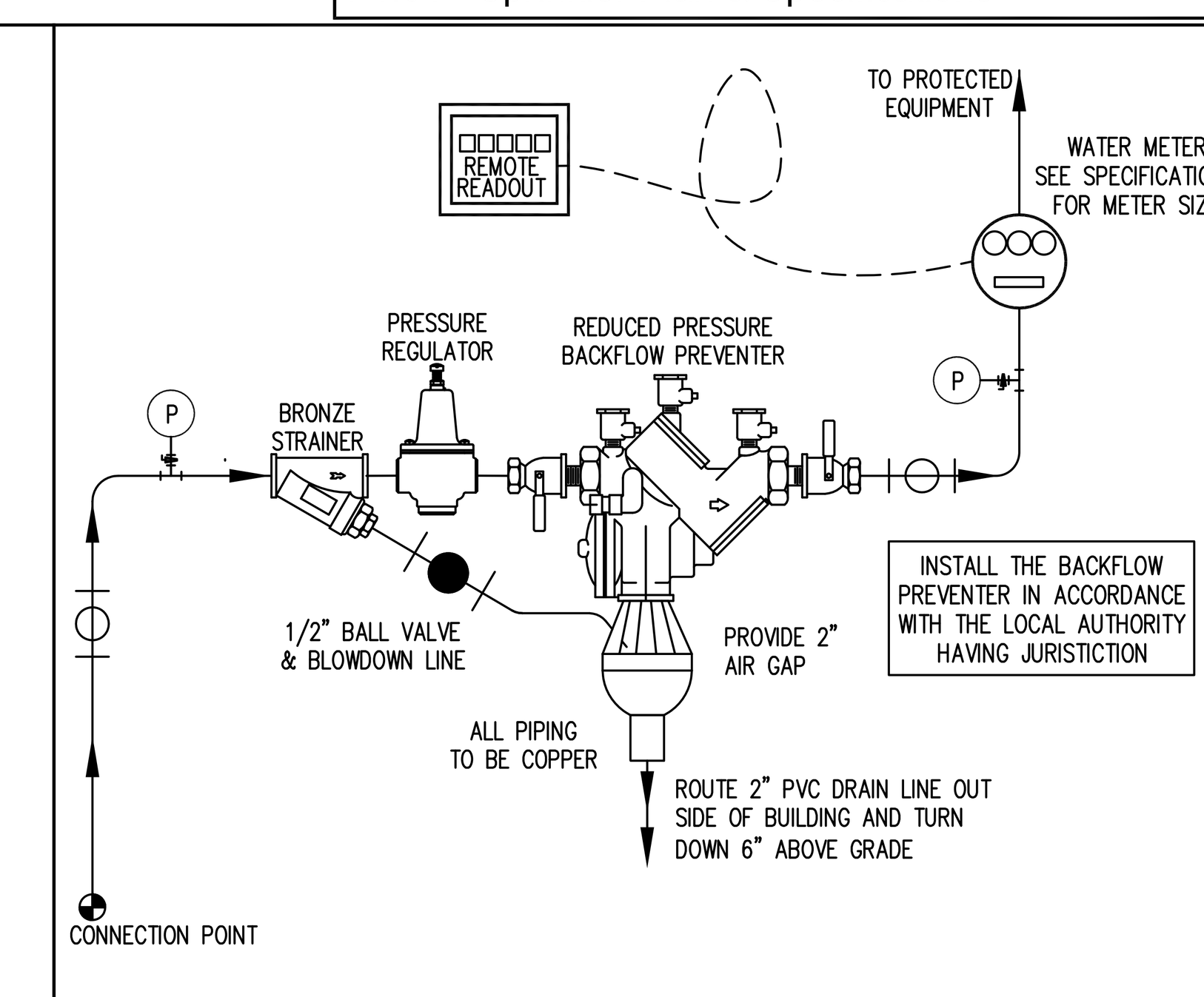
PIPE BOLLARD DETAIL 4



ECO - EXTERIOR CLEANOUT DETAIL 3



INTERIOR FLOOR CLEANOUT DETAIL (FCO) 2



REDUCED PRESSURE BACKFLOW PREVENTER DETAIL 1

SCEPTER ENGINEERING, PC

STATE OF TEXAS
STEVEN A DUNN
119221
LICENSED PROFESSIONAL ENGINEER

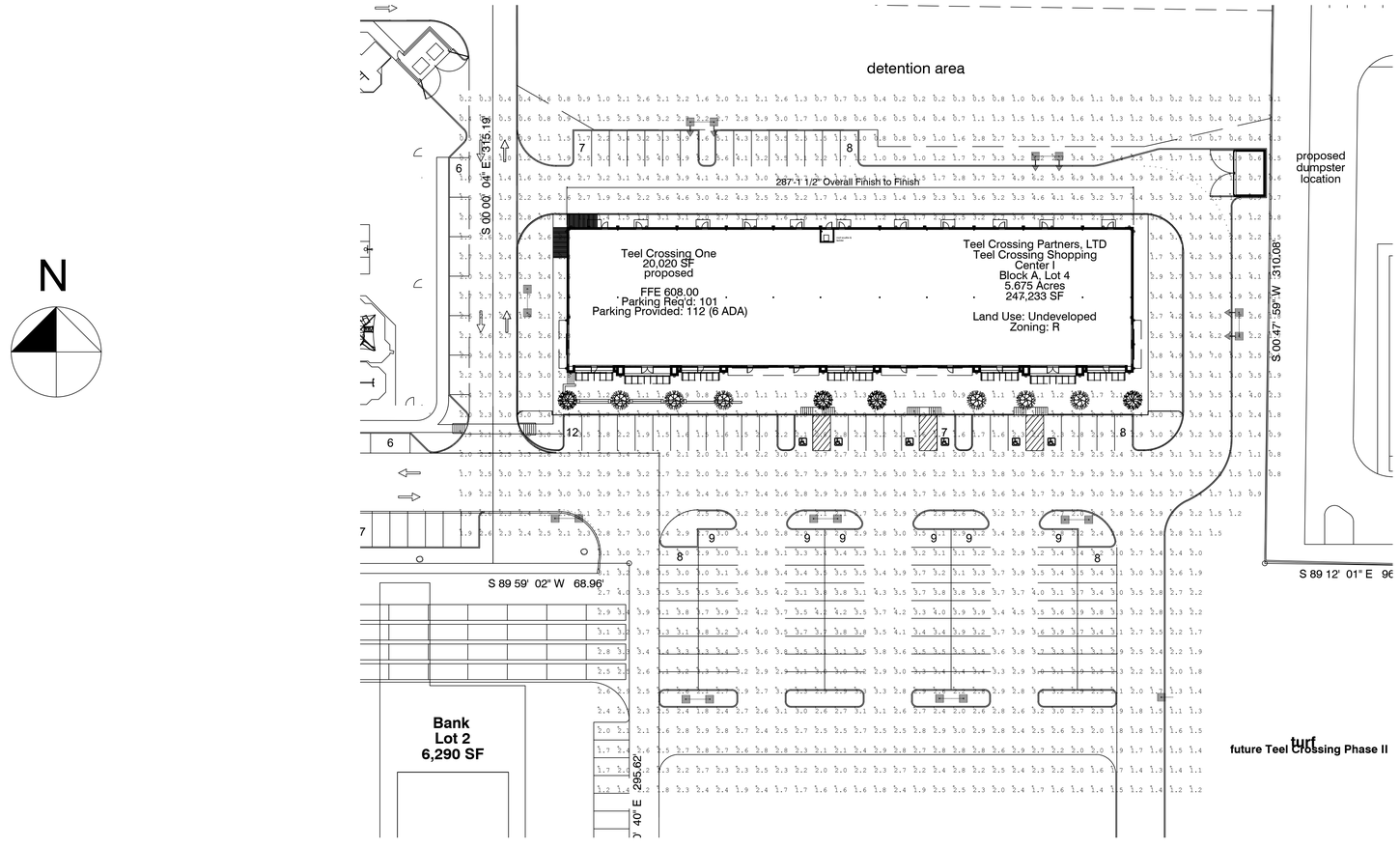
Firm Registration Pending

Teel Crossing One
Frisco, TX

Revisions

P1.01

22 May 2015



Calculation Summary								
Label	Units	Avg	Max	Min	Avg/Min	Max/Min	PtSpcLr	PtSpcTb
OVERALL SUMMARY	Fc	2.92	7.0	1.0	2.92	7.00	10	10

Luminaire Schedule					
WLS10756 TEEL CROSSING - PHASE I FRISCO, TX PM: HOLLY PLEASE CONTACT US FOR PRICING AT WLS@WLSLIGHTING.COM					
Symbol	Qty	Label	Lumens	LLF	Description
	6	A	44000	0.800	WLS-FVM-5-400-PSMH-FG 30' POLE 2'-6'' BASE
	1	B	44000	0.800	WLS-FVM-5-400-PSMH-FG 30' POLE 2'-6'' BASE
	3	C	44000	0.800	WLS-FVM-3-400-PSMH-FG 30' POLE 2'-6'' BASE

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine applicability of the layout to existing or future field conditions.

This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions utilizing current industry standard lamp ratings in accordance with Illuminating Engineering Society approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and other variable field conditions.

01 Teel Crossing Site Lighting Photometrics
NOT TO SCALE

Duane Meyers Architect
360 PR 3423
Uncertain, Texas 75661
903.484.4040
dmmeyers@mac.com

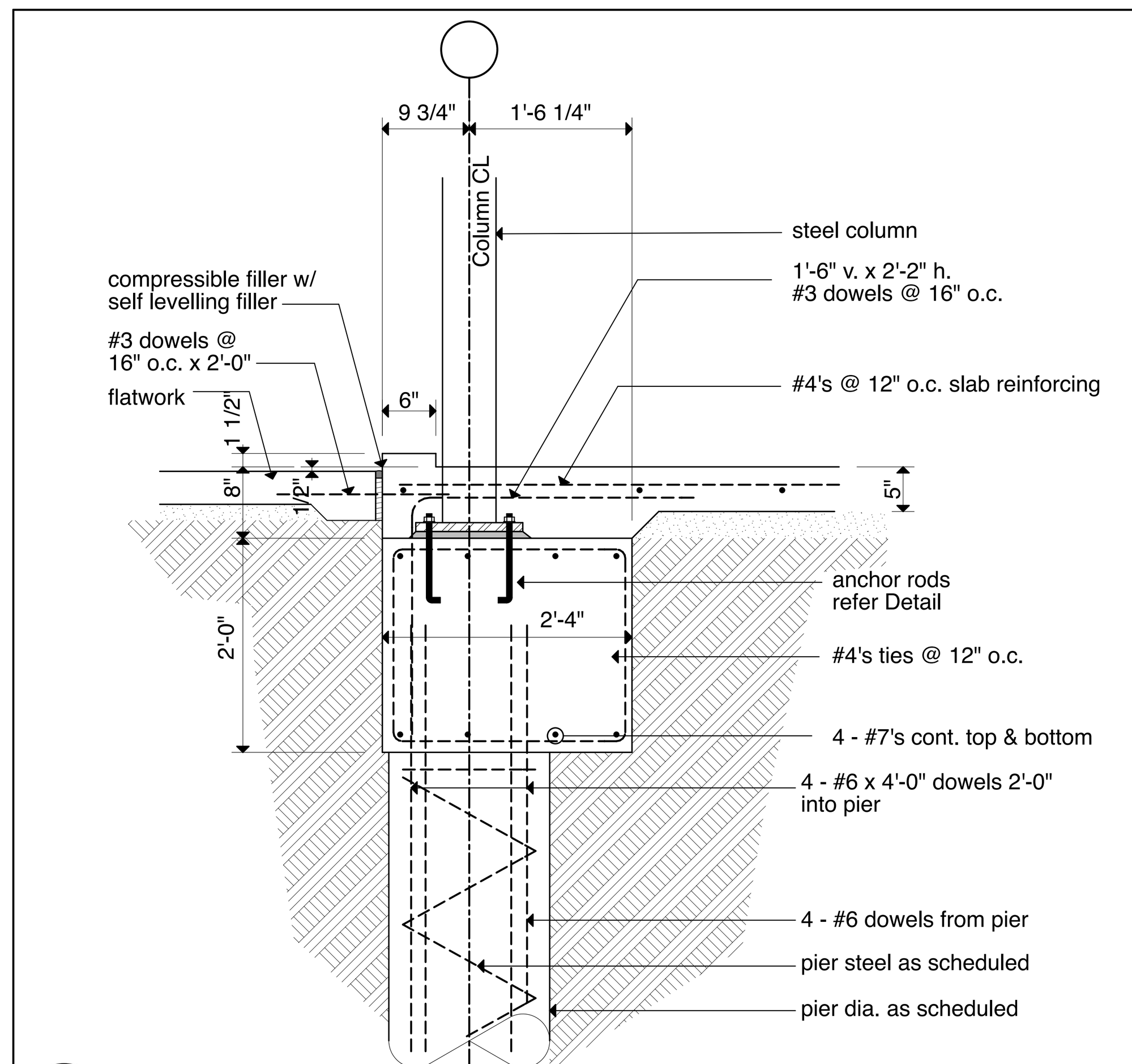
Teel Crossing One
Frisco, TX
Construction Documents

Revisions

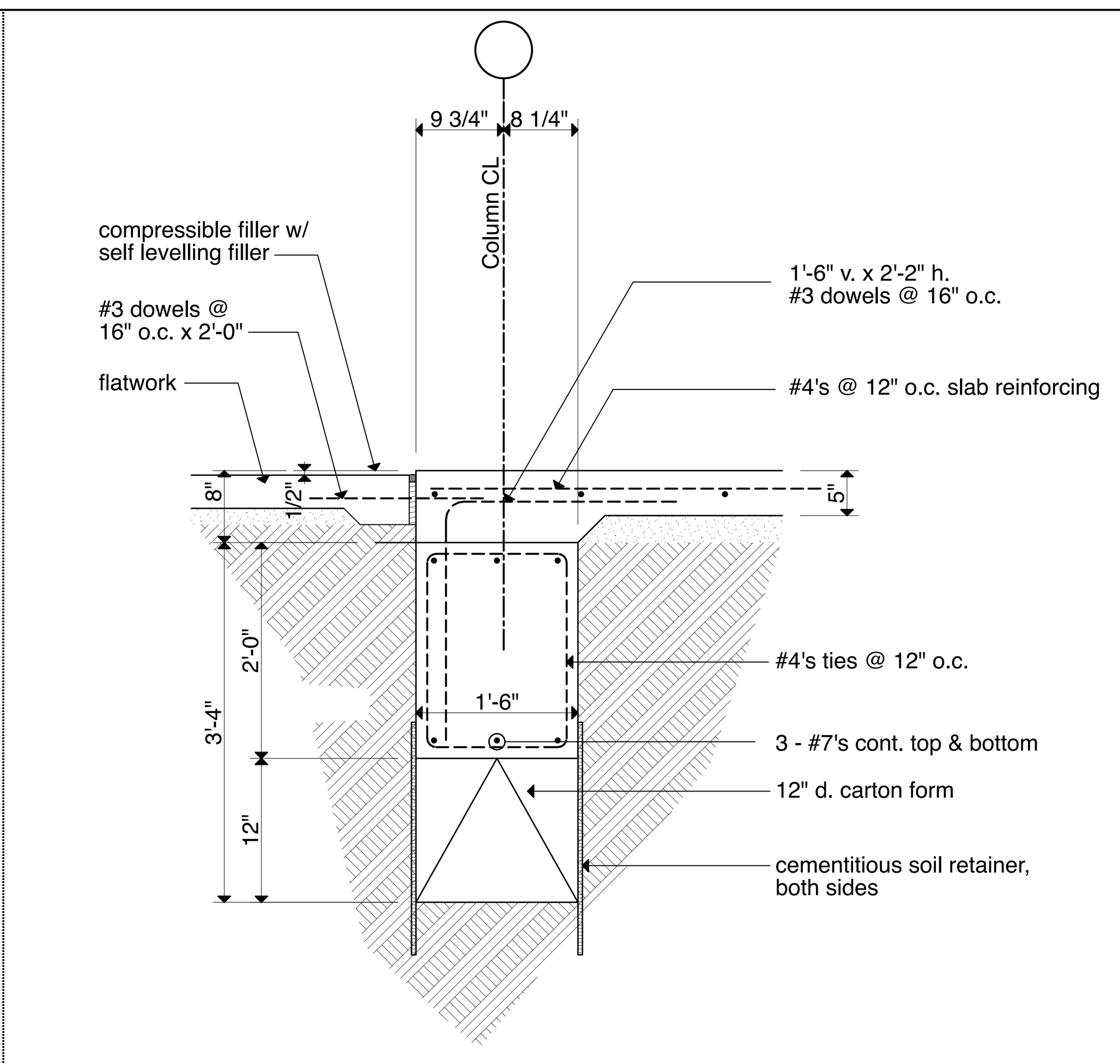
REGISTERED ARCHITECT DUANE M. MEYERS STATE OF TEXAS
22 May 2015

