SHELL WAREHOUSE BUILDING- PHASE 2

NORTHGATE COMMERCE PARK

1965 NORTHGATE COMMERCE PARKWAY — SUFFOLK, VIRGINIA

DRAWINGS PREPARED BY

WILLIAMS ENGINEERING ASSOCIATES, P.C.

PROJECT DATA:

BUILDING CODE: 2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE
MODEL BUILDING CODE IS IBC 2018
SEPARATED USE GROUPS: B (BUSINESS) / S-1 (MODERATE HAZARD STORAGE)
GROSS BUILDING AREAS
EXISTING AREA (PHASE 1)= 51,600 SF (COMPLETED IN 2009)
ADDITION AREA (PHASE 2) = 37,500 SF
TOTAL COMBINED AREA = 89,100 SF

CONSTRUCTION TYPE IIB (NON COMBUSTIBLE)

FIRE SUPPRESSION SYSTEM: WILL BE PROVIDED (EXISTING BUILDING IS SPRINKLERED) TO MEET 'UNLIMITED AREA' PROVISION PER SECTION 507 OF THE BUILDING CODE

FIRE RATED PERIMETER WALLS: NONE REQUIRED (CODE TABLE 602)

FIRE RATED INTERIOR WALLS: (NONE REQUIRED FOR UNLIMITED AREA BLDG)

PHASE 2 OCCUPANT LOAD: 37,500 SF / 500 = 75 OCCUPANTS

EGRESS EXITS REQUIRED: 8 BEING PROVIDED

MAX. PATH OF EGRESS TRAVEL = 200 LF (CODE TABLE 1017.2)

PLUMBING FIXTURES- PHASE 2 IS A SHELL BUILDING, TOILETS WILL BE PROVIDED AS PART OF TENTANT LEASING AND BUILD OUT

AREA LIMITATION CALCULATION:

TABULAR ALLOWABLE AREA, UNLIMITED AREA PER SECTION 507 OF THE CODE

ALLOWABLE HEIGHT CALCULATION:

ALLOWABLE HEIGHT: 3 STORIES, 75 FEET MAX.
BUILDING ADDITION IS 1 STORY, 36'-2" FRONT EAVE ELEVATION

OWNER:

NORTHGATE COMMERCE CENTER, LLC
1 SMITH STREET
NORWALK, CT

GENERAL CONTRACTOR:

C.L. PINCUS JR.& CO. INC. PHONE: (757) 468-5100
2700 SONIC DRIVE
VA. BEACH, VA 23453

STRUCTURAL ENGINEER:

WILLIAMS ENGINEERING ASSOCIATES, P.C. PHONE: (757) 717-8396 (M)
758 SHERATON DRIVE
VIRGINIA BEACH, VIRGINIA 23452

ARCHITECT: (NONE)

SHEET INDEX:

GENERAL NOTES:

1. THESE DRAWINGS HAVE BEEN PREPARED AS A DESIGN/BUILD PROJECT AND INCLUDE THE STRUCTURAL DESIGN AND INCIDENTAL ARCHITECTURE. ANY CIVIL, GEOTECHNICAL, PLUMBING, MECHANICAL (HVAC), SPRINKLER, ELECTRICAL AND ANY OTHER SYSTEM DESIGN IS THE RESPONSIBILITY OF THE RESPECTIVE SUB CONTRACTOR OR CONSULTANT. ANY ENGINEERING REQUIRED BY THE GOVERNING JURISDICTION FOR THESE DISCIPLINES IS THE RESPONSIBILITY OF EACH RESPECTIVE SUB CONTRACTOR OR CONSULTANT.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL CODES AND ORDINANCES, INCLUDING THE AMERICANS WITH DISABILITIES ACT (ADA).
3. ALL WORK PERFORMED SHALL BE OF ACCEPTED INDUSTRY STANDARDS AND PRACTICES GOVERNING THE HIGHEST QUALITY OF WORKMANSHIP.
4. EACH SUB CONTRACTOR IS TO THOROUGHLY REVIEW THESE DRAWINGS AND EVALUATE THE SCOPE OF WORK REQUIRED BY THEIR RESPECTIVE TRADE PRIOR TO THE START OF CONSTRUCTION.
5. THE CONTRACTOR SHALL VERIFY LAYOUT AND DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND CONSULT WITH THE ENGINEER REGARDING ANY DISCREPANCIES THAT EXIST WITHIN THE CONSTRUCTION DOCUMENTS. ANY AREAS THAT ARE UNCLEAR OR CONFLICTING SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.
6. ALL EXIT SIGNS AND EMERGENCY LIGHTING ARE TO BE LOCATED AS REQUIRED BY SECTION 1011 OF THE CODE (LAYOUT TO BE INCLUDED IN THE ELECTRICAL DESIGN-BUILD PACKAGE).
7. THE CONTRACTOR SHALL COORDINATE ALL WORK, STOCKING OF MATERIALS, REMOVAL OF DEBRIS, ETC. IN COMPLIANCE WITH LOCAL CODES AND ORDINANCES.
8. THE CONTRACTOR SHALL COORDINATE ALL COLOR SELECTIONS (PAINT, WALL PANELS, ETC.) DIRECTLY WITH THE OWNER.
9. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL ALL STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES AND SEQUENCES OF PROCEDURES TO PERFORM THE WORK.

PROJECT SCOPE:

THE SCOPE INVOLVES A 37,500 SF METAL BUILDING WAREHOUSE ADDITION TO AN EXISTING FACILITY DESIGNED IN DEC. OF 2008. THE ORIGINAL ARCHITECTURAL METAL BUILDING AND STRUCTURAL/FOUNDATION DRAWINGS ARE AVAILABLE.

THE EXISTING BUILDING IS SPRINKLERED AND THE NEW BUILDING WILL BE SPRINKLERED TO MEET THE 'UNLIMITED AREA' PROVISION OF THE BUILDING CODE.

THIS ADDITION WILL CONSIST OF THE 'SHELL', TOILETS WILL BE PROVIDED AS PART OF THE TENANT LEASING AND BUILD OUT.

THE NEW WAREHOUSE SPACE WILL BE SEMI-HEATED, NOT HEATED TO COMFORT LEVEL AND WITHOUT AIR CONDITIONING.

IT IS INTENDED THAT THE EXISTING METAL ENDWALL SYSTEM WILL BE LEFT IN PLACE AS PART OF TENANT SEPARATION.

AERIAL VIEW

EXISTING BUILDING

CL PINCUS JR. & CO.
GENERAL CONTRACTORS

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758 SHERATON DRIVE
VA. BEACH, VA 23452
CELL: (757) 717-8396
EMAIL: WILLENGR@AOL.COM
WEBSITE: WWW.WILLENGR.COM

COMMONWEALTH OF VIRGINIA
12/14/22
DAVID WILLIAMS
Lic. No. 014564
PROFESSIONAL ENGINEER

Project: 2230
Drawn: DRW
Checked: DRW
Date: 12/14/22

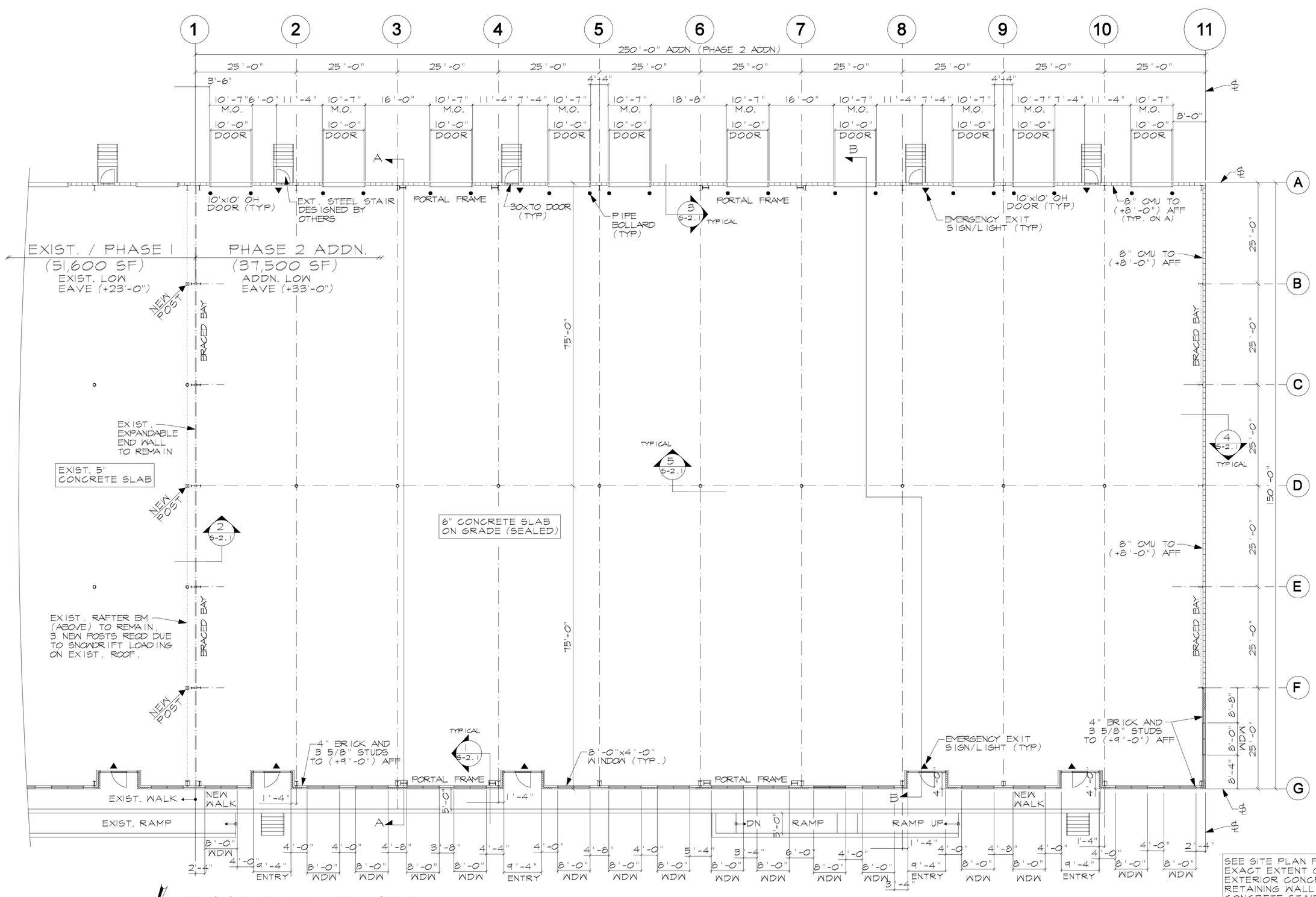
Revisions	
Mark	Date
1	x/x/22

SHELL WAREHOUSE BUILDING- PHASE 2
NORTHGATE COMMERCE PARK
1965 NORTHGATE COMMERCE PARKWAY — SUFFOLK, VIRGINIA

TITLE SHEET

SHEET NO.

T-1.1



FLOOR PLAN - PHASE 2 (SEE SHEET A-1.2 FOR PLAN LEGEND AND NOTES)

SCALE: 3/32" = 1'-0"

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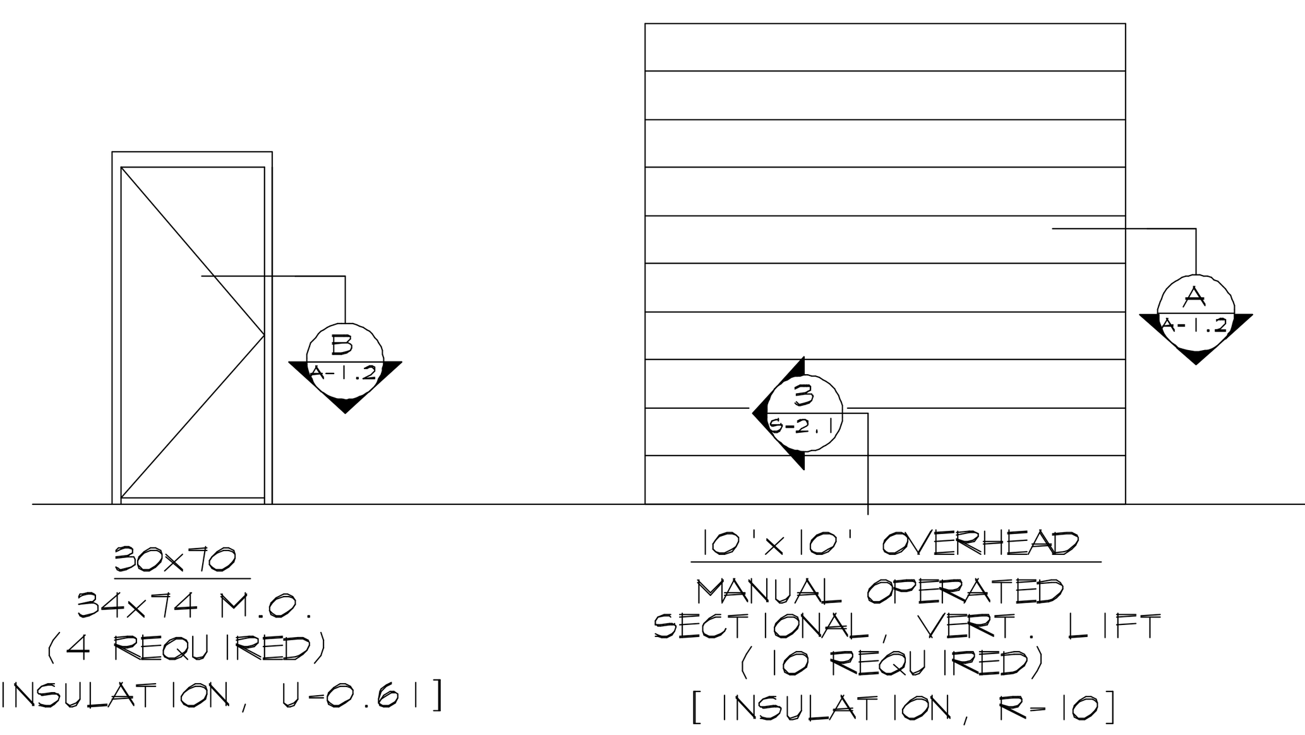
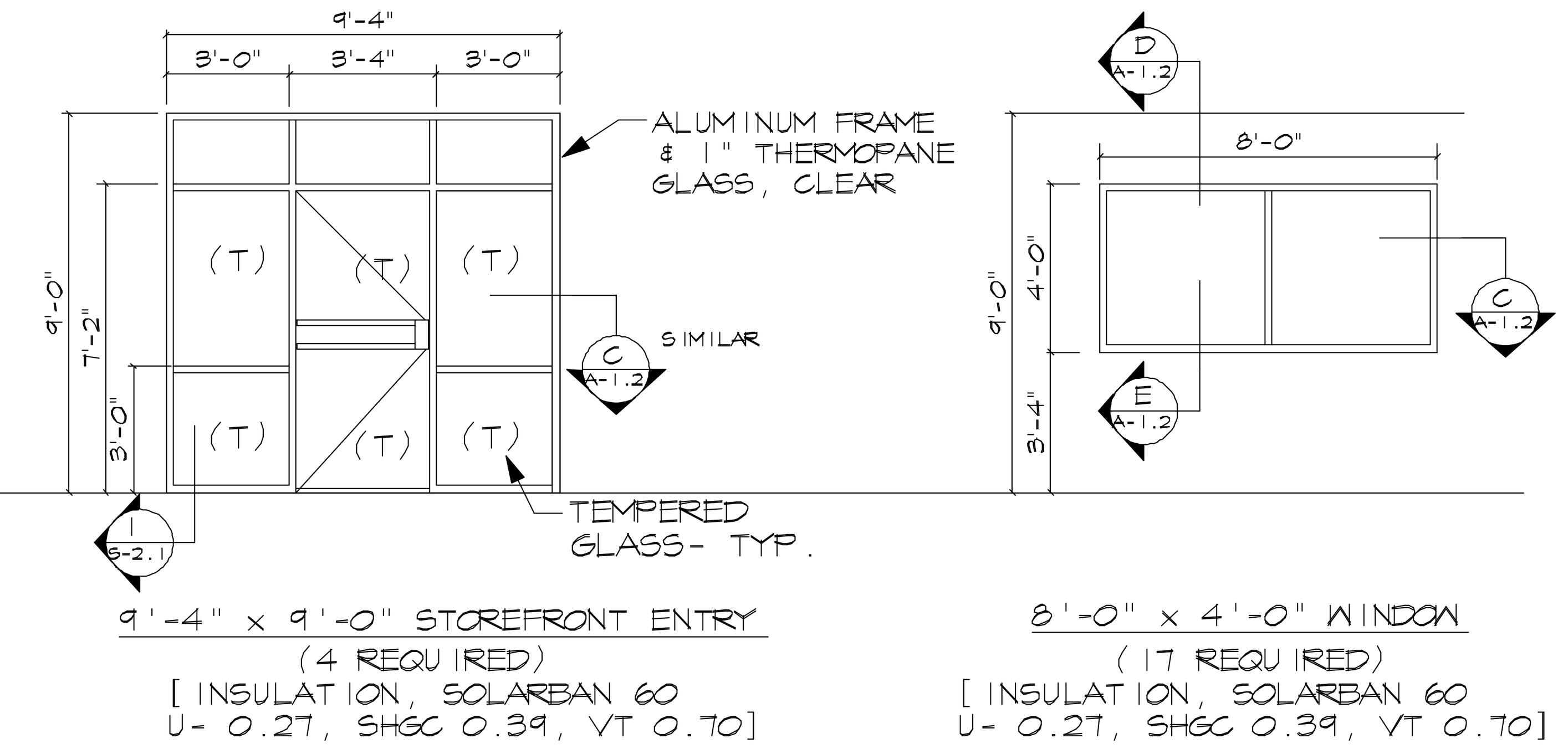
FLOOR PLAN- PHASE 2

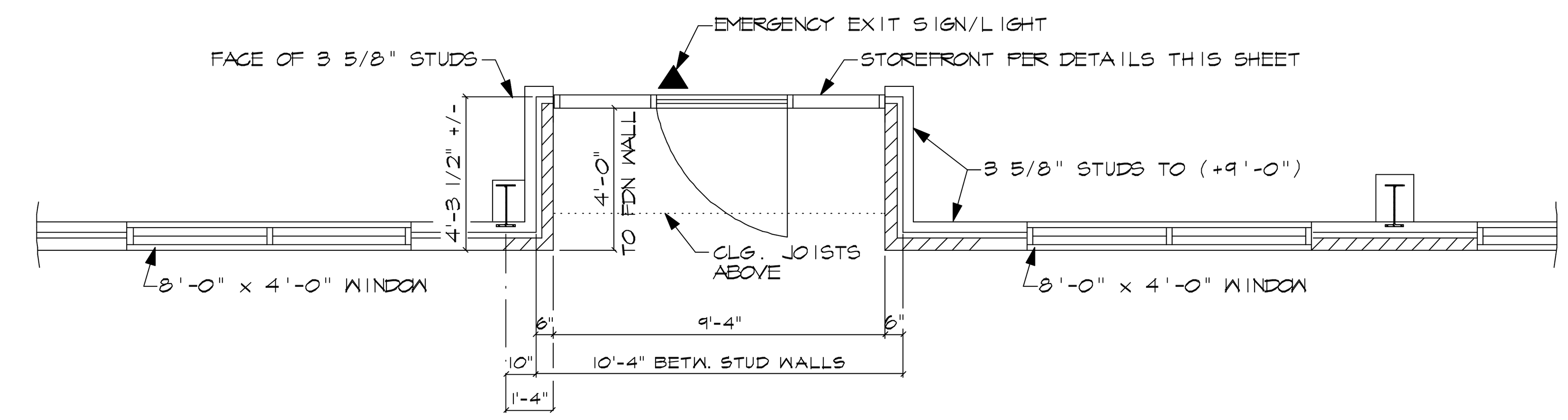
SHEET NO.
A-1.1



TYPICAL DOOR TYPES:
SCALE: 1/4" = 1'-0"



TYPICAL STOREFRONT DOOR AND WINDOW TYPES
SCALE: 1/4" = 1'-0"

