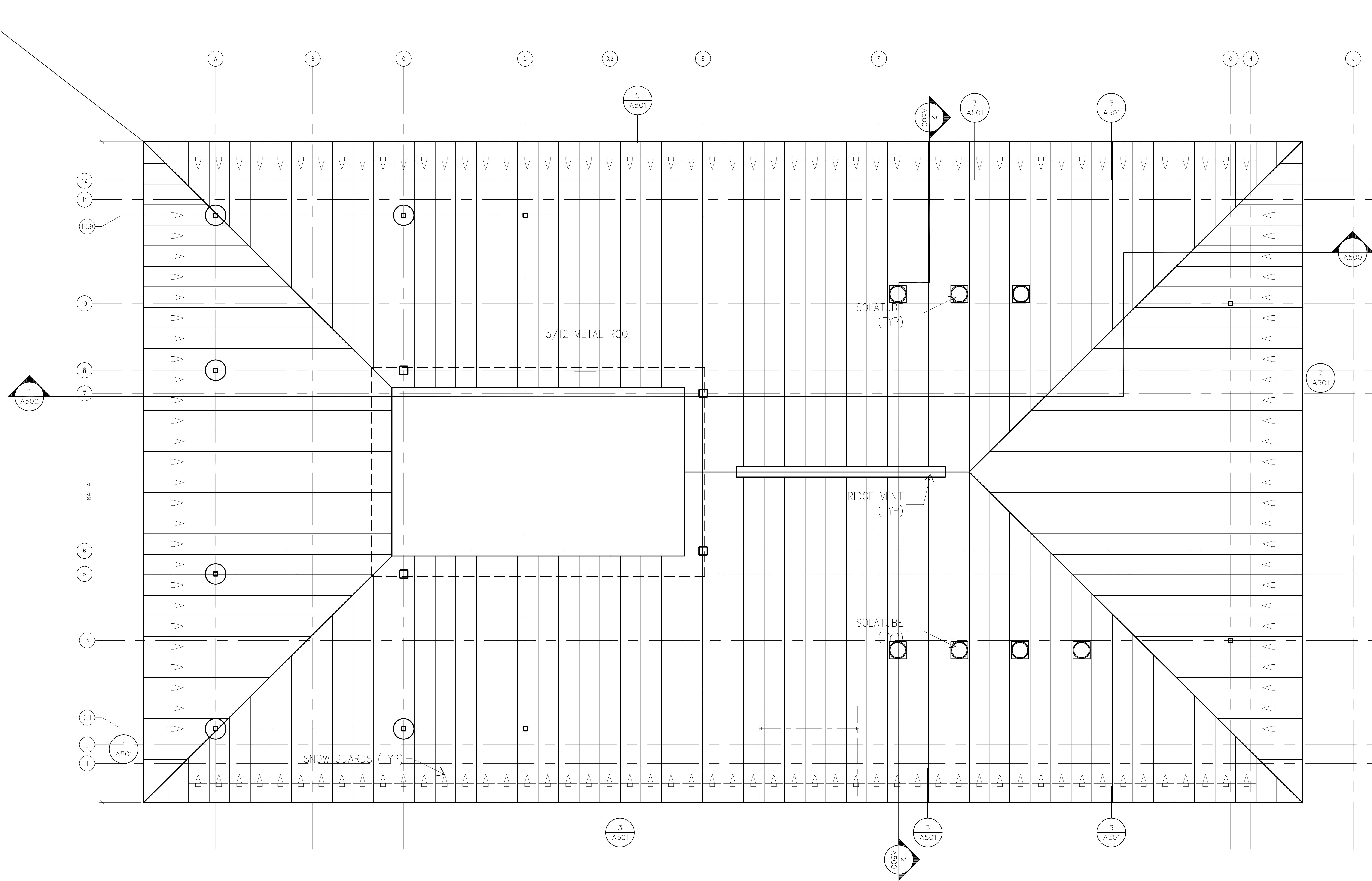
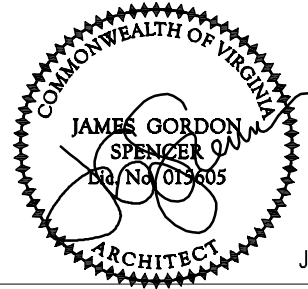
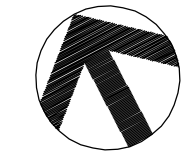


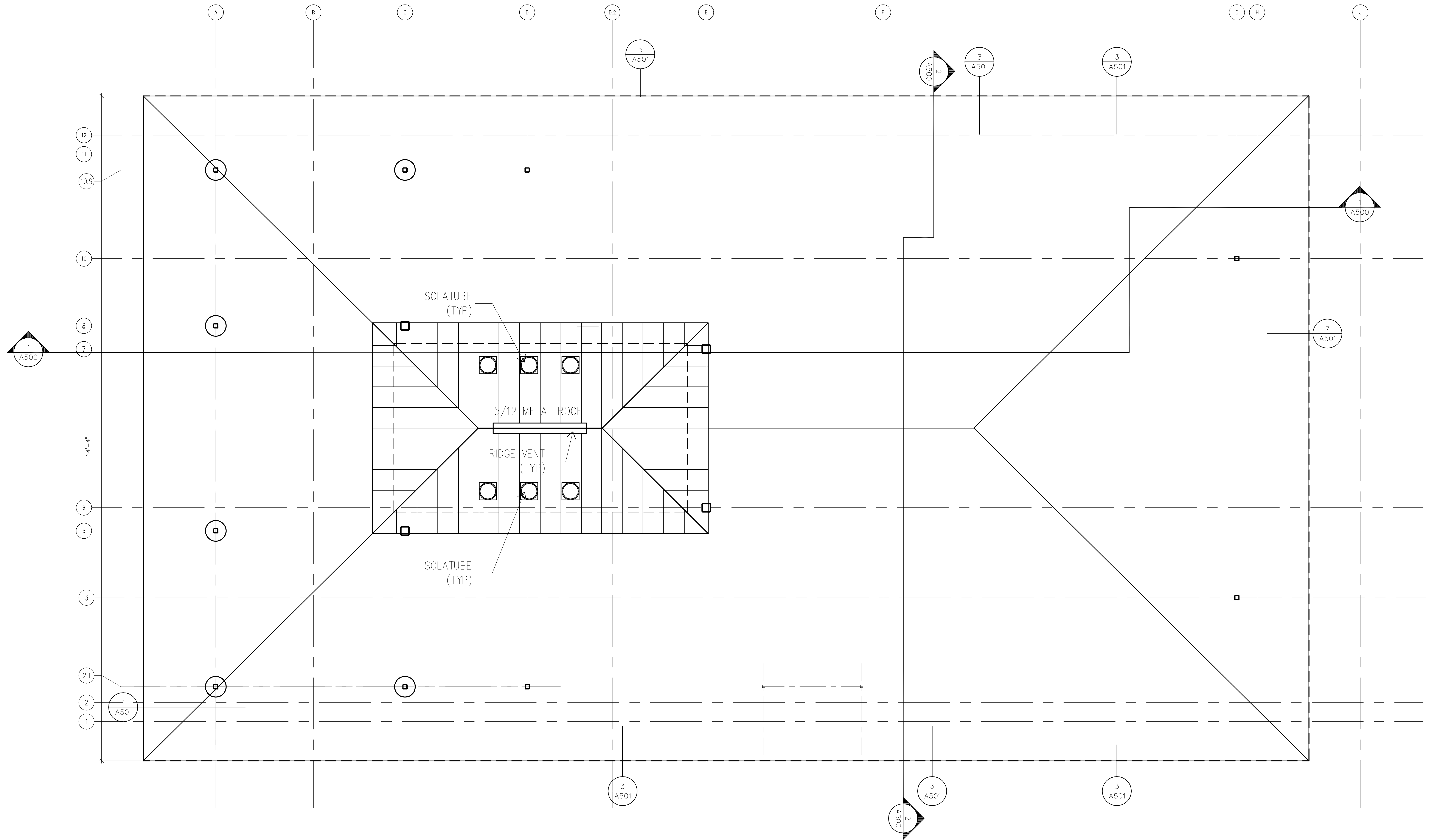


LOWER ROOF PLAN

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

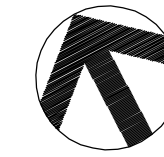


Revisions	CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: MACTEC MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085	ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424	MEP ENGINEER: Thompson Company consulting engineers 50 Technology Parkway South Norcross, Georgia 30092 404. 266. 1400 www.tcieng.com Atlanta, Dubai, UAE Orlando, Mexico City, Mexico Houston, Tortola, BVI	SURVEY: HALDER SURVEYS 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708	 NATIONAL CEMETERY ADMINISTRATION	Drawing Title LOWER ROOF PLAN Approved: Director, Technical Support Service Approved: Chief, Architectural & Engineering Division	Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY Building Number Checked Drawn Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA	Date 7-29-11 Project No. 872CM3035 DRAWING NO. A101 Dwg. 42 of 80	



UPPER ROOF PLAN

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



JULY 29, 2011

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:



MACTEC ENGINEERING AND CONSULTING, INC.
3200 TOWN POINT DR., KENNESAW, GA. 30144
TEL: (770) 421-3400 FAX: (770) 421-3486

MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:



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NATIONAL
CEMETERY
ADMINISTRATION

Drawing Title

UPPER ROOF PLAN

Approved: Director, Technical Support Service

Approved: Chief, Architectural & Engineering Division

Project Title

ADMINISTRATION / PUBLIC
INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY

Building Number

Checked

Drawn

Location

18424 JOPLIN ROAD
TRIANGLE, VIRGINIA

Date

7-29-11

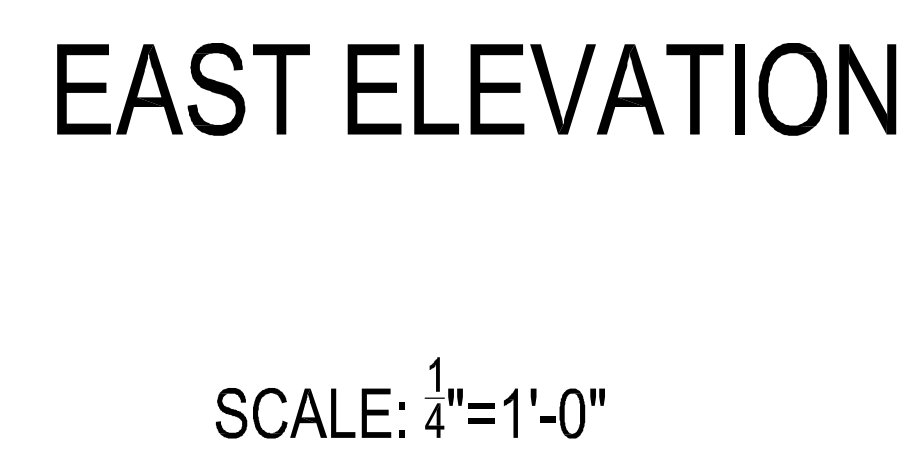
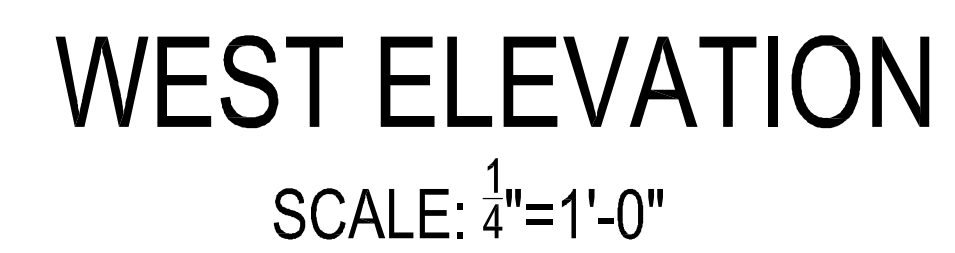
Project No.

872CM3035

DRAWING NO.

A102

Dwg. 43 of 80



JULY 29, 2011

A200
Dwg. 44 of 80

Revisions	Date
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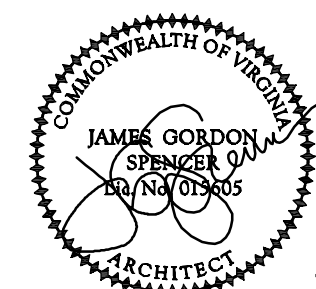
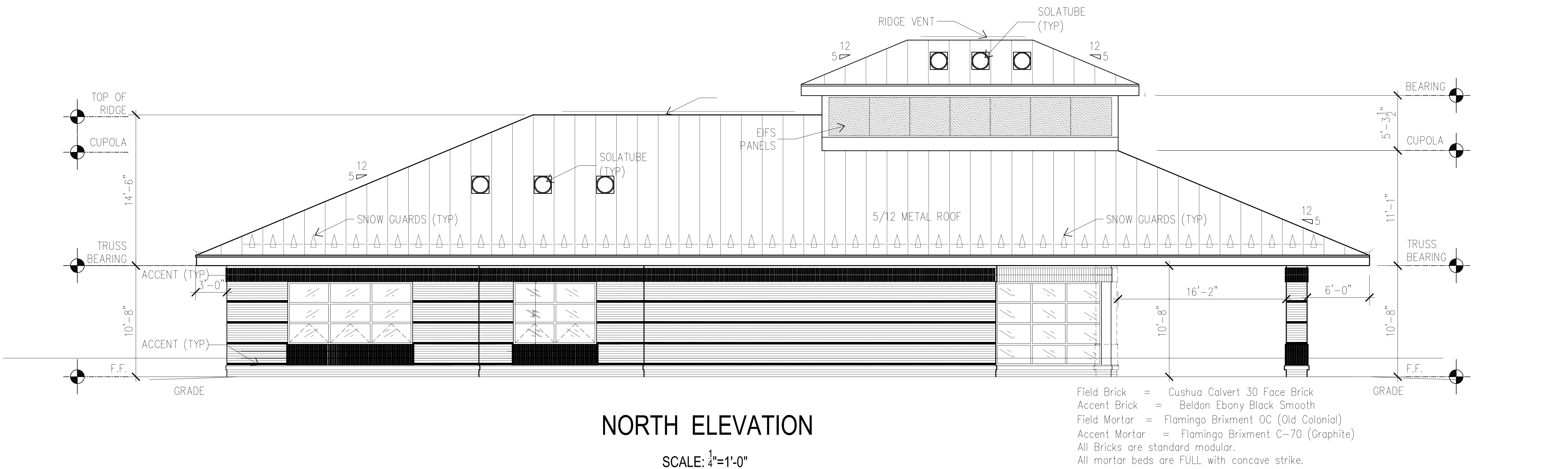
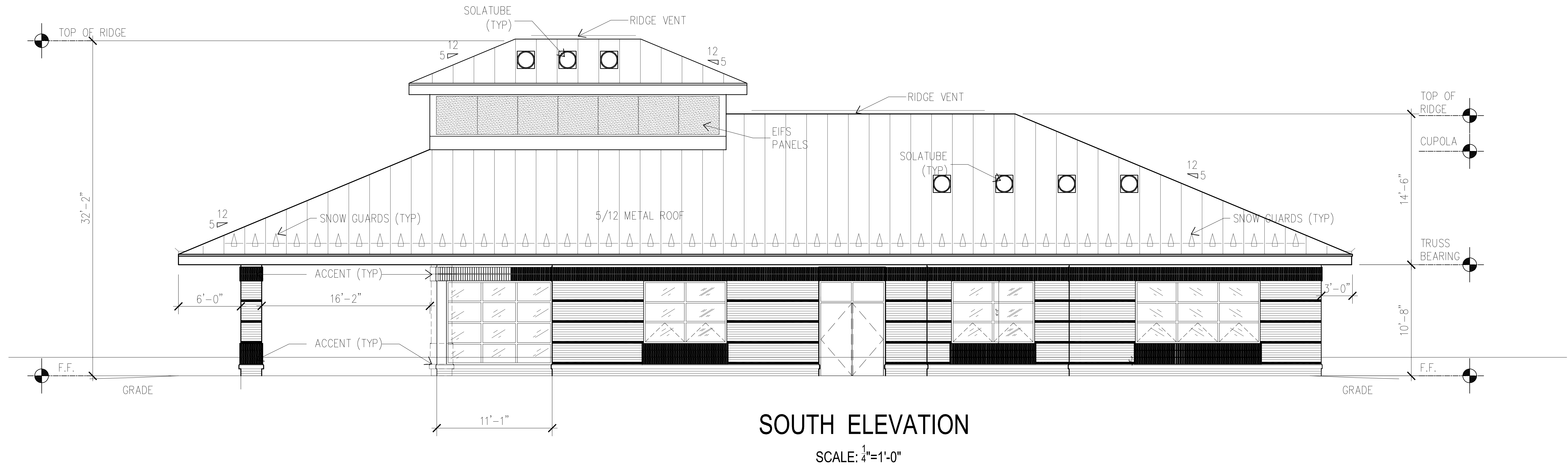
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JULY 29, 2011

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MACTEC
MACTEC ENGINEERING AND CONSULTING, INC.
3200 TOWN POINT DR., KENNESAW, GA. 30144
TEL: (770) 421-3400 FAX: (770) 421-3486
MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:
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SURVEY:
HALDER SURVEYS
10400 CHESTER ROAD, CHESTER, VA 23831
TEL: (804) 748-8707 FAX: (804) 748-8708

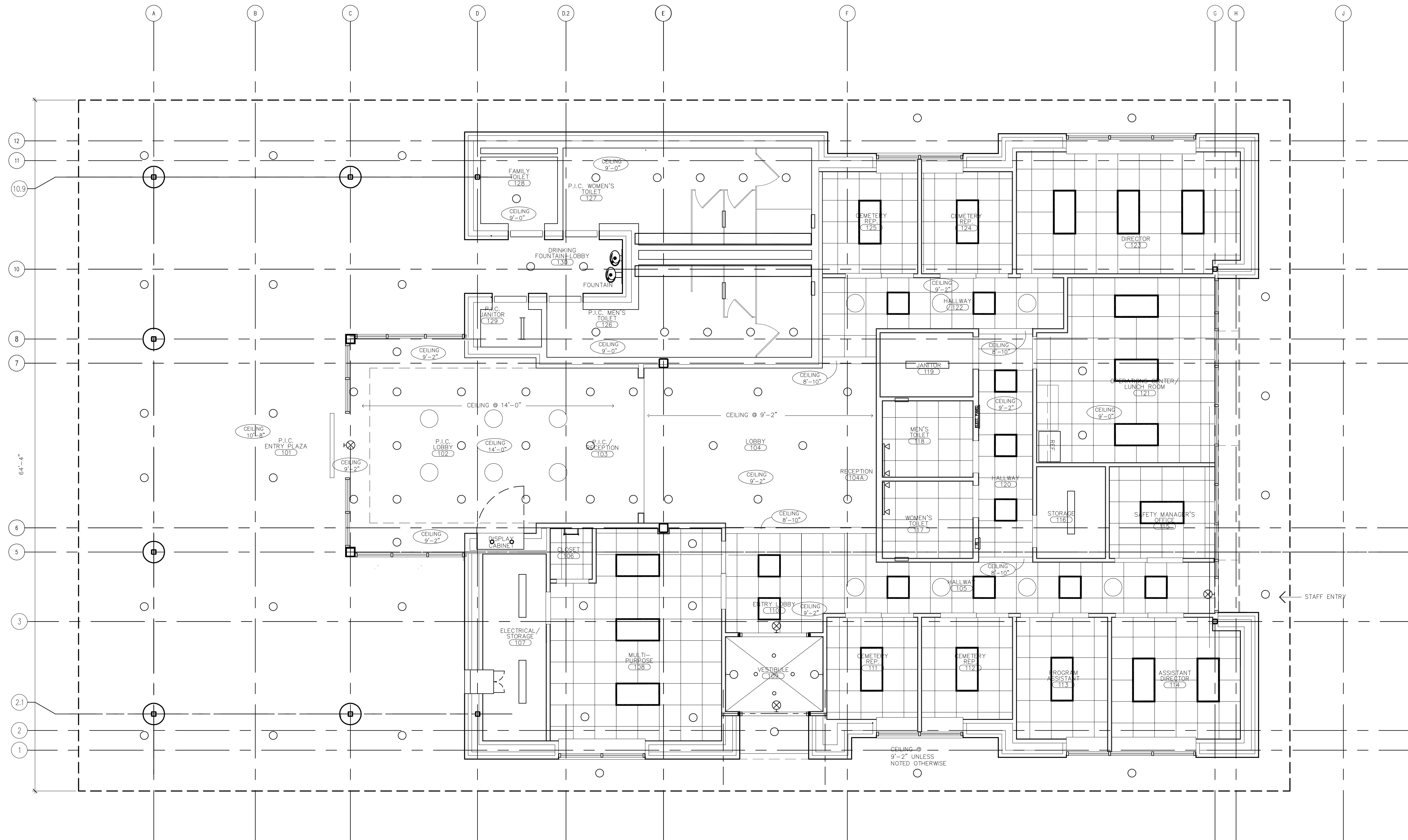


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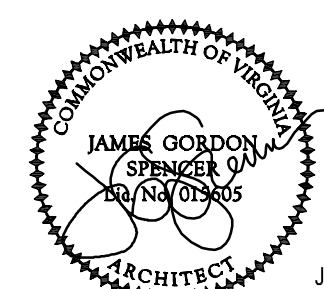
Drawing Title
EXTERIOR ELEVATIONS
Approved: Director, Technical Support Service
Approved: Chief, Architectural & Engineering Division

Project Title
**ADMINISTRATION / PUBLIC
INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY**
Building Number
Checked
Drawn
Location
**18424 JOPLIN ROAD
TRIANGLE, VIRGINIA**

Date
7-29-11
Project No.
872CM3035
DRAWING NO.
A201
Dwg. 45 of 80



REFLECTED CEILING PLAN



JULY 29, 2011

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:
MACTEC
MACTEC ENGINEERING AND CONSULTING, INC.
3200 TOWN POINT DR., KENNESAW, GA. 30144
TEL: (770) 421-3400 FAX: (770) 421-3486
MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:
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703-525-0424

MEP ENGINEER:
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consulting engineers
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Houston, Toronto, BVI

SURVEY:
HALDER SURVEYS INC.
10400 CHESTER ROAD, CHESTER, VA 23831
TEL: (804) 748-8707 FAX: (804) 748-8708

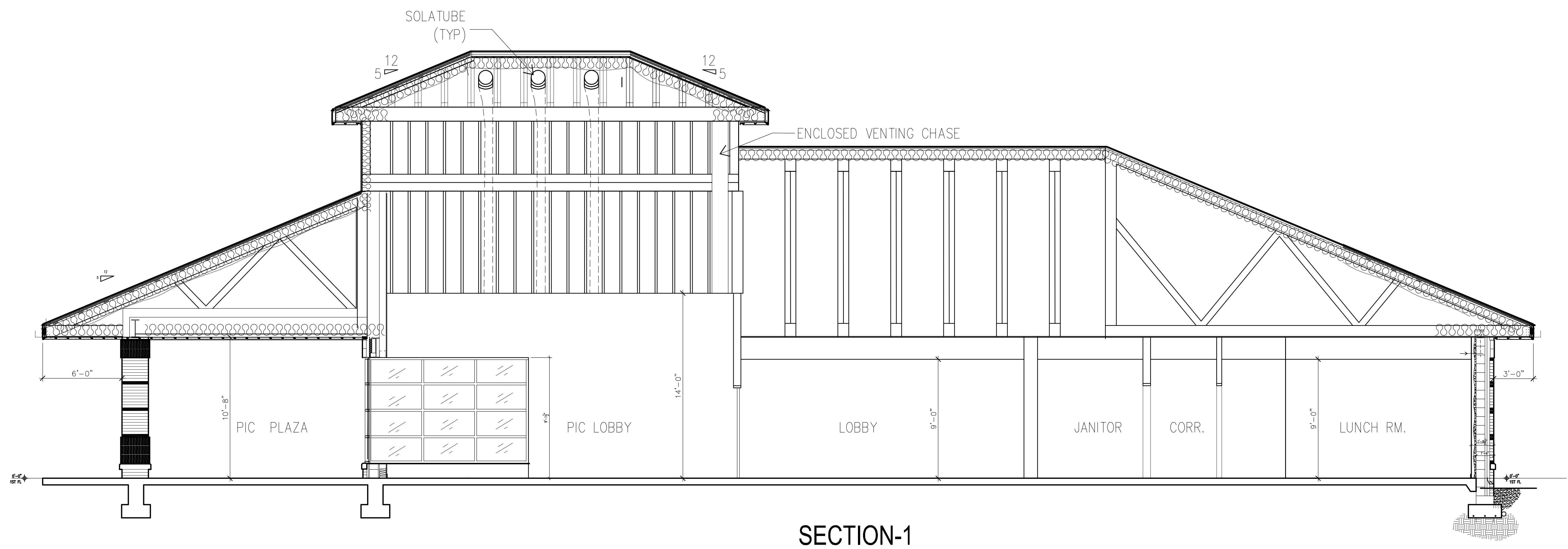
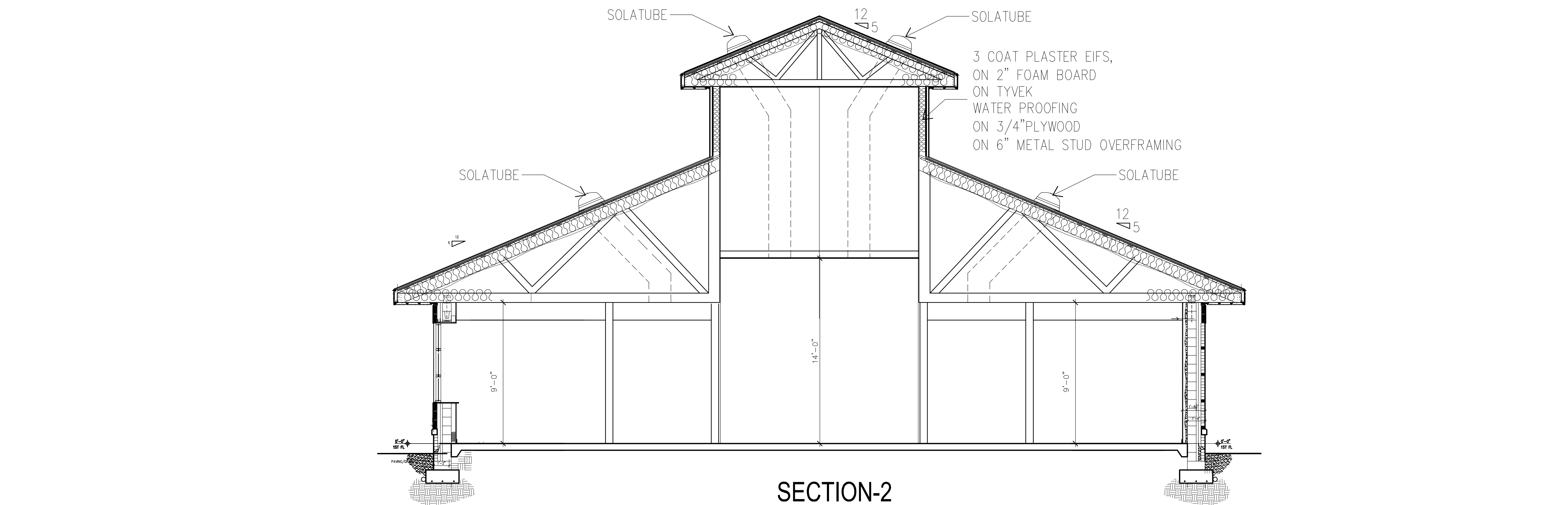


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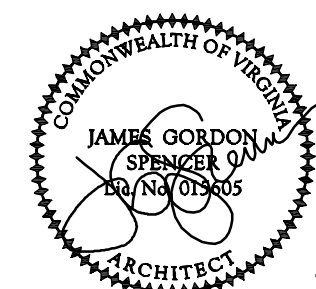
Drawing Title
REFLECTED CEILING PLAN
Approved: Director, Technical Support Service
Approved: Chief, Architectural & Engineering Division

Project Title
**ADMINISTRATION / PUBLIC
INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY**
Building Number
Checked
Drawn
Location
**18424 JOPLIN ROAD
TRIANGLE, VIRGINIA**

Date
7-29-11
Project No.
872CM3035
DRAWING NO.
A400
Dwg. 46 of 80



BUILDING SECTIONS



JULY 29, 2011

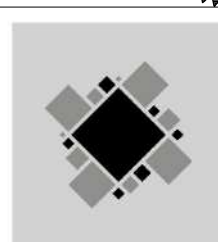
CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:

MACTEC

MACTEC ENGINEERING AND CONSULTING, INC.
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TEL: (770) 421-3400 FAX: (770) 421-3486

MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:



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**NATIONAL
CEMETERY
ADMINISTRATION**

Drawing Title

BUILDING SECTIONS

Approved: Director, Technical Support Service

Approved: Chief, Architectural & Engineering Division

Project Title

**ADMINISTRATION / PUBLIC
INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY**

Building Number

Checked

Drawn

Location

**18424 JOPLIN ROAD
TRIANGLE, VIRGINIA**

Date

7-29-11

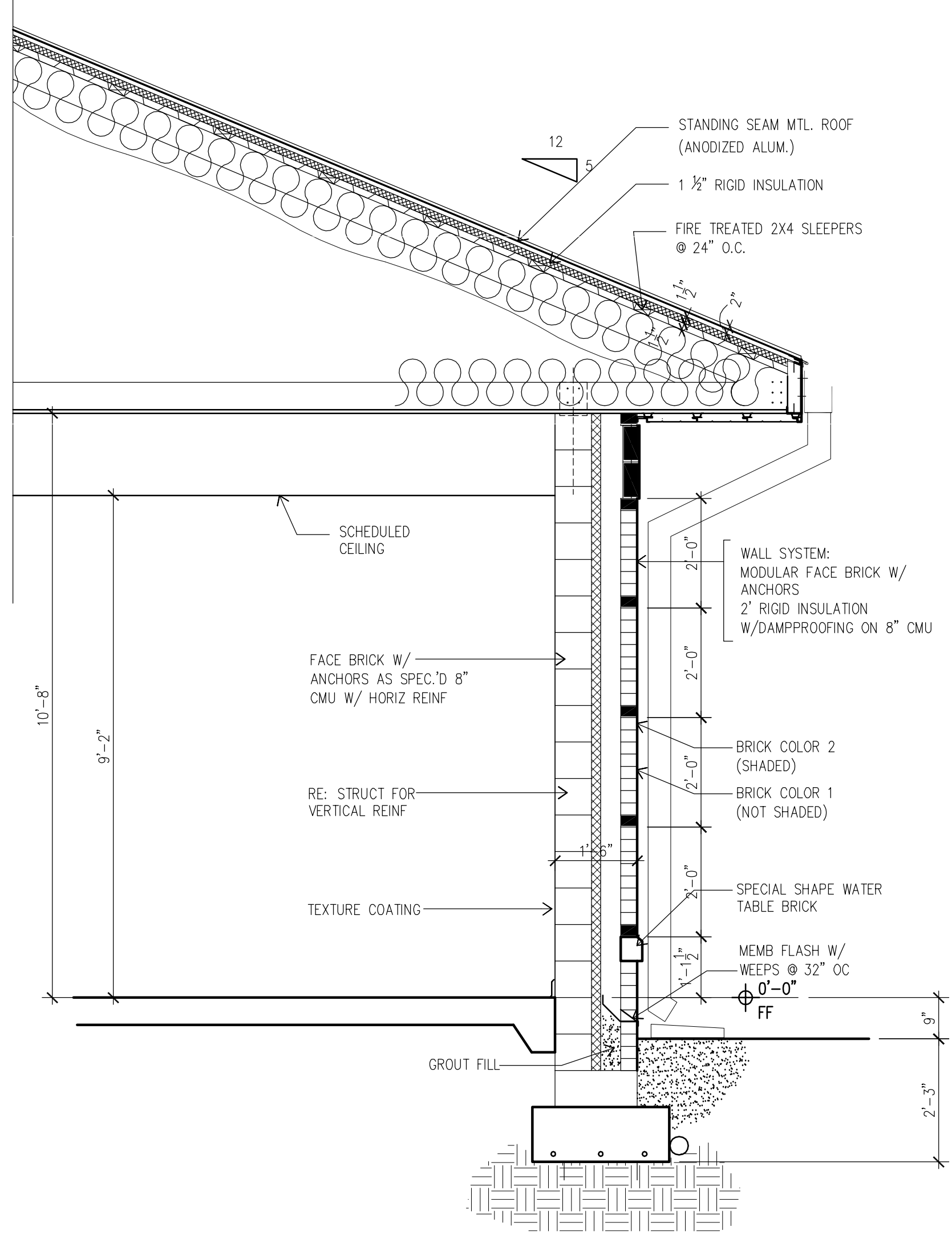
Project No.

872CM3035

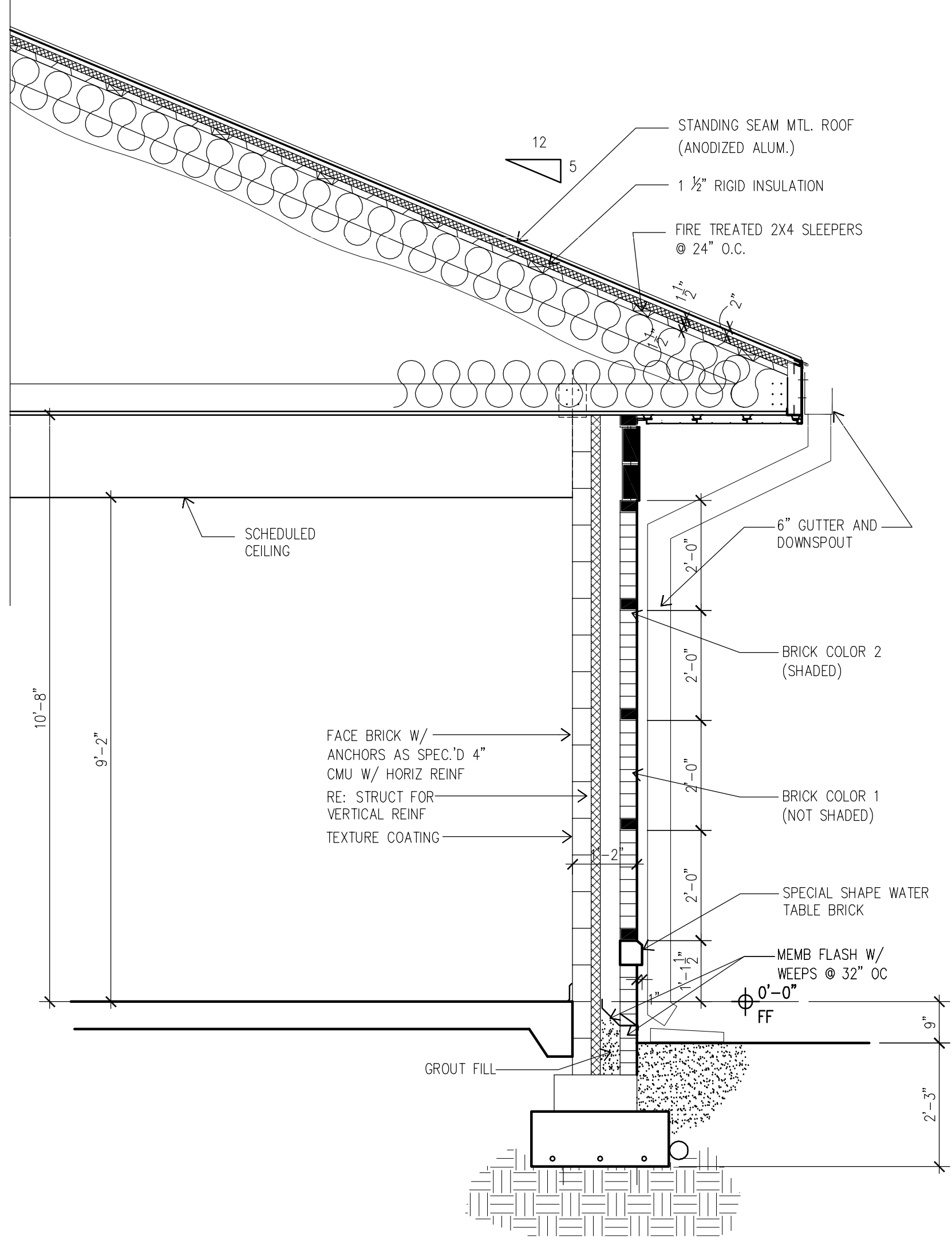
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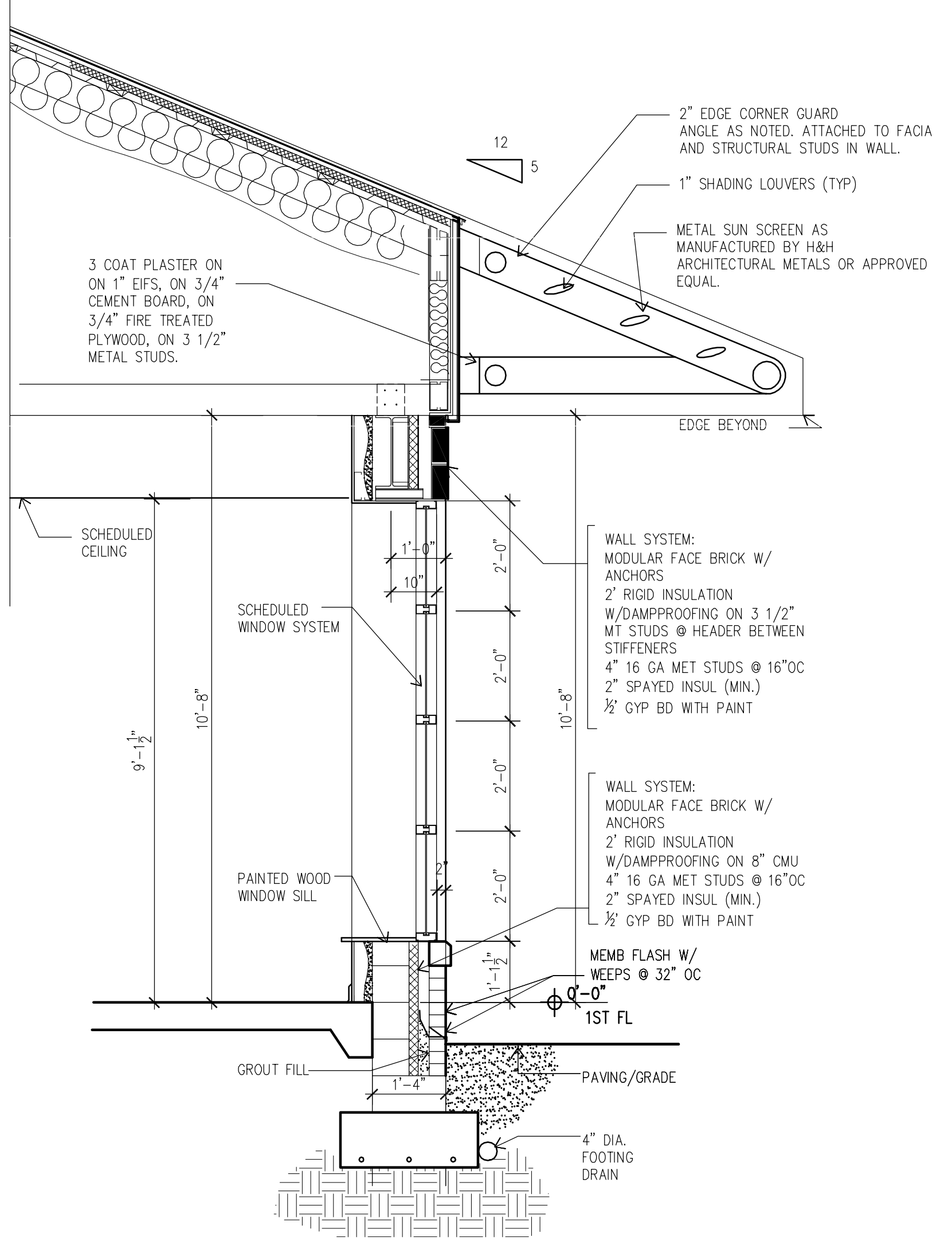
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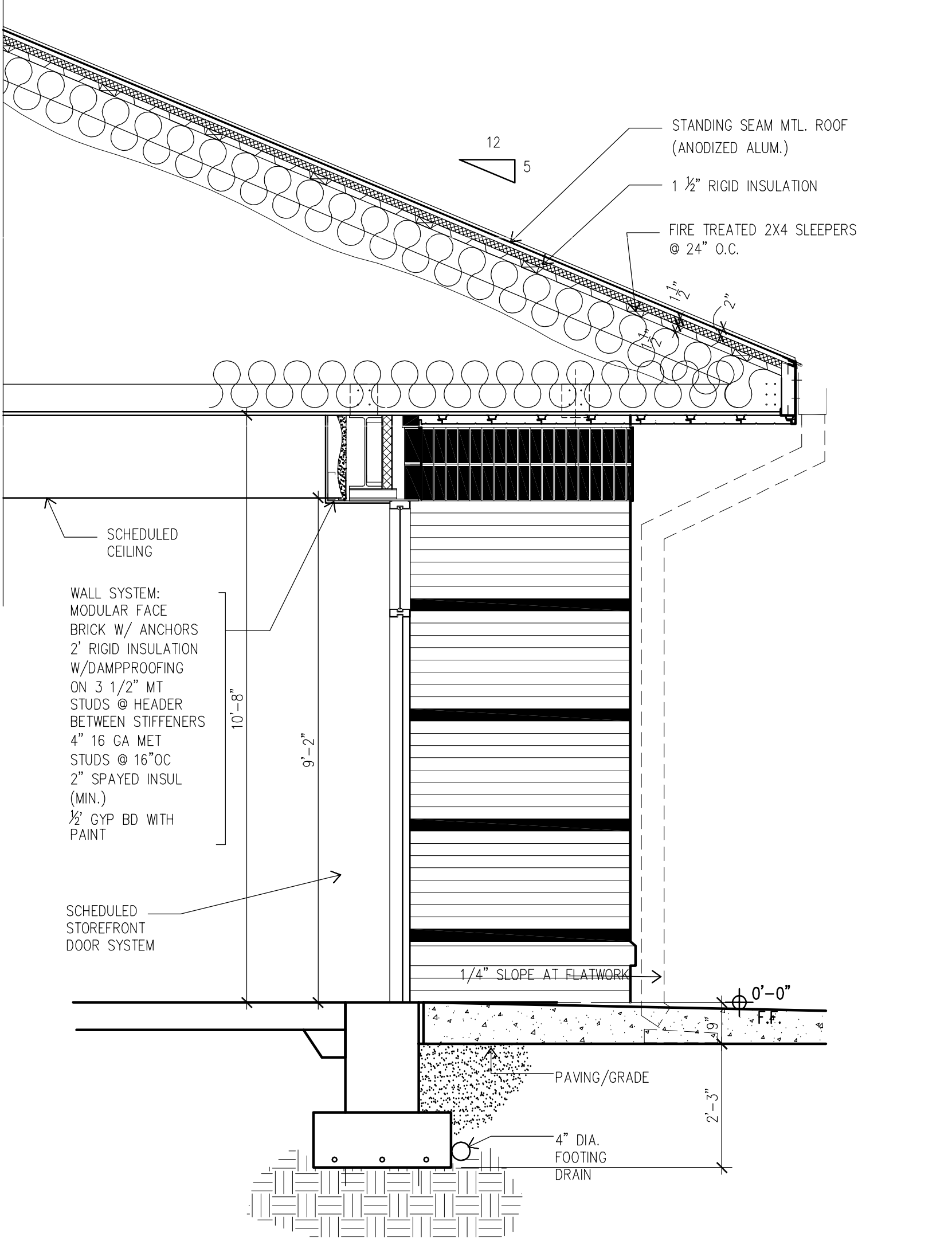
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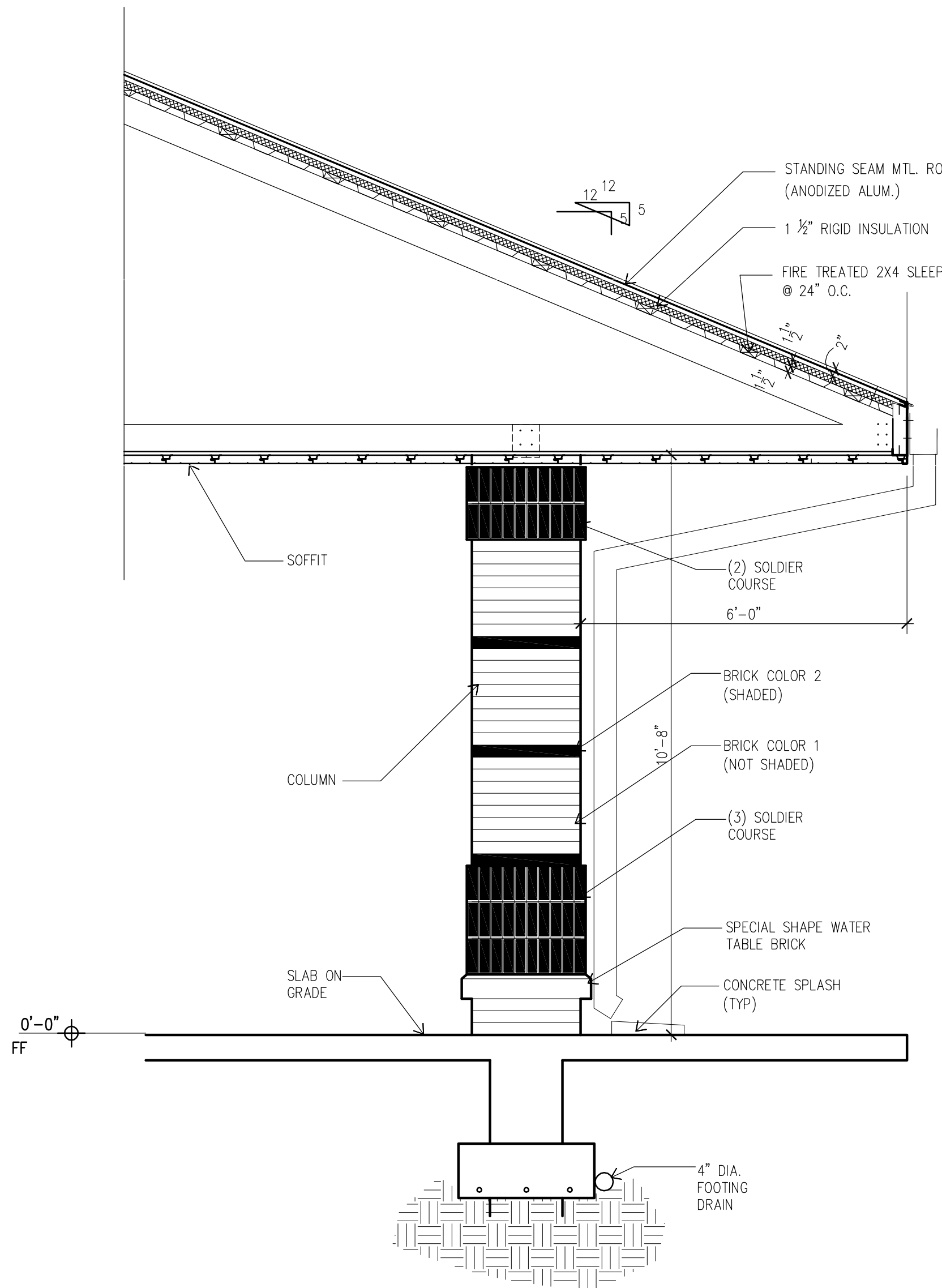
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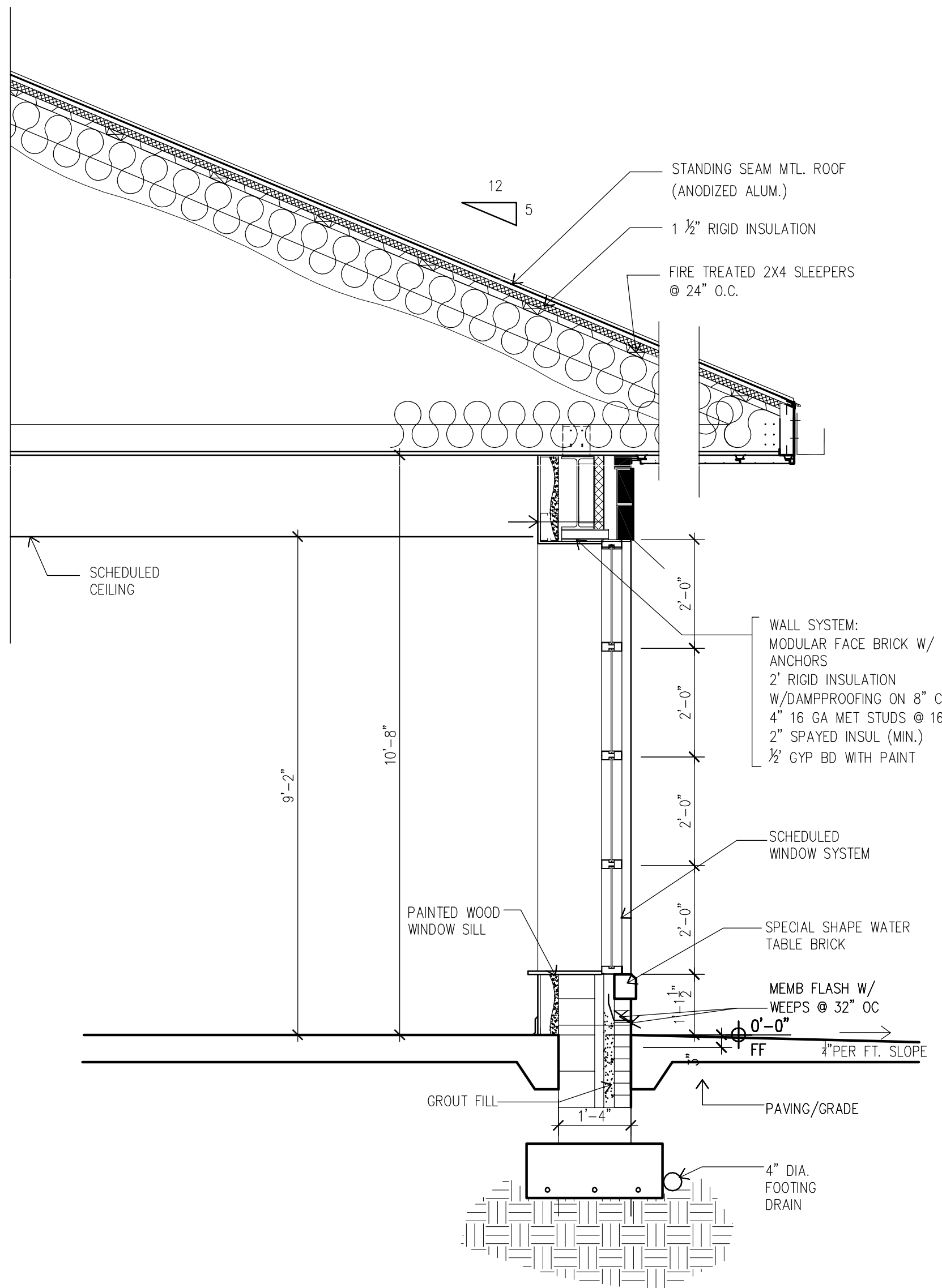
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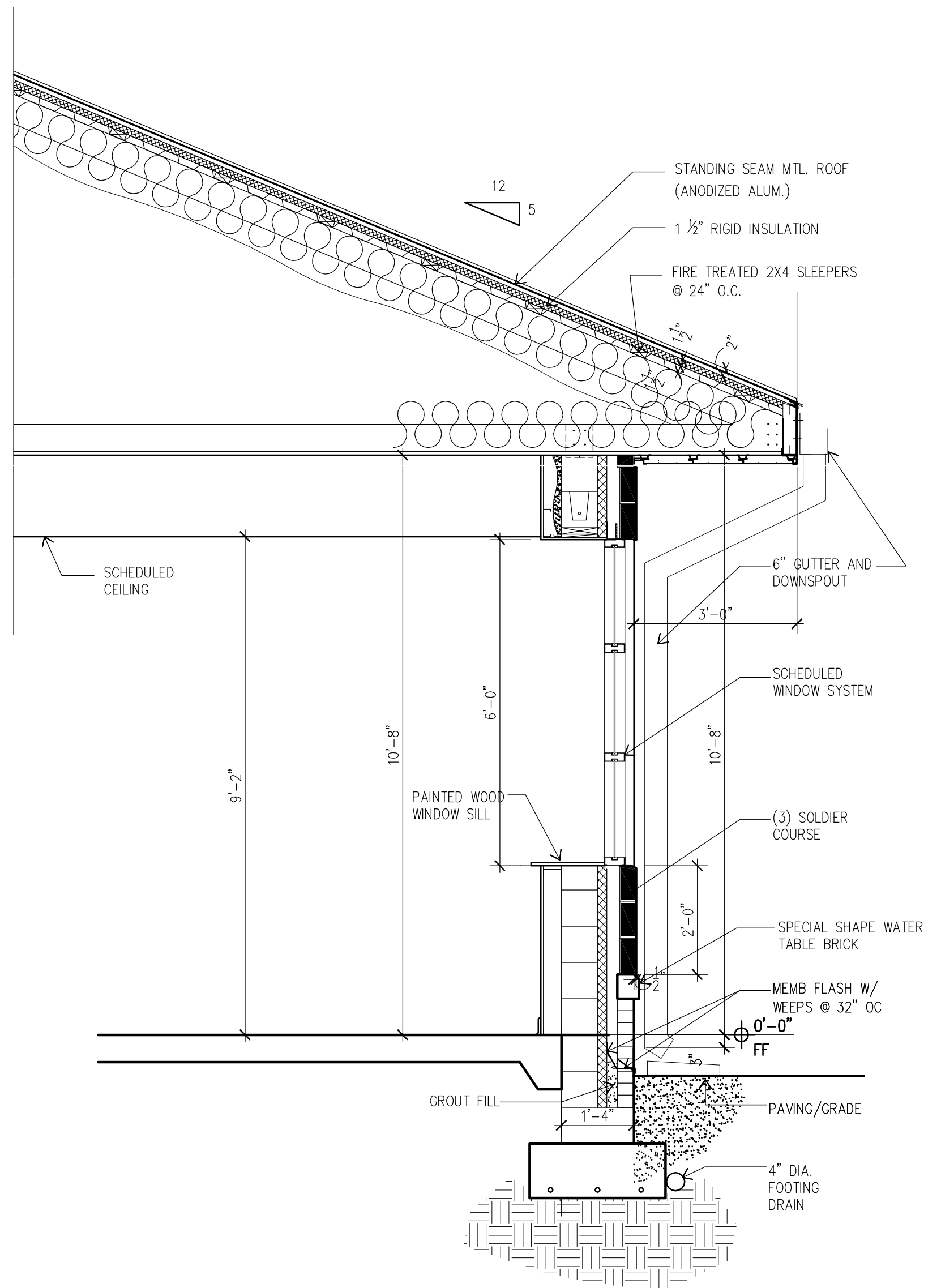
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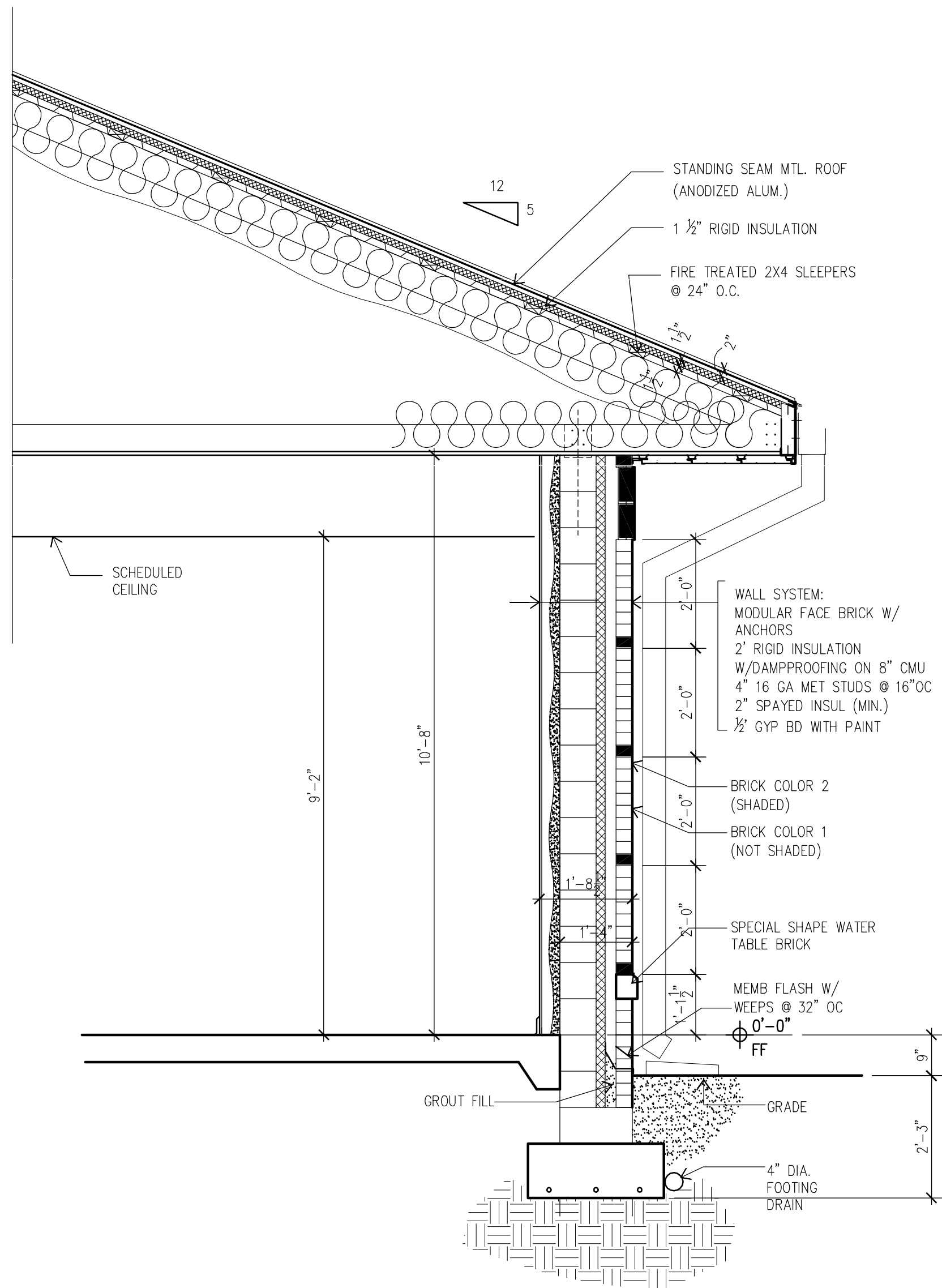
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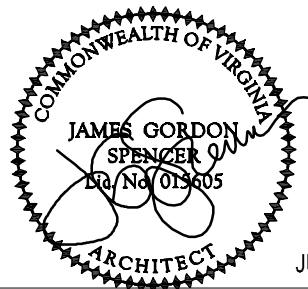


WALL SECTION-3



WALL SECTION-4

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



JULY 29, 2011

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3200 TOWN POINT DR., KENNESAW, GA. 30144
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MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:



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SURVEY:



10400 CHESTER ROAD, CHESTER, VA 23831
TEL: (804) 748-8707 FAX: (804) 748-8708



NATIONAL
CEMETERY
ADMINISTRATION

Drawing Title

WALL SECTIONS

Approved: Director, Technical Support Service

Approved: Chief, Architectural & Engineering Division

Project Title

ADMINISTRATION / PUBLIC
INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY

Building Number

Checked

Drawn

Location

18424 JOPLIN ROAD
TRIANGLE, VIRGINIA

Date

7-29-11

Project No.

872CM3035

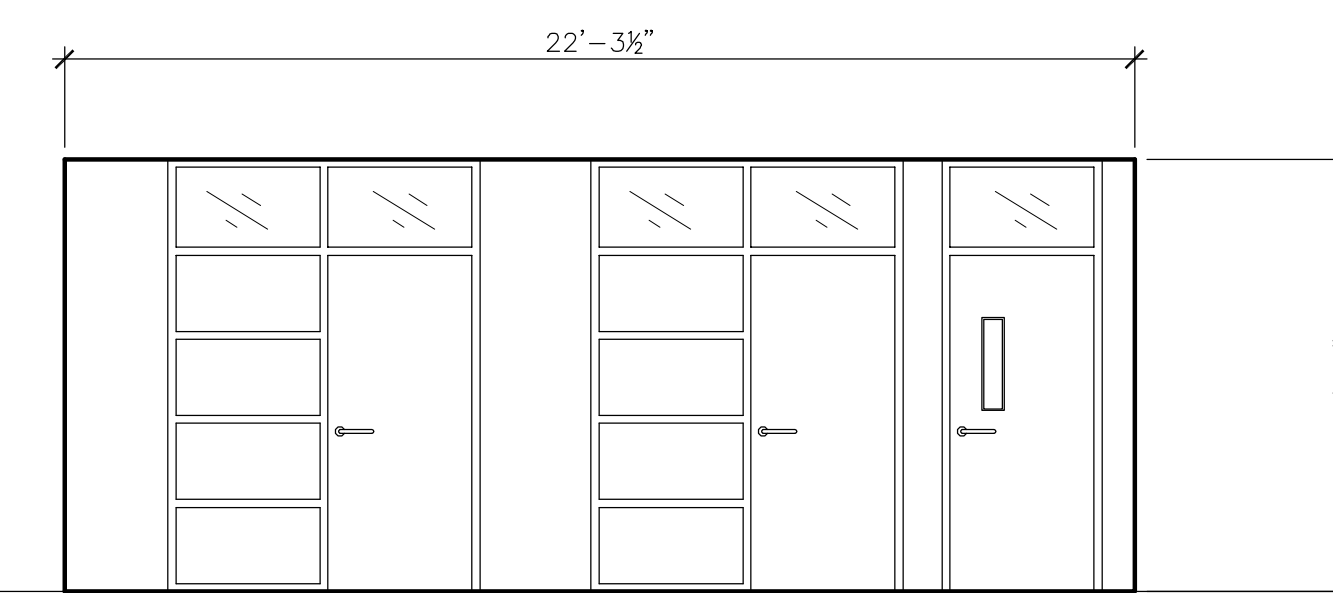
DRAWING NO.