PH1.0

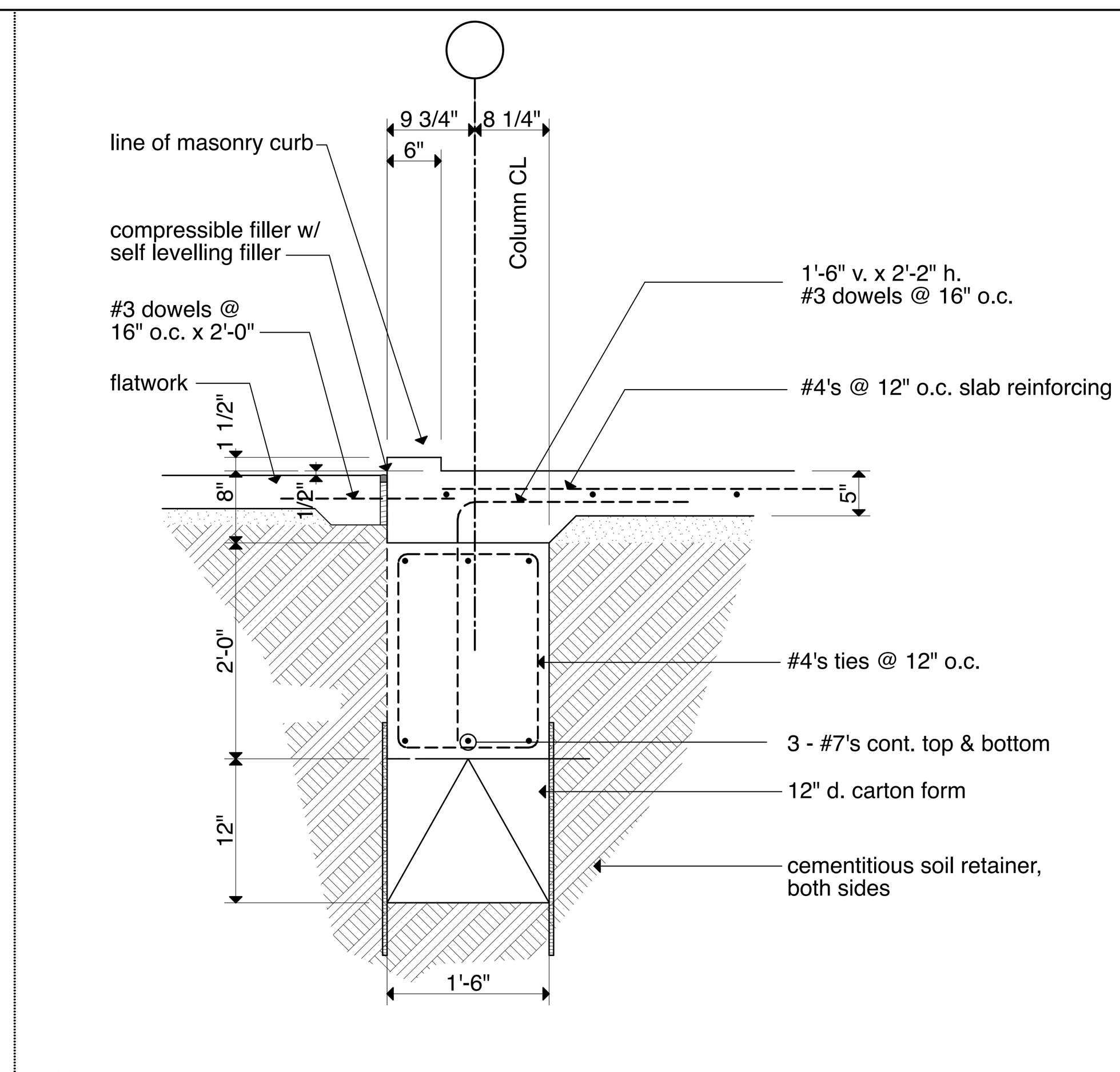
22 May 2015



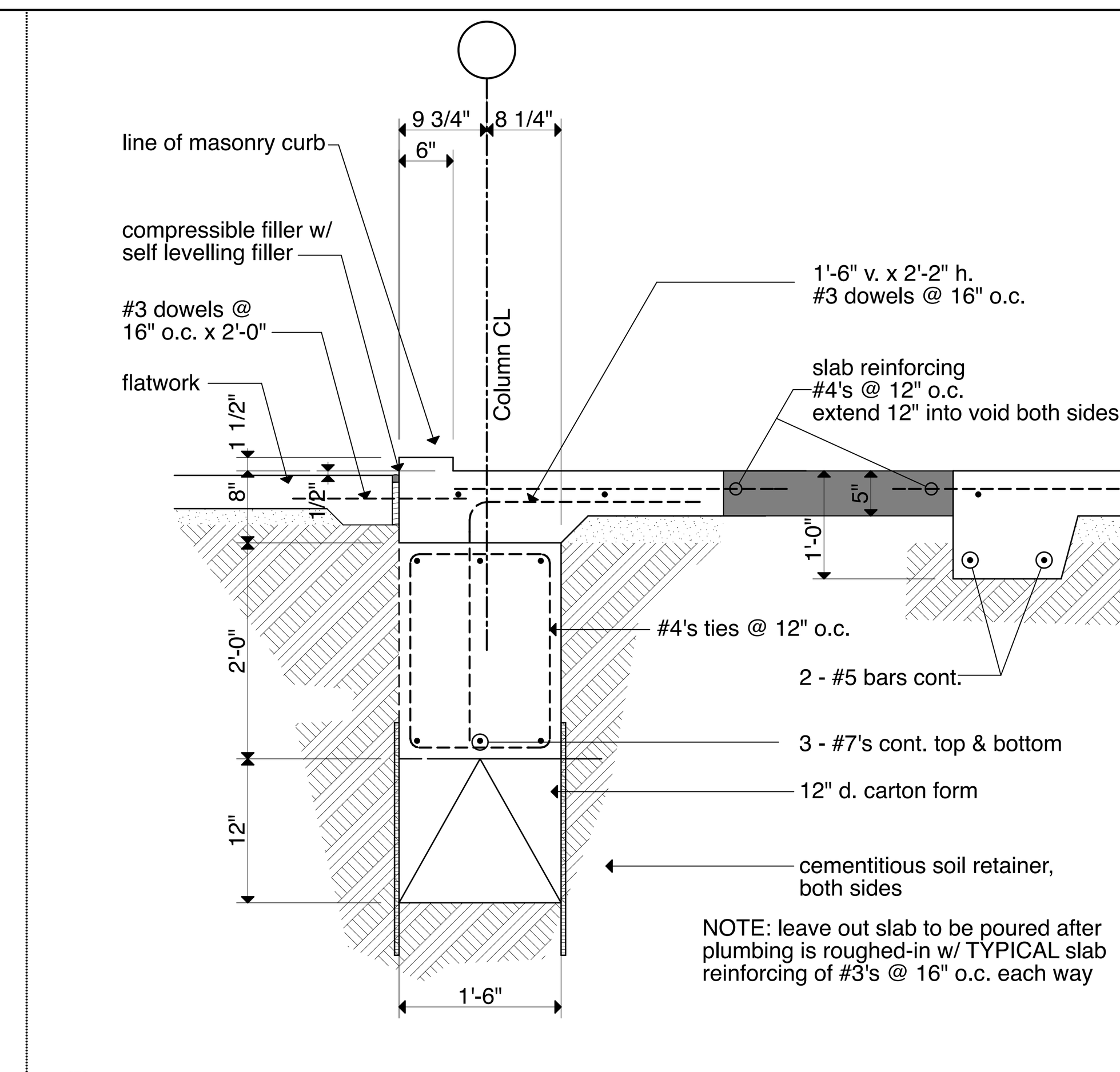
01 **Typical Grade Beam @ Column/Pier**
scale: 3/4" = 1'-0"



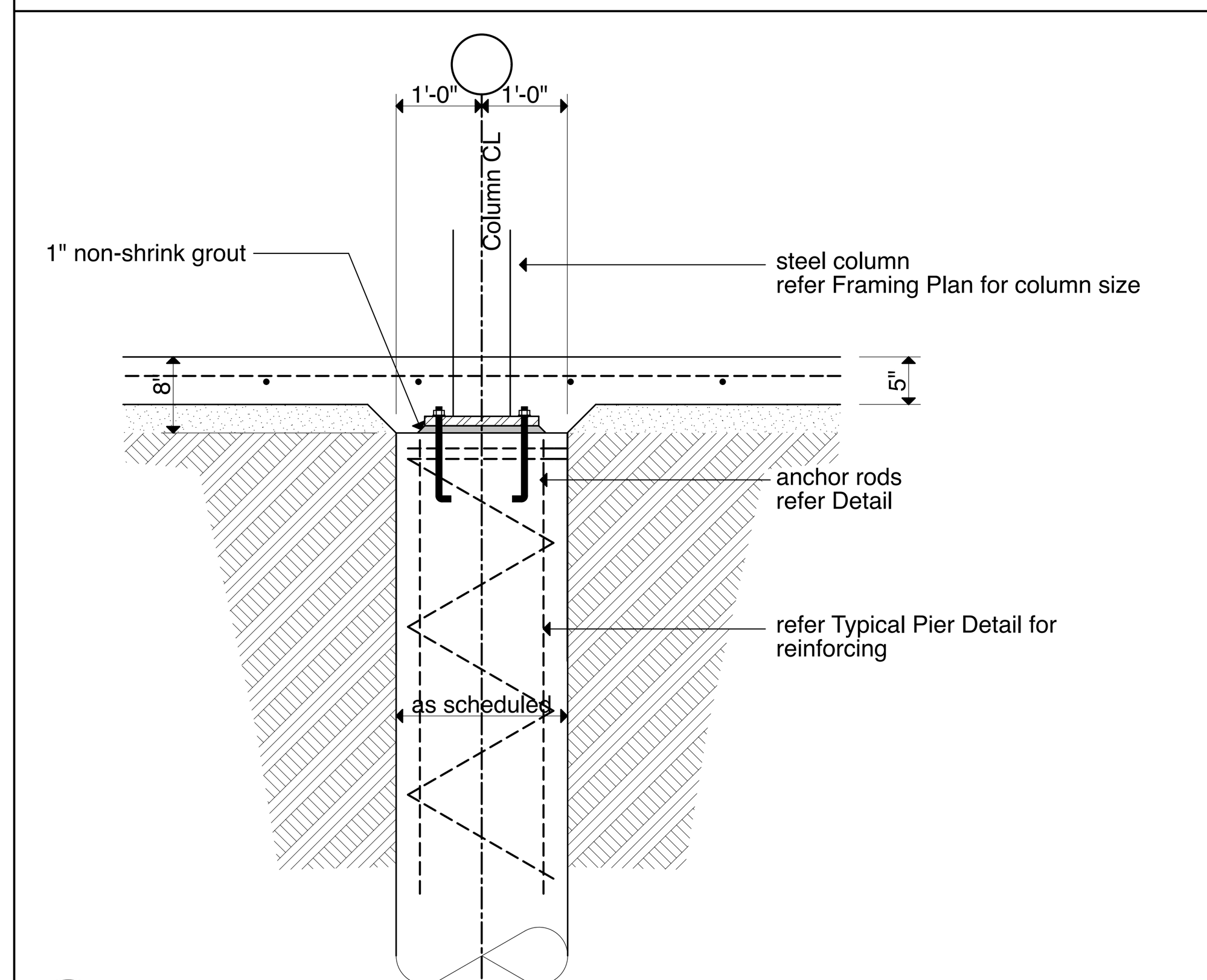
02 **Typical Grade Beam @ Storefront & HM Doors**
scale: 3/4" = 1'-0"



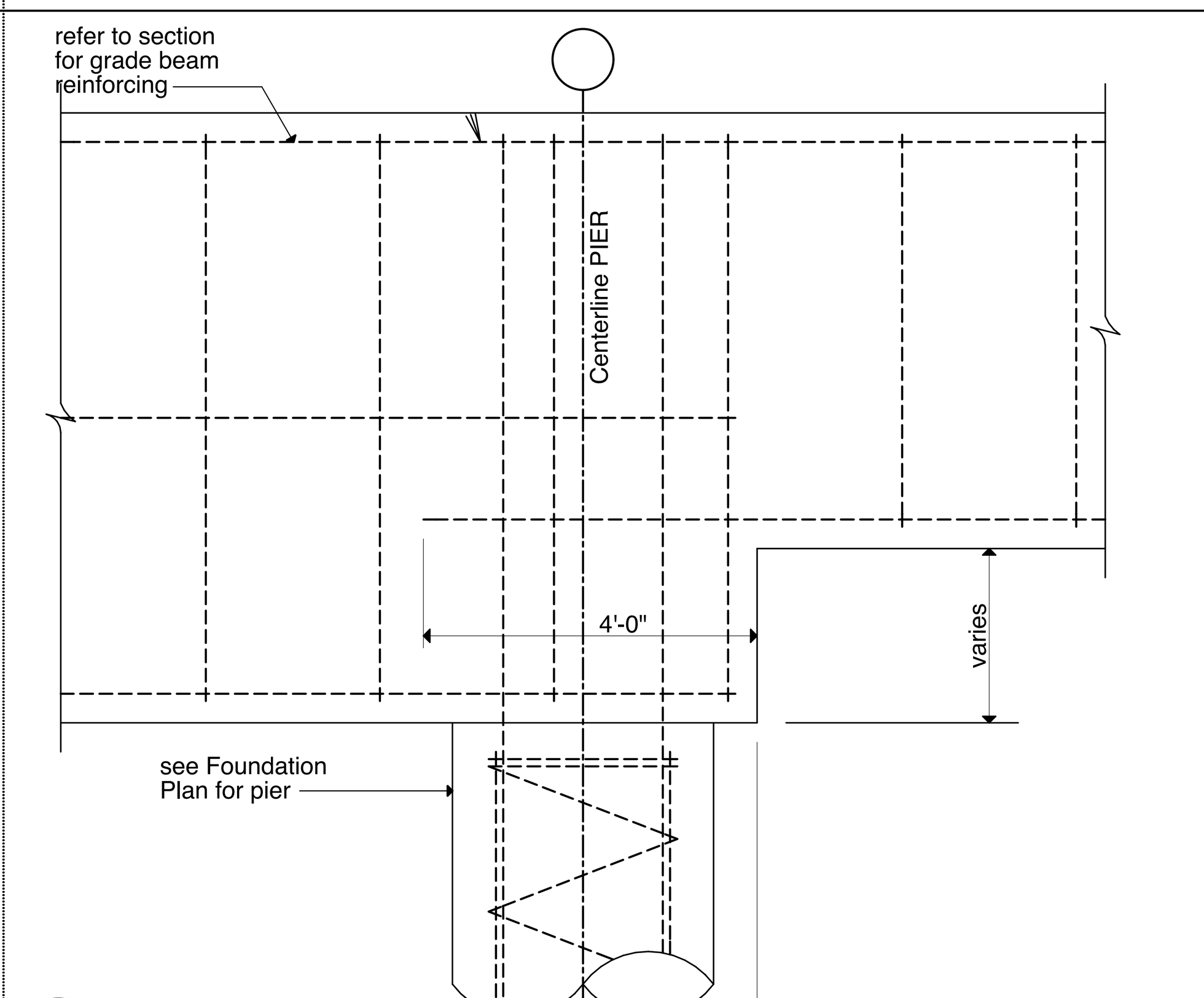
03 **Typical Grade Beam**
scale: 3/4" = 1'-0"



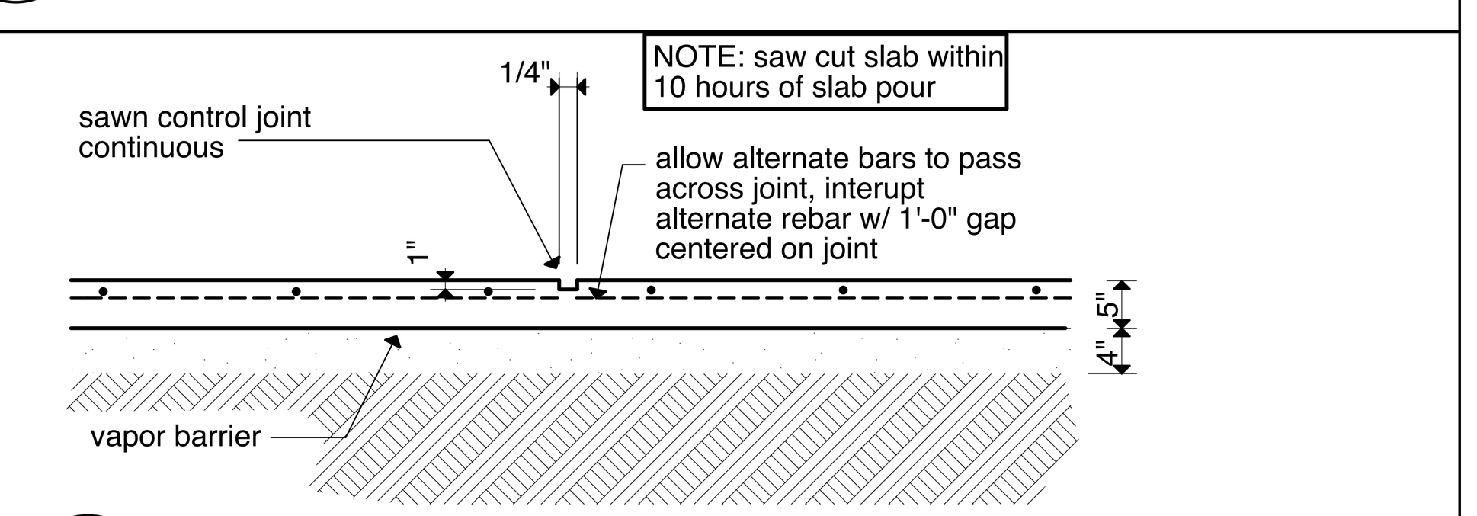
04 **Typical Slab Leaveout**
scale: 3/4" = 1'-0"