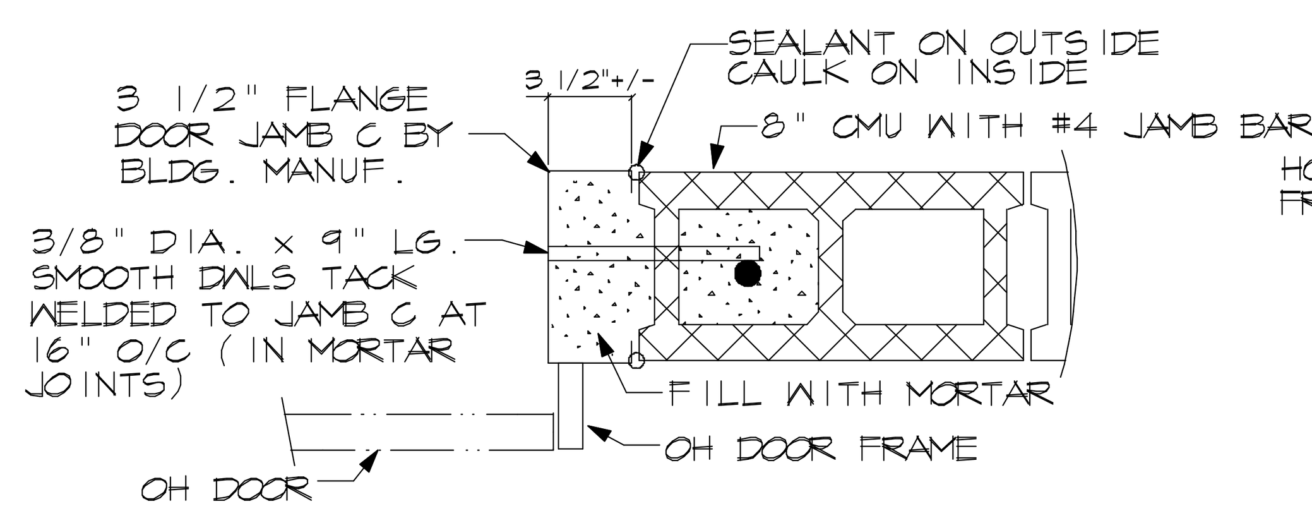


TYPICAL ENLARGED PLAN AT FRONT ENTRY
SCALE: 1/4" = 1'-0"

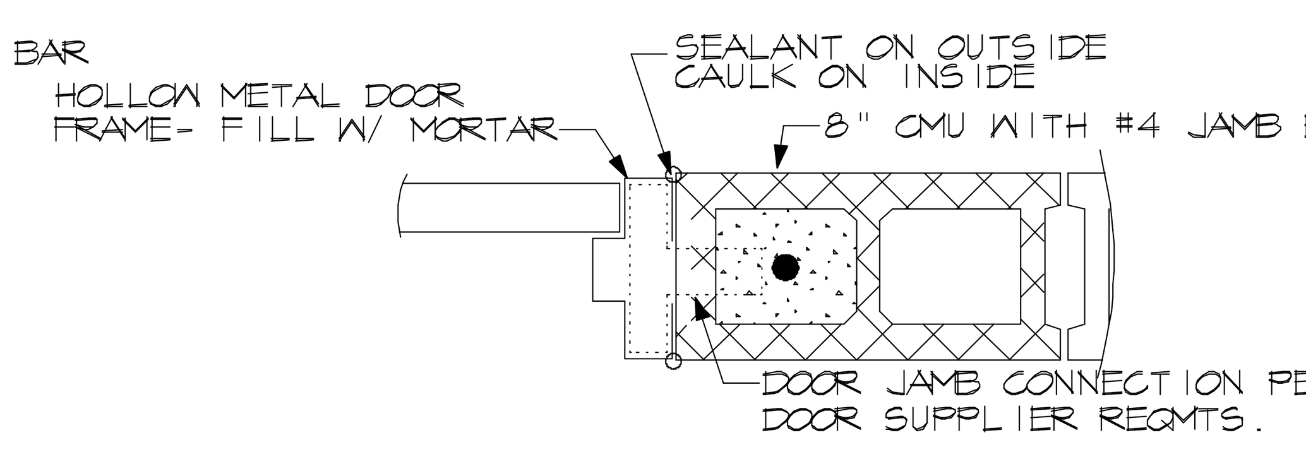
DOOR SCHEDULE

DOOR	DOOR SIZE	FRAME
30x70	3'-0" x 7'-0" (INSULATED)	HOLLOW METAL
10'x10'OH	10'-0" x 10'-0" SECTIONAL OH (INSULATED)	STEEL
30x70 ENTRY	3'-0" x 7'-0" ENTRY DOOR AT STOREFRONT	ALUMINUM

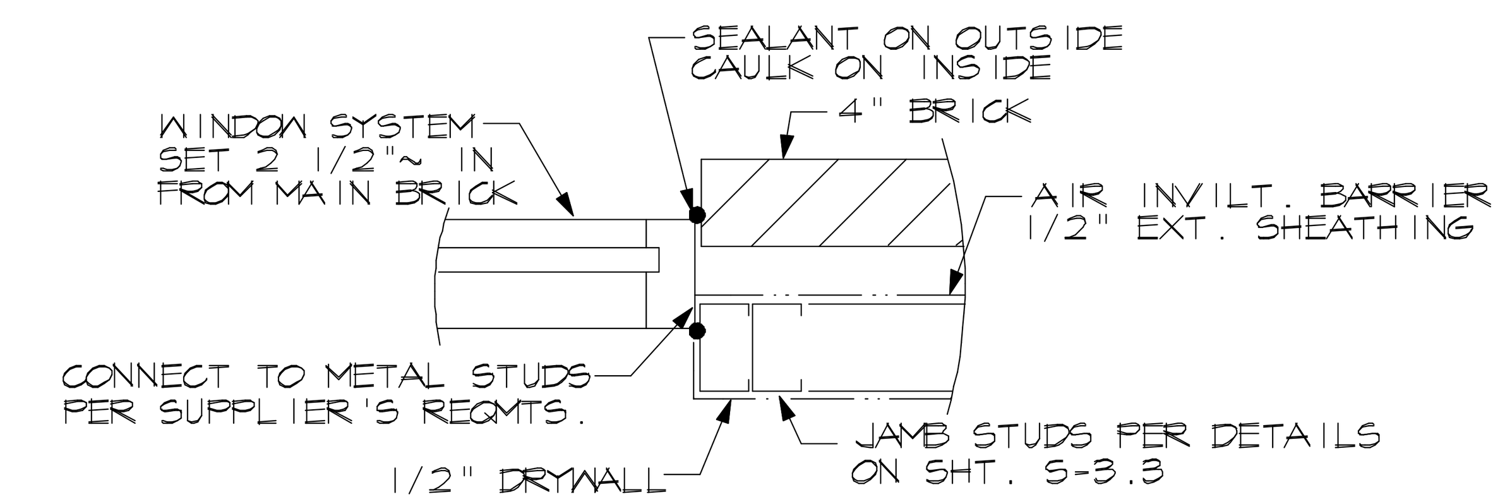
DOOR SCHEDULE NOTES:
1. ALL HINGED DOORS TO HAVE DOOR STOPS.
2. ALL PERSONNEL DOOR HARDWARE TO BE A.D.A. COMPLIANT WITH LEVER TYPE HANDLES.



DOOR JAMB DETAIL A
SCALE: 1 1/2" = 1'-0" A-1.2

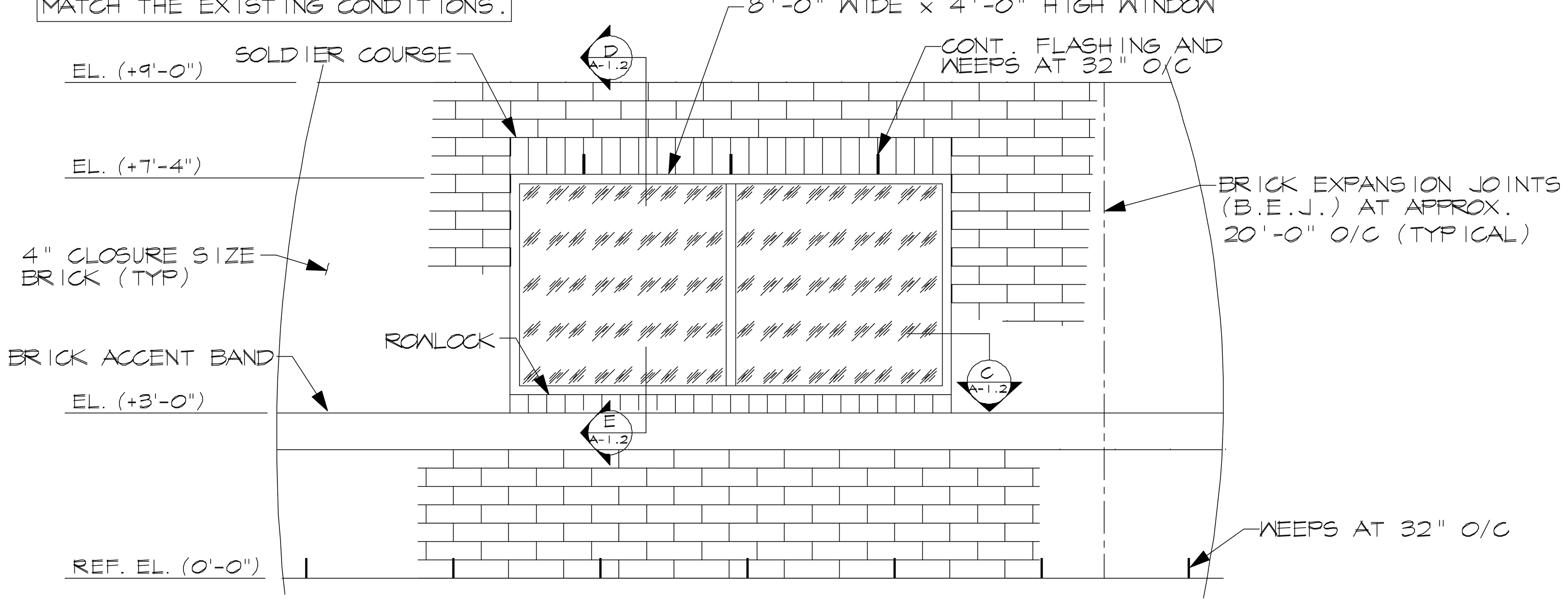


DOOR JAMB DETAIL B
SCALE: 1 1/2" = 1'-0" A-1.2

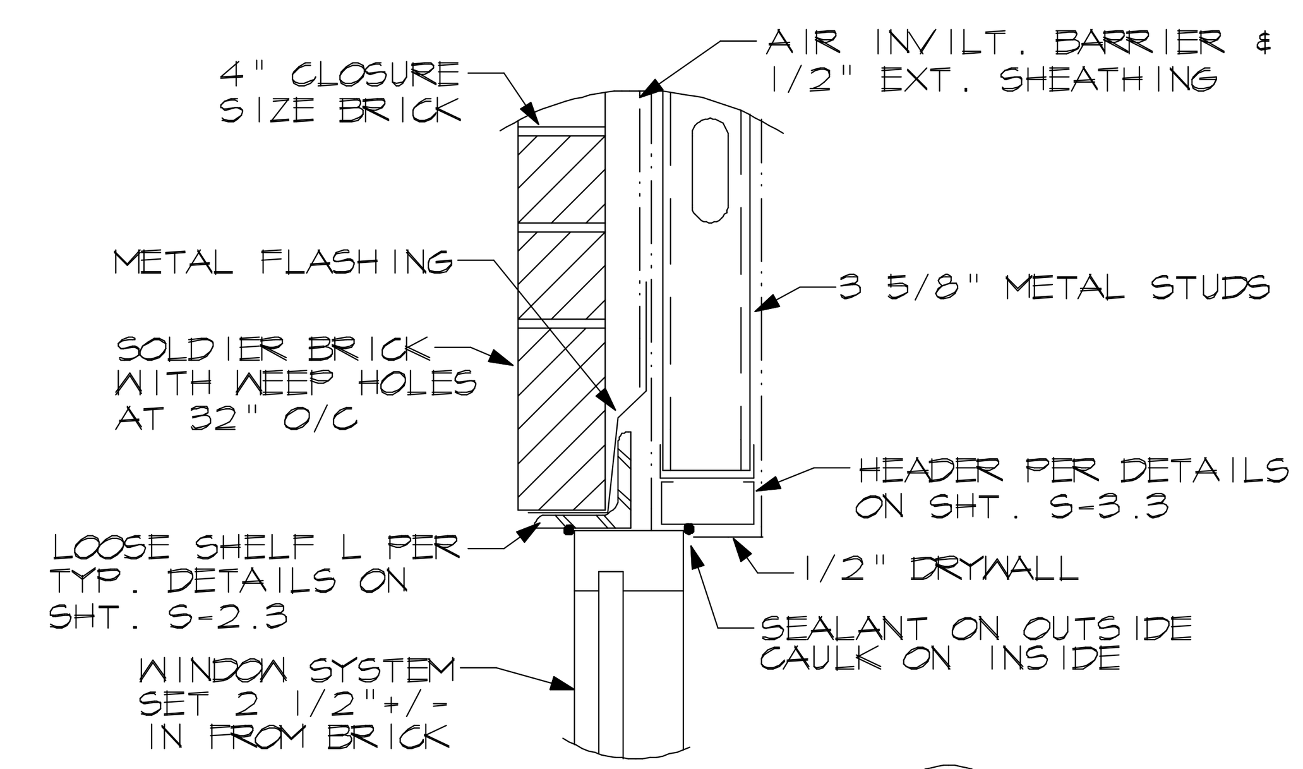


WINDOW JAMB DETAIL C
SCALE: 1 1/2" = 1'-0" A-1.2

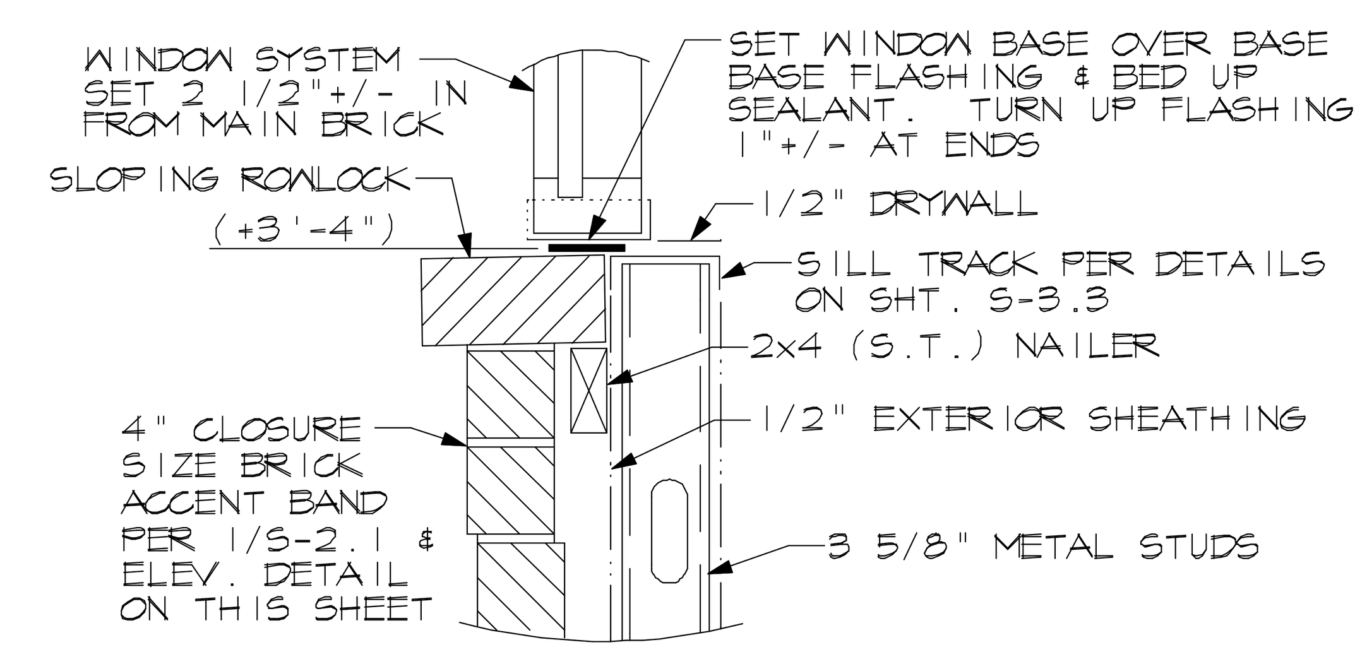
NOTE: ALL MASONRY WORK TO MATCH THE EXISTING CONDITIONS.



TYPICAL ENLARGED FRONT MASONRY ELEVATION
SCALE: 1/2" = 1'-0"



WINDOW HEAD DETAIL D
SCALE: 1 1/2" = 1'-0" A-1.2



WINDOW SILL DETAIL E
SCALE: 1 1/2" = 1'-0" A-1.2

PLAN NOTES: (WORK WITH SHEET A-1.1)
1. ELEVATIONS ARE BASED ON FINISHED FIRST FLOOR REFERENCE ELEVATION (0'-0"), WHICH IS TO MATCH THE EXISTING FLOOR.
2. SEE THE CIVIL DRAWINGS FOR THE EXACT LOCATIONS OF ALL EXTERIOR STAIR SYSTEMS, RAMPS, RETAINING WALLS, ETC.
3. SEE SHEET S-3.1 FOR THE TYPICAL BUILDING SECTIONS.
4. SEE SHEET S-3.2 FOR THE TYPICAL PERIMETER WALL SECTIONS.
5. SEE SHEET S-4.1 AND T-1.1 FOR ADDITIONAL NOTES.
6. VERIFY ALL DIMENSIONS WITH THE FINAL METAL BUILDING DRAWINGS.

PLAN LEGEND: (WORK WITH SHEET A-1.1)

M.O.	MASONRY OPENING
U.O.N.	UNLESS OTHERWISE NOTED
▲	EMERGENCY EXIT/LIGHT
℄	METAL BUILDING STRUCTURE LINE
AFF	ABOVE FINISHED FLOOR
(+x'-x")	ELEVATION ABOVE FINISHED FLOOR
WDW	WINDOW
DN	DOWN
SIM	SIMILAR

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⚠	x/x/22

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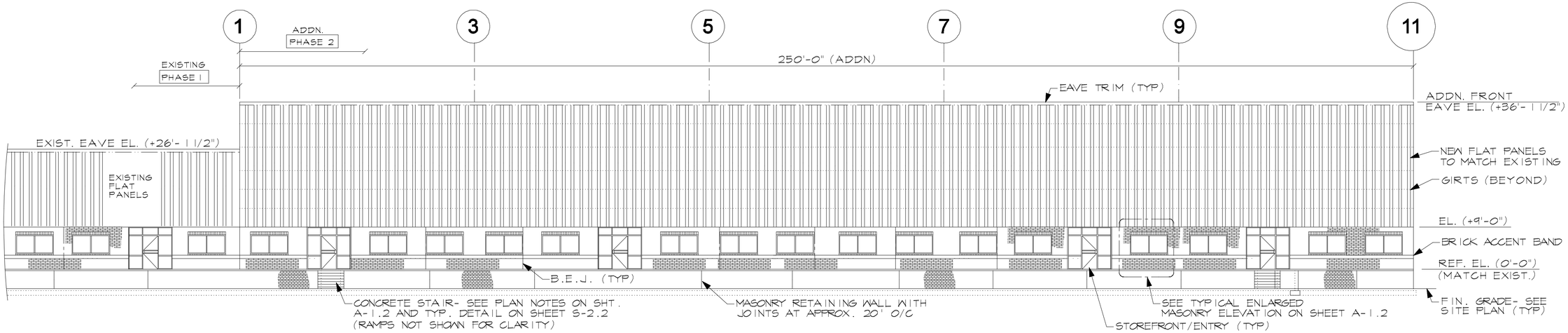
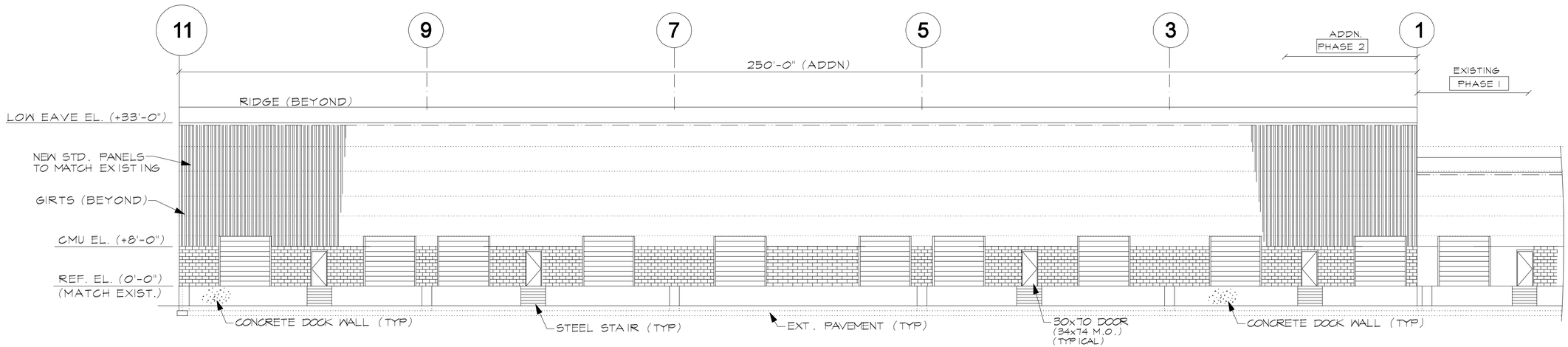
SUFFOLK, VIRGINIA
1965 NORTHGATE COMMERCE PARKWAY
ARCHITECTURAL DETAILS