A501

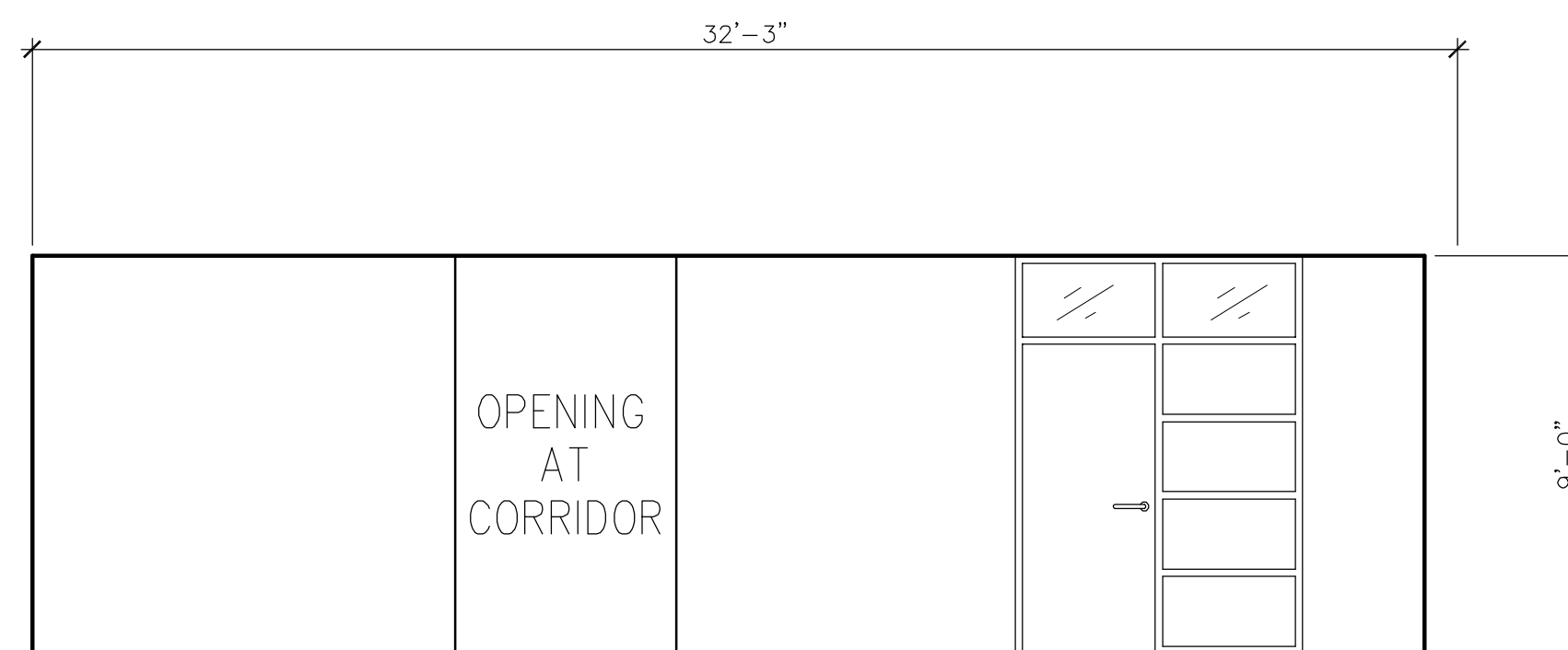
Dwg. 48 of 80



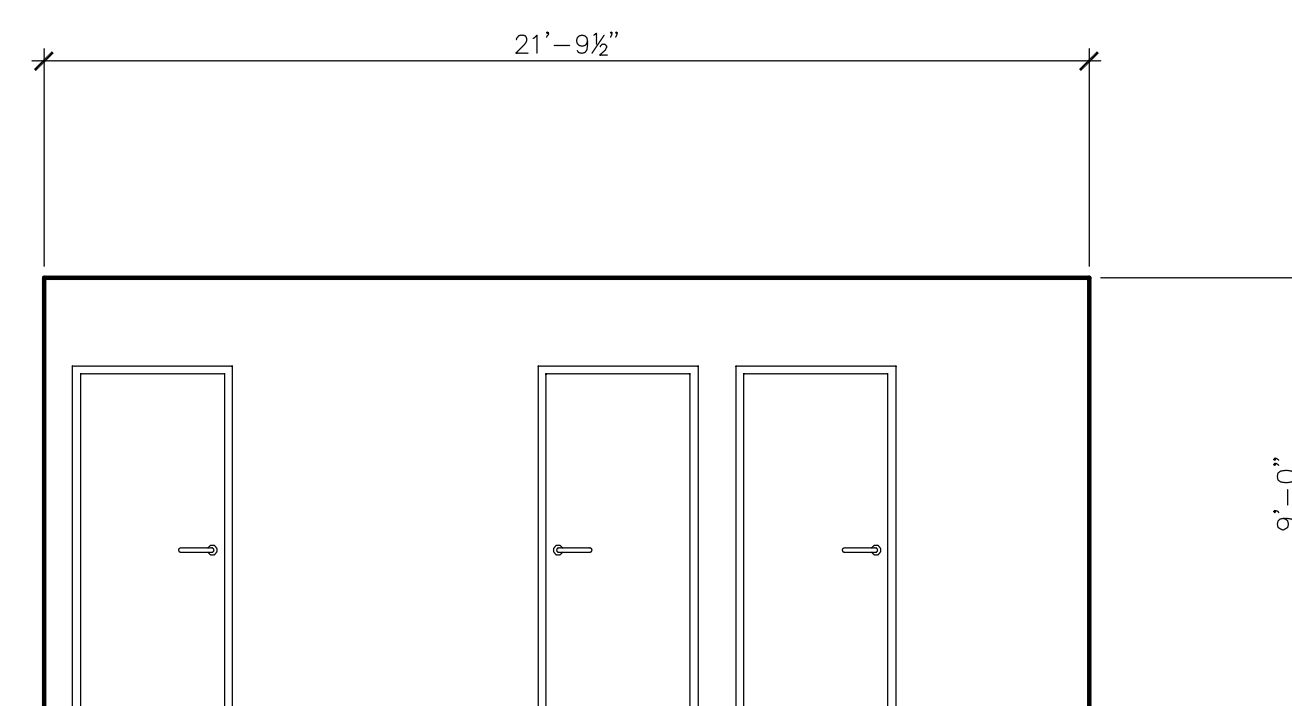
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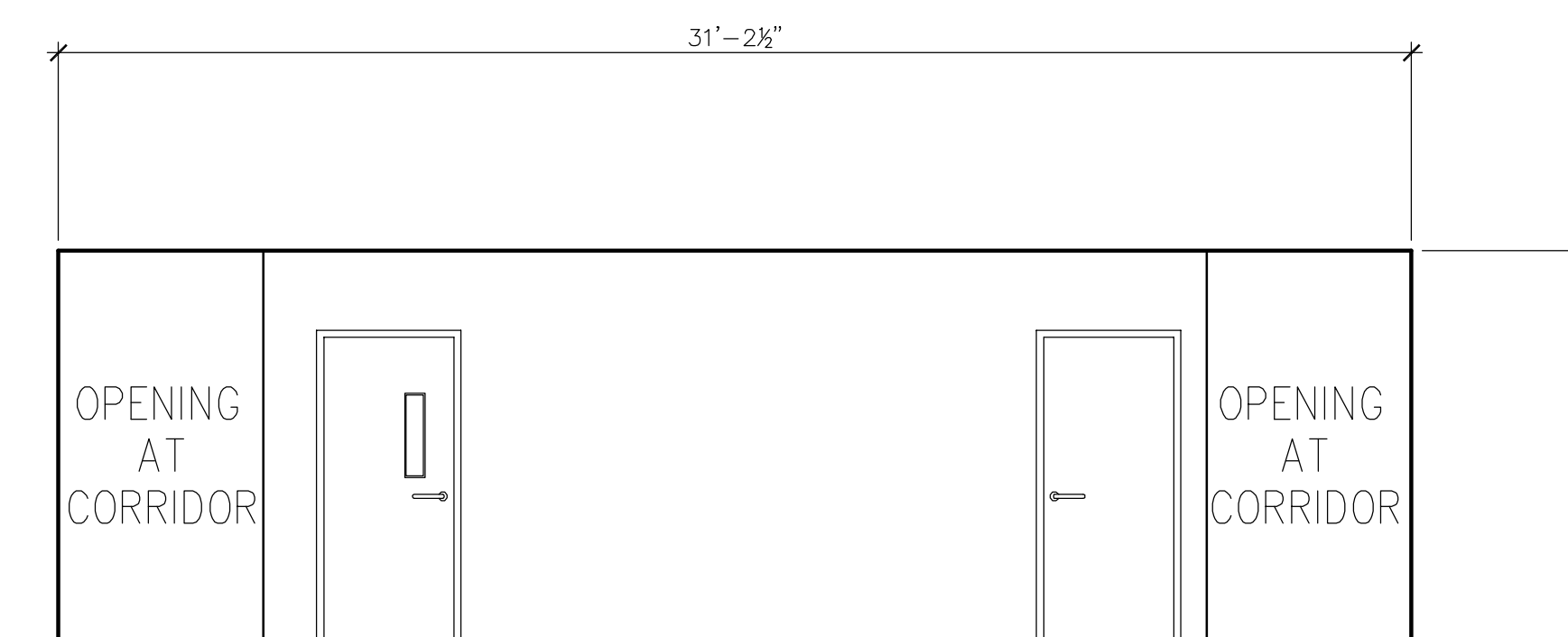
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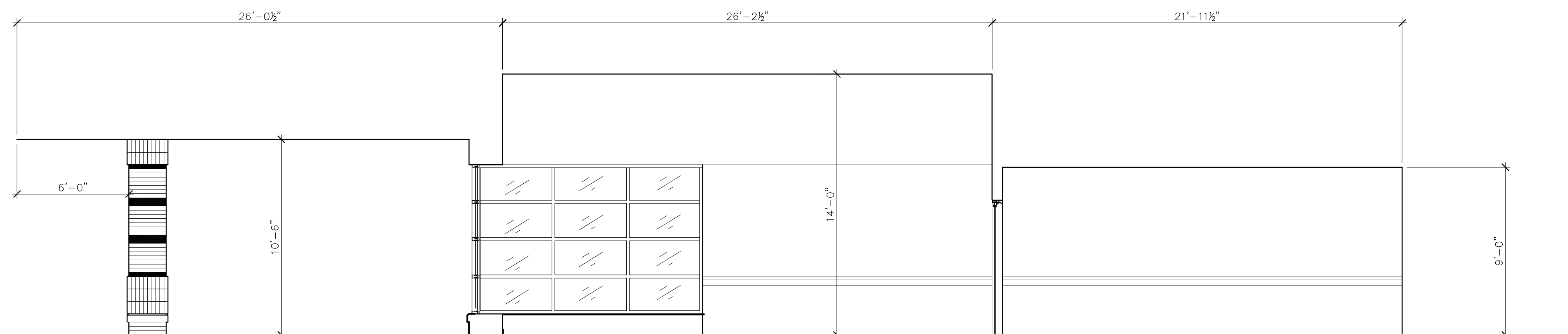
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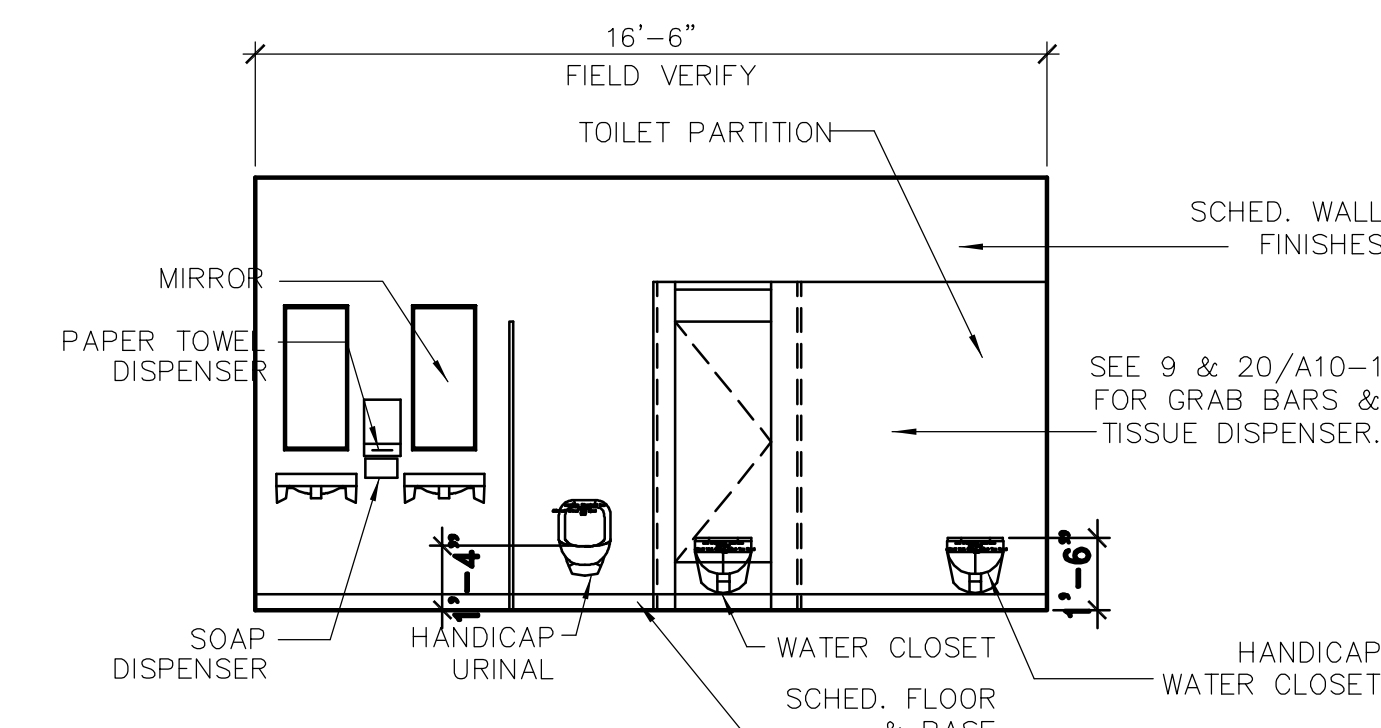
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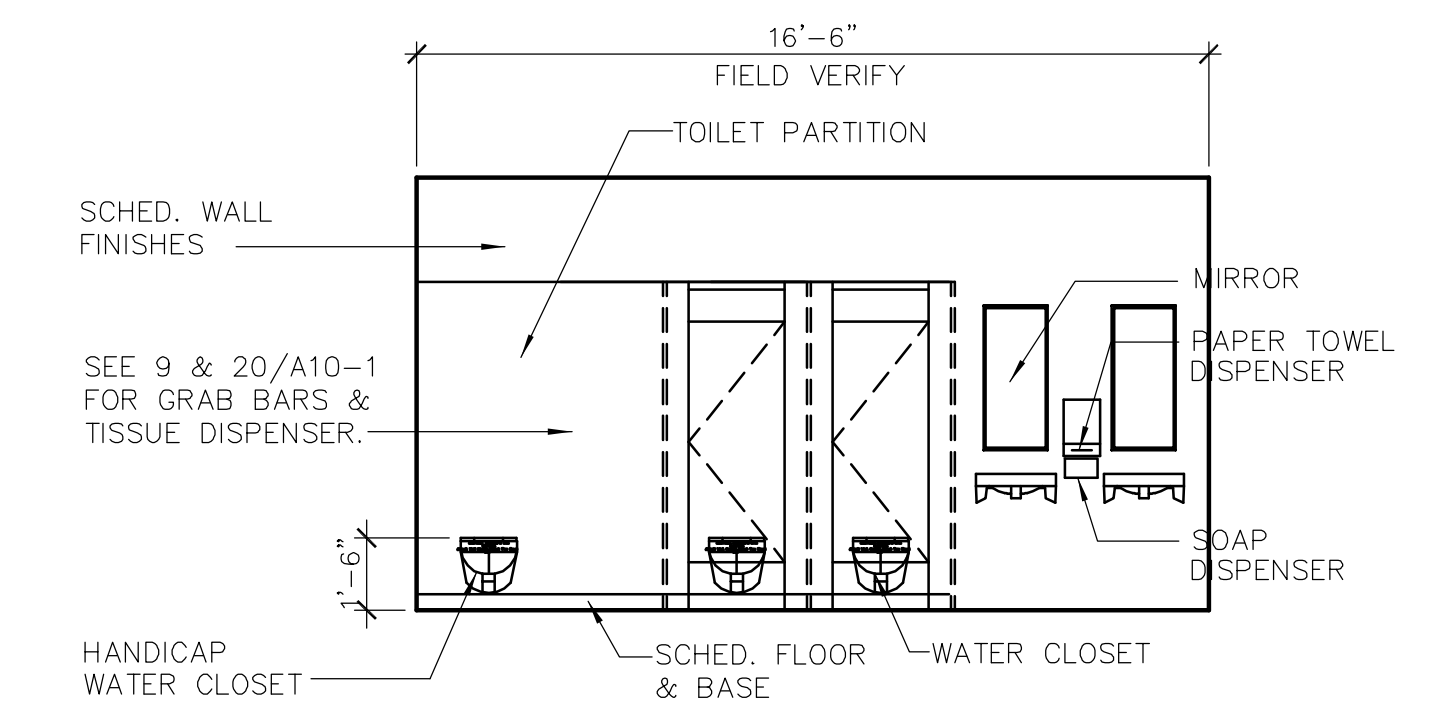
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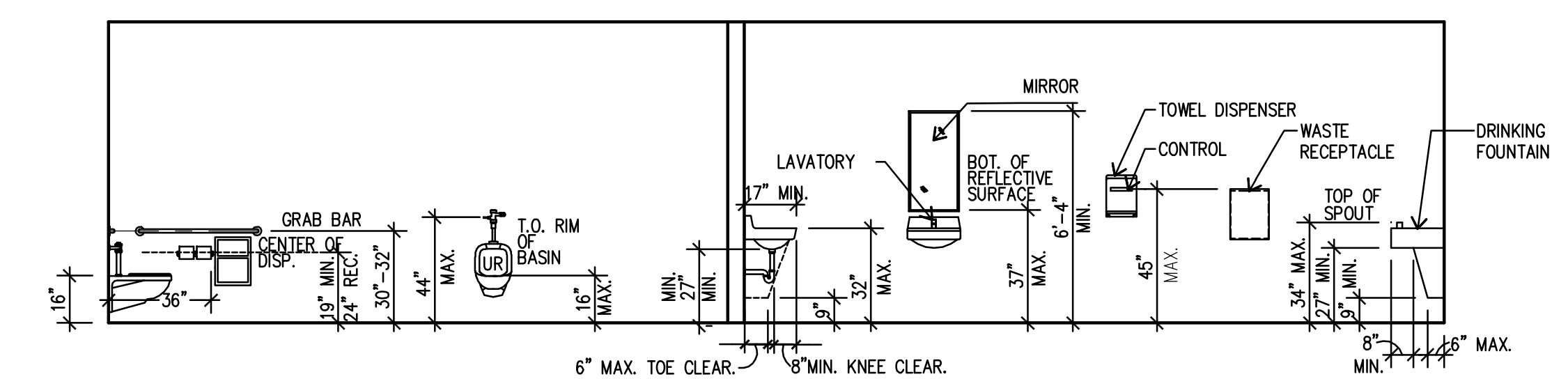
CORRIDOR AT PIC LOBBY 102, PIC RECEPTION 103, AND LOBBY 104
SCALE: 1/4"=1'-0"



MEN'S RESTROOMS @ PIC
SCALE: 1/4"=1'-0"

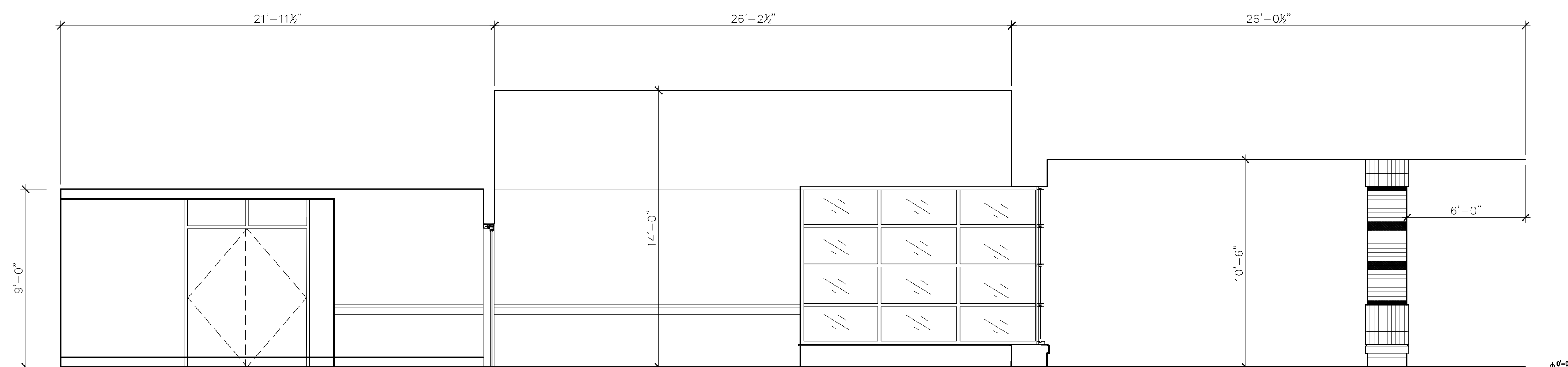


WOMEN RESTROOMS @ PIC
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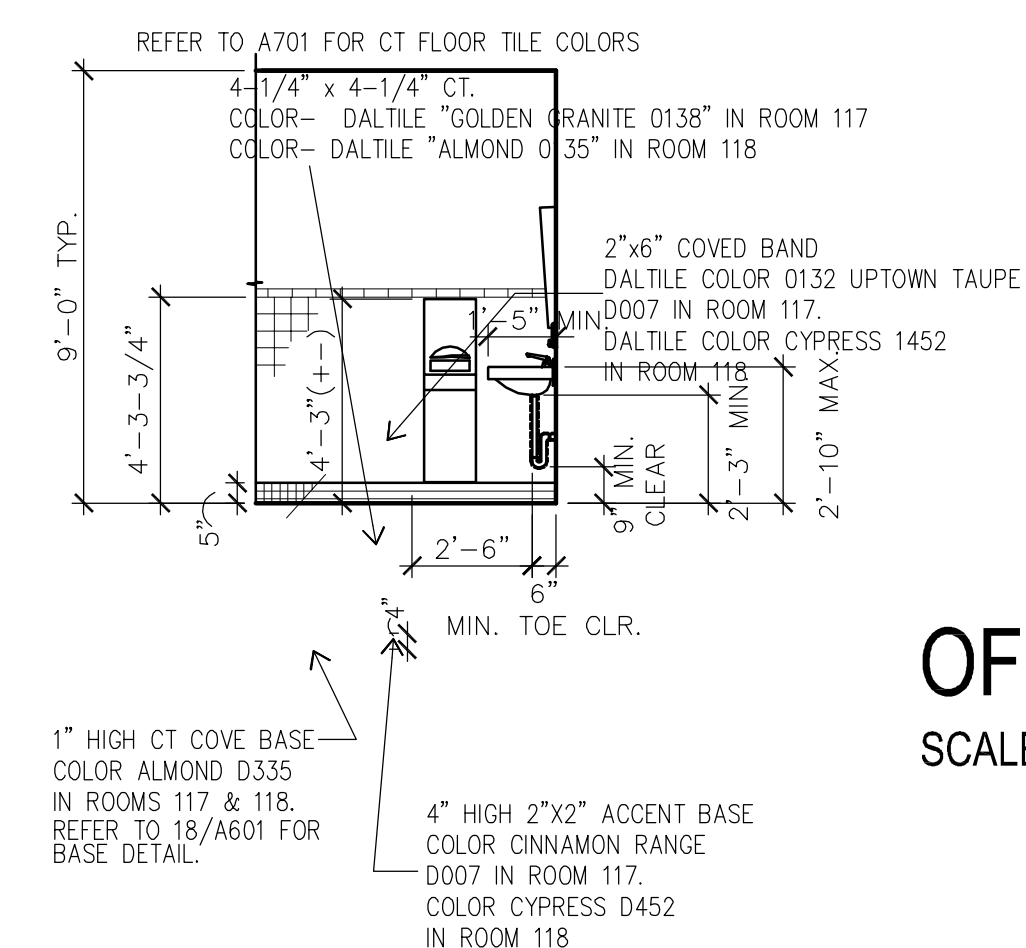


MOUNTING HEIGHTS

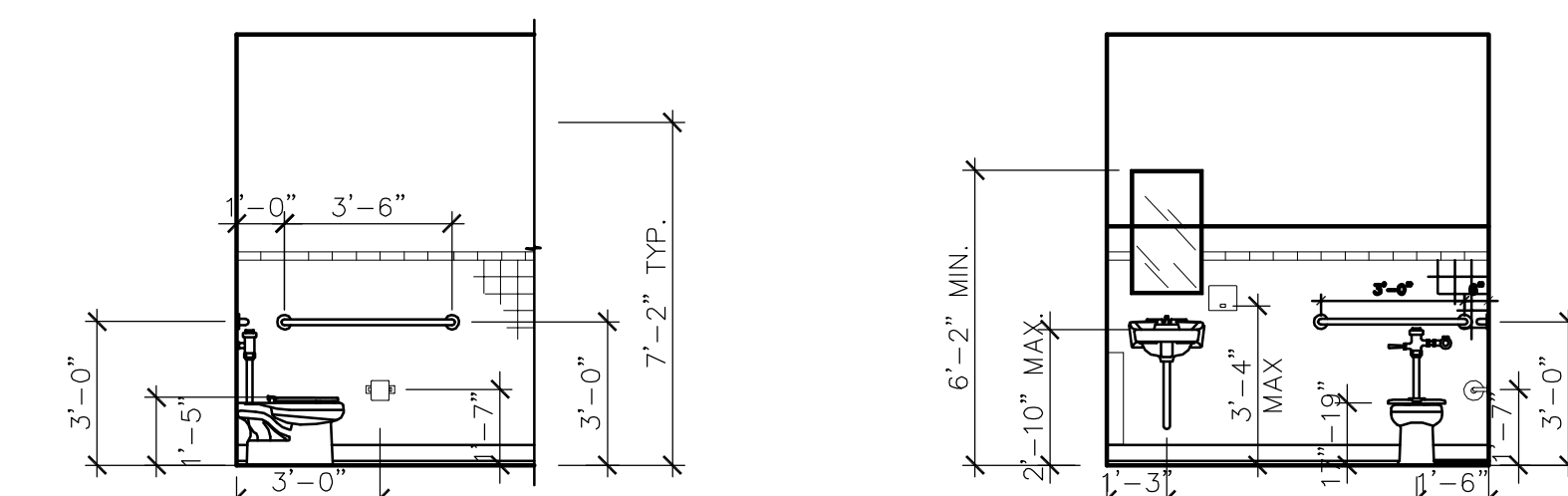
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CORRIDOR AT PIC LOBBY 102, PIC RECEPTION 103, AND LOBBY 104
SCALE: 1/4"=1'-0"

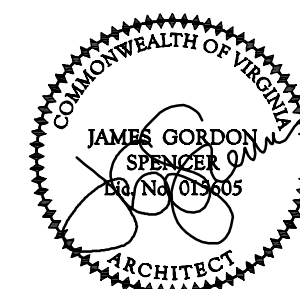


C.T COLORS



OFFICE RESTROOMS 117 & 118

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



JULY 29, 2011



MEP ENGINEER:



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consulting engineers

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SURVEY:



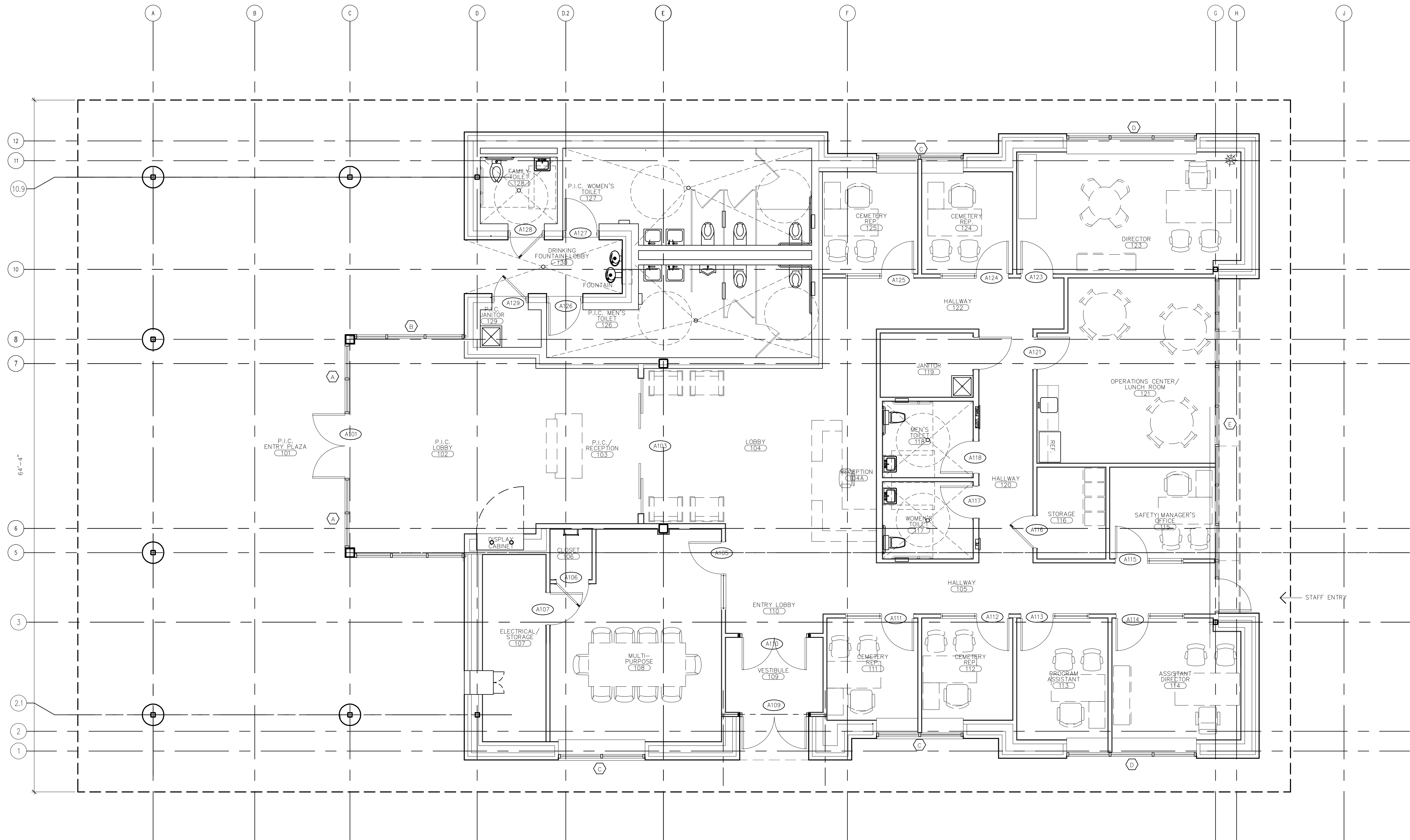
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SURVEYS
P.C.

10400 CHESTER ROAD, CHESTER, VA 23831
TEL: (804) 748-8707 FAX: (804) 748-8700



NATIONAL
CEMETERY
ADMINISTRATION

Drawing Title INTERIOR ELEVATIONS	Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY			Date 7-29-11
	Approved: Director, Technical Support Service			Project No. 872CM3035
Approved: Chief, Architectural & Engineering Division	Building Number	Checked	Drawn	DRAWING NO. A600
	Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA			Dwg. 49 of 80



FURNITURE PLAN

SCALE: $\frac{1}{4}$ "=1'-0"



JULY 29, 2011

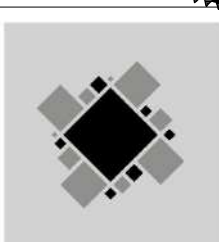
CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:



MACTEC ENGINEERING AND CONSULTING, INC.
3200 TOWN POINT DR., KENNESAW, GA. 30144
TEL: (770) 421-3400 FAX: (770) 421-3486

MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:



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703-525-0424

MEP ENGINEER:



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NATIONAL
CEMETERY
ADMINISTRATION

Drawing Title

FURNITURE PLAN

Approved: Director, Technical Support Service

Approved: Chief, Architectural & Engineering Division

Project Title
ADMINISTRATION / PUBLIC
INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY

Building Number

Checked

Drawn

Location
18424 JOPLIN ROAD
TRIANGLE, VIRGINIA

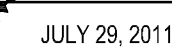
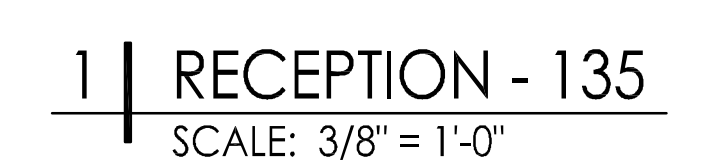
Date
7-29-11

Project No.
872CM3035

DRAWING NO.

A700

Dwg. 51 of 80



- A. GENERAL
- ALL CONSTRUCTION SHALL CONFORM TO 2009 VIRGINIA CONSTRUCTION CODE (USBC). REFERENCE TO OTHER STANDARD SPECIFICATIONS OR CODES SHALL MEAN THE LATEST STANDARD OR CODE ADOPTED AND PUBLISHED
 - VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS BEFORE STARTING WORK. NOTIFY THE STRUCTURAL ENGINEER IN WRITING OF CONDITIONS ENCOUNTERED IN THE FIELD CONTRADICTORY TO THOSE SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS.
 - PROVIDE ADEQUATE BRACING FOR STRUCTURES SO THAT THEY WILL BE STABLE DURING ALL STAGES OF CONSTRUCTION. THE STRUCTURES AND FOUNDATIONS ARE DESIGNED FOR A COMPLETED CONDITION ONLY AND THEREFORE REQUIRE ADDITIONAL SUPPORT TO MAINTAIN STABILITY BEFORE COMPLETION. STRUCTURES SHALL BE CONSIDERED COMPLETE WHEN ALL STRUCTURAL MEMBERS ARE COMPLETED AND HAVE ATTAINED THEIR SPECIFIED DESIGN STRENGTH AS SHOWN ON THE DRAWINGS.
 - THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC.
 - COORDINATE STRUCTURAL CONTRACT DOCUMENTS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL. NOTIFY STRUCTURAL ENGINEER OF ANY CONFLICT AND/OR OMISSION.
 - COORDINATE AND VERIFY FLOOR AND ROOF OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR ADDITIONAL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE ARCHITECTURAL AND MECHANICAL DRAWINGS.
 - REVIEW OF SUBMITTALS AND/OR SHOP DRAWINGS BY THE STRUCTURAL ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO REVIEW AND CHECK SHOP DRAWINGS BEFORE SUBMITTAL TO THE STRUCTURAL ENGINEER. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS. CONTRACTOR IS ALSO RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.

B. GENERAL DESIGN LOADS

- DEAD LOADS: SELF WEIGHT OF STRUCTURE
- LIVE LOAD:

FLOOR 100 PSF

ROOF 18 PSF
- WIND LOAD

ASSUMPTIONS CONFORM TO USBC AND ASCE 7-05.

OCCUPANCY CATEGORY: II

ENCLOSURE CLASSIFICATION: PARTIALLY ENCLOSED

EXPOSURE CATEGORY: C

BASIC WIND SPEED 100 MPH

IMPORTANCE FACTOR: Iw = 1.0

GUEST EFFECT FACTOR: G = 0.85

TOPOGRAPHIC FACTOR: Kzt = 1.0

INTERNAL PRESSURE COEFFICIENT (GCpi) +0.55
- SEISMIC LOAD

0.2 SEC SPECTRAL RESPONSE ACCELERATION: SS = .162

1 SEC SPECTRAL RESPONSE ACCELERATION: S1 = .052

OCCUPANCY CATEGORY: II

SITE CLASS D

DESIGN CATEGORY B

IMPORTANCE FACTOR: IE = 1.0

FRAMING SYSTEM: ORDINARY REINFORCED MASONRY SHEAR WALLS

RESPONSE MOD FACTOR R = 2

SYSTEM OVER-STRENGTH W = 2.5

DEFLECTION AMPLIFICATION FACTOR Cd = 1.4

SHORT TERM SPECTRAL RESPONSE COEFFICIENT Sds = 0.173

ONE SECOND SPECTRAL RESPONSE COEFFICIENT Sd1 = 0.083

RESPONSE COEFFICIENT CS = 0.087

ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

DESIGN BASE SHEAR V = 7.83 KIPS
- SNOW LOAD

GROUND SNOW LOAD: Pg = 25 PSF

IMPORTANCE FACTOR: Is = 1

EXPOSURE CATEGORY: C

ROOF SLOPE 5 ON 12

EXPOSURE FACTOR Ce = 1.0

THERMAL FACTOR Ct = 1.0

ROOF FLOP FACTOR Cs = 0.75

C. FOUNDATIONS

- THE DESIGN OF FOOTINGS AND STRUCTURAL SLAB IS BASED ON AN ALLOWABLE BEARING PRESSURE OF 3000 PSF AS PER THE REPORT OF GEOTECHNICAL EXPLORATION BY MACTEC ENGINEERING AND CONSULTING. DATED MAY 27, 2011.
- QUALIFIED SOIL TECHNICIAN UNDER THE DIRECTION OF A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF VIRGINIA (SOIL TECHNICIAN) SHALL EVALUATE CONDITION AND/OR ADEQUACY OF ALL SUBGRADES, FILLS AND BACKFILLS PER PROJECT SPECIFICATIONS AND THE GEOTECHNICAL REPORTS BEFORE PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, FILLS, BACKFILLS, ETC.
- GROUND WATER SHALL BE KEPT AT LEAST 2 FEET BELOW THE DEEPEST FOUNDATION BEARING ELEVATION DURING CONSTRUCTION. SEE GEOTECHNICAL REPORT FOR RECOMMENDATIONS REGARDING THE SURFACE WATER AND SHALLOW GROUNDWATER CONTROL.
- AFTER STRIPPING ALL PAVEMENTS, VEGETATION, ROOTMAT, TOPSOIL, AND ANY OTHER SOFT OR UNSUITABLE MATERIAL FROM THE CONSTRUCTION AREA, AND PRIOR TO FILL PLACEMENT, THE STRIPPED SURFACE SHOULD BE EVALUATED BY A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF VIRGINIA. THE DEPTH OF STRIPPING SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
- ALL FILL OPERATIONS SHOULD BE OBSERVED, ON A FULL-TIME BASIS BY A SOIL TECHNICIAN TO DETERMINE THAT MINIMUM COMPACTION REQUIREMENTS ARE BEING MET. PROOFROLLING SHOULD BE PERFORMED TO HELP LOCATE LOCALIZED AREAS WHERE SOFT, DELETERIOUS SOILS MAY EXIST. PROOFROLLING OPERATIONS SHOULD BE WITNESSED BY A SOIL TECHNICIAN.
- FILL MATERIALS SHOULD BE PLACED IN LIFTS NOT EXCEEDING 8" LOOSE THICKNESS. EACH LIFT SHOULD BE THOROUGHLY COMPACTED UNTIL DENSITIES EQUIVALENT TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY IS UNIFORMLY OBTAINED (ASTM D698). THE UPPER 18" OF SOIL BENEATH FOOTINGS, SLABS, AND PAVEMENTS SHALL BE COMPACTED TO A MINIMUM OF 100% OF STANDARD PROCTOR MAXIMUM DRY DENSITY..

D. REINFORCED CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
- ALL CONCRETE SHALL BE NORMAL WEIGHT AIR ENTRAIN, AND HAVE THE FOLLOWING MINIMUM 28 DAY STRENGTH.

FOUNDATIONS: 4000 PSI

SLABS: 3500 PSI

ALL OTHER: 3000 PSI
- THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE OWNER'S TESTING LABORATORY. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S.

- USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.
- HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED ONLY WHERE INDICATED. CONSTRUCTION JOINTS SHALL BE THOROUGHLY ROUGHENED BY MECHANICAL MEANS, AND CLEANED.
- WHEN PLACING CONCRETE UNDER HOT OR COLD WEATHER CONDITIONS COMPLY WITH THE LATEST EDITIONS OF ACI305R: "HOT WEATHER CONCRETING" OR ACI306R: "COLD WEATHER CONCRETING".
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 UNLESS NOTED OTHERWISE AND ASTM A 706 FOR REINFORCING BARS TO BE WELDED.
- WELD WIRE FABRIC (W.W.F.) REINFORCING STEEL SHALL CONFORM TO ASTM D-185 UNLESS NOTED OTHERWISE.
- ALL REINFORCING LAP SPLICES IN CONCRETE SHALL CONFORM TO ACI 350 PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE; SPLICE ONLY AS SHOWN OR APPROVED; STAGGER SPLICES WHERE POSSIBLE; USE TENSION SPLICE (CLASS "B") UNLESS NOTED OTHERWISE. DOWELS SHALL MATCH THE SIZE AND SPACING OF THE SPECIFIED REINFORCEMENT AND SHALL BE LAPPED WITH TENSION SPLICES (CLASS "B") UNLESS NOTED OTHERWISE.
- TIE ALL REINFORCING STEEL AND EMBEDMENTS SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN THE POSITION OF REINFORCEMENT WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES. "STICKING" DOWELS INTO WET CONCRETE IS NOT PERMITTED.
- REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER UNLESS NOTED OTHERWISE:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"

SLABS 1 1/2"
- DO NOT WELD OR TACK WELD REINFORCING BARS.
- CHAMFER OR ROUND ALL EXPOSED CORNERS MINIMUM 3/4"

E. MASONRY

- CONCRETE MASONRY DESIGN AND CONSTRUCTION SHALL CONFORM TO: ACI 530-08/ASCE 5, BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES. ACI 530.1- 08/ASCE 6-08, SPECIFICATIONS FOR MASONRY STRUCTURES.
- PROVIDE NORMAL WEIGHT, HOLLOW, LOAD-BEARING CONCRETE MASONRY UNITS (CMU) CONFORMING TO ASTM C90.
- PROVIDE CONCRETE MASONRY WITH MINIMUM AVERAGE COMPRESSIVE STRENGTH, f'm = 1,900 PSI.
- PROVIDE TYPE "S" MORTAR IN ACCORDANCE WITH ASTM C270, UNLESS NOTED OTHERWISE. MORTAR BED JOINTS SHALL NOT EXCEED 5/8" THICKNESS.
- PROVIDE GROUT FOR REINFORCED MASONRY IN ACCORDANCE WITH ASTM C476 WITH MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI UNLESS NOTED OTHERWISE.
- PROVIDE HORIZONTAL JOINT REINFORCEMENT COMPLYING WITH ASTM A82, AS INDICATED ON STRUCTURAL DRAWINGS.
- PROVIDE VERTICAL, REINFORCEMENT AS INDICATED ON STRUCTURAL DRAWINGS.
- LAY MASONRY UNITS IN RUNNING BOND UNLESS NOTED OTHERWISE.
- SIDES AND TOPS OF MASONRY WALL PANELS SHALL BE ANCHORED TO STRUCTURE BY DOVETAIL ANCHORS, METAL STRAPS, OR EQUIVALENT UNLESS NOTED OTHERWISE.
- FOR OPENINGS LESS THAN 4'-0", PROVIDE STRUCTURAL LINTEL ABOVE OPENINGS IN MASONRY WALLS UNLESS OTHERWISE NOTED. USE 2#5 IN STRUCTURAL LINTEL. GROUT SOLID.
- MASONRY TO BE INSPECTED PER TABLE 1704.5.1 LEVEL 1 REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION OF USBC.
- ALL CONCRETE MASONRY UNITS REINFORCING (VERT. & HORIZ.) SHALL BE LAPPED THUS:

BAR	LAP LENGTH	DOWEL HOOK LENGTH
#4	3'-0"	8"
#5	4'-0"	10"
#6	4'-8"	12"

F. STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED ACCORDING TO AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" THIRTEENTH EDITION.
- SUBMIT SHOP DRAWINGS PREPARED IN ACCORDANCE WITH AISC MANUAL "DETAILING FOR STEEL CONSTRUCTION", LATEST EDITION. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED.
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

STEEL WIDE FLANGE (W-SHAPES AND WT's) - ASTM A992 (fy = 50 ksi MIN.)

STEEL PLATES, ANGLES, & CHANNELS - ASTM A36 (fy = 36 ksi MIN.)

STRUCTURAL TUBING (HSS) - ASTM A500 GRADE B
- ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 55, UNLESS NOTED OTHERWISE.
- USE PREQUALIFIED WELDED JOINTS AS PER ANSI/AWS D1.1 "STRUCTURAL WELDING CODE- STEEL". USE ONLY CERTIFIED WELDERS, MINIMUM E70XX ELECTRODES UNLESS NOTED OTHERWISE.
- DO NOT USE GAS CUTTING TORCHES FOR CORRECTING FABRICATION ERRORS IN THE STRUCTURAL FRAMING.
- BOLTED CONNECTIONS SHALL BE ASSEMBLED AND INSPECTED ACCORDING TO "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS".
- PROVIDE TEMPORARY BRACING OF STRUCTURAL FRAMING UNTIL ALL PERMANENT BRACING, ROOF DECKS (DIAPHRAGMS) ARE COMPLETELY INSTALLED.
- PAINT STRUCTURAL STEEL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. DO NOT PAINT STEEL SURFACES TO BE ENCASED IN CONCRETE OR RECEIVE SPRAYED ON FIREPROOFING, CONNECTIONS DESIGNATED AS FRICTION TYPE, OR TO BE WELDED.

G. STEEL DECK

- FABRICATION AND ERECTION OF STEEL DECKING SHALL CONFORM TO THE LATEST EDITION OF THE STEEL DECK INSTITUTE DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS AS APPLICABLE TO THE PROJECT.
- ROOF DECK: 1 1/2" TYPE B. 20 Gg. GALVANIZED & ERECTED PER MANUFACTURERS RECOMMENDATIONS.
- ANCHOR STEEL ROOF DECKING TO SUPPORT STRUCTURE WITH SELF DRILLING SCREWS ON A 36/7 PATTERN. SUBMIT TO THE STRUCTURAL ENGINEER THE PRODUCT DATA SHEET OF THE PROPOSED SCREWS FOR APPROVAL..
- PROVIDE DECKING CONTINUOUS OVER 3 SUPPORT SPANS (MINIMUM).
- STEEL DECKING SHALL BE ERECTED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

H. COLD FORM METAL ROOF TRUSS AND ROOF JOIST

- MATERIALS FOR COLD FORM METAL ROOF TRUSS AND ROOF JOIST SHALL BE AS FOLLOWS:

A. SHEET STEEL FOR JOISTS, STUDS AND ACCESSORIES 16 GAGE AND HEAVIER: ASTM A653, STRUCTURAL STEEL,

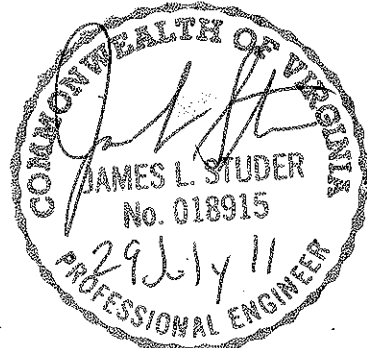
ZINC COATED G90, WITH A YIELD OF 50 KSI MINIMUM.
B. SHEET STEEL FOR JOISTS, STUDS AND ACCESSORIES 18 GAGE AND LIGHTER: ASTM A653, STRUCTURAL STEEL, ZINC COATED G90, WITH A YIELD OF 33 KSI MINIMUM.
C. GALVANIZING REPAIR PAINT: MIL-P-21035B.

- DESIGN STEEL IN ACCORDANCE WITH AMERICAN IRON AND STEEL INSTITUTE PUBLICATION "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", EXCEPT AS OTHERWISE SHOWN OR SPECIFIED.
- STRUCTURAL PERFORMANCE: COLD FORM METAL ROOF TRUSS AND JOIST WITHSTAND DESIGN LOADS INDICATED IN SECTION B, GENERAL DESIGN LOADS.
- DESIGN FRAMING SYSTEMS TO WITHSTAND DESIGN LOADS WITHOUT DEFLECTIONS GREATER THAN THE FOLLOWING:

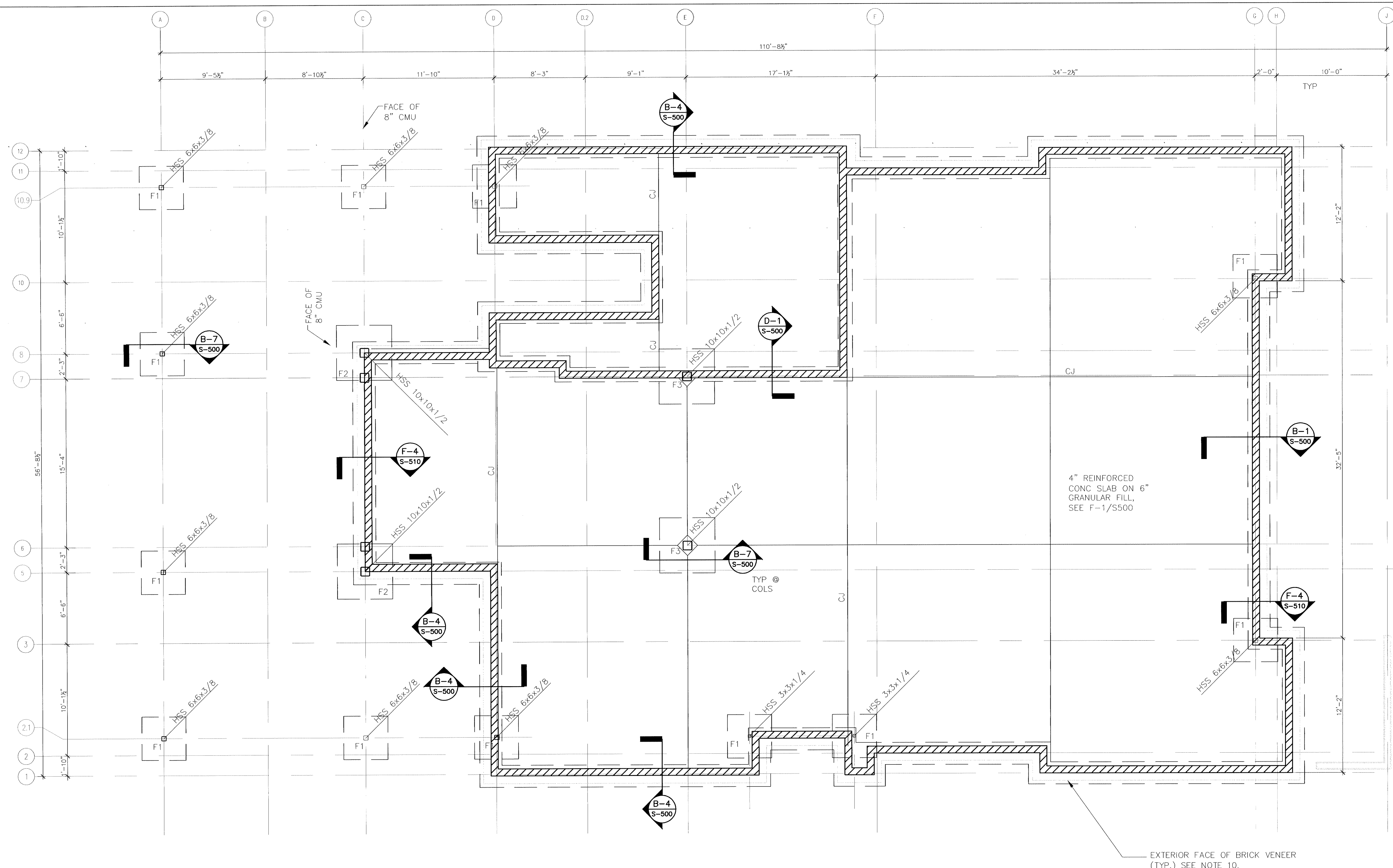
4.A. EXTERIOR NON-LOAD-BEARING CURTAIN WALL: LATERAL DEFLECTION OF 1/240 OF THE WALL HEIGHT.

4.B. ROOF JOISTS: VERTICAL DEFLECTION OF 1/360 OF THE SPAN.

4.C. ROOF TRUSSES: VERTICAL DEFLECTION OF 1/360 OF THE SPAN.
- DESIGN FRAMING SYSTEMS TO PROVIDE FOR MOVEMENT OF FRAMING MEMBERS WITHOUT DAMAGE OR OVERSTRESSING, SHEATHING FAILURE, CONNECTION FAILURE, UNDUE STRAIN ON FASTENERS AND ANCHORS, OR OTHER DETRIMENTAL EFFECTS WHEN SUBJECT TO A MAXIMUM AMBIENT TEMPERATURE CHANGE (RANGE) OF 120 DEGREES F.
- DESIGN FRAMING SYSTEM TO ACCOMMODATE DEFLECTION OF PRIMARY BUILDING STRUCTURE AND CONSTRUCTION TOLERANCES, AND TO MAINTAIN CLEARANCES AT OPENINGS.
- ENGINEERING RESPONSIBILITY: COLD FORM METAL ROOF TRUSS AND ROOF JOIST SHALL BE DESIGN FOR THE INDICATED DESIGN LOADS, INCLUDING STRUCTURAL ANALYSIS AND CALCULATIONS. SHOP DRAWINGS AND CALCULATIONS SHALL BE PREPARED, SEALED, SIGNED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VIRGINIA WHO WAS RESPONSIBLE FOR ITS PREPARATION AND SUBMITTED FOR REVIEW.

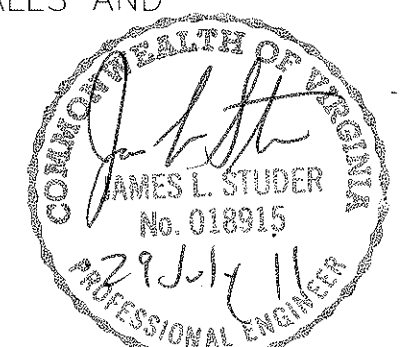


Revisions Date		CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: MACTEC MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085		ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424		MEP ENGINEER: Thompson Company consulting engineers 50 Technology Parkway South Norcross, Georgia 30092 Atlanta, Georgia 30309 Dubai, UAE 404.266.1400 www.tcleng.com Orlando, Florida, FL Mexico City, Mexico Houston, Texas, TX Toronto, BVI		SURVEY: HALDER SURVEYS 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708		NATIONAL CEMETERY ADMINISTRATION		Drawing Title STRUCTURAL GENERAL NOTES		Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY		Date 07-29-11	
Approved: Director, Technical Support Service		Building Number		Checked MG		Drawn LKB		Project No. 872CM3035		Drawing No. S-001		Dwg. 55 of 81					
Approved: Chief, Architectural & Engineering Division		Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA															



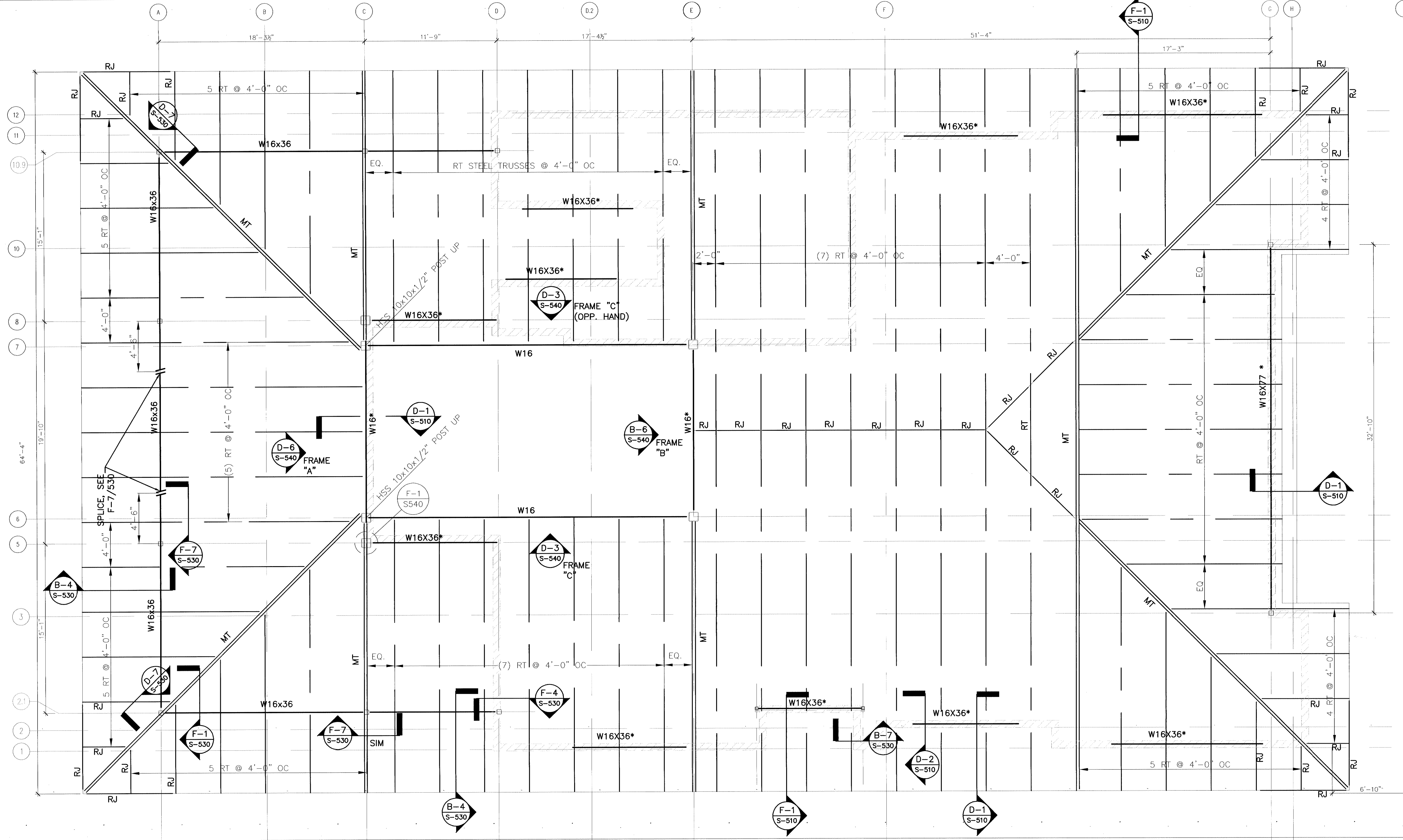
1 FOOTING AND FOUNDATION PLAN
S100 SCALE 1/4" = 1'-0"

- NOTES:
1. FOR FLOOR DRAIN, (SEE MECH'L & ARCH'T'L. PLANS FOR LOCATIONS).
 2. FOR STRUCTURAL NOTES, (SEE DRAWING D-4/S500).
 3. C.J INDICATES CONC. SLAB CONTROL/CONSTRUCTION JOINTS. (SEE 5/S1.1)
 4. MASONRY CONTROL JOINTS TO MATCH BRICK CONTROL JOINTS AS SHOWN ON ARCH. ELEVATION DRAWINGS.
 5. TOP OF FOOTING ELEVATIONS(TFE) = 22'-4" (U.N.O.)
 6. EJ INDICATES CONCRETE EXPANSION JOINT.
 7. FOR COLUMN ISOLATION JOINT SEE F-4/S500.
 8. FINISH FLOOR ELEVATION = 100'-0" CORRESPONDS TO A SITE SURVEY ELEVATION = 228.50'
 9. HATCHING INDICATES LOAD BEARING WALL.
 10. FOR DIMENSIONAL LOCATION OF EXTERIOR WALLS AND OPENINGS, SEE ARCHITECTURAL DRAWINGS.