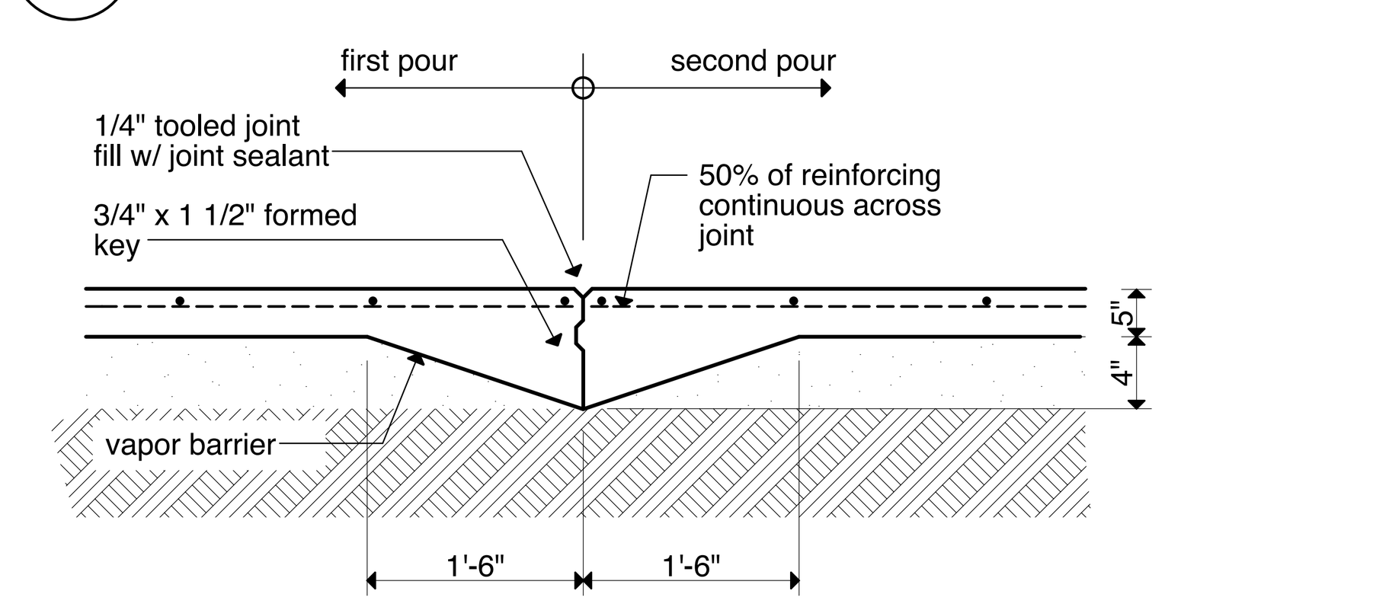
05 **Typical Interior Pier**
scale: 3/4" = 1'-0"



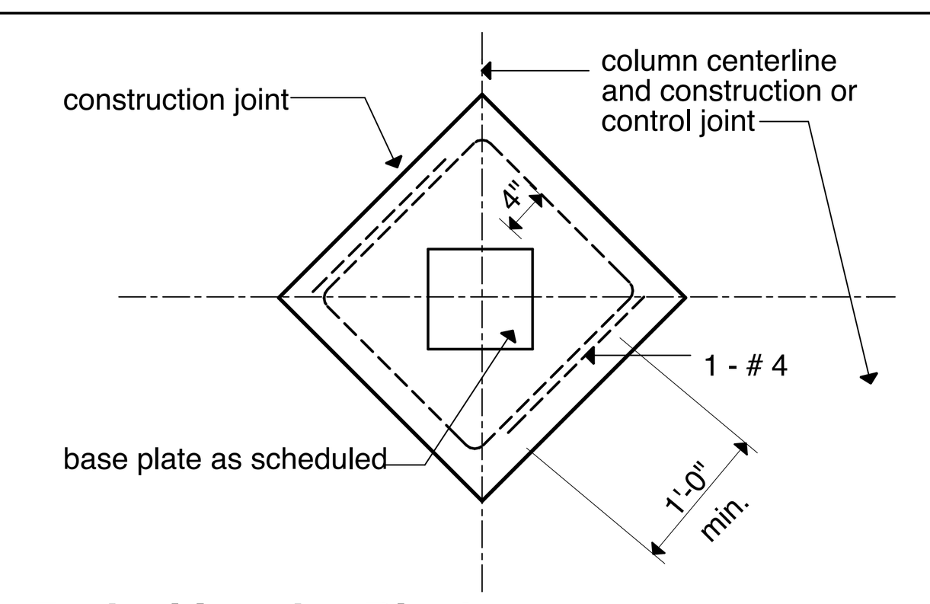
06 **Typical Grade Beam Step**
scale: 3/4" = 1'-0"



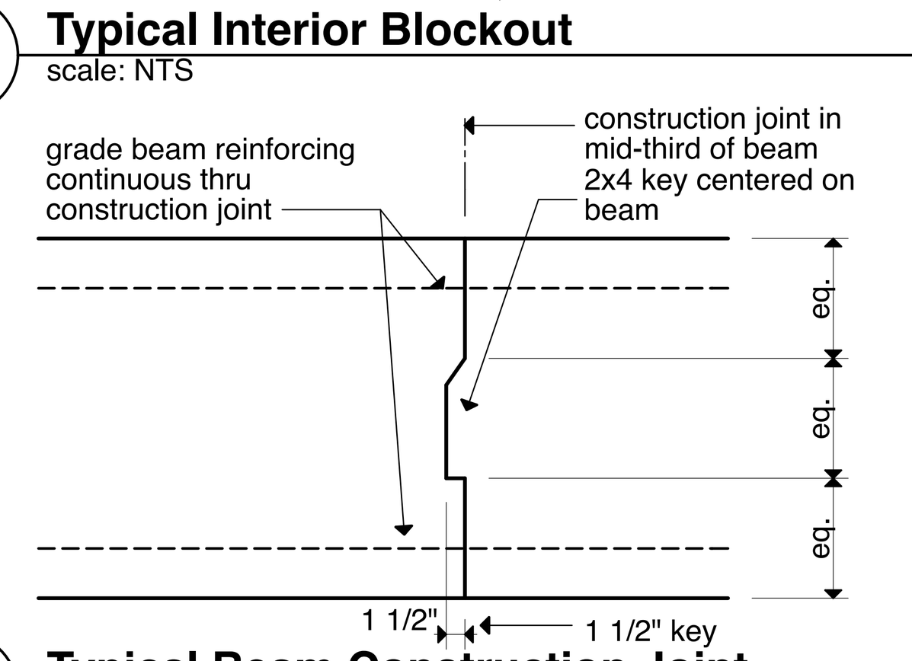
08 **Typical Control Joint**
scale: NTS



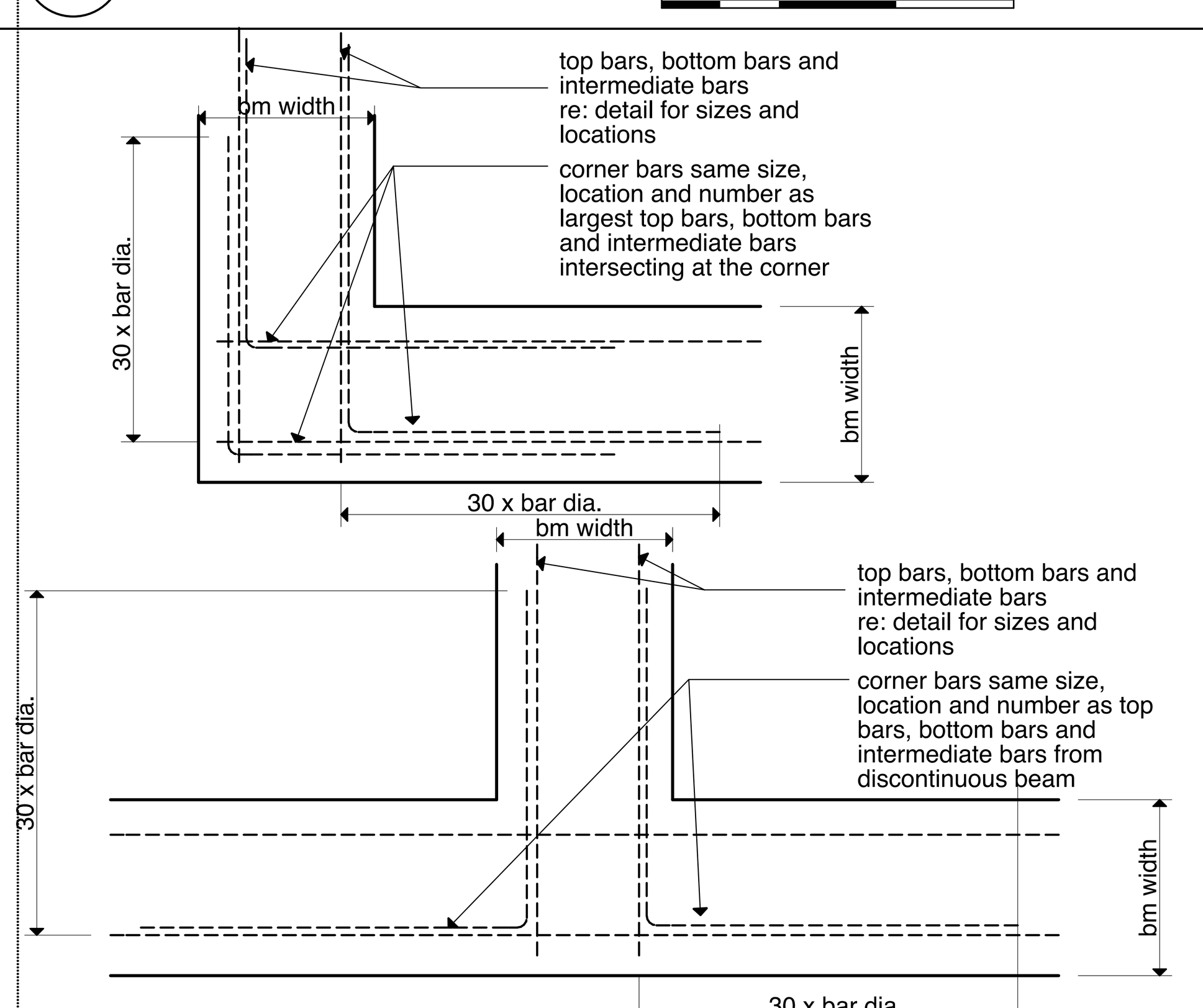
09 **Typical Construction Joint**
scale: NTS



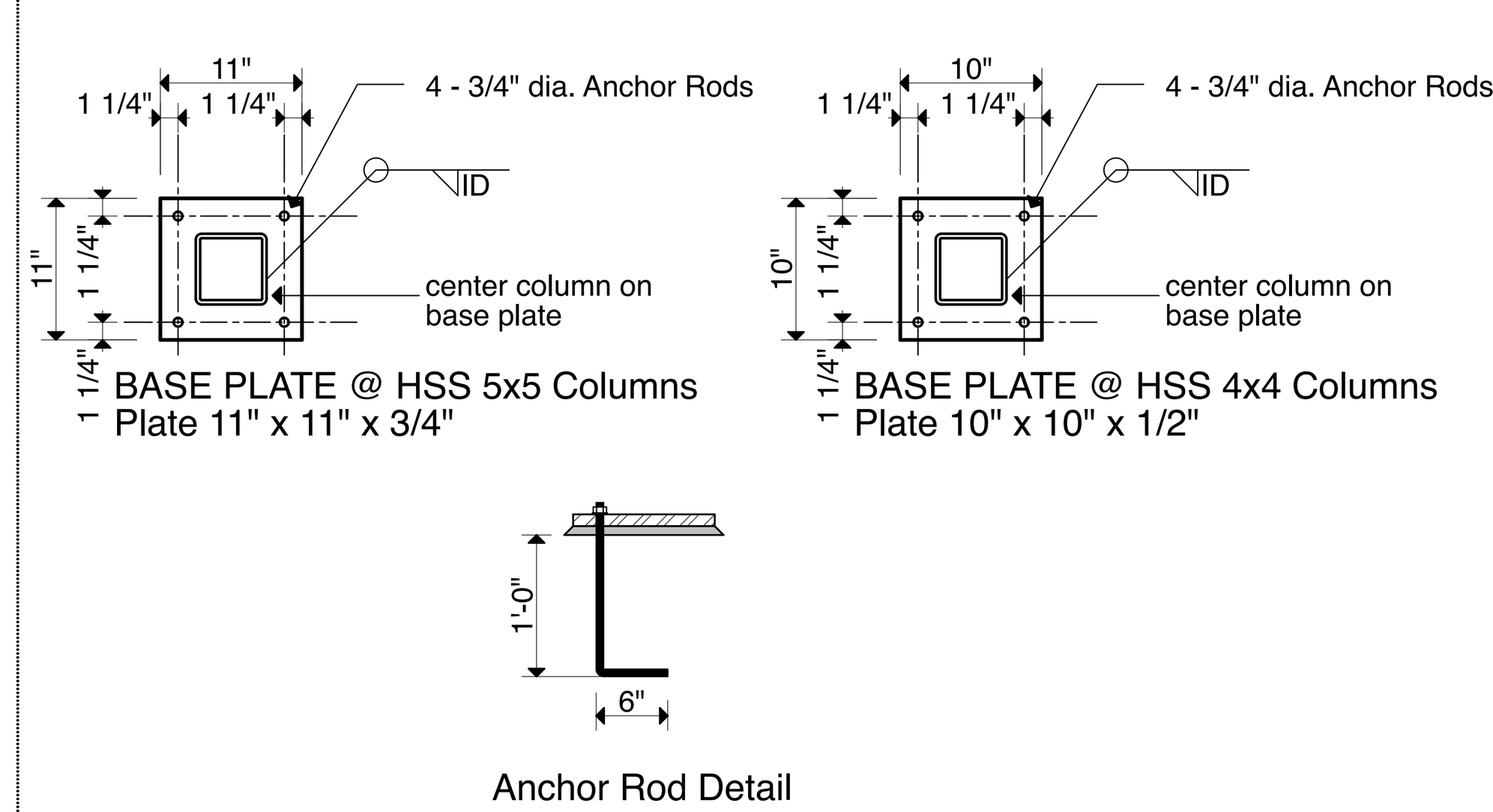
10 **Typical Interior Blockout**
scale: NTS



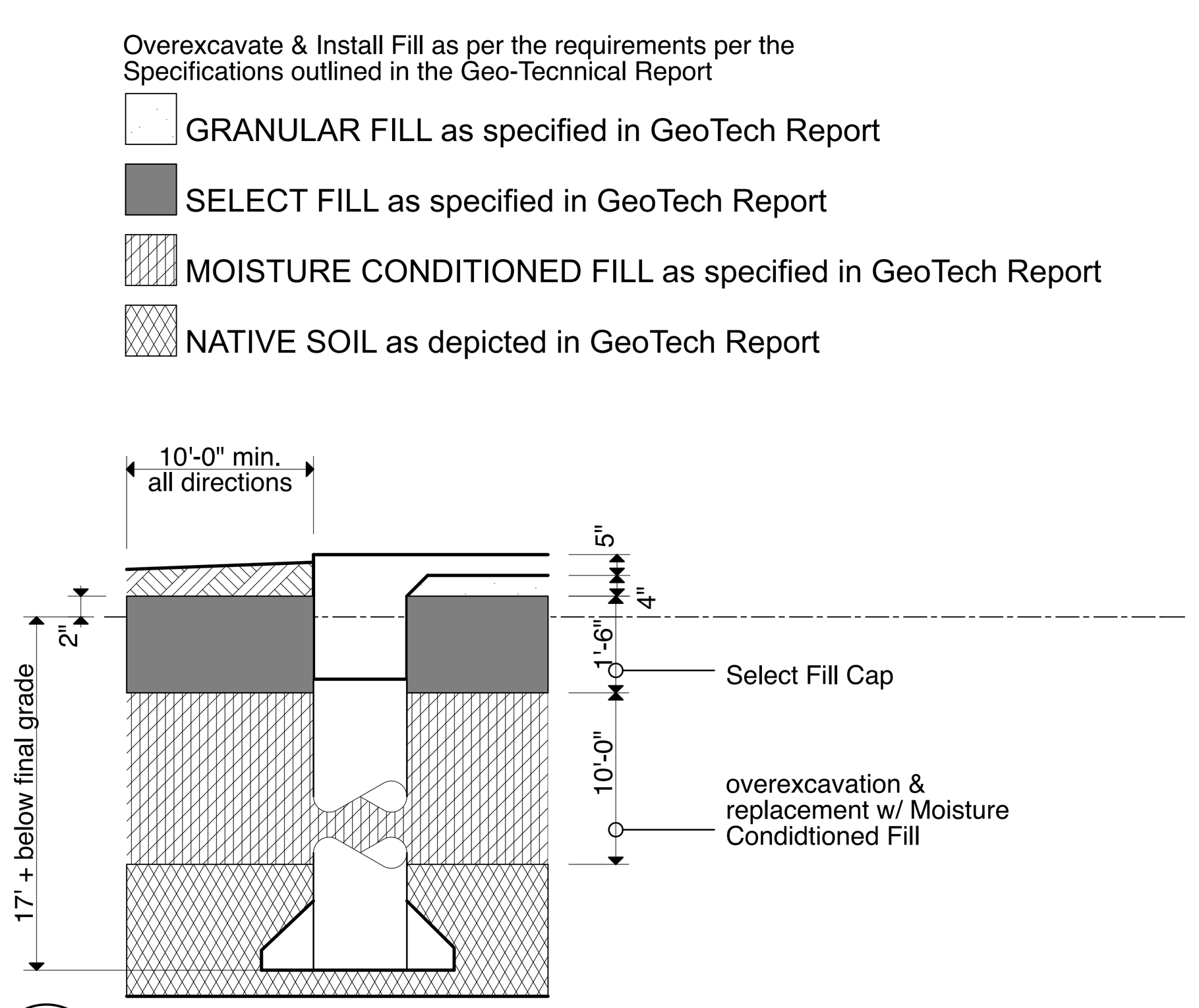
11 **Typical Beam Construction Joint**
scale: NTS