SHEET NO.
A-1.2



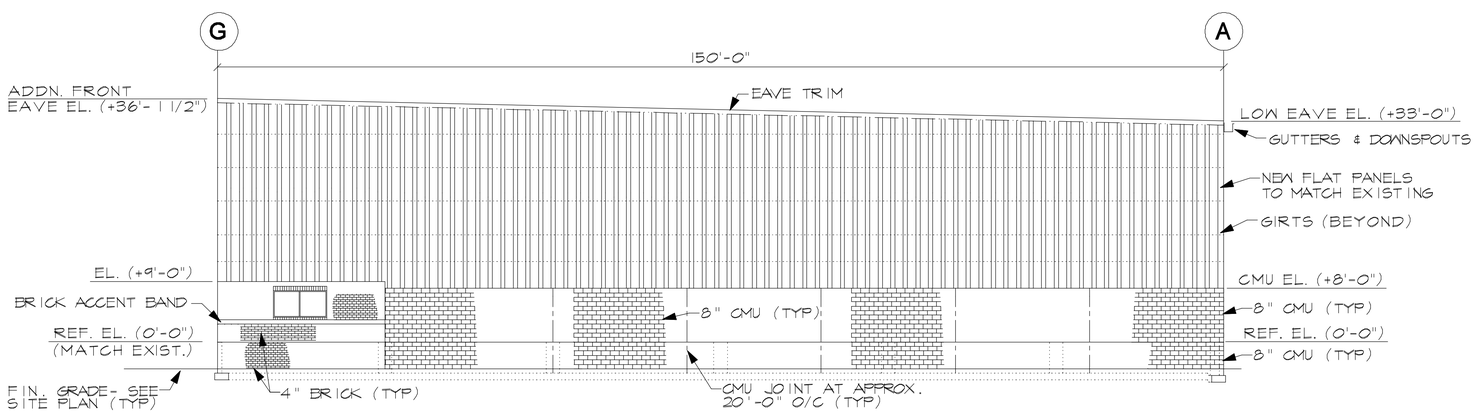
FRONT BUILDING ELEVATION- LINE G

SCALE: 3/32" = 1'-0"



REAR BUILDING ELEVATION- LINE A

SCALE: 3/32" = 1'-0"



RIGHT SIDE BUILDING ELEVATION- LINE 11

SCALE: 3/32" = 1'-0"

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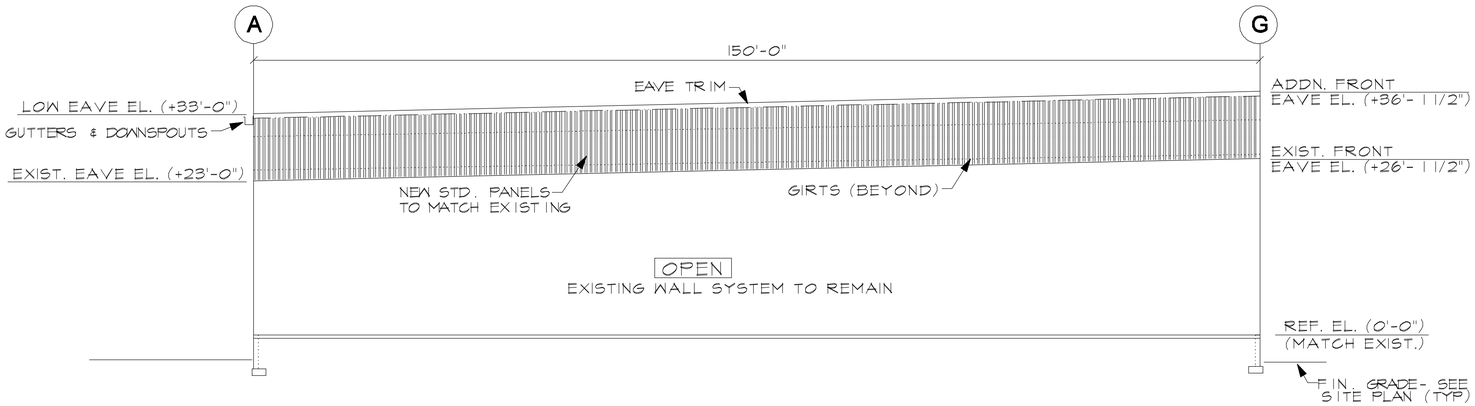
BUILDING ELEVATIONS

SHEET NO.

A-2.1



LEFT SIDE BUILDING ELEVATION- LINE 1

SCALE: 3/32" = 1'-0"

EXIST. ENDWALL AT ADDN.

FRONT LEFT CORNER

FAR ENDWALL

REAR WALL

PHOTOS OF EXISTING CONDITIONS

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NORTHGATE COMMERCE PARK
1965 NORTHGATE COMMERCE PARKWAY
SUFFOLK, VIRGINIA
BUILDING ELEVATIONS & PHOTOS OF EXISTING CONDITIONS

SHEET NO.
A-2.2

FOUNDATION PLAN - PHASE 2

SCALE: 3/32" = 1'-0"

(SEE SHEET S-2.2 FOR PLAN LEGEND AND NOTES)

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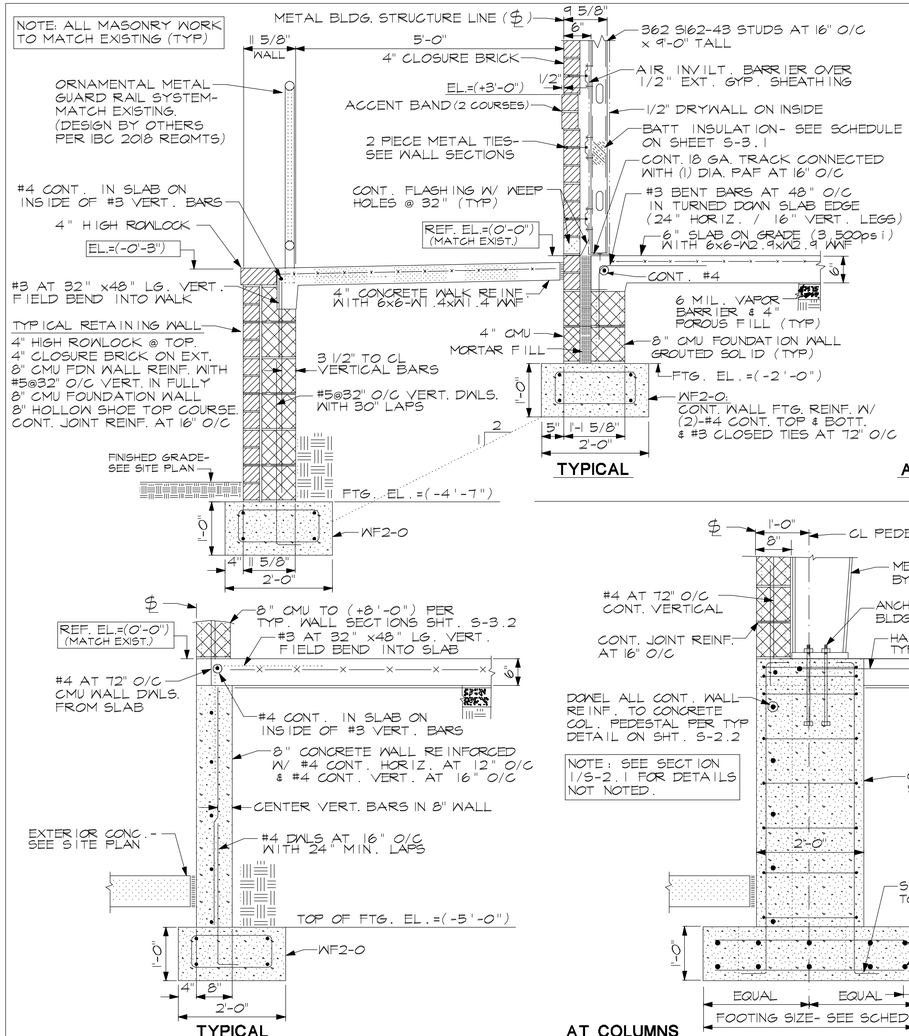
SUFFOLK, VIRGINIA
FOUNDATION PLAN- PHASE 2

SHEET NO.
S-1.1

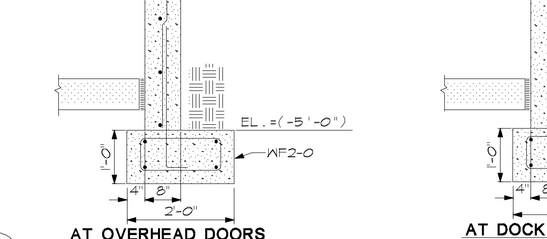
NOTE: ALL MASONRY WORK TO MATCH EXISTING (TYP)

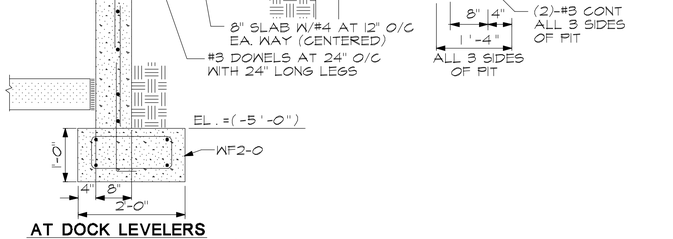


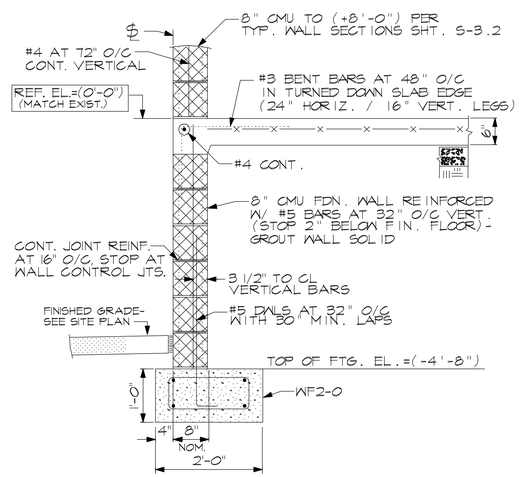
SECTION 1 S-2.1
SCALE: 3/4" = 1'-0"

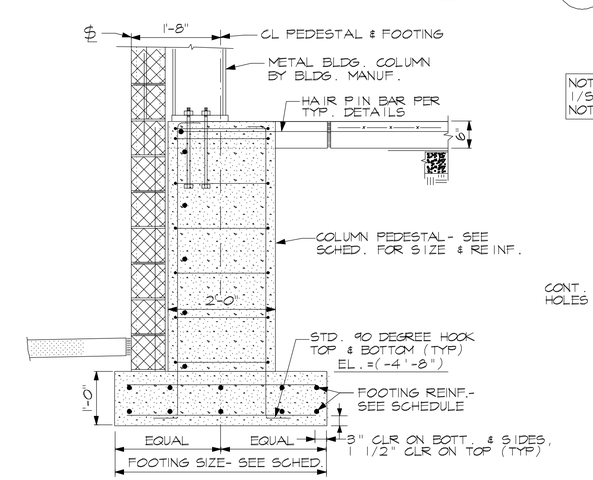
SECTION 2 S-2.1
SCALE: 3/4" = 1'-0"

SECTION 3 S-2.1
SCALE: 3/4" = 1'-0"

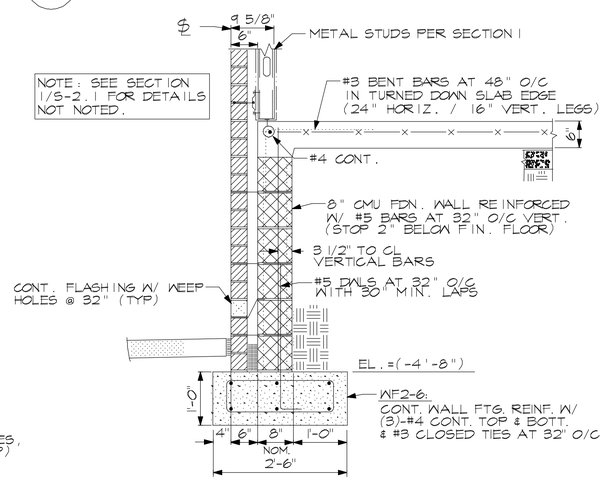


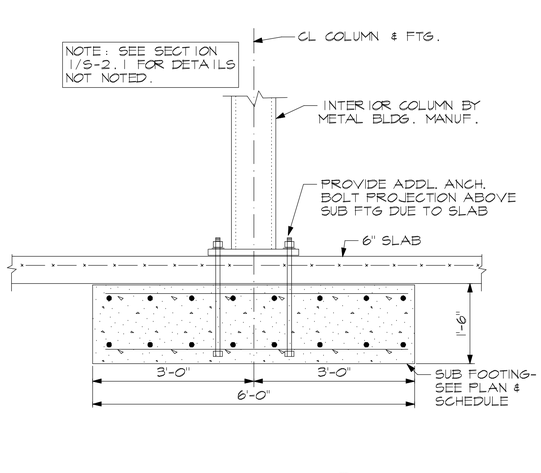






SECTION 4 S-2.1
SCALE: 3/4" = 1'-0"





SECTION 5 S-2.1
SCALE: 3/4" = 1'-0"

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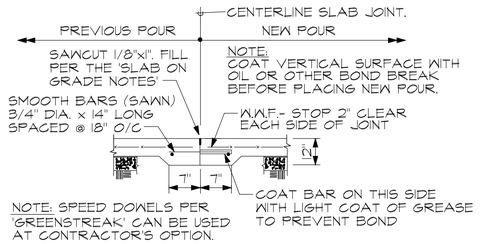
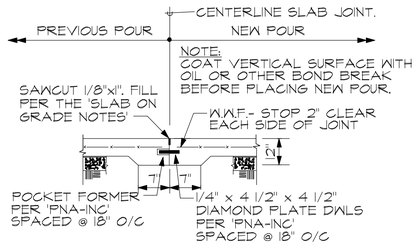
SECTIONS AND DETAILS

SHEET NO.
S-2.1



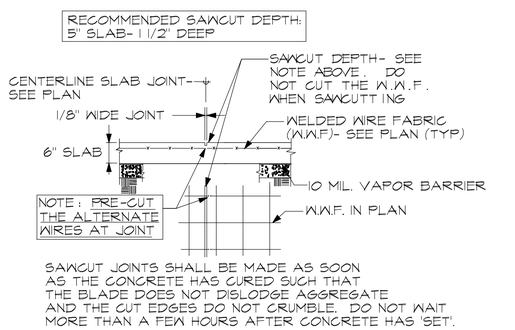
DOWELED JOINT, ROUND DOWELS



DOWELED JOINT, PLATE DOWEL OPTION

TYPICAL SLAB CONSTRUCTION JOINT DETAILS

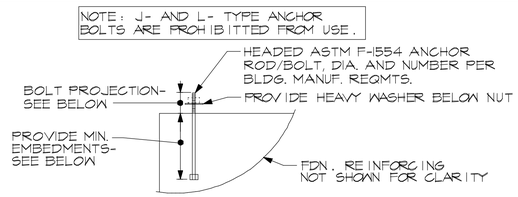
NOT TO SCALE **(DENOTED D.C.J. ON PLAN)**



TYPICAL SLAB CONTRACTION (SAWCUT) JOINT

NOT TO SCALE **(DENOTED C.J. ON PLAN)**

NOTE: J- AND L- TYPE ANCHOR BOLTS ARE PROHIBITTED FROM USE.

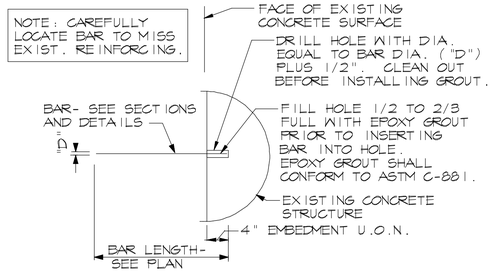


DIAMETER	MIN. EMBED.	MIN. PROJ.	MIN. LENGTH
5/8"	10"	2"	12"
3/4"	15"	3"	18"
7/8"	14 1/2"	3 1/2"	18"
1"	14 1/2"	3 1/2"	18"
1 1/4"	14 1/2"	3 1/2"	18"

NOTES:
1. USE EXPANSION BOLTS AT OVERHEAD DOOR JAMB CHANNELS WITH 1/2" DIAMETER MIN. BOLTS (4" EMBEDMENT, 2" PROJ.)
2. USE ADDITIONAL BOLT PROJECTION AT INTERIOR COLUMNS PER SECTION 5/S-2.1.
3. OPTION: USE ALL THREAD RODS FOR ENDWALL POSTS AT SECTION 2/S2.1 WITH 8" EMBEDMENTS AND 3" PROJECTIONS, EPOXY GROUTED TO FOOTING.

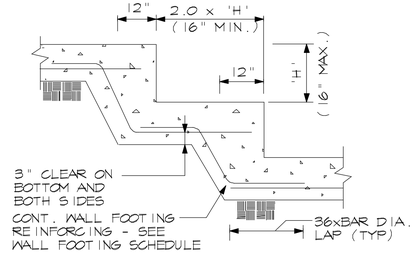
TYPICAL COLUMN ANCHOR ROD/BOLT DETAIL

NOT TO SCALE



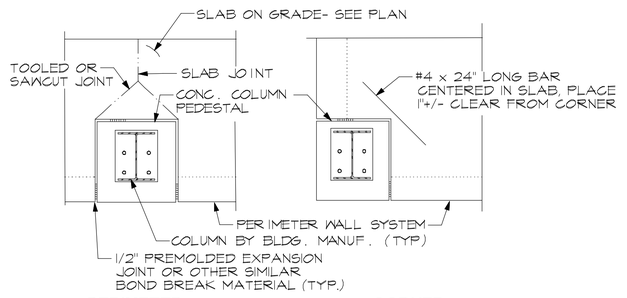
TYPICAL REINFORCING DOWEL TO EXIST. CONSTRUCTION DETAIL

NOT TO SCALE



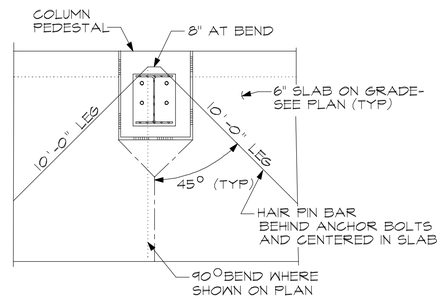
TYP. STEPPED WALL FOOTING DETAIL

NOT TO SCALE **(DENOTED S.F. ON PLAN)**



TYPICAL PEDESTAL ISOLATION JOINT DETAILS

NOT TO SCALE



TYP. HAIR PIN BAR DETAIL

NOT TO SCALE

COLUMN FOOTING SCHEDULE

MARK	SIZE	THICK.	REINFORCING	
			TRANSVERSE	LONGITUDINAL
F4x4 Ⓣ	4'-0" x 4'-0"	12"	(5)-#5 x 3'-6" TOP & BOTT.	(5)-#5 x 3'-6" TOP & BOTT.
F5x5 Ⓣ	5'-0" x 5'-0"	12"	(6)-#5 x 4'-6" TOP & BOTT.	(6)-#5 x 4'-6" TOP & BOTT.
F6x6 Ⓣ	6'-0" x 6'-0"	18"	(7)-#5 x 5'-6" TOP & BOTT.	(7)-#5 x 5'-6" TOP & BOTT.
MF3x3	3'-0" x 3'-0"	24"	(4)-#5 x 2'-6" BOTT.	(4)-#5 x 2'-6" BOTT.