CERTIFIED FOR CONSTRUCTION	7-11-2008	CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: MACTEC MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085	ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424	MEP ENGINEER: Thompson Company consulting engineers 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcieng.com Atlanta, GA Orlando, FL Houston, TX Dubai, UAE Mexico City, Mexico Tortola, BVI	SURVEY: ON RECORD HALDER SURVEYS P.C. 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708		NATIONAL CEMETERY ADMINISTRATION	Drawing Title FOUNDATION PLAN	Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY	Date 07-29-11
								Approved: Director, Technical Support Service	Building Number	Checked MG
Approved: Chief, Architectural & Engineering Division								Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA	DRAWING NO. S-100	Dwg. 56 of 81

B-1 UPPER ROOF FRAMING PLAN
S110 SCALE 1/4" = 1'-0"



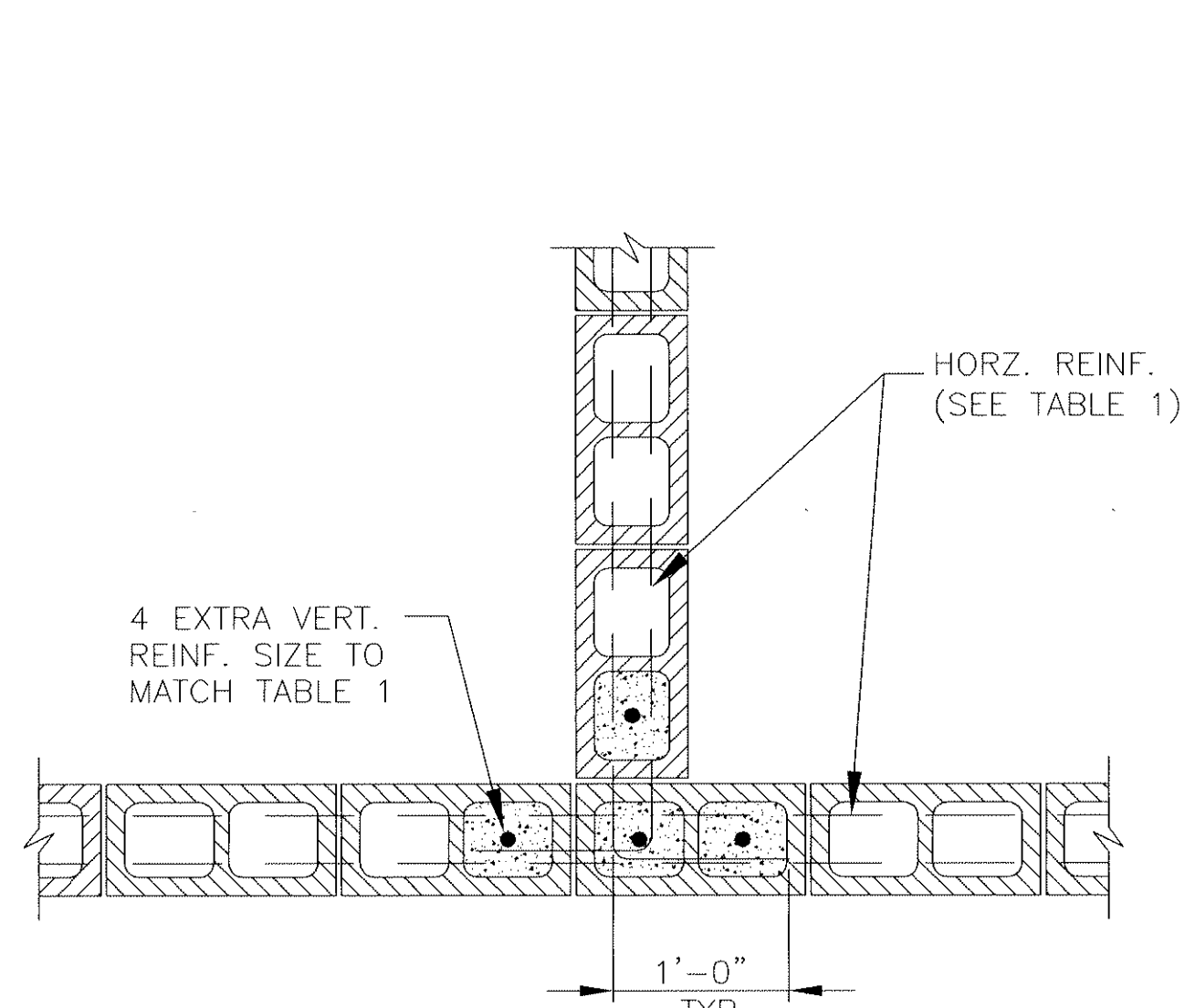
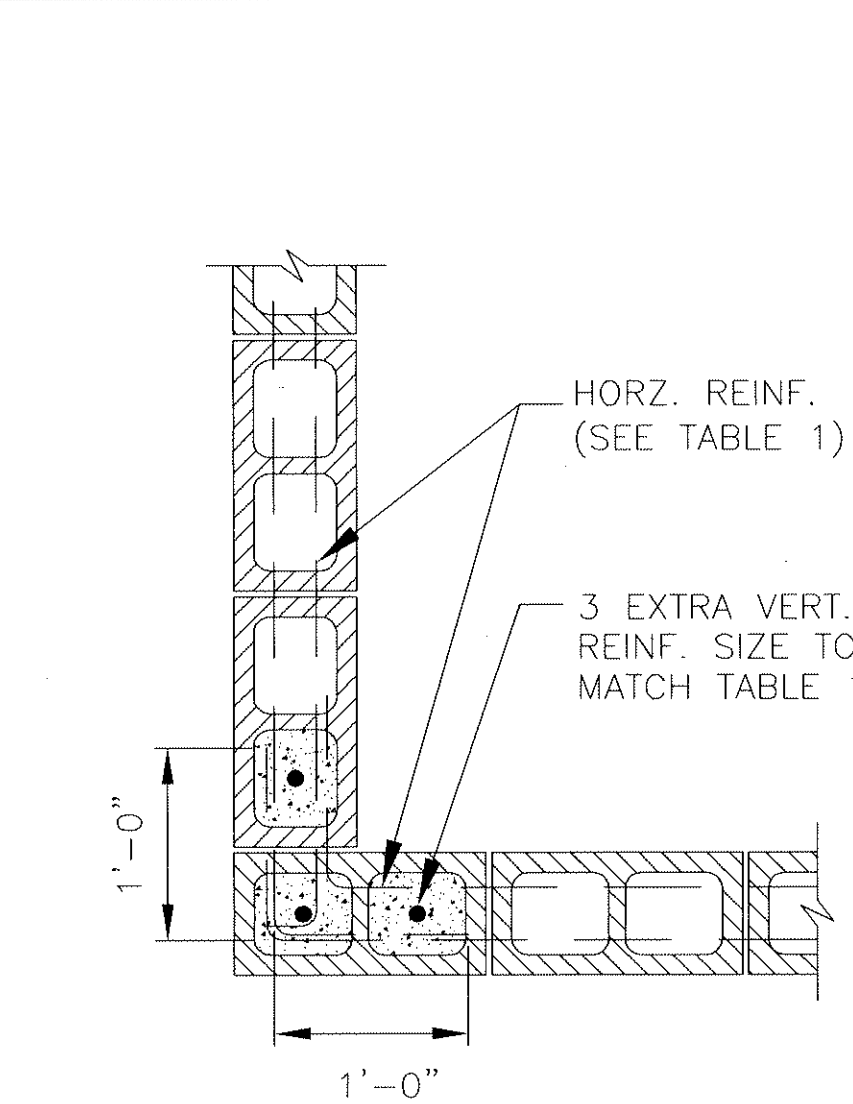
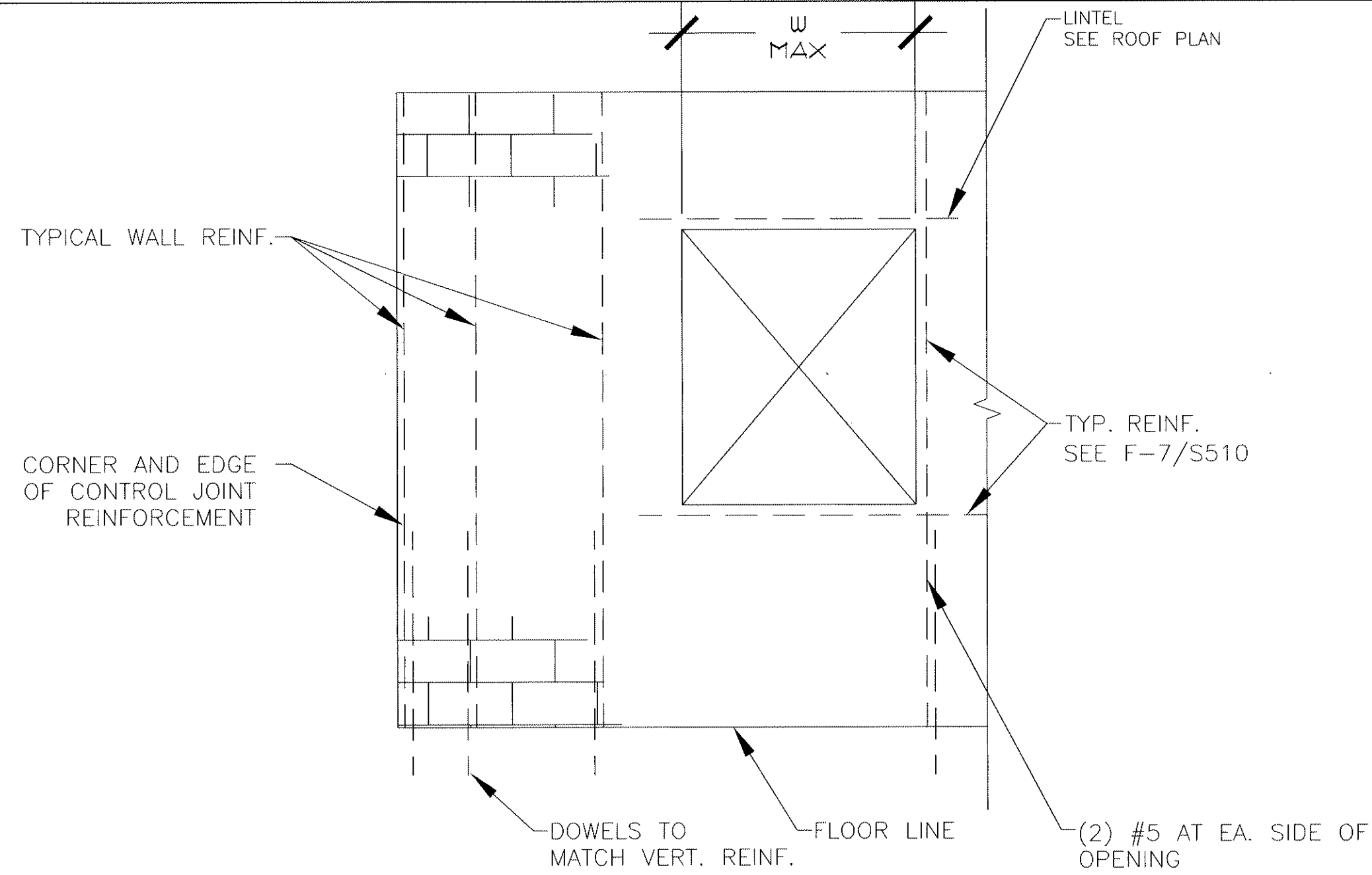
- NOTE:**
- FOR STRUCTURAL NOTES, (SEE DRAWING S001)
 - RT-INDICATES LIGHT GAGE ROOF TRUSS. (SEE S520). DESIGN AND DETAIL BY TRUSS MANUFACTURER.
 - MT-INDICATES MASTER ROOF TRUSS, DESIGN AND DETAIL BY TRUSS MANUFACTURER.
 - RJ - INDICATES ROOF JOIST DESIGNATIONS. MIN. SIZE OF 6" x 16 GA. TO BE DESIGNED BY TRUSS SUPPLIER.
 - ALL TRUSS, RAFT, & JOIST CONNECTION TO TRUSS ARE TO BE FURNISHED BY TRUSS MANUFACTURER.
 - TRUSS BEARING ELEVATION = 10'-8" (A.F.F.) U.N.O..
 - W#* INDICATES LINTEL BEAM, SEE D-1/S510 FOR DETAILS.

--- INDICATES BEARING WALL BELOW

F-1 LOWER ROOF FRAMING PLAN
S110 SCALE 1/4" = 1'-0"

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085		ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424		MEP ENGINEER: Thompson Company consulting engineers 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcleng.com Atlanta, Dubai, UAE Orlando, Mexico City, Mexico Houston, Toronto, BVI		SURVEY: HALDER SURVEYS 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708		 NATIONAL CEMETERY ADMINISTRATION		Drawing Title: ROOF FRAMING PLAN		Project Title: ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY		Date: 07-29-11	
Approved: Director, Technical Support Service		Building Number:		Checked: MG		Drawn: LKB		Project No.: 872CM3035		DRAWING NO.: S-110		Dwg. 57 of 81			
Approved: Chief, Architectural & Engineering Division		Location: 18424 JOPLIN ROAD TRIANGLE, VIRGINIA													

Date	07-29-11
Project No.	872CM3035
DRAWING NO.	S-500
Dwg. 58 of 81	



B-1 TYP. WALL REINF. ELEVATION

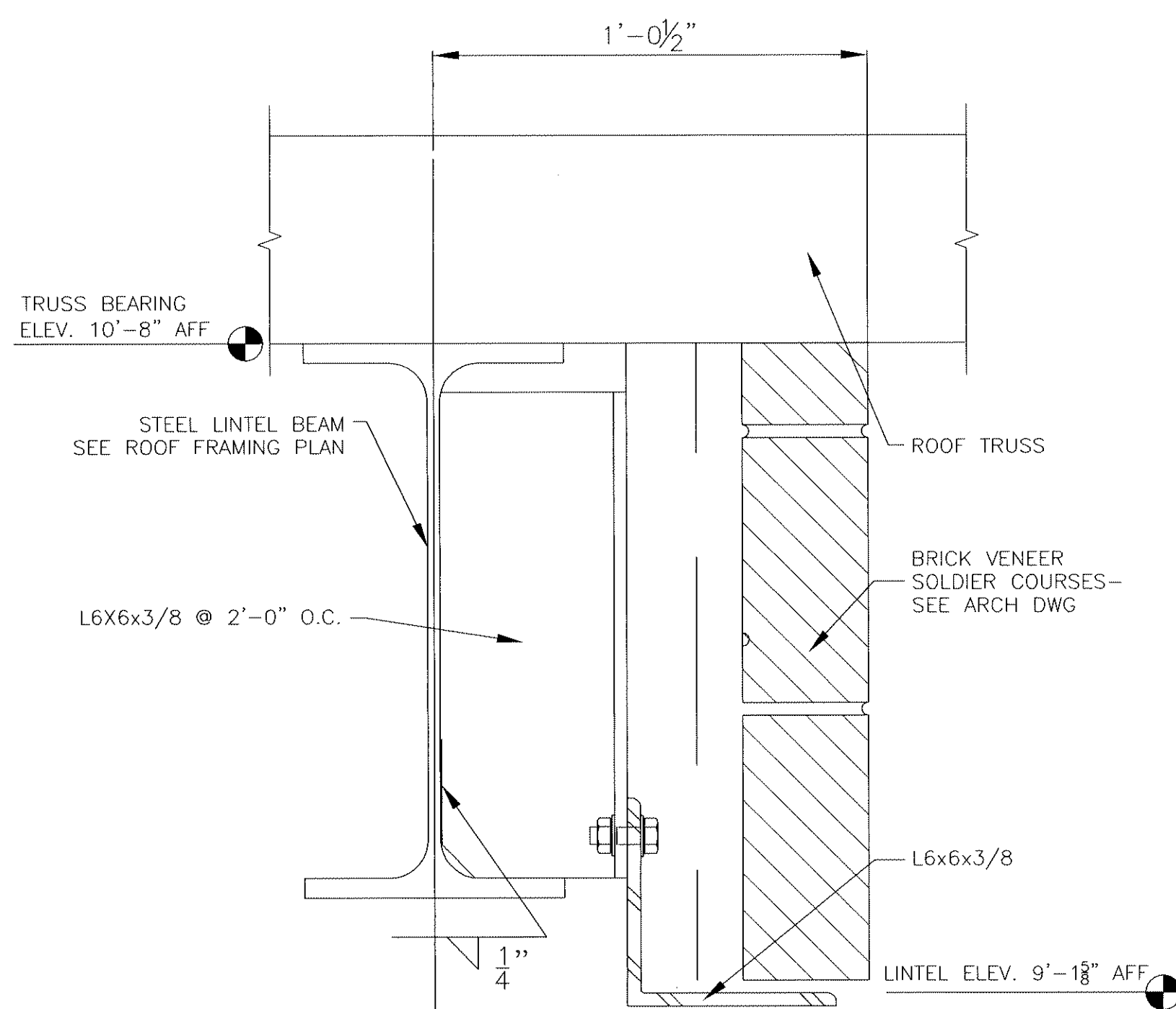
S510 SCALE 1/2" = 1'-0"

B-4 PLANS-TYP. CORNER REINF. AT BOND BEAMS

S510 SCALE 1" = 1'-0"

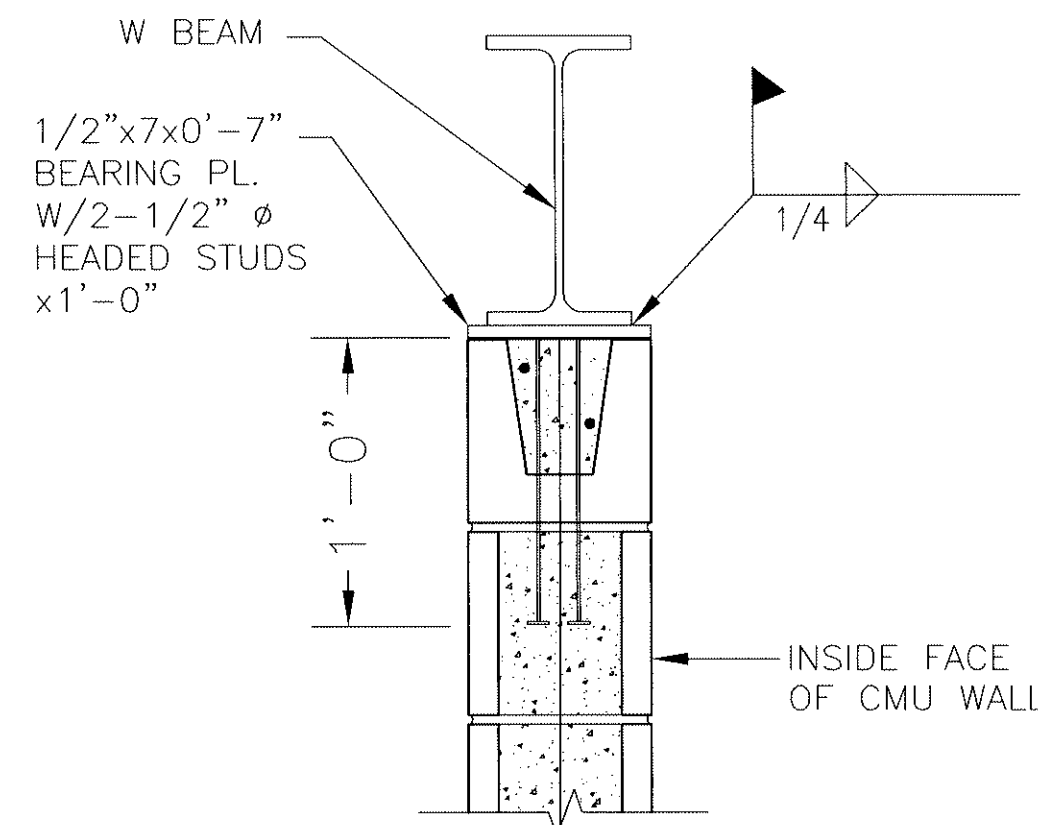
B-8 PLANS-TYP. CONTROL JOINT

S510 SCALE 1" = 1'-0"



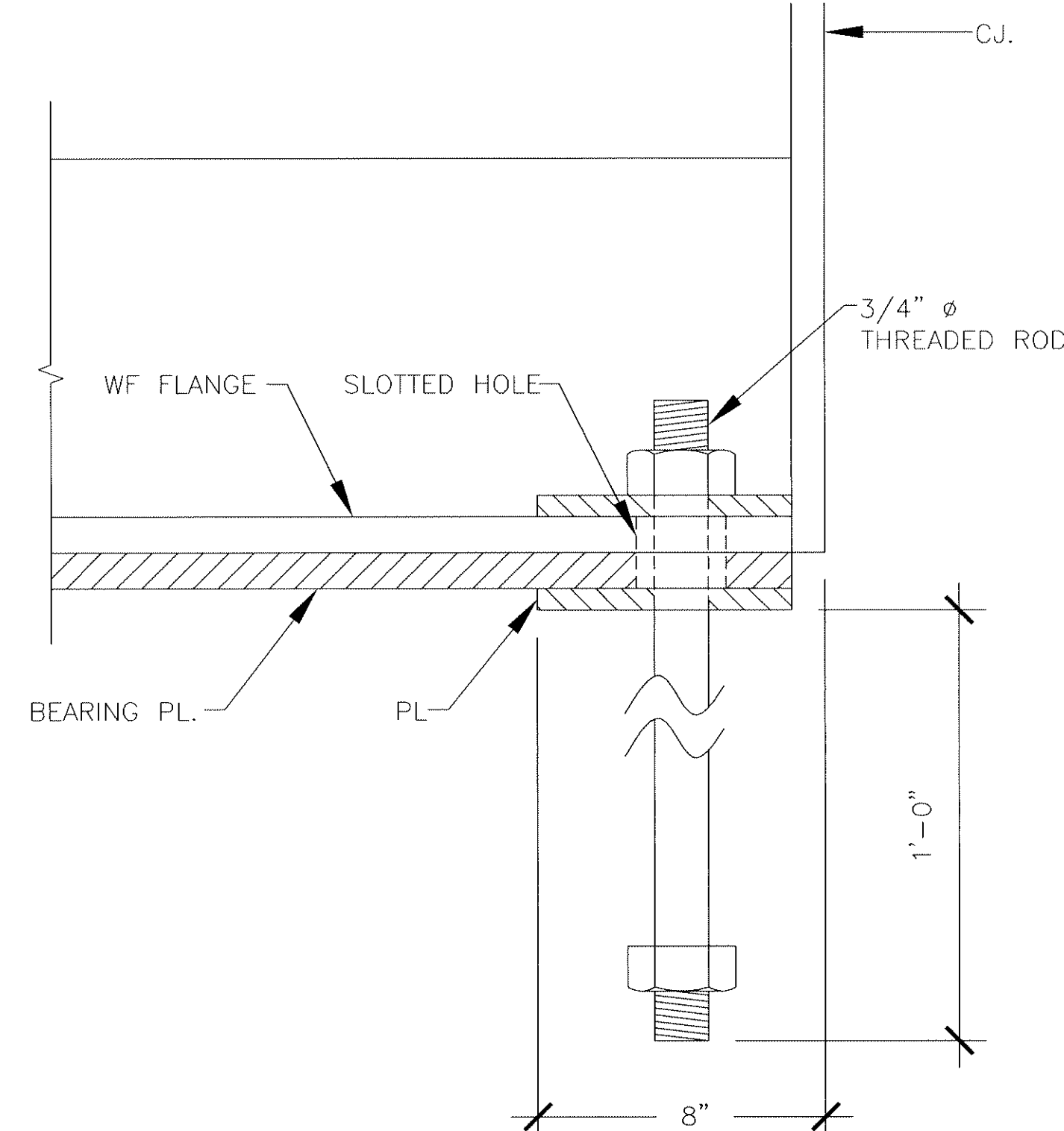
D-1 DETAIL - TYP. LINTEL

S510 SCALE 3" = 1'-0"



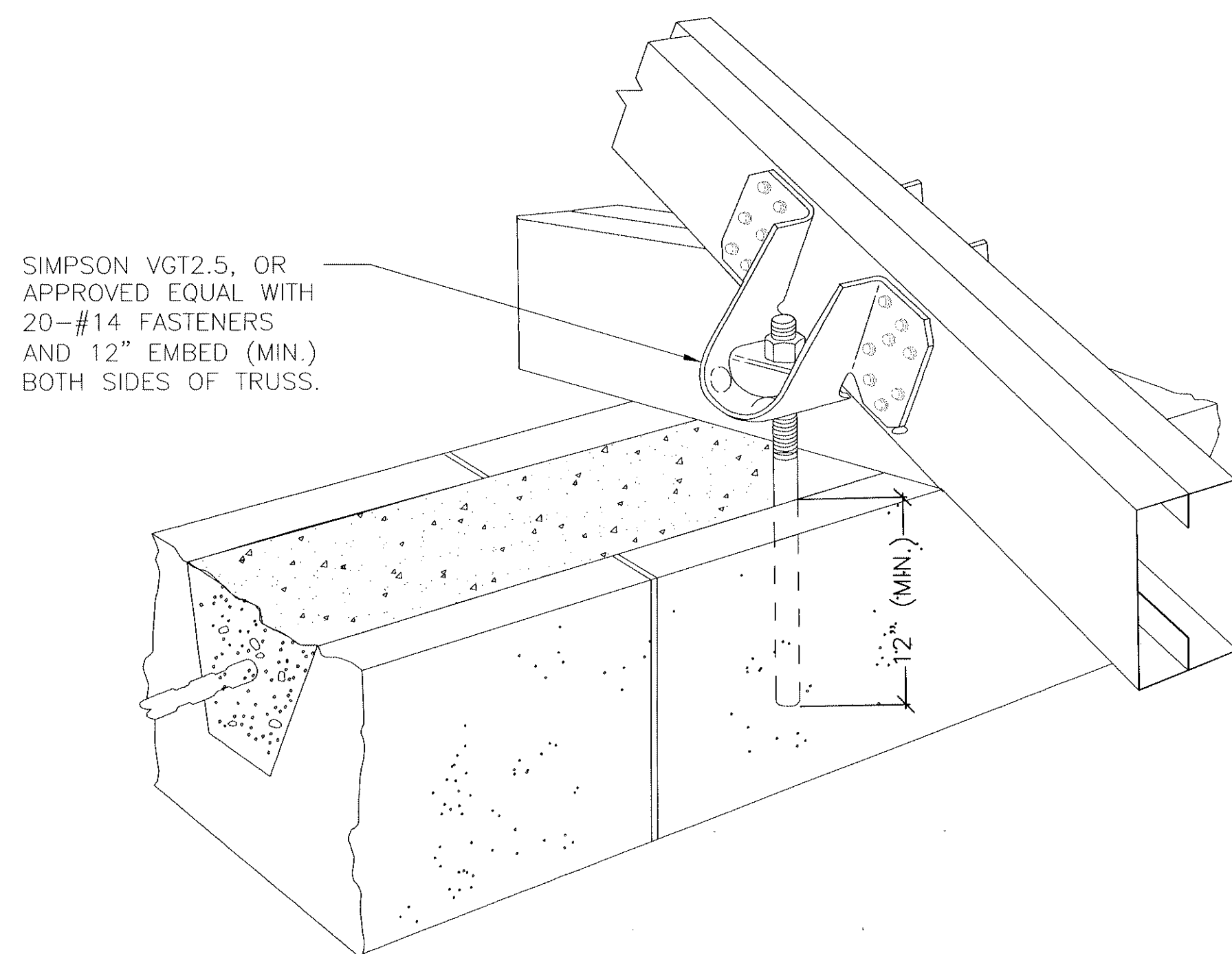
D-4 DETAIL - BEAM

S510 SCALE 1 1/2" = 1'-0"



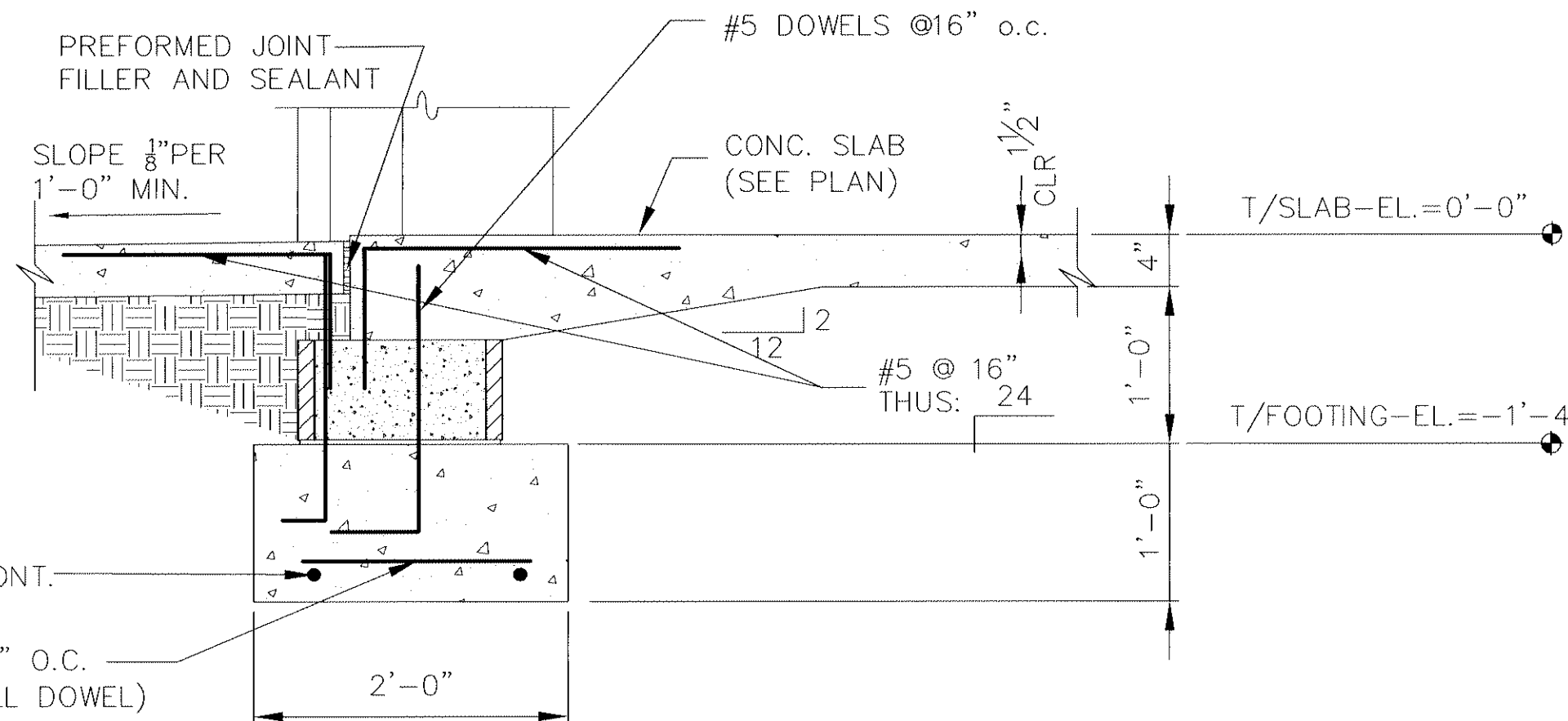
D-6 DETAIL - BEAM CONNECTION

S510 SCALE 3" = 1'-0"



F-1 TYP. TRUSS CONNECTION TO CMU

S510 SCALE 3/4" = 1'-0"



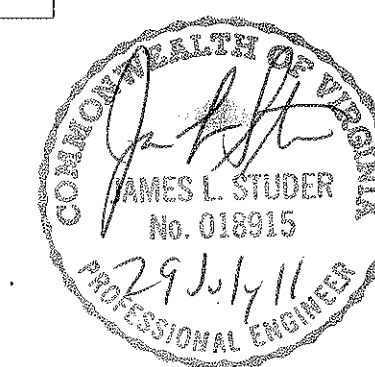
F-4 DETAIL - TYP. SLAB AT DOOR

S500 SCALE 1 1/2" = 1'-0"

F-7 DETAIL - BEAM CONNECTION

S510 SCALE 1 1/2" = 1'-0"

TABLE 1 : CONCRETE MASONRY UNIT REINFORCEMENT			
NOMINAL WALL THICKNESS	VERTICAL	HORIZONTAL	REMARKS
8"	#5 @ 16" O.C.	W2.8 @ 16" O.C. LAP 1'-0"	1- ALL CELLS WITH VERTICAL REINF. SHALL BE FULLY GROUTED.
		BOND BEAM W/(2) #5 CONT.	2- ADDITIONAL REINF. SHALL BE ADDED AROUND ALL OPENINGS AS SHOWN IN ELEVATION



Revisions	Date

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:



MACTEC ENGINEERING AND CONSULTING, INC.
5200 TOWN POINT DR., KENNESAW, GA. 30144
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MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:



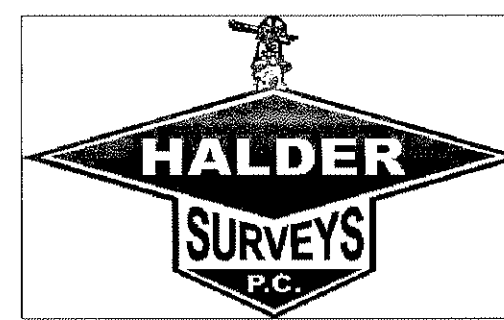
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SURVEY:



10400 CHESTER ROAD, CHESTER, VA 23831
TEL: (804) 748-8707 FAX: (804) 748-8708



NATIONAL CEMETERY ADMINISTRATION

Drawing Title

WALL DETAILS

Approved: Director, Technical Support Service

Approved: Chief, Architectural & Engineering Division

Project Title

ADMINISTRATION / PUBLIC INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY

Building Number

Checked

MG

Drawn

LKB

Location

18424 JOPLIN ROAD
TRIANGLE, VIRGINIA

Date

07-29-11

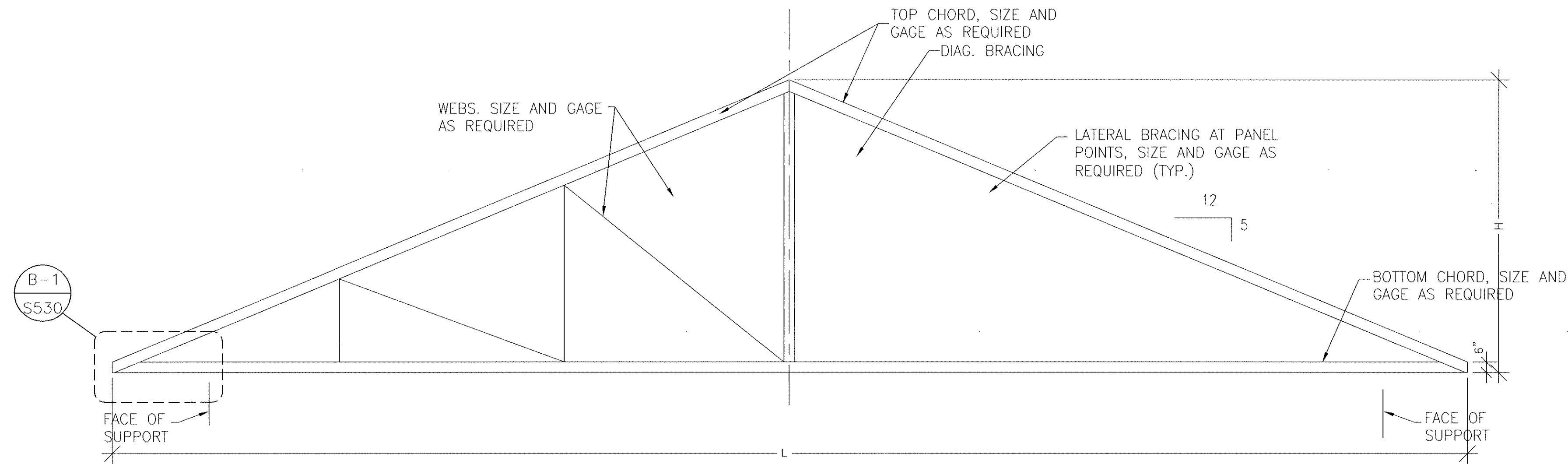
Project No.

872CM3035

Drawing No.

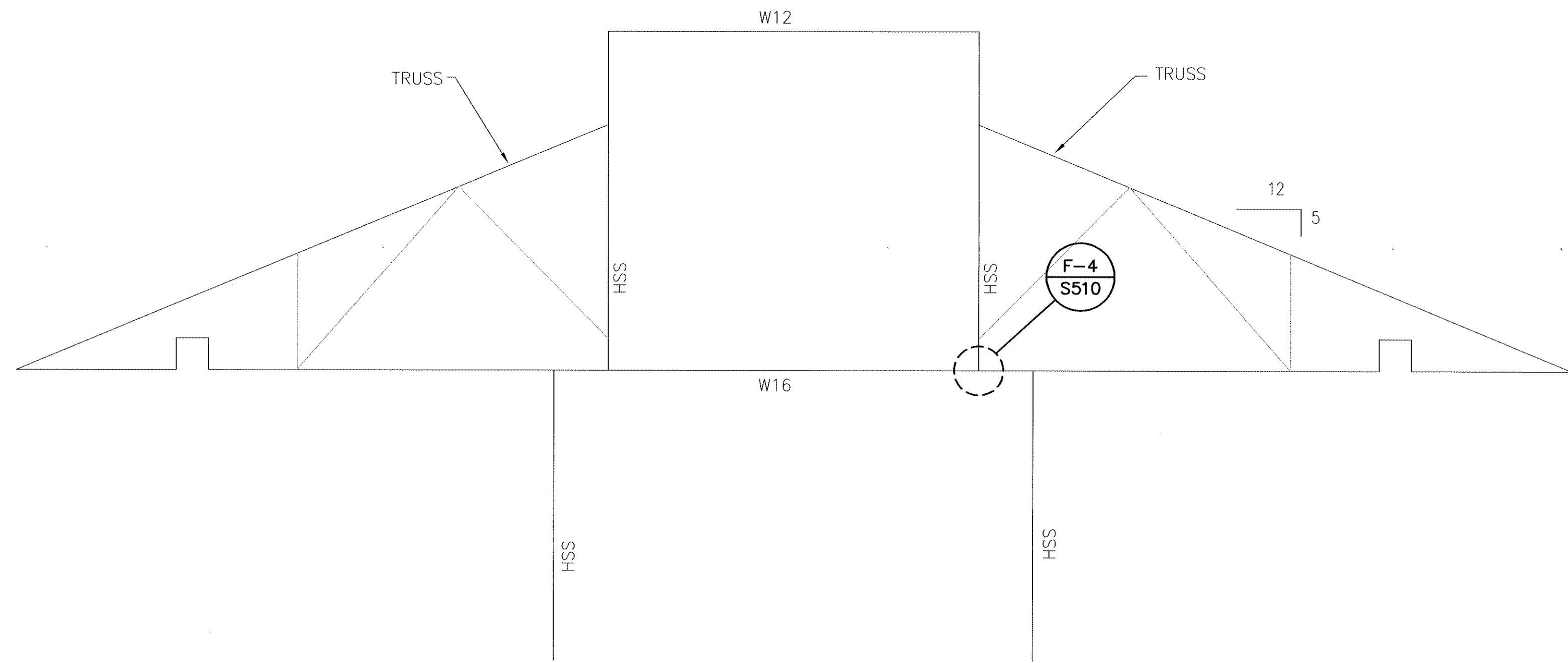
S-510

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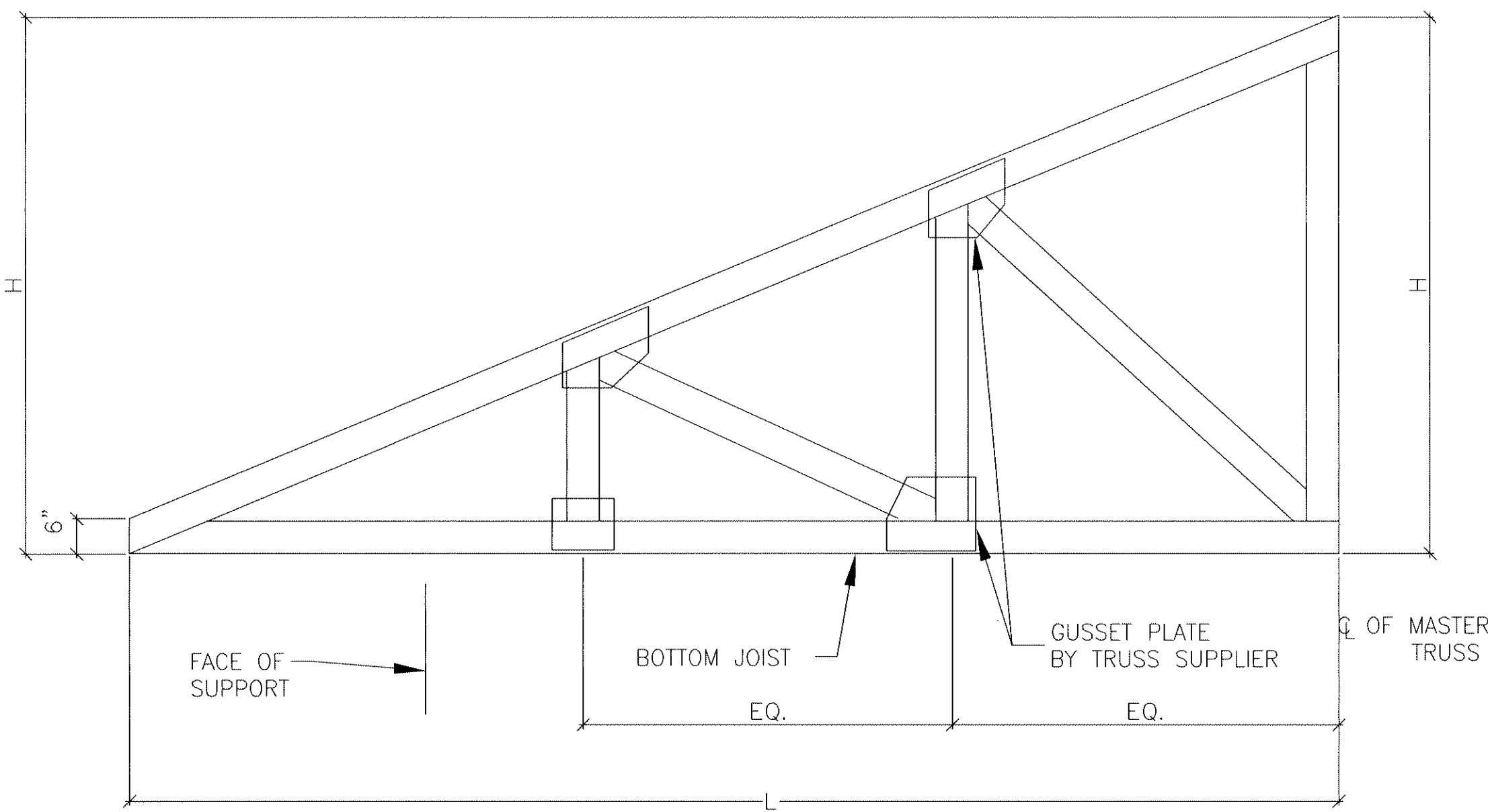
B-1 TYP TRUSS ELEVATION

S520 SCALE 1/4"=1'-0"



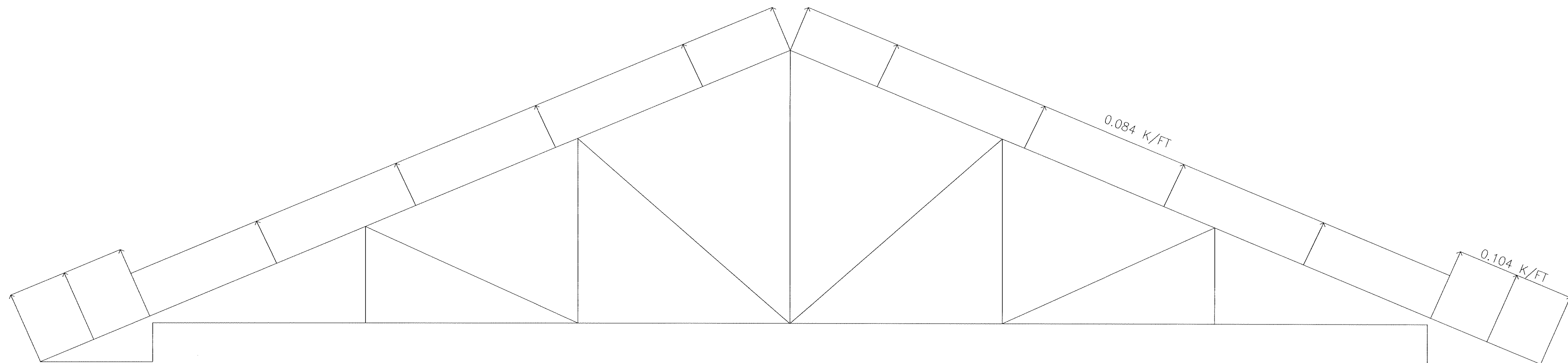
B-6 FRAMING AT WEST ELEVATION (AT CUPOLA COLUMN GRID C)

S520 SCALE 1/4"=1'-0"



D-1 RIDGE TRUSS ELEVATION

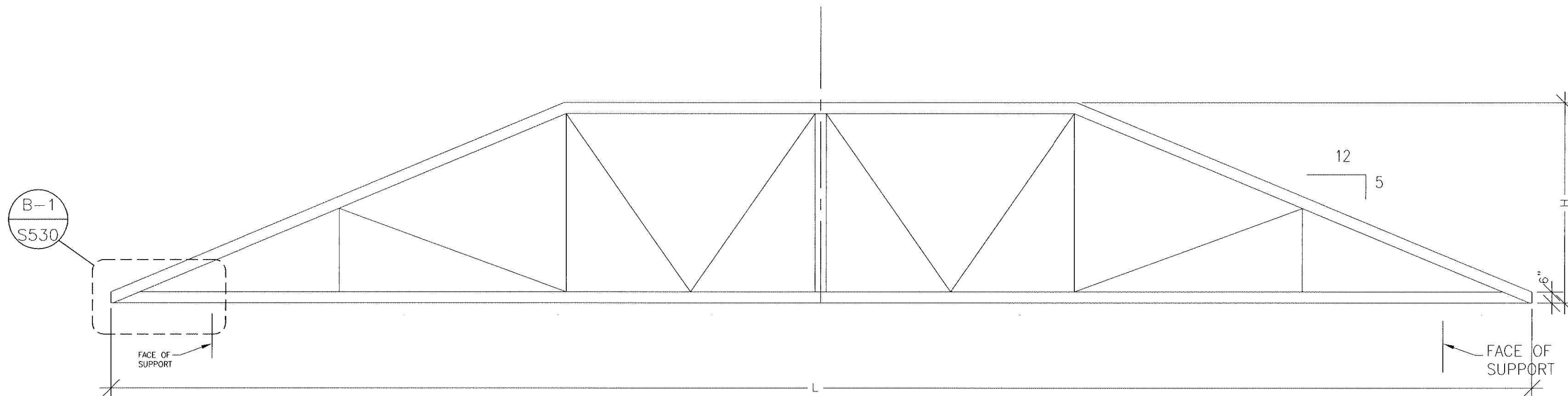
S520 SCALE 1/2"=1'-0"



D-4 LOAD DIAGRAM

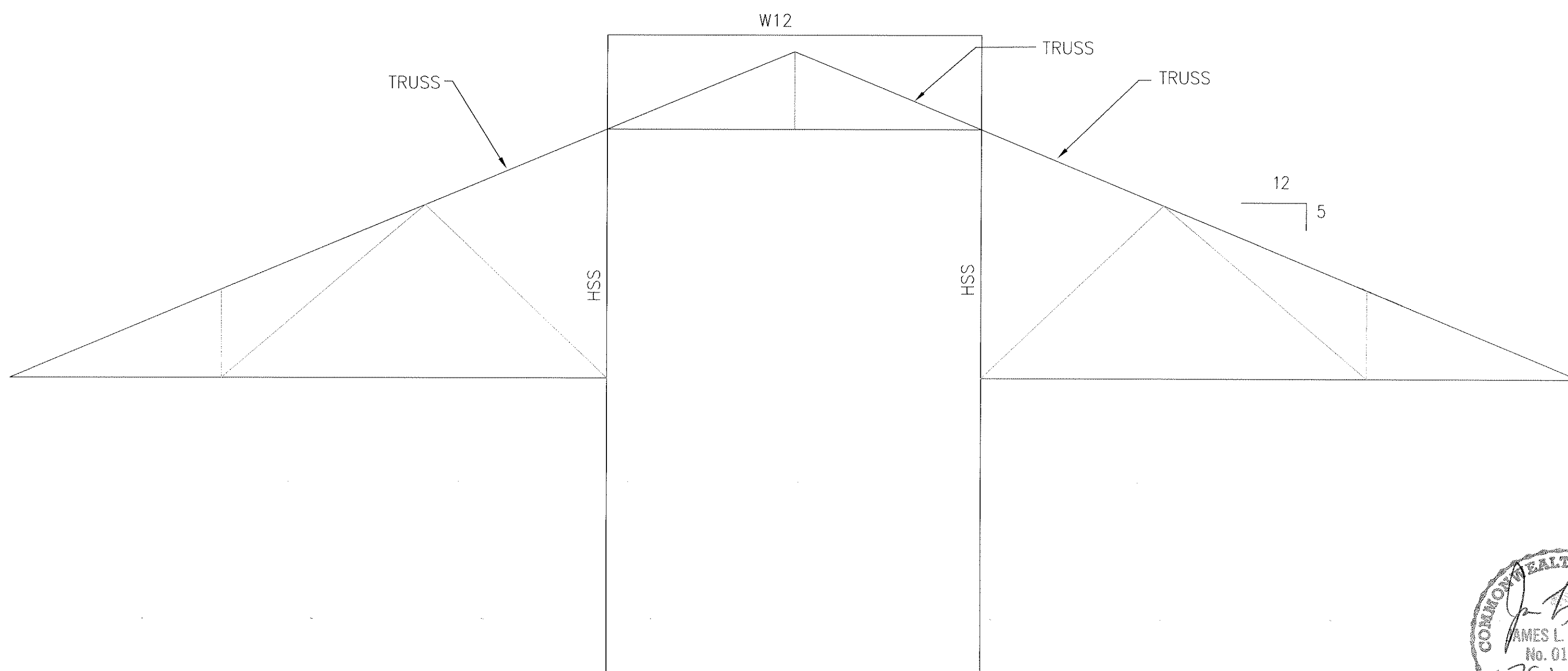
S520 SCALE 1/2"=1'-0"

D.L. ON ROOF TOP CHORD= 40 LBS/FT
D.L. ON ROOF BOTTOM CHORD= 40 LBS/FT
L.L. ON ROOF TOP CHORD= 80 LBS/FT
L.L. ON ROOF BOTTOM CHORD= 0 LBS/FT
MIN. D.L. W/UPLIFT= 30 PSF.



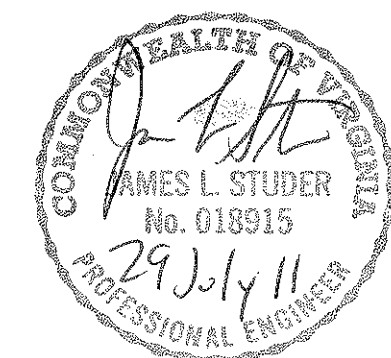
F-1 STEP DOWN TRUSS ELEVATION

S520 SCALE 1/4"=1'-0"



F-6 FRAMING AT EAST ELEVATION (AT CUPOLA COLUMN GRID E)

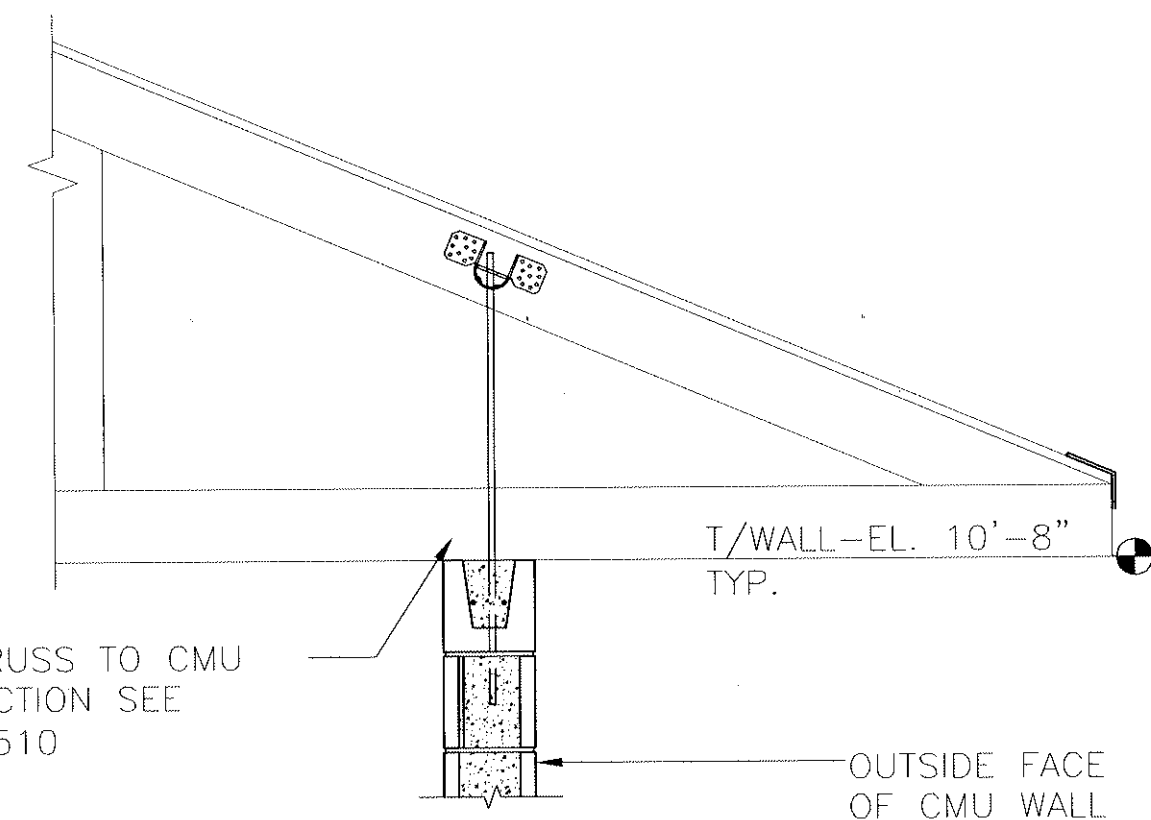
S520 SCALE 1/4"=1'-0"



F-1 STEP DOWN TRUSS ELEVATION S520 SCALE 1/4"=1'-0"		CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: MACTEC MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085		ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424		MEP ENGINEER: Thompson Company consulting engineers 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcleng.com Atlanta, Dubai, UAE Orlando, Mexico City, Mexico Houston, Toronto, BVI		SURVEY: HALDER SURVEYS P.C. 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708		NATIONAL CEMETERY ADMINISTRATION		Drawing Title TRUSS LAYOUTS AND SCHEDULE		Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY		Date 07-29-11	
Approved: Director, Technical Support Service		Building Number		Checked MG		Drawn LKB		Project No. 872CM3035		Drawing No. S-520		Dwg. 60 of 81		Approved: Chief, Architectural & Engineering Division		Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA	

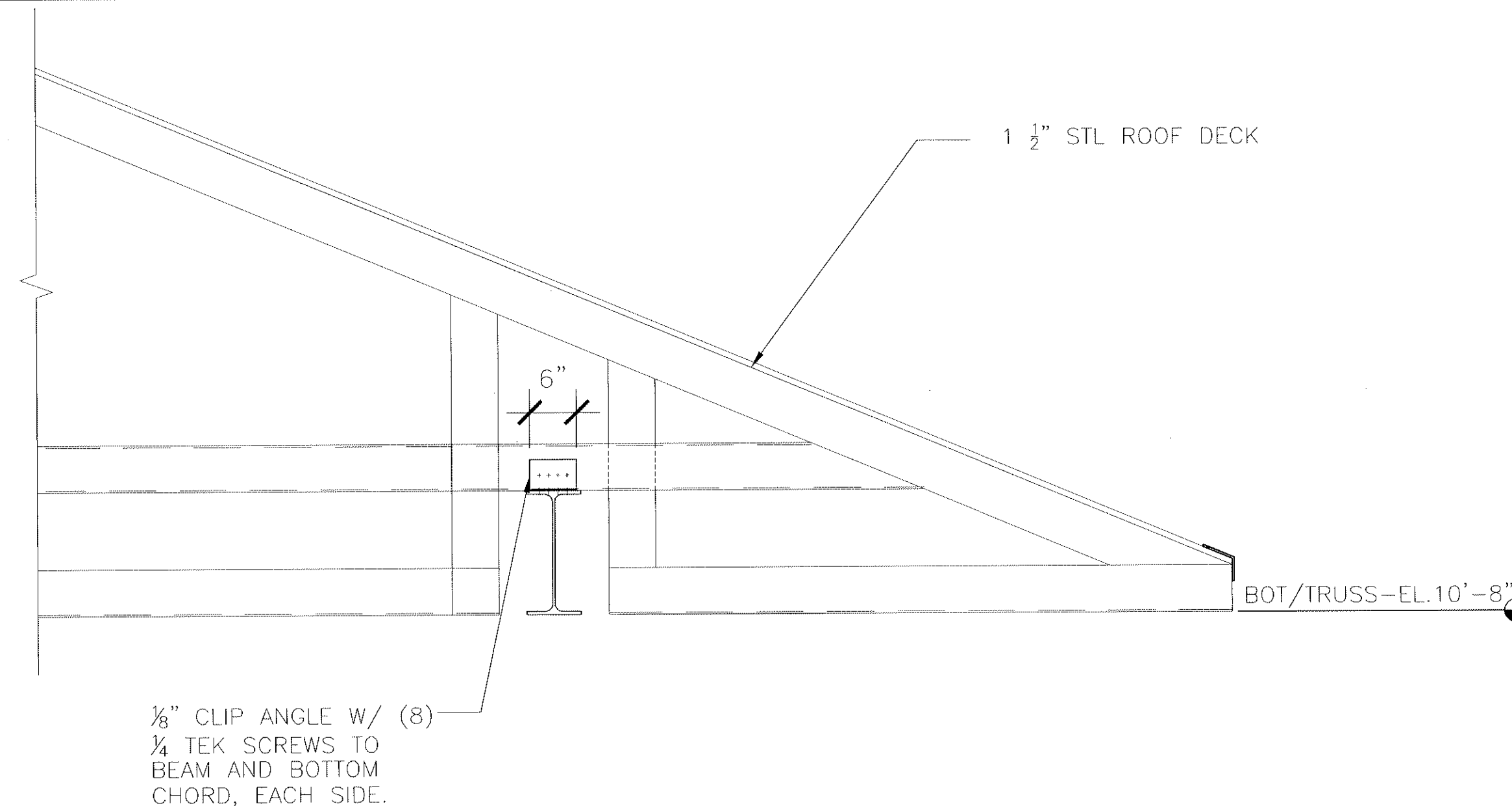
DT/TRUSS-EL. 10'-8"

FOR TRUSS TO CMU
CONNECTION SEE
F-1/S510



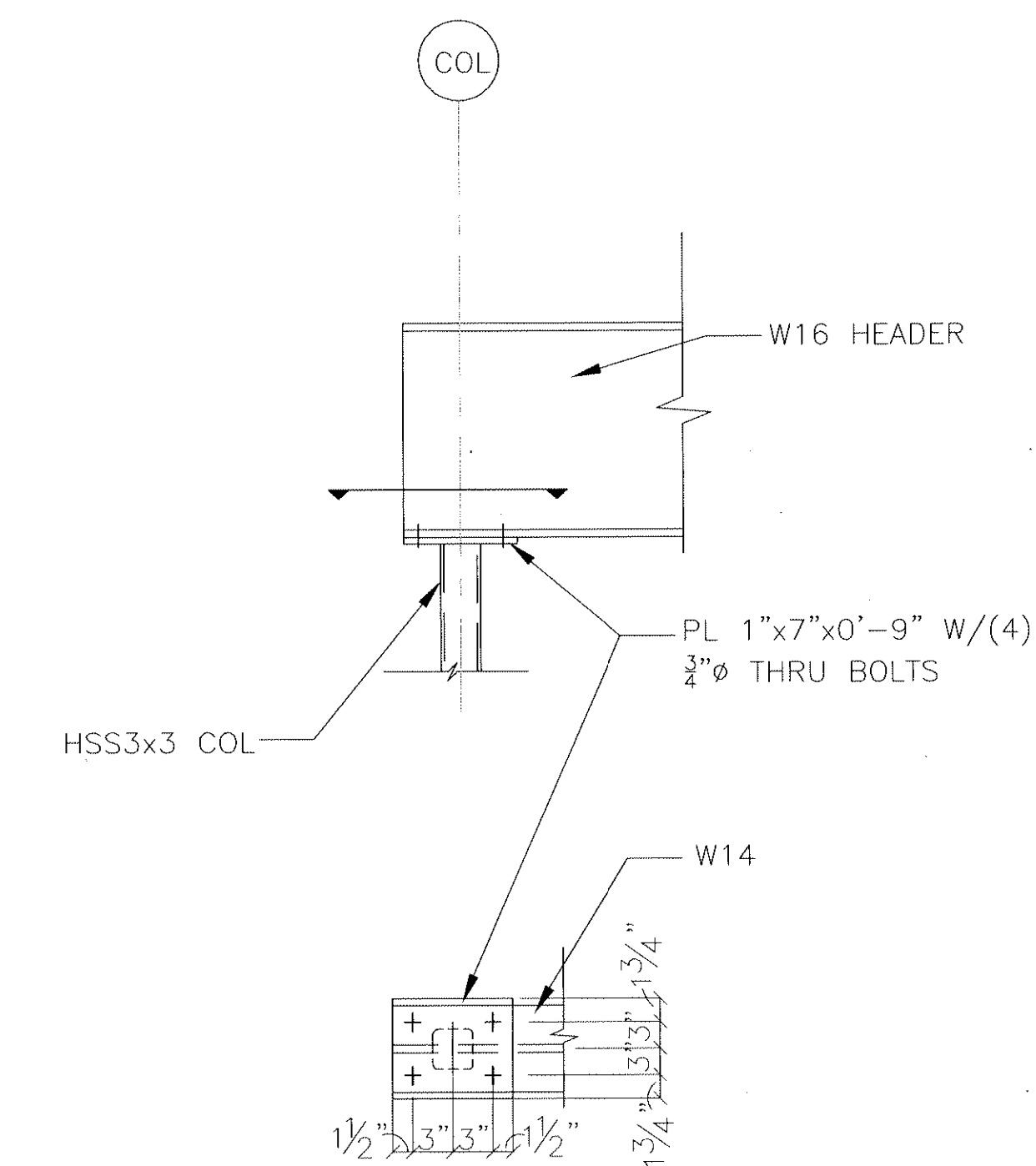
B-1 TYP. TRUSS CONNECTION TO CMU

S530 SCALE 3/4" = 1'-0"