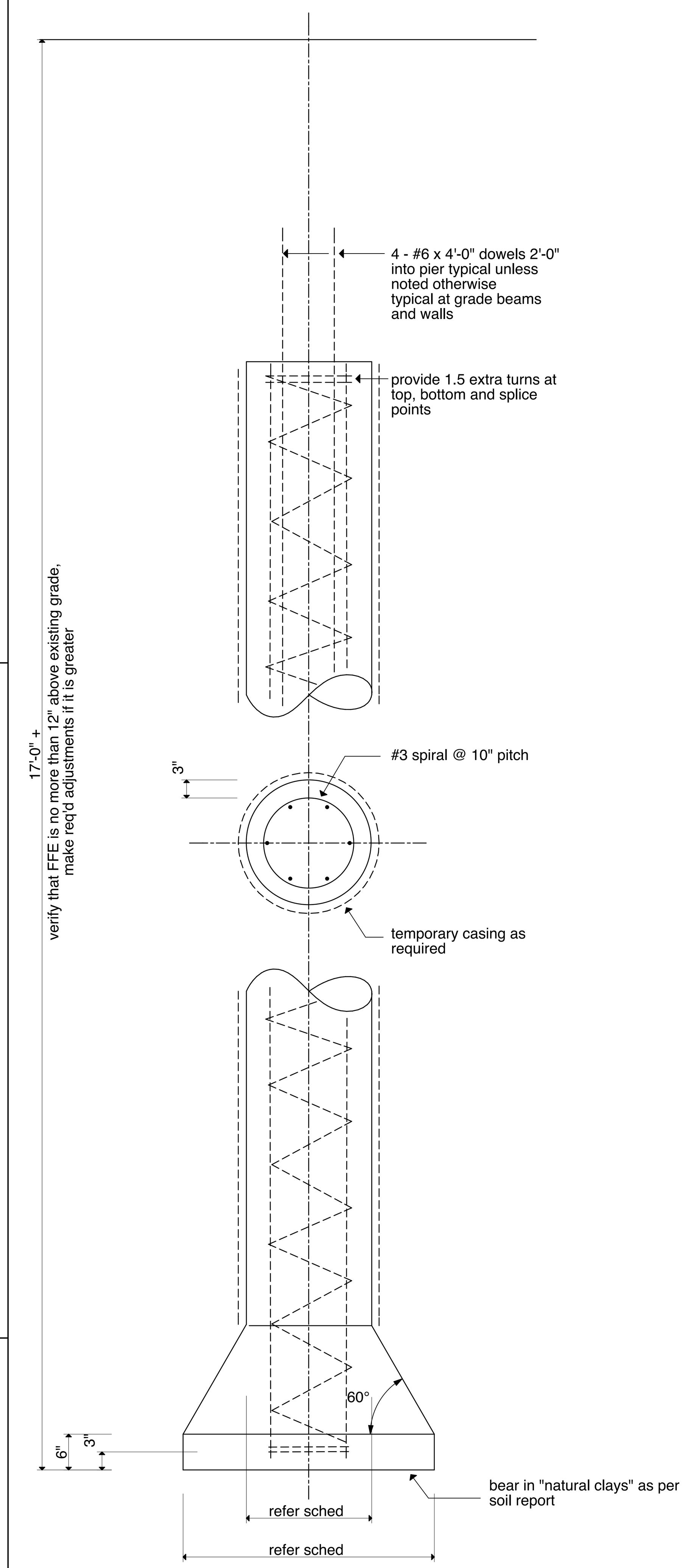
12 **Typical Beam Corner & Tee**
scale: NTS



13 **Base Plate & Anchor Rod Details**
scale: NTS



14 **Subgrade Preparation Profile**
scale: NTS



Pier & Bell Schedule

	Shaft Dia.	Bell Dia.	Reinf'g
	18" dia.	36" dia.	6 - #6's
	18" dia.	54" dia.	6 - #6's

15 **Belled Pier Schedule**
scale: NTS

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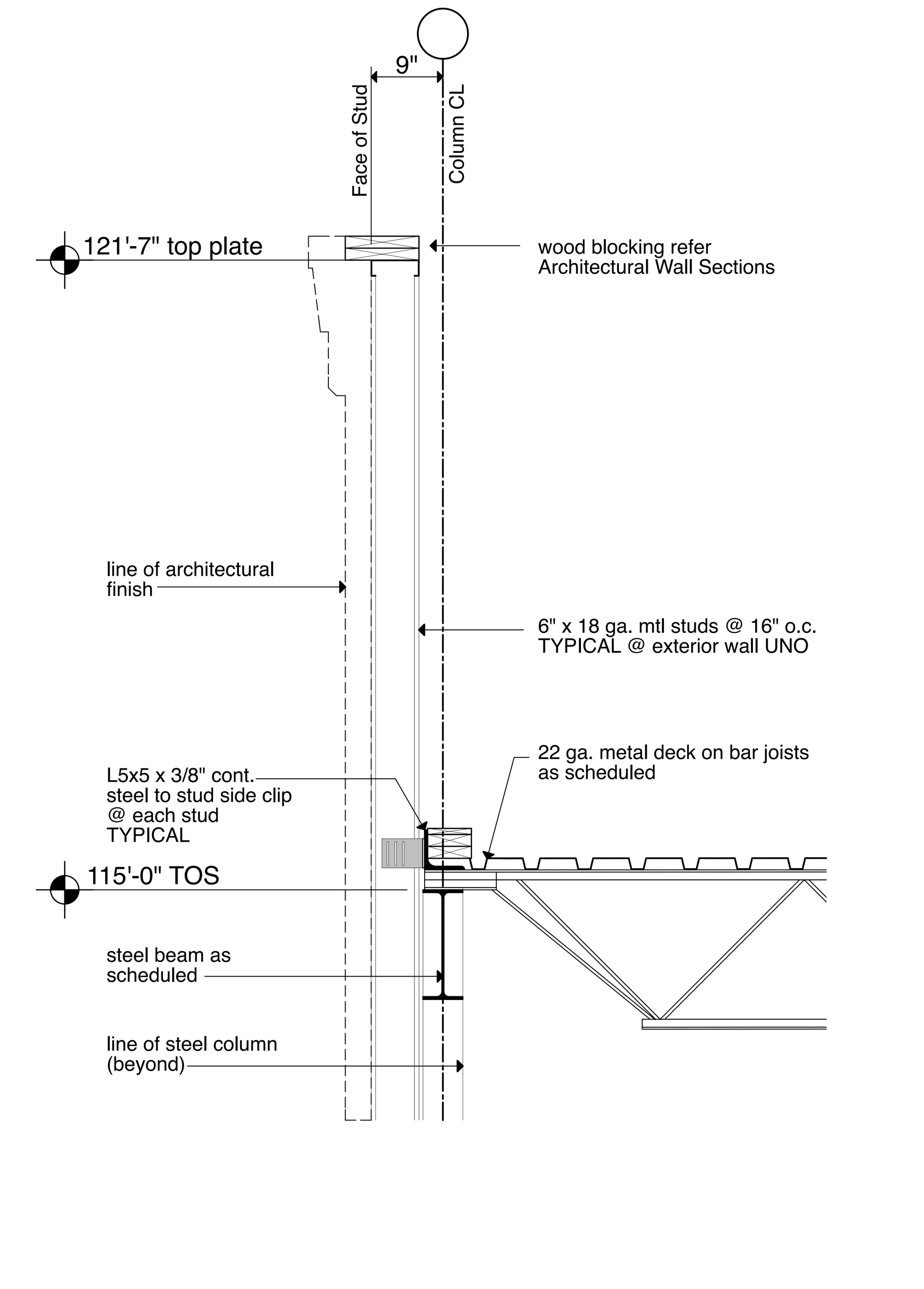
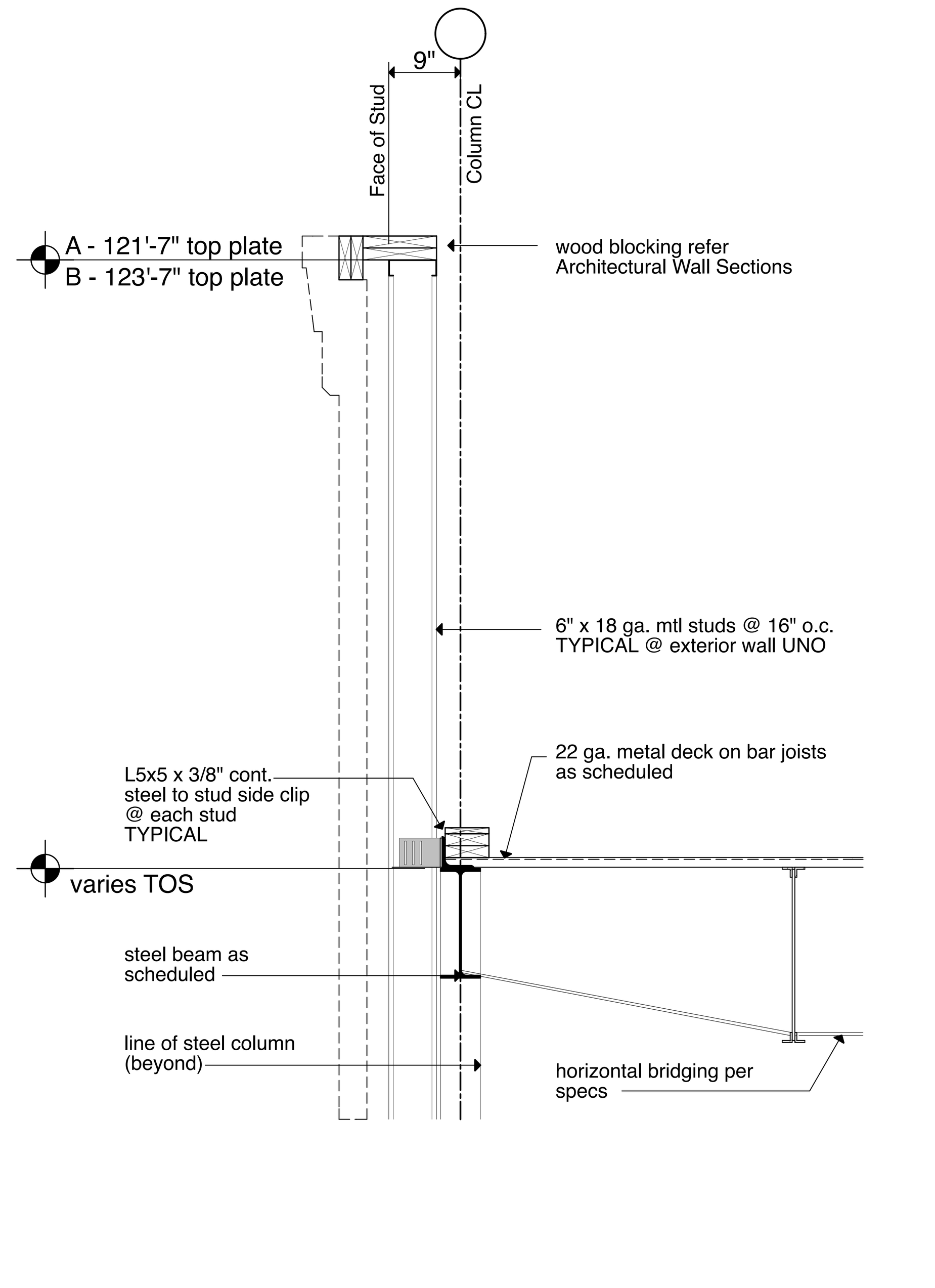
Revisions