CONCRETE PEDESTAL SCHEDULE

MARK	SIZE	REINFORCING			PLAN DETAIL
		VERTICAL	TIES	TIE SPACING (SPACING FROM FLR.)	
P-1	18"x18"	(4)-#5	(2)-#3 EACH LAYER	1 @ 2", 1 @ 2" & REM. @ 9"	
P-2 P-2A	20"x24" 24"x24"	(8)-#5	(2)-#3 EACH LAYER	1 @ 2", 1 @ 2" & REM. @ 9"	
P-3	24"x40"	(12)-#5	(5)-#3 EACH LAYER	1 @ 2", 1 @ 2" & REM. @ 9"	

WALL FOOTING SCHEDULE

MARK	WIDTH 'W'	THICK. 'T'	REINFORCING	
			CONTINUOUS	TIE BARS
WF2-0	2'-0"	12"	(2)-#4 T & BOTT	SEE SECTIONS
WF2-6	2'-6"	12"	(3)-#4 T & BOTT	SEE SECTIONS

PLAN NOTES: (WORK WITH SHEET S-1.1)

1. ELEVATIONS ARE BASED ON FINISHED FIRST FLOOR REFERENCE ELEVATION (0'-0"), WHICH IS TO MATCH THE EXISTING FLOOR.
2. SEE THE CIVIL DRAWINGS FOR THE EXACT LOCATIONS OF ALL EXTERIOR STAIR SYSTEMS, RAMPS, RETAINING WALLS, ETC.
3. SEE SHEET S-3.1 FOR THE TYPICAL BUILDING SECTIONS.
4. SEE SHEET S-3.2 FOR THE TYPICAL PERIMETER WALL SECTIONS.
5. SEE SHEET S-4.1 AND T-1.1 FOR ADDITIONAL NOTES.
6. VERIFY ALL DIMENSIONS WITH THE FINAL METAL BUILDING DRAWINGS.

PLAN LEGEND: (WORK WITH SHEET S-1.1)

FXxX	COLUMN FOOTING- SEE SCHEDULE THIS SHEET
WFX-X	WALL FOOTING- SEE SCHEDULE THIS SHEET
MFXxX	MONOLITHIC FOOTING- SEE SCHEDULE THIS SHEET
(-x'-x")	TOP OF FOOTING ELEVATION
P-x	COLUMN PEDESTAL- SEE SCHEDULE THIS SHEET
D.C.J.	DOWELED SLAB CONSTRUCTION JOINT
C.J.	SLAB CRACK CONTROL JOINT
— - — - —	SLAB JOINT
S.F.	STEPPED FOOTING
℄	METAL BUILDING STRUCTURE LINE
U.O.N.	UNLESS OTHERWISE NOTED
Ⓣ	TOP REINFORCING IN FOOTING

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12/14/22
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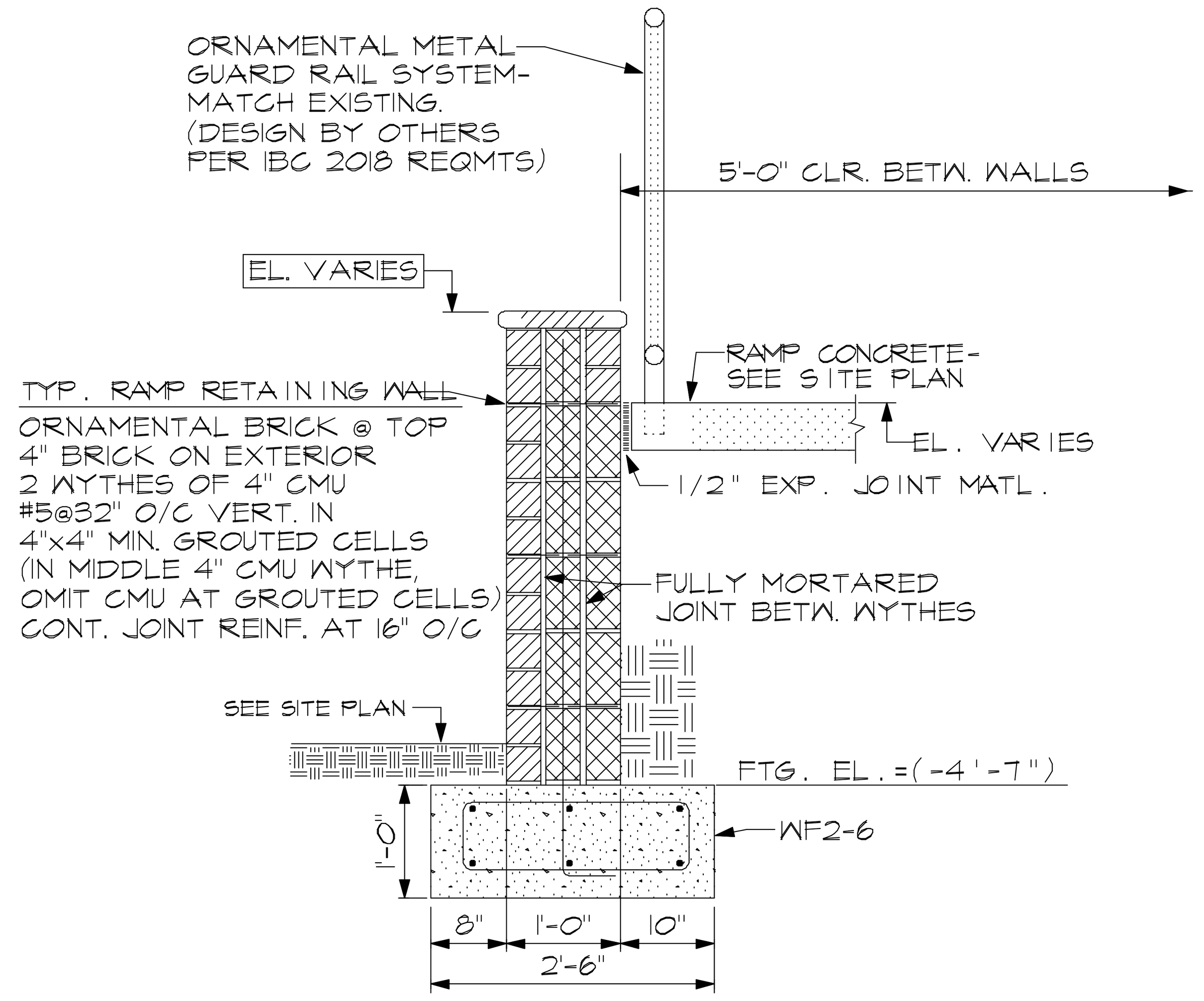
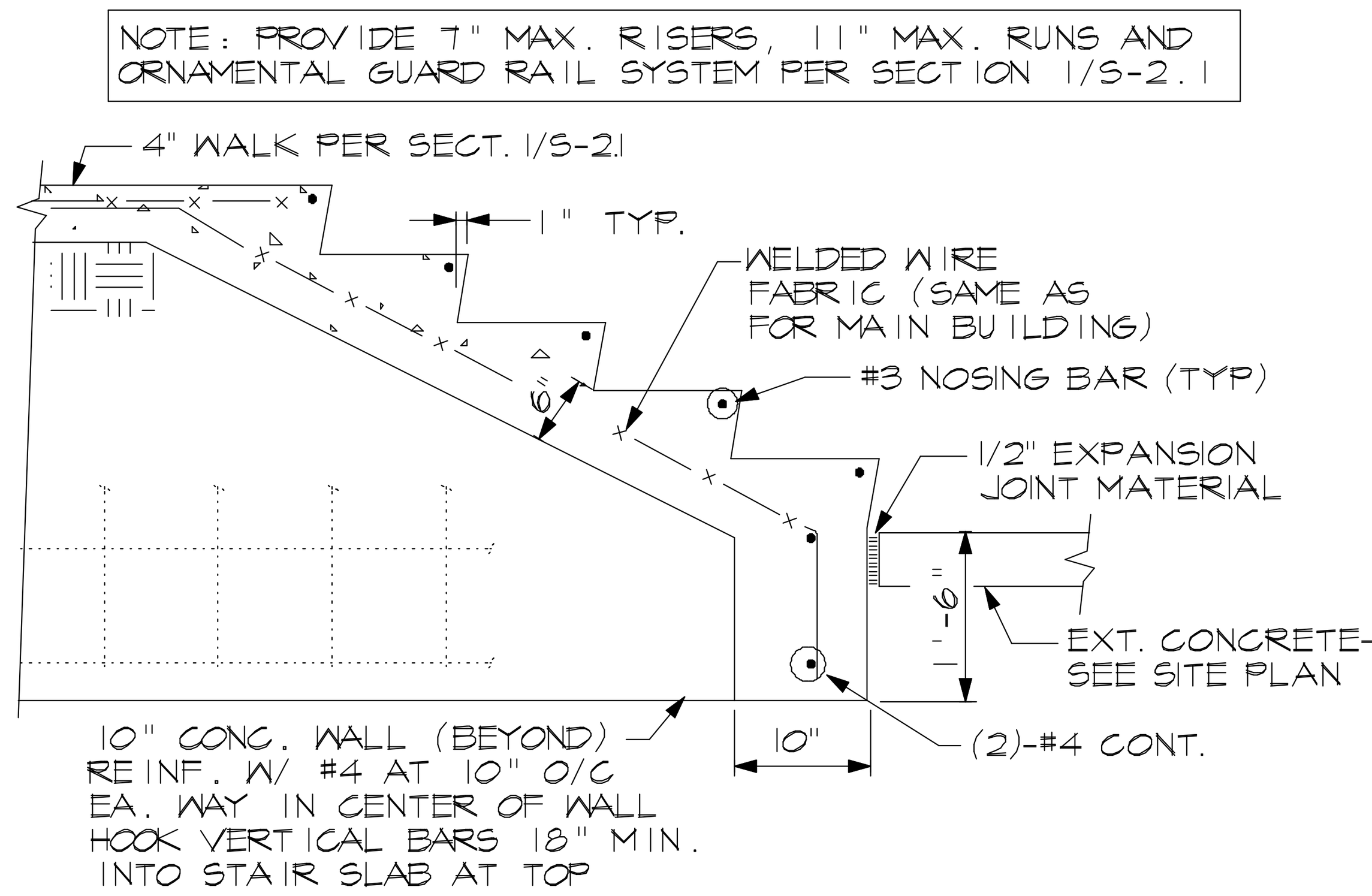
SHELL WAREHOUSE BUILDING- PHASE 2
NORTHGATE COMMERCE PARK
1965 NORTHGATE COMMERCE PARKWAY
SUFFOLK, VIRGINIA
SECTIONS AND DETAILS

SHEET NO.
S-2.2



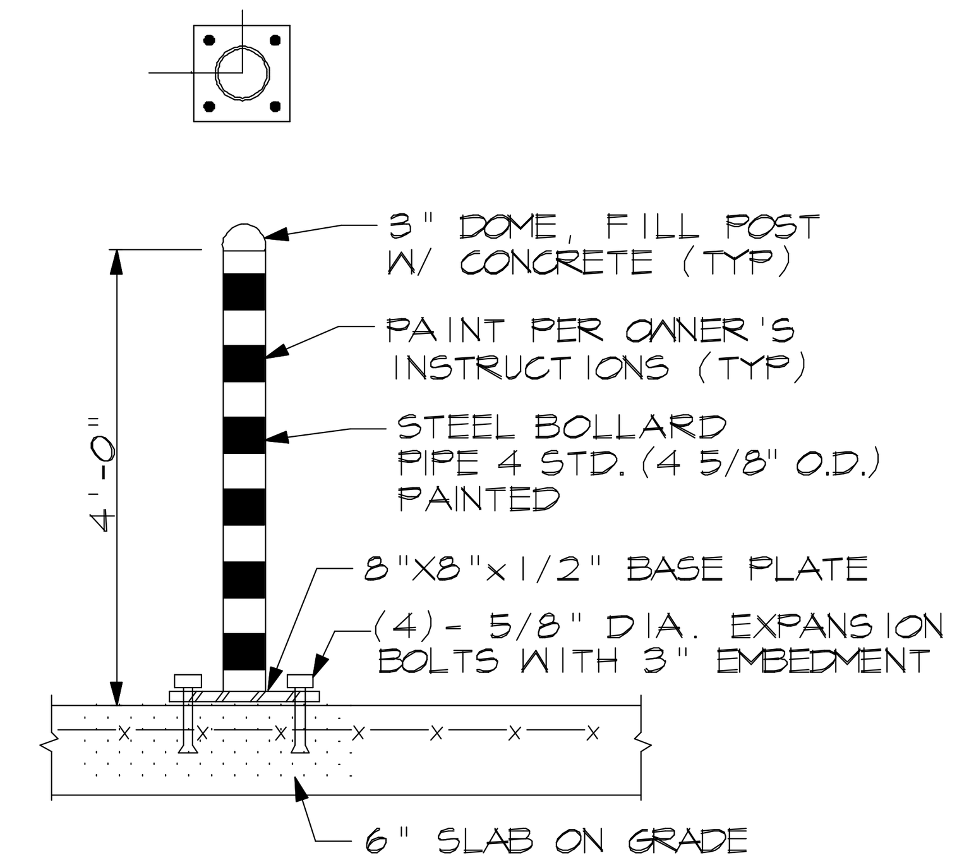
TYP. FRONT RAMP RETAINING WALL DETAIL

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



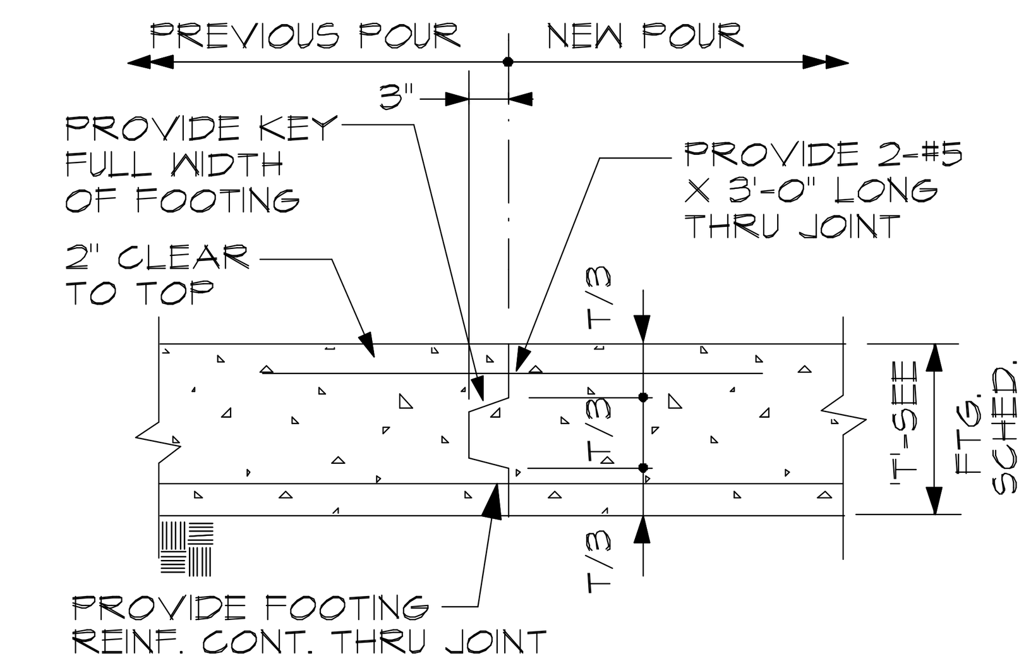
TYP. FRONT CONCRETE STAIR DETAIL

NOT TO SCALE



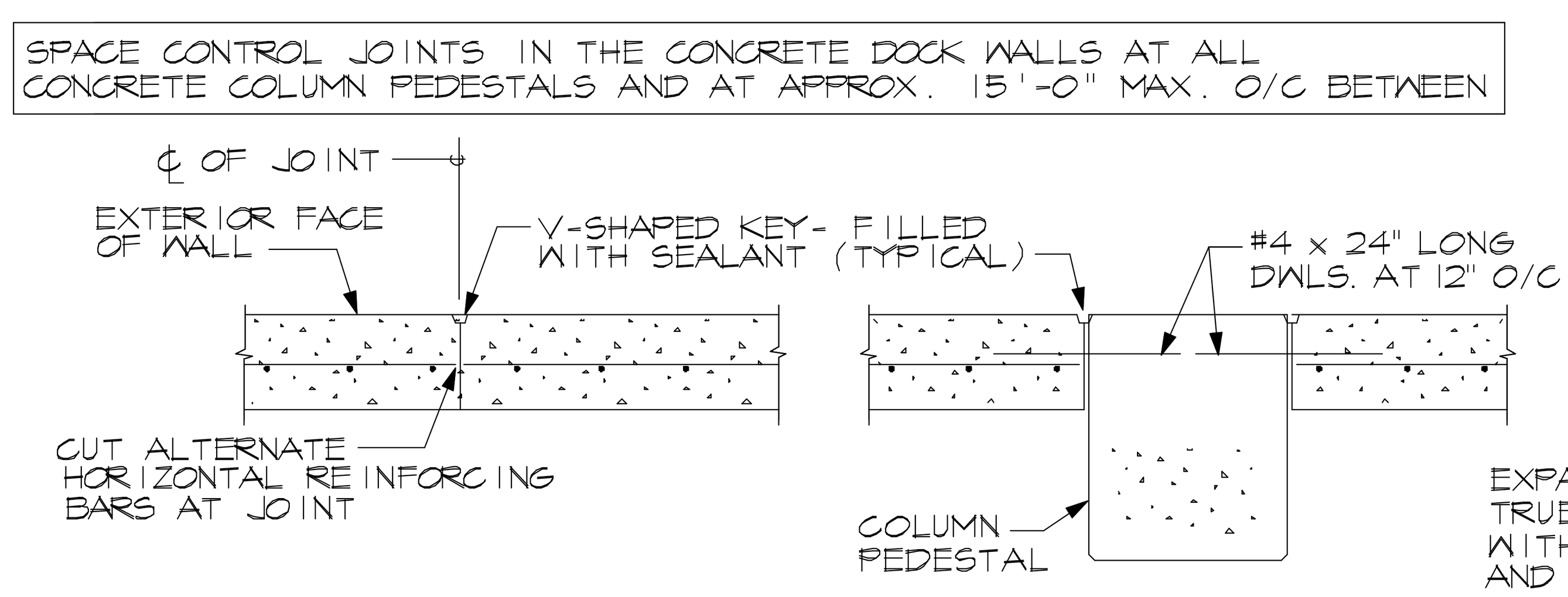
TYPICAL PIPE BOLLARD DETAIL

NOT TO SCALE



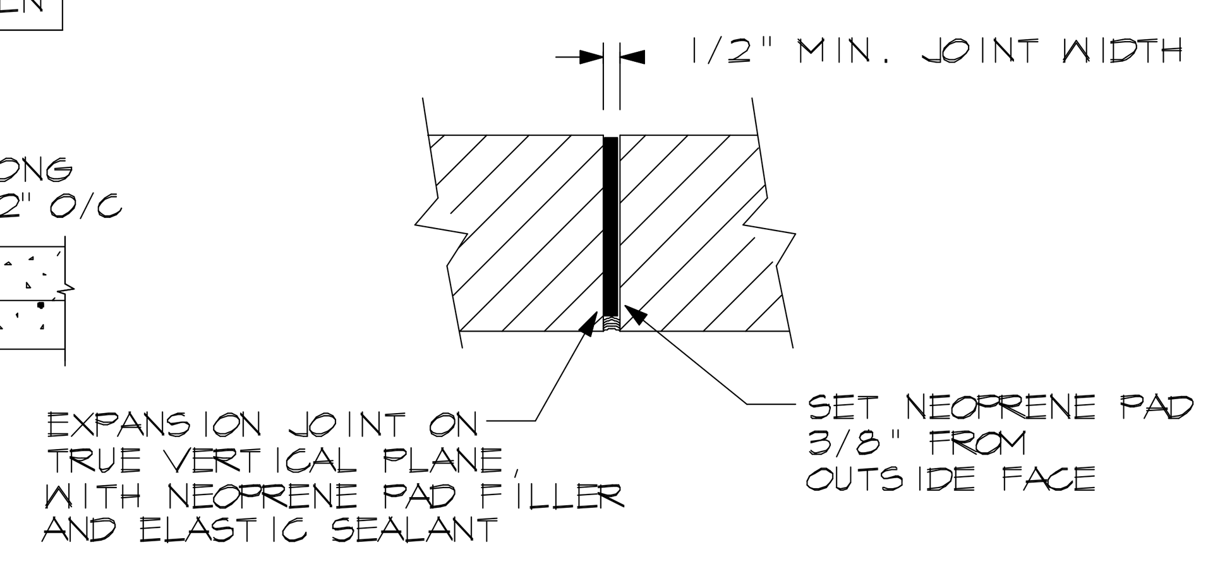
TYPICAL WALL FOOTING CONSTRUCTION JOINT DETAIL