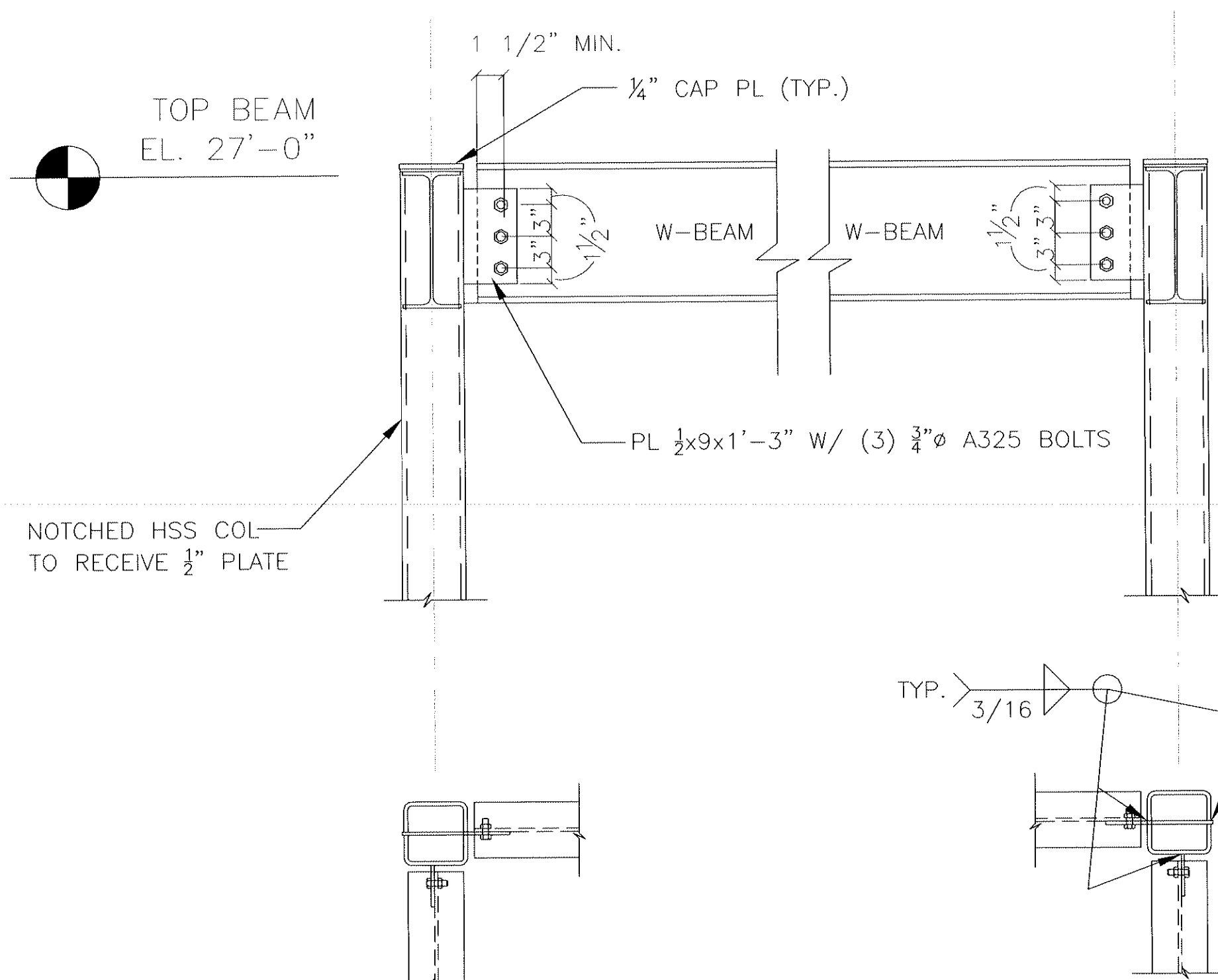
B-4 EAVE SECTION @CANOPY

S530 SCALE 3/4" = 1'-0"



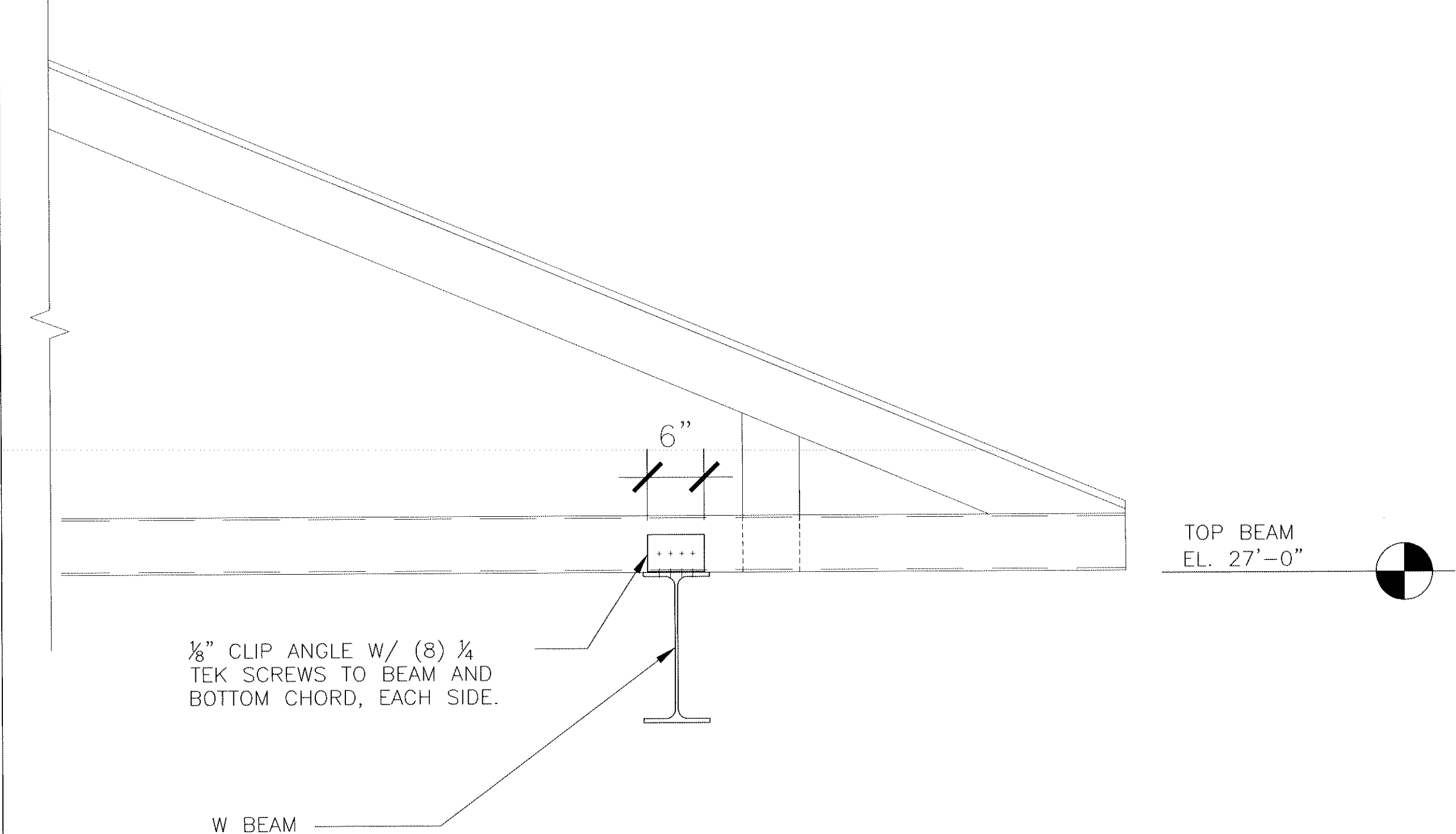
B-7 DETAIL- LINTEL BEAM @ SOUTH ENTRY

S530 SCALE 1" = 1'-0"



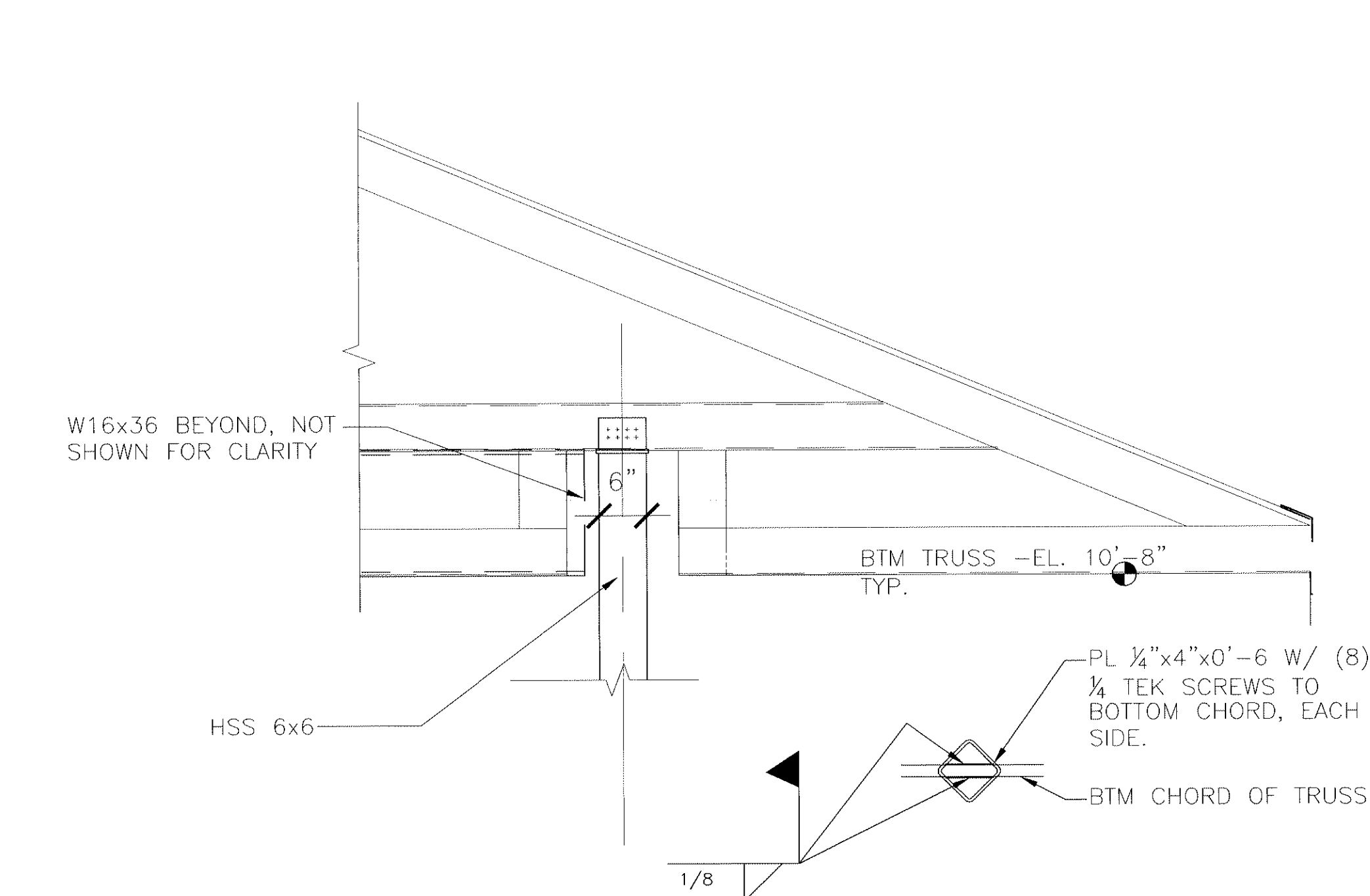
D-1 CUPOLA FRAMING ATTACHMENT TO HSS COLUMNS

S530 SCALE 1/4" = 1'-0"



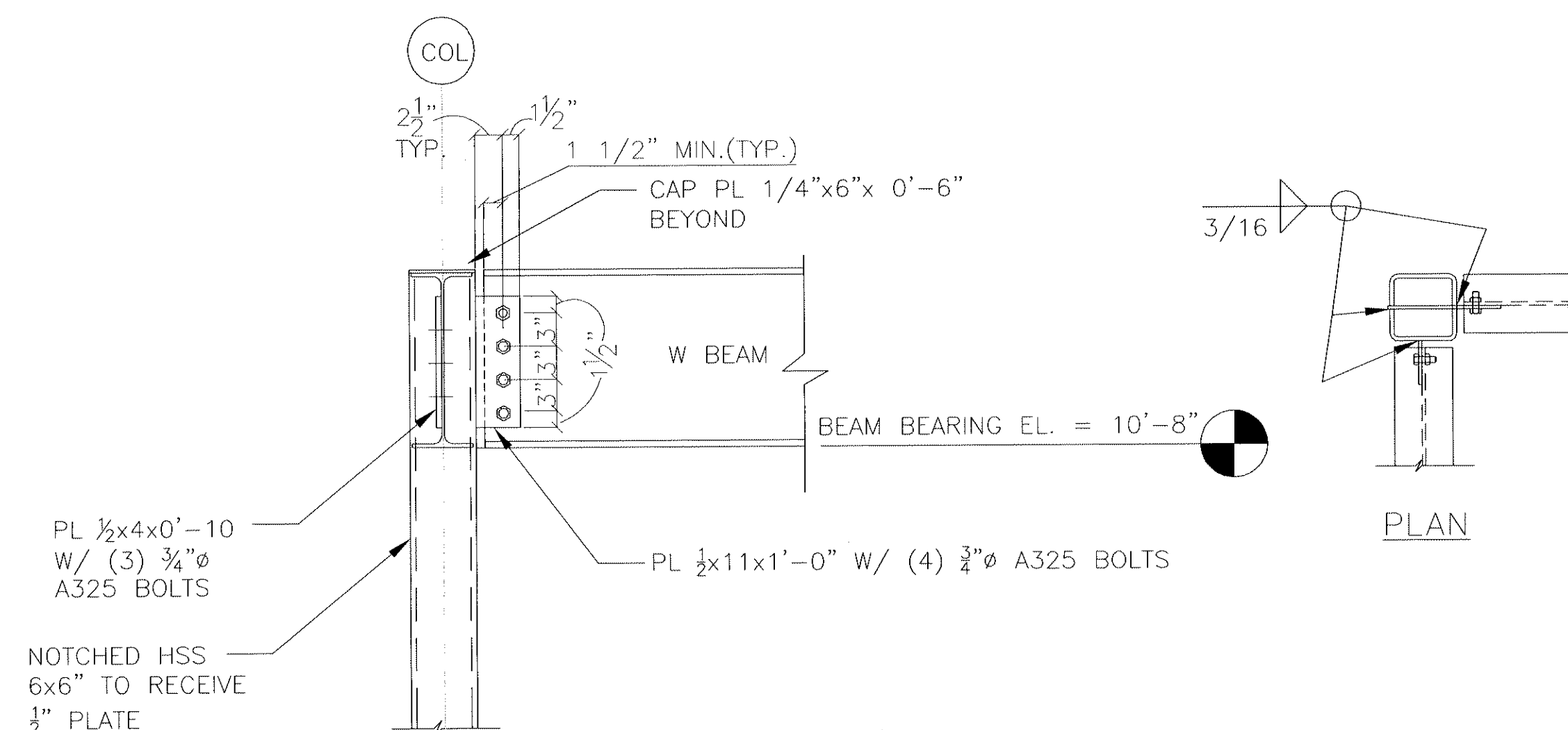
D-4 ROOF TRUSS CONNECTION AT CUPOLA

S530 SCALE 1" = 1'-0"



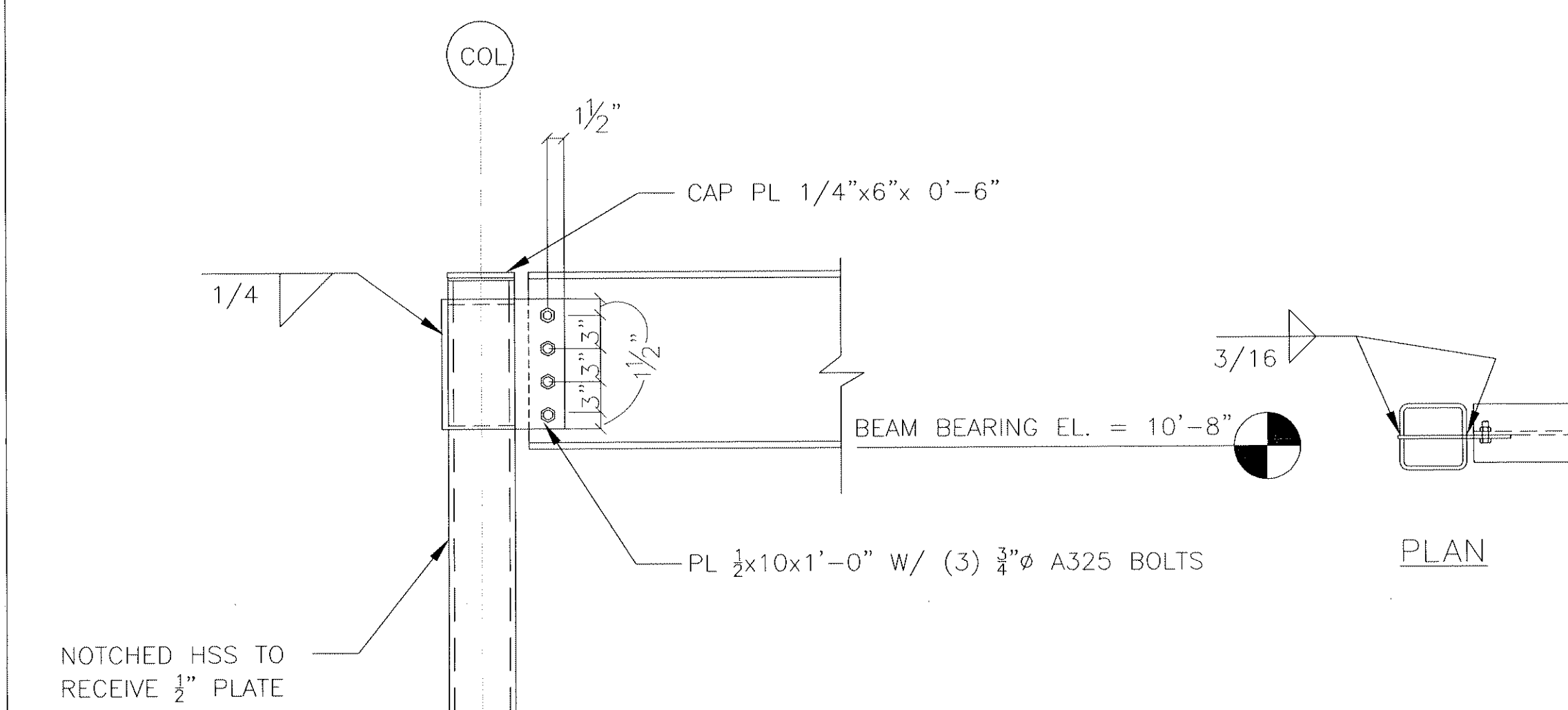
D-7 HIP MASTER TRUSS CONNECTION AT HSS

S530 SCALE 1" = 1'-0"



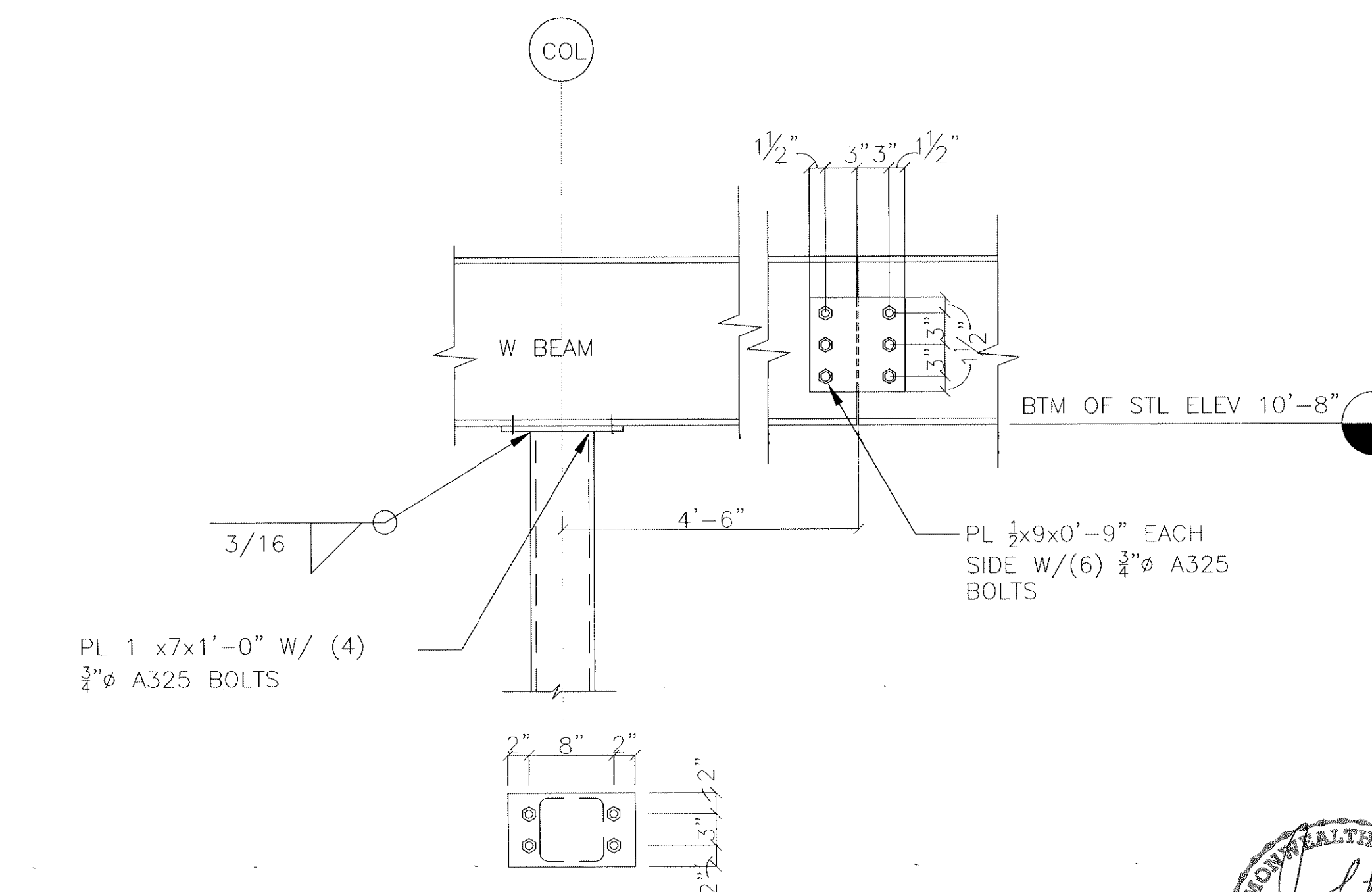
F-1 CORNER COL TO BEAM CONN. DETAIL

S530 SCALE 1" = 1'-0"



F-4 END COL TO BEAM CONN. DETAIL

S530 SCALE 1" = 1'-0"



F-7 TYPICAL BEAM SPLICE DETAIL

S530 SCALE 1" = 1'-0"

Revisions	Date

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NATIONAL CEMETERY ADMINISTRATION

Drawing Title: **ROOF FRAMING DETAILS**

Approved: Director, Technical Support Service

Approved: Chief, Architectural & Engineering Division

Project Title: **ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY**

Building Number: **18424 JOPLIN ROAD TRIANGLE, VIRGINIA**

Checked: **MG**

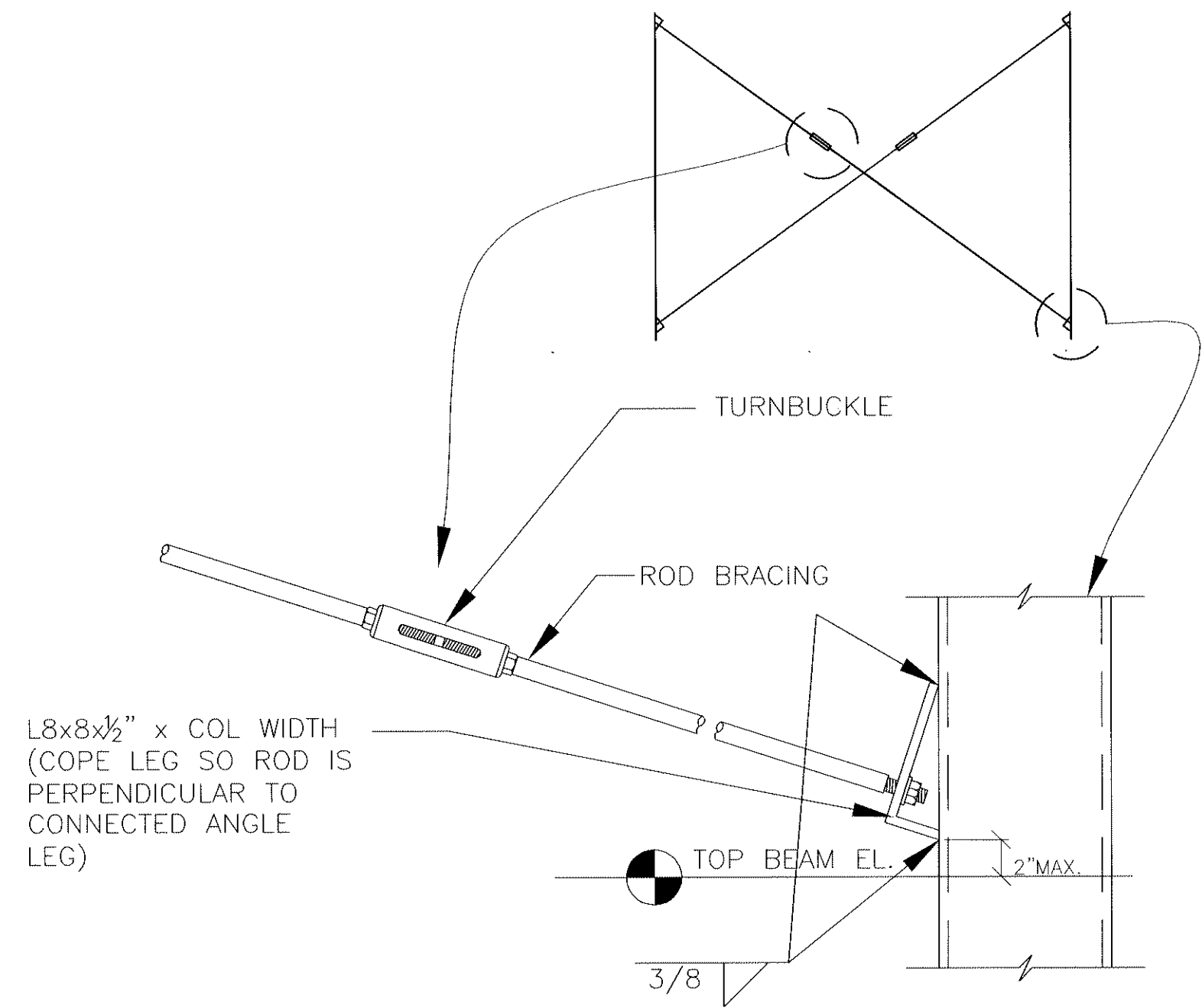
Drawn: **LKB**

Date: **07-29-11**

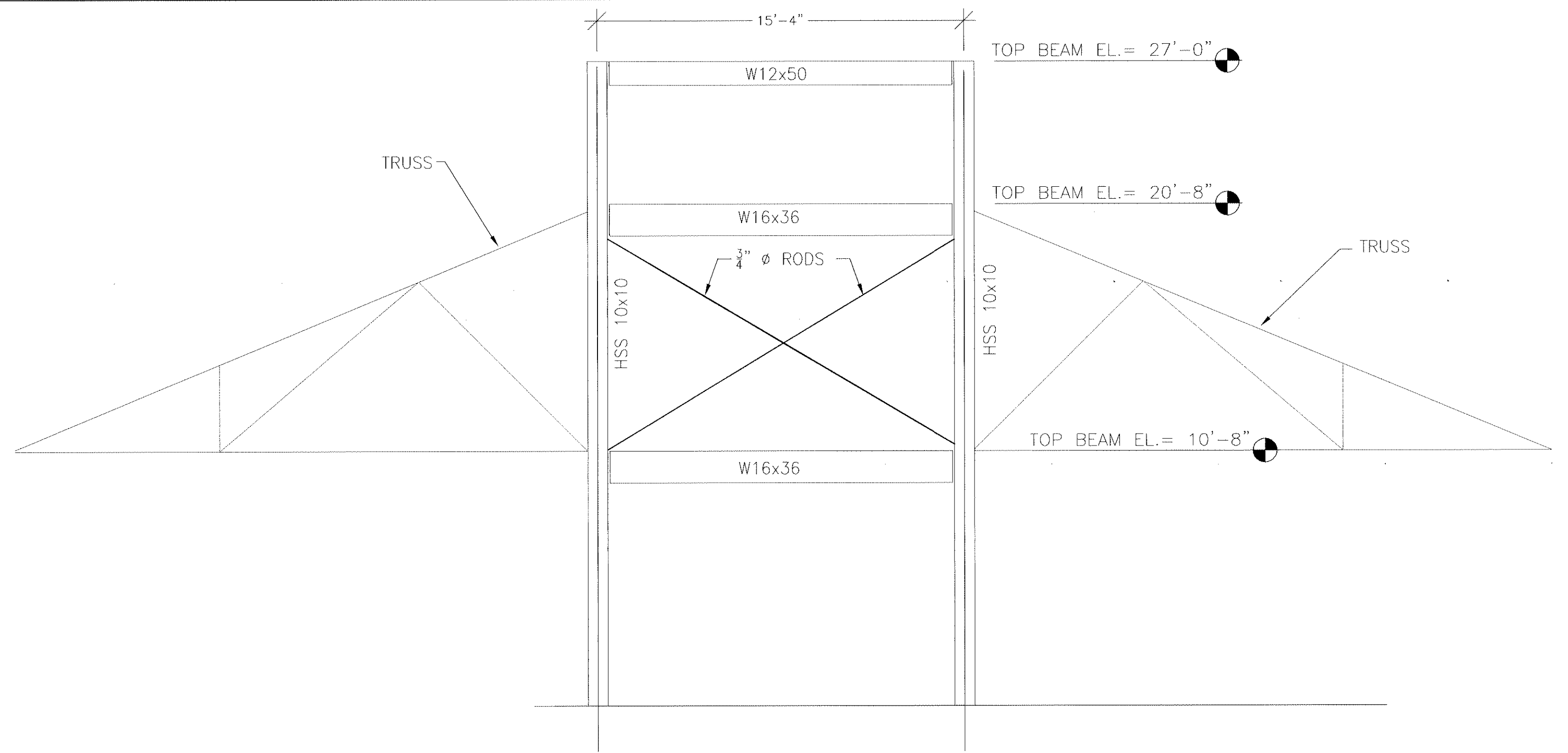
Project No.: **872CM3035**

Drawing No.: **S-530**

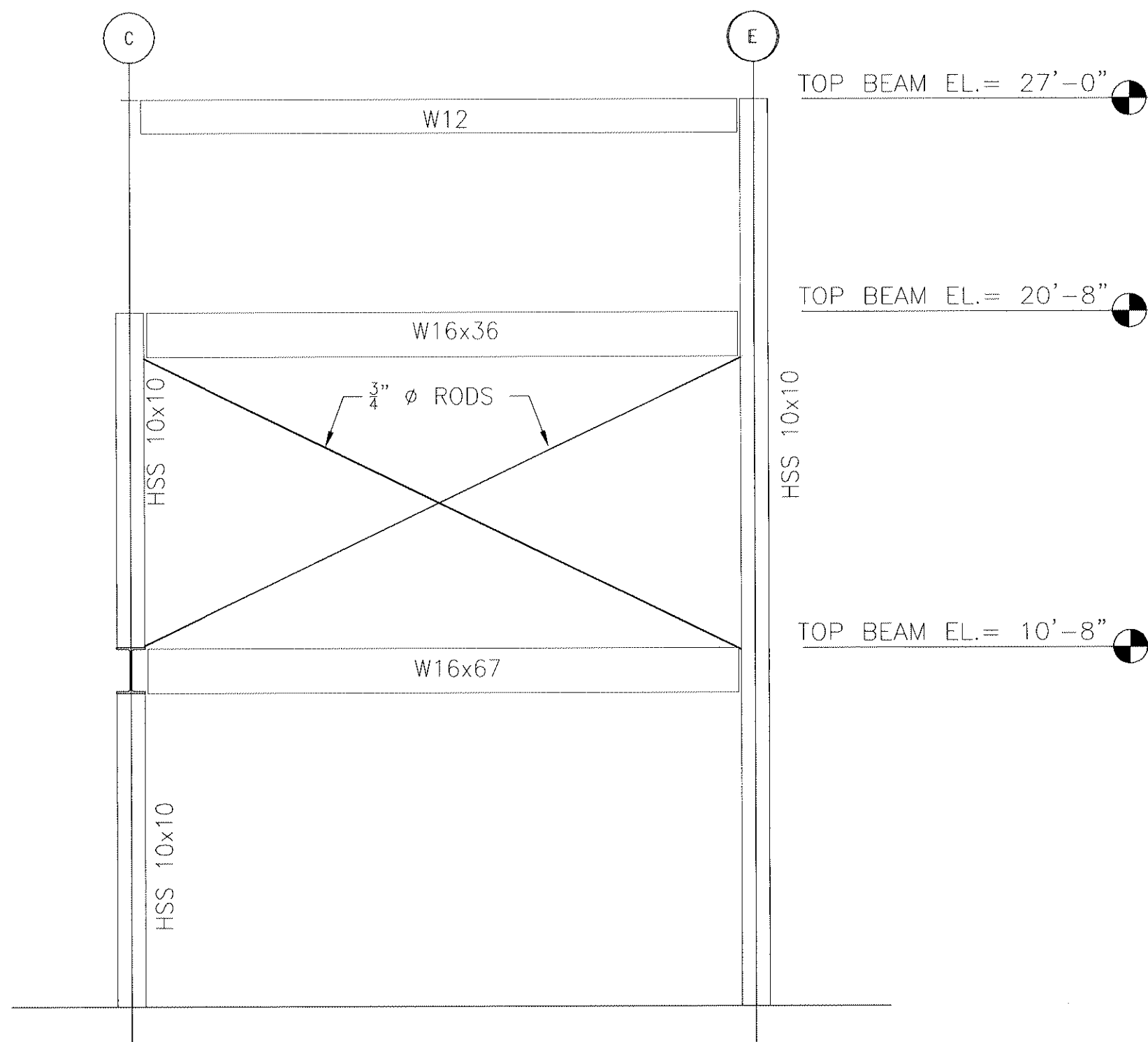
Dwg. 61 of 81



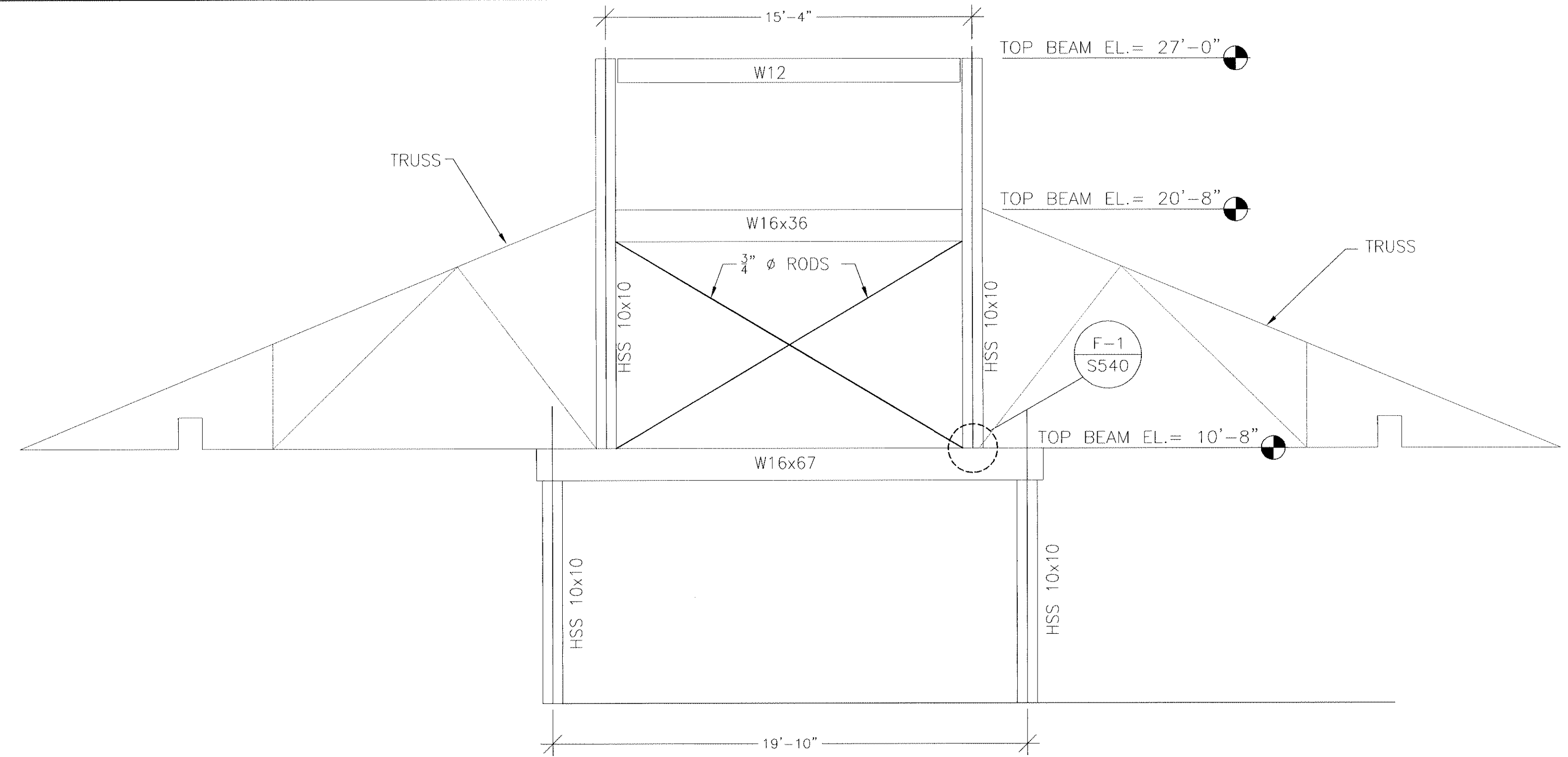
B-3 CROSS BRACING DETAIL
S540 SCALE 1 1/2"=1'-0"



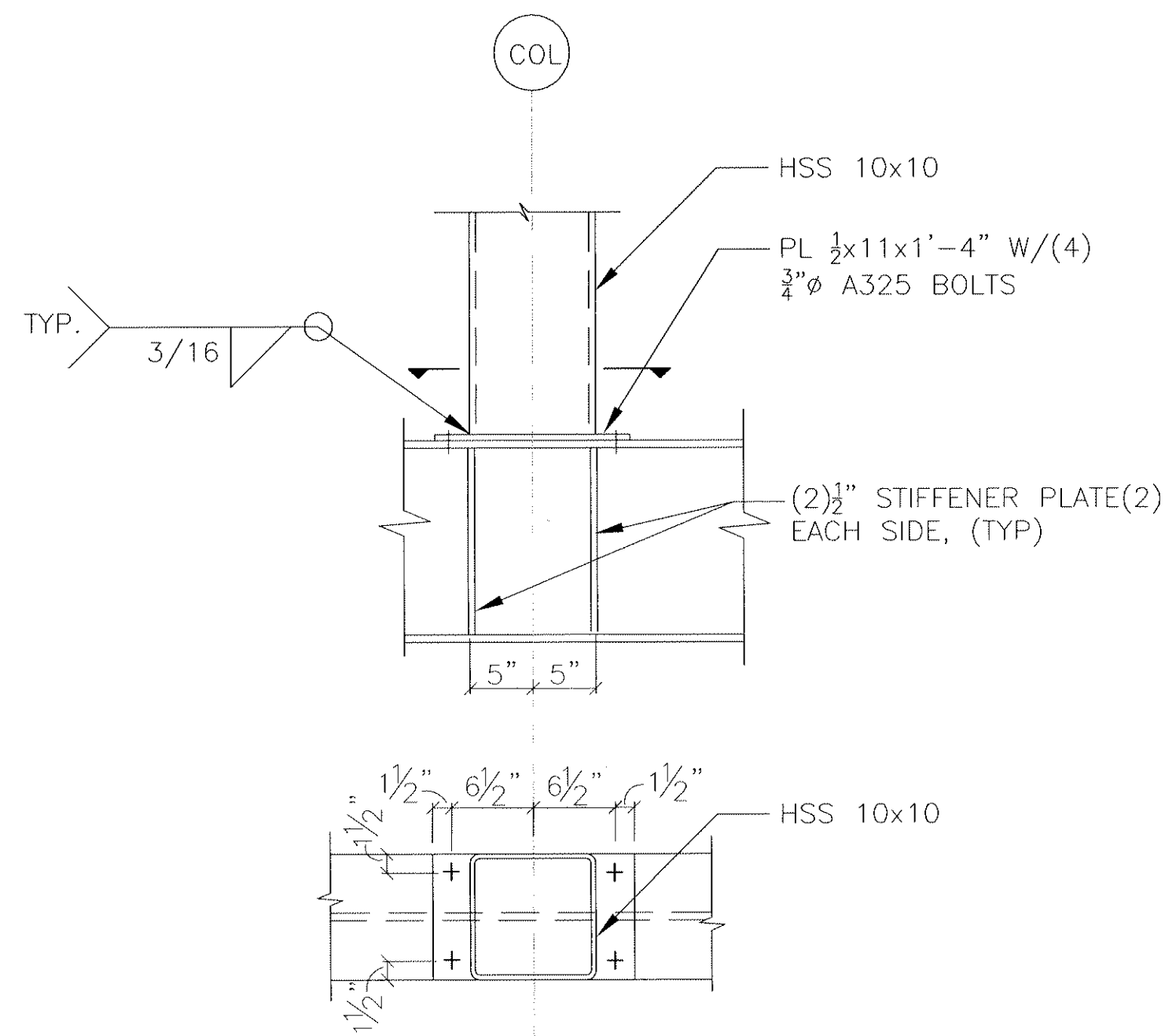
B-6 FRAME "B" (AT CUPOLA)
S540 SCALE 1/4"=1'-0"



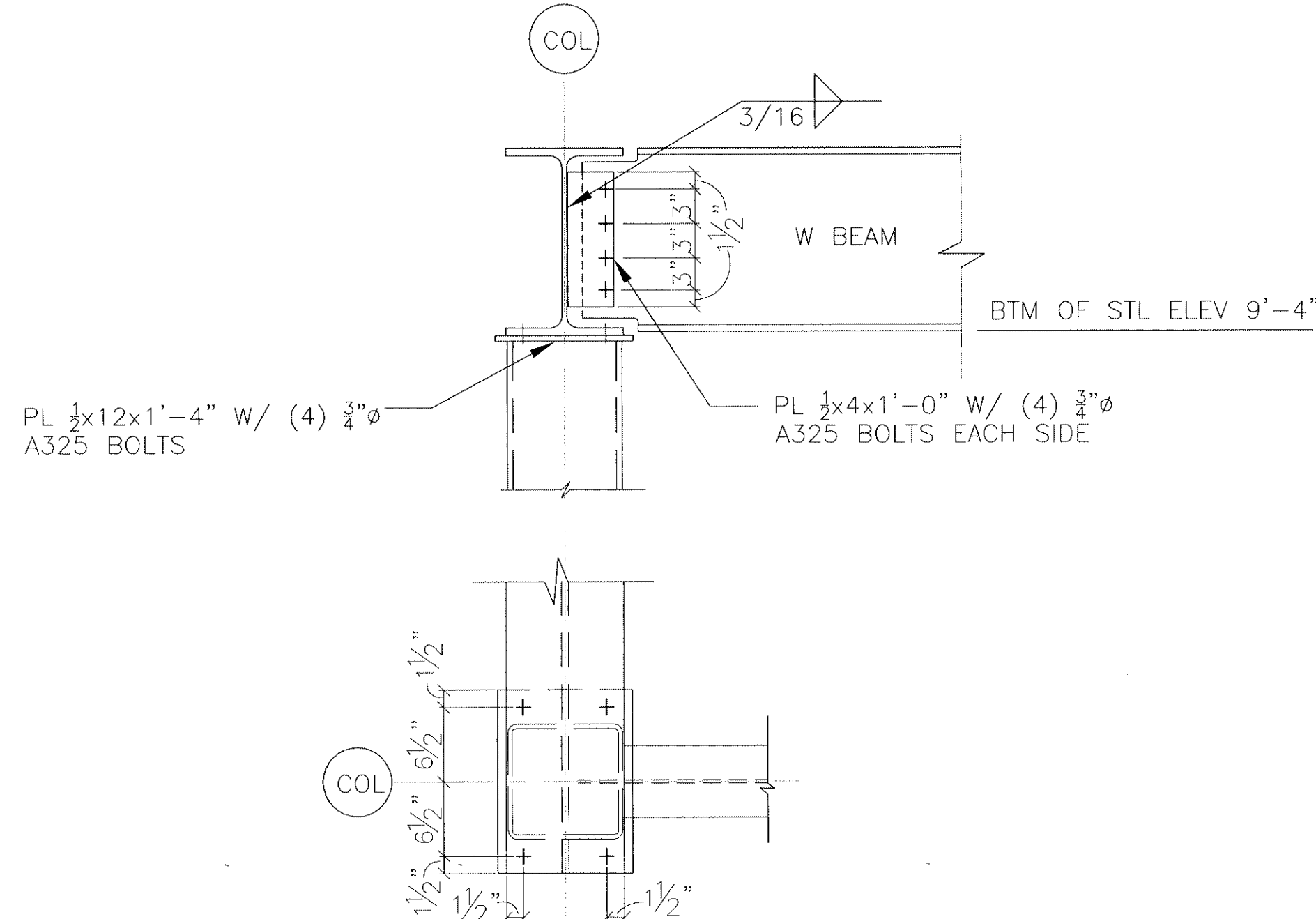
D-3 FRAME "C" (AT CUPOLA))
S540 SCALE 1/4"=1'-0"



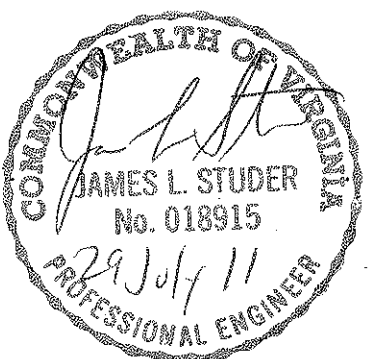
D-6 FRAME "A" (AT CUPOLA))
S540 SCALE 1/4"=1'-0"



F-1 COLUMN STUB UP DETAIL
S540 SCALE 1" = 1'-0"



F-4 BEAM CONN. DETAIL
S540 SCALE 1" = 1'-0"



F-1 COLUMN STUB UP DETAIL S540 SCALE 1" = 1'-0"		F-4 BEAM CONN. DETAIL S540 SCALE 1" = 1'-0"		FRAMING DETAILS		ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY		Date 07-29-11 Project No. 872CM3035	
CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: MACTEC MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085		ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424		MEP ENGINEER: Thompson Company consulting engineers 50 Technology Parkway South Norcross, Georgia 30092 Atlanta, Dubai, UAE Orlando, Mexico City, Mexico Houston, Toronto, BV		SURVEY: HALDER SURVEYS 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708		NATIONAL CEMETERY ADMINISTRATION	
Approved: Director, Technical Support Service		Approved: Chief, Architectural & Engineering Division		Building Number Checked MG Drawn LKB		Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA		Drawing No. S-540 Dwg.62 of 81	

ELECTRICAL ABBREVIATIONS	
WHERE ABBREVIATIONS ARE USED IN THE DOCUMENTS AND NOT LISTED IN THE FOLLOWING, REFER TO ANSI/IEEE STANDARD 100 AND FOR MECHANICAL EQUIPMENT REFER TO THE MECHANICAL SYSTEMS ABBREVIATIONS SCHEDULE.	
AC	ALTERNATING CURRENT
AC	ALTERNATING CURRENT
AF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BC	BELOW CEILING
BKR	BREAKER
CATV	COMMUNITY ACCESS TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CO	CONDUIT ONLY
CONT	CONTINUES
CNTL	CONTROL
CPU	CENTRAL PROCESSING UNIT
CU	COPPER
CT	CURRENT TRANSFORMER
DC	DIRECT CURRENT
Δ	DELTA
DIM	DIMMER
DISC	DISCONNECT SWITCH
DN	DOWN
E	EMERGENCY
EC	EMPTY CONDUIT
EX	EXISTING
FA	FIRE ALARM
FAP	FIRE ALARM CONTROL PANEL
FOR	FEDER
FL	FLOOR
F	FUSE OR FUSED
FVNR	FULL VOLTAGE NON-REVERSING
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GF	GROUND FAULT PROTECTION
GRC OR GRS	GALVANIZED RIGID STEEL CONDUIT
G OR GND	GROUND
H OR HT	HEIGHT
HD	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HOA	HAND-OFF-AUTOMATIC
HZ	HERTZ
IS	ISOLATED GROUND
ISO	ISOLATED
J OR JB	JUNCTION BOX
K	KILO, THOUSAND
KCML	THOUSAND CIRCULAR MILLS
LED	LIGHT EMITTING DIODE
M	MOTOR
MA TV	MASTER ANTENNA TELEVISION
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MAN HOLE
MLO	MAIN LUGS ONLY
MT	MOUNT
MTG	MOUNTING
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NON FUSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OL	OVERLOAD
P	POLE
PC	PHOTOELECTRIC CONTROL
PNL	PANELBOARD
PT	POTENTIAL TRANSFORMER
PVC	POLY-VINYL CHLORIDE
R	RELAY
RC	REMOTE CONTROL
RECPT	RECEPTACLE
RMS	ROOT MEAN SQUARE
SFL	SUB FED LUGS
SPD	SURGE PROTECTIVE DEVICES
SYM	SYMMETRICAL
SW	SWITCH
SWBD	SWITCHBOARD
TBB	TELEPHONE BACKBOARD
TEL	TELEPHONE
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UPS	UNINTERRUPTED POWER SUPPLY
V	VOLTS
VA	VOLT-AMPERE
W	WATTS
WP	WEATHERPROOF WHILE IN USE
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
Y	WYE
Z	IMPEDANCE

ELECTRICAL SYMBOL LEGEND		
SYMBOL	DESCRIPTION	MTG HT. NOTE L-2
SWITCHES	\$ SINGLE POLE SINGLE THROW TOGGLE SWITCH	48"
	\$\$ TWO SINGLE POLE SINGLE THROW SWITCHES AND BALLAST COMBINATION TO CONTROL OUTER LAMPS ON ONE SWITCH, INNER LAMP(S) ON OTHER SWITCH	48"
	\$ DOUBLE POLE SINGLE THROW SWITCH	48"
	\$ THREE-WAY TOGGLE SWITCH	48"
	\$ FOUR-WAY TOGGLE SWITCH	48"
	\$ SINGLE POLE SINGLE THROW TOGGLE SWITCH W/ PILOT LAMP	48"
	\$ SINGLE POLE SINGLE THROW KEYED TOGGLE SWITCH	48"
	\$ MANUAL MOTOR RATED SWITCH WITH OVERLOAD PROTECTION	
	⌚ DIMMER SWITCH	48"
	⌚ 3-WAY DIM SWITCH	48"
DEVICES	⊙ / ⊙ DAYLIGHT HARVESTING SENSOR, WALL / CEILING MOUNTED	80'-
	⊙ / ⊙ INFRARED OCCUPANCY SENSOR W/ MANUAL ON/OFF SWITCH	80'-
	⊙ / ⊙ ULTRA-SONIC OCCUPANCY SENSOR, WALL / CEILING MOUNTED	80'-
	⊙ / ⊙ INFRARED OCCUPANCY SENSOR, WALL / CEILING MOUNTED	80'-
	⊙ / ⊙ DUAL TECHNOLOGY OCCUPANCY SENSOR, WALL / CEILING MOUNTED	80'-
	⊙ / ⊙ OCCUPANCY SENSOR POWER PACK 1 ZONE CONTROLLER	
	⊙ / ⊙ / ⊙ SINGLE RECEPTACLE WALL / FLOOR / CEILING MOUNTED	18'-/-
	⊙ / ⊙ / ⊙ DUPLEX RECEPTACLE WALL / FLOOR / CEILING MOUNTED	18'-/-
	⊙ / ⊙ / ⊙ DOUBLE DUPLEX RECEPTACLE WALL / FLOOR / CEILING MOUNTED	18'-/-
	⊙ / ⊙ / ⊙ RECEPTACLE ABOVE COUNTER SINGLE / DUPLEX / DOUBLE DUPLEX, MOUNTING HEIGHT TO BE COORDINATED WITH ARCHITECT.	
RACEWAY	⊙ / ⊙ / ⊙ SPLIT WIRE DUPLEX RECEPTACLE WALL / FLOOR / CEILING MOUNTED	18"
	⊙ / ⊙ / ⊙ SWITCH CONTROLLED DOUBLE DUPLEX RECEPTACLE	18"
	⊙ / ⊙ / ⊙ SPECIAL PURPOSE RECEPTACLE WALL / FLOOR / CEILING MOUNTED NOTE L-6	18"
	⊙ / ⊙ / ⊙ WALL MOUNTED CLOCK RECEPTACLE	
	⊙ / ⊙ / ⊙ JUNCTION BOX WALL / CEILING OR EQUIPMENT / FLOOR MOUNTED	
	⊙ / ⊙ / ⊙ POWER POLE	
	⊙ / ⊙ / ⊙ DEDICATED CIRCUIT NOTE L-7	
	⊙ / ⊙ / ⊙ ARROWHEAD INDICATES HOMERUN, X-1, 3, AND 5 ADJACENT TO HOMERUN ARROWHEADS INDICATES HOMERUN TO PANEL X, CIRCUIT NUMBERS 1, 3, AND 5, NOTE L-1, 7, 8	
	⊙ / ⊙ / ⊙ LOW VOLTAGE RACEWAY FOR LIGHTING SENSORS	
	⊙ / ⊙ / ⊙ RACEWAY INSTALLED CONCEALED IN WALL AND/OR ABOVE CEILING	
LIGHTING	⊙ / ⊙ / ⊙ RACEWAY INSTALLED CONCEALED IN SLAB, OR BELOW GRADE OR ABOVE ROOF	
	⊙ / ⊙ / ⊙ RACEWAY INSTALLED EXPOSED	
	⊙ / ⊙ / ⊙ GROUND	
	⊙ / ⊙ / ⊙ FLEXIBLE RACEWAY (6" MAX LENGTH)	
	⊙ / ⊙ / ⊙ CONDUIT UP / CONDUIT DOWN	
	⊙ / ⊙ / ⊙ CONDUIT TERMINATION (STUB-OUT)	
	⊙ / ⊙ / ⊙ CONDUIT CONTINUATION	
	⊙ / ⊙ / ⊙ FLUORESCENT LIGHT FIXTURE, OVERHEAD / WALL MOUNTED	
	⊙ / ⊙ / ⊙ FLUORESCENT STRIP OR INDUSTRIAL LIGHT FIXTURE	
	⊙ / ⊙ / ⊙ CEILING MOUNTED LIGHT FIXTURE	
FA	⊙ / ⊙ / ⊙ WALL MOUNTED LIGHT FIXTURE	
	⊙ / ⊙ / ⊙ DIRECTIONAL OR WALL WASH LIGHT FIXTURE	
	⊙ / ⊙ / ⊙ INTERNALLY ILLUMINATED EXIT SIGN, CEILING / WALL MOUNTED, PROVIDE ARROWS AS INDICATED	
	⊙ / ⊙ / ⊙ EGRESS AND/OR EMERGENCY LIGHT FIXTURE	
	⊙ / ⊙ / ⊙ EGRESS AND/OR EMERGENCY LIGHT FIXTURE, HALF OF LAMPS OR CENTER LAMP ON EMERGENCY CIRCUIT	
	⊙ / ⊙ / ⊙ LIGHT TRACK AND LIGHT TRACK FIXTURES	
	⊙ / ⊙ / ⊙ STEP LIGHT	
	⊙ / ⊙ / ⊙ LANDSCAPE UPLIGHT LUMINAIRE	
	⊙ / ⊙ / ⊙ BOLLARD LUMINAIRE AND BASE	
	⊙ / ⊙ / ⊙ SMOKE DETECTOR, WALL / CEILING MOUNTED	
ELECTRICAL EQUIPMENT	⊙ / ⊙ / ⊙ THERMAL DETECTOR, WALL / CEILING MOUNTED	
	⊙ / ⊙ / ⊙ CARBON MONOXIDE DETECTOR, WALL / CEILING MOUNTED	
	⊙ / ⊙ / ⊙ DUCT DETECTOR	
	⊙ / ⊙ / ⊙ FLUSH MOUNTED PANELBOARD	
	⊙ / ⊙ / ⊙ SURFACE MOUNTED PANELBOARD	
	⊙ / ⊙ / ⊙ MOTOR CONNECTION	
	⊙ / ⊙ / ⊙ NON-FUSIBLE DISCONNECT SWITCH, RATING / POLES / NEMA ENCLOSURE	
	⊙ / ⊙ / ⊙ 60A/3R/40A FUSIBLE DISCONNECT SWITCH, RATING / POLES / NEMA ENCLOSURE / FUSE RATING	
	⊙ / ⊙ / ⊙ SIZE 2/3R MAGNETIC MOTOR STARTER, NEMA SIZE RATING / ENCLOSURE	
	⊙ / ⊙ / ⊙ SIZE 2/3R/40A COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECTING MEANS, NEMA SIZE RATING / ENCLOSURE / FUSE RATING (WHERE REQUIRED)	
LOW VOL	⊙ / ⊙ / ⊙ SIZE 2/1 VARIABLE SPEED SOLID STATE STARTER AND DISCONNECT MEANS, NEMA SIZE RATING / ENCLOSURE	
	⊙ / ⊙ / ⊙ EQUIPMENT AS INDICATED	
	⊙ / ⊙ / ⊙ TIME CLOCK	
	⊙ / ⊙ / ⊙ CONTACTOR	
	⊙ / ⊙ / ⊙ VOICE / DATA OUTLET WALL / FLOOR / ABOVE COUNTER NOTE L-3, 4	18'-/-
	⊙ / ⊙ / ⊙ TELEVISION OUTLET WALL / FLOOR / CEILING MOUNTED	18'-/-
	⊙ / ⊙ / ⊙ TELECOMMUNICATIONS BACKBOARD, NOTE L-6	18"
	⊙ / ⊙ / ⊙ LOW VOLTAGE PUSH BUTTON	48"
	⊙ / ⊙ / ⊙ DOOR CHIME	
	⊙ / ⊙ / ⊙	

LEGEND NOTES:	
L-1	EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED IN ALL BRANCH CIRCUIT RACEWAYS.
L-2	UNLESS NOTED, MOUNTING HEIGHT DIMENSIONS ARE TO THE CENTER OF THE DEVICE OR OUTLET ABOVE GRADE OR FINISHED FLOOR.
L-3	FURNISH AND INSTALL 3/4" CONDUIT HOMERUNS TO NEAREST TELEPHONE BACKBOARD, UNLESS OTHERWISE INDICATED OR SPECIFIED.
L-4	FURNISH AND INSTALL 3/4" CONDUIT HOMERUNS TO NEAREST DATA SYSTEM BACKBOARD.
L-5	SPECIAL PURPOSE RECEPTACLE OUTLET, REFER TO KEYNOTES ON RESPECTIVE DRAWING FOR DESCRIPTION.
L-6	TELEPHONE BACKBOARD TO BE PLYWOOD PAINTED WITH LOW SMOKE RELEASE PAINT.
L-7	DEDICATED CIRCUITS SHALL NOT SHARE A COMMON GROUND OR NEUTRAL CONDUCTOR WITH NON-DEDICATED CIRCUITS. DEDICATED CIRCUITS SHALL BE INSTALLED IN INDIVIDUAL RACEWAY SYSTEMS. DEDICATED CIRCUIT HOMERUNS SHALL NOT BE COMBINED TO SHARE NEUTRAL OR GROUND CONDUCTORS.
L-8	NON-DEDICATED BRANCH CIRCUITS SHALL CONSIST OF ONE PHASE CONDUCTOR, ONE NEUTRAL CONDUCTOR AND ONE GROUND CONDUCTOR.