S1.01

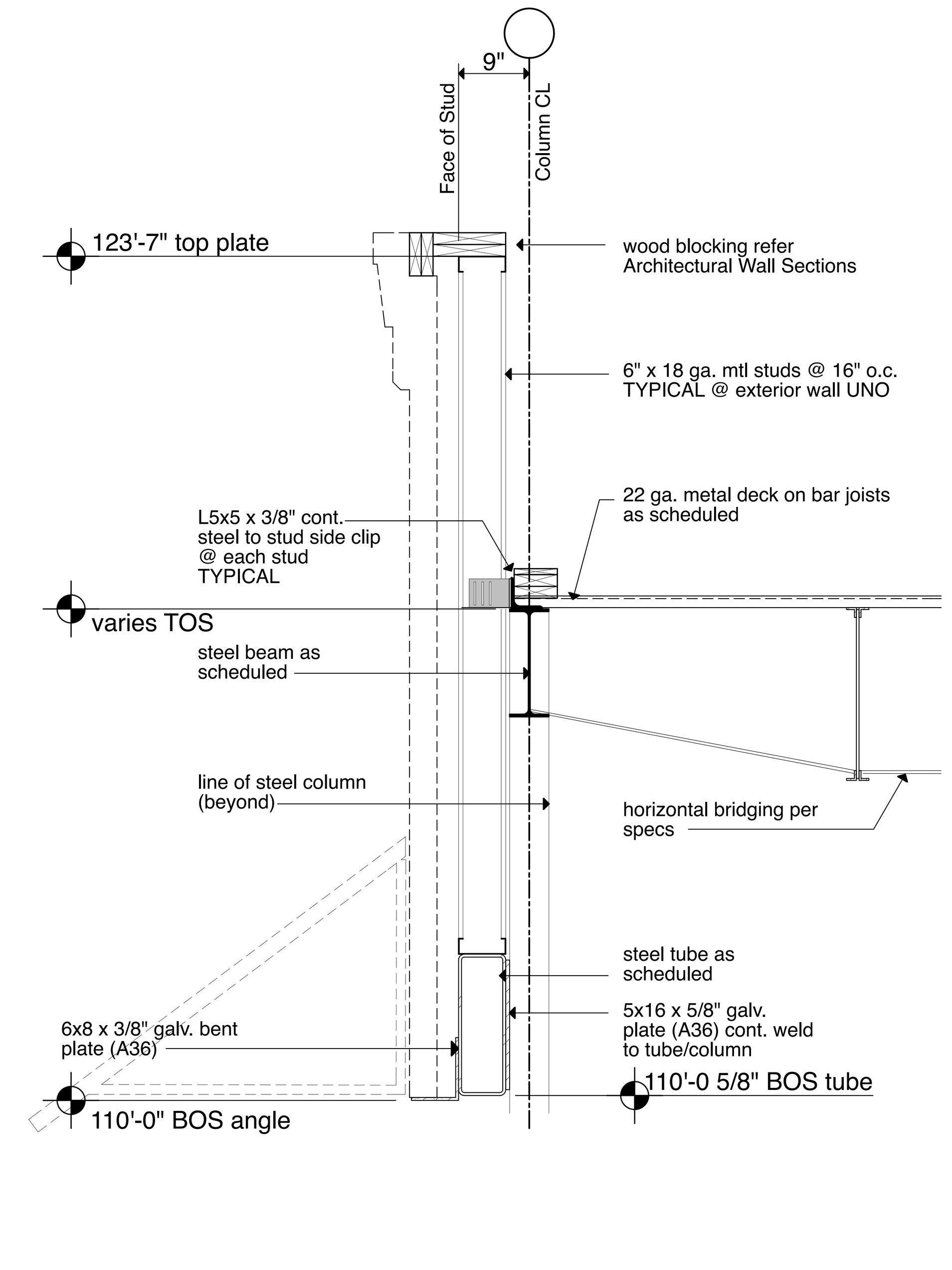
22 May 2015



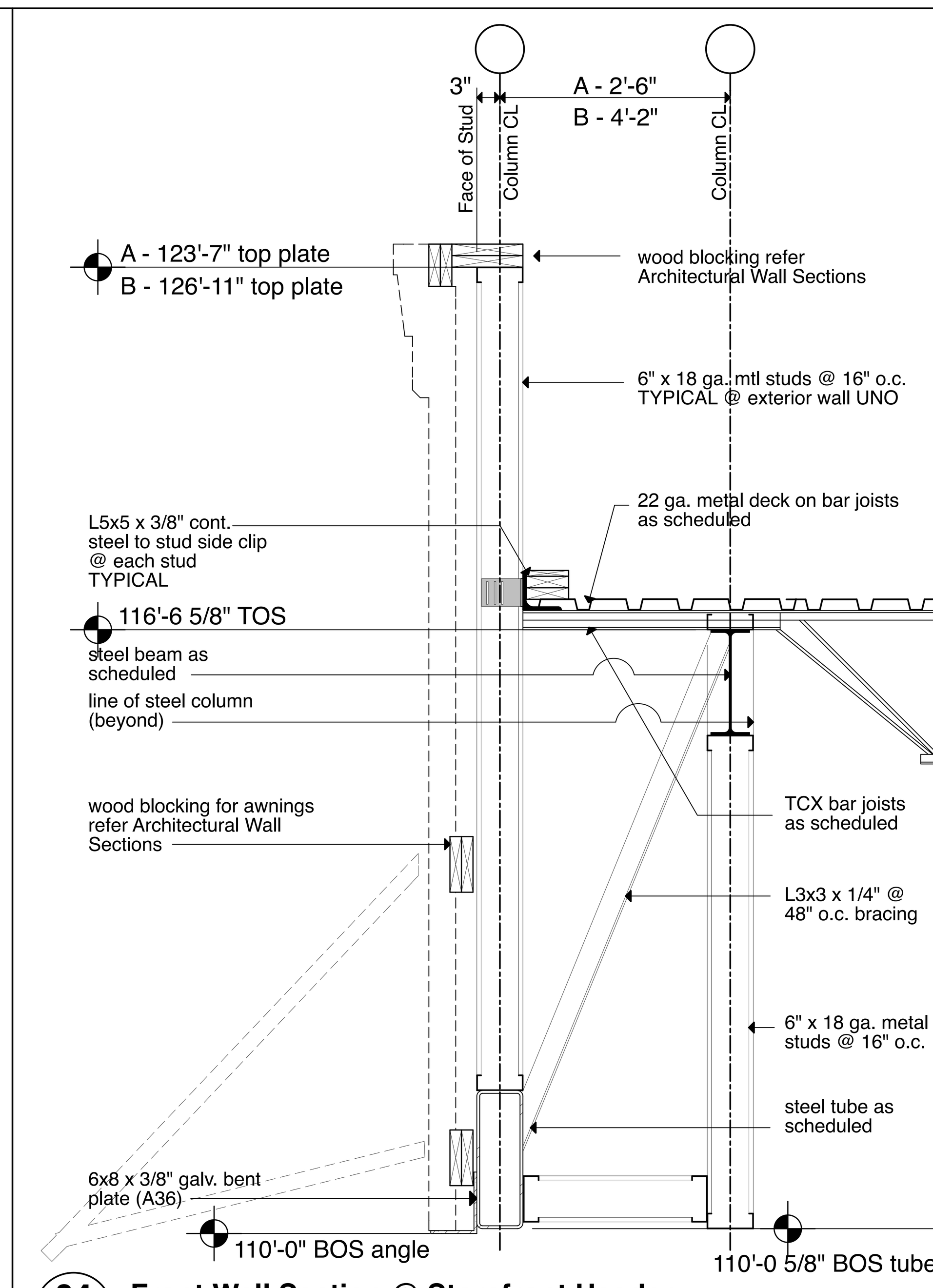
01 Rear Wall Section
scale: 3/4" = 1'-0"



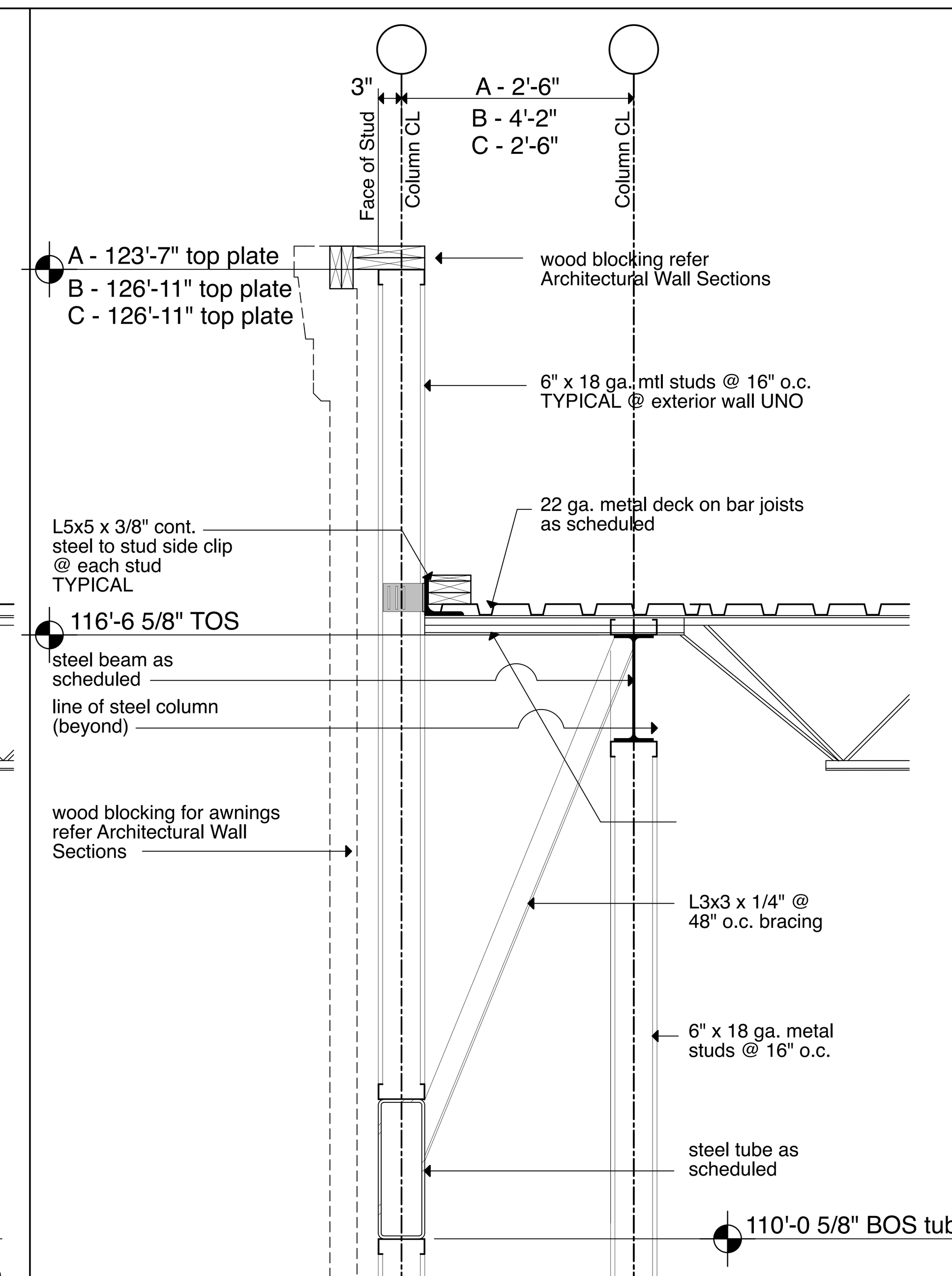
02 AB Side Wall Section
scale: 3/4" = 1'-0"



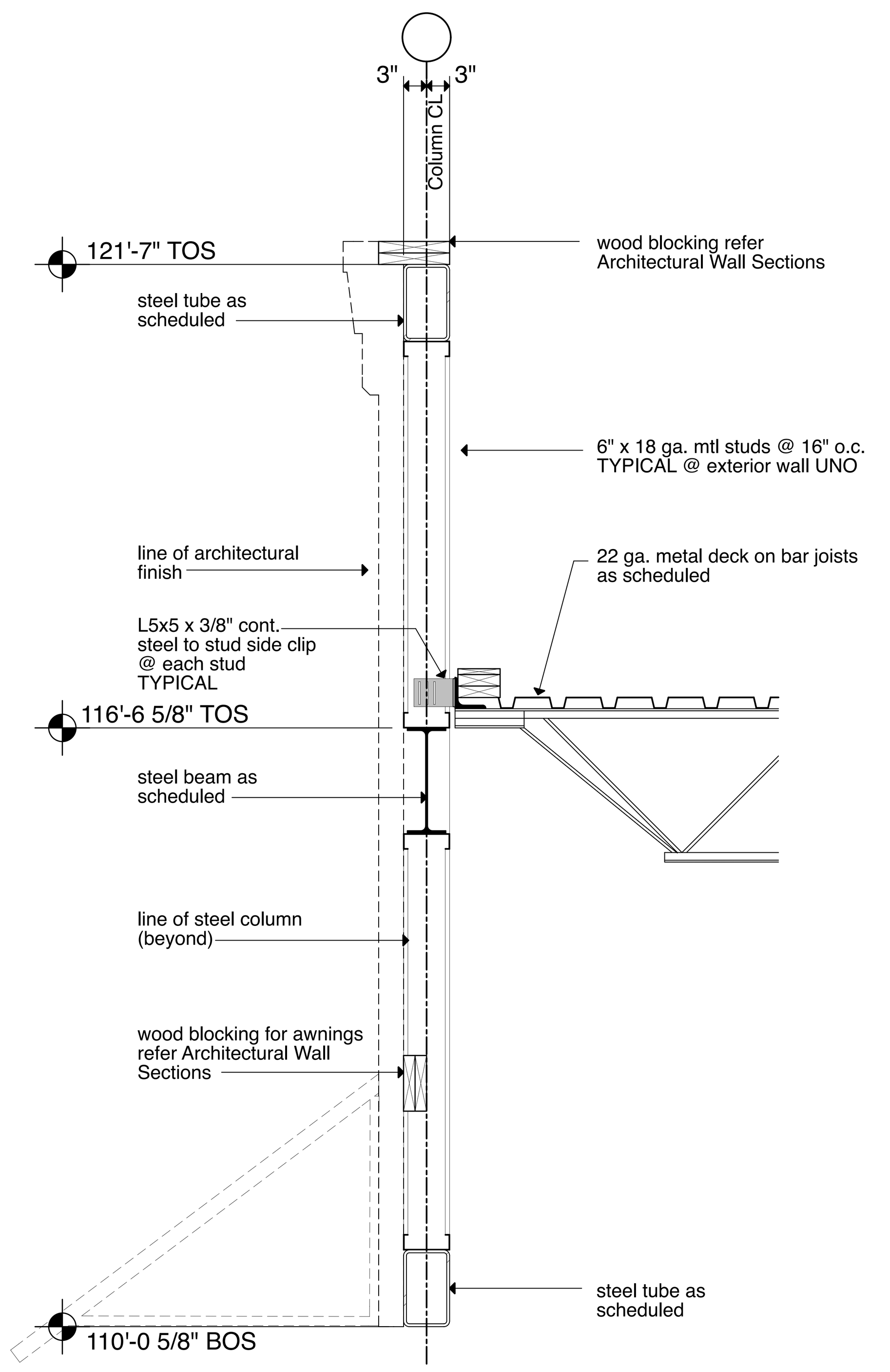
03 Side Wall Section @ Storefront Header
scale: 3/4" = 1'-0"



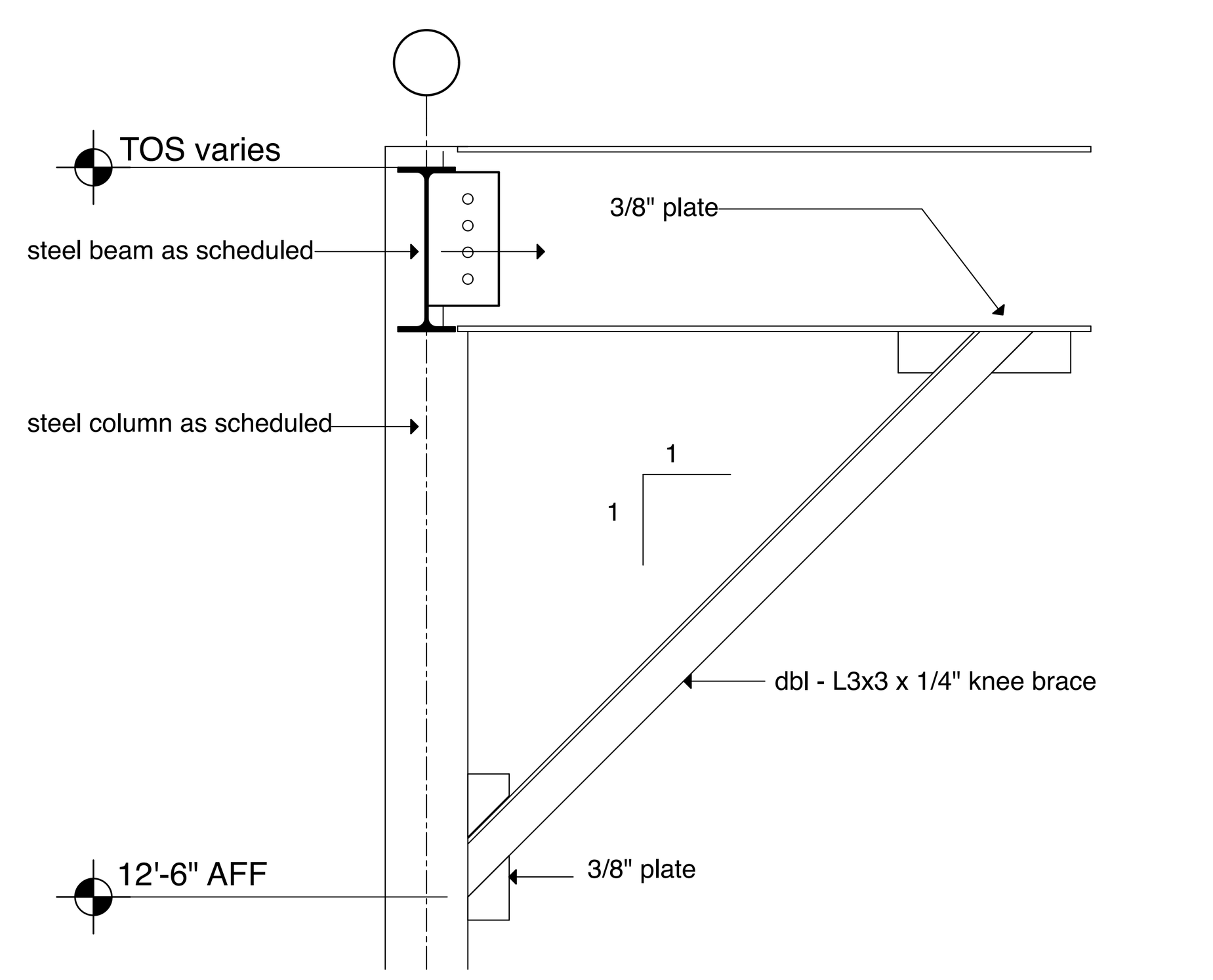
04 AB Front Wall Section @ Storefront Header
scale: 3/4" = 1'-0"



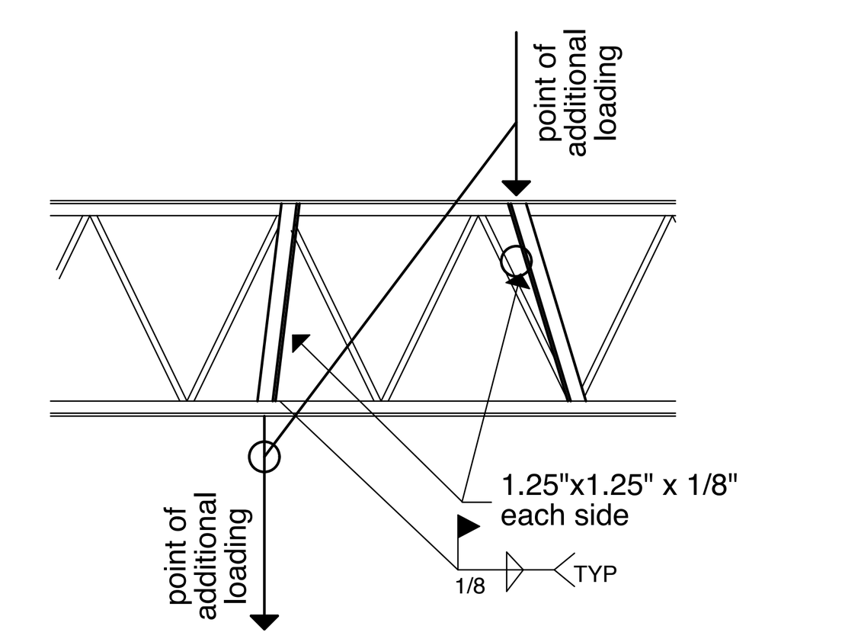
05 ABC Front Wall Section @ Pilaster
scale: 3/4" = 1'-0"