NOT TO SCALE



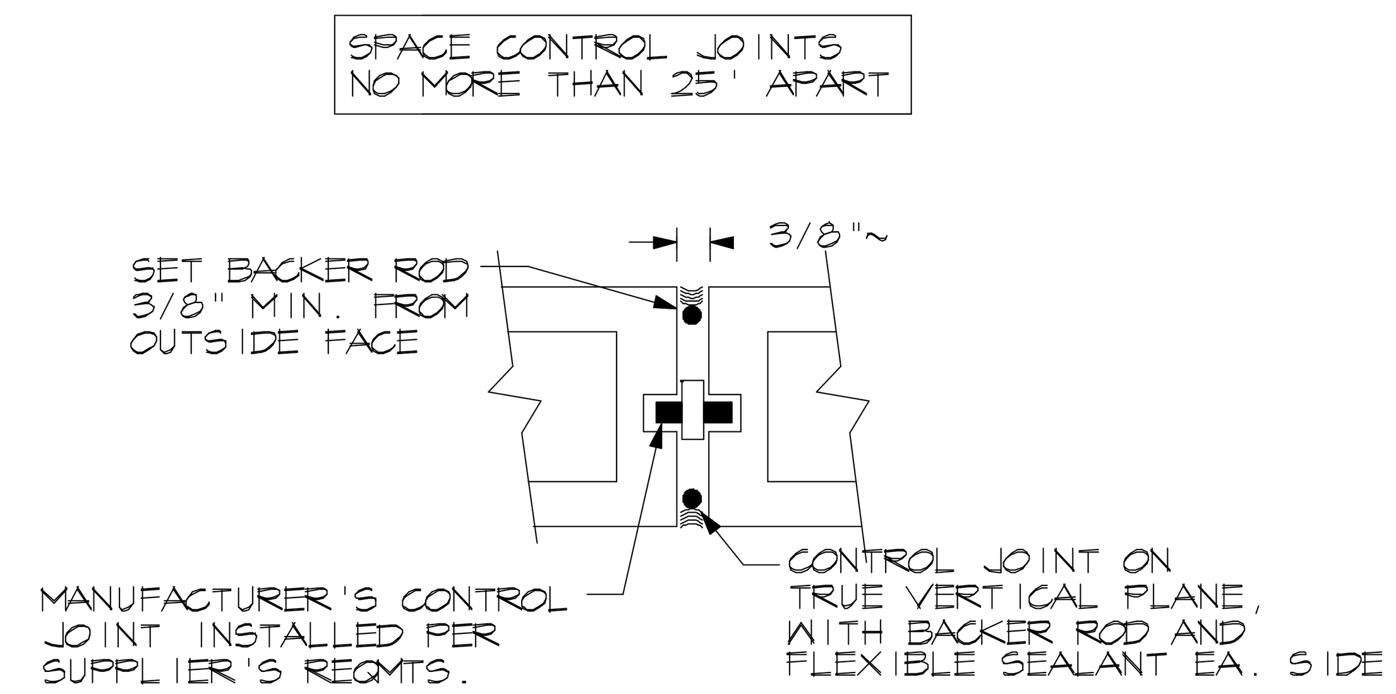
CONCRETE WALLS

CRACK CONTROL JOINT



BRICK FACADE

BRICK EXPANSION JOINT, DENOTED (B.E.J.) ON PLAN

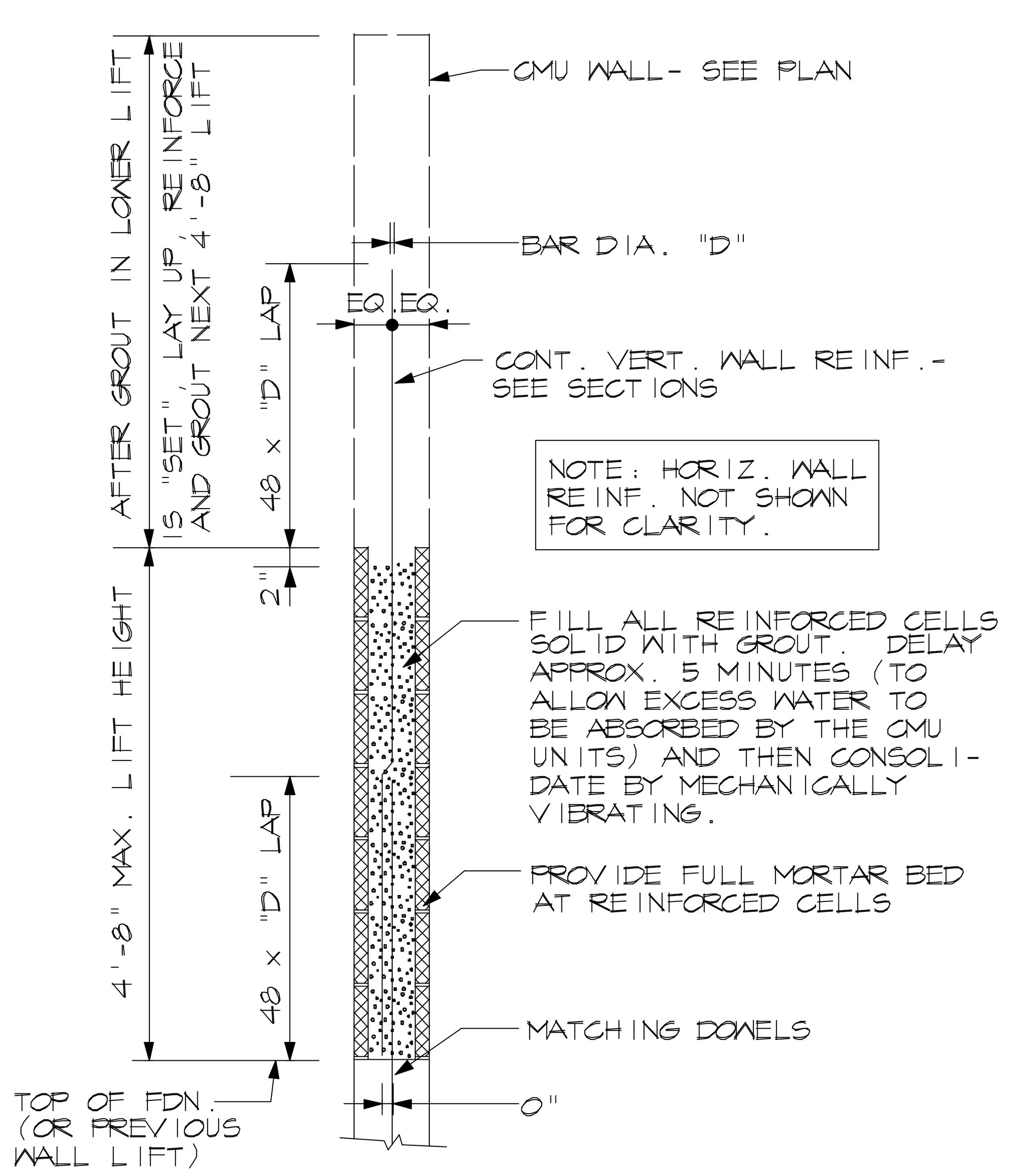


CMU WALLS

CRACK CONTROL JOINT

TYP. MASONRY AND CONCRETE WALL JOINT DETAILS

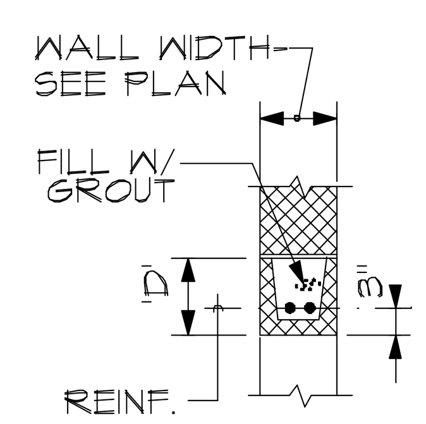
NOT TO SCALE



TYPICAL "LOW-LIFT" MASONRY WALL CONSTRUCTION DETAIL

NOT TO SCALE

BOND BEAM LINTEL SCHEDULE		
CLR. SPAN	'D'	REINFORCING
UP TO 5'-4"	8"	2-#4 BOTT.
5'-5" TO 6'-8"	8"	2-#5 BOTT.
6'-8" TO 10'-0"	16"	2-#5 TOP & BOT.

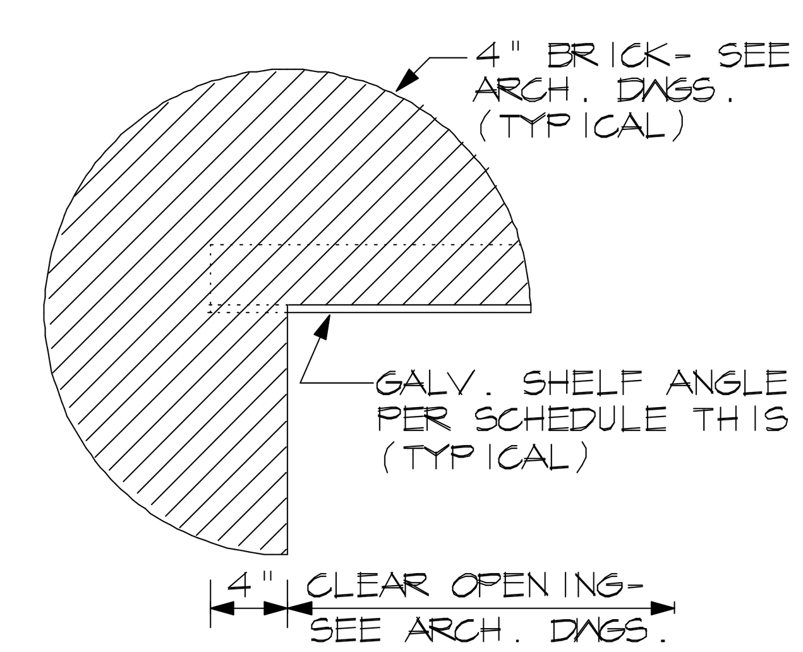


SECTION

NOTES:
1. SEE THE ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS.
2. PROVIDE 8" MINIMUM BEARING EACH END.
3. SCHEDULE APPLIES ONLY TO LINTELS NOT OTHERWISE SHOWN.
4. CONTRACTOR TO PROVIDE TEMPORARY SHORING UNTIL MASONRY HAS PROPERLY SET (3 DAY MIN.)

TYPICAL BOND BEAM LINTEL DETAILS

NOT TO SCALE

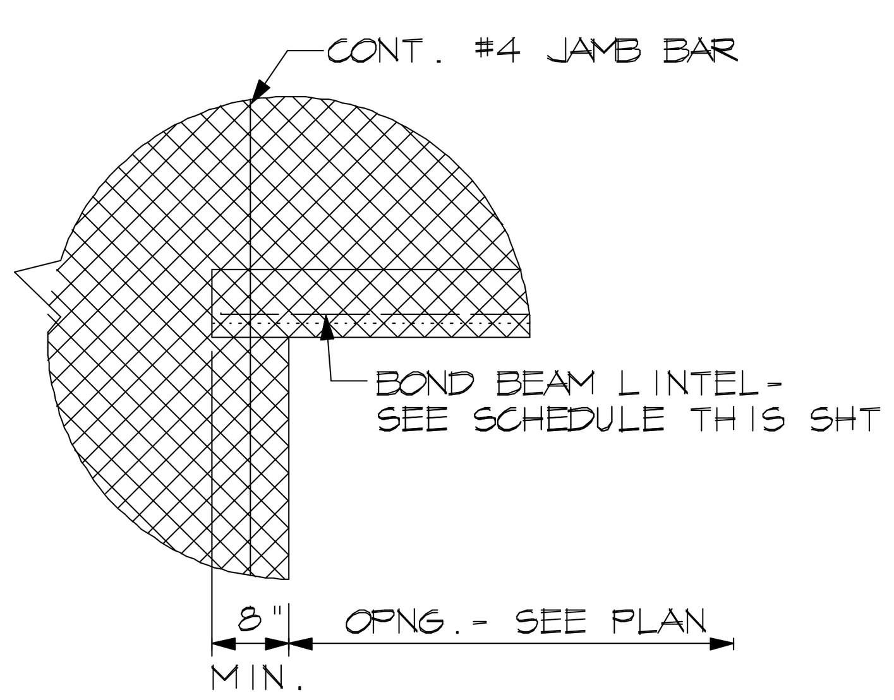


TYP. BRICK SHELF L DETAIL

NOT TO SCALE

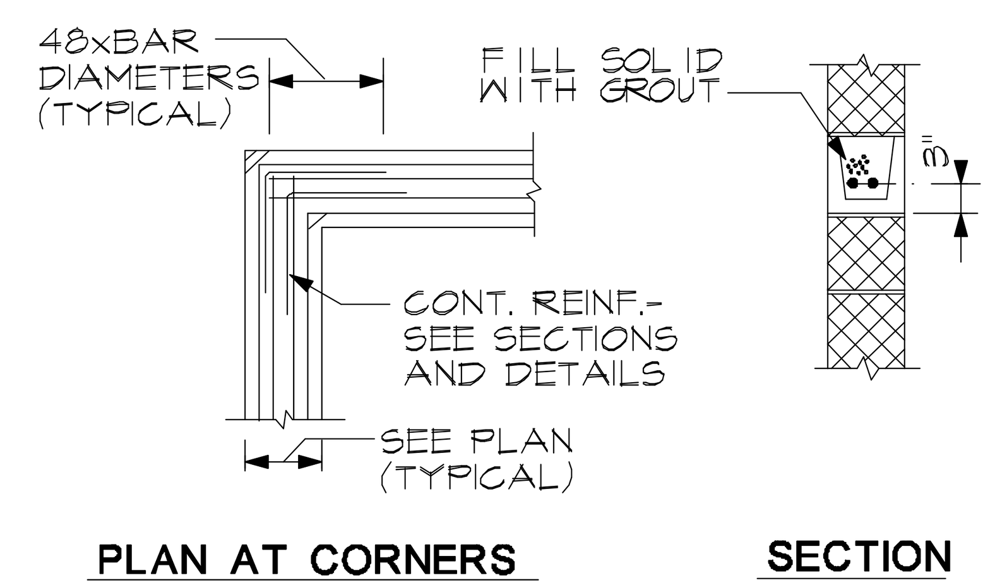
BRICK SHELF ANGLE SCHEDULE	
CLEAR SPAN	ANGLE SIZE (GALV.)
UP TO 3'-4"	L4x4x1/4
3'-5" TO 5'-4"	L4X4X3/8
5'-5" TO 8'-8"	L6x4x5/16 (LLV)

PROVIDE TEMPORARY SUPPORT OF SHELF ANGLES UNTIL BRICK HAS 'SET'.



TYPICAL LINTEL BEARING DETAIL

NOT TO SCALE



PLAN AT CORNERS

SECTION

TYP. BOND BEAM REINF. DETAILS

NOT TO SCALE

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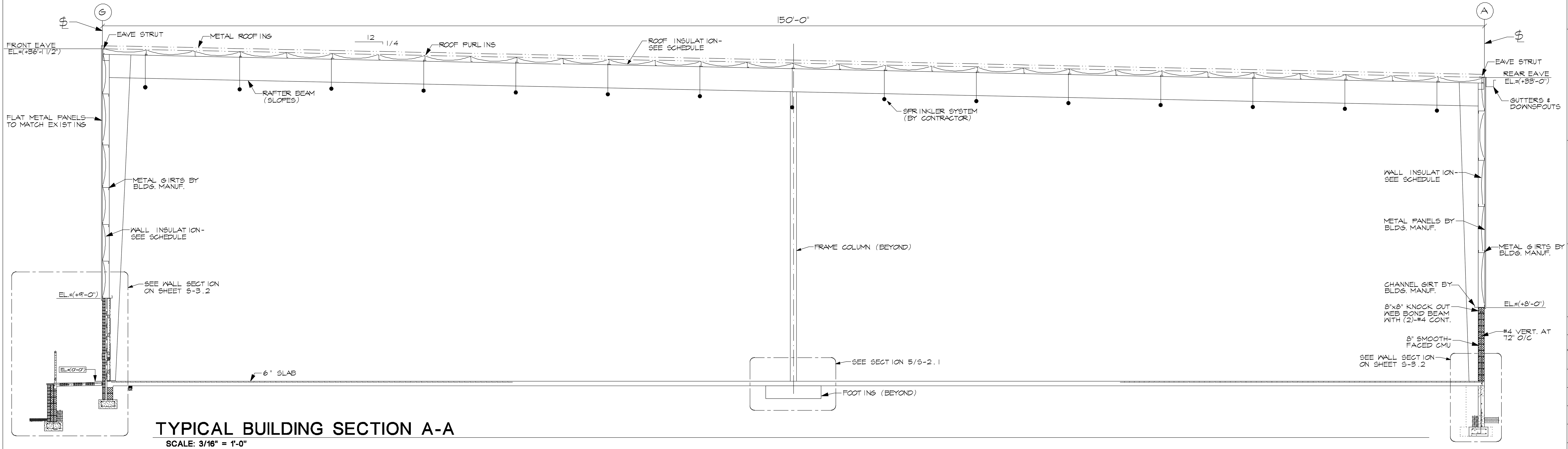
⚠	x/x/22

SHELL WAREHOUSE BUILDING- PHASE 2
NORTHGATE COMMERCE PARK
1965 NORTHGATE COMMERCE PARKWAY
SUFFOLK, VIRGINIA

SECTIONS AND DETAILS

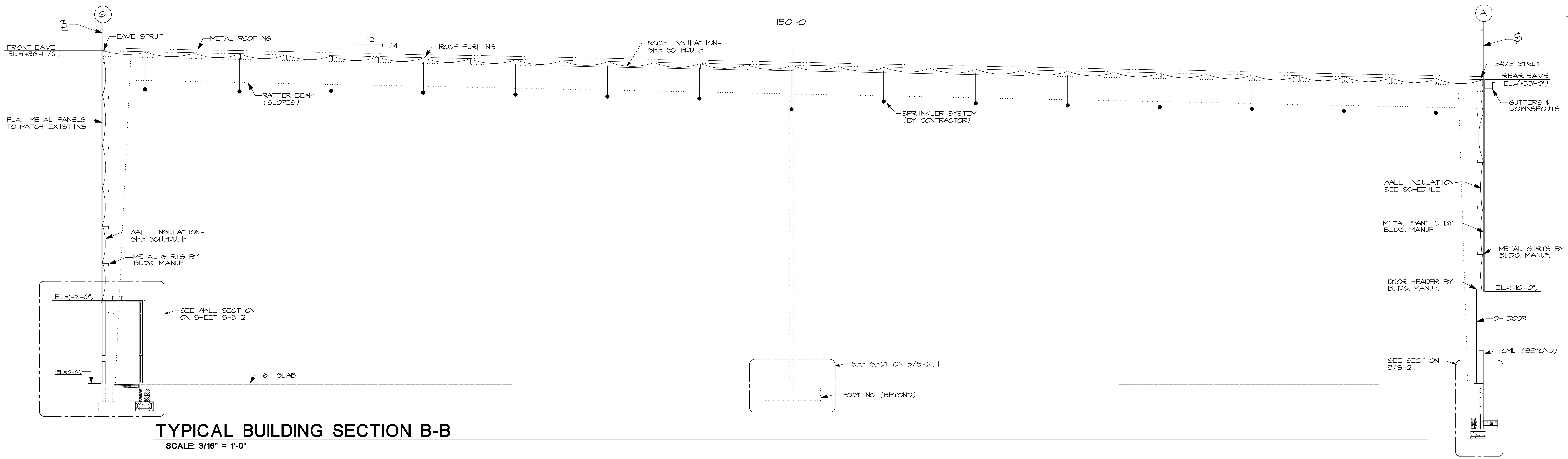
SHEET NO.