GENERAL NOTES	
1.	ALL SYMBOLS INDICATED IN LEGEND(S) MAY NOT NECESSARILY BE USED ON THIS PROJECT.
2.	THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE GENERAL ARRANGEMENT FOR ELECTRICAL EQUIPMENT. REVIEW ARCHITECTURAL DRAWINGS FOR DOOR SWINGS, CABINETS, COUNTERS, AND BUILT-IN EQUIPMENT; CONDITIONS INDICATED ON ARCHITECTURAL PLANS SHALL GOVERN. COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH STRUCTURAL SYSTEM AND MECHANICAL EQUIPMENT AND ACCESS THERETO. COORDINATE INSTALLATION OF RECESS ELECTRICAL EQUIPMENT WITH CONCEALED DUCTWORK AND PIPING. REFER TO ARCHITECTURAL DRAWINGS AND/OR INTERIOR DESIGN DRAWINGS FOR ALL DIMENSIONS AND STANDARD DETAILS. DO NOT SCALE.
3.	CAPITAL LETTERS BESIDE LIGHTING SYMBOL INDICATES FIXTURE TYPE. WHERE INDICATED ON DRAWINGS LOWER CASE LETTER INDICATES SWITCH LEG, DIMMER OR CONTROL DESIGNATION.
4.	NUMERAL BESIDE EQUIPMENT, DEVICE, OR OUTLETS INDICATES CIRCUIT CONNECTION.
5.	WHEN CONDUCTOR OR CONDUIT SIZE IS INDICATED FOR BRANCH CIRCUIT HOMERUN, THE CONDUCTOR AND CONDUIT SIZE INDICATED SHALL BE USED FOR THE COMPLETE CIRCUIT UNLESS OTHERWISE INDICATED.
6.	PROVIDE OUTLET BOX FITTING FOR EACH DEVICE, SIZE TO ACCOMMODATE DEVICE AND CONDUCTORS.
7.	WALL SWITCHES CONTROLLING 120 VAC CIRCUIT OF OPPOSITE PHASES SHALL NOT BE INSTALLED IN A COMMON BOX UNLESS A PERMANENT BARRIER IS PROVIDED.
8.	ALL CONDUITS PENETRATING ROOF SHALL BE SEALED TO MEET LOCAL BUILDING CODE. REFER TO ARCHITECTURAL DOCUMENTS AND DETAILS.
9.	ALL RACEWAY AND EQUIPMENT SUPPORTS AND HANGERS SHALL BE ATTACHED TO STRUCTURAL MEMBERS. COORDINATE WITH STRUCTURAL DOCUMENTS. DO NOT SUPPORT CONDUIT OR DEVICES FROM METAL ROOF.
10.	ROOF MOUNTED MECHANICAL EQUIPMENT SHALL HAVE POWER AND CONTROL RACEWAY ROUTED THROUGH EQUIPMENT ROOF CURB.
11.	DISCONNECT SWITCHES, MOTOR STARTERS, AND OTHER ELECTRICAL EQUIPMENT INSTALLED ABOVE ACCESSIBLE CEILINGS AND REQUIRING ACCESS FOR MAINTENANCE, SHALL BE INSTALLED WITH BOTTOM OF DEVICE A MAXIMUM OF ONE (1) FOOT ABOVE CEILING TO PROVIDE READY ACCESSIBILITY. CODE AND MANUFACTURER REQUIRED CLEARANCES SHALL BE MAINTAINED.
12.	ACCESS PANELS SHALL BE CONSOLIDATED TO MINIMIZE THE QUANTITY REQUIRED. COORDINATE LOCATION WITH ARCHITECTURAL DOCUMENTS. THE PROPOSED LOCATION OF ACCESS PANELS SHALL BE SUBMITTED TO ARCHITECTS FOR REVIEW PRIOR TO INSTALLATION.
13.	ALL CIRCUIT SHALL BE 2#12, 1#120, 3/4" C UNLESS NOTED OTHERWISE.
14.	PRIOR TO THE PANELBOARD ORDERING PROCESS, CONTRACTOR SHALL OBTAIN THE ACTUAL MAXIMUM AVAILABLE FAULT CURRENT DATA FROM THE UTILITY COMPANY. AIC RATINGS FOR THE PANELBOARDS SHALL BE REVISED TO BE ABLE TO SUSTAIN THE FAULT CURRENT FOUND BY THE FAULT CURRENT ANALYSIS.
15.	PROVIDE STARTERS AND DISCONNECTS FOR ALL MECHANICAL AND PLUMBING MOTORS AND EQUIPMENT WITH MOTORS, UNLESS STARTERS ARE PROVIDED BY MANUFACTURER OF EQUIPMENT. SIZE ALL STARTERS AND DISCONNECTS PER THE NATIONAL ELECTRICAL CODE.

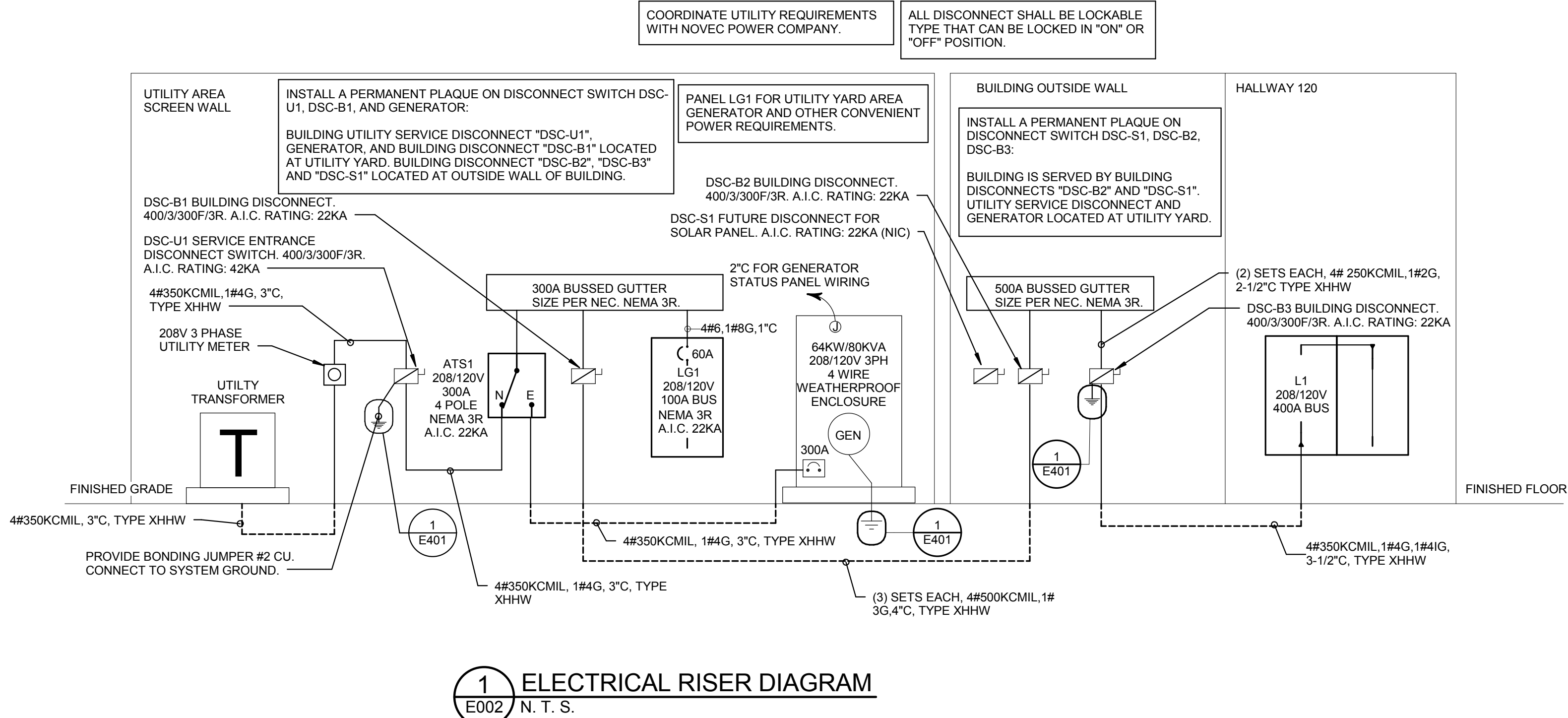
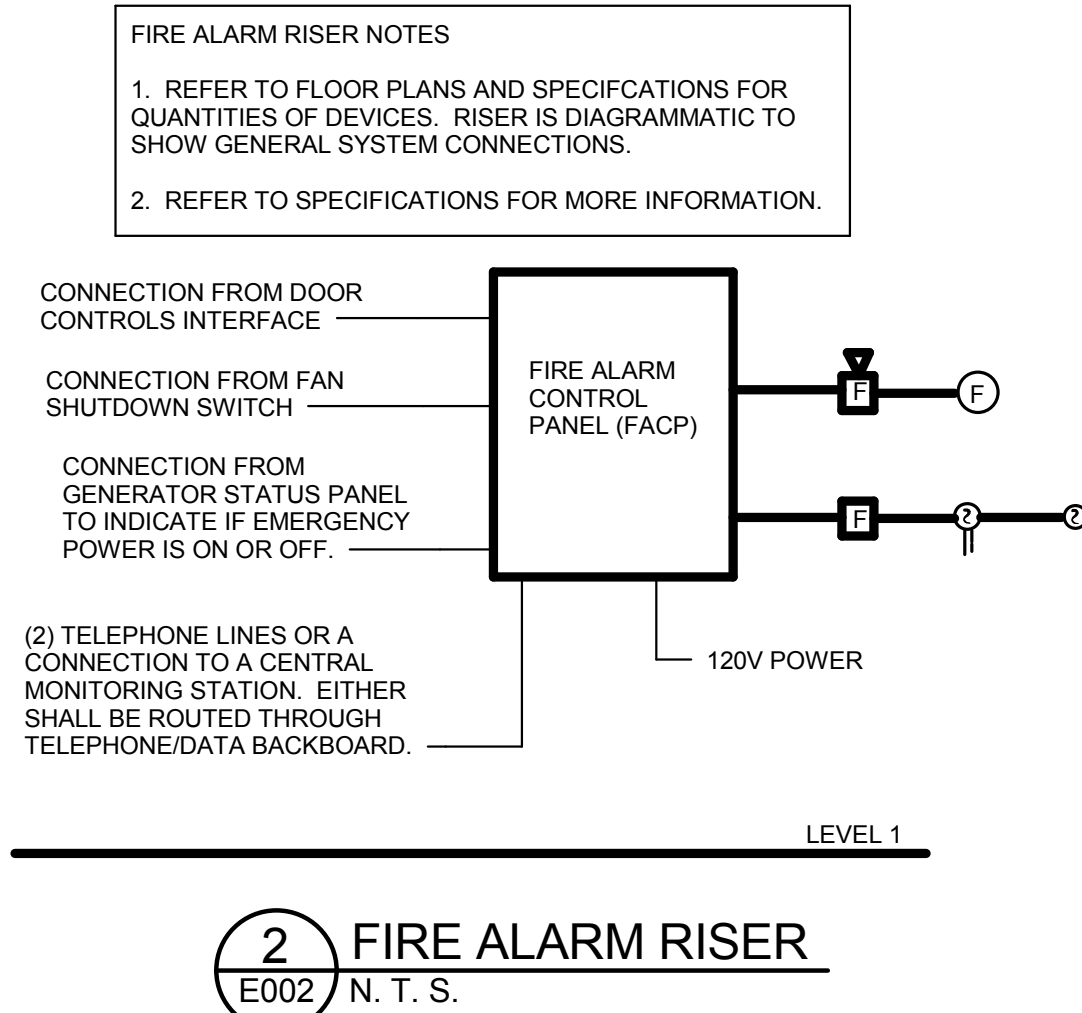
COORDINATION NOTES	
1.	REVIEW ALL SPECIFICATIONS AND DOCUMENTS FOR ELECTRICAL REQUIREMENTS AND LOCATION OF EQUIPMENT REQUIRING ELECTRICAL SERVICE. PROVIDE SERVICE TO AND MAKE CONNECTIONS TO ALL SUCH EQUIPMENT.
2.	REFER TO ARCHITECTURAL AND/OR LANDSCAPE DESIGN DOCUMENTS FOR ALL PUBLIC AREA AND EXTERIOR BUILDING LIGHTING REQUIREMENTS. PROVIDE QUANTITY OF BRANCH CIRCUITS AS REQUIRED TO SERVE LIGHTING. PROVIDE ALL SWITCHES, DIMMERS, DIMMING SYSTEMS, LOW VOLTAGE CONTROL, STATIONS, CONTACTORS, EMERGENCY INTERFACE, ETC., FOR CONTROL OF LIGHTING AS REQUIRED.
3.	REFER TO MECHANICAL AND PLUMBING DOCUMENTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT POWER REQUIREMENTS. PROVIDE QUANTITY OF BRANCH CIRCUITS, SWITCHES, DISCONNECTS, STARTERS, CONTROLLERS, AND ENERGY MANAGEMENT SYSTEMS FOR EQUIPMENT AS REQUIRED. PROVIDE DEDICATED CIRCUITS AND ISOLATED GROUNDS FOR ALL EQUIPMENT CONTROLS.

GRAPHICS LEGEND	
SYMBOL	DESCRIPTION
⊙	KEYNOTE
#	COLUMN REFERENCE GRID
—	CUT LINE
1 E1.2 SCALE	DRAWING NUMBER SHEET NUMBER
1 E1.2 AREA TO BE DETAILED	DRAWING NUMBER SHEET NUMBER
☁	REVISION AREA
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Revisions	Date	CIVIL ENGINEER/LANDSCAPE ARCHITECTURE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											</
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Branch Panel: L1													
Location: Supply From: Mounting: Recessed Enclosure: Type 1					Volts: 120/208 Wye Phases: 3 Wires: 4				A.I.C. Rating: 22KA Maine Type: MLO Mains Rating: 400 A				
CKT	Circuit Description		Trip	Poles	A	B		C	Poles	Trip	Circuit Description		CKT
1	AHU-1-1		70 A	3	833	720				1	20 A	RCPT - ENTRY / LOBBY	2
3	--		--	--		833	720			1	20 A	RCPT - LOBBY / PIC RECP.	4
5	--		--	--				833	540	1	20 A	RCPT - EXTERIOR	6
7	AHU-1-2		50 A	3	933	720				1	20 A	RCPT - TOILETS 126 AND JANITOR 129	8
9	--		--	--		933	900			1	20 A	RCPT - TOILETS 127, 128	10
11	--		--	--				933	1080	1	20 A	RCPT - CEMET REP 124,125	12
13	CU-1-1		110 A	3	7333	720				1	20 A	RCPT IG - CEMET REP 124,125	14
15	--		--	--		7333	900			1	20 A	RCPT - DIRECTOR 123	16
17	--		--	--				7333	720	1	20 A	RCPT IG - DIRECTOR 123	18
19	CU-1-2		110 A	3	7333	1080				1	20 A	RCPT - OP CNTRLUNCH RM	20
21	--		--	--		7333	360			1	20 A	RCPT - OP CNTRLUNCH RM	22
23	--		--	--				7333	720	1	20 A	RCPT - RECEPTION 104A	24
25	EH-1-1		20 A	3	1800	900				1	20 A	RCPT - HALLWAY 122,120	26
27	--		--	--		1800	900			1	20 A	RCPT - HALLWAY 114,120	28
29	--		--	--				1800	720	1	20 A	RCPT - TOILETS 117,118	30
31	EH-1-2		20 A	3	1000	360				1	20 A	RCPT - JANITOR 116 AND ATTIC	32
33	--		--	--		1000	540			1	20 A	RCPT IG - SM OFFICE 115	34
35	--		--	--				1000	720	1	20 A	RCPT IG - OFFICES 113,114	36
37	SITE PUMP		20 A	3	833	1080				1	20 A	RCPT - OFFICES 113,114	38
39	--		--	--		833	720			1	20 A	RCPT IG - OFFICES 111,112	40
41	--		--	--				833	1080	1	20 A	RCPT - OFFICES 111,112	42
43	WH-1		20 A	2	1500	360				1	20 A	RCPT IG - PIC RECEPTION 103	44
45	--		--	--		1500	900			1	20 A	RCPT IG - MULTI-PUR 108	46
47	WH-2		20 A	2			1500	900		1	20 A	RCPT IG - MULTI-PUR 108	48
49	--		--	--		1500	360			1	20 A	RCPT - ELEC ROOM	50
51	EV Charging Station		40 A	2		3120	360			1	20 A	RCPT IG - DATA RACK	52
53	--		--	--				3120	360	1	20 A	RCPT IG - TELEPHONE BOARD	54
55	Spare		20 A	1	0	180				1	20 A	RCPT IG - PIC	56
57	Spare		20 A	1		0	0			1	20 A	TIMECLOCK	58
59	Spare		20 A	1				0	492	1	20 A	LIGHTING - PIC TOILETS 126,127,128	60
61	Spare		20 A	1	0	676				1	20 A	LIGHTING - EXTERIOR & PIC ENTRY 101	62
63	Spare		20 A	1		0	952			1	20 A	LIGHTING - SOUTH OFFICES & MP 108	64
65	Spare		20 A	1				0	1162	1	20 A	LIGHTING - NORTH OFFICES	66
67	Space		--	--	0	572				1	20 A	LIGHTING - PIC 102, 103	68
69	Space		--	--		0	932			1	20 A	LIGHTING - LOBBY 104 , HALLWAYS	70
71	Space		--	--				0	360	1	20 A	DRINKING FOUNTAIN	72
73	Space		--	--	0	180				1	20 A	FACP	74
75	Space		--	--		0	600			1	20 A	AUTOMATIC DOOR	76
77	Space		--	--				0	180	1	20 A	BMS PANEL	78
79	Space		--	--	0	900				1	20 A	EF-1	80
81	Space		--	--		0	700			1	20 A	EF-2	82
83	Space		--	--				0	0	1	20 A	Spare	84
Total Load:			31875 VA		34171 VA		33721 VA						
Total Amps:			266 A		285 A		281 A						
Load Classification			Connected Load		Estimated Demand		Panel Totals						
HVAC			49300 VA		49300 VA		Total Conn. Load: 99766 VA						
Lighting			4786 VA		5983 VA		Total Est. Demand: 96778 VA						
Motor			4100 VA		4725 VA		Total Conn.: 277 A						
Other			21960 VA		21960 VA		Total Est. Demand: 269 A						
Receptacle			19620 VA		14810 VA								
Notes:													

MECHANICAL EQUIPMENT SCHEDULE												
Mark	Unit Description	W	HP	FLA	Voltage	Phase	Panel	Circuit Number	Circuit Description	Disconnect Switch	Starter Size	Notes
AHU-1-1	AIR HANDLING UNIT	15000 VA	1 - 1/2	48.6 A	208 V	3	L1	1,3,5	3#4,1#6G,1"1C	100/3/1	W/ UNIT	HEATING LOAD IS NOT SHOWN IN PANEL SCHEDULE BECAUSE COOLING LOAD IS BIGGER
AHU-1-2	AIR HANDLING UNIT	10000 VA	2	35.6 A	208 V	3	L1	7,9,11	3#6,1#10G,3/4"C	100/3/1	W/ UNIT	HEATING LOAD IS NOT SHOWN IN PANEL SCHEDULE BECAUSE COOLING LOAD IS BIGGER
CU-1-1	COMPRESSOR	22000 VA		61.1 A	208 V	1	L1	13,15,17	3#2,1#6G,1-1/4"C	200/3/1	W/ UNIT	
CU-1-2	COMPRESSOR	22000 VA		61.1 A	208 V	1	L1	19,21,23	3#2,1#6G,1-1/4"C	200/3/1	W/ UNIT	
EF-1	EXHAUST FAN	900 VA	1/3	7.2 A	120 V	1	L1	80	2#12,1#12G,3/4"C	SM	NEMA 0	
EF-2	EXHAUST FAN	700 VA	1/4	5.8 A	120 V	1	L1	82	2#12,1#12G,3/4"C	SM	NEMA 0	
EH-1-1	HEATER	5400 VA	1/4	15.0 A	208 V	3	L1	25,27,29	3#12,1#12G,3/4"C	30/3/1	N/A	
EH-1-2	HEATER	3000 VA	FRACTIONAL	8.3 A	208 V	3	L1	31,33,35	3#12,1#12G,3/4"C	30/3/1	N/A	
WH-1	WATER HEATER	3000 VA		14.4 A	208 V	1	L1	43,45	2#12,1#12G,3/4"C	30/2/1	N/A	
WH-2	WATER HEATER	3000 VA		14.4 A	208 V	1	L1	47,49	2#12,1#12G,3/4"C	30/2/1	N/A	



LIGHTING FIXTURE SCHEDULE				
Type	Description	Lamp	Voltage	Wattage
A	4" COVE MOUNTED LINEAR FLUORESCENT FIXTURE WITH KICKER REFLECTOR. GALVANIZED STEEL HOUSING.	28W T5 WITH (1) 1-LAMP ELECTRONIC BALLAST	120 V	28 VA
B1	1" X 4" 2 LAMP, 3" DEPTH AND CURVED SHAPE. STYLISH CURVED LENS, BOTTOM PRISMS, HEAVY DUTY CHANNEL OF CODE GAUGE DIE FORMED STEEL HOUSING WITH MULTI-STAGE PHOSPHATE TREATED, HIGH REFLECTANCE BAKED WHITE ENAMEL FINISH COAT, CEILING SURFACE MOUNTED FLUORESCENT WRAPAROUND FIXTURE WITH RFI SUPPRESSION.	(2) 32W T8 WITH (1) 2-LAMP ELECTRONIC BALLAST	120 V	56 VA
B1X	1" X 4" 2 LAMP, 3" DEPTH AND CURVED SHAPE. STYLISH CURVED LENS, BOTTOM PRISMS, HEAVY DUTY CHANNEL OF CODE GAUGE DIE FORMED STEEL HOUSING WITH MULTI-STAGE PHOSPHATE TREATED, HIGH REFLECTANCE BAKED WHITE ENAMEL FINISH COAT, CEILING SURFACE MOUNTED FLUORESCENT WRAPAROUND FIXTURE WITH RFI SUPPRESSION. 90 MINUTE BATTERY BACKUP.	(2) 32W T8 WITH (1) 2-LAMP ELECTRONIC EMERGENCY BALLAST	120 V	56 VA
B2X	1" X 4" 2 LAMP, 3" DEPTH AND CURVED SHAPE. STYLISH CURVED LENS, BOTTOM PRISMS, HEAVY DUTY CHANNEL OF CODE GAUGE DIE FORMED STEEL HOUSING WITH MULTI-STAGE PHOSPHATE TREATED, HIGH REFLECTANCE BAKED WHITE ENAMEL FINISH COAT, CEILING SURFACE MOUNTED FLUORESCENT WRAPAROUND FIXTURE. 90 MINUTE BATTERY BACKUP.	(2) 32W T8 WITH (1) 2-LAMP ELECTRONIC EMERGENCY BALLAST	120 V	56 VA
B3	1" X 2" 2 LAMP, 3" DEPTH AND CURVED SHAPE. STYLISH CURVED LENS, BOTTOM PRISMS, HEAVY DUTY CHANNEL OF CODE GAUGE DIE FORMED STEEL HOUSING WITH MULTI-STAGE PHOSPHATE TREATED, HIGH REFLECTANCE BAKED WHITE ENAMEL FINISH COAT, CEILING SURFACE MOUNTED FLUORESCENT WRAPAROUND FIXTURE.	(2) 14W T5 WITH (1) 2-LAMP ELECTRONIC EMERGENCY BALLAST	120 V	28 VA
C	4" HIGH BRIGHT, COOL WHITE 4000K, LED CABINET FIXTURE. PROVIDE REMOTE DRIVER WITH ENCLOSURE AS SHOWN IN PLAN.	26W LED WITH REMOTE DRIVER	120 V	28 VA
D1	8" DIA. DOWNLIGHT WITH OPEN REFLECTOR, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN. 0-10V DIMMABLE BALLAST.	CFQ28W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC BALLAST	120 V	26 VA
D1X	8" DIA. DOWNLIGHT WITH OPEN REFLECTOR, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN. 0-10V DIMMABLE BALLAST. 90 MINUTE BATTERY BACKUP.	CFQ28W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC INTEGRAL EMERGENCY BALLAST	120 V	26 VA
D2	8" DIA. DOWNLIGHT WITH OPEN REFLECTOR, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN.	CFQ28W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC BALLAST	120 V	26 VA
D2X	8" DIA. DOWNLIGHT WITH OPEN REFLECTOR, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN. 90 MINUTE BATTERY BACKUP.	CFQ28W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC INTEGRAL EMERGENCY BALLAST	120 V	26 VA
D3	6" DIA. HORIZONTAL DOWNLIGHT WITH OPEN REFLECTOR, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN.	CFQ13W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC BALLAST	120 V	19 VA
D3X	6" DIA. HORIZONTAL DOWNLIGHT WITH OPEN REFLECTOR, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN. 90 MINUTE BATTERY BACKUP.	CFQ13W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC INTEGRAL EMERGENCY BALLAST	120 V	19 VA
D4	6" DIA. HORIZONTAL DOWNLIGHT WITH OPEN REFLECTOR, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN. 0-10V DIMMABLE BALLAST.	CFQ28W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC BALLAST	120 V	28 VA
D5	8" DIA. DAMP LOCATION RATED EXTERIOR DOWNLIGHT WITH CLEAR LENS, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN.	CFQ28W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC BALLAST	120 V	26 VA
D5X	8" DIA. DAMP LOCATION RATED EXTERIOR DOWNLIGHT WITH CLEAR LENS, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN. 90 MINUTE BATTERY BACKUP.	CFQ28W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC INTEGRAL EMERGENCY BALLAST	120 V	26 VA
D6	8" DIA. DAMP LOCATION RATED EXTERIOR DOWNLIGHT WITH CLEAR LENS, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN. FIXTURE HOUSING SHALL BE SUITABLE FOR INSULATION CEILING INSTALLATION.	CFQ28W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC INTEGRAL EMERGENCY BALLAST	120 V	26 VA
D6X	8" DIA. DAMP LOCATION RATED EXTERIOR DOWNLIGHT WITH CLEAR LENS, REFLECTOR SHALL BE ALUMINUM SELF FLANGED WITH CLEAR SPECULAR LOW IRIDESCENT ALZAK FINISH, GALVANIZED STEEL MOUNTING PAN. FIXTURE HOUSING SHALL BE SUITABLE FOR INSULATION CEILING INSTALLATION. 90 MINUTE BATTERY BACKUP.	CFQ28W WITH (1) TYPE 1 CLASS P, HIGH POWER FACTOR UNIV. VOLT. ELECTRONIC INTEGRAL EMERGENCY BALLAST	120 V	26 VA
F	2" X 2" 2 LAMP, 3" DEEP 9 CELLS WITH 0-10V DIMMABLE BALLAST. AIR RETURN. MULTI-STAGE PHOSPHATE TREATED HOUSING.	(2) 14W T5 WITH (1) 2-LAMP ELECTRONIC BALLAST	120 V	28 VA
FX	2" X 2" 2 LAMP, 3" DEEP 9 CELLS WITH 0-10V DIMMABLE BALLAST. AIR RETURN. MULTI-STAGE PHOSPHATE TREATED HOUSING. 90 MINUTE BATTERY BACKUP	(2) 14W T5 WITH (1) 2-LAMP ELECTRONIC EMERGENCY BALLAST	120 V	28 VA
G	2" X 4", 3 LAMP, 3" DEEP 18 CELLS FIXTURE WITH (2) 0-10V DIMMABLE BALLASTS. AIR RETURN. MULTI-STAGE PHOSPHATE TREATED HOUSING.	(3) 28W T5 WITH (1) 3-LAMP ELECTRONIC BALLAST	120 V	84 VA
GX	2" X 4", 3 LAMP, 3" DEEP 18 CELLS FIXTURE WITH (2) 0-10V DIMMABLE BALLASTS. AIR RETURN. MULTI-STAGE PHOSPHATE TREATED HOUSING. 90 MINUTE BATTERY BACKUP.	(3) 28W T5 WITH (1) 3-LAMP ELECTRONIC EMERGENCY BALLAST	120 V	84 VA
H1X	2" X 4", 2 LAMP, ACRYLIC LENS. AIR RETURN. MULTI-STAGE PHOSPHATE TREATED HOUSING. 90 MINUTE BATTERY BACKUP.	(2) 28W T5 WITH (1) 2-LAMP ELECTRONIC EMERGENCY BALLAST	120 V	56 VA
H2	2" X 4", 3 LAMP WITH 12125 ACRYLIC LENS. AIR RETURN. MULTI-STAGE PHOSPHATE TREATED HOUSING.	(3) 28W T5 WITH (1) 3-LAMP ELECTRONIC BALLAST	120 V	78 VA
H2X	2" X 4", 3 LAMP WITH 12125 ACRYLIC LENS WITH 0-10V DIMMABLE BALLAST. AIR RETURN. MULTI-STAGE PHOSPHATE TREATED HOUSING. 90 MINUTE BATTERY BACKUP.	(3) 28W T5 WITH (1) 3-LAMP ELECTRONIC EMERGENCY BALLAST	120 V	78 VA
P	DECORATIVE PENDANT. TO BE SELECTED BY ARCHITECT.	20W MR16	120 V	20 VA
S	DECORATIVE SCOCNE, TO BE SELECTED BY ARCHITECT.	CFT 13W WITH (1) 1-LAMP ELECTRONIC BALLAST	120 V	13 VA
ST	21" DIAMETER SOLATUBE. SOLATUBE 759 DS DAYLIGHTING SYSTEM FROM SOLATUBE COMPANY.	N/A	120 V	0 VA
V	VANITY LIGHT. TO BE SELECTED BY ARCHITECT.	100W MAX	120 V	100 VA
X	RED EDGE-LIT LED EXIT SIGN. 90 MINUTE BATTERY BACKUP.	LED	120 V	5 VA

Revisions	Date

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE


MACTEC ENGINEERING AND CONSULTING, INC.,
3200 TOWN POINT DR., KENNESAW, GA. 30144
TEL: (770) 421-3400 FAX: (770) 421-3486

MACTEC PROJECT: 6151-10-0085

ARCHITECTURE


MATRIX SETTLES
1220 N. FILLMORE ST.,
SUITE 300
ARLINGTON, VA 22211
703-525-0424

MEP ENGINEER


Thompson Company
consulting engineers
29094
50 Technology Parkway South
Norcross, Georgia 30092
404.266.1400
www.tcieng.com

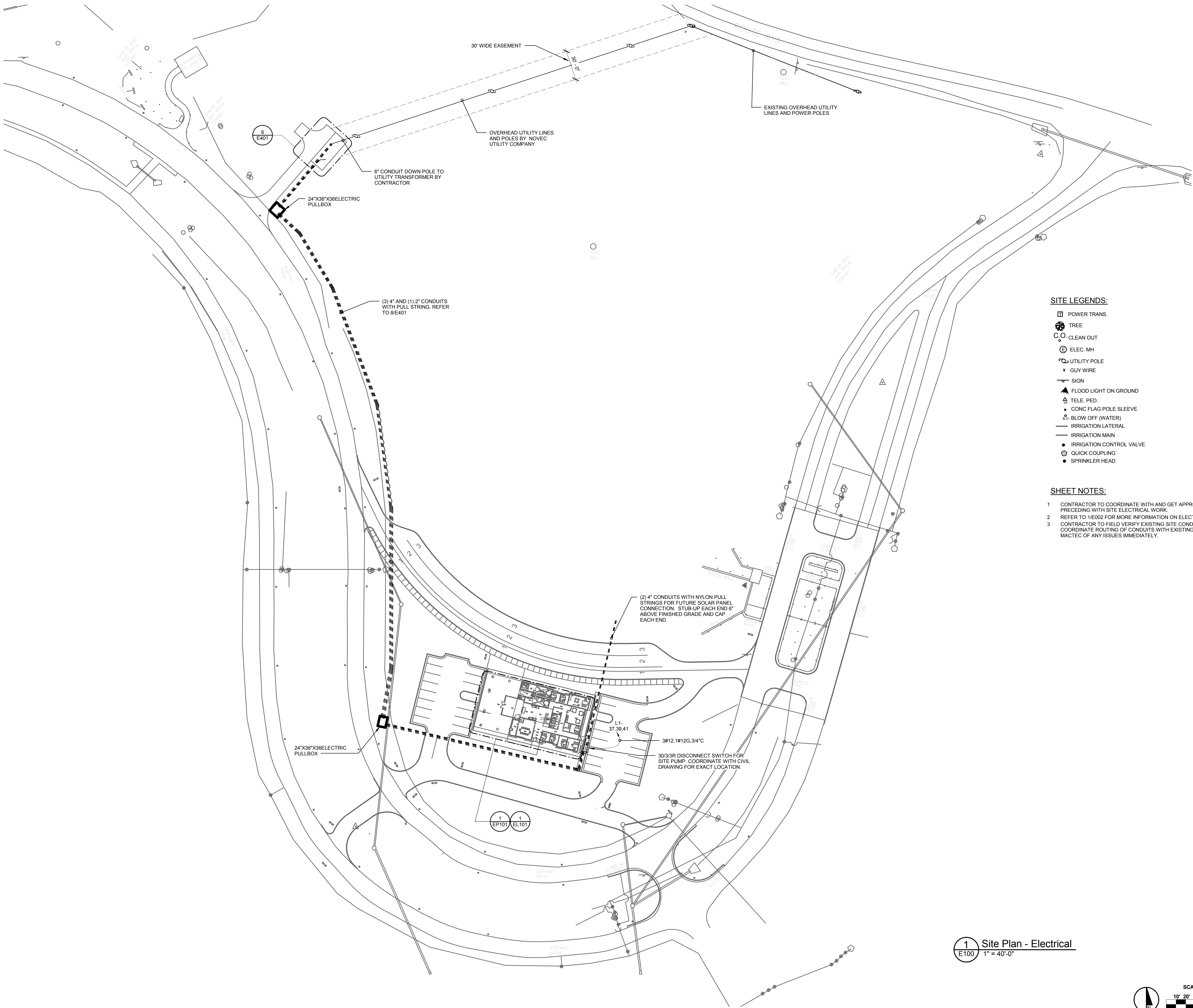
Atlanta
Dubai, UAE

Orlando
Mexico City, Mexico

Houston
Toronto, BVI

SURVEY


HALDER
SURVEYS
P.C.
10400 CHESTER ROAD, CHESTER, VA 23831
TEL: (804) 748-8707 FAX: (804) 748-8708



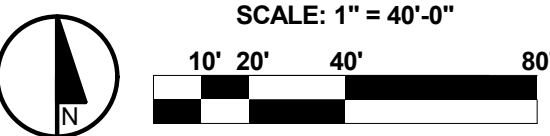
SITE LEGENDS:

- POWER TRANS.
- TREE
- CLEAN OUT
- ELEC. MH
- UTILITY POLE
- GUY WIRE
- SIGN
- FLOOD LIGHT ON GROUND
- TELE. PED.
- CONC FLAG POLE SLEEVE
- BLOW OFF (WATER)
- IRRIGATION LATERAL
- IRRIGATION MAIN
- IRRIGATION CONTROL VALVE
- QUICK COUPLING
- SPRINKLER HEAD

SHEET NOTES:

- CONTRACTOR TO COORDINATE WITH AND GET APPROVAL FROM NOVEC UTILITY BEFORE PRECEDING WITH SITE ELECTRICAL WORK.
- REFER TO 1/E002 FOR MORE INFORMATION ON ELECTRICAL SYSTEM.
- CONTRACTOR TO FIELD VERIFY EXISTING SITE CONDITIONS BEFORE DIGGING. COORDINATE ROUTING OF CONDUITS WITH EXISTING UTILITIES AND IRRIGATION. NOTIFY MACTEC OF ANY ISSUES IMMEDIATELY.

1 Site Plan - Electrical
E100 1" = 40'-0"



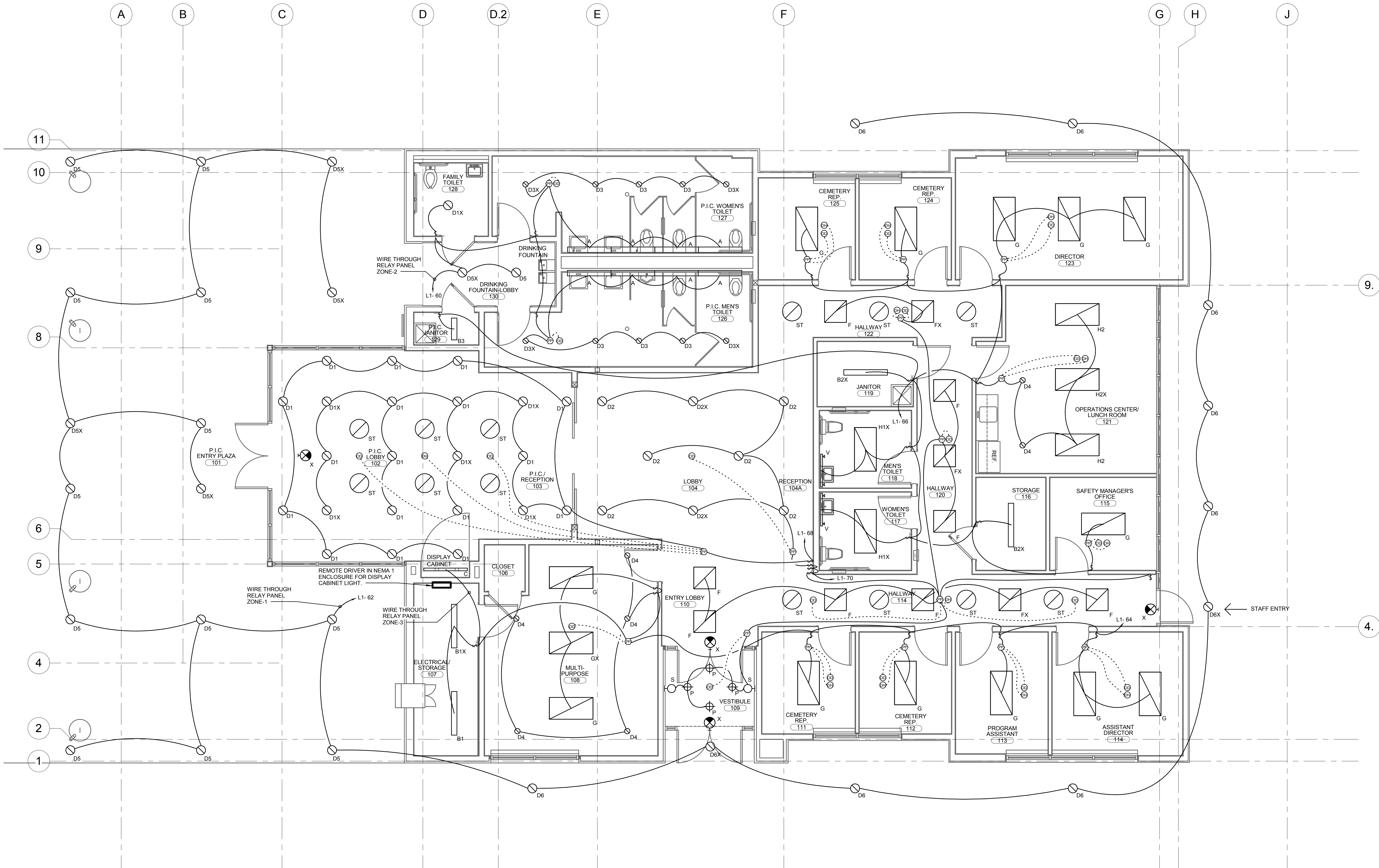
Revisions		Date	CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:		ARCHITECTURE:	MEP ENGINEER:		SURVEY:	Drawing Title Site Plan - Electrical		Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY	Date 7-29-11
MACTEC			MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486		MATRIX SETTLES	Thompson Company consulting engineers 29094 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcieng.com		HALDER SURVEYS INC.	National Cemetery Administration		Building Number	Checked TN
MACTEC PROJECT: 6151-10-0085			1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424			Atlanta Dubai, UAE		10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708	Approved: Chief, Architectural & Engineering Division		Drawn HW	DRAWING NO. E100
									Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA			Dwg. 65 or 80

RELAY PANEL LIGHTING CONTROL			
ZONE	DESCRIPTION	ON	OFF
1	EXTERIOR DOWNLIGHTS	PHOTOCELL	10:00 PM
2	TOILETS 126,127,128	6:00 AM	10:00 PM
3	DISPLAY CABINET LIGHTING	7:30 AM	4:00 PM
4	SPARE		

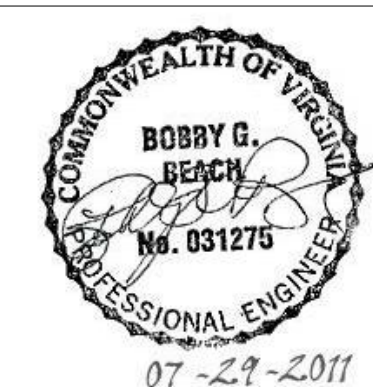
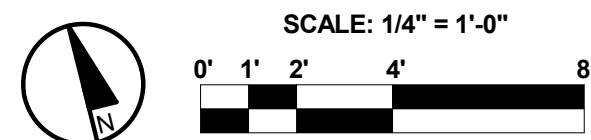
NOTE: CONFIRM ALL SETTINGS WITH RESIDENT ENGINEER.

SHEET NOTES:

- REFER TO SHEET E002 FOR LIGHTING FIXTURE SCHEDULE.
- COORDINATE EXACT LIGHTING FIXTURE LOCATION WITH ARCHITECT.
- ALL EXIT SIGNS AND BATTERY PACKS SHALL BE WIRED TO AN UNSWITCHED PORTION OF THE LIGHTING CIRCUIT SERVING THE SAME ROOM OR AREA.
- LOW VOLTAGE WIRING SHOW TO HELP IDENTIFY SENSOR'S ASSOCIATED POWER PACK.



1 Lighting Floor Plan
EL101 1/4" = 1'-0"



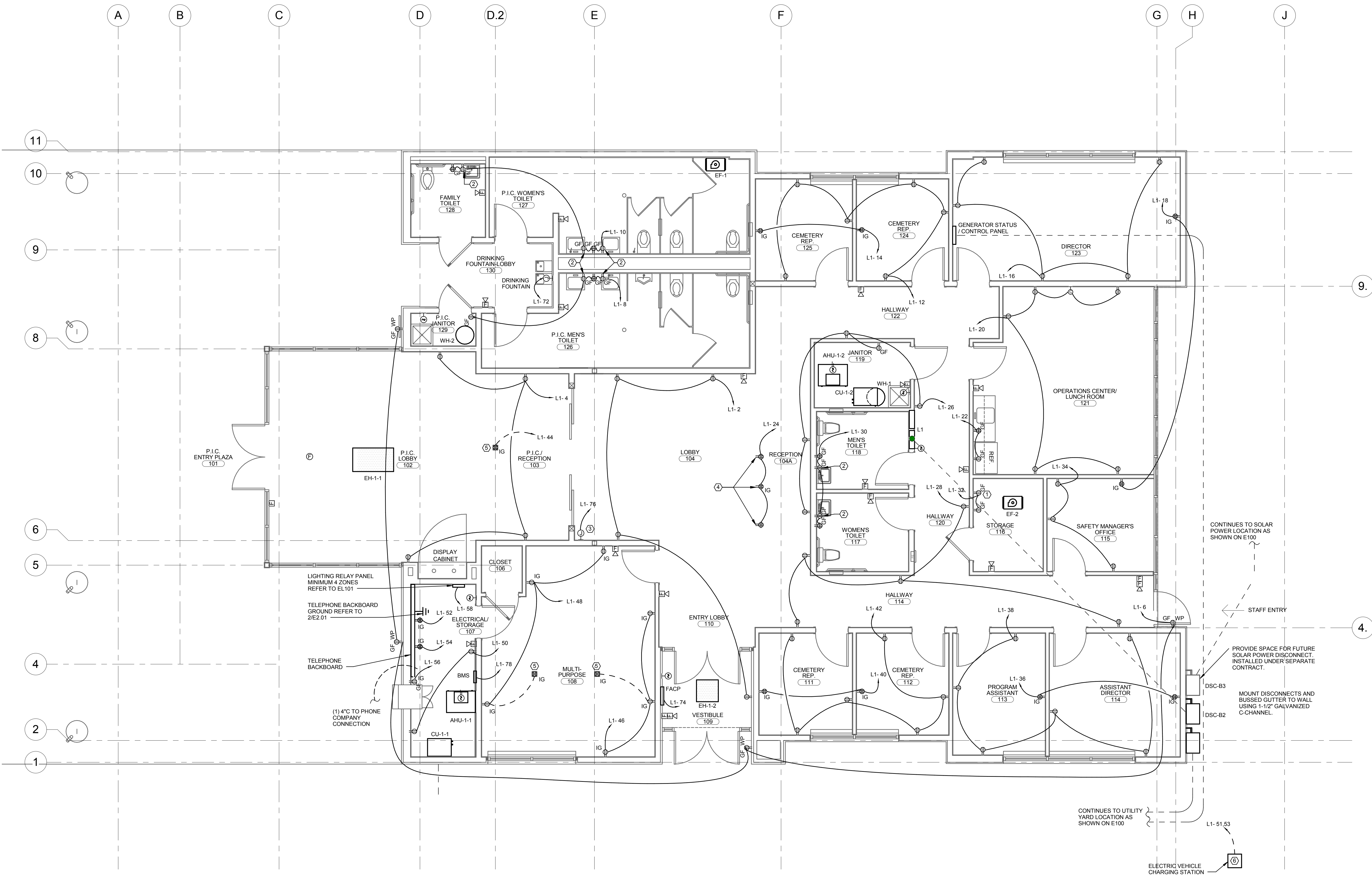
CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: MACTEC MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085		ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424		MEP ENGINEER: Thompson Company consulting engineers 29094 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcieng.com Atlanta Dubai, UAE Orlando Mexico City, Mexico Houston Tortola, BVI		SURVEY: HALDER SURVEYS INC. 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708		NATIONAL CEMETERY ADMINISTRATION		Drawing Title Lighting Floor Plan - Electrical Approved: Director, Technical Support Service Approved: Chief, Architectural & Engineering Division		Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY Building Number Checked TN Drawn HW Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA		Date 7-29-11 Project No. 872CM3035 DRAWING NO. EL101 Dwg. 66 of 80	
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KEY NOTES: (X)

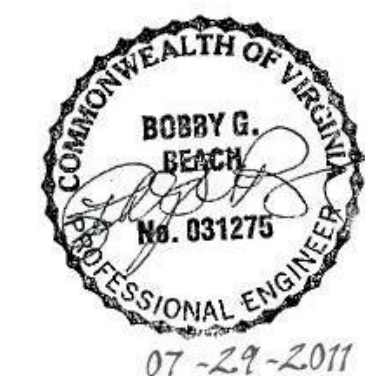
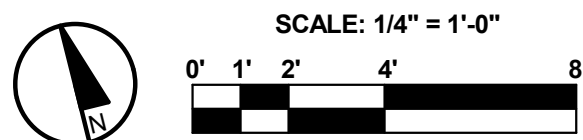
1. PROVIDE RECEPTACLE IN ATTIC SPACE. MOUNT 24" ABOVE TOP OF JOIST TO STRUCTURE WITHIN 5 FEET OF HATCH.
2. PROVIDE RECEPTACLE FOR AUTOMATIC FAUCET CONTROLLER.
3. PROVIDE JUNCTION BOX FOR AUTOMATIC DOOR. REFER TO MANUFACTURE FOR CONNECTION INFORMATION.
4. RECEPTACLES MOUNTED IN MILLWORK. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS.
5. PROVIDE FLUSH MOUNTED FLOOR BOX WITH A MINIMUM SPACE FOR 2 DUPLEX RECEPTACLES AND 2 SINGLE GANG SPACES FOR VOICE/DATA AND AV.
6. PROVIDE SINGLE STATION ELECTRIC VEHICLE CHARGING STATION. WIRE USING 3/8" I.D. 34"C. PROVIDE CONCRETE BASE AND CENTER CHARGING STATION ON END PARKING SPOT. COORDINATE LOCATION WITH CIVIL DRAWINGS.

SHEET NOTES:

1. REFER TO SHEET E002 FOR MECHANICAL EQUIPMENT SCHEDULE.
2. ALL 125V 15A AND 20A RECEPTACLES IN LOBBY AREA SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES.
3. ALL RECEPTACLES 120V AND 200V 15A AND 20A RECEPTACLES IN DAMP OR WET LOCATIONS SHALL BE LISTED WEATHER-RESISTANT RECEPTACLES
4. REFER TO SPECIFICATION FOR LIGHTNING PROTECTION INFORMATION.
5. PROVIDE PHOTOCELL FOR RELAY PANEL. MOUNT PER MANUFACTURER'S RECOMMENDED INSTRUCTIONS TO EXTERIOR OF BUILDING IN A LOCATION WITH MINIMAL VISIBILITY TO THE PUBLIC.



1 Power Floor Plan
EP101 1/4" = 1'-0"



Revisions	Date

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:

MACTEC
MACTEC ENGINEERING AND CONSULTING, INC.
3200 TOWN POINT DR., KENNESAW, GA. 30144
TEL: (770) 421-3400 FAX: (770) 421-3486

MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:

MATRIX SETTLES
1220 N. FILLMORE ST.
SUITE 300
ARLINGTON, VA 22211
703-525-0424

MEP ENGINEER:

Thompson Company
consulting engineers
29094
50 Technology Parkway South
Norcross, Georgia 30092
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Atlanta
Dubai, UAE

Orlando
Mexico City, Mexico

Houston
Tortola, BVI

SURVEY:

HALDER SURVEYS P.C.
10400 CHESTER ROAD, CHESTER, VA 23831
TEL: (804) 748-8707 FAX: (804) 748-8708

NATIONAL CEMETERY ADMINISTRATION

Drawing Title
Power Floor Plan - Electrical

Approved: Director, Technical Support Service

Approved: Chief, Architectural & Engineering Division

Project Title
**ADMINISTRATION / PUBLIC INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY**

Building Number

Checked
TN

Drawn
HW

Location
**18424 JOPLIN ROAD
TRIANGLE, VIRGINIA**

Date
7-29-11

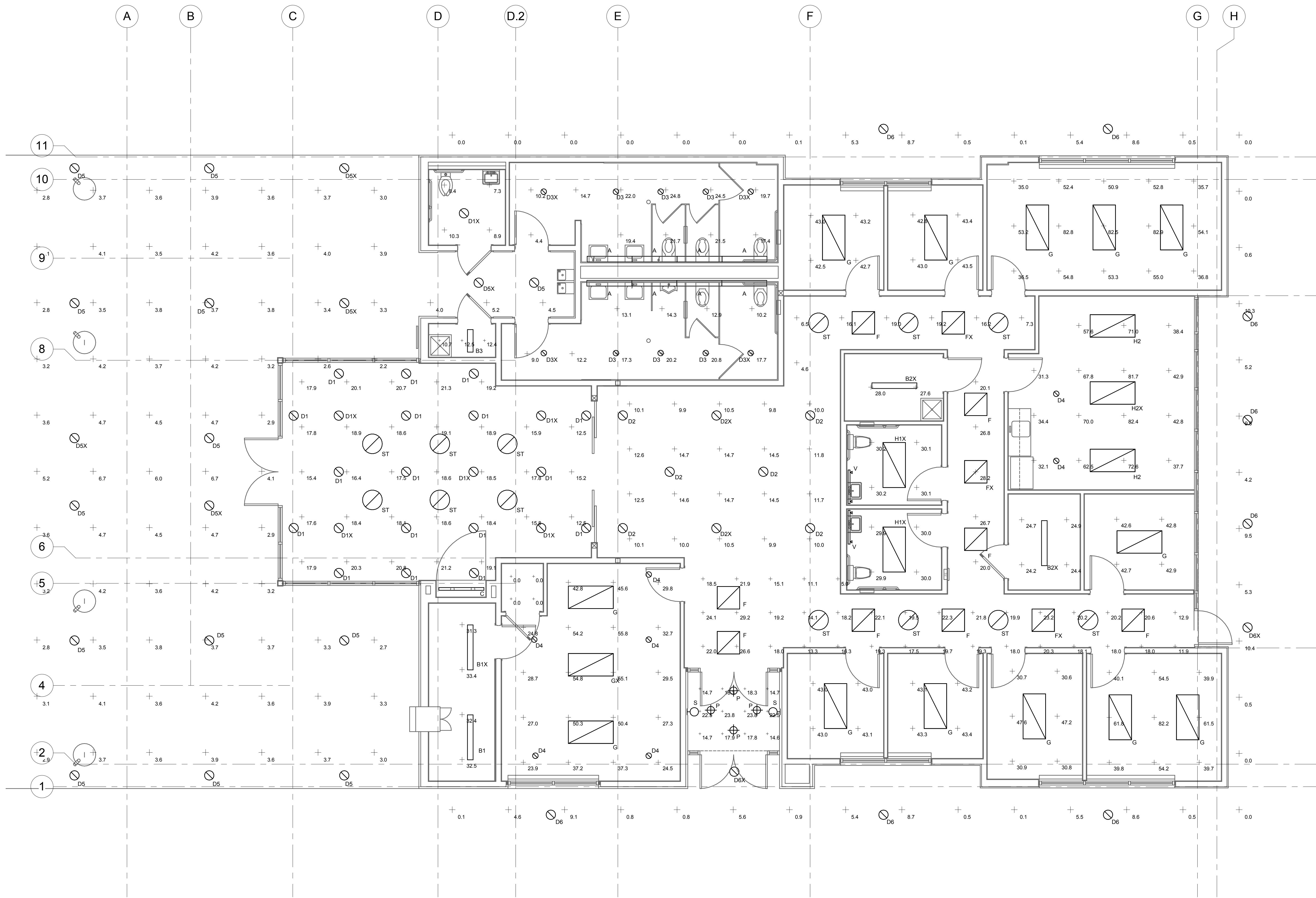
Project No.
872CM3035

DRAWING NO.
EP101

Dwg. 67 of 80

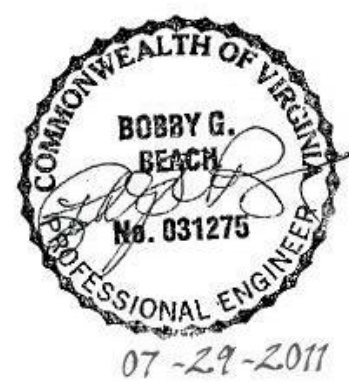
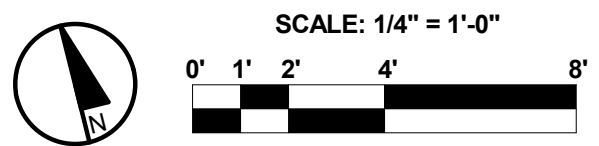
SHEET NOTES:

- 1 CALCULATIONS INCLUDE AN AVERAGE LIGHT LOSS FACTOR (LLF) OF 0.75.
- 2 SOLATUBES WERE NOT INCLUDED IN THE FOOT-CANDLE CALCULATIONS, AS THE SETTING FOR THE DAYLIGHT HARVESTING WILL AFFECT THE FOOT-CANDLES THAT ARE ATTAINED.
- 3 REFER TO E002 FOR LIGHTING FIXTURE SCHEDULE.