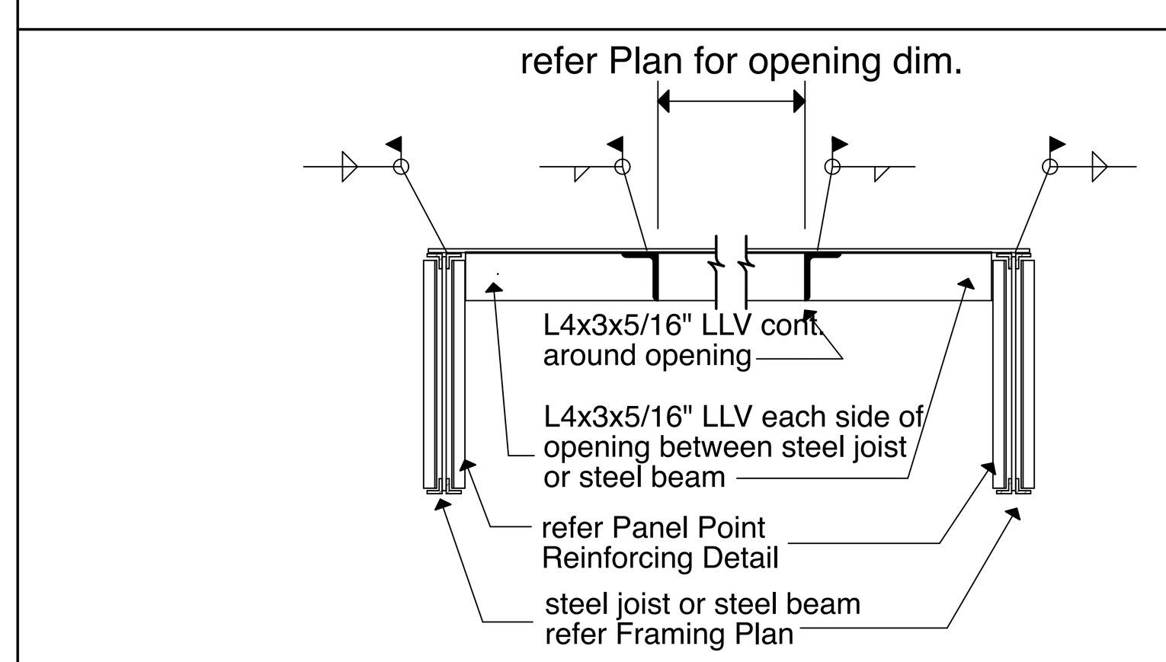
06 Front Wall Storefront Section
scale: 3/4" = 1'-0"



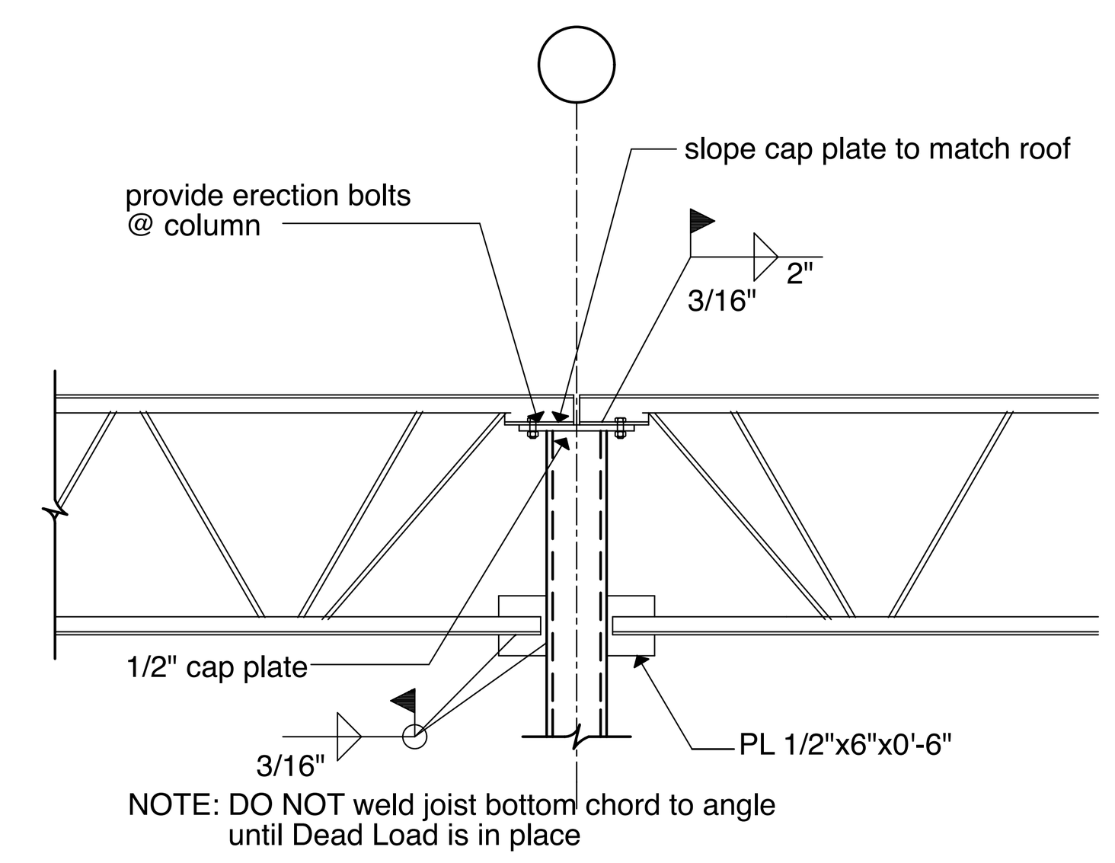
07 Knee Brace Detail
scale: NTS



08 Joist Panel Point Reinforcing @ RTU
scale: NTS



09 Typical Roof Opening Framing
scale: NTS

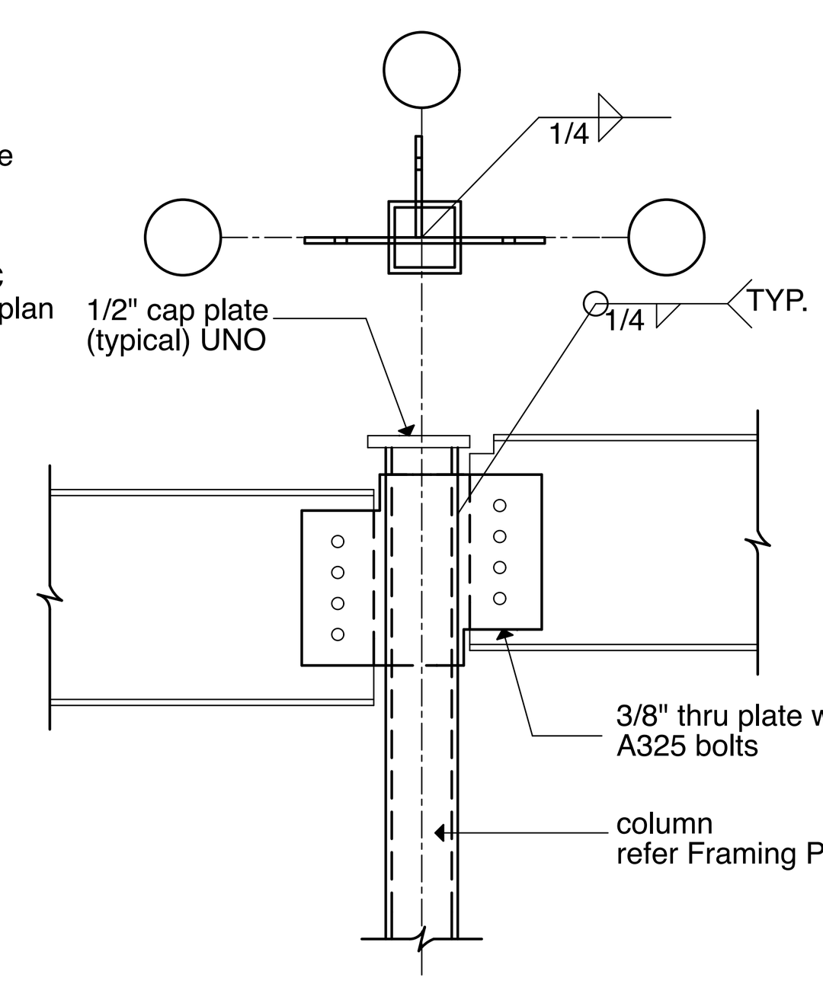


10 Typical Joist Connection
scale: NTS

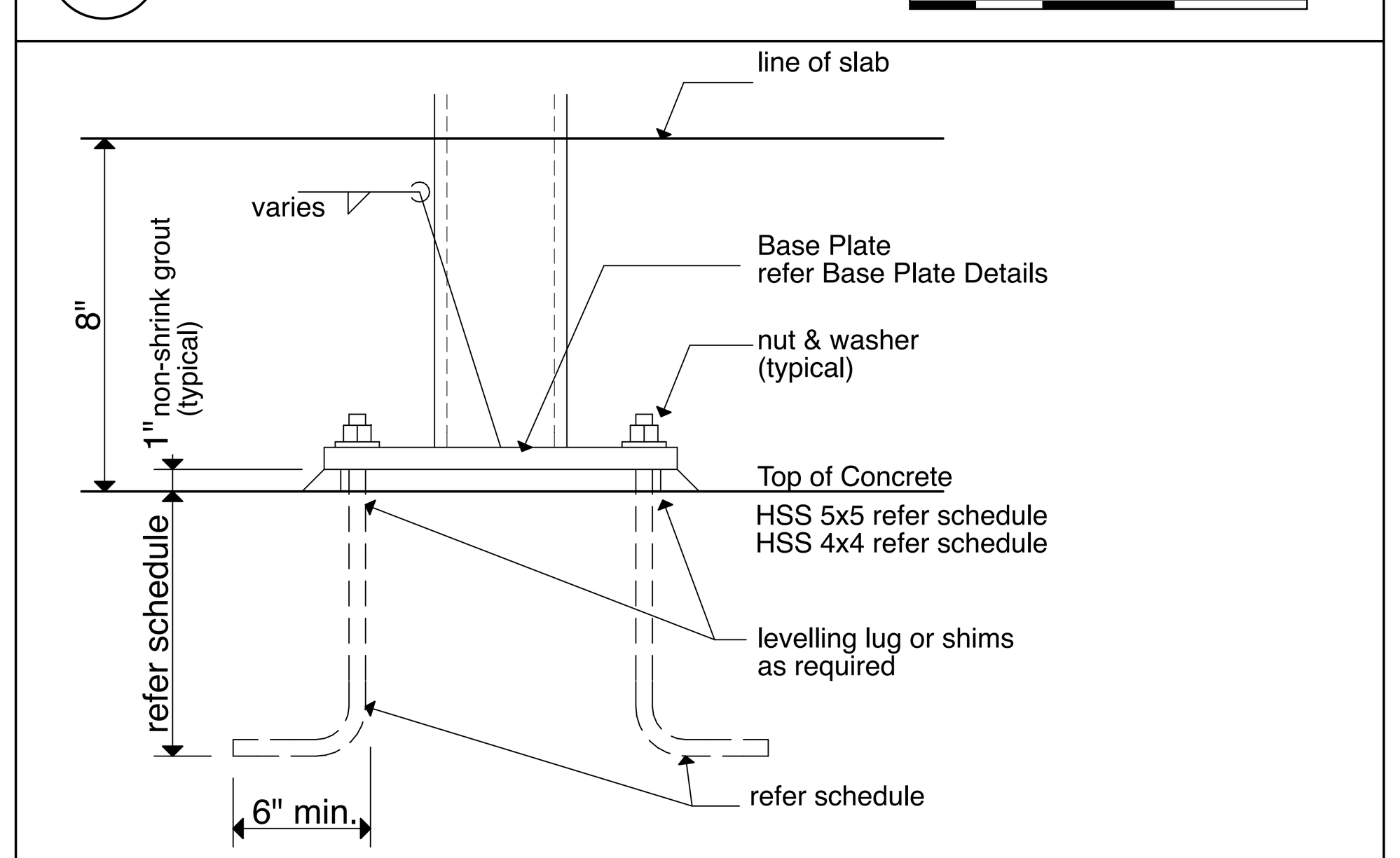
Beam Depth	No. of IL" Dia. Bolts
W8,W10	2
W12, 14	3
W16	4
W18	5
W21	5
W24	6

NOTE:
for Beams 14" deep or less
thru Plates not required.
Use Tab Plate, weld to Column face

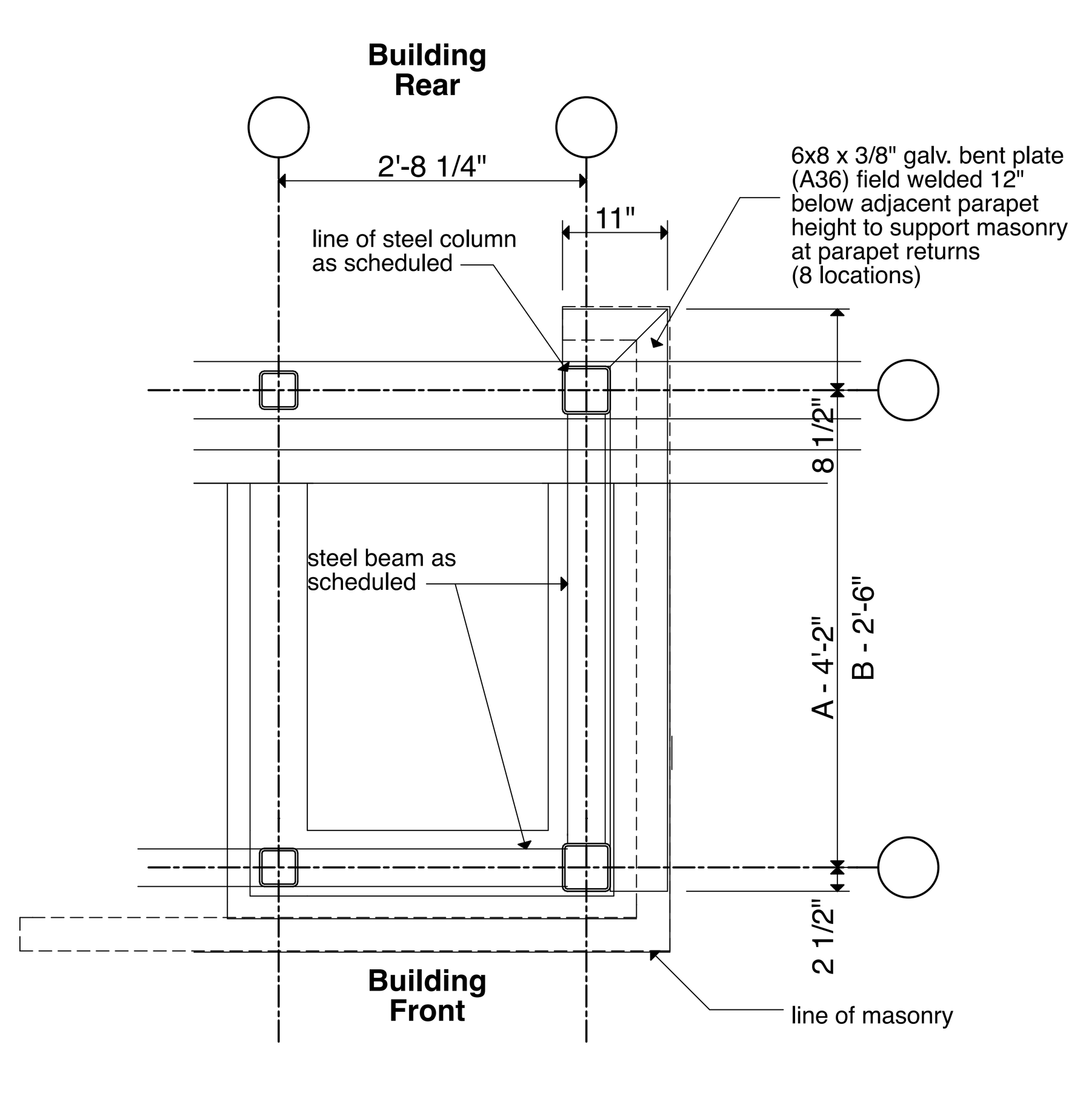
No. of bolts to be the maximum of:
1. Schedule (above)
2. Required for 55% of Part 2 AISC
3. Required for reaction shown on plan