S-2.3



TYPICAL BUILDING SECTION A-A

SCALE: 3/16" = 1'-0"



TYPICAL BUILDING SECTION B-B

SCALE: 3/16" = 1'-0"

BUILDING INSULATION SCHEDULE PER COMCHECK RUN BASED ON IECC 2018/ASHRAE 90.1 (2016) AND SEMI-HEATED WAREHOUSE SPACE
ROOF: MIN. OF R-19 (6") SINGLE LAYER WITH R-3.5 THERMAL BLOCKS ON PURLINS
PEMB WALL: R-13 (4"), SINGLE LAYER VINYL FACED
STUD WALL: R-13 (4") BATT IN 3 5/8" STUDS
8" CMU: NON REINFORCED CELLS FILLED WITH 'COREFILL 500', R-8
PERIMETER SLAB: NONE REQUIRED PER ASHRAE 90.1

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SHELL WAREHOUSE BUILDING- PHASE 2

NORTHGATE COMMERCE PARK

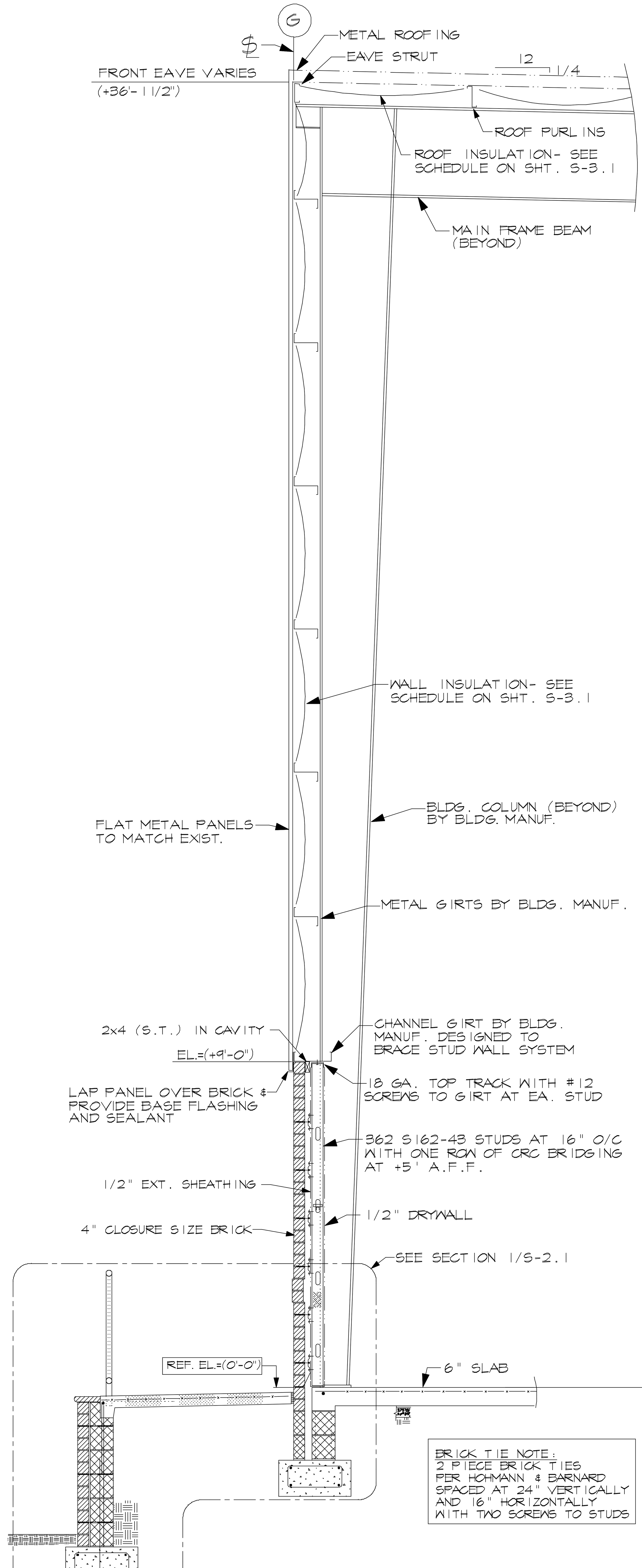
SUFFOLK, VIRGINIA

1965 NORTHGATE COMMERCE PARKWAY

TYPICAL BUILDING SECTIONS

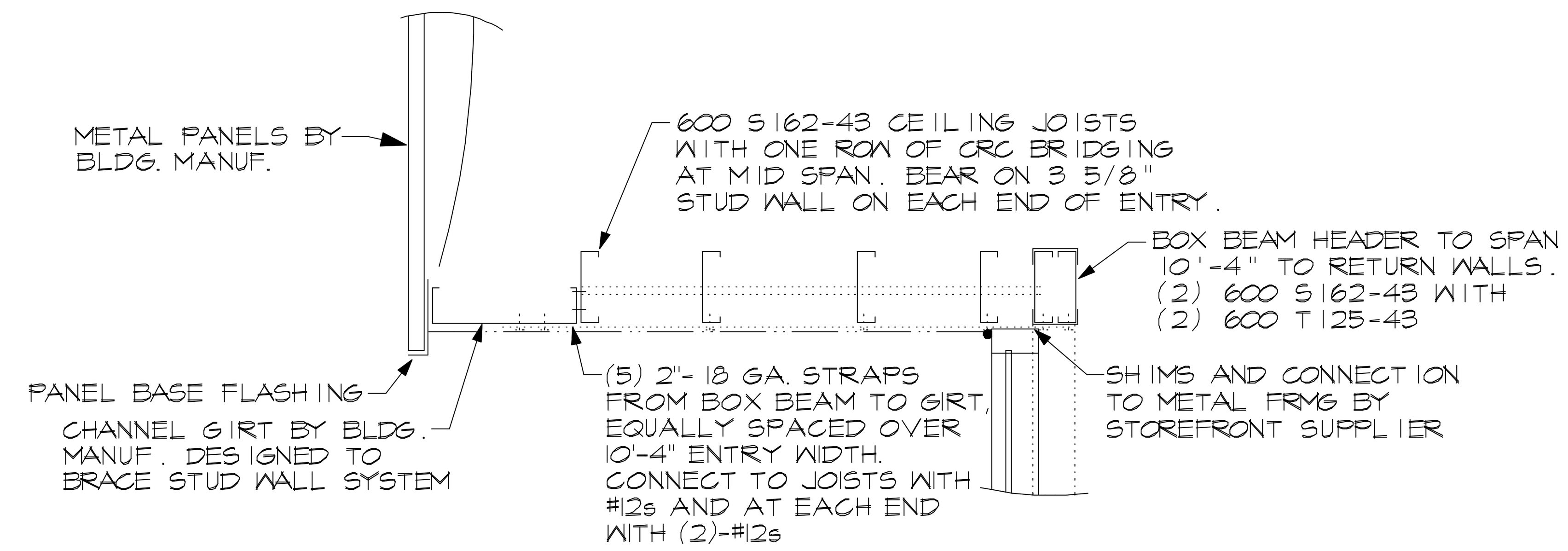
SHEET NO.

S-3.1

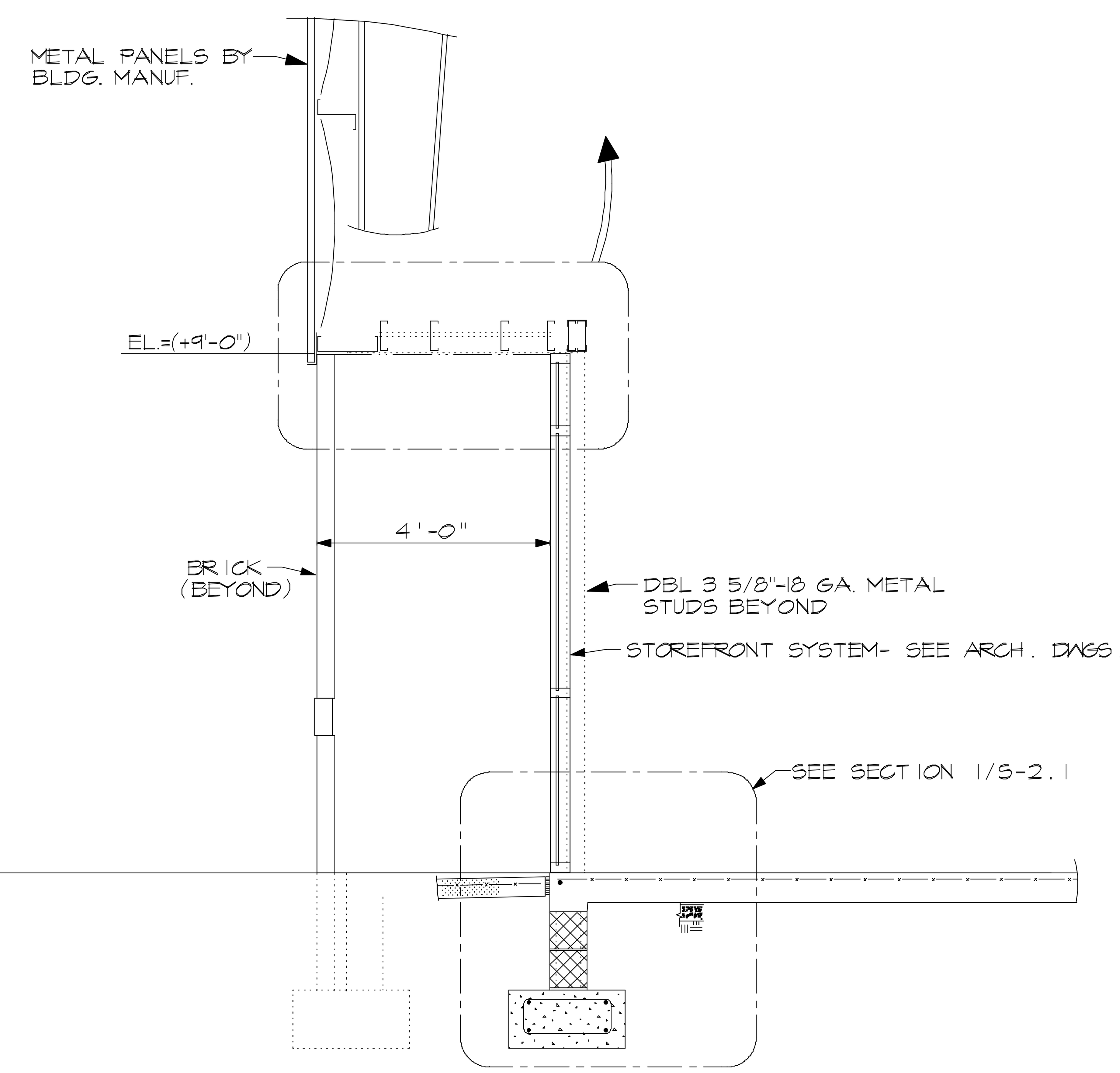


(WALL RETURNS AT ENDS ARE SIMILAR)

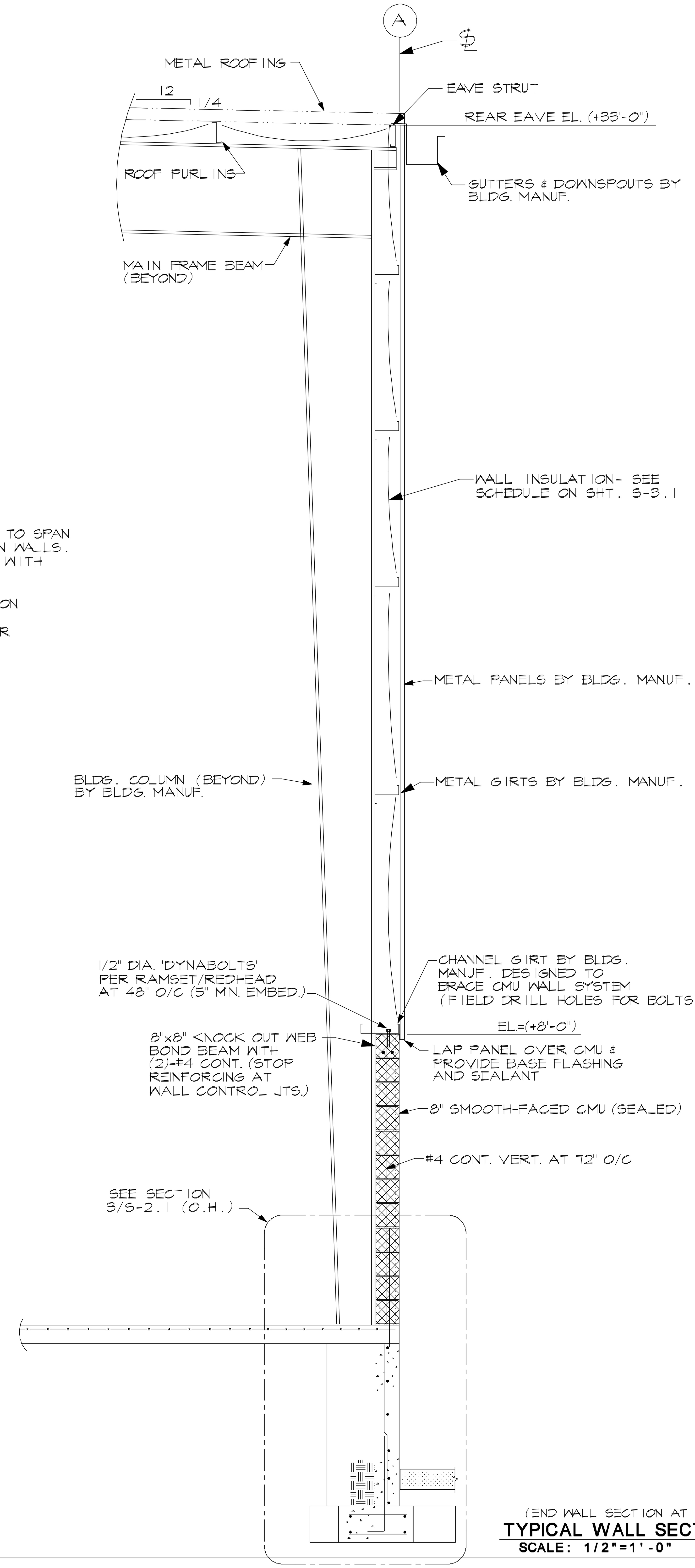
TYPICAL WALL SECTION AT FRONT
SCALE: 1/2"=1'-0"



TYP. ENLARGED SOFFIT DETAIL
SCALE: 1"=1'-0"



TYPICAL WALL SECTION AT FRONT ENTRY
SCALE: 1/2"=1'-0"



(END WALL SECTION AT LINE 11 IS SIMILAR)

TYPICAL WALL SECTION AT REAR
SCALE: 1/2"=1'-0"

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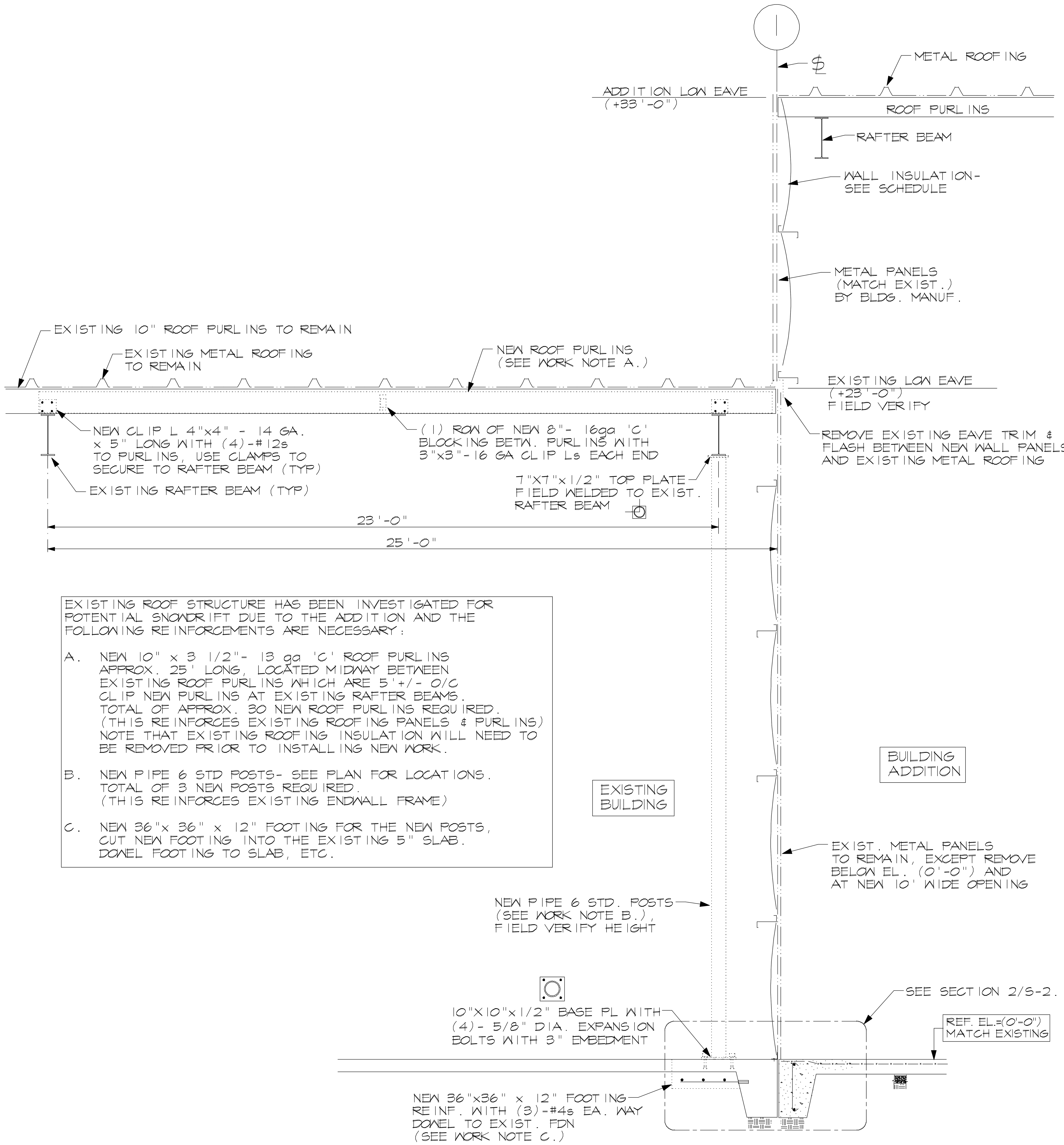
TYPICAL PERIMETER WALL SECTIONS

SHEET NO.
S-3.2



EXISTING ROOF STRUCTURE HAS BEEN INVESTIGATED FOR POTENTIAL SNOWDRIFT DUE TO THE ADDITION AND THE FOLLOWING REINFORCEMENTS ARE NECESSARY:

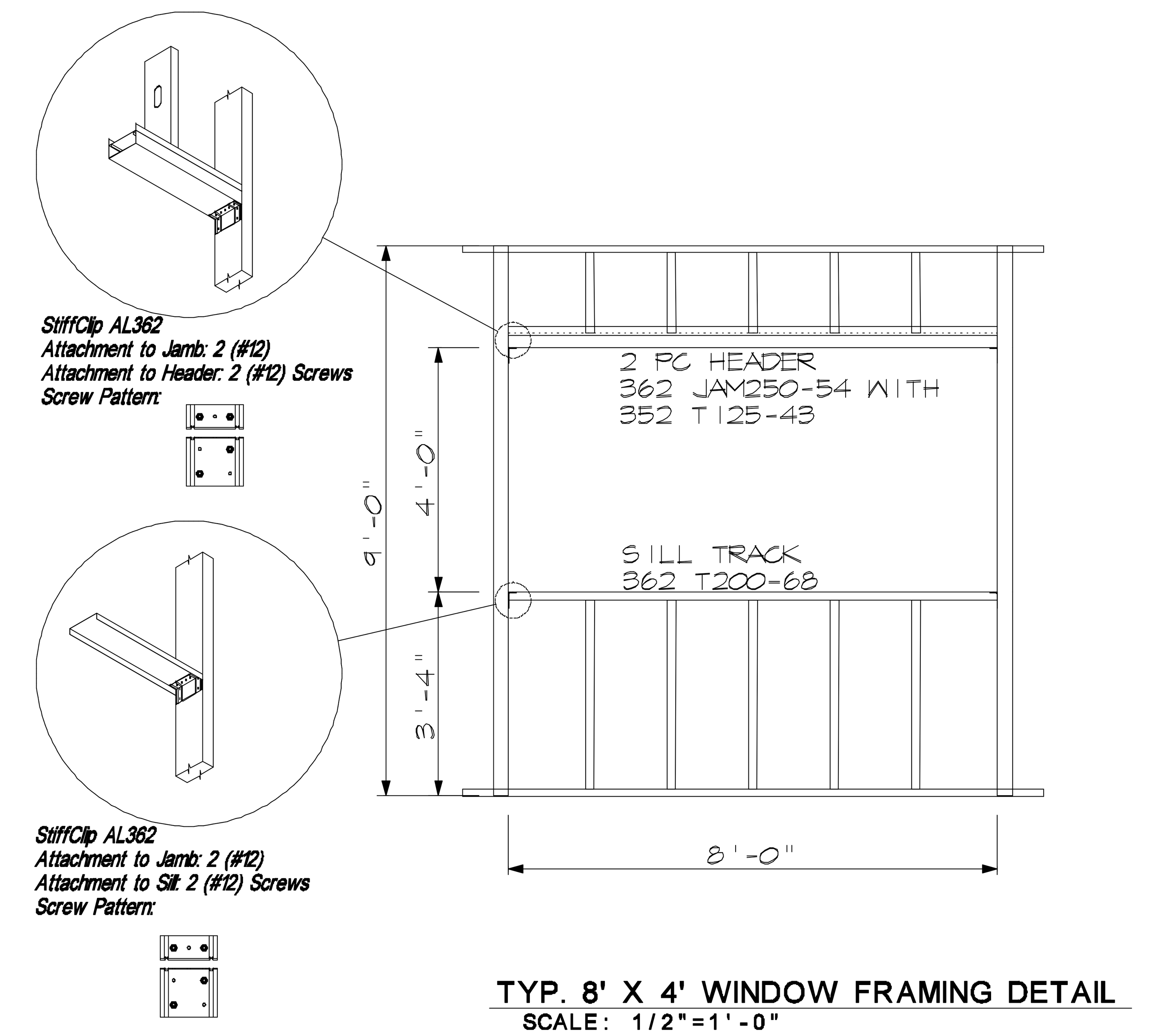
A. NEW 10" x 3 1/2"- 13 ga 'C' ROOF PURLINS APPROX. 25' LONG, LOCATED MIDWAY BETWEEN EXISTING ROOF PURLINS WHICH ARE 5'+/- O/C CLIP NEW PURLINS AT EXISTING RAFTER BEAMS. TOTAL OF APPROX. 30 NEW ROOF PURLINS REQUIRED. (THIS REINFORCES EXISTING ROOFING PANELS & PURLINS) NOTE THAT EXISTING ROOFING INSULATION WILL NEED TO BE REMOVED PRIOR TO INSTALLING NEW WORK.