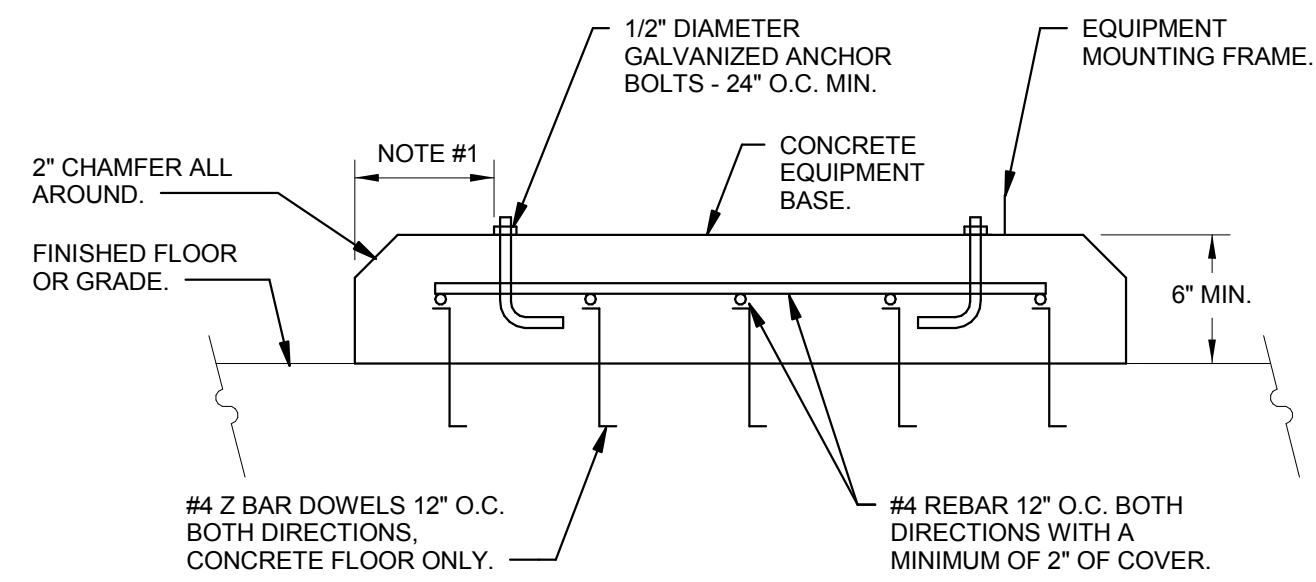


STATISTICS						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Assistant Director 114	+	52.6 fc	82.2 fc	39.7 fc	2.1:1	1.3:1
Canopy	+	3.8 fc	6.7 fc	2.2 fc	3.0:1	1.7:1
Canopy South, East, and North	+	3.3 fc	10.4 fc	0.0 fc	N / A	N / A
Cemetery Rep 111	+	43.0 fc	43.1 fc	43.0 fc	1.0:1	1.0:1
Cemetery Rep 112	+	43.3 fc	43.4 fc	43.1 fc	1.0:1	1.0:1
Cemetery Rep 124	+	43.2 fc	43.5 fc	42.8 fc	1.0:1	1.0:1
Cemetery Rep 125	+	42.9 fc	43.2 fc	42.5 fc	1.0:1	1.0:1
Closet 106	+	0.0 fc	0.0 fc	0.0 fc	N / A	N / A
Director 123	+	54.6 fc	82.9 fc	35.0 fc	2.4:1	1.6:1
Electrical/Storage 107	+	32.4 fc	33.4 fc	31.3 fc	1.1:1	1.0:1
Family Toilet 128	+	8.7 fc	10.3 fc	7.3 fc	1.4:1	1.2:1
Hallway 114	+	18.7 fc	29.2 fc	5.0 fc	5.8:1	3.7:1
Hallway 120	+	24.4 fc	28.2 fc	20.0 fc	1.4:1	1.2:1
Hallway 122	+	12.7 fc	19.2 fc	4.6 fc	4.2:1	2.8:1
Janitor 119	+	27.8 fc	28.0 fc	27.6 fc	1.0:1	1.0:1
Lobby 104	+	11.9 fc	14.7 fc	9.8 fc	1.5:1	1.2:1
Men's Toilet 118	+	30.2 fc	30.2 fc	30.1 fc	1.0:1	1.0:1
Multipurpose 108	+	38.5 fc	55.8 fc	23.9 fc	2.3:1	1.6:1
Operations Center/Lunch Room 121	+	55.0 fc	82.4 fc	31.3 fc	2.6:1	1.8:1
PIC Janitor 129	+	11.9 fc	12.5 fc	10.7 fc	1.2:1	1.1:1
PIC Lobby 102	+	18.0 fc	21.3 fc	12.5 fc	1.7:1	1.4:1
PIC Men's Toilet 126	+	14.8 fc	20.8 fc	9.0 fc	2.3:1	1.6:1
PIC Women's Toilet 127	+	18.2 fc	24.8 fc	4.4 fc	5.6:1	4.1:1
Program Assistant 113	+	36.3 fc	47.6 fc	30.6 fc	1.6:1	1.2:1
Safety Manager's Office 115	+	42.8 fc	42.9 fc	42.6 fc	1.0:1	1.0:1
Storage 116	+	24.6 fc	24.9 fc	24.2 fc	1.0:1	1.0:1
Vestibule 109	+	18.6 fc	23.8 fc	14.6 fc	1.6:1	1.3:1
Women's Toilet	+	29.9 fc	30.0 fc	29.9 fc	1.0:1	1.0:1

1 Lighting Calculation
E301 1/4" = 1'-0"



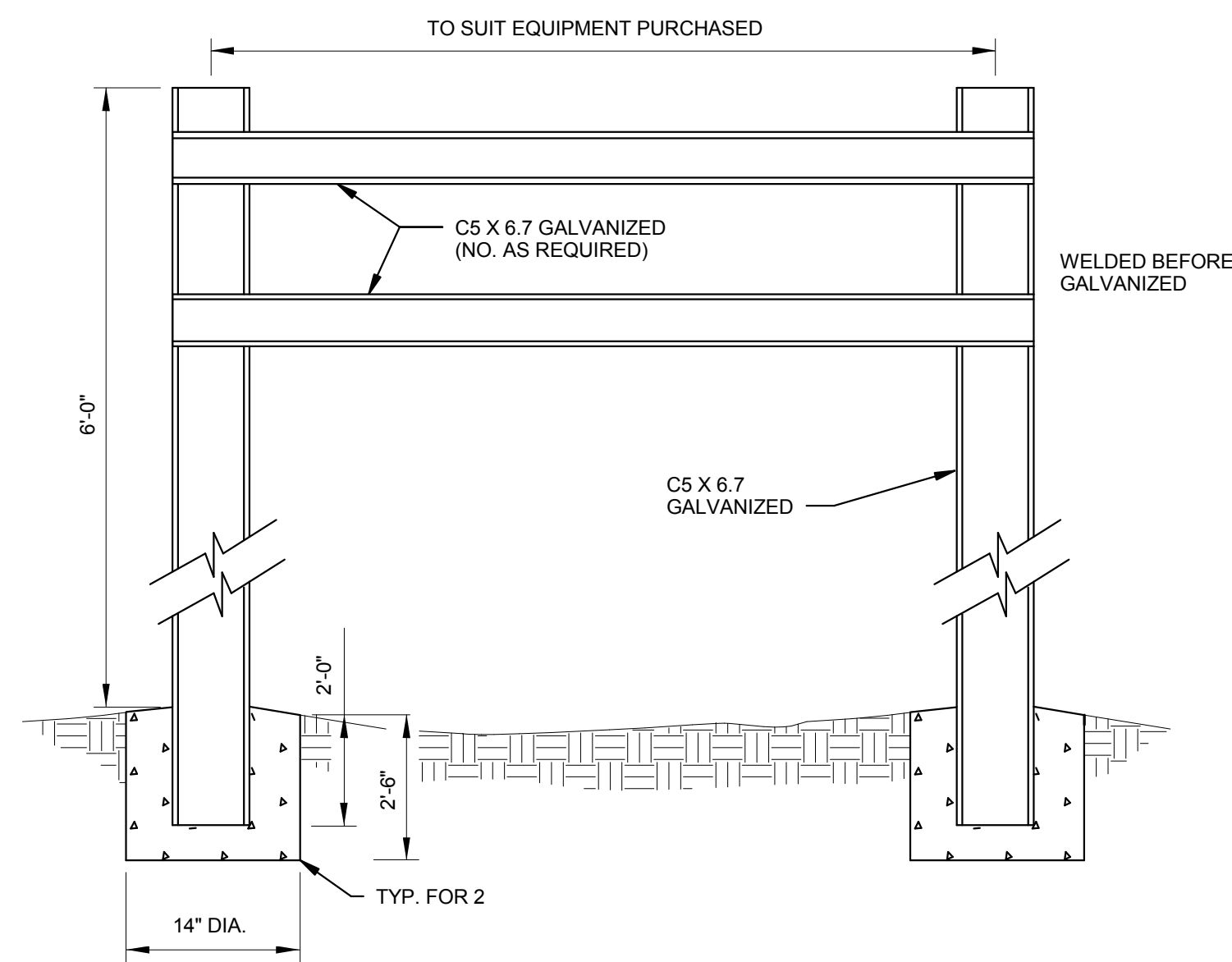
Revisions		Date	CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: MACTEC MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085		ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424		MEP ENGINEER: Thompson Company consulting engineers 29094 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcieng.com Atlanta Dubai, UAE Orlando Mexico City, Mexico Houston Tortola, BVI		SURVEY: HALDER SURVEYS P.C. 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708		 NATIONAL CEMETERY ADMINISTRATION		Drawing Title Lighting Calculation Approved: Director, Technical Support Service Approved: Chief, Architectural & Engineering Division		Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY Building Number Checked TN Drawn HW Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA		Date 7-29-11 Project No. 872CM3035 DRAWING NO. E301 Dwg. 68 of 80	
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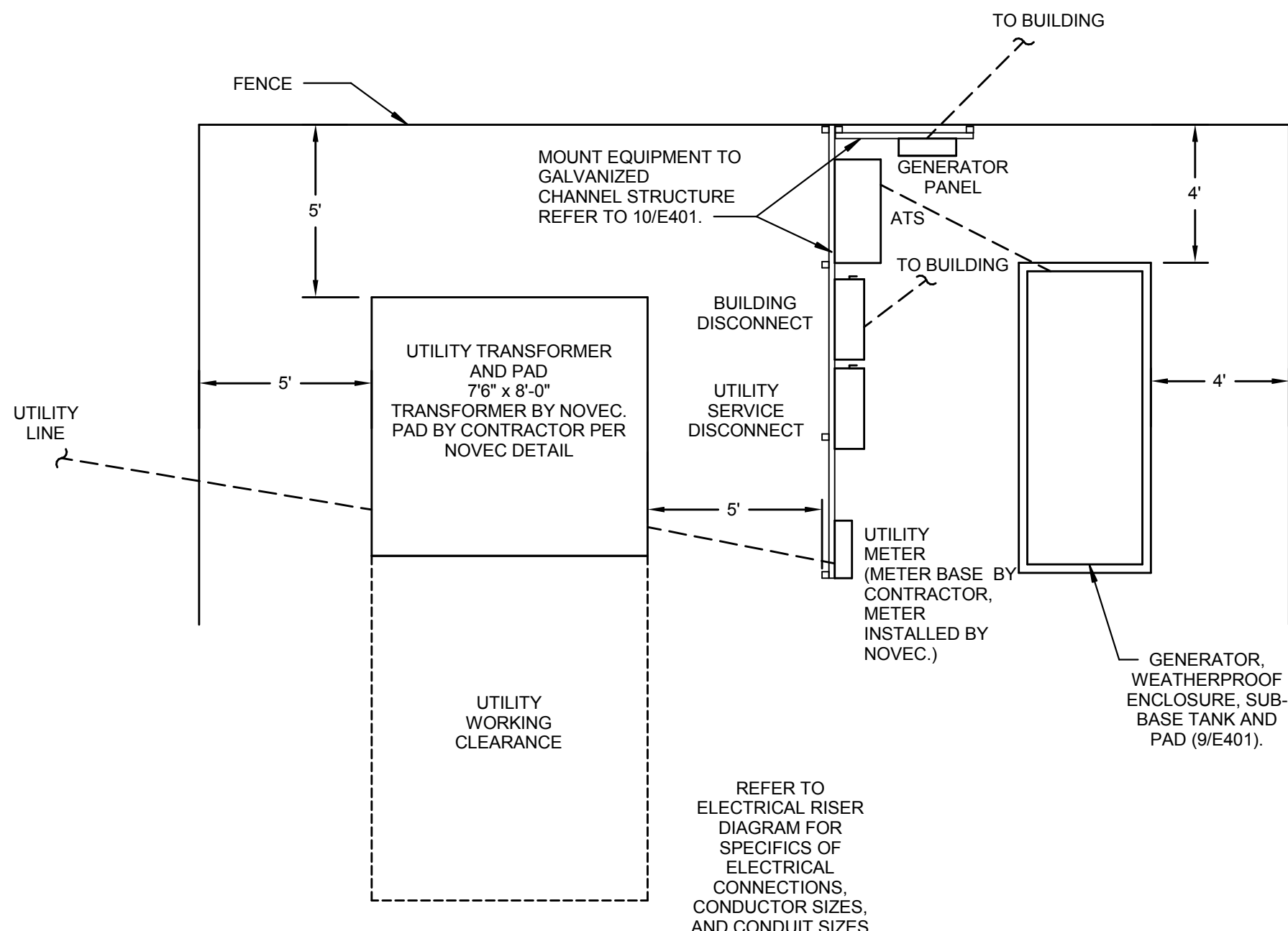
DETAIL NOTES:

1. CONCRETE BASE SHALL BE 6" LARGER THAN THE BASE OF THE EQUIPMENT BEING SUPPORTED.
2. ROUGHEN AND MOISTEN FINISHED CONCRETE FLOOR BEFORE POURING CONCRETE BASE.
3. MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI FOR ALL CONCRETE.

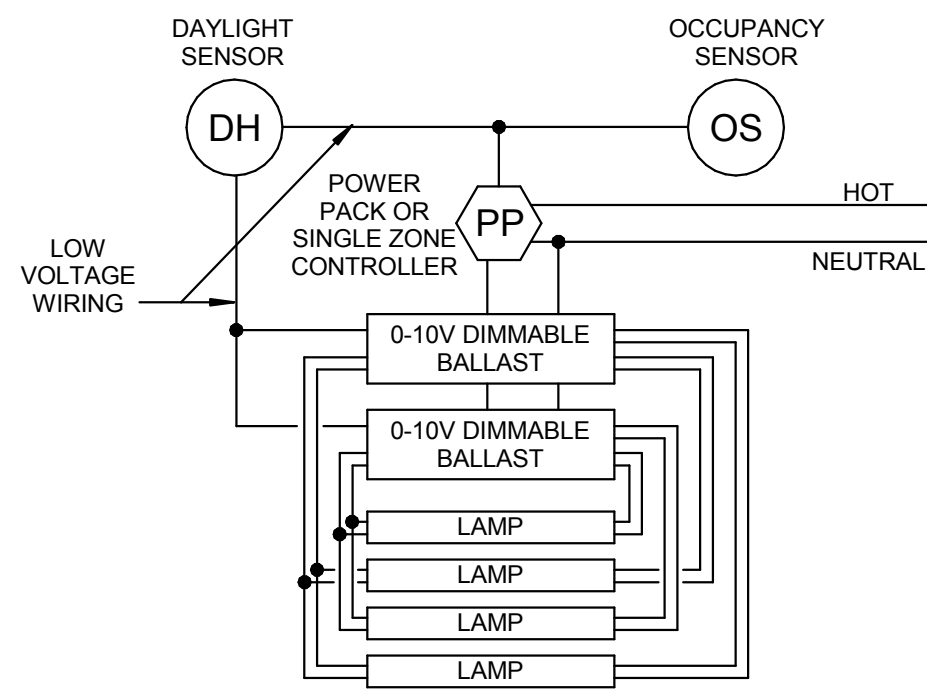
9 DETAIL - EQUIPMENT PAD E401 N.T.S.



10 DETAIL - EQUIPMENT SUPPORT - EXTERIOR E401 N.T.S.



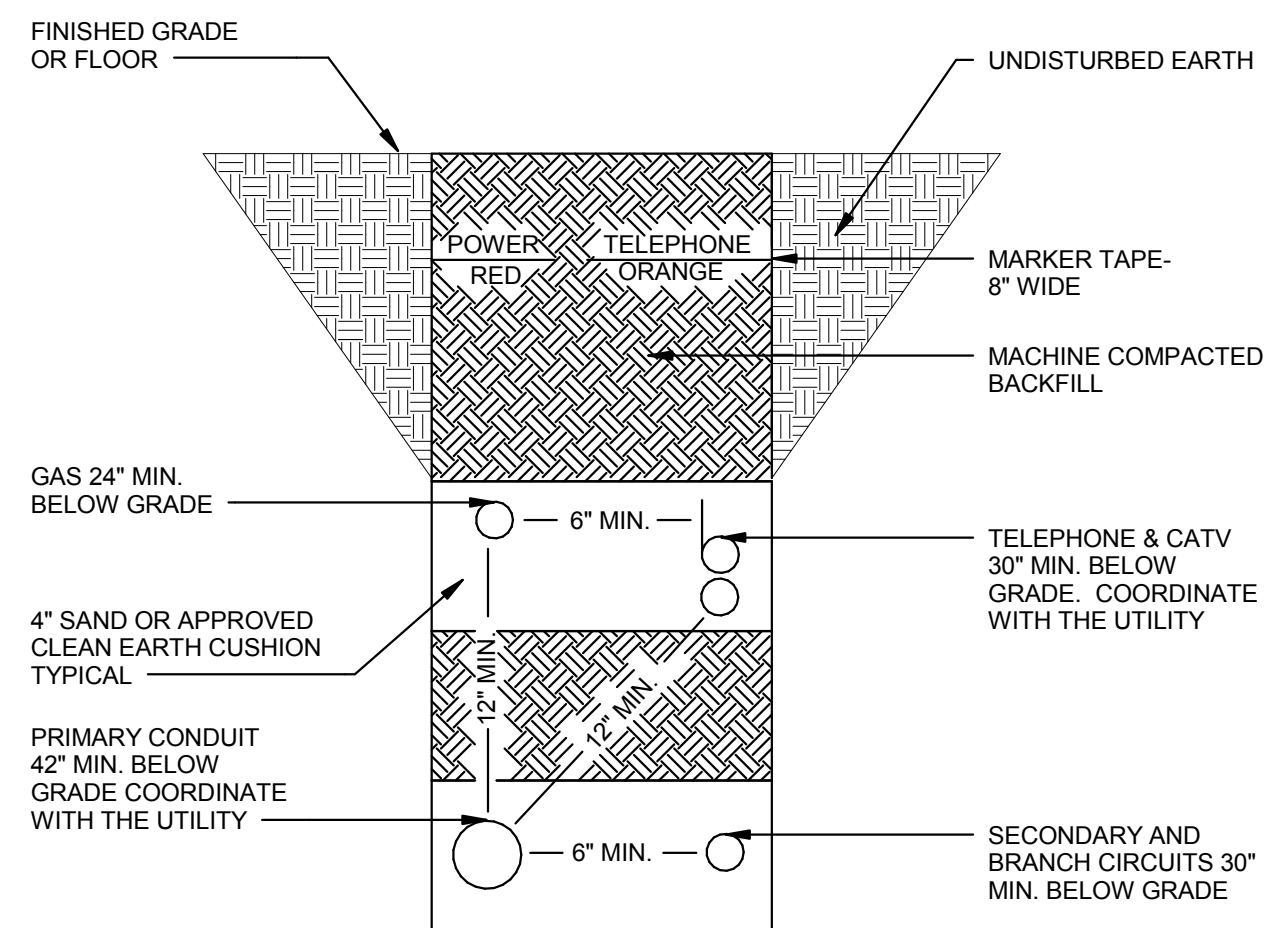
6 ELECTRICAL UTILITY YARD E401 1/4" = 1'-0"



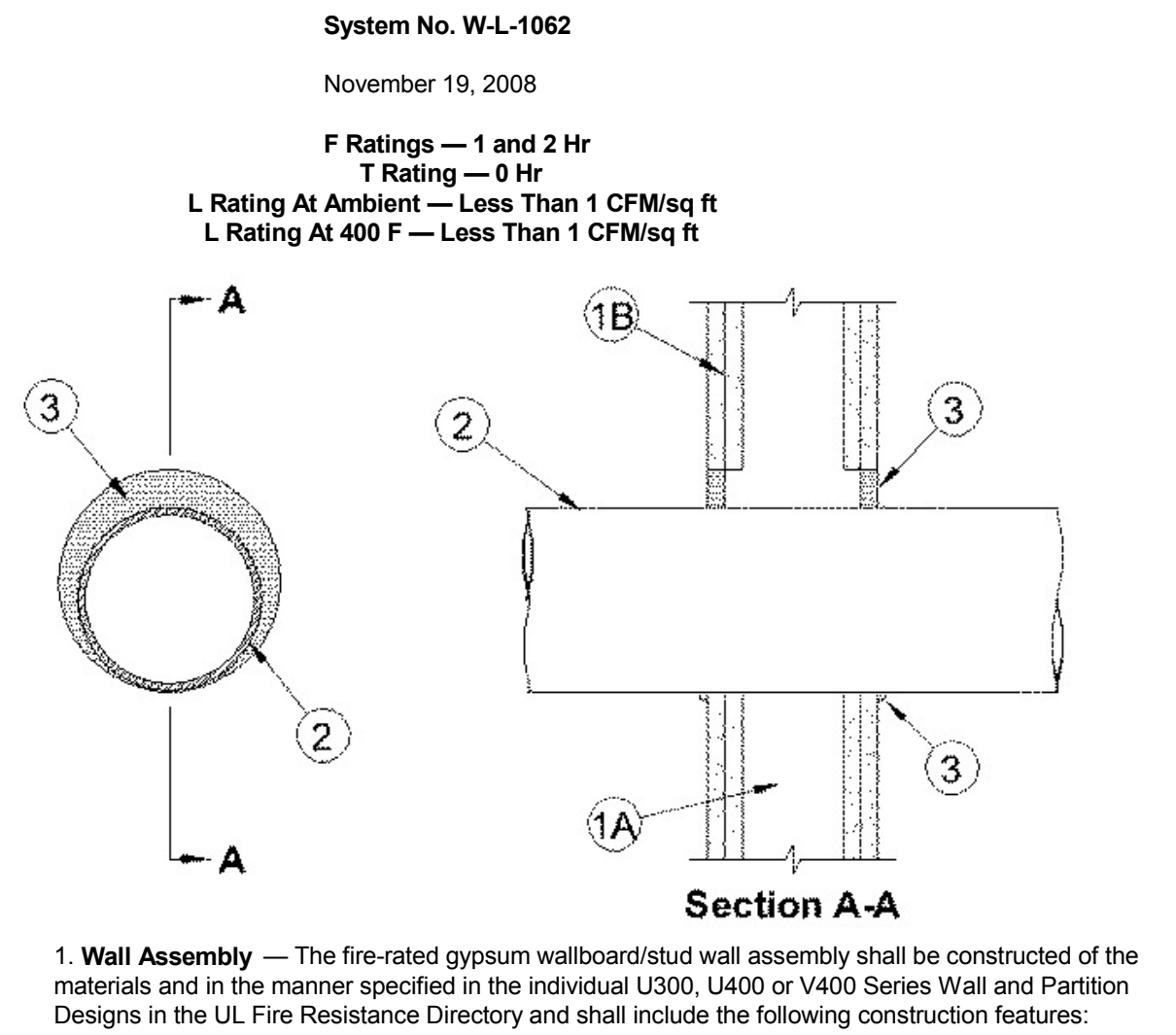
DETAIL NOTES:

1. DETAIL IS DIAGRAMMATIC ACTUAL CONNECTIONS AND WIRING MAY VARY DEPENDING ON MANUFACTURER
2. OCCUPANCY SENSOR CONTROLS ON/OFF OF LIGHTS. WHEN THE OCCUPANCY SENSOR SENSES AN OCCUPIED SPACE THE LIGHTS TURN ON AND THE DAYLIGHT CONTROLS ADJUST THE DIMMING OF THE FIXTURES BASED ON THE LIGHT LEVELS IN THE SPACE.
3. EXTEND LOW VOLTAGE WIRING AND POWER WIRING TO ALL FIXTURES TO BE CONTROLLED BY POWER PACK AS SHOWN ON FLOOR PLAN.

7 DETAIL - TYPICAL DH/OS LIGHTING CONTROL E401 N.T.S.



8 DETAIL - TRENCH E401 N.T.S.



1. **Wall Assembly** — The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

- A. Studs** — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (610 mm) OC.
- B. Gypsum Board** — Thickness, type, number of layers and fasteners as required in the individual Wall and Partition Design. Max diam of opening in wood stud walls is 8 in. (203 mm). Max diam of opening in steel stud walls is 14 in. (356 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. **Through Penetrants** — One metallic pipe, conduit or tubing to be installed within the firestop system. The space between pipe, conduit or tubing and periphery of opening shall be a min 0 in. (point contact) to a max 2 in. (51 mm). Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

- A. Steel Pipe** — Nom 12 in. (305 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.
- B. Iron Pipe** — Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe.
- C. Conduit** — Nom 4 in. (102 mm) diam (or smaller) electrical metallic tubing, nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 1 in. (25 mm) diam (or smaller) flexible steel conduit.
- D. Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
- E. Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

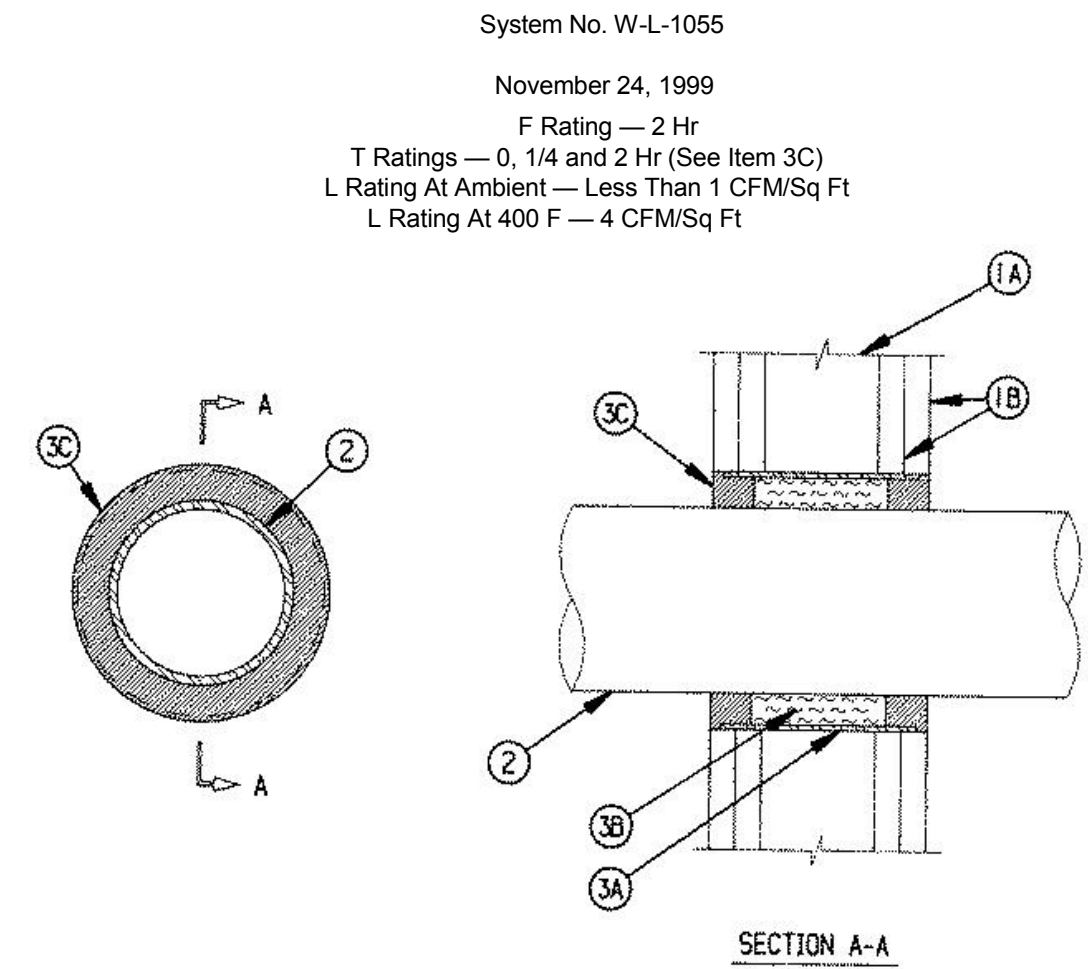
3. **Fill, Void or Cavity Material** — **Caulk** — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. Min 3/8 in. (10 mm) diam bead of fill material applied at point contact location at the penetrant/gypsum board interface on both sides of wall.

MOMENTIVE PERFORMANCE MATERIALS — Pensil 100 Caulk.

SPECIFIED TECHNOLOGIES INC — Pensil 100 Sealant, Pensil 300 Sealant or SpecSeal Series SIL300 Sealant.

*Bearing the UL Classification Mark

4 FIRE RATED PENETRATION - 1HR E401 N.T.S.



1. **Wall Assembly** — The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

- A. Studs** — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
- B. Gypsum Board** — Two layers of nom 5/8 in. thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max diam of opening is 8 in.

2. **Through Penetrants** — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The annular space between pipe, conduit or tubing and periphery of opening shall be 3/4 in. to 3-1/2 in. The following types and sizes of metallic pipes, conduits or tubing may be used:

- A. Conduit** — Nom 4 in. diam (or smaller) electrical metallic tubing or steel conduit.
- B. Copper Tubing** — Nom 4 in. diam (or smaller) Type L (or heavier) copper tubing.

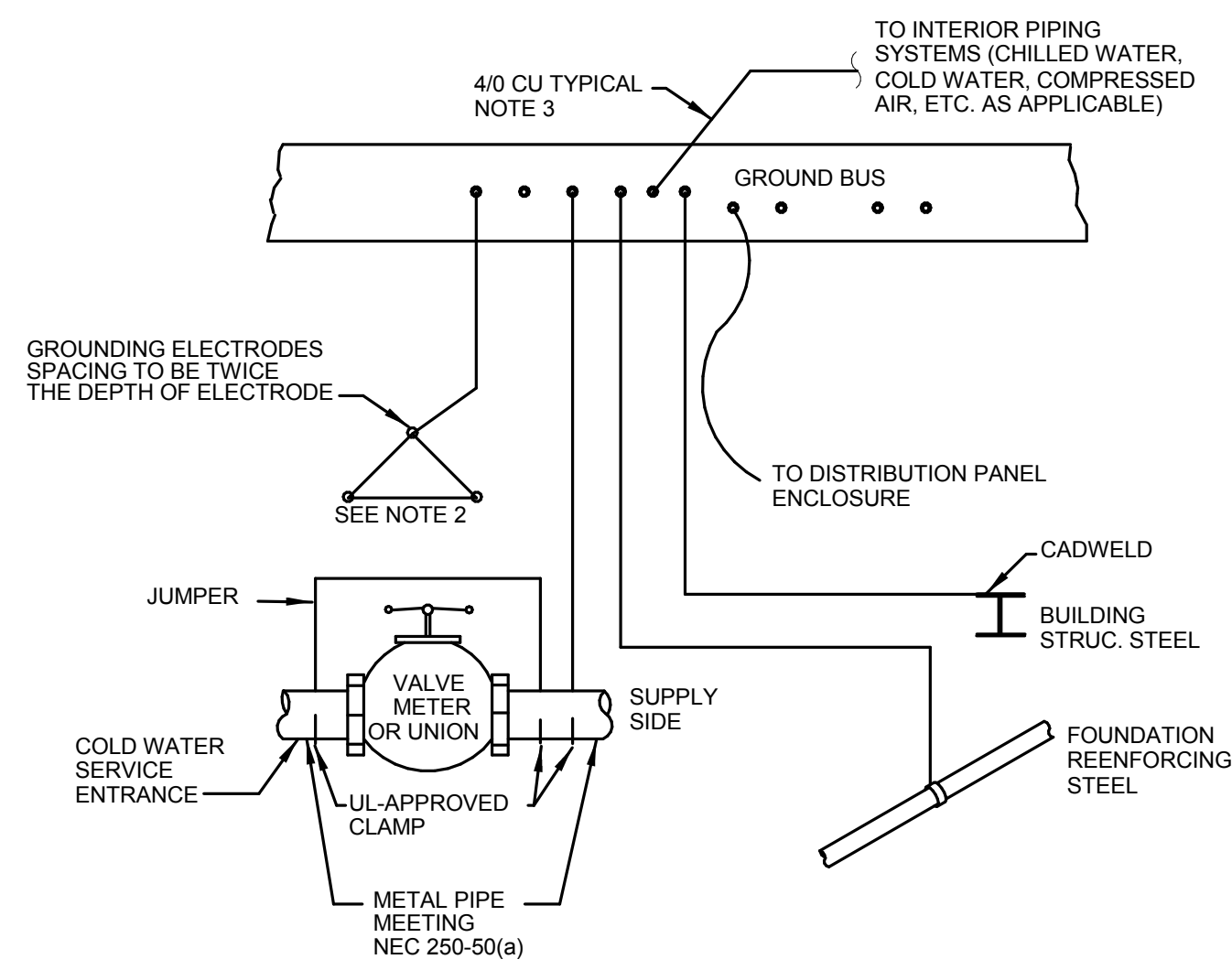
3. **Firestop System** — The hourly F and T Rating for the firestop systems are dependent upon the type and size of pipe, annular space, fill material thickness and fill material type as described in the table below. When the annular space in the table shows a range of distances, the penetrating item may be installed either concentrically or eccentrically within the firestop system. The firestop system shall consist of the following:

Pipe Type	Min Steel Sleeve or Wire Mesh Length In.	Min Fill Mtl Thkns In.	F Rating Hr	T Rating Hr
2A	5	1/4	2	1/4
2B	4-3/4	1/2	2	0
2A	4	1	2	1/4

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant

*Bearing the UL Classification Mark

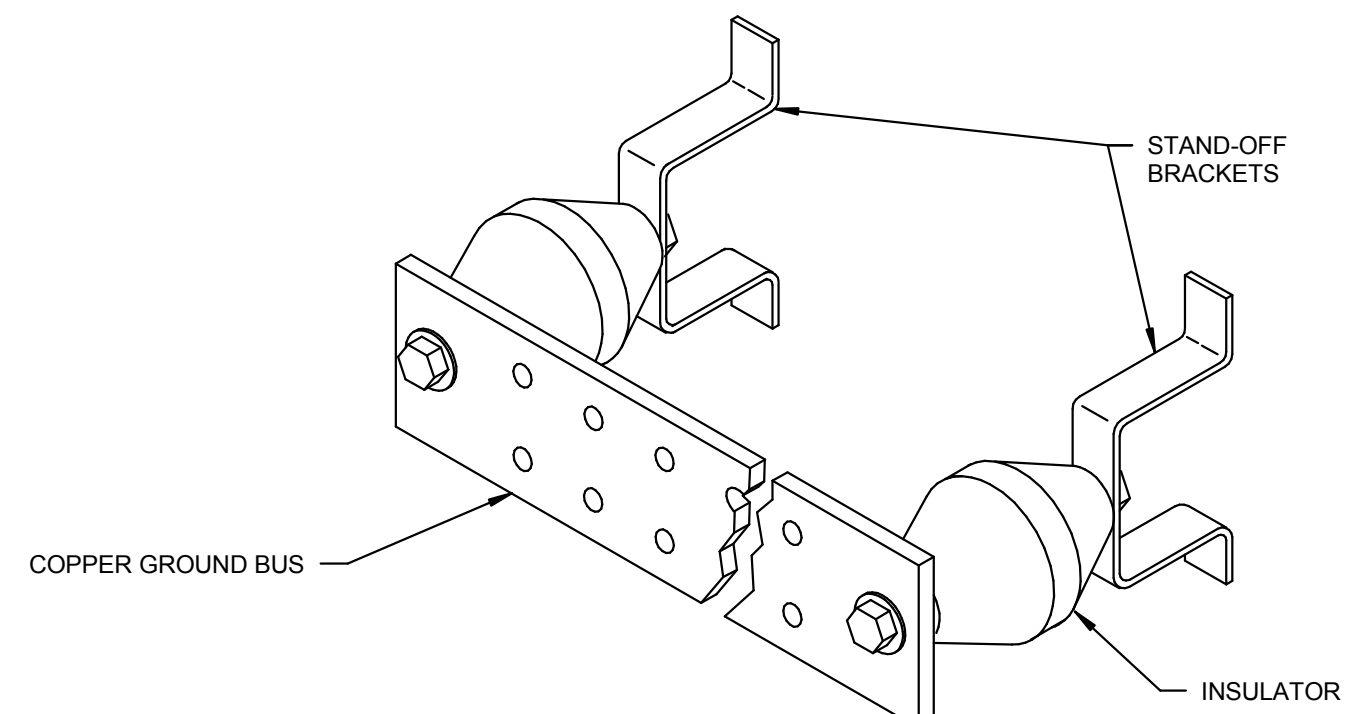
5 FIRE RATED PENETRATION - 2HR E401 N.T.S.



GENERAL NOTES:

1. ALL GROUNDING CONDUCTORS ARE 4/0 COPPER UNLESS NOTED OTHERWISE
2. LENGTH OF GROUND RODS DEPENDENT ON GROUND RESISTANCE REQUIRED AND/OR SPECIFICATIONS. MINIMUM GROUND ROD TO BE 3/4" X 10'
3. ALL GROUNDING CABLES SHALL BE MINIMUM 4/0, EXCEPT WHERE REQUIRED TO BE INCREASED IN SIZE BY NEC ARTICLE 250.

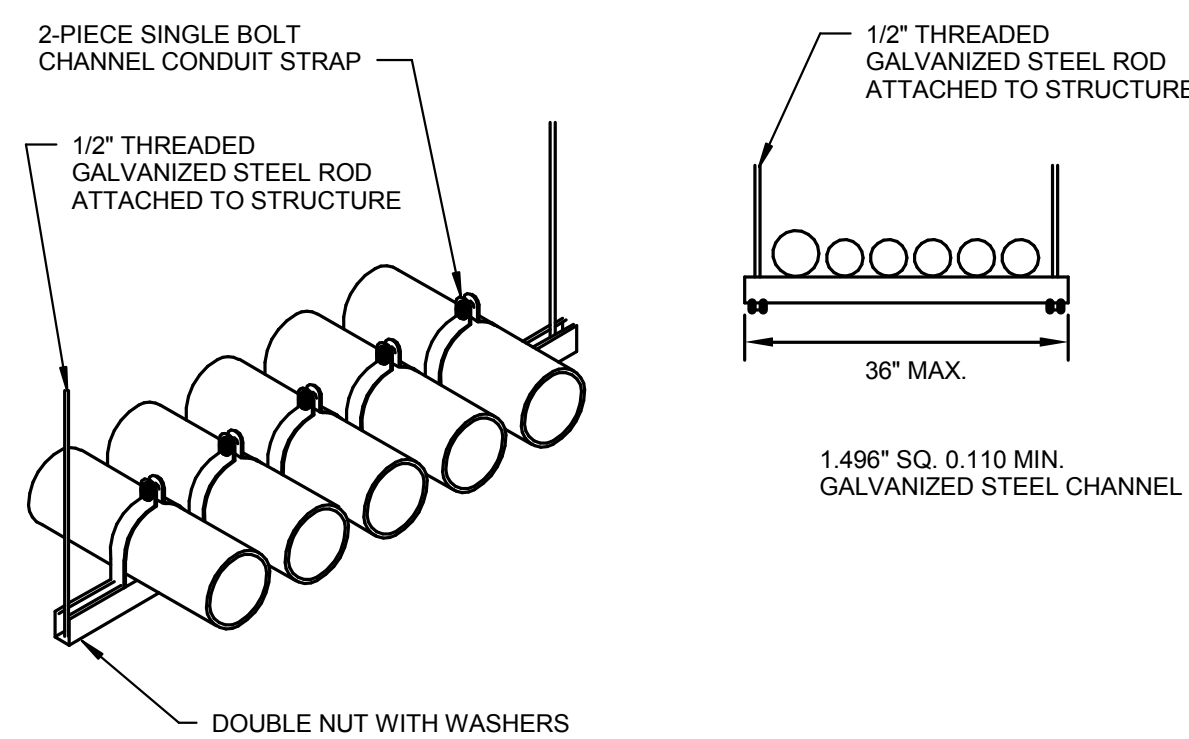
1 DETAIL - SERVICE GROUNDING E401 12" = 1'-0"



DETAIL NOTES:

PROVIDE 1/4" X 5 7/8" X 12" BAR, DRILLED AND TAPPED AS REQUIRED. INSULATORS SHALL BE 2.7KV RATED.

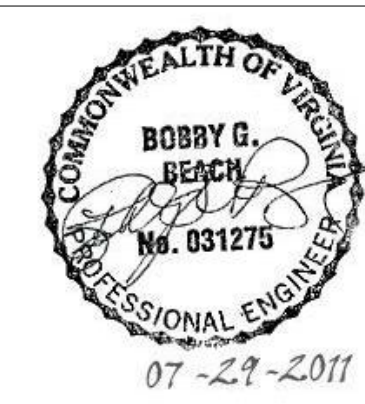
2 DETAIL - GROUNDING-BAR E401 N.T.S.



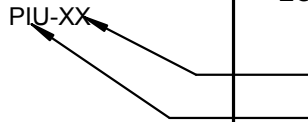
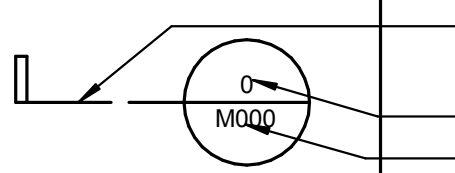
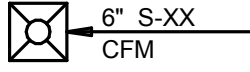
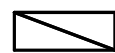
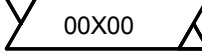
DETAIL NOTES:

1. CONTRACTOR MAY USE A CONDUIT SUSPENSION SYSTEM EQUIVALENT TO THAT WHICH IS DETAILED, HAVING THE FEATURES SHOWN AND APPROVED IN ADVANCE BY THE RESIDENT ENGINEER.
2. PROVIDE A SAMPLE SUPPORT SYSTEM TO KEEP ON JOB SITE FOR CONSTRUCTION GUIDE PURPOSES.
3. CONDUIT SUSPENSION SYSTEM SHALL BE INDEPENDENT OF ANY OTHER SUSPENSION SYSTEM.

3 DETAIL - CONDUIT HANGER E401 N.T.S.



HVAC ABBREVIATIONS							
ABBREVIATION/DEFINITION		ABBREVIATION/DEFINITION		ABBREVIATION/DEFINITION		ABBREVIATION/DEFINITION	
ABV	ABOVE	E.A.	EXHAUST AIR	MAX	MAXIMUM	SA	SUPPLY AIR
AC	ABOVE CEILING	EAT	ENTERING AIR TEMPERATURE	MBH	1000 BTU/HOUR	SEF	SMOKE EXHAUST FAN
AD	ACCESS DOOR	EF	EXHAUST FAN	MVD	MANUAL DAMPER	SD	SPLITTER DAMPER
ADJ	ADJUSTABLE	EG	EXHAUST GRILLE	MIN	MINIMUM	SE	SMOKE EXHAUST
AFF	ABOVE FINISH FLOOR	ENGR	ENGINEER	MOD	MOTOR OPERATED DAMPER	SF	SQUARE FEET
ARCH	ARCHITECT	ER	EXHAUST REGISTER	N/A	NOT APPLICABLE	SG	SUPPLY GRILLE
BD	BACKDRAFT DAMPER	ESP	EXTERNAL STATIC PRESSURE	N.C.	NORMALLY CLOSED	SP	STATIC PRESSURE (IN. W.G.)
BTU	BRITISH THERMAL UNIT	EXIST	EXISTING	N.O.	NORMALLY OPEN	SQ	SQUARE
BTUH	BRITISH THERMAL UNIT/HOUR	EXH	EXHAUST	OA	OUTSIDE AIR	SR	SUPPLY REGISTER
BOT	BOTTOM	F	DEGREES FAHRENHEIT	OBD	OPPOSED BLADE DAMPER	STR	STRUCTURAL
CAP	CAPACITY	FA	FREE AREA	OE	OPEN-END	TG	TRANSFER GRILLE
CD	CEILING DIFFUSER	FL	FLOOR	OPNG	OPENING	TYP	TYPICAL
CFM	CUBIC FEET PER MINUTE	FLEX	FLEXIBLE	PH	ELECTRICAL PHASE	T-STAT	THERMOSTAT
CLG	CEILING	FOD	FACE OPERATED DAMPER	PLBSG	PLUMBING	UH	UNIT HEATER
COND	CONDENSATE	FT	FEET	PSIA	POUNDS PER SQ. IN. ABSOLUTE	VAV	VARIABLE AIR VOLUME UNIT
CONN	CONNECTION	FT 2	SQUARE FEET	PSIG	POUNDS PER SQ. IN. GAUGE	VEL	VELOCITY
CONT	CONTINUATION	GAL	GALLON(S)	RA	RETURN AIR	VFD	VARIABLE FREQUENCY DRIVE
CP	CONTROL PANEL	GR	GRILLE	RAG	RETURN AIR GRILLE	WB	WET BULB
C/C	COOLING COIL	HP	HORSEPOWER	RAR	RETURN AIR REGISTER	WC	WATER COLUMN
D	DRAIN	HR	HOUR	REG	REGISTER	WG	WATER GAUGE
DB	DRY BULB	H/C	HEATING COIL	RG	RETURN GRILLE	WI	WITH
DB	DECEBEL	IN	INCHES	RH	RELATIVE HUMIDITY		
DIA	DIAMETER	KW	KILOWATT	RPM	ROTATIONS PER MINUTE		
DIFF	DIFFUSER	LAT	LEAVING AIR TEMPERATURE	RTU	ROOF TOP UNIT		
DN	DOWN	LBS.	POUNDS				
DWGS	DRAWINGS	LF	LINEAR FEET				

HVAC LEGEND	
	DETAIL NUMBER DRAWING WHERE SHOWN
	EQUIPMENT DESIGNATION EQUIPMENT NUMBER EQUIPMENT NAME
	SECTION CUT LINE SECTION NUMBER DRAWING WHERE SHOWN
	CEILING SUPPLY DIFFUSER WITH NECK SIZE, TYPE, AND CFM
	RETURN AIR GRILLE (RAG)
	THERMOSTAT/TEMPERATURE SENSOR
	DUCT UP - RETURN OR EXHAUST
	DUCT UP - SUPPLY
	DUCT SIZE
	MANUAL DAMPER
	DUCT MOUNTED SMOKE DETECTOR
	AIRFLOW DIRECTION
	MOTOR OPERATED DAMPER
	FLEXIBLE ROUNOUT WITH SPIN-IN FITTING AND MANUAL DAMPER

AIR DISTRIBUTION SCHEDULE	
TYPE	DESCRIPTION
S-PP	24 X 24 PERFORATED PLATE CEILING DIFFUSERS SIZED TO FIT CEILING GRID. ROUND NECK SIZED AS INDICATED ON DRAWINGS. PROVIDE 4-WAY ADJUSTABLE GRIDS TO DIFFUSE THE AIR. PROVIDE A FACTORY APPLIED FINISH OF A COLOR AS SELECTED BY THE ARCHITECT.
S-PP-2	12 X 12 PERFORATED PLATE CEILING DIFFUSERS SIZED TO FIT CEILING GRID. ROUND NECK SIZED AS INDICATED ON DRAWINGS. PROVIDE 4-WAY ADJUSTABLE GRIDS TO DIFFUSE THE AIR. PROVIDE A FACTORY APPLIED FINISH OF A COLOR AS SELECTED BY THE ARCHITECT.
S-CF	ROUND CONE FACE CEILING DIFFUSER. MINIMUM OF 3 STAMPED CONES. 1 PIECE CONSTRUCTION WITH ROUND NECK SIZES AS INDICATED ON DRAWINGS. PROVIDE PATTERN ADJUSTMENT DEVICE AND ADJUSTING VOLUME DAMPER. FACTORY APPLIED FINISH OF A COLOR AS SELECTED MY THE ARCHITECT.
S-SR	SUPPLY AIR REGISTERS SHALL BE ALL ALUMINUM WITH ADJUSTABLE DOUBLE DEFLECTION BLADES ON 3/4" CENTERS. THE FRONT SET OF BLADES SHALL BE HORIZONTAL. PROVIDE FACE OPERABLE OPPOSED BLADE DAMPER AND THE FINISH SHALL BE FACTORY APPLIED PRIMER FOR FIELD PAINTING.
R-SR	EXHAUST AIR REGISTER SHALL BE ALUMINUM WITH 1/2" X 1/2" X 1/2" GRID. PROVIDE A FACE OPERABLE OPPOSED BLADE DAMPER AND FACTORY APPLIED PRIMER FOR FIELD PAINTING.
R-SG	RETURN SIDEWALL GRILLE SHALL BE ALL ALUMINUM WITH FIXED 35° SINGLE DEFLECTION HORIZONTAL BLADES ON 1/2" CENTERS AND THE FINISH SHALL BE FACTORY APPLIED PRIMER FOR FIELD PAINTING.
RAG	RETURN AIR GRILLES. 24X24 PERFORATED PLATE. SIZED TO FIT THE CEILING GRID. PROVIDE A FACTORY APPLIED FINISH OF A COLOR AS SELECTED BY THE ARCHITECT.

AIR HANDLING UNIT SCHEDULE									
MARK	SUPPLY AIRFLOW (CFM)	OUTDOOR AIR FLOW (CFM)	E.S.P. (in-wg)	MOTOR POWER (hp)	TOTAL COOLING CAPACITY (MBH)	TOTAL SENSIBLE CAPACITY (BTU/Hr)	HEAT INPUT (kW)	NO. OF STEPS	NOTES
AHU-1-1	1,880	510	2.0		69.0	23.0	15.0	3	ALL
AHU-1-2	2,175	280	2.0		54.0	12.0	10	3	ALL
NOTES: 1. BASIS OF DESIGN IS TRANE. 2. VERTICAL UNIT WITH TOP SUPPLY AND RIGHT RETURN. 3. PROVIDE WITH 2" DISPOSABLE FILTER RACK AT THE UNIT'S RETURN OPENING. 4. PROVIDE VARIABLE SPEED FAN. 5. PROVIDE STARTER AND DISCONNECT SWITCH. 6. PROVIDE SUPPLY AND RETURN AIR TEMPERATURE SENSORS. 7. PROVIDE SUPPLY AIR SMOKE DETECTOR. 8. PROVIDE PROGRAMMABLE THERMOSTAT. 9. PROVIDE CONDENSATE PUMP. 10. PROVIDE 410A REFRIGERANT. 11. COORDINATE WITH ELECTRICAL FOR ELECTRICAL REQUIREMENTS. 12. CONNECT REFRIGERANT SUCTION AND LIQUID LINES FROM CORRESPONDING COMPRESSOR.									

EXHAUST FAN SCHEDULE							
MARK	AREA SERVED	AIR FLOW (CFM)	E.S.P. (in-wg)	DRIVE TYPE	RPM	HP (WATTS)	CONTROLS
EF-1	P.I.C. RESTROOMS	630	0.75	BELT	2034	1/3	CONTINUOUS OPERATION
EF-2	MEN'S & WOMEN'S TOILET	280	0.50	BELT	1811	1/4	CONTINUOUS OPERATION
NOTES: 1. BASIS OF DESIGN IS GREENHECK. 2. CENTRIFUGAL INLINE EXHAUST FAN. 3. PROVIDE WITH DISCONNECT SWITCH. 4. PROVIDE BACKDRAFT DAMPER. 5. COORDINATE WITH ELECTRICAL FOR ELECTRICAL REQUIREMENTS.							

ELECTRICAL UNIT HEATER SCHEDULE				
MARK	AREA SRVED	CFM	KW	NOTES
EH-1-1	P.I.C. LOBBY	500	5	1,3,4,5
EH-1-2	VESTIBULE	300	3	2,3,4,5
NOTES: 1. CABINET TYPE PLENUM HEATER. 2. RECESSED TYPE CEILING HEATER. 3. PROVIDE WITH DISCONNECT SWITCH. 4. PROVIDE WALL MOUNTED THERMOSTAT. 5. COORDINATE WITH ELECTRICAL FOR ELECTRICAL REQUIREMENTS.				

HVAC GENERAL NOTES

- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE HVAC SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES, AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL PARAMETERS GIVEN IN THESE DOCUMENTS SHALL BE STRICTLY CONFORMED WITH ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE HVAC SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ANY ADDITIONAL COST TO THE CONTRACT. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS. CONTRACTOR SHALL PREPARE HIS OWN FABRICATION AND INSTALLATION DRAWINGS FOR COORDINATION WITH ALL OTHER DISCIPLINES. SUBMIT COORDINATION AND FABRICATION DRAWINGS FOR REVIEW BY THE ARCHITECT PRIOR TO INSTALLATION OF ANY EQUIPMENT, PIPE OR DUCT. THE COORDINATION DRAWINGS SHALL HAVE ALL FIRE WALLS AND FLOORS INDICATED ON THE COORDINATION DRAWINGS.
- THE MECHANICAL CONTRACTOR SHALL HAVE A MINIMUM OF FIVE YEARS EXPERIENCE ON THE INSTALLATION OF DIRECT EXPANSION GEOTHERMAL FIELDS.
- COORDINATE DUCTWORK, REFRIGERANT PIPING, AND CONDENSATE PIPING WITH ALL OTHER DISCIPLINES AND TRADES. MAKE ALL OFFSETS AND TRANSITIONS TO COORDINATE WITH OTHER TRADES WITHOUT ANY ADDITIONAL EXPENSE TO THE CONTRACT.
- COORDINATE EXACT LOCATION GRILLES, REGISTERS AND DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
- COORDINATE THE EXACT LOCATION AND SIZE OF ALL ROOF AND SLAB PENETRATIONS WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO ANY CONCRETE BEING PLACED.
- FLEXIBLE DUCT RUNOUTS TO TERMINAL DEVICES (VAVS AND PLUS) SHALL BE INSTALLED FREE OF KINKS AND SAGS. PROVIDE BELL MOUTH FITTINGS AT ALL TAKE-OFFS ON MEDIUM PRESSURE DUCTWORK. MAXIMUM LENGTH OF LOW PRESSURE FLEXIBLE DUCT SHALL BE 7'-0". MAXIMUM LENGTH OF MEDIUM PRESSURE FLEXIBLE DUCT SHALL BE 3'-0". FLEXIBLE DUCT SHALL NOT BE USED TO CORRECT MISALIGNMENT OF TERMINAL UNIT AND MEDIUM PRESSURE DUCT CONNECTION.
- MAINTAIN DUCTWORK LEVEL AS HIGH AS POSSIBLE UNLESS NOTED OTHERWISE. TRANSITION RECTANGULAR DUCTWORK ON THE BOTTOM AND THE SIDES. ALL DUCT TRANSITIONS FROM SQUARE TO ROUND SHALL BE SMOOTH SQUARE TO ROUND TRANSITIONS. SPIN-IN FITTINGS AT THE END OF CAPPED DUCTS ARE NOT ACCEPTABLE.
- DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. WHERE INTERNAL INSULATION IS CALLED FOR, DIMENSIONS SHALL BE INCREASED BY THE THICKNESS OF THE INSULATION.
- ALL EQUIPMENT, PIPING, CONDUIT OR ANY PORTIONS OF DUCTWORK VISIBLE THROUGH SLOTS, GRILLES, REGISTERS, OR DIFFUSERS IN FINISHED AREAS SHALL BE PAINTED FLAT BLACK.
- ALL MOTORS 1/8 HP AND ABOVE SHALL HAVE A DISCONNECT SWITCH MOUNTED ADJACENT TO THE MOTOR OR DEVICE. SEE DIVISION 26 FOR DISCONNECT TYPE AND SPECIFICATION.
- CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH DIVISION 26 EQUIPMENT AND ALL ELECTRICAL CONTRACT DOCUMENTS PRIOR TO ORDERING AND INSTALLING EQUIPMENT.
- ALL OPEN ENDED DUCTS SHALL BE REINFORCED WITH 1" X 1" X 1/8" GALVANIZED STEEL ANGLES BOLTED OR RIVETED 6" ON CENTER (MAXIMUM) ALL AROUND THE EXTERIOR PERIMETER OF THE DUCT.
- MOUNT THERMOSTATS WHERE INDICATED ON PLANS. AT 4'-0" AFF UNLESS OTHERWISE NOTED. ALL TERMINAL UNITS SHALL REQUIRE TEMPERATURE SENSORS. SEE THE ARCHITECTURAL DRAWINGS AS WELL AS THE MECHANICAL DRAWINGS FOR THE COORDINATED LOCATIONS WHERE THERE IS A CONFLICT OF LOCATIONS AMONG THE DRAWINGS, NOTIFY THE ARCHITECT IMMEDIATELY FOR RESOLUTION.
- ALL BRANCH DUCTWORK SHALL BE THE SAME SIZE AS THE DIFFUSER CONNECTION SERVED UNLESS OTHERWISE NOTED.
- ALL DIFFUSERS INSTALLED IN LAY-IN CEILINGS SHALL BE 4-WAY PATTERN UNLESS OTHERWISE NOTED.
- ALL WIRING IN THE CEILING PLENUM SHALL BE INSTALLED IN CONDUIT IN ACCORDANCE WITH DIVISION 26.
- CONDENSATE DRAIN LINES RUNNING HORIZONTALLY SHALL BE SLOPED 1/4" PER FOOT DOWN IN THE DIRECTION OF FLOW.
- COORDINATE WITH ARCHITECTURAL DRAWINGS FOR EXACT SIZE, LOCATION AND MOUNTING HEIGHT OF ALL EXTERIOR LOUVERS AND WALL MOUNTED DEVICES.
- RETURN AIR SHALL BE THROUGH CEILING DIFFUSERS AND GRILLES PROVIDED IN THE CEILING UNLESS SHOWN OTHERWISE.
- PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.

CONTROL NOTES

THE CONTRACTOR IS RESPONSIBLE FOR THE PURCHASE AND INSTALLATION AND PROPER OPERATION OF ALL CONTROL SYSTEM COMPONENTS AND FOR THE PROPER OPERATION OF THE BUILDING AUTOMATION SYSTEM AS A COMPLETE AND FULLY OPERATIONAL SYSTEM. ALL COMPONENTS REQUIRED TO ACCOMPLISH THE SEQUENCES OF OPERATION AND THE PROJECT SPECIFICATIONS AND TO PROVIDE A FULLY OPERATIONAL SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR, EVEN IF THOSE ITEMS ARE NOT SPECIFICALLY SHOWN OR NOTED ON THE PROJECT DRAWINGS.

THE CONTRACTOR SHALL PROVIDE A TEST AND BALANCE/COMMISSIONING CONTRACTOR SEPARATE FROM THE MECHANICAL SUB-CONTRACTOR AND THE CONTROLS SUB-CONTRACTOR TO BALANCE AND ADJUST THE MECHANICAL SYSTEMS AND TO TEST AND VERIFY THE PROPER OPERATION OF THE MECHANICAL SYSTEMS. THIS TESTING AND VERIFYING SHALL INCLUDE COMPLETE TESTING AND DOCUMENTATION OF THE PROPER OPERATION OF THE CONTROLS SYSTEM. EACH DEVICE, SENSOR, AND CONTROLLER SHALL BE TESTED TO DETERMINE IF IT OPERATES CORRECTLY. THEN EACH SYSTEM AND SUB-SYSTEM SHALL BE COMMANDED INTO EACH SYSTEMS CONTROLS FUNCTIONAL PROFILE MODE AND THE STATUS OF EACH DEVICE LISTED ON THE SYSTEM FUNCTIONAL PROFILE SHALL BE INSPECTED TO DETERMINE IF IT IS OPERATING IN THE PROPER STATE.

THE CONTROLS SUB-CONTRACTOR SHALL WORK DIRECTLY WITH THE COMMISSIONING CONTRACTOR TO FIX, REPAIR, AND REPROGRAM ALL CONTROLS DEVICES AND SOFTWARE FOUND TO BE NOT OPERATING CORRECTLY.

THE COMMISSIONING CONTRACTOR SHALL DOCUMENT THE DESIGN AND ACTUAL MEASURED VALUES FOR ALL SENSING DEVICES AND SHALL DOCUMENT ACTUAL SETPOINT VALUES DETERMINED TO WORK BEST FOR THIS FACILITY. THIS MECHANICAL SYSTEM, AND THIS CONTROLS SYSTEM.

EXHAUST FANS:
EXHAUST FANS SHALL RUN CONTINUOUSLY WHEN SCHEDULED BY THE BUILDING MANAGEMENT SYSTEM.

UNIT HEATERS:
A WALL MOUNTED THERMOSTAT SHALL CYCLE THE UNIT HEATERS ON A DROP IN TEMPERATURE BELOW SETPOINT.
A THERMOSTAT SHALL CYCLE THE FAN ON A RISE IN TEMPERATURE.

AIR HANDLING UNITS:
THE SYSTEM SHALL BE AUTOMATICALLY STARTED AND STOPPED BY THE DDC CONTROLLER WHENEVER THE HAND-OFF-AUTOMATIC SWITCH IS IN THE AUTOMATIC POSITION, AND MANUALLY STARTED AND STOPPED BY THE HAND POSITION.

CONTROLS SHALL BE ENERGIZED, AND THE RETURN DAMPER SHALL OPEN PRIOR TO FAN STARTING. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. THE OUTSIDE AIR DAMPER SHALL OPEN UPON COMPLETION OF THE MORNING WARM-UP MODE.

IN COOLING MODE, THE SPACE TEMPERATURE SENSOR SHALL MODULATE THE VARIABLE FAN SPEED AND THE COMPRESSOR SHALL RUN TO MAINTAIN DISCHARGE TEMPERATURE.

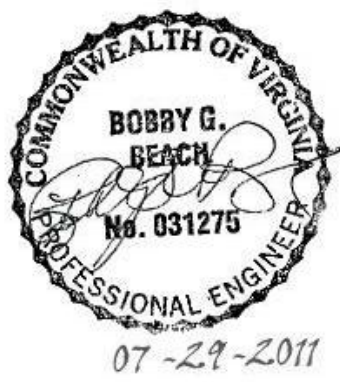
IN HEATING MODE, WITH THE FAN AT MINIMUM SPEED, THE ELECTRIC HEATING COIL SHALL STEP TO MAINTAIN SPACE TEMPERATURE.

THE CO2 SENSOR SHALL MONITOR AND REPORT CO2 LEVELS TO THE BUILDING MANAGEMENT SYSTEM.

ON POWER INTERRUPTION OR FAN SHUTDOWN, THE OUTSIDE AIR DAMPER SHALL CLOSE, SMOKE DETECTORS IN THE SUPPLY AIR DUCT SHALL AUTOMATICALLY SHUT DOWN THE FAN.

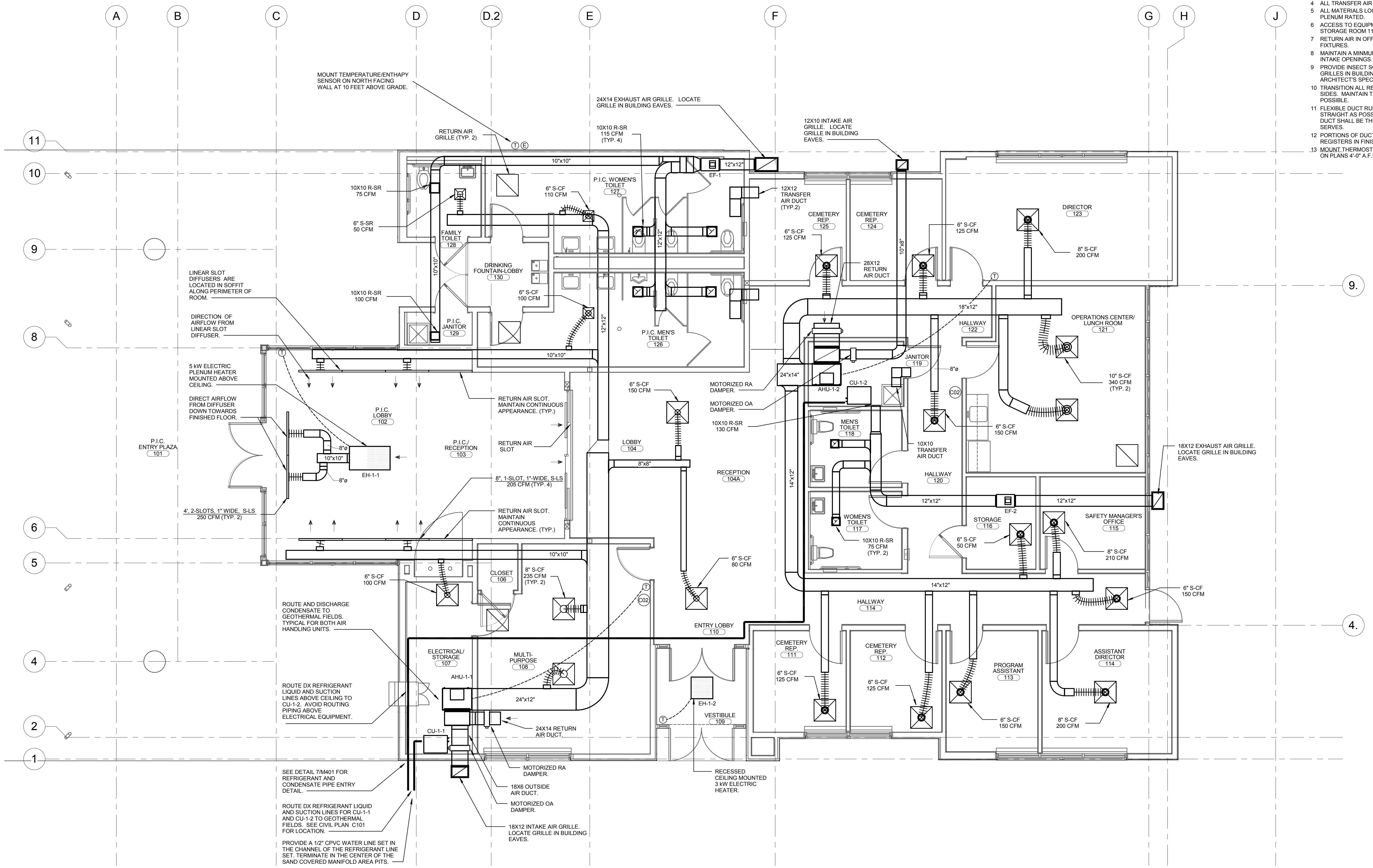
ON ACTIVATION OF THE FIRE ALARM SYSTEM, THE SYSTEM SHALL SHUT DOWN.