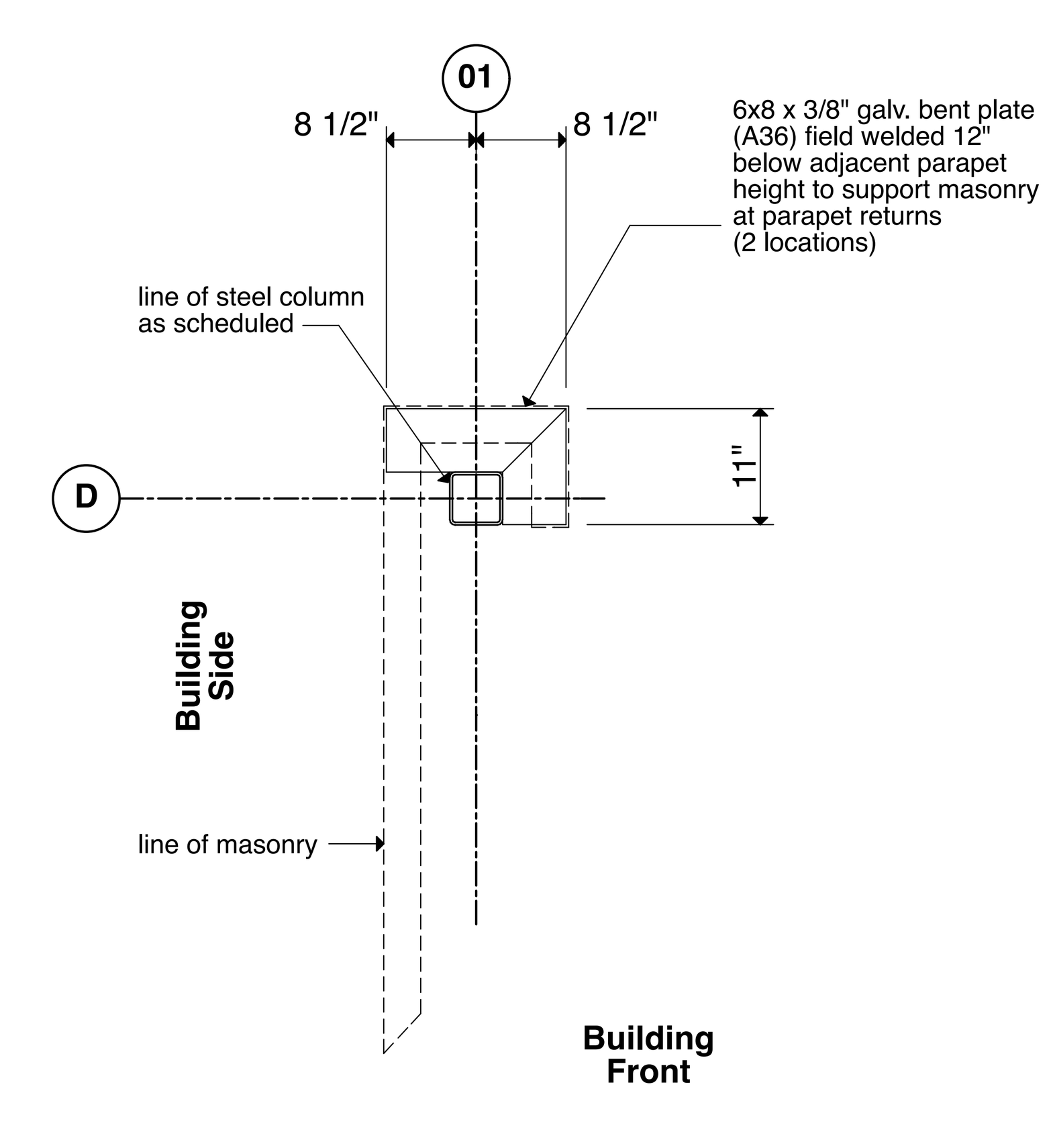
11 Typical Beam to Column
scale: NTS



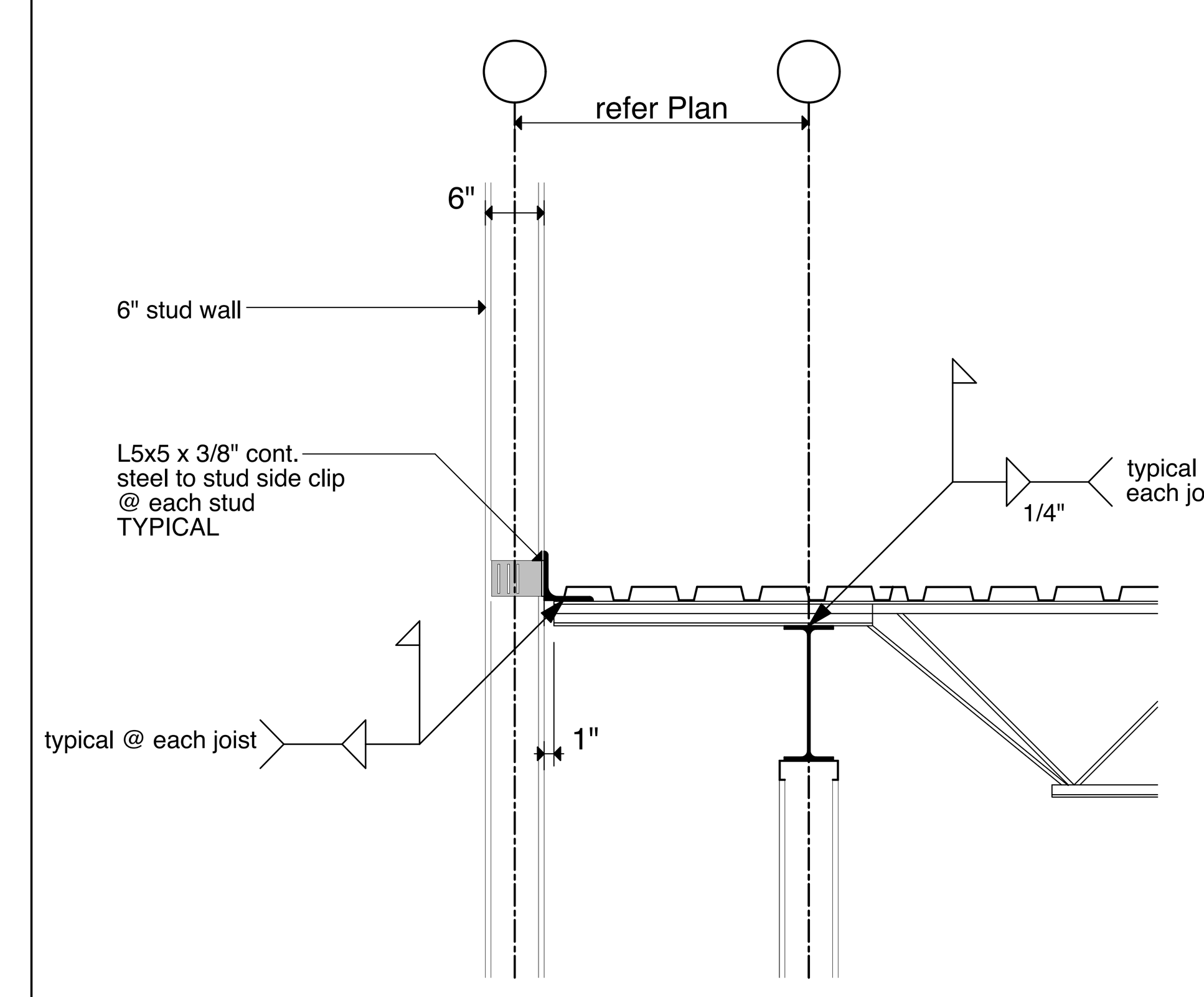
12 Base Plate Elevation
scale: NTS



13 Parapet Masonry Returns @ Front of Building
scale: NTS



14 Parapet Masonry Returns @ Side of Building
scale: NTS



15 Extended Joist Detail
scale: NTS

This document is released for the purpose of interim review under the authority of Duane Meyers Architect registration no. 8599 in the State of Texas and is not to be used for construction, bidding or permitting.

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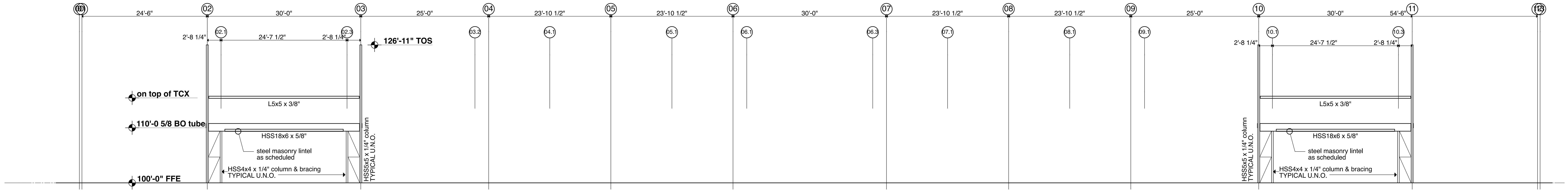
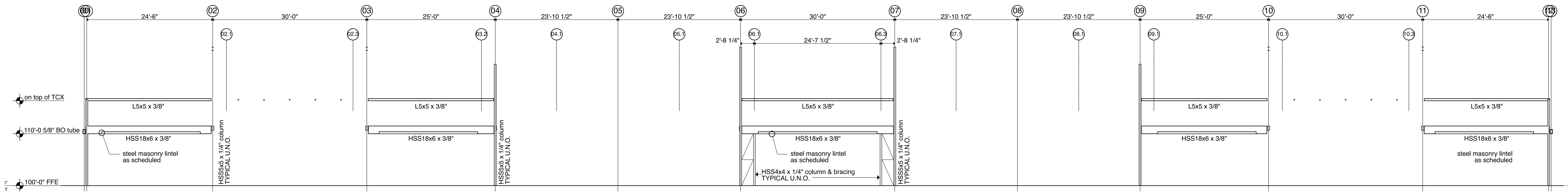
S1.02

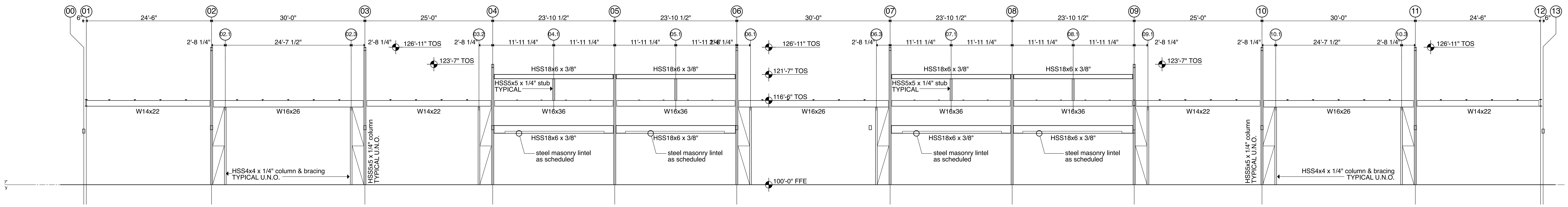
22 May 2015



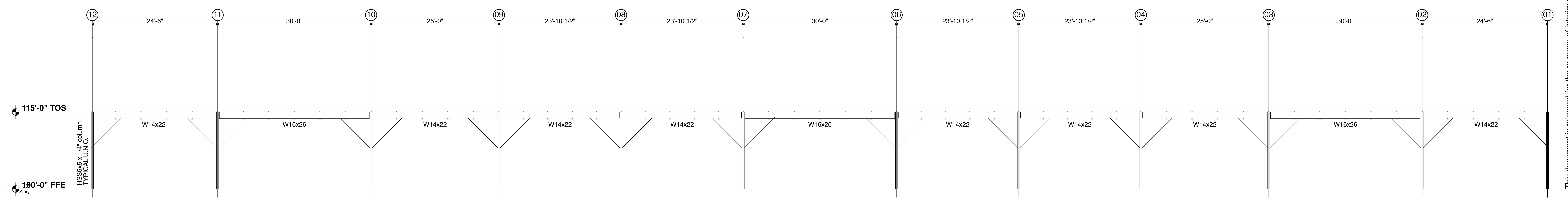
01 Grid A Elevation
SCALE: 1/8" = 1'-0"



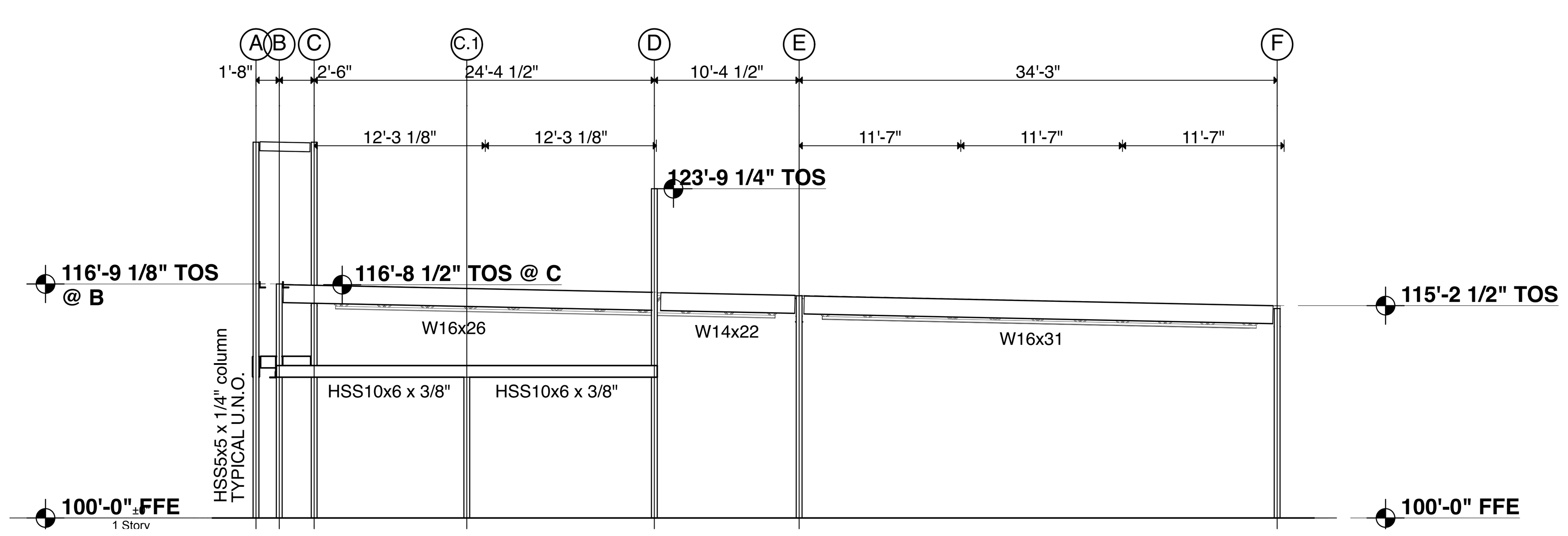
02 Grid B Elevation
SCALE: 1/8" = 1'-0"



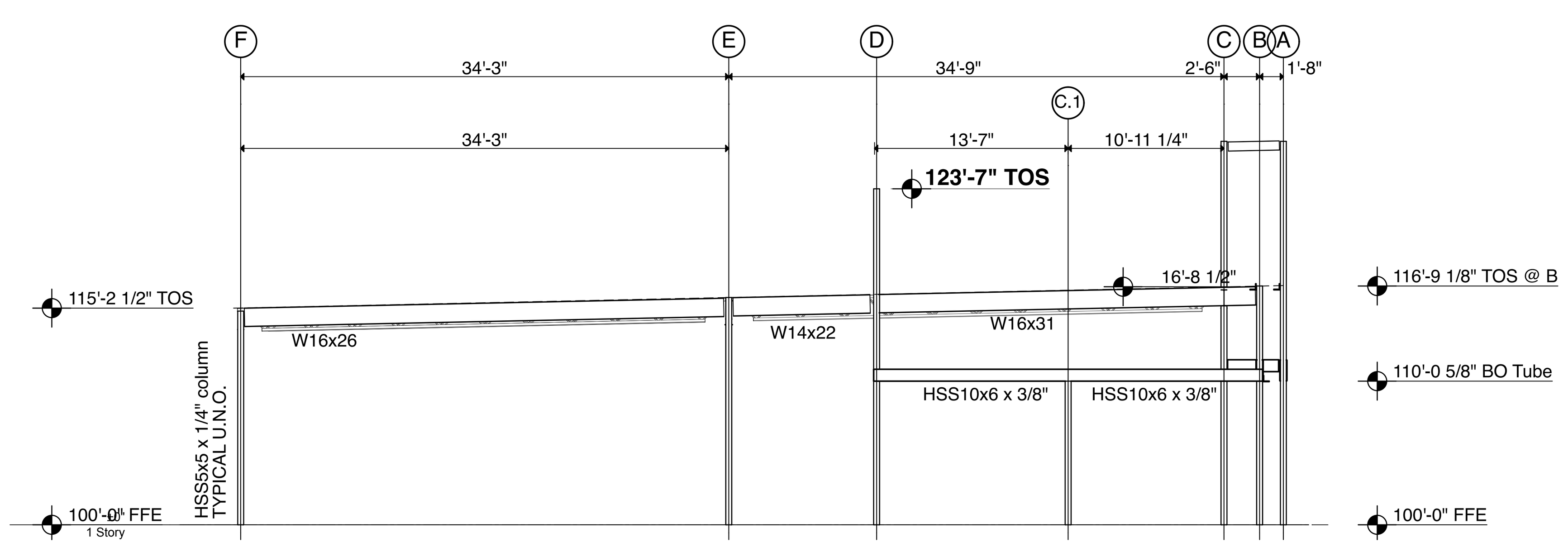
03 Grid C Elevation
SCALE: 1/8" = 1'-0"