B. NEW PIPE 6 STD POSTS- SEE PLAN FOR LOCATIONS. TOTAL OF 3 NEW POSTS REQUIRED. (THIS REINFORCES EXISTING ENDWALL FRAME)

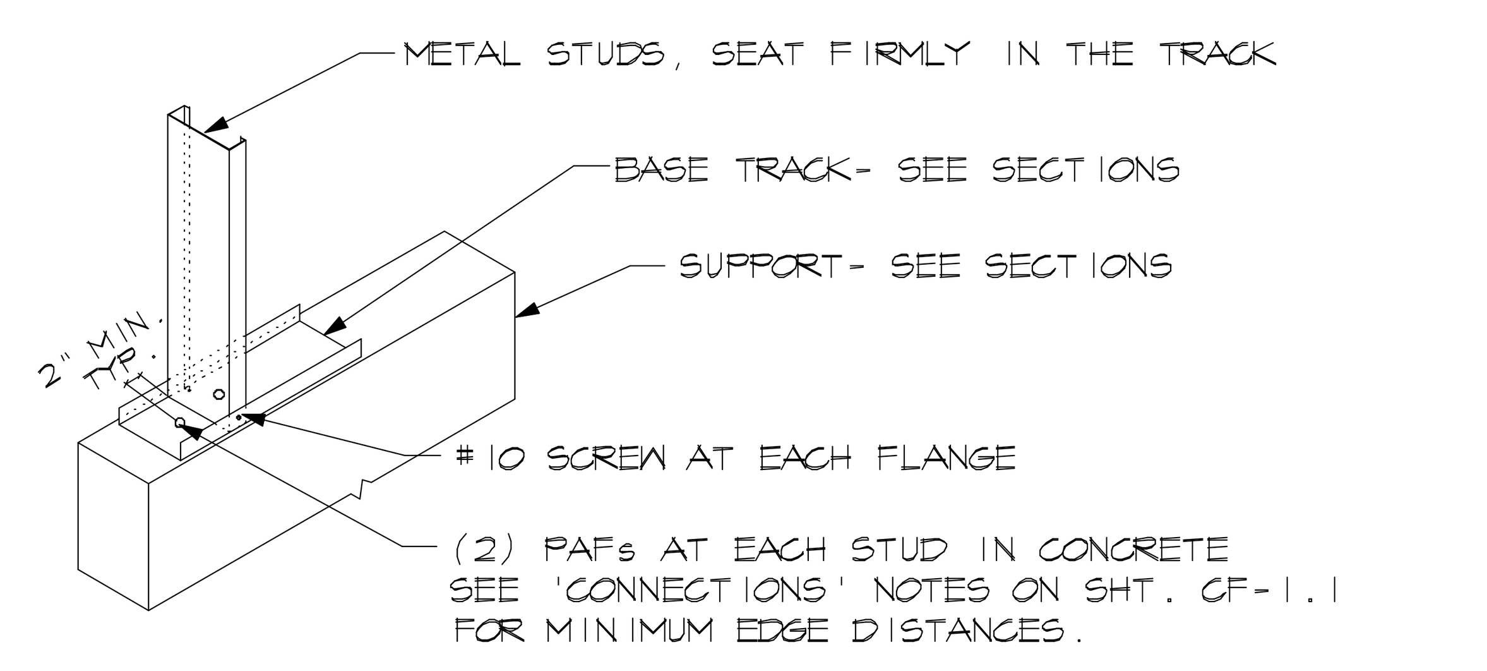
C. NEW 36"x 36" x 12" FOOTING FOR THE NEW POSTS, CUT NEW FOOTING INTO THE EXISTING 5" SLAB. DOWEL FOOTING TO SLAB, ETC.

TYP. WALL SECTION AT EXIST. ENDWALL
SCALE: 1/2"=1'-0"

WINDOW JAMB OPTIONS		
Section	362 S300-97, 50 ksi	
Section	(2) 362 S200-68, 50 ksi	

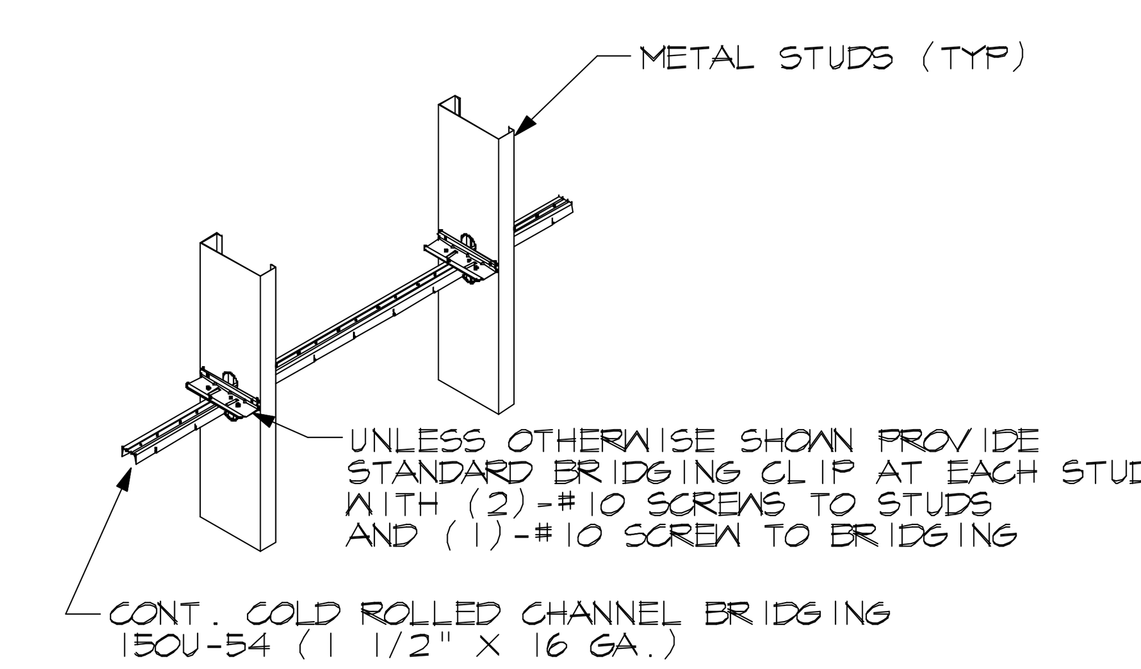


TYP. 8' X 4' WINDOW FRAMING DETAIL
SCALE: 1/2"=1'-0"



TYPICAL PAF FASTENERS:
TYPE: HILTI 'X-U'
DIA.: 0.157"
NUMBER: SEE NOTE ABOVE
MIN. LENGTH: 1 1/4" (AT CONCRETE SUPPORTS)

TYP. BASE TRACK TO SUPPORT DETAIL
NOT TO SCALE



TYP. WALL BRIDGING DETAIL
NOT TO SCALE

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TYPICAL WALL FRAMING DETAILS

SHEET NO.
S-3.3

GENERAL STRUCTURAL NOTES:

1. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE DRAWINGS OF ALL OTHER DISCIPLINES (CIVIL, ARCHITECTURAL, ETC.). THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES AND OTHER ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL SAFETY PRECAUTIONS AND REGULATIONS DURING THE WORK. THE ENGINEER WILL NOT ADVISE ON NOR ISSUE DIRECTION AS TO SAFETY PRECAUTIONS AND PROGRAMS.
3. THE STRUCTURAL DRAWINGS HEREIN REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY GUYING, SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL ALL STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED. THE INVESTIGATION, DESIGN, SAFETY, ADEQUACY AND INSPECTION OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC. IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE METHODS, TECHNIQUES AND SEQUENCES OF PROCEDURES TO PERFORM THE WORK. THE SUPERVISION OF THE WORK IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO APPROVAL BY THE ENGINEER.
6. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH THE SUPPLIER'S INSTRUCTIONS AND REQUIREMENTS.
7. LOADING APPLIED TO THE STRUCTURE DURING THE PROCESS OF CONSTRUCTION SHALL NOT EXCEED THE SAFE LOAD-CARRYING CAPACITY OF THE STRUCTURAL MEMBERS. THE LIVE LOADINGS USED IN THE DESIGN OF THIS STRUCTURE ARE INDICATED IN THE 'DESIGN CRITERIA NOTES'. DO NOT APPLY ANY CONSTRUCTION LOADS UNTIL STRUCTURAL FRAMING IS PROPERLY CONNECTED TOGETHER AND UNTIL ALL TEMPORARY BRACING IS IN PLACE.
8. ALL ASTM AND OTHER REFERENCES ARE PER THE LATEST EDITIONS OF THESE STANDARDS, UNLESS OTHERWISE NOTED.
9. SHOP DRAWINGS AND OTHER ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. ALL SHOP DRAWINGS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR BEFORE SUBMITTAL. THE ENGINEER'S REVIEW IS TO BE FOR CONFORMANCE WITH THE DESIGN CONCEPT AND FRAMING COMPLIANCE WITH THE RELEVANT CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW, CHECK AND COORDINATE THE SHOP DRAWINGS PRIOR TO SUBMISSION. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS OR OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, DIMENSIONS, ETC.
10. SUBMIT SHOP DRAWINGS IN THE FORM OF .PDF FILES SENT VIA EMAIL. AS A MINIMUM, SUBMIT THE FOLLOWING ITEMS FOR REVIEW:
    A. CONCRETE MIX DESIGN.
    B. REINFORCING STEEL SHOP DRAWINGS.
    C. PRE-ENGINEERED METAL BUILDING SYSTEM (SEE NOTES).

    OTHER SUBMITTALS MAY BE REQUIRED PER THE "SCHEDULE OF SPECIAL INSPECTIONS" OR THE SEPARATE NOTES CONTAINED HEREIN.
11. IN ACCORDANCE WITH CHAPTER 17 OF THE CODE, SPECIAL INSPECTIONS WILL BE REQUIRED FOR THIS PROJECT, PER THE LOCAL BUILDING DEPARTMENT REQUIREMENTS. SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE "SCHEDULE OF SPECIAL INSPECTIONS".

DESIGN CRITERIA NOTES:

1. THE INTENDED DESIGN STANDARDS AND/OR CRITERIA ARE AS FOLLOWS:

GENERAL	2018 VIRGINIA CONSTRUCTION CODE (MODEL BUILDING CODE IS IBC 2018)
LOADS	ASCE 7-16
CONCRETE	ACI 318-14
CONCRETE MASONRY	ACI 530
METAL FRAMING	AISI S100-16
FOUNDATIONS	SOIL BEARING CAPACITY OF 2,000 PSF PER ORIGINAL GEOTECHNICAL REPORT BY GET SOLUTIONS, DATED 6/2/2008.

2. BUILDING RISK CATEGORY : II
3. DESIGN GRAVITY DEAD LOADS USED IN THE DESIGN OF THIS STRUCTURE ARE AS FOLLOWS:

ROOF	METAL BLDG. SYSTEM WT. + 5 PSF MIN. COLLATERAL
ALL OTHER	ACTUAL WEIGHT

4. DESIGN GRAVITY LIVE LOADS USED IN THE DESIGN OF THIS STRUCTURE ARE AS FOLLOWS:

ROOF	20 PSF (REDUCIBLE DUE TO TRIBUTARY AREA)
FIRST FLOOR	550 PSF

5. DESIGN LATERAL LIVE LOADS USED IN THE DESIGN OF THIS STRUCTURE ARE AS FOLLOWS:
   WIND: 3 SECOND GUST BASIC WIND SPEED V (ult) = 117 MPH, EXPOSURE 'C' GCPI = +/- 0.18 (ENCLOSED), Gh=\$0.2 PSF, COMPONENT AND CLADDING
   NOT CONSIDERED TO BE IN 'WINDBORNE DEBRIS REGION' DUE TO WIND VELOCITY
   WIND PRESSURE = -43.5 PSF (ult), CORNER ZONE 5, 10 SF TRIB. AREA
   CONVERSION TO NOMINAL WIND SPEED V (asd) = V (ult) X 0.775
   MAIN WINDFORCE SYSTEM WIND TO BE DETERMINED BY METAL BUILDING ENGINEER
   SEISMIC: Ie=1.00, SPECTRAL RESPONSE COEFFS. Sds= 9.7 & Sd1= 6.50, SOIL SITE CLASS 'D', SEISMIC DESIGN CATEGORY 'A'
   WIND LOADS ARE ASSUMED TO GOVERN THE DESIGN OF THE MAIN SYSTEM.
6. DESIGN SNOW LOADS USED IN THE DESIGN OF THIS STRUCTURE ARE AS FOLLOWS:
   Pg (GROUND SNOW LOAD) = 10 PSF, Ce=1.0, Ct=1.0, Is=1.0, Pf= 7 PSF
   SNOW DRIFT ON EXIST. BUILDING: MAX. OF 72 PSF, MIN. OF 7.7 PSF IT' AWAY
7. THE LATERAL LOAD RESISTING SYSTEMS OF THIS BUILDING CONSISTS OF:
   HORIZONTAL DIAPHRAGMS - ROD BRACING IN ROOF
   VERTICAL SYSTEMS
   RIGID FRAMES (FIN BASED COLUMNS) ON FRAME LINES 2 THRU 10
   BRACED BAYS ON LINES 1 AND 11
   PORTAL FRAMES ON LINES A AND G
8. THIS STRUCTURE HAS BEEN DESIGNED WITH "SAFETY FACTORS" IN ACCORDANCE WITH GENERALLY ACCEPTED PRINCIPLES OF STRUCTURAL ENGINEERING. THE FUNDAMENTAL NATURE OF THE 'SAFETY FACTOR' IS TO COMPENSATE FOR UNCERTAINTIES IN THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL BUILDING COMPONENTS. IT IS INTENDED THAT "SAFETY FACTORS" BE USED SO THAT THE LOAD CARRYING CAPACITY OF THE STRUCTURE DOES NOT FALL BELOW THE DESIGN LOAD AND THAT THE BUILDING WILL PERFORM UNDER DESIGN LOAD WITHOUT DISTRESS. WHILE THE USE OF "SAFETY FACTORS" IMPLIES SOME EXCESS CAPACITY BEYOND DESIGN LOAD, SUCH EXCESS CAPACITY CANNOT BE ADEQUATELY PREDICTED AND SHALL NOT BE RELIED UPON.

EXISTING CONSTRUCTION NOTES:

1. BEFORE PROCEEDING WITH ANY WORK WITHIN THE EXISTING FACILITY, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH EXISTING STRUCTURAL AND OTHER CONDITIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL NECESSARY BRACING, SHORING AND OTHER SAFEGUARDS TO MAINTAIN ALL PARTS OF THE EXISTING WORK IN A SAFE CONDITION DURING THE PROCESS OF DEMOLITION AND CONSTRUCTION AND TO PROTECT FROM DAMAGE THOSE PORTIONS OF THE EXISTING WORK WHICH ARE TO REMAIN.
2. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS, ELEVATIONS, ETC. NECESSARY FOR THE PROPER CONSTRUCTION AND ALIGNMENT OF THE NEW PORTIONS OF THE WORK TO THE EXISTING WORK. THE CONTRACTOR SHALL MAKE ALL MEASUREMENTS NECESSARY FOR FABRICATION AND ERECTION OF STRUCTURAL MEMBERS. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. SEE SECTIONS ON SHEET S-3.2 FOR THE SNOWDRIFT INVESTIGATION (EXISTING 'BUTLER' ENDWALL CONDITION).

SITE PREPARATION NOTES:

1. WITHIN AN AREA AN AVERAGE OF 5 FEET BEYOND THE BUILDING LIMITS, EXCAVATE A MINIMUM OF 6" OF EXISTING SOIL. REMOVE ALL ORGANICS, PAVEMENT, TOPSOIL, ROOTS, DEBRIS AND OTHERWISE UNSUITABLE SOIL. AN UNDERCUT OF FROM 1' TO 2' MAY BE REQUIRED (SEE GEOTECH. REPORT).
2. THE SURFACE OF THE EXPOSED SUBGRADE SHALL BE INSPECTED BY PROBING OR TESTING TO CHECK FOR POCKETS OF SOFT OR UNSUITABLE MATERIAL. EXCAVATE UNSUITABLE SOIL AS DIRECTED BY THE GEOTECHNICAL ENGINEER / TESTING AGENCY.
3. PROOFROLL THE SURFACE OF THE EXPOSED SUBGRADE WITH A LOADED TANDEM AXLE DUMP TRUCK. REMOVE ALL SOILS WHICH PUMP OR DO NOT COMPACT PROPERLY AS DIRECTED BY THE GEOTECHNICAL ENGINEER / TESTING AGENCY.
4. FILL ALL EXCAVATED AREAS WITH APPROVED CONTROLLED FILL. PLACE IN 8 INCH LOOSE LIFTS AND COMPACT TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-698.
5. ALL CONTROLLED FILL MATERIAL SHALL BE A SELECT GRANULAR MATERIAL FREE FROM ALL ORGANICS OR OTHERWISE DELETERIOUS MATERIAL WITH NOT MORE THAN 20% BY WEIGHT PASSING A NO. 200 SIEVE (CLASSIFIED AS SP, SW, SM, SP-SM, OR SW-SM OR BETTER IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM).
6. PROVIDE FIELD DENSITY TESTS FOR EACH 5,000 S.F. OF BUILDING AREA FOR EACH LIFT OF CONTROLLED FILL.

FOUNDATION NOTES:

1. FOUNDATIONS SHALL BEAR ON COMPACTED SUBGRADE SOILS OR COMPACTED FILL CAPABLE OF SUPPORTING A NET ALLOWABLE BEARING PRESSURE OF 2,000 PSF. ALL FOUNDATION EXCAVATIONS SHALL BE EVALUATED BY THE GEOTECHNICAL ENGINEER / TESTING AGENCY PRIOR TO POURING FOUNDATION CONCRETE.
2. ALL FOOTING ELEVATIONS SHALL BE AS SHOWN ON THE FOUNDATION PLAN. THESE ELEVATIONS SHALL BE LOWERED AS REQUIRED TO OBTAIN THE REQUIRED DESIGN BEARING PRESSURE.
3. ALL FOUNDATION CONCRETE SHALL OBTAIN A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI. ANY CONCRETE PERMANENTLY EXPOSED TO WEATHER SHALL BE AIR ENTRAINED TO 5% (+/- 1%) WITH AN ADMIXTURE THAT CONFORMS TO ASTM C-260.
4. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE BUILDINGS". HOT WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305. COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.
5. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60.
6. UNLESS OTHERWISE NOTED, THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:
   A) CONCRETE CAST AGAINST & PERMANENTLY EXPOSED TO EARTH - 3"
   B) CONCRETE EXPOSED TO EARTH OR WEATHER:
      #6 THROUGH #18 BARS - 2"
      #5 BAR, W31 OR D31 WIRE & SMALLER - 1 1/2"
7. ALL REINFORCING MARKED CONT INUOUS (CONT.) ON THE PLANS AND DETAILS SHALL BE LAPPED 36xBAR DIAMETERS AT SPLICES UNLESS OTHERWISE NOTED.
8. NO UNBALANCED BACKFILLING SHALL BE DONE AGAINST FOUNDATION WALLS UNLESS WALLS ARE SECURELY BRACED AGAINST OVERTURNING, EITHER BY TEMPORARY BRACING OR BY PERMANENT CONSTRUCTION.
9. PRIOR TO COMMENCING ANY FOUNDATION WORK, COORDINATE WORK WITH ANY EXISTING UTILITIES. FOUNDATIONS SHALL BE LOWERED WHERE REQUIRED TO AVOID UTILITIES.