Revisions		Date	
CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:		ARCHITECTURE:	
 MACTEC ENGINEERING AND CONSULTING, INC., 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486		 1220 N. FILLMORE ST., SUITE 300 ARLINGTON, VA 22211 703-525-0424	
MEP ENGINEER:		SURVEY:	
 50 Technology Parkway South Norcross, Georgia 30092 Atlanta, Dubai, UAE		 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708	
 NATIONAL CEMETERY ADMINISTRATION		Drawing Title Notes, Legend, Abbrev. & Schedule - Mechanical	
Approved: Director, Technical Support Service		Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY	
Approved: Chief, Architectural & Engineering Division		Building Number DMB	
		Checked DMB	
		Drawn CB	
		Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA	
		Date 7-29-11	
		Project No. 872CM3035	
		DRAWING NO. M001	
		Dwg. 70 or 80	

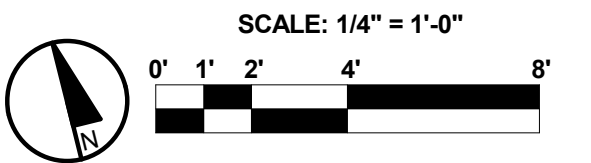


SHEET NOTES:

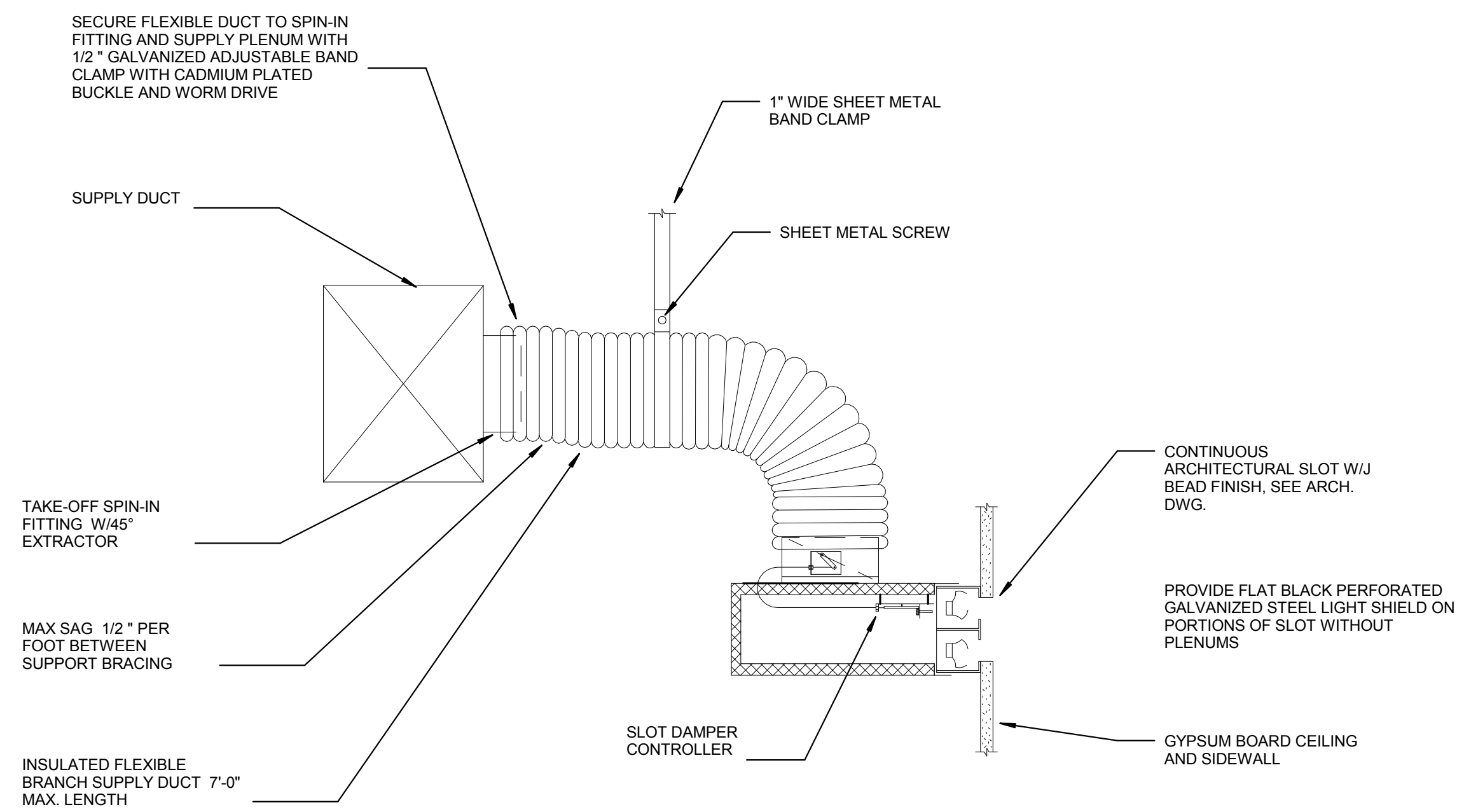
1. COORDINATE ALL DIFFUSERS AND GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLAN.
2. COORDINATE AND ROUTE THE SUPPLY AND RETURN DUCTWORK THROUGH TRUSS AND WRAPPED WITH EXTERNAL INSULATION.
3. ALL DUCTWORK SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE.
4. ALL TRANSFER AIR OPENING LOCATED ABOVE CEILING.
5. ALL MATERIALS LOCATED WITHIN THE PLENUM SHALL BE PLENUM RATED.
6. ACCESS TO EQUIPMENT IN ATTIC SHALL BE THROUGH STORAGE ROOM 116.
7. RETURN AIR IN OFFICES PROVIDED BY RETURN AIR LIGHT FIXTURES.
8. MAINTAIN A MINIMUM 10' DISTANCE BETWEEN ALL EXHAUST AND INTAKE OPENINGS.
9. PROVIDE INSECT SCREENS ON ALL INTAKE AND EXHAUST GRILLES IN BUILDING EAVES. SEAL WATER TIGHT AND PAINT PER ARCHITECT'S SPECIFICATIONS.
10. TRANSITION ALL RECTANGULAR DUCTWORK ON BOTTOM AND SIDES. MAINTAIN TOP OF DUCTWORK LEVEL AND AS HIGH AS POSSIBLE.
11. FLEXIBLE DUCT RUNOUTS TO CEILING DIFFUSERS SHALL BE AS STRAIGHT AS POSSIBLE AND FREE OF SAGS & KINKS. FLEX DUCT SHALL BE THE SAME SIZE AS THE DIFFUSER NECK IT SERVES.
12. PORTIONS OF DUCTWORK VISIBLE THROUGH GRILLES AND REGISTERS IN FINISHED AREAS SHALL BE PAINTED FLAT BLACK.
13. MOUNT THERMOSTATS AND FAN SWITCHES WHERE INDICATED ON PLANS 4'-0" A.F.F.



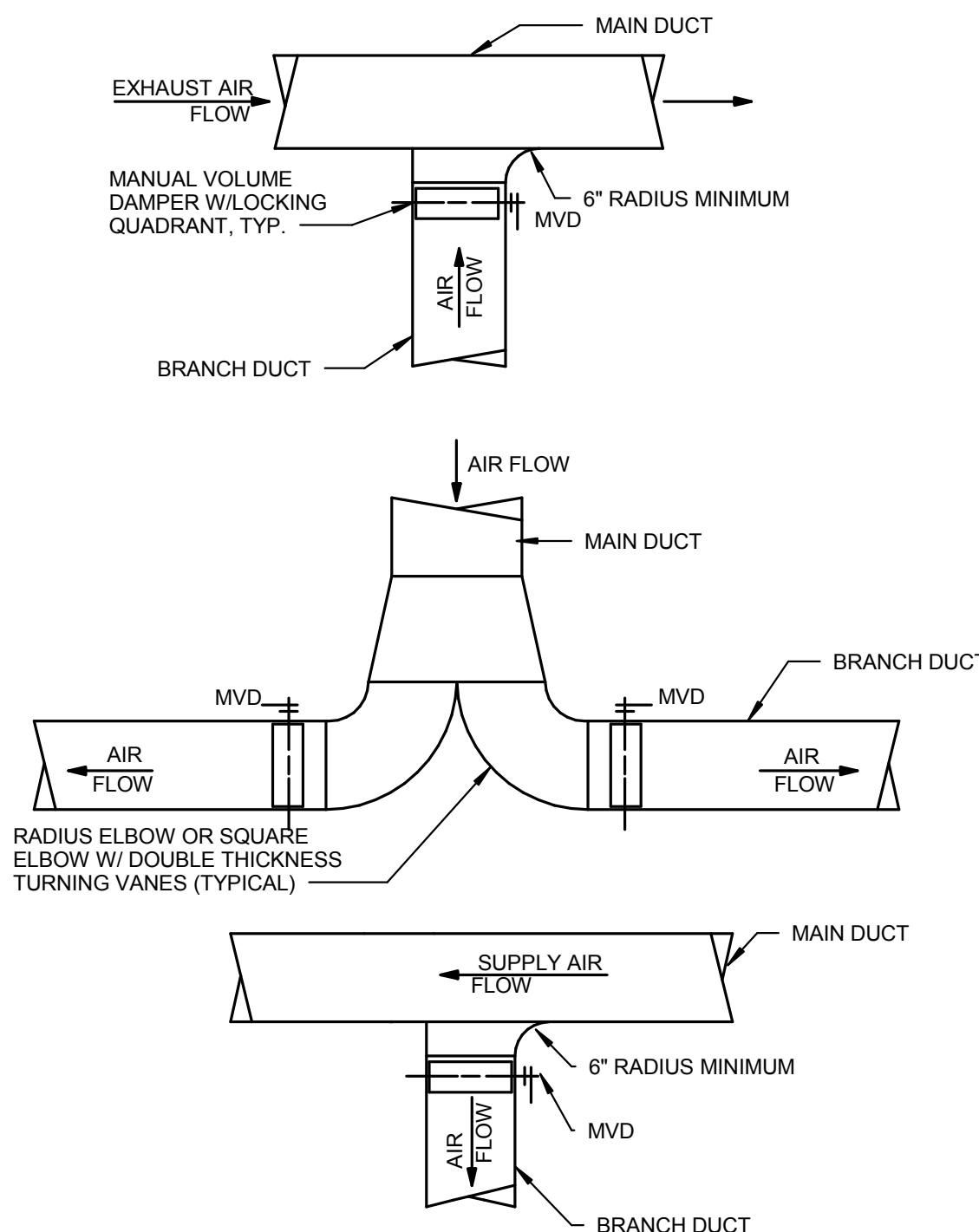
1 FLOOR PLAN - MECHANICAL
M101 1/4" = 1'-0"



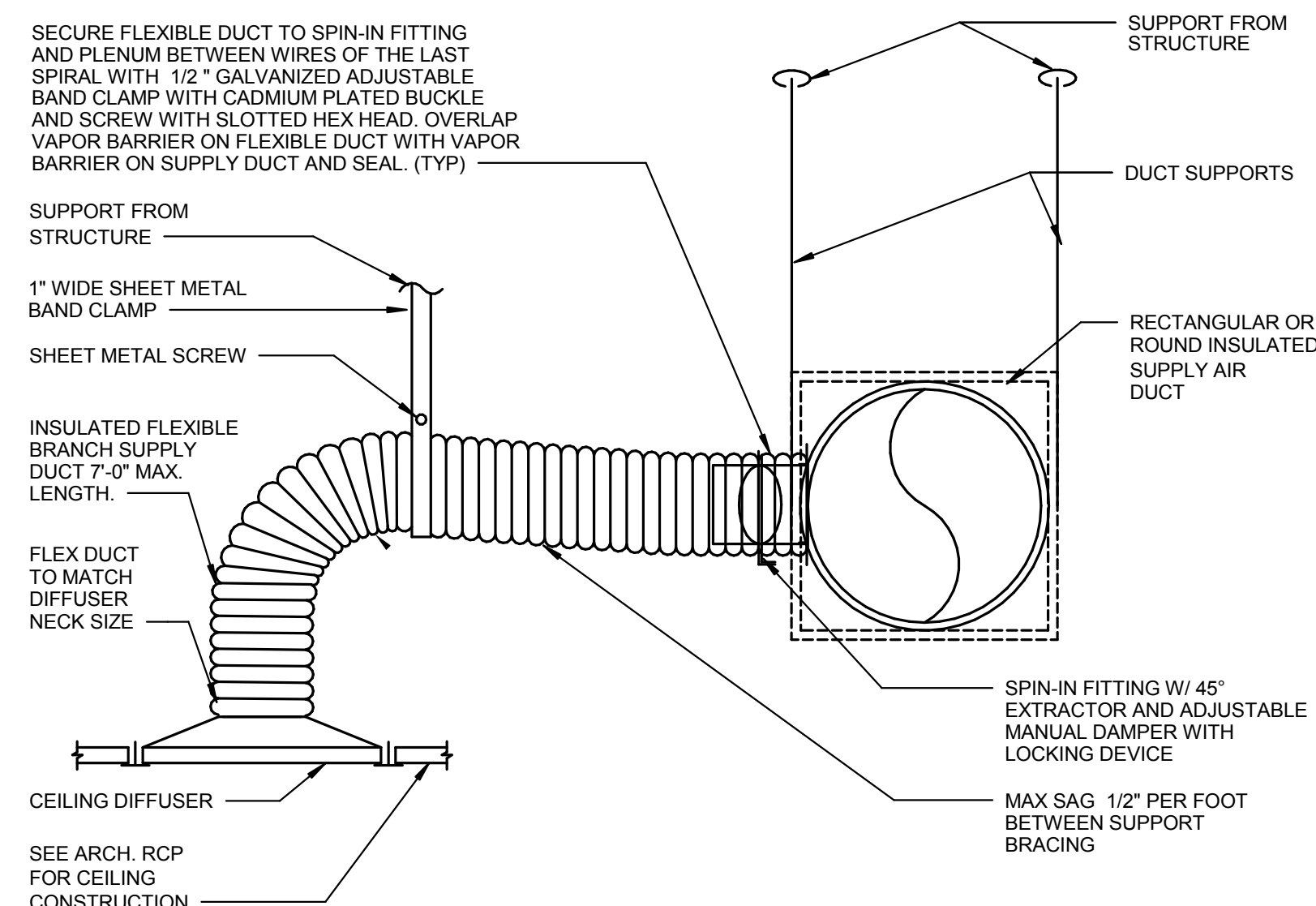
Revisions Date	CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: ARCHITECTURE: MEP ENGINEER: SURVEY: MACTEC MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085	ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424	MEP ENGINEER: Thompson Company consulting engineers 29094 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcieng.com Atlanta, Dubai, UAE Orlando Mexico City, Mexico Houston Tortola, BVI	SURVEY: HALDER SURVEYS INC. 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708	NATIONAL CEMETERY ADMINISTRATION	Drawing Title Floor Plan - Mechanical Approved: Director, Technical Support Service Approved: Chief, Architectural & Engineering Division	Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY Building Number Checked DMB Drawn CB Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA	Date 7-29-11 Project No. 872CM3035 DRAWING NO. M101 Dwg. 71 of 80
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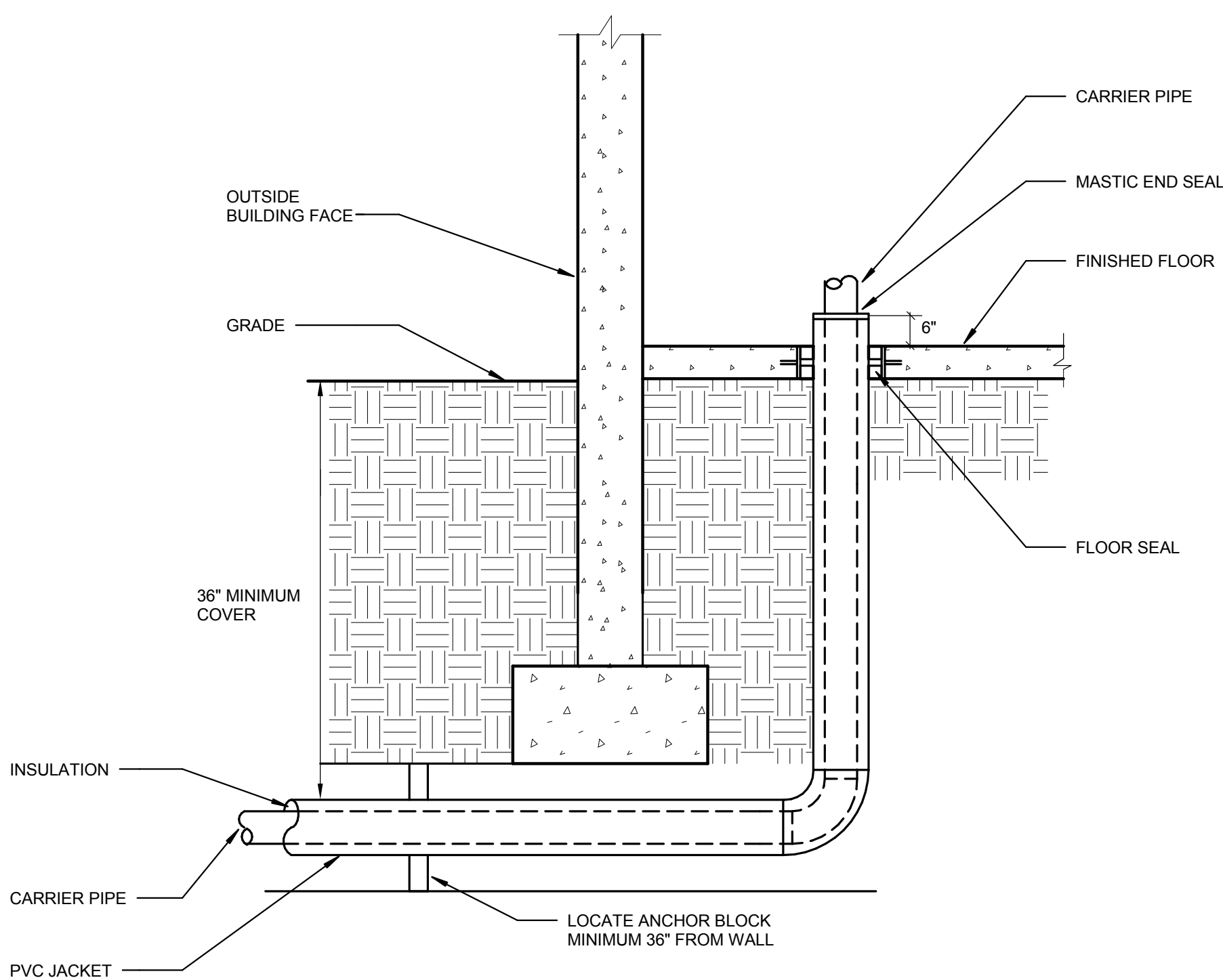
6 SLOT DIFFUSER - SIDEWALL HORIZONTAL DISCHARGE
M401 N.T.S.



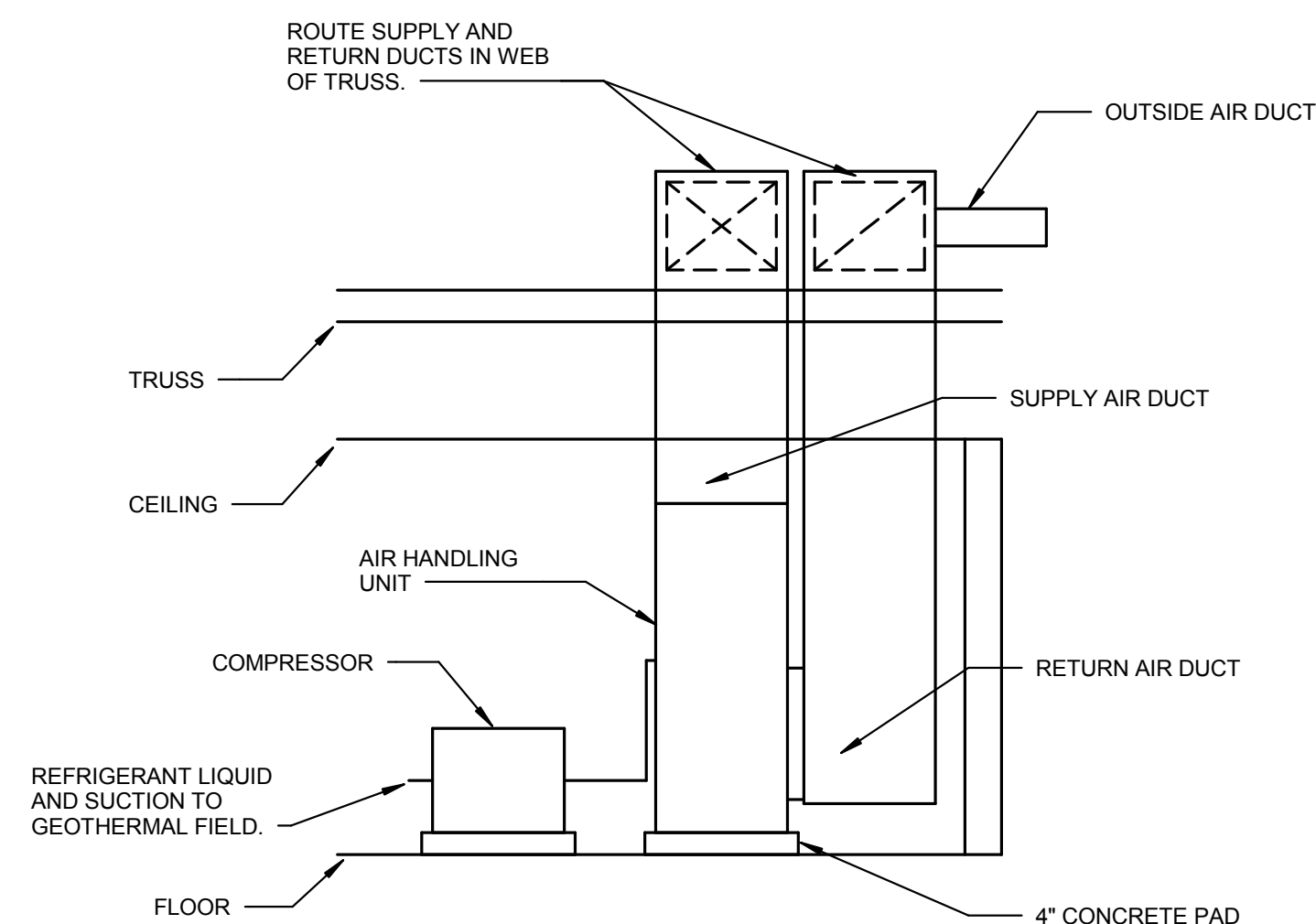
4 TYP. RECTANGULAR LOW-PRESSURE
M401 N.T.S.



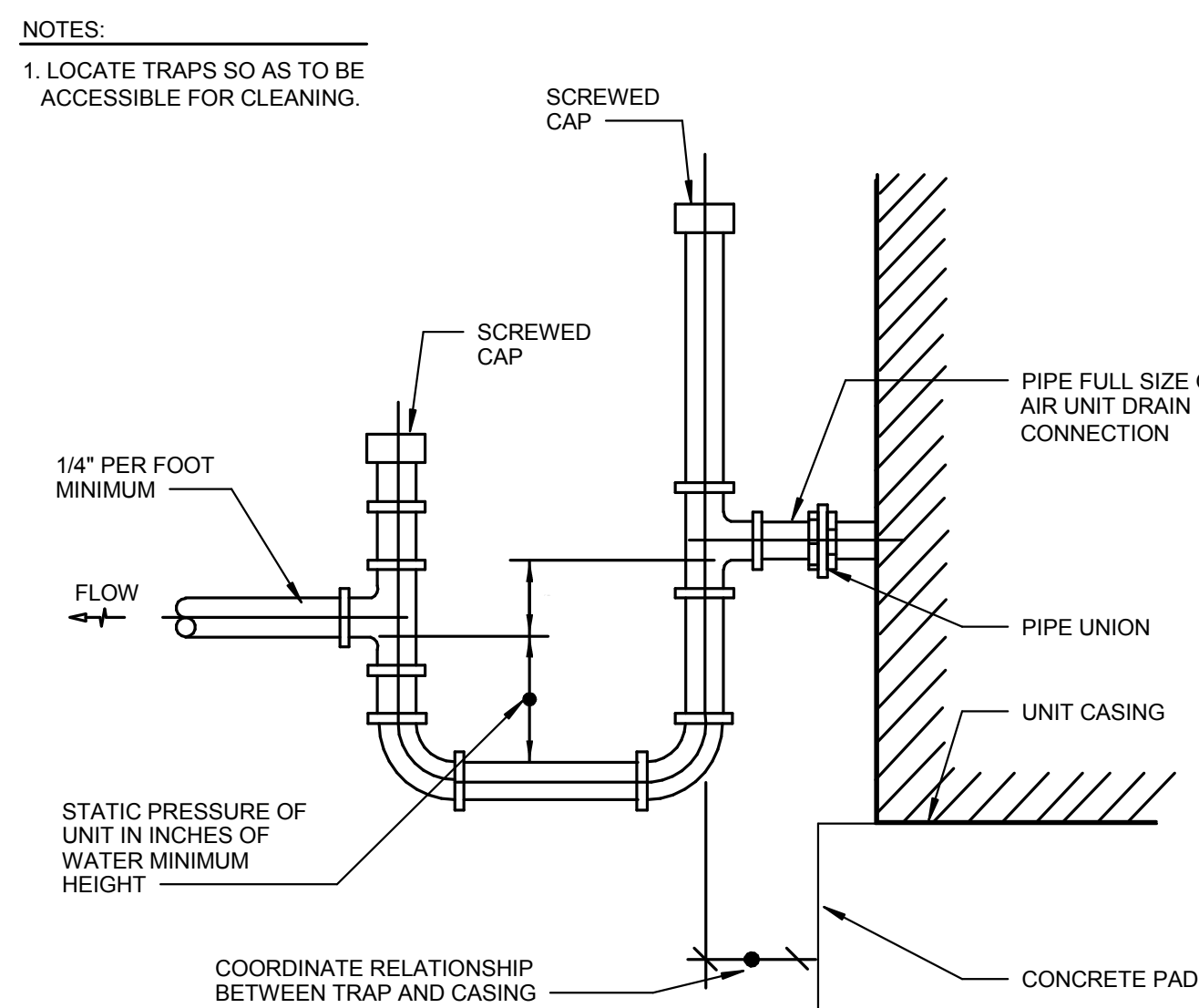
1 CEILING DIFFUSER CONNECTION DETAIL
M401 N.T.S.



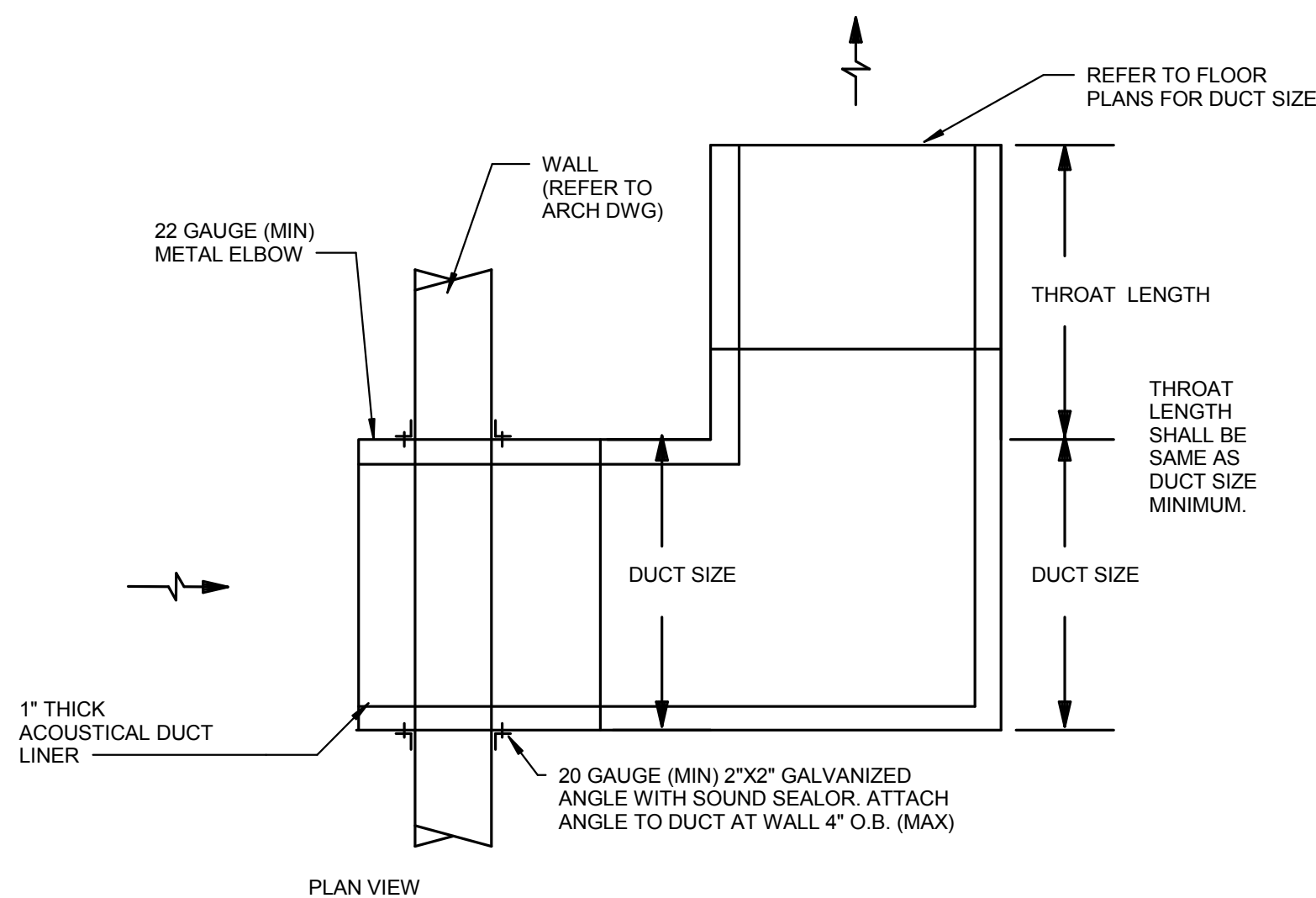
7 BUILDING ENTRY PIPE DETAIL
M401 N.T.S.



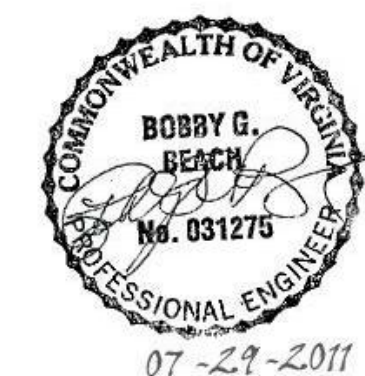
5 AIR HANDLING UNIT DETAIL
M401 N.T.S.



2 CONDENSATE DRAIN TRAP DETAIL
M401 N.T.S.



3 SOUND ATTENUATED RETURN ELBOW DETAIL
M401 N.T.S.



Revisions	Date

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:

MACTEC

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MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:

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NATIONAL CEMETERY ADMINISTRATION

Drawing Title

Details - Mechanical

Approved: Director, Technical Support Service

Approved: Chief, Architectural & Engineering Division

Project Title

**ADMINISTRATION / PUBLIC INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY**

Building Number

Checked
DMB

Drawn
CB

Location

**18424 JOPLIN ROAD
TRIANGLE, VIRGINIA**

Date

7-29-11

Project No.

872CM3035

DRAWING NO.

M401

Dwg. 72 of 80

ABBREVIATIONS			
A/C	ABOVE CEILING	FWH	FREEZELESS WALL HYDRANT
AFF	ABOVE FINISHED FLOOR	GCO	GRADE CLEANOUT
AFG	ABOVE FINISHED GRADE	HB	HOSE BIBB
AF	ABOVE FLOOR	HD	HUB DRAIN
AP	ACCESS PANEL	HW	HOT WATER
BCO	BASE CLEANOUT	IE	INVERT ELEVATION
B/F	BELOW FLOOR	IW	INDIRECT WASTE
BFP	BACKFLOW PREVENTER	LAV	LAVATORY
B/G	BELOW GRADE	MAX	MAXIMUM
BOP	BOTTOM OF PIPE	MIN	MINIMUM
BV	BALANCING VALVE	MISC	MISCELLANEOUS
CD	CONDENSATE DRAIN	MV	MIXING VALVE
CL	CENTER LINE	PRV	PRESSURE REDUCING VALVE
COND	CONDENSATE	REF	REFERENCE
CONN	CONNECTION	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
CONT	CONTINUATION	S	SANITARY
CW	COLD WATER	SHO	SHOWER
CWV	COMBINATION WASTE & VENT	SP	SPRINKLER
D	DRAIN	T&P	TEMPERATURE & PRESSURE
DFU	DRAINAGE FIXTURE UNIT	TEMP	TEMPERATURE
DIA	DIAMETER	TP	TRAP PRIMER
DN	DOWN	TYP	TYPICAL
EL	ELEVATION	UG	UNDERGROUND
ET	EXPANSION TANK	UNO	UNLESS NOTED OTHERWISE
EW	ELECTRIC WATER COOLER	UR	URINAL
EW	ELECTRIC WATER HEATER	V	VENT
FCV	FLOW CONTROL VALVE	VTR	VENT THROUGH ROOF
FCO	FLOOR CLEANOUT	W	WASTE
FD	FLOOR DRAIN	WC	WATER CLOSET
FF	FINISHED FLOOR	WCO	WALL CLEANOUT
FFE	FINISHED FLOOR ELEVATION	WH	WALL HYDRANT
FHB	FREEZEPROOF HOSE BIBB	WHA	WATER HAMMER ARRESTOR
FU	FIXTURE UNITS		

PLUMBING LEGEND			
	SANITARY WASTE OR DRAIN, ABOVE FLOOR		PIPE ANCHOR
	SANITARY WASTE OR DRAIN, BELOW FLOOR		CHECK VALVE
	FLOOR DRAIN WITH TRAP PRIMER		BALANCING VALVE
	VENT PIPING		PRESSURE REDUCING VALVE
	COLD WATER PIPING		BUTTERFLY VALVE
	HOT WATER (120)		WATER HAMMER ARRESTOR W/PDI RATING
	DRAIN WITH TRAP		PRESSURE GAUGE W/ SHUTOFF COCK
	RISER DOWN (ELBOW)		WALL HYDRANT
	RISER UP (ELBOW)		HOSE BIBB
	BRANCH CONNECTION - BOTTOM		GAS VALVE
	BRANCH CONNECTION - TOP		FLOOR DRAIN
	UNION		DETAIL NUMBER DRAWING WHERE SHOWN
	FLOOR CLEANOUT		
	STRAINER	P1, P2, ETC.	PLUMBING FIXTURE NUMBER - REFER TO PLUMBING FIXTURE CONNECTION SCHEDULE
	GATE/BALL VALVE		

PLUMBING FIXTURE CONNECTION SCHEDULE							
"F". NO.	DESCRIPTION	MINIMUM CONNECTION SIZE				MOUNTING HT. ABOVE FLOOR	REMARKS
		WASTE	VENT	CW	HW		
P1	WATER CLOSET	4"	2"	1-1/4"	---	15"	WALL HUNG SENSOR OPERATED FLUSH VALVE
P1H	WATER CLOSET - ADA	4"	2"	1-1/4"	---	18"	WALL HUNG SENSOR OPERATED FLUSH VALVE
P1AH	WATER CLOSET - ADA	4"	2"	3/4"	---	18"	FLOOR MOUNTED TANK TYPE
P2	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	32"	WALL HUNG SENSOR OPERATED FAUCET
P2H	LAVATORY - ADA	1-1/2"	1-1/2"	1/2"	1/2"	32"	WALL HUNG SENSOR OPERATED FAUCET
P3H	URINAL - ADA	2"	1-1/2"	3/4"	---	17"	WALL HUNG SENSOR OPERATED FLUSH VALVE
P4	MOP SINK	3"	2"	3/4"	3/4"	---	24"x24"
P5H	SINK - ADA	1-1/2"	1-1/2"	1/2"	1/2"		COUNTER TOP
P6	ELEC. WATER COOLER - ADA	1-1/2"	1-1/2"	1/2"	---	32"	1/5 HP, B-LEVEL, FREEZELESS

WATER HEATER SCHEDULE							
EQUIP. NO.	LOCATION	MIN. STOR. CAP. (GAL.)	MIN. REC. (GPH)	DISC. TEMP. (F)	TEMP. RISE (F)	ELECTRIC TOTAL KW	NO. ELEM.
WH-1	JANITOR	20	27	120	70	3	2
WH-2	P.I.C. - JANITOR	30	27	120	70	3	2
NOTES:							
1. WATER HEATER BASED ON A.O. SMITH DSE - 20 AND DSE - 30. 2. ELEMENTS WIRED FOR SIMULTANEOUS OPERATION. 3. INDIRECT DRAIN T&P RELIEF TO FLOOR DRAIN. 4. PROVIDE EXPANSION TANK ET-1 - BASED ON AMTROL ST-5. 5. REFER TO DETAIL 2/P401							

DRAIN SCHEDULE				
EQUIP. NO.	TYPE	STRAINER/ GRATE	FINISH	REMARKS
FD-G	FLOOR DRAIN - GENERAL	6" DIA.	NICKEL BRONZE	SECURED,

- GENERAL NOTES
1. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE PLUMBING SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES, AND CONTROLS COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL PARAMETERS GIVEN IN THESE DOCUMENTS SHALL BE STRICTLY CONFORMED TO. ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE PLUMBING AND FIRE PROTECTION SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, LOCAL AUTHORITIES AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ANY ADDITIONAL COST TO THE OWNER. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.

2. COORDINATE ALL WORK WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL TRADES. PIPE ROUTING SHOWN IS DIAGRAMMATIC. PROVIDE ALL OFFSETS, FITTINGS AND HANGERS TO AVOID INTERFERENCES WITH EQUIPMENT, PIPING, DUCT WORK, LIGHTS, CONDUIT, STRUCTURAL MEMBERS AND ALL OTHER BUILDING COMPONENTS.

3. COORDINATE ALL FLOOR AND WALL PENETRATIONS WITH STRUCTURAL DRAWINGS. SET SLEEVES IN FLOORS AND WALLS AND ATTACHMENTS FOR HANGERS AS CONSTRUCTION PROGRESSES. COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES WITH STRUCTURAL ENGINEER. ALL PENETRATIONS MUST BE SEALED AND HELD AS TIGHT TO COLUMNS OR WALLS AS POSSIBLE.

4. PROVIDE 12"x12" ACCESS PANELS ALL VALVES LOCATED ABOVE NON ACCESSIBLE CEILINGS AND INSIDE PIPE CHASES. EXACT LOCATION MUST BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND APPROVED BY ARCHITECT PRIOR TO INSTALLATION. ALL ACCESS PANELS SHALL BE LOCATED SO THAT THEY ARE NOT VISIBLE TO PUBLIC VIEW. ALL VALVES AND ACCESSORIES SHALL BE LOCATED WITHIN 12" OF ACCESS THROUGH EITHER WALLS OR CEILING.

5. ALL DRAINAGE PIPING AND POTABLE WATER PIPING SHALL BE CONCEALED INSIDE WALLS AND PIPE CHASES OR ABOVE CEILINGS. HOLD ALL PIPING ABOVE CEILING AS HIGH AS POSSIBLE.

6. ALL DRAINAGE PIPING 4" AND LARGER SHALL SLOPE AT 1/8 INCH PER FOOT UNLESS OTHERWISE NOTED. ALL DRAINAGE PIPING 3" SIZE AND SMALLER SHALL SLOPE AT 1/4 INCH PER FOOT MINIMUM UNLESS OTHERWISE NOTED.

7. CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL DOMESTIC WATER AND SANITARY SEWERS SERVICES AT APPROXIMATELY 5'-0" FROM BUILDING STRUCTURE UNLESS OTHERWISE NOTED.

8. WALL HYDRANTS AND HOSE BIBBS SHALL BE MOUNTED 1'-6" ABOVE GRADE OR FLOOR LEVELS.

9. COORDINATE ALL UNDERGROUND PIPING WITH GRADE BEAMS, WALL FOOTINGS, COLUMN FOUNDATIONS AND OTHER STRUCTURAL CONDITIONS.

10. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR LOCATION OF ALL PLUMBING FIXTURES. EXACT LOCATION OF ALL PLUMBING FIXTURES MUST BE VERIFIED IN FIELD PRIOR TO INSTALLATION. FINAL LOCATION SHALL BE AS DIRECTED BY ARCHITECT.

11. FLOORS WHERE INDICATED ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS SHALL SLOPE TO FLOOR DRAINS. MAXIMUM SLOPE IN ANY DIRECTION SHALL NOT EXCEED 1/8 INCH PER FOOT. EXACT LOCATION OF ALL FLOOR DRAINS AND HUB DRAINS FOR EQUIPMENT MUST BE VERIFIED IN FIELD PRIOR TO INSTALLATION. FINAL LOCATION SHALL BE AS DIRECTED BY ARCHITECT.

12. PROVIDE AUTOMATIC TYPE TRAP PRIMER ON ALL FLOOR DRAINS.

13. ALL STRUCTURAL PENETRATIONS, SLEEVES AND BLOCKOUTS ARE TO BE LOCATED AND COORDINATED IN THE FIELD BY THE CONTRACTOR IN RELATION TO THE REQUIREMENTS OF FINAL EQUIPMENT AND FIXTURES SELECTED.

14. PROVIDE WATER HAMMER ARRESTORS ON ALL WATER SUPPLY PIPING SERVING QUICK-CLOSING VALVES. ARRESTOR SIZING SHALL BE PER PDI STANDARD WH-201.

15. REFER TO ARCHITECTURAL DRAWINGS AND THE STATE OF VIRGINIA ACCESSIBILITY STANDARDS FOR LOCATIONS AND ELEVATIONS OF PLUMBING FIXTURES. ALL ACCESSIBLE FIXTURE SHALL BE INSTALLED TO CONFORM TO THE AMERICANS WITH DISABILITIES ACT. (ADA).

16. WATER AND DRAIN PIPES UNDER ADA LAVATORIES SHALL BE COVERED WITH PRE MOLDED MANUFACTURED INSULATING COVERS. NO SHARP AND ABRASIVE SURFACE SHALL BE UNDER LAVATORIES.

Revisions

Date

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE

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SURVEY

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NATIONAL
CEMETERY
ADMINISTRATION

Legend, Notes, Abbrev. & Schedules - Plumbing

Approved: Director, Technical Support Service

Approved: Chief, Architectural & Engineering Division

Project Title

ADMINISTRATION / PUBLIC INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY

Building Number

Checked
JHS

Drawn
JLH

Location

18424 JOPLIN ROAD
TRIANGLE, VIRGINIA

Date

7-29-11

Project No.

872CM3035

DRAWING NO.

P001

Dwg. 73 or 80

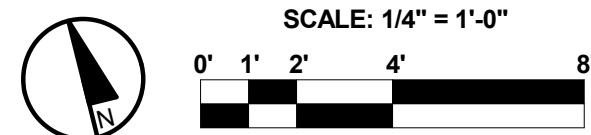
07-29-2011



SHEET NOTES:

- 1 ALL HANDICAPPED PLUMBING FIXTURES SHALL BE ADA APPROVED.
- 2 RUN P&T RELIEF FROM WATER HEATER TO FLOOR DRAIN WITH PROPER AIR GAP.
- 3 CONNECT WATER SERVICE TO SITE UTILITIES. SEE SITE UTILITY PLAN. MAIN WATER SUPPLY LINE SHALL BE DISINFECTED AND TEST PER LOCAL SPECIFICATION.
- 4 ALL FLOOR DRAINS IN TRAFFIC AREA SHALL BE INSTALLED FLUSHED TO FLOOR SURFACE.
- 5 ALL ABOVE FLOOR COPPER WATER LINES SHALL BE PROVIDED WITH 1/2 INCH INSULATION WITH VAPOR.
- 6 ALL PLUMBING MATERIALS INCLUDING PIPING INSULATION, SANITARY WASTE AND VENT PIPING SHALL BE RATED FOR PLENUM RETURN.
- 7 REFER TO DRAWING P001 FOR "GENERAL NOTES."

1 FLOOR PLAN - PLUMBING
P101 1/4" = 1'-0"
FINISHED FLOOR ELEV.: 228.50' (SEA LEVEL)



Revisions	Date

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:



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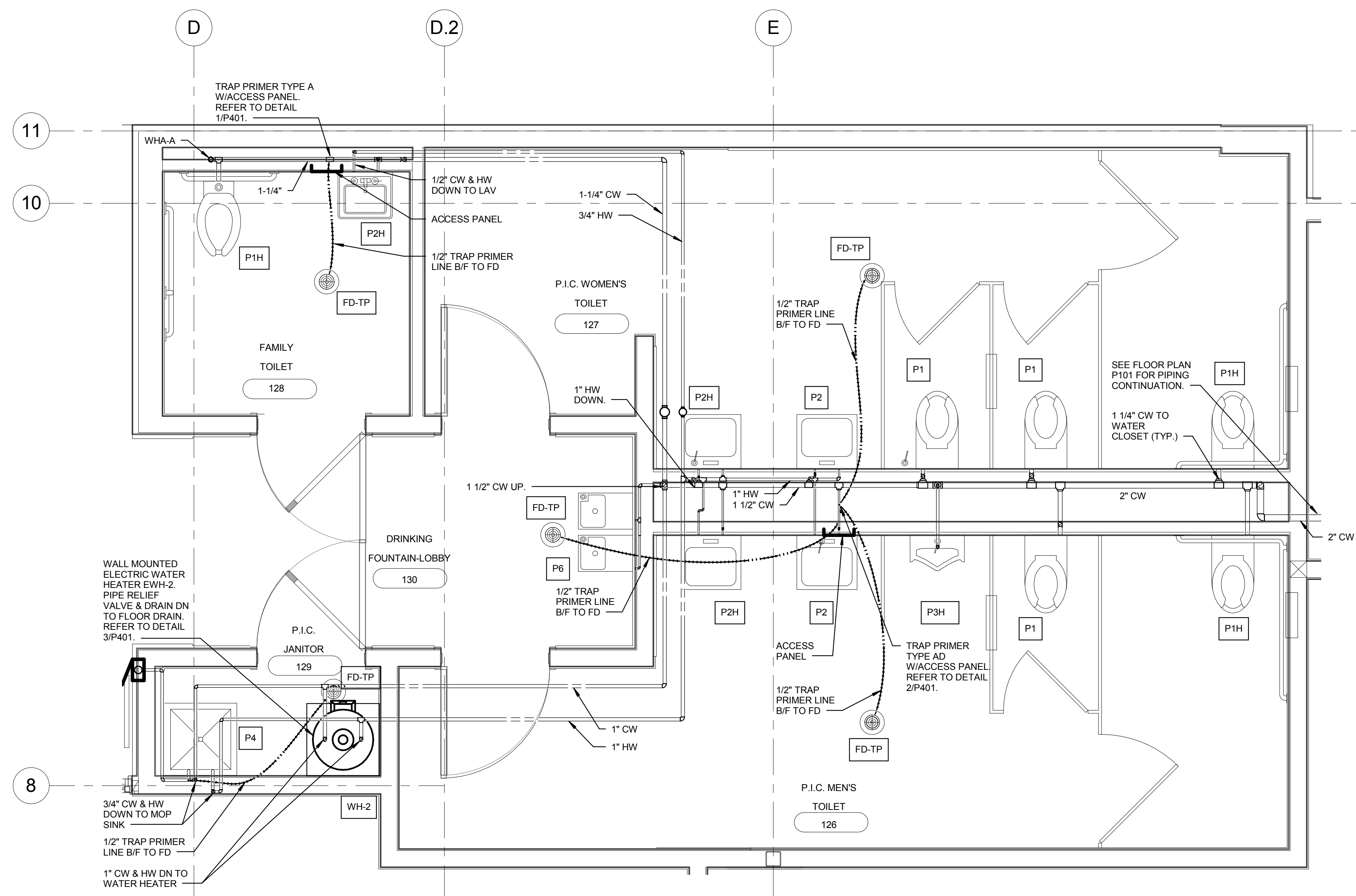


NATIONAL
CEMETERY
ADMINISTRATION

Drawing Title	Floor Plan - Plumbing		
Approved: Director, Technical Support Service			
Approved: Chief, Architectural & Engineering Division			

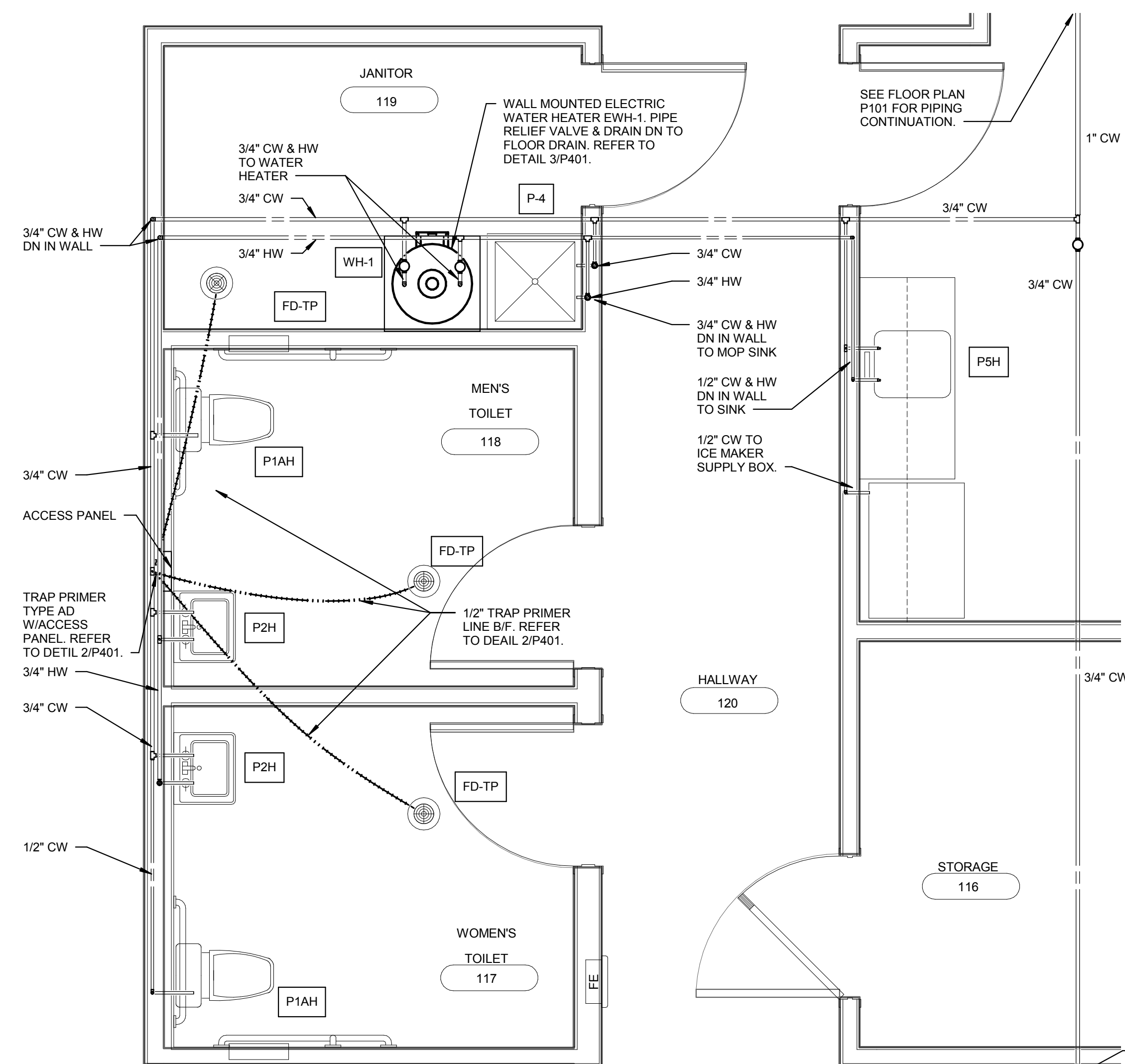
Project Title	ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY		
Building Number	Checked HJS	Drawn JLH	
Location	18424 JOPLIN ROAD TRIANGLE, VIRGINIA		

Date	7-29-11
Project No.	872CM3035
DRAWING NO.	P101
Dwg. 74 or 80	



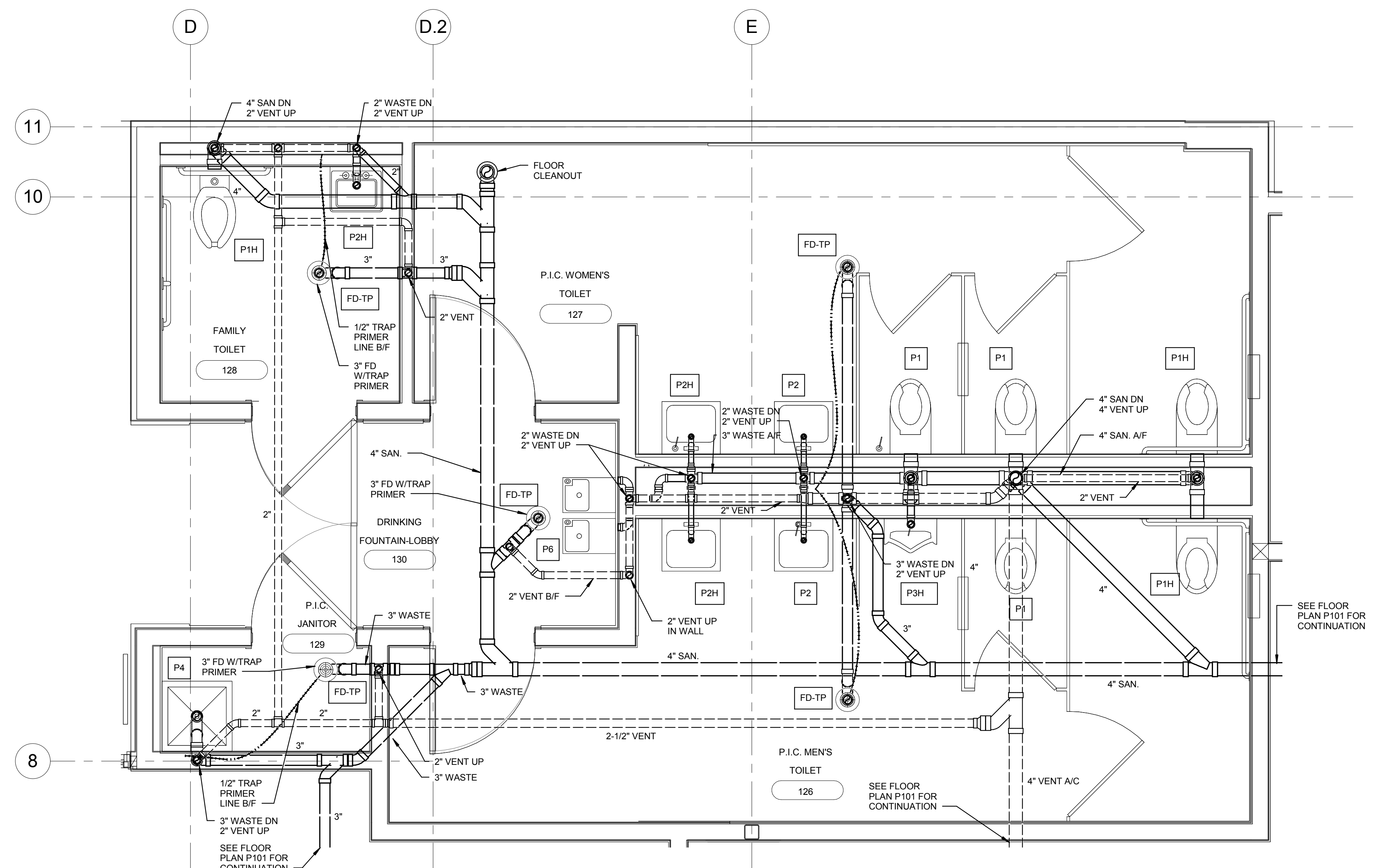
3 ENLARGED PLAN - P.I.C. RESTROOMS - DOMESTIC WATER PIPING
P201 1/2" = 1'-0"

ISOMETRIC VIEWS
REFER TO SHEET 1/P301



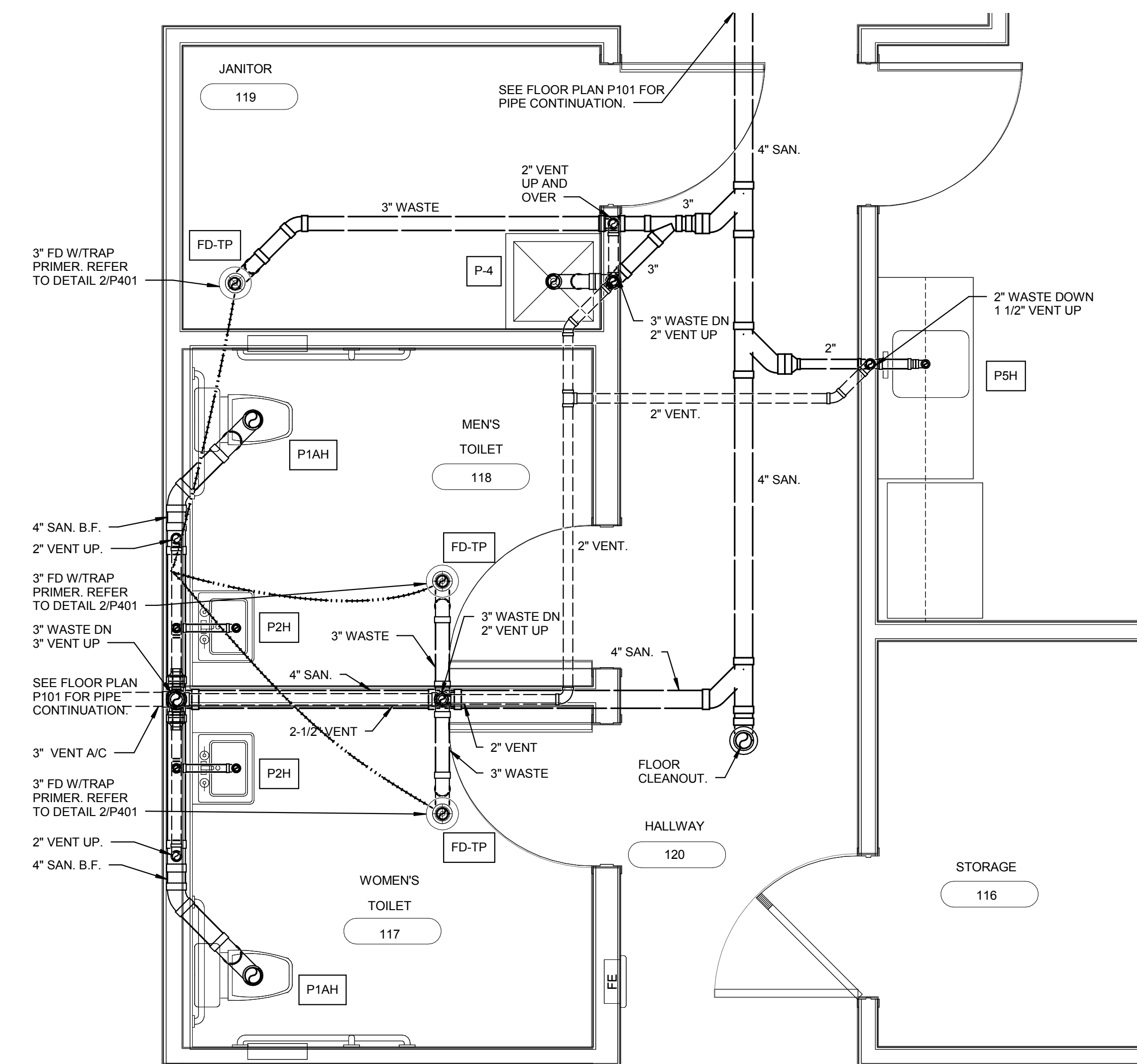
4 ENLARGED PLAN - MEN'S & WOMEN'S RESTROOM - DOMESTIC WATER PIPING
P201 1/2" = 1'-0"