04 Grid F Elevation
SCALE: 1/8" = 1'-0"



05 Grid 12 Elevation
SCALE: 1/8" = 1'-0"



06 Grid 01 Elevation
SCALE: 1/8" = 1'-0"

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S1.03

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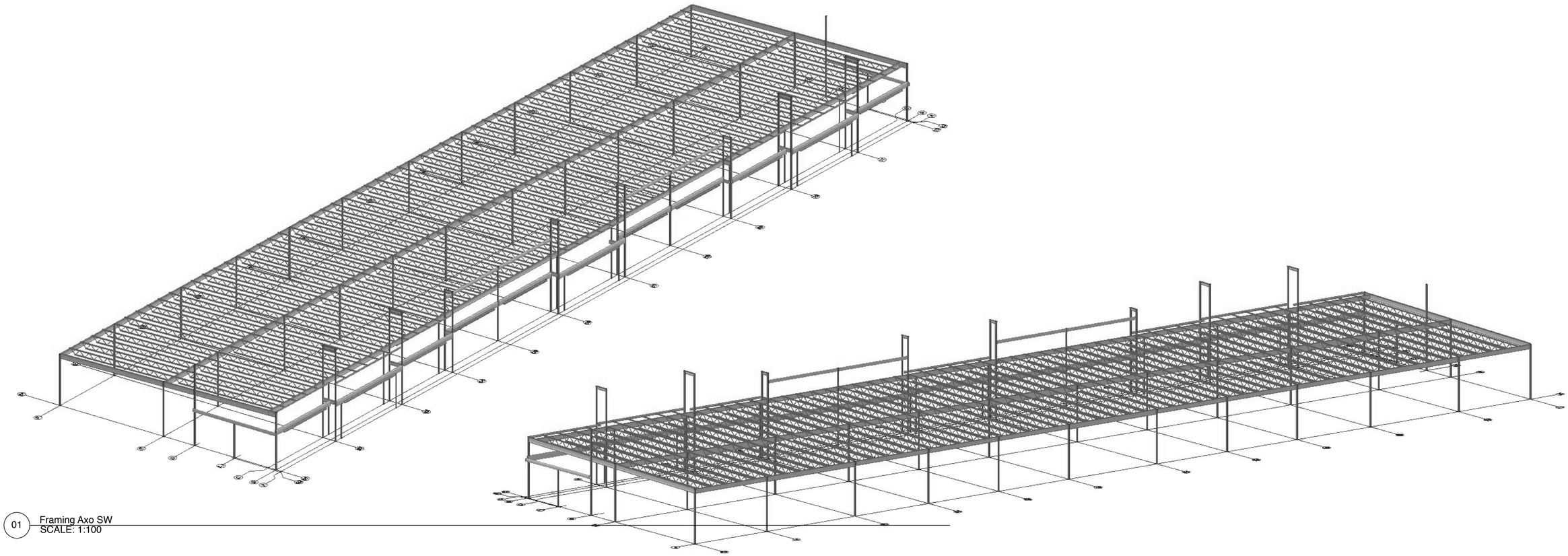
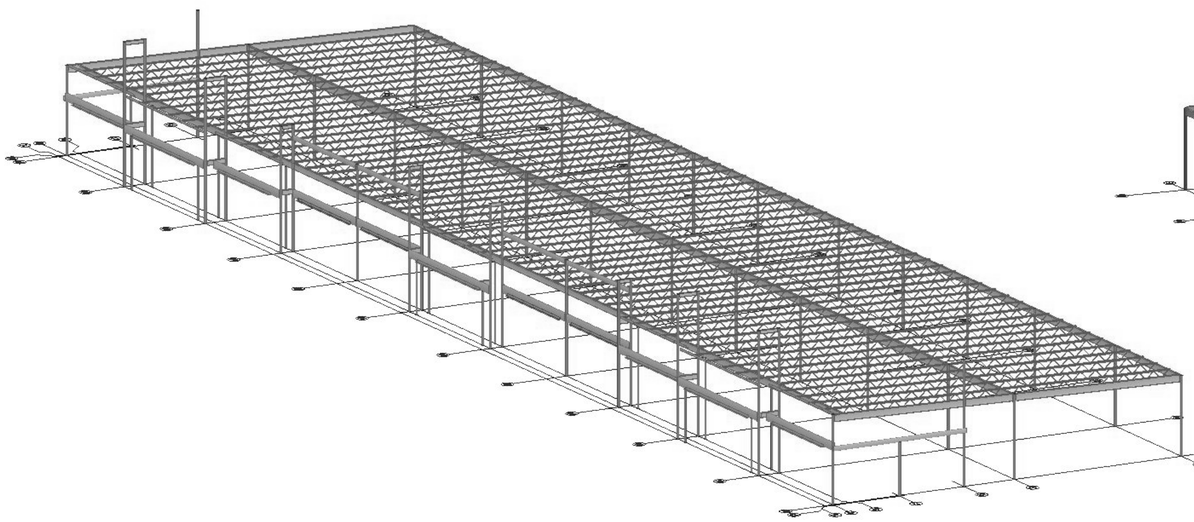


01 Framing Axo SW
SCALE: 1:100



02 Framing Axo NE
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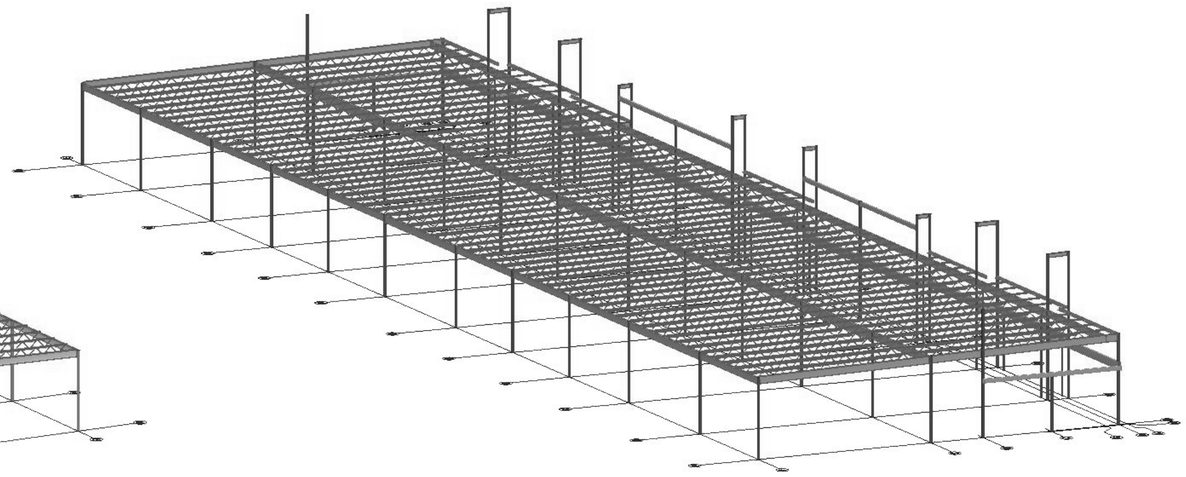

03 Framing Axo SE
SCALE: 1:100

04 Framing Axo SW
SCALE: 1:100

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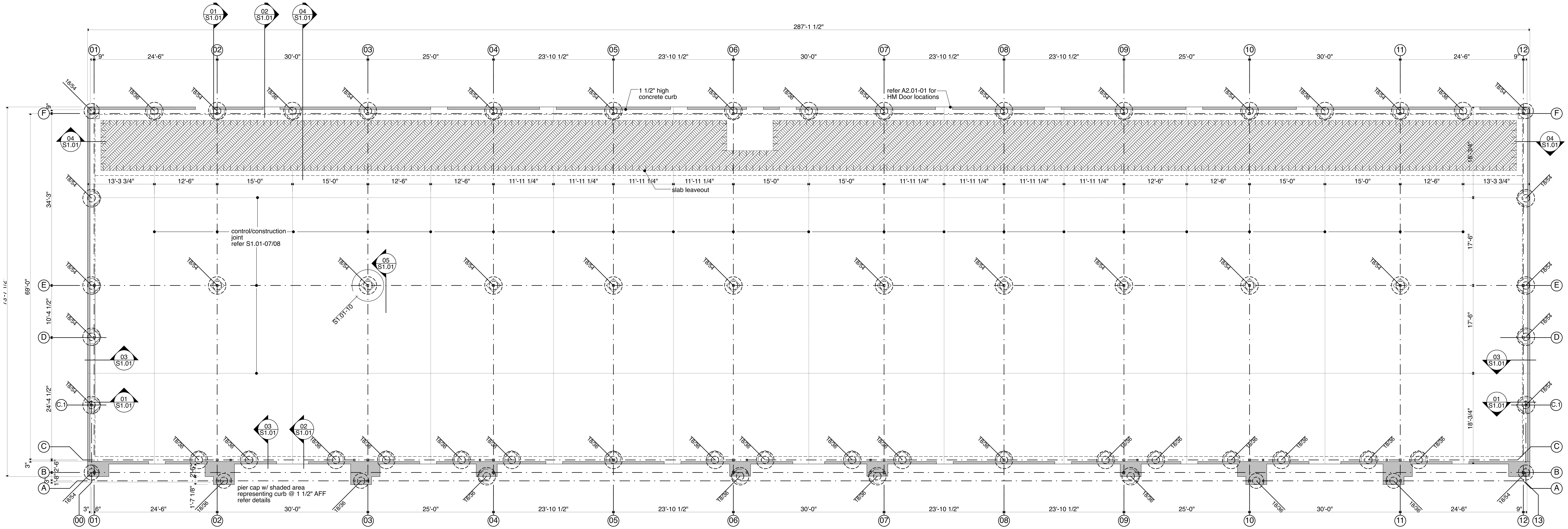
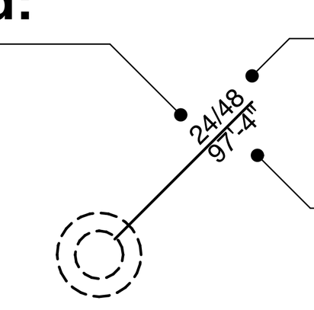


General Notes Foundation:

1. Floor slab to be 5 inch concrete w/ #4's @ 12" o.c.c each way.
2. Provide Control Joints @ ALL Column Lines and as shown on Foundation Plan.
3. Provide vapor barrier below slab, refer Specifications.
4. Center piers under columns U.N.O.
5. Relative Finished Floor Elevation (FFE) = 100'-0"
6. Foundation Plan and Details are based upon the Geotechnical Report published by Alpha Testing, Inc dated 14 Oct 2008. A copy of the report is published in the Project Manual. All subgrade and foundation preparation shall meet or exceed the recommendations of the Geotechnical Report. Refer S1.01-15 for Schematic Section.
7. ALL piers to penetrate 17'-0" minimum into sub grade.

Pier Legend:



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S2.01

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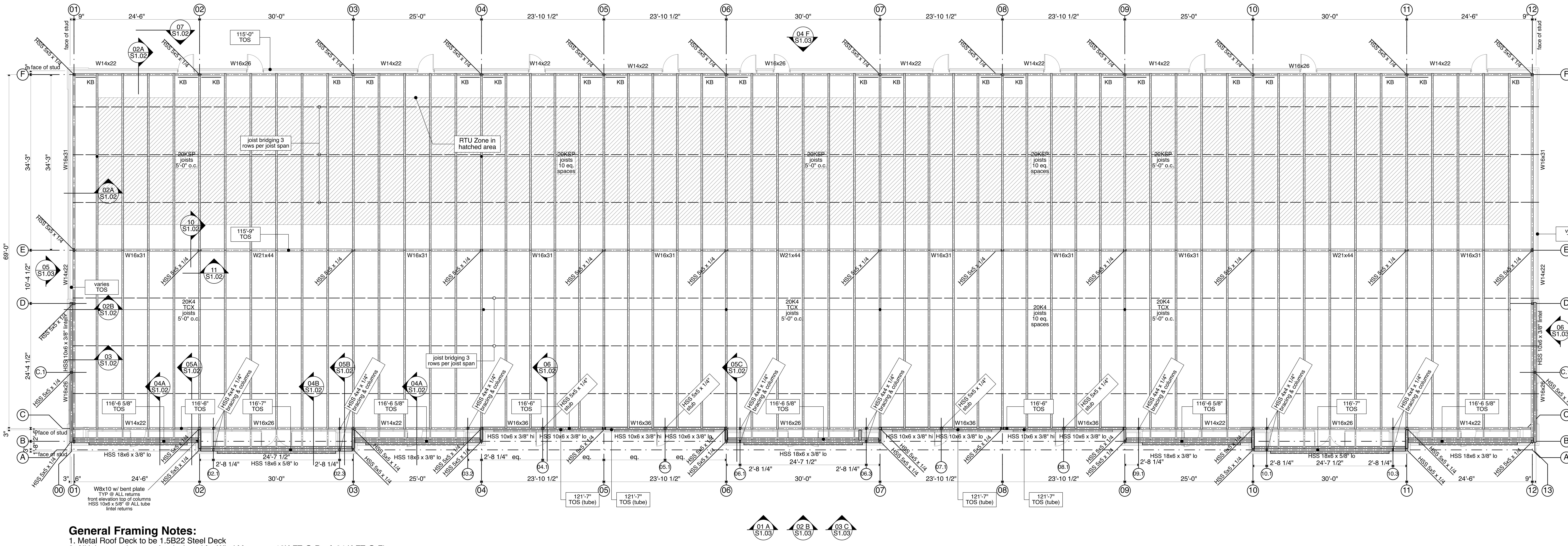

General Framing Notes:

1. Metal Roof Deck to be 1.5B22 Steel Deck
2. All joists at columns to be designed for Wind Moment = 12K-FT @ Roof, 34 K-FT @ Floor
3. Elevation noted on Framing Plan as 000'-0" are to Top Of Steel (TOS) bearing. Slope roof uniformly between noted elevations.
4. Relative Finished Floor Elevation One (FFE1) = 100'-0"
5. Provide minimum 6 inch fastener spacing at building perimeter, struts and end laps. Number of sidelap fasteners specified are total between deck support points.
6. Design joists marked "KSP" for 25 psf Dead Load and 20 psf Live Load and one mechanical unit weighing up to 1,500 lbs to be placed in the Mechanical Unit Zone equally supported by two joists, two per bay between columns. No RTU's can be located in consecutive joist bays. Refer to Framing Details

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COSERV ENGINEERING SERVICES
ELECTRICAL LOAD REQUIREMENTS

Project / Customer Name: _____

Address: _____ City: _____ State: _____ Zip: _____

Requested Voltage (select only one):

( ) Single Phase 120/240 (X) 3 Phase 120/208Y ( ) 3 Phase 277/480Y

( ) 3 Phase 120/240△ OH ( ) Single Phase 240/480△OH ( ) Other

Indicate only one: (X) New Load ( ) Adding load to an electrically energized service

Building Type: ( ) Retail ( ) Restaurant ( ) Residential (X) Other Shell Building

Total Square Footage: 20,020 Service Entrance Size (amps) 1200A

# of Conduits 1 # of Conductors 4 Size of Conductors 500 KCMIL

NOTE: Customer/Electrician to supply two hole compression secondary hi-lugs for all customer installed secondary conductors.

HVAC LOAD INFORMATION

QUANTITY	PHASE	VOLTS	TONS	SEER	A/C KW-EACH	HEAT KW-EACH

MOTOR LOAD INFORMATION

QUANTITY	PHASE	VOLTS	HP-EACH	START TYPE	EQUIPMENT DESCRIPTION

LIGHTING & MISCELLANEOUS LOAD INFORMATION

QUANTITY	PHASE	VOLTS	CONNECTED KW-EACH	EQUIPMENT DESCRIPTION

* Service size based on 40 watts / s.f. and electric heat.

_____ _____

Signature (required) Title

_____ _____

Phone Date

Updated 04/21/15

REQUIRED INFORMATION FOR A COSERV ELECTRIC DESIGN

Thank you for allowing CoServ Electric the opportunity to work with you on your project. The following items are required to produce a design and cost that will be used in the production of a final design layout. In addition, your CoServ Electric Engineering Tech will help coordinate the location of easements required for your development. Please note that all information is required before your project can be designed, estimated and released to the Construction Management group for scheduling. Because each site and project is unique, CoServ Electric may require additional information before proceeding with cost estimates for your project.

Commercial Development

- One Cad .dwg file (saved down to 2010 version) located on the NAD_1983_StatePlane_Texas_North_Central_FIPS_4202_Feet that contains all wet utilities, retaining walls, paving (including sidewalks), parking, bldg. foot prints and parking lot lighting. This file shall not contain X-Ref's or blocks that cannot be exploded or modified. The customer is responsible for all secondary conduit and conductor for commercial projects. Request max number of conduit and conductor spec from your CoServ PM

- Completed Load Requirement Form for each building that will be constructed. CoServ will also require a Load Requirement Form for any other meters within the site such as irrigation, lighting or communications.

- Provide E- Sheets (panel schedules and one line diagram etc…)

- Geo Tech report for the site.

- Current easement plat.

- Profiles of all wet utilities, top and bottom of wall elevations if retaining walls are present, footing plans for all retaining and screening walls, all shall be in PDF format.

Feasibility Study

Only .dwg files of the site will be accepted, PDF files are not allowed, except for easement plat. Any additional information from the previous categories will help CoServ provide you with a closer cost estimate. Any project that does not receive all required information will be considered as a Feasibility Study only and will not be processed further.