SLAB ON GRADE NOTES:

1. PROVIDE CONCRETE SLABS OVER A 10 MIL, POLY VAPOR BARRIER AND 4" OF POROUS FILL. PROVIDE A 3,500 PSI MIX USING TYPE I OR II CEMENT. MAXIMUM SLUMP FOR ALL CONCRETE SLABS SHALL BE 5 INCHES. MAXIMUM WATER CEMENT RATIO SHALL BE 0.50. ALL CONCRETE SLABS TO BE PERMANENTLY EXPOSED TO WEATHER SHALL BE AIR ENTRAINED TO 5% (+/- 1%) WITH AN ADMIXTURE THAT CONFORMS TO ASTM C-260.
2. ALL WELDED WIRE FABRIC (W.W.F.) SHALL BE IN ACCORDANCE WITH ASTM A-185. LOCATE ALL W.W.F. APPROX. 2" FROM THE TOP SURFACE OF THE 6" THICK SLAB. LAP ADJOINING PIECES AT LEAST ONE FULL MESH. UNLESS OTHERWISE APPROVED, ALL WELDED WIRE FABRIC SHALL BE BLOCKED UP WITH CONCRETE BRICK INTO THE POSITION INDICATED ON A 5'x5' GRID. THE USE OF POLYPROPYLENE FIBERS (IN LIEU OF WELDED WIRE FABRIC) IS PROHIBITED WITHOUT THE WRITTEN AUTHORIZATION OF THE ENGINEER.
3. THE ALTERNATE WIRES OF THE WELDED WIRE FABRIC MUST BE PRE-CUT AT THE SLAB CRACK CONTOL JOINT LOCATIONS TO CREATE A "WEAKENED PLANE". WITHOUT CUTTING THE ALTERNATE WIRES, THE STRENGTH OF THE WIRE WILL PREVENT THE SLAB FROM CRACKING (SEPARATING) AT THE JOINT AND THE SLAB MAY BEGIN TO CRACK ELSEWHERE.
4. ALL POROUS FILL MATERIAL SHALL BE A CLEAN GRANULAR MATERIAL WITH 100% PASSING A 1-1/2" SIEVE AND NO MORE THAN 5% PASSING A NO. 200 SIEVE. POROUS FILL SHALL BE COMPACTED TO 95% MAX. DRY DENSITY PER ASTM D-698.
5. ALL SAWCUT CRACK CONTROL JOINTS SHALL BE CUT AS SOON AS THE CONCRETE HAS SUFFICIENT 'SET' TO PREVENT RAVELING. JOINTS SHALL BE CUT WITH 'SOFT-CUT' SAW. REPLACE BLADE AND SKID PLATE REGULARLY TO MAINTAIN THE QUALITY OF THE JOINT.
6. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE BUILDINGS". HOT WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305. COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.
7. THE WALKS AND OTHER EXTERIOR SLABS ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS. COORDINATE ALL EXTERIOR CONCRETE WORK WITH THE SITE PLAN.
8. IN ORDER TO AVOID CONCRETE SHRINKAGE CRACKING, THE MAX. LENGTH OF SLAB CAST IN ANY ONE CONTINUOUS POUR IS RECOMMENDED TO BE LESS THAN APPROX. 125 FEET. THE SPACING OF CONTROL JOINTS SHALL BE AS SHOWN ON PLAN.
9. TAKE FOUR (4) TEST CYLINDERS FOR EVERY 50 CUBIC YARDS OR LESS OF EACH CLASS OF CONCRETE POURED EACH DAY. TAKE ONE (1) SLUMP TEST FOR EACH SET OF CYLINDERS. PERFORM SLUMP TEST FOR EACH TRUCK.
10. CURE SLABS VIA SPRAY-ON CURING COMPOUND (COORDINATE WITH G.C.)

MASONRY NOTES:

1. MASONRY CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1)" PUBLISHED BY THE AMERICAN CONCRETE INSTITUTE, DETROIT, MICHIGAN.
2. HOLLOW LOAD-BEARING MASONRY UNITS SHALL CONFORM TO ASTM C-90, GRADE N-1 AND BE MADE WITH LIGHTWEIGHT AGGREGATE. THE MINIMUM PRISM COMPRESSIVE STRENGTH (f'm) SHALL BE 1,350 PSI AT AN AGE OF 28 DAYS, AS DETERMINED BY THE UNIT STRENGTH METHOD OF ACI 530.1.
3. FILL ALL BOND BEAMS AND REINFORCED CELLS SOLIDLY WITH GROUT. GROUT SHALL CONFORM TO ASTM C-476 AND SHALL OBTAIN A MIN. 28 DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
4. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A-615 GRADE 60. SHOP FABRICATE REINFORCING BARS WHICH ARE SHOWN TO BE HOOKED OR BENT. PROVIDE A MINIMUM LAP OF 48 x BAR DIAMETERS AT ALL SPLICES, UNLESS INDICATED OTHERWISE.
5. MORTAR SHALL CONFORM TO ASTM C-270, TYPE S. ALL MORTAR SHALL MEET THE "PROPORTION SPECIFICATION" OF ASTM C-270, AND BE MADE WITH PORTLAND CEMENT/LIME (NON AIR-ENTRAINED).
6. UNLESS OTHERWISE INDICATED, ALL WALLS SHALL BE LAID IN RUNNING BOND. BOND CORNERS AND INTERSECTIONS OF LOAD-BEARING WALLS.
7. PROVIDE VERTICAL REINFORCING BARS OF THE GIVEN SIZE AND SPACING AS INDICATED. PROVIDE BARS AT ALL WALL CORNERS, INTERSECTIONS AND OPENING EDGES. MASONRY WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "LOW-LIFT" DETAIL INDICATED.
8. PROVIDE REBAR DOWELS FROM FOUNDATIONS TO MATCH VERTICAL REINFORCING SIZE AND SPACING. DOWELS SHALL HAVE STANDARD 90 DEGREE HOOKS AND LAP WITH THE FIRST LIFT OF RE INFORCING.
9. PROVIDE HORIZONTAL BOND BEAMS WITH CONTINUOUS REINFORCING AS INDICATED. FILL BOND BEAMS SOLID WITH GROUT AND RE INFORCE WITH A MIN. OF TWO, CONTINUOUS #4 BARS.
10. COORDINATE INSERTS FOR THE TOP OF WALL BRACING AT ELEVAITON ('+8'-0") WITH THE METAL BUILDING SUPPLIER.
11. PROVIDE BOND BEAM LINTELS AND BRICK SHELF ANGLES ABOVE ALL CMU & BRICK WALL OPENINGS PER THE TYPICAL DETAILS. SEE THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL DOOR AND WINDOW OPENINGS.
12. THE MASONRY CONTRACTOR SHALL PROVIDE ALL REQUIRED TEMPORARY WALL BRACING DURING CONSTRUCTION (SEE 'GENERAL STRUCTURAL NOTES').
13. PROVIDE TWO PIECE ADJUSTBLE VENEER TIES (GALV. PER ASTM A153), WIRE SIZE W1.7 (9 gauge) TO COVER A MAX. AREA OF 2.67 SF PER TIE. SEE SECTIONS FOR TIE TYPE AND SPACING. CONNECT BASE ANCHORS TO STUDS WITH (2)-#10 ZING SCREWS, 1/2" MIN. INTO STUDS TRIANGULAR TIES: COORDINATE WITH CAVITY SIZE, EMBED 2" MIN. INTO VENEER.

CFMF PRODUCT IDENTIFICATION AND REQUIREMENTS:

1. THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) STANDARDS ARE USED IN THIS SUBMITTAL. ANY MANUFACTURER WHOSE PRODUCT MEETS OR EXCEEDS THE SSMA STANDARDS ARE ACCEPTABLE. SEE NOTES BELOW FOR NOMENCLATURE.

   362S162-43
   - 43 — THICKNESS (mils)
   - S — FLANGE SIZE
   - 162 — MEMBER TYPE
   - 362 — WEB SIZE

2. THE FIRST SET OF NUMBERS INDICATE THE WEB SIZE (NOMINAL MEMBER DEPTH).
   3 5/8" MEMBER = 362
   6" MEMBER = 600
3. THE LETTER INDICATES THE MEMBER TYPE:
   STANDARD / STUD SHAPE = S
   TRACK = T
   TSN JAMB STUD = JAM
4. THE SECOND SET OF NUMBERS INDICATES THE FLANGE SIZE:
   1 1/4" FLANGE= 125 (WITH 0.188" MIN. LIP)
   1 3/8" FLANGE= 137 (WITH 0.375" MIN. LIP)
   1 5/8" FLANGE= 162 (WITH 0.500" MIN. LIP)
   2" FLANGE= 200 (WITH 0.625" MIN. LIP)
5. THE LAST SET OF NUMBERS INDICATES THE MATERIAL THICKNESS:

GAUGE	SSMA MINIMUM	COLOR CODING
20 = 33 mils	0.0329"	WHITE
18 = 43 mils	0.0428"	YELLOW
16 = 54 mils	0.0538"	GREEN
14 = 68 mils	0.0677"	ORANGE

6. THE MINIMUM ACCEPTABLE FLANGE WIDTHS AND THICKNESSES ARE SHOWN. INCREASED FLANGE WIDTHS AND HEAVIER THICKNESSES MAY BE SUBSTITUTED.

COLD FORMED METAL FRAMING (CFMF) NOTES:

1. ALL FIELD CUTTING OF STRUCTURAL FRAMING MUST BE DONE BY SAWING OR SHEARING. TORCH CUTTING IS NOT PERMITTED.
2. NOTCHING OR COPING OF STRUCTURAL FRAMING IS NOT PERMITTED UNLESS OTHERWISE SHOWN OR APPROVED IN WRITING BY THE ENGINEER.
3. ENDS OF STUDS MUST SEAT FIRMLY IN THE TRACKS, WHICH MUST HAVE FULL BEARING ON THE STRUCTURE.
4. UNLESS OTHERWISE INDICATED, SPLICING OF STRUCTURAL FRAMING IS NOT PERMITTED EXCEPT FOR TRACKS AND BRIDGING.
5. THE MINIMUM ACCEPTABLE FLANGE WIDTHS AND THICKNESSES ARE SHOWN. INCREASED FLANGE WIDTHS AND HEAVIER THICKNESSES MAY BE SUBSTITUTED.
6. ALL MEMBERS SHALL HAVE A MIN. YIELD STRENGTH AS FOLLOWS:
   43 mil AND LIGHTER - 33 ksi
   54 mil AND HEAVIER - 50 ksi
7. ALL METAL TO BE IN ACCORDANCE WITH ASTM A653, WITH G60 GALVANIZED COATING.
8. WHERE PROVIDED, FACTORY PUNCH OUTS MUST BE CENTERED ON THE MEMBER AND BE SPACED AT A MIN. OF 24" ON CENTER. PUNCH OUTS SHALL HAVE A MAXIMUM WIDTH OF 1/2 OF THE MEMBER DEPTH (2 1/2" MAX. LIMIT) AND A MAX. LENGTH OF 4 1/2". ALL MEMBERS MAY HAVE PUNCH OUTS UNLESS OTHERWISE NOTED.

CFMF CONNECTIONS:

1. ALL SCREWS SHALL BE A MIN. OF #10, EXCEPT WHERE A LARGER DIAMETER IS INDICATED. ALL SCREWS SHALL BE SELF TAPPING AND CONFORM TO SAE J78. A MIN. OF 3 THREADS SHALL EXTEND THROUGH THE STEEL. SCREWS SHALL PENETRATE THE COMPONENTS WITHOUT CAUSING PERMANENT SEPARATION BETWEEN THE COMPONENTS. SCREWS SHALL BE INSTALLED IN A MANNER SUCH THAT THE THREADS OR HOLES ARE NOT STRIPPED.
2. UNLESS OTHERWISE SHOWN PROVIDE THE FOLLOWING SCREWS CONNECTORS:
   AT TRACK TO STUD FLANGES: ONE #10-16 x 5/8" (PAN HEAD)
   AT FRAMING LAPS: THREE #12-24 x 1 1/4" (HEX HEAD)
3. UNLESS OTHERWISE SHOWN, PROVIDE THE FOLLOWING MIN. SCREW SPACINGS IN METAL TO METAL FRAMING CONNECTIONS:
   EDGE DISTANCE = 3/4" MIN. (TO ALL EDGES OR CORNERS)
   CENTER TO CENTER SPACING = 3/4" MIN.
4. ALL POWER ACTUATED FASTENERS (PAF) SHALL BE IN ACCORDANCE WITH 'HILTI' OR APPROVED EQUAL. INSTALL ALL PAFS PER THE SUPPLIER'S INSTRUCTIONS AND REQUIREMENTS.
5. UNLESS OTHERWISE SHOWN, PROVIDE THE FOLLOWING PAF CONNECTORS:
   TO CONCRETE OR CMU: TWO, HITLI TYPE 'X-U', 0.157" DIA (1 1/4" MIN. LENGTH) AT EA. STUD
   TO HOT ROLLED STEEL: ONE, HITLI TYPE 'X-U', 0.157" DIA (5/8" MIN. LENGTH) AT EA. STUD
6. UNLESS OTHERWISE SHOWN, PROVIDE THE FOLLOWING MIN. PAF SPACINGS:
   EDGE DISTANCE = 2 1/2" MIN. TO ALL CONCRETE EDGES OR CORNERS
   = 3/4" MIN. TO ALL HOT ROLLED STEEL EDGES OR CORNERS
   CENTER TO CENTER SPACING = 4" MIN. IN CONCRETE OR CMU, 3" MIN. IN STEEL
7. IF FIELD WELDING IS REQUIRED, WELDING SHALL CONFORM TO THE AWS D1.3 SPECIFICATION FOR WELDING SHEET STEEL IN STRUCTURES. TOUCH UP ALL FIELD WELDS WITH A ZINC RICH PAINT.
8. ALL CLIPS SHALL BE PER 'THE STEEL NETWORK', OR APPROVED EQUAL.

PRE-ENGINEERED METAL BUILDING NOTES:

1. THE ENTIRE PRE-ENGINEERED METAL BUILDING SYSTEM SHALL BE DESIGNED BY THE METAL BUILDING MANUFACTURER IN CONFORMANCE TO THE PROVISIONS OF THE APPLICABLE BUILDING CODE (SEE 'DESIGN CRITERIA NOTES') AND THE METAL BUILDING 'LOW-RISE BUILDING SYSTEMS MANUAL' AS PUBLISHED BY THE METAL BUILDING MANUFACTURER'S ASSOCIATION, WHERE THESE CRITERIA CONFLICT, THE MORE STRINGENT CRITERIA SHALL APPLY.
2. IT IS THE PRE-ENGINEERED METAL BUILDING MANUFACTURER'S RESPONSIBILITY TO DESIGN THE COMPLETE BUILDING SYSTEM (STEEL FRAMING, ANCHOR RODS/BOLTS, PURLINS, GIRTS, BRACINGS, CONNECTIONS, ROOFING, WALL PANELS, COMPONENTS, ATTACHMENTS, ETC.). THE MANUFACTURER SHALL SUBMIT A CERTIFICATION LETTER BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN VIRGINIA STATING THAT THE BUILDING SYSTEM DESIGN MEETS THE INDICATED CODE, PERFORMANCE AND LOADING REQUIREMENTS.
3. THE PRE-ENGINEERED METAL BUILDING MANUFACTURER SHALL BE CERTIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE ENTIRE METAL BUILDING SYSTEM FOR REVIEW. THE CONTRACTOR SHALL ALSO SUBMIT A COMPLETE STRUCTURAL DESIGN ANALYSIS OF THE BUILDING SYSTEM (FOR RECORD PURPOSES ONLY). THE SHOP DRAWING SUBMITTAL SHALL INCLUDE ALL ANCHOR BOLT REQUIREMENTS AND FOUNDATION REACTIONS. ALL SHOP DRAWINGS AND CALCULATION SUBMITTALS SHALL BEAR THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN VIRGINIA.
5. DESIGN LOADS TO BE USED IN CONNECTION WITH THE METAL BUILDING DESIGN ARE PER THE 'DESIGN CRITERIA NOTES'. IN ADDITION TO THE ACTUAL ROOF DEAD LOAD, AN ADDITIONAL COLLATERAL ROOF FRAMING DEAD LOAD SHALL BE INCLUDED PER THE 'DESIGN CRITERIA NOTES'. CONTRACTOR TO COORDINATE ALL EQUIPMENT LOADS (HVAC, PIPING, ETC.) WITH THE SUBCONTRACTOR'S DRAWINGS, OWNER'S RTU REQUIREMENTS, ETC.
6. CALCULATIONS FOR FRAME DEFLECTIONS SHALL BE DONE USING ONLY THE BARE FRAME METHOD. REDUCTIONS BASED ON ENGINEERING JUDGEMENT USING THE ASSUMED COMPOSITE STIFFNESS OF THE BUILDING ENVELOPE SHALL NOT BE PERMITTED. DRIFT SHALL FOLLOW AISC'S "SERVICEABILITY DESIGN CONSIDERATIONS FOR LOW-RISE BUILDINGS." CALCULATIONS SHALL BE SUBMITTED VERIFYING THAT THE ACTUAL DRIFT UNDER CODE REQUIRED LOADINGS DOES NOT EXCEED THE ALLOWABLE.
7. THE PRE-ENGINEERED MANUFACTURER SHALL PROVIDE ALL PURLINS, GIRTS, GIRDERS, JAMB CHANNELS AND OTHER COMPONENTS REQUIRED FOR A COMPLETE SYSTEM. ALL PERIMETER WALL SYSTEMS SHALL BE PROPERLY SUPPORTED BY THE METAL BUILDING SYSTEM. ALLOWABLE DEFLECTIONS OF COMPONENTS SHALL BE IN ACCORDANCE WITH SECTION 1604.3 OF THE BUILDING CODE.
8. THE FOUNDATION DESIGN IS BASED UPON A GENERIC BUILDING SYSTEM AND CALCULATED REACTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORD. OF ANY REVISIONS REQUIRED AS A RESULT OF A CHANGE IN THE BUILDING MANUFACTURER, INCLUDING REDESIGN OF THE FOUNDATIONS.
9. THE SIZE, NUMBER AND PLACEMENT PATTERN OF ALL ANCHOR RODS (BOLTS) SHALL BE DETERMINED BY THE PRE-ENGINEERED BUILDING MANUFACTURER. ANCHOR EMBEDMENTS ARE INDICATED ON THE DRAWINGS. PROVIDE A MINIMUM NUMBER OF FOUR ANCHOR RODS (BOLTS) AT ALL FRAME COLUMNS.
10. THE METAL BUILDING ERECTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING (SEE 'GENERAL STRUCTURAL NOTES').
11. UNLESS OTHERWISE NOTED OR SPECIFIED, ALL STEEL MEMBERS SHALL CLEANED AND PAINTED PER THE METAL BUILDING MANUFACTURER'S STANDARD REQUIREMENTS.

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GENERAL CONTRACTORS

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COMMONWEALTH OF VIRGINIA
12/14/22
DAVID WILLIAMS
Lic. No. 014564
PROFESSIONAL ENGINEER

Project: 2230
Drawn: DRW
Checked: DRW
Date: 12/14/22

Revisions

Mark	Date
1	x/x/22

SHELL WAREHOUSE BUILDING- PHASE 2
NORTHGATE COMMERCE PARK
1965 NORTHGATE COMMERCE PARKWAY — SUFFOLK, VIRGINIA
STRUCTURAL NOTES

SHEET NO.
S-4.1