ISOMETRIC VIEWS
REFER TO SHEET 1/P301



1 ENLARGED PLAN - P.I.C. RESTROOMS - WASTE & VENT PIPING
P201 1/2" = 1'-0"

ISOMETRIC VIEWS
REFER TO SHEET 2/P301



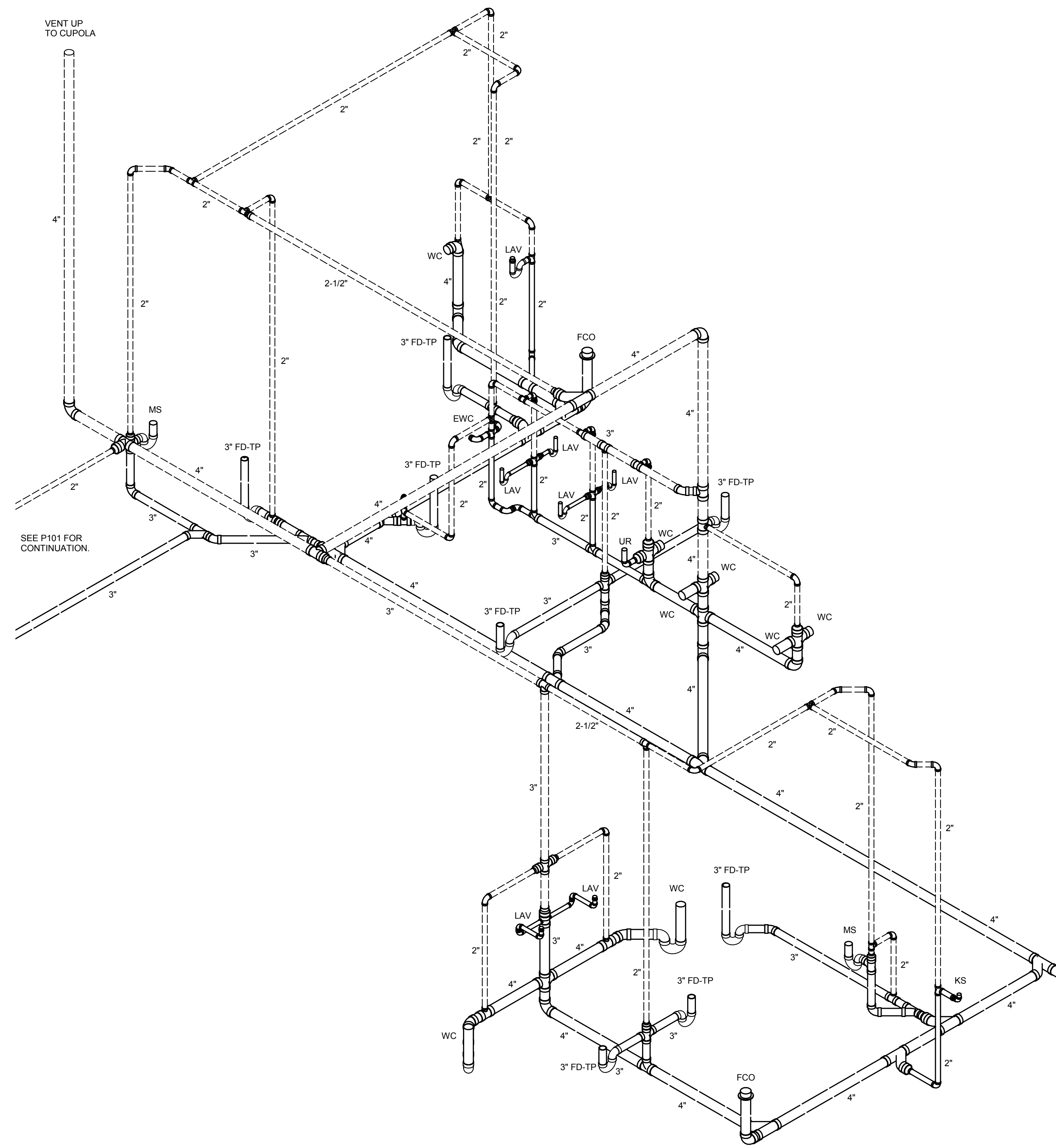
2 ENLARGED PLAN - MEN'S & WOMEN'S RESTROOM - WASTE & VENT PIPING
P201 1/2" = 1'-0"

ISOMETRIC VIEWS
REFER TO SHEET 2/P301

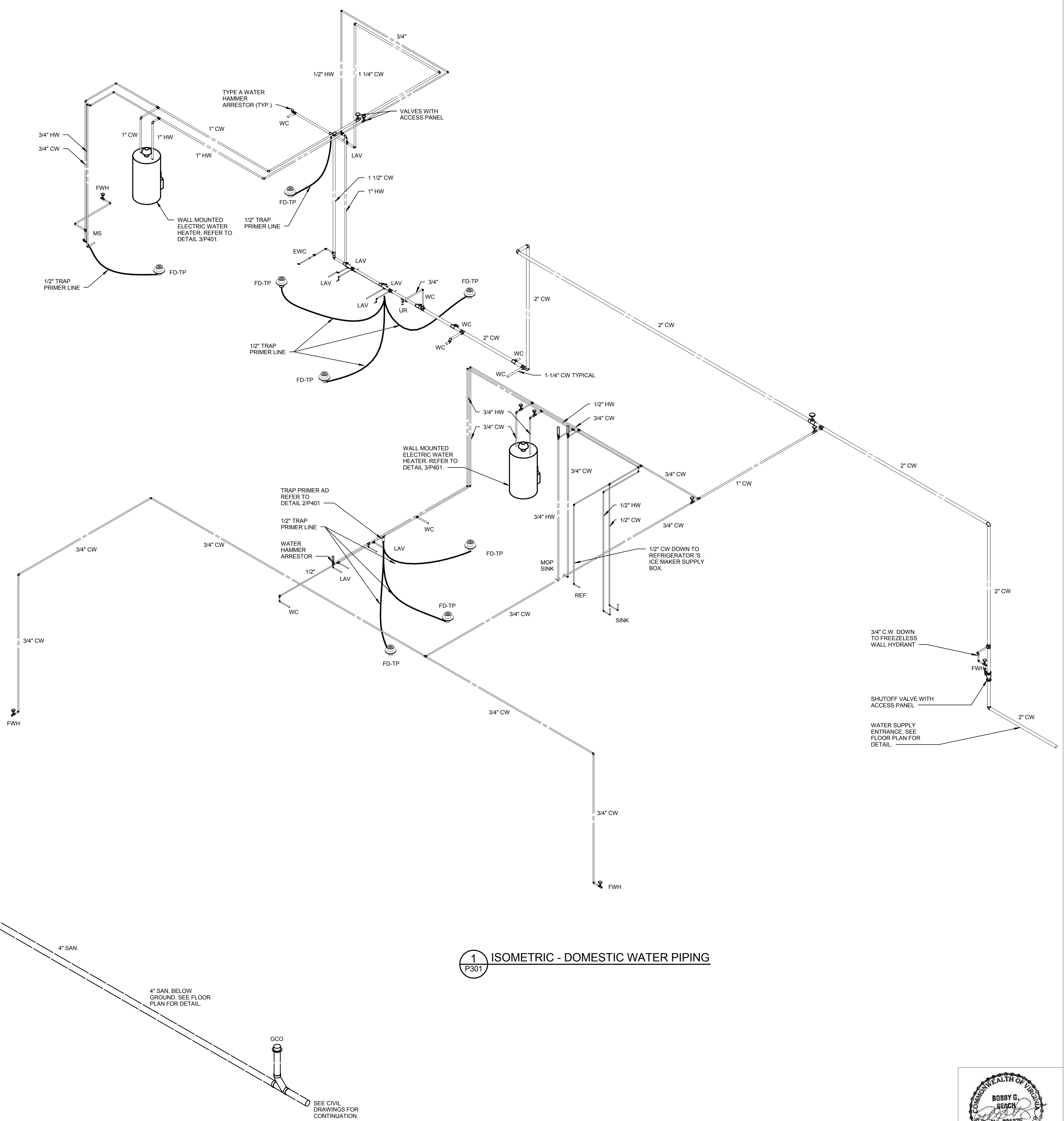
SCALE: 1/2" = 1'-0"



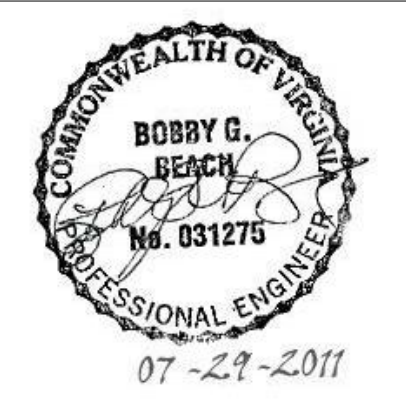
Revisions Date	CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: MACTEC ENGINEERING AND CONSULTING, INC. 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085	ARCHITECTURE: 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424	MEP ENGINEER: 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcieng.com Atlanta, Dubai, UAE Orlando Mexico City, Mexico Houston Torrela, BVI	SURVEY: 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708	NATIONAL CEMETERY ADMINISTRATION	Drawing Title Enlarged Plans - Plumbing Approved: Director, Technical Support Service Approved: Chief, Architectural & Engineering Division	Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY Building Number Checked HJS Drawn JLH Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA	Date 7-29-11 Project No. 872CM3035 DRAWING NO. P201 Dwg. 75 of 80
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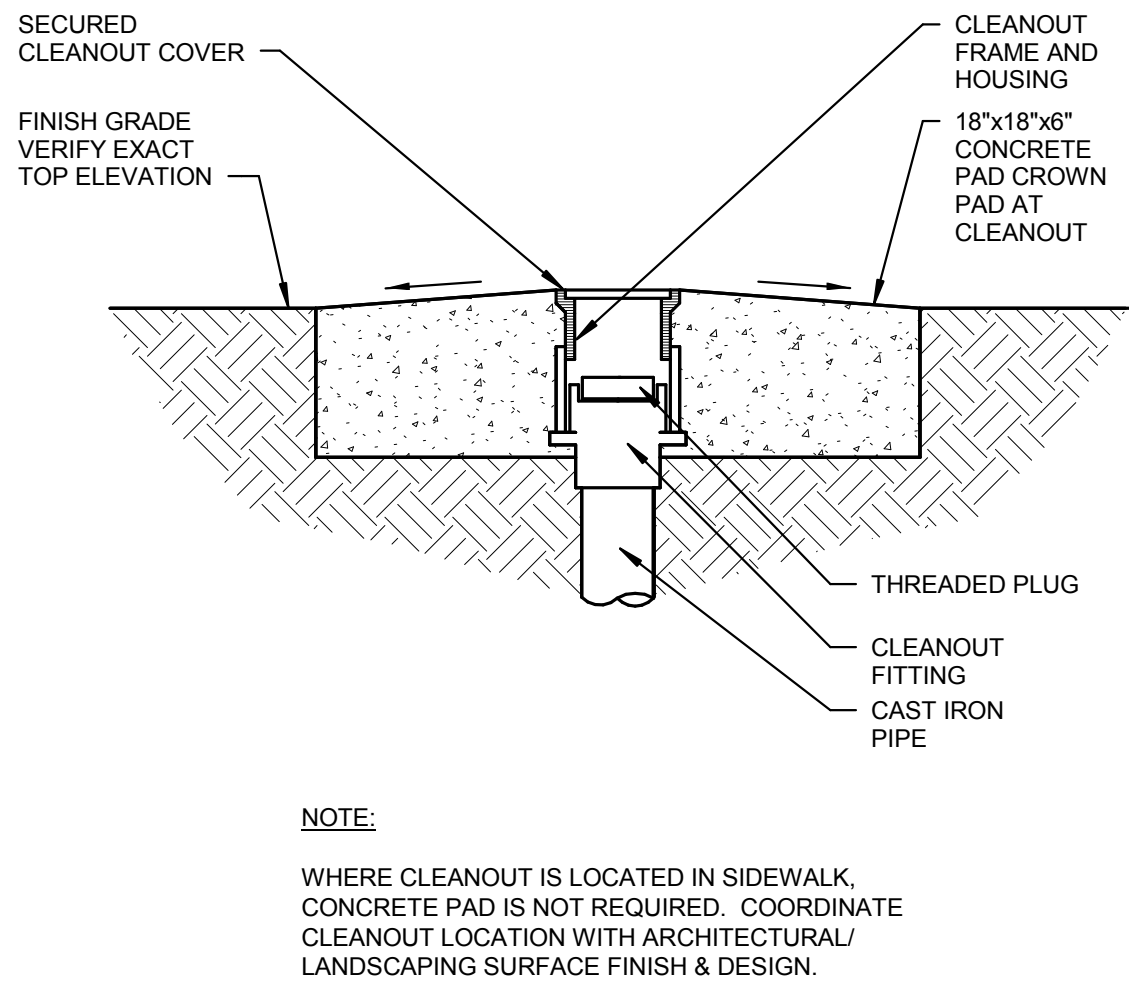


2
P301 ISOMETRIC - WASTE & VENT PIPING

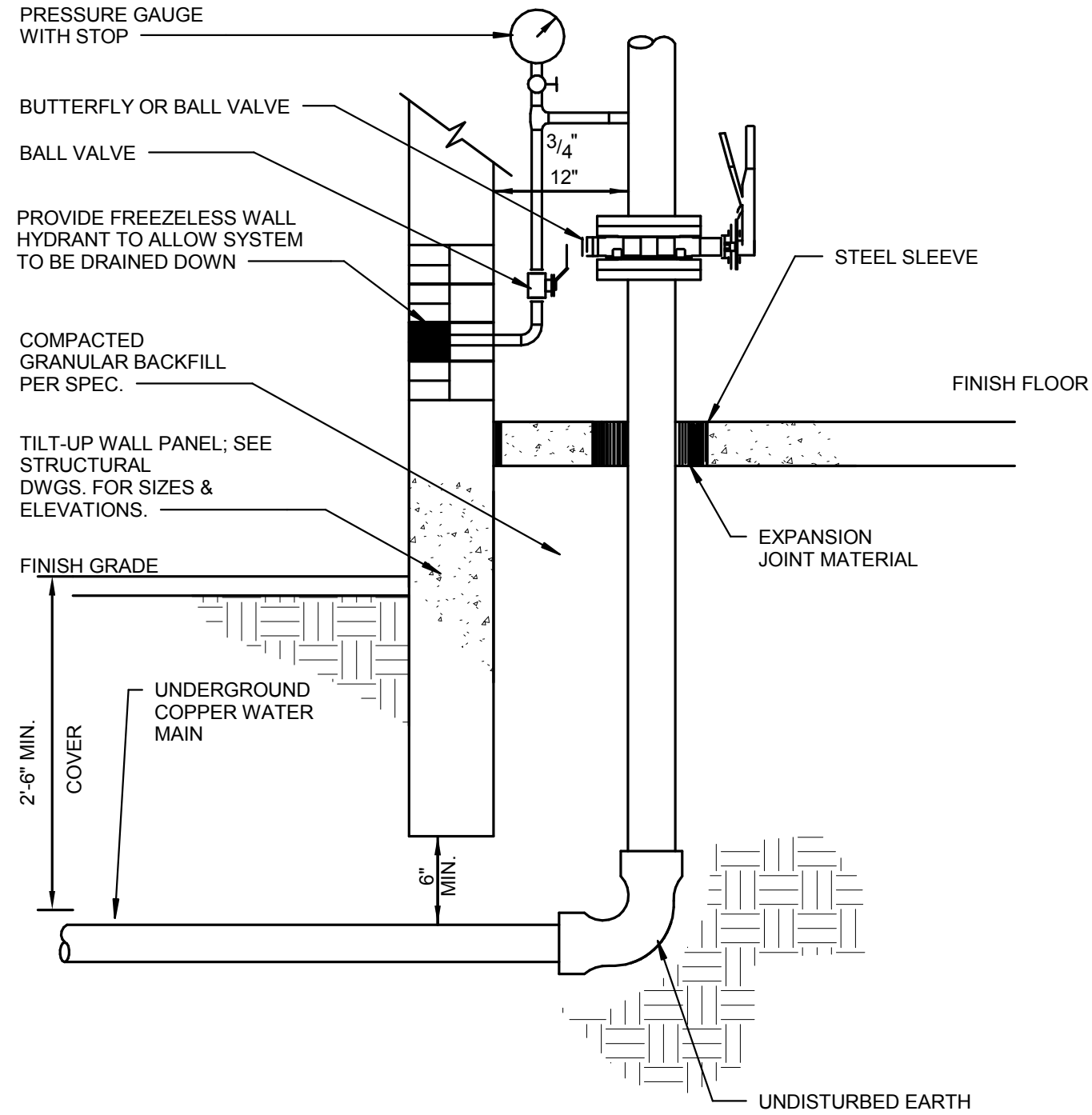


1
P301 ISOMETRIC - DOMESTIC WATER PIPING

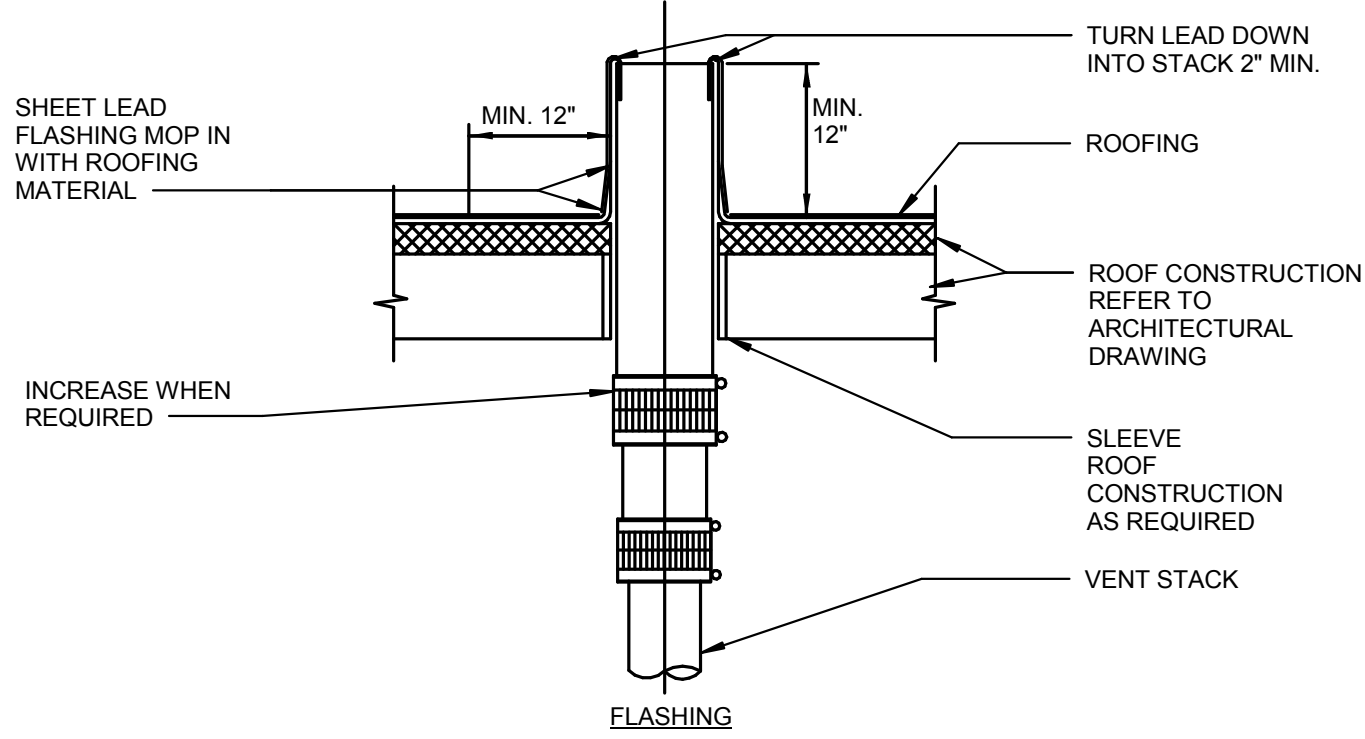




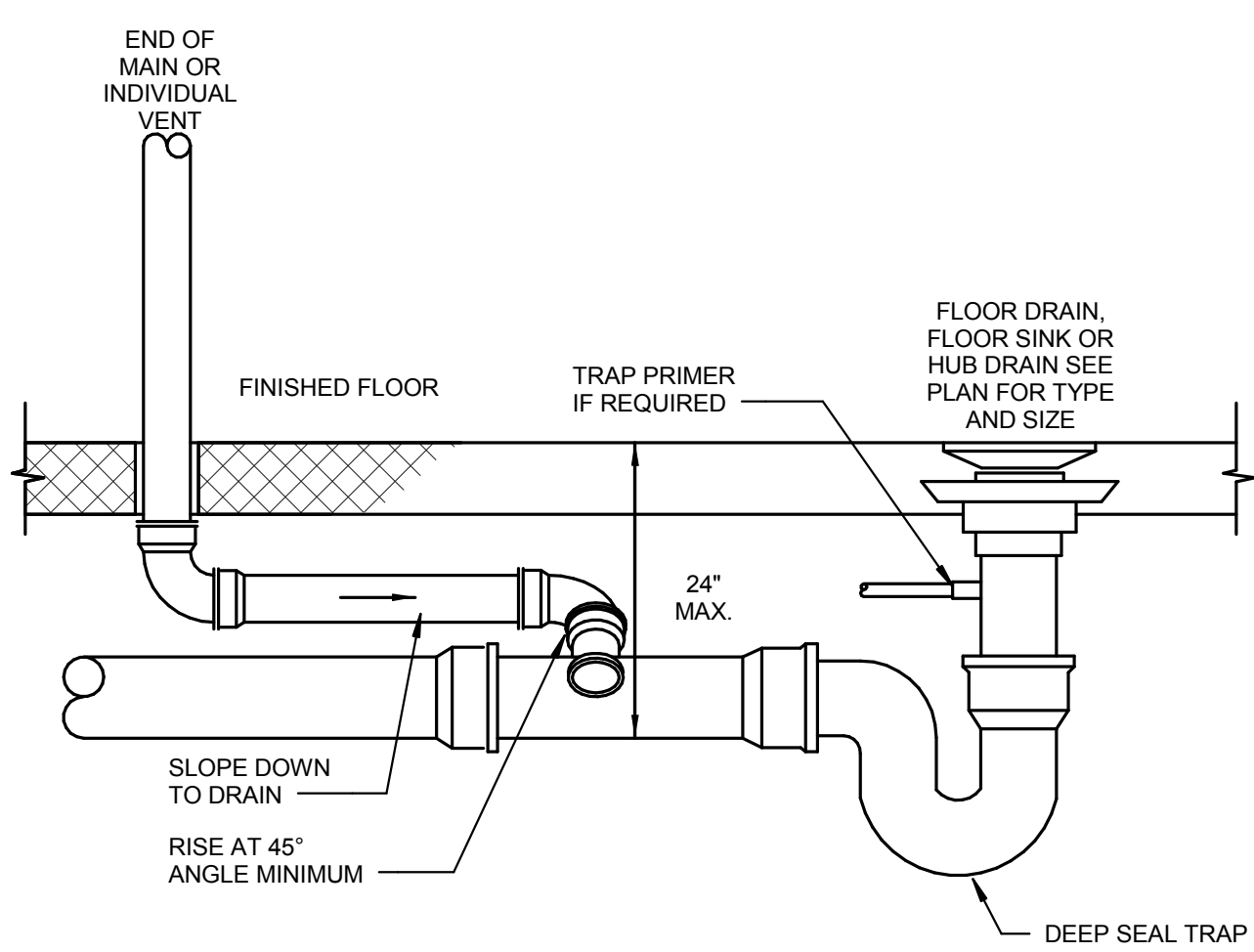
7 DETAIL - GRADE CLEANOUT (GCO)
P401 N.T.S.



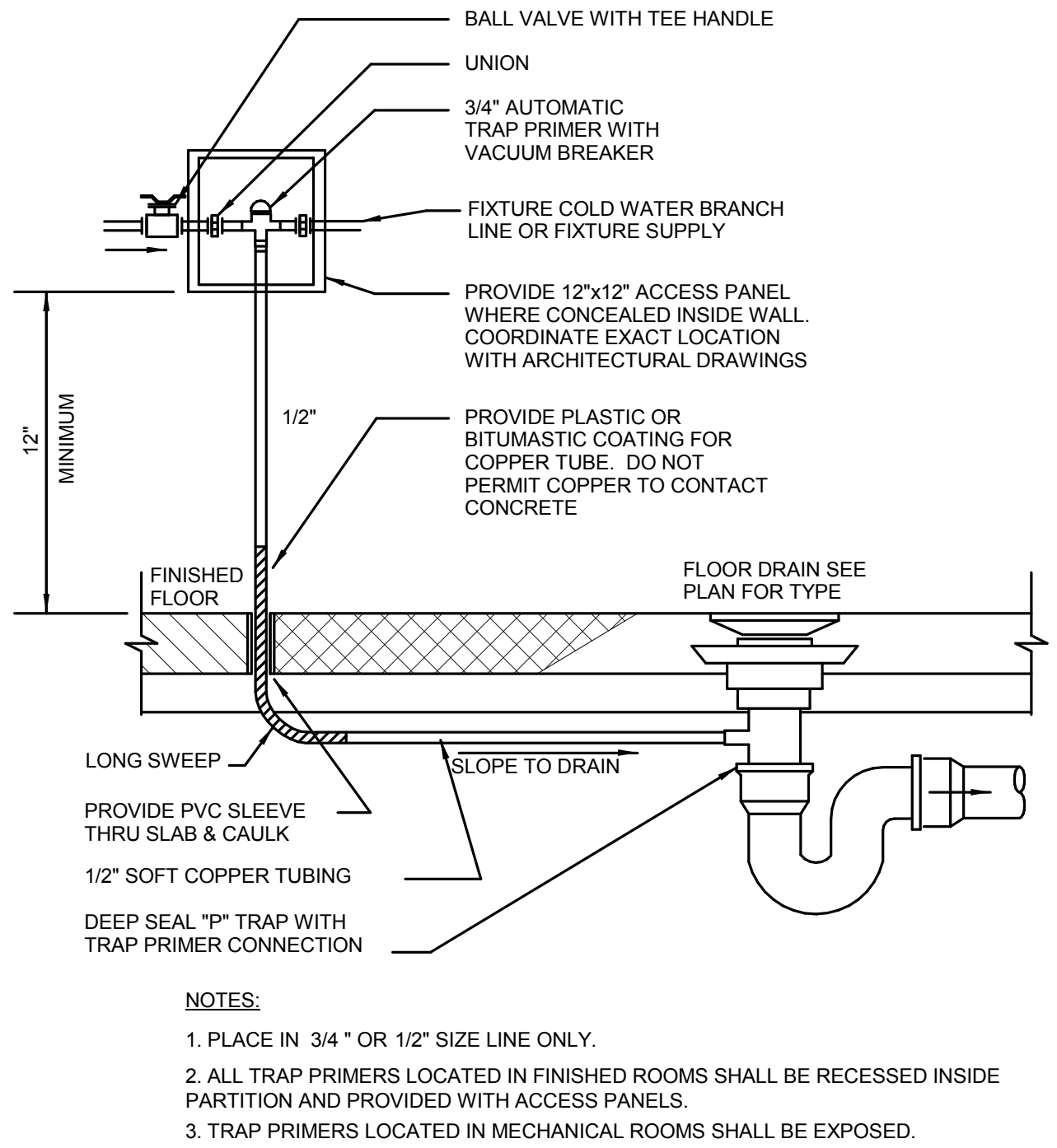
4 DETAIL - WATER SERVICE ENTRANCE RISER
P401 N.T.S.



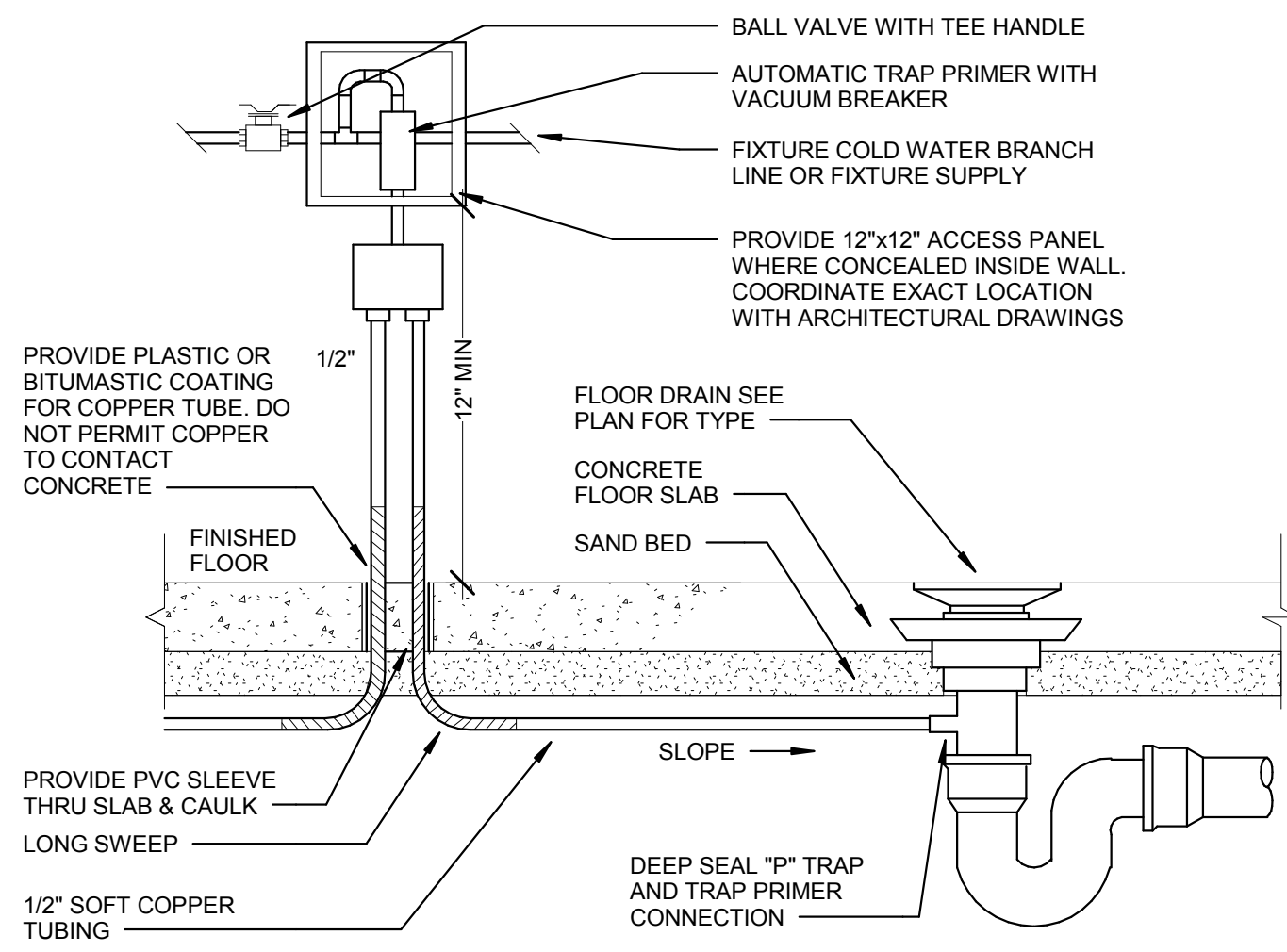
5 DETAIL - VENT THROUGH ROOF (VTR)
P401 N.T.S.



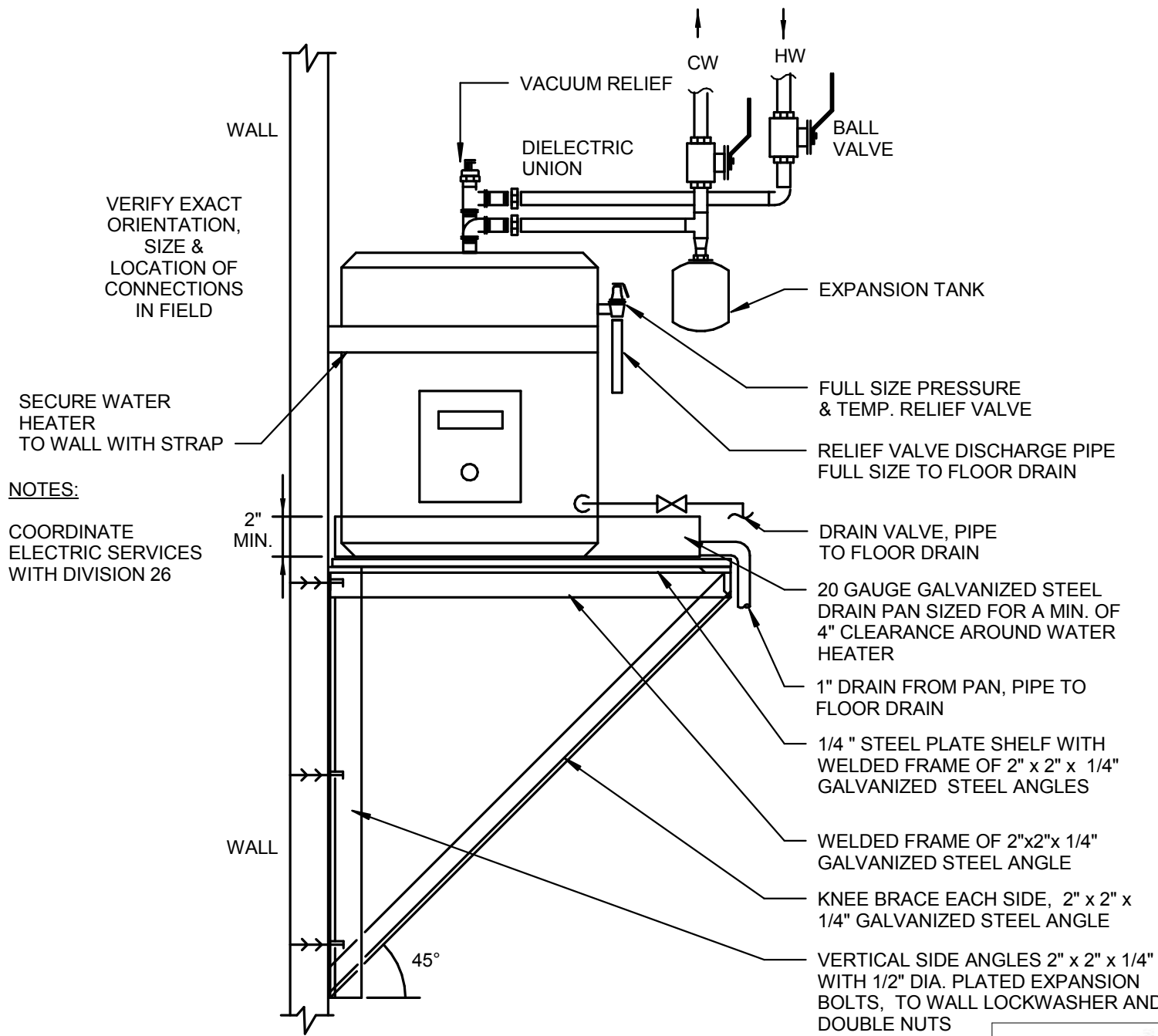
6 DETAIL - FLOOR DRAIN HORIZONTAL VENT
P401 N.T.S.



1 DETAIL - AUTOMATIC TRAP PRIMER (TP-A)
P401 N.T.S.



2 DETAIL - AUTOMATIC TRAP PRIMER (TP-AD)
P401 N.T.S.



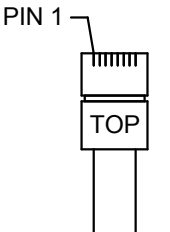
3 DETAIL - ELECTRIC WATER HEATER
P401 N.T.S.

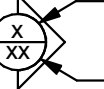
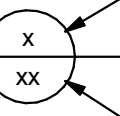
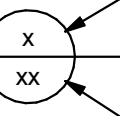
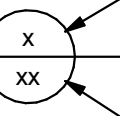
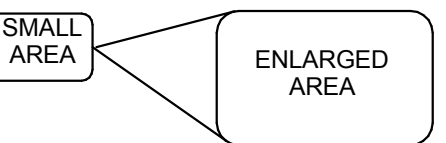


Revisions	Date	CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:  MACTEC ENGINEERING AND CONSULTING, INC., 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085	ARCHITECTURE:  MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424	MEP ENGINEER:  Thompson Company consulting engineers 29094 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcieng.com Atlanta, Dubai, UAE Orlando, Mexico City, Mexico Houston, Torrela, BVI	SURVEY:  10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708	 NATIONAL CEMETERY ADMINISTRATION	Drawing Title Details - Plumbing	Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY	Date 7-29-11
		Approved: Director, Technical Support Service	Building Number	Checked HJS	Drawn JLH	Project No. 872CM3035	DRAWING NO. P401		
				Approved: Chief, Architectural & Engineering Division	Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA		Dwg. 77 of 80		

LOCAL BRANCH CIRCUIT POWER		
UNITED STATES OF AMERICA		
VOLTAGE	120 V.A.C.	
FREQUENCY	60 Hz	

VOICE & DATA JACK COLOR CODE		
RJ-45 PIN/PAIR ASSIGNMENT - (EIA/TIA T568B)		
PIN NUMBER	ASSIGNMENT	COLOR
1	PAIR 2 - TIP (T2)	WHITE/ORANGE
2	PAIR 2 - RING (R2)	ORANGE
3	PAIR 3 - TIP (T3)	WHITE/GREEN
4	PAIR 1 - RING (R1)	BLUE
5	PAIR 1 - TIP (T1)	WHITE/BLUE
6	PAIR 3 - RING (R3)	GREEN
7	PAIR 4 - TIP (T4)	WHITE/BROWN
8	PAIR 4 - RING (R4)	BROWN



GRAPHIC LEGEND	
 OR 	COLUMN REFERENCE GRID
	CUT LINE
	DETAIL NUMBER
	SECTION REFERENCE SHEET NUMBER
	DRAWING TITLE SCALE
	SHEET NUMBER
	DETAIL NUMBER SHEET NUMBER
	AREA DETAILED ELSEWHERE
	REVISION AREA
	SMALL AREA ENLARGED
	REVISION NUMBER

GENERAL NOTES:

G-1 THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND REPRESENT THE ENGINEERS DESIGN INTENT AND REQUIREMENTS ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL SIZES, WEIGHTS, AND DIMENSIONS AND TO COORDINATE ALL DEVICE LOCATIONS WITH THE ARCHITECTURE, STRUCTURAL, AND INTERIORS DRAWINGS FOR DIMENSIONING.

G-2 CONTRACT DOCUMENTS OF OTHER DIVISIONS MAY CONTAIN INFORMATION OR REQUIREMENTS FOR WORK COVERED BY TECHNOLOGY SYSTEMS. REVIEW ENTIRE CONTRACT DOCUMENTS BEFORE BEGINNING WORK.

G-3 REFER TO ARCHITECTURAL AND/OR INTERIOR DESIGN DRAWINGS FOR MOUNTING HEIGHTS AND LOCATIONS OF DEVICES IN PUBLIC AREAS.

G-4 REFER TO OTHER DIVISIONS SUCH AS ELECTRICAL, MECHANICAL, ETC. FOR MOUNTING HEIGHTS, LOCATIONS AND OTHER REQUIREMENTS OF J-BOX AND OUTLETS REQUIRED FOR SYSTEMS.

G-5 CABLES INSTALLED IN CABLE TRAY SHALL BE RATED ACCORDINGLY. PROVIDED FIRE AND SMOKE (PLENUM) RATED CABLES AS REQUIRED.

G-6 ELECTRICAL POWER OUTLETS ASSOCIATED WITH SYSTEMS IN THIS SECTION SHALL BE LOCATED DIRECTLY ADJACENT TO SYSTEMS OUTLETS. (i.e.: DUPLEX POWER NEXT TO DATA OUTLET.) COLUMNS OR OTHER OBSTRUCTIONS SHALL NOT SEPARATE POWER FROM SYSTEMS OUTLETS.

G-7 EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED IN ALL BRANCH CIRCUITS.

G-8 TECHNOLOGY SYSTEMS CABLING INSTALLED BELOW GRADE OR THAT MAY BE SUBJECT TO ADVERSE OR WET CONDITIONS SHALL BE INDOOR/OUTDOOR AND RISER RATED.

G-9 CABLE TRAY SHALL BE INSTALLED WHERE ACCESSIBLE. PROVIDE ACCESS PANELS AS REQUIRED. WHEN NOT READILY ACCESSIBLE, EMT CONDUIT SHALL BE PROVIDED IN LIEU OF CABLE TRAY. QUANTITY AND SIZE OF CONDUIT SHALL BE THE SAME EFFECTIVE CROSS SECTIONAL AREA AS THE SPECIFIED CABLE TRAY.

G-10 MINIMUM RACEWAY SIZE SHALL BE 3/4" (UNLESS OTHERWISE NOTED). WHERE RUN UNDERGROUND OR IN CONCRETE, MINIMUM SIZE SHALL BE 1".

G-11 UNLESS NOTED OTHERWISE, MOUNTING HEIGHT DIMENSIONS ARE TO THE CENTER OF THE DEVICE OR OUTLET ABOVE GRADE OR FINISHED FLOOR.

G-12 SOME SYMBOLS THIS SHEET MAY NOT BE USED IN THIS PROJECT.

G-13 VERIFY PROPER WORKING VOLTAGES AND FREQUENCY BEFORE CONNECTING EQUIPMENT TO BRANCH CIRCUIT POWER.

VOICE / DATA GENERAL NOTES:

V-1 COORDINATE ALL FIBER OPTIC CONNECTOR TYPES AND PATCH PANELS WITH OWNER PRIOR TO PROCUREMENT AND INSTALLATION.

V-2 EIA/TIA 568B WIRING STANDARD IS TO BE USED FOR ALL COPPER BASED DATA PATCH PANELS UNLESS OTHERWISE NOTED.

SECURITY GENERAL NOTES:

S-1 EACH SECURITY DEVICE SHALL BE INDIVIDUALLY HOME RUN TO CONTROL PANEL (UNLESS OTHERWISE NOTED).

S-2 NO SECURITY CABLING TO BE VISIBLE AT ANY TIME. WHEN TRANSITIONING CABLE BETWEEN EQUIPMENT AND J-BOX, THE APPROPRIATE CONNECTORS AND WP CONDUIT ARE TO BE USED.

S-3 WHEN 120VAC IS REQUIRED FOR A PIECE OF SECURITY EQUIPMENT, A SEPARATE J-BOX AND CONDUIT SHALL BE INSTALLED TO KEEP A SEPARATION BETWEEN THE HIGH VOLTAGE AND LOW VOLTAGE CABLING.

SYSTEM SYMBOLS LEGEND NOTES:

L-1 SOME SYMBOLS IN LEGEND MAY NOT BE USED.

L-2 TELEPHONE BACKBOARD TO BE 3/4" FIRE RETARDANT TREATED PLYWOOD. PROVIDE GROUNDING BAR AND DEDICATED IS QUAD RECEPTACLES, REFERENCE SPECIFICATIONS & DETAILS.

L-3 PROVIDE MINIMUM 3/4" CONDUIT AND/OR CABLE TRAY HOMERUNS TO IDF, UNLESS OTHERWISE INDICATED OR SPECIFIED.

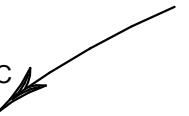
L-4 SIZE JUNCTION/MOUNTING BACK BOX TO ACCOMMODATE DEVICE AND REQUIRED NUMBER OF CONDUCTORS. PROVIDE ANY FITTINGS OR PLATES NECESSARY FOR EACH DEVICE. COORDINATE SPECIALTY BOXES WITH EQUIPMENT SUPPLIER.

L-5 PREPARE DOOR FRAME/HARDWARE FOR INSTALLATION. COORDINATE INSTALLATION OF ELECTRONIC DOOR STRIKE/LOCKS WITH ARCHITECTURAL CONTRACT DOCUMENTS.

L-6 OUTLETS MAY BE REQUIRED IN ADDITION TO THOSE SHOWN ON PLAN DRAWINGS. REFERENCE DETAILS, SCHEDULES, SPECIFICATIONS, ELECTRICAL DRAWINGS, ETC. TO CONFIRM ACTUAL QUANTITIES AND CABLING REQUIREMENTS.

L-7 DIMENSIONS ADJACENT SYMBOL INDICATE HEIGHT ABOVE FINISHED FLOOR (MEASURED TO CENTER OF OUTLET). MOUNT +18" AFF UON. REFERENCE CONTRACT SPECIFICATIONS, ARCHITECTURAL AND INTERIOR DESIGN DOCUMENTS FOR OTHER REQUIREMENTS. INTERIOR DESIGN DOCUMENTS TAKE PRECEDENCE.

A/V SYSTEM LEGEND

 HOME RUN TO EQUIPMENT RACK. LETTER DESIGNATES WHICH RACK LABEL.

SYSTEMS SYMBOL LEGEND				
	SYMBOL	DESCRIPTION	NOTES:	MTG. HT.
VOICE & DATA		DATA OUTLET (RJ-45 JACK, CAT-6 UTP)	L-3, L-4	L-7
		TELEVISION OUTLET - RG-6/U COAXIAL CABLE w/ "F" CONNECTOR	L-3, L-4	L-7
		TELEVISION OUTLET - WALL / FLOOR MOUNTED	L-3, L-4	L-7
TELEVISION DISTRIBUTION (CATV)		FIXED CCTV CAMERA	L-4	CEILING
		DOOR CONTACT	L-5	DOOR FRAME
		MOTION DETECTOR	L-4	
SECURITY (CCTV)		KEYPAD	L-4	+48"
		MAGNETIC DOOR LOCK - ACCESS CONTROL	L-5	DOOR FRAME
		ELECTRIC DOOR STRIKE - ACCESS CONTROL	L-5	DOOR FRAME
		CARD READER - ACCESS CONTROL	L-4	+48"
		CLOSED CIRCUIT TELEVISION MONITOR		
RACEWAY AND CIRCUITING		ARROWHEAD INDICATES HOMERUN (Letter indicates which rack location)	A-1, A-2	
		CONDUIT TERMINATION (STUB OUT)	G-9	
		CABLE TRAY ELBOW AND "T" CONNECTORS	G-4, G-8	
		CABLE TRAY (DIMENSIONS AS SHOWN ON DRAWINGS)	G-4, G-8	
		JUNCTION BOX - CEILING / WALL / FLOOR MOUNTED	L-4	L-7
		TELEPHONE BACKBOARDS 3/4" x 4' x 8' / WITH 4" FURROUT REAR ACCESS SPACE	L-2	
		TELEPHONE BACKBOARDS 3/4" x 4' x 8' / WITH 4" FURROUT REAR ACCESS SPACE	L-2	

CAMERA SCHEDULE								
Camera #	Sheet	Location	Type	Power	Field of View	Mount	Level	Comments
1	T101	108 MULTI-PURPOSE	FIXED	POE	45 DEG	INTERIOR CEILING	Level 1	MONITOR ELECTRICAL ROOM ACCESS
2	T101	T16 STORAGE	FIXED	POE	45 DEG	INTERIOR CEILING	Level 1	MONITOR STORAGE ROOM ACCESS

Revisions

Date

CIVIL ENGINEER/LANDSCAPE ARCHITECTURE:


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MACTEC PROJECT: 6151-10-0085

ARCHITECTURE:


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Thompson Company
consulting engineers
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50 Technology Parkway South
Norcross, Georgia 30092
Atlanta, Georgia 30092
404.266.1400
www.tcieng.com

Atlanta, Georgia 30092
Houston, Texas 77058
Tortola, BVI

SURVEY:


HALDER SURVEYS
P.C.

10400 CHESTER ROAD, CHESTER, VA 23831
TEL: (804) 748-8707 FAX: (804) 748-8708


NATIONAL CEMETERY ADMINISTRATION

Drawing Title

Legends, Notes, & Abbrev. - TSYS

Approved: Director, Technical Support Service

Approved: Chief, Architectual & Engineering Division

Project Title

ADMISTRATION / PUBLIC INFORMATION BUILDING
QUANTICO NATIONAL CEMETERY

Building Number

Checked DB

Drawn WGP

Location

18424 JOPLIN ROAD
TRIANGLE, VIRGINIA

Date

7-29-11

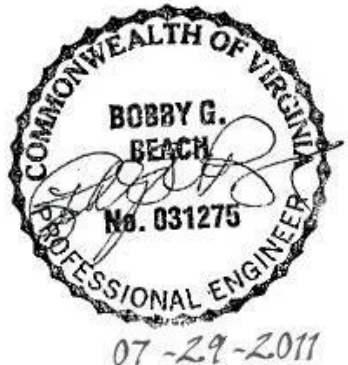
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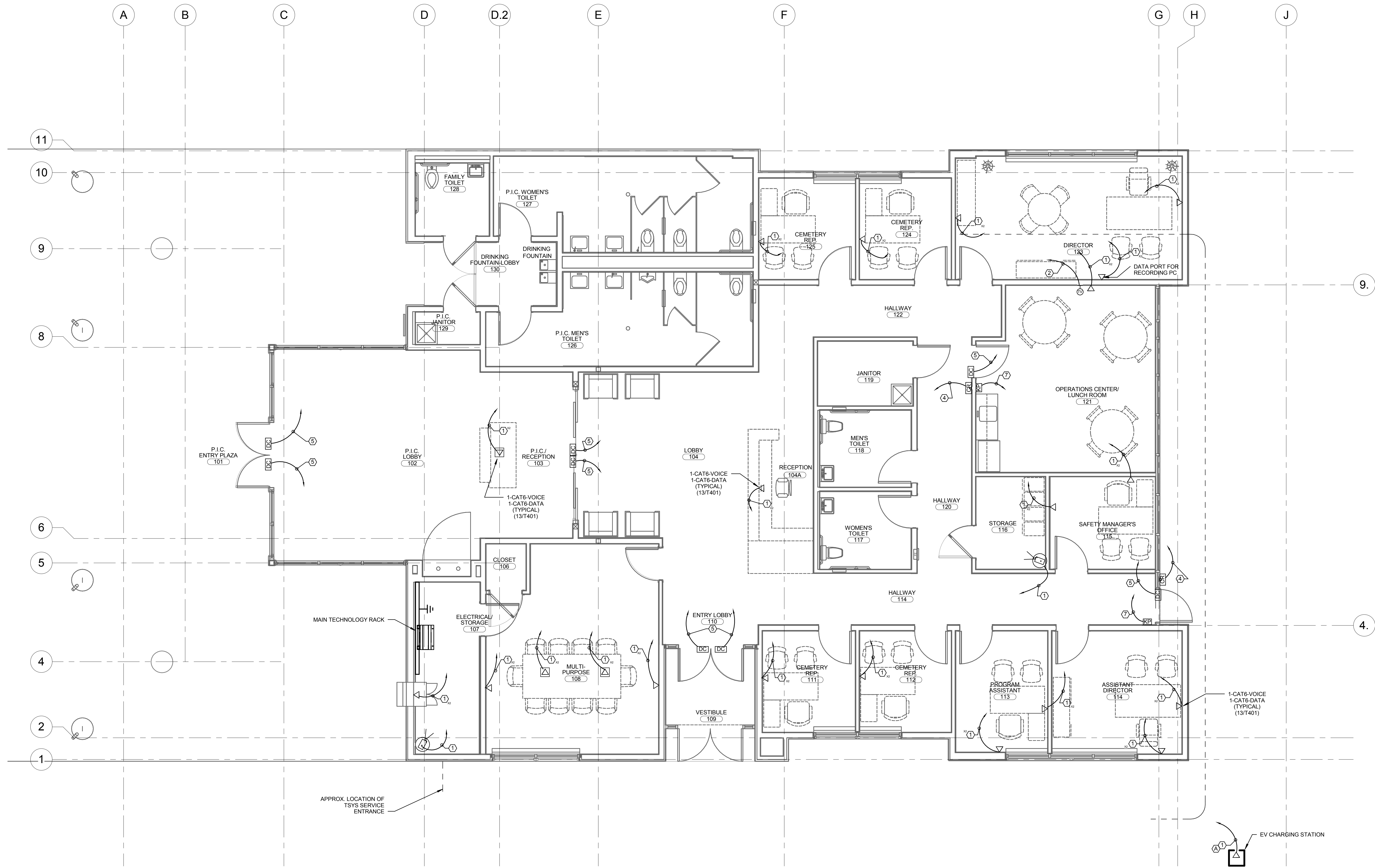
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Drawing No.

T001

Dwg. 78 of 80


07-29-2011



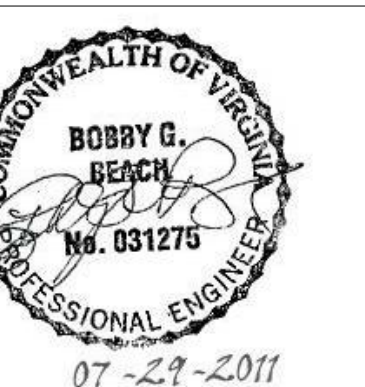
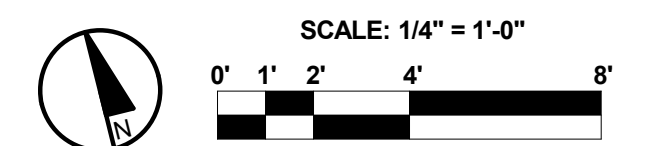
1 Floor Plan -TSYS
1/4" = 1'-0"

CABLING NOTES:

- #23AWG/4 PAIR, CAT-6, UTP (0.233" O.D.)
- RG-6/U COAX (0.283" O.D.)
- #18 AWG/4C/SH-O (0.180" O.D.)
- #22 AWG/3PR/SH-O (0.195" O.D.)
- #22 AWG/2C/SH-O (0.125" O.D.)
- #22 AWG/4C/SH-I (0.145" O.D.)
- #20 AWG/8C/SH-O (0.256" O.D.)

RACEWAY NOTES:

- 1" RACEWAY



Revisions Date	CIVIL ENGINEER/LANDSCAPE ARCHITECTURE: ARCHITECTURE: MEP ENGINEER: SURVEY: MACTEC MACTEC ENGINEERING AND CONSULTING, INC., 3200 TOWN POINT DR., KENNESAW, GA. 30144 TEL: (770) 421-3400 FAX: (770) 421-3486 MACTEC PROJECT: 6151-10-0085	ARCHITECTURE: MATRIX SETTLES 1220 N. FILLMORE ST. SUITE 300 ARLINGTON, VA 22211 703-525-0424	MEP ENGINEER: SURVEY: Thompson Company consulting engineers 29094 50 Technology Parkway South Norcross, Georgia 30092 404.266.1400 www.tcieng.com Atlanta Dubai, UAE Orlando Mexico City, Mexico Houston Tortola, BVI	SURVEY: HALDER SURVEYS INC. 10400 CHESTER ROAD, CHESTER, VA 23831 TEL: (804) 748-8707 FAX: (804) 748-8708	NATIONAL CEMETERY ADMINISTRATION	Drawing Title FLOOR PLAN -TSYS Approved: Director, Technical Support Service Approved: Chief, Architectural & Engineering Division	Project Title ADMINISTRATION / PUBLIC INFORMATION BUILDING QUANTICO NATIONAL CEMETERY Building Number Checked DB Drawn WGP Location 18424 JOPLIN ROAD TRIANGLE, VIRGINIA	Date 7-29-11 Project No. 872CM3035 DRAWING NO. T101 Dwg. 79 or 80
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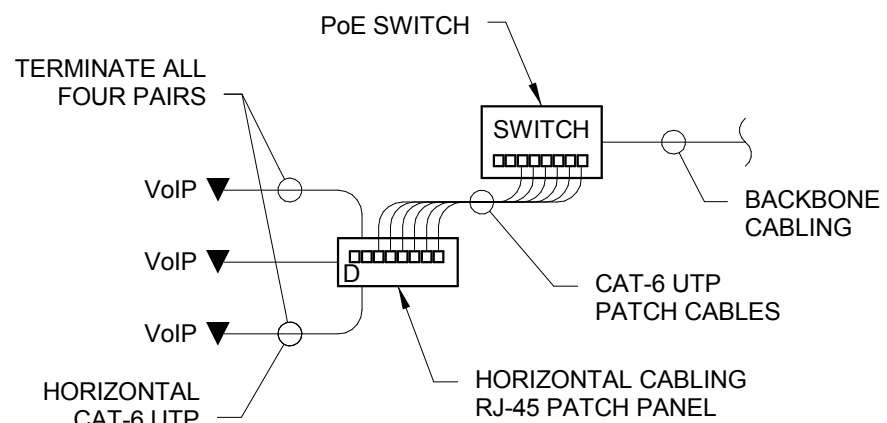
CABLING NOTES:

(applies this sheet only)

- 1 #24AWG/4 PAIR, CAT-6, UTP (0.195"/0.233" O.D.)
2 RG-59/U COAX (0.235" O.D.)
3 RG-6/U COAX (0.283" O.D.)
4 RG-11/U COAX (0.405" O.D.)
5 #18 AWG/4C/SH-O (0.159" O.D.)
6 #20 AWG/8C/SH-O (0.256" O.D.)
7 #20 AWG/2PR/SH-I (0.225" O.D.)
8 #20 AWG/6PR/SH-O (0.328" O.D.)
9 #20 AWG/2C/TP (0.141" O.D.)
10 #18 AWG/2C/TP (0.155" O.D.)
11 #18 AWG/3C SCREEN CONTROL CABLE (0.191" O.D.)
12 #16 AWG/2C/TP (0.189" O.D.)
13 #14 AWG/2C/TP (0.234" O.D.)
14 #12 AWG/2C/TP (0.269" O.D.)
15 GEPCO/AXLINK/CRESNET (#22 AWG/2C/TP/SH + #18 AWG/2C) (0.281" O.D.)
16 CRESCAT-QM-P (CRESNET + LO-SKEW CAT-5E UTP) (SIAMSE 0.234" O.D.)
17 CUSTOM MANUFACTURER'S CABLE

DETAIL NOTES:

1. TERMINATE BACKBONE CABLING TO OPTICAL FIBER PATCH PANEL. PATCH FEED INTO POE SWITCH. CROSSCONNECT HORIZONTAL CABLING TO POE SWITCH USING CAT-6 RATED PATCH CABLE.
2. PROVIDE SUFFICIENT QUANTITY CAT-6 RATED PATCH CABLES TO PROVIDE FULL CROSSCONNECT OF HORIZONTAL CABLING TO NETWORK SWITCH. PROVIDE CABLE MANAGEMENT BETWEEN PATCH PANELS AND ACTIVE NETWORK ELECTRONICS.
3. ACTIVE DATA NETWORK COMPONENTS (SWITCHES/HUBS/MEDIA CONVERTERS) BY OWNER (FF&E), UNLESS OTHERWISE NOTED.

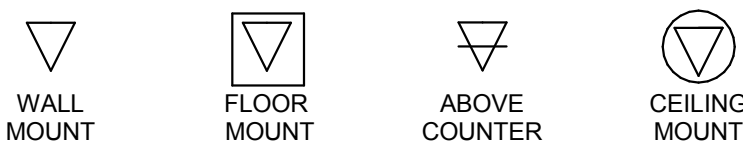


11 TYP VOIP CROSSCONNECT
T401 N.T.S.

DETAIL NOTES:

(applies this detail only)

1. DETAIL ADDRESSES MOUNTING CONDITION OF VOICE/DATA OUTLETS ONLY. REFERENCE OTHER DRAWINGS FOR AV/CATV/CCTV MOUNTING REQUIREMENTS. REFERENCE INTERIOR DESIGN DOCUMENTS FOR ADDITIONAL REQUIREMENTS.

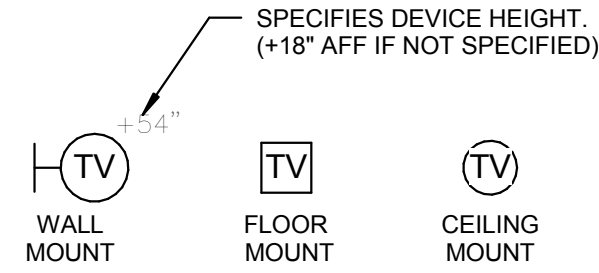


10 TYP DEVICE MOUNTING 1
T401 N.T.S.

DETAIL NOTES:

(applies this detail only)

1. DETAIL ADDRESSES MOUNTING CONDITION OF TELEVISION OUTLETS ONLY. REFERENCE OTHER DRAWINGS FOR AV/CATV/CCTV MOUNTING REQUIREMENTS. REFERENCE INTERIOR DESIGN DOCUMENTS FOR ADDITIONAL REQUIREMENTS.

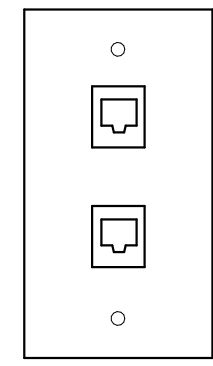


9 TYP DEVICE MOUNTING
T401 N.T.S.

DETAIL NOTES:

(applies this detail only)

1. RJ-45 (DATA) WALL OUTLET
2. ALL CAT6 TERMINATE TO PATCH PANEL FOR VOICE AND DATA



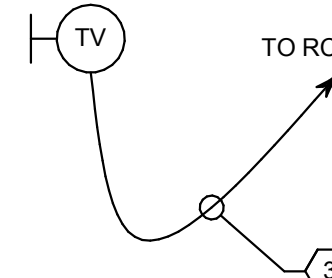
TYPICAL OF ON FLOORPLANS

13 RJ-45 2 Port Wall Jack
T401 N.T.S.

DETAIL NOTES:

(applies this detail only)

1. POWER OUTLET REQUIRED ADJACENT TO TV.



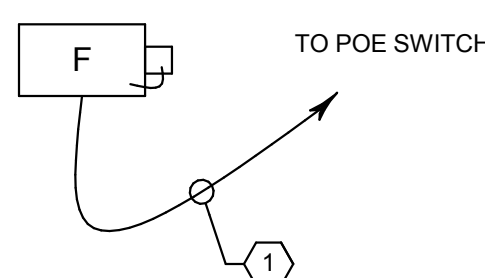
TYPICAL OF ON FLOORPLANS

7 TYP STD TELEVISION OUTLET
T401 N.T.S.

DETAIL NOTES:

(applies this detail only)

1. ROUTE IP CABLING TO POE SWITCH.
2. TERMINATE CABLES INTO JUNCTION BOX WITH SINGLE-GANG PLATE.



TYPICAL OF ON FLOORPLANS

6 TYP INTERIOR IP FIXED CAMERA
T401 N.T.S.

DETAIL NOTES:

(applies this detail only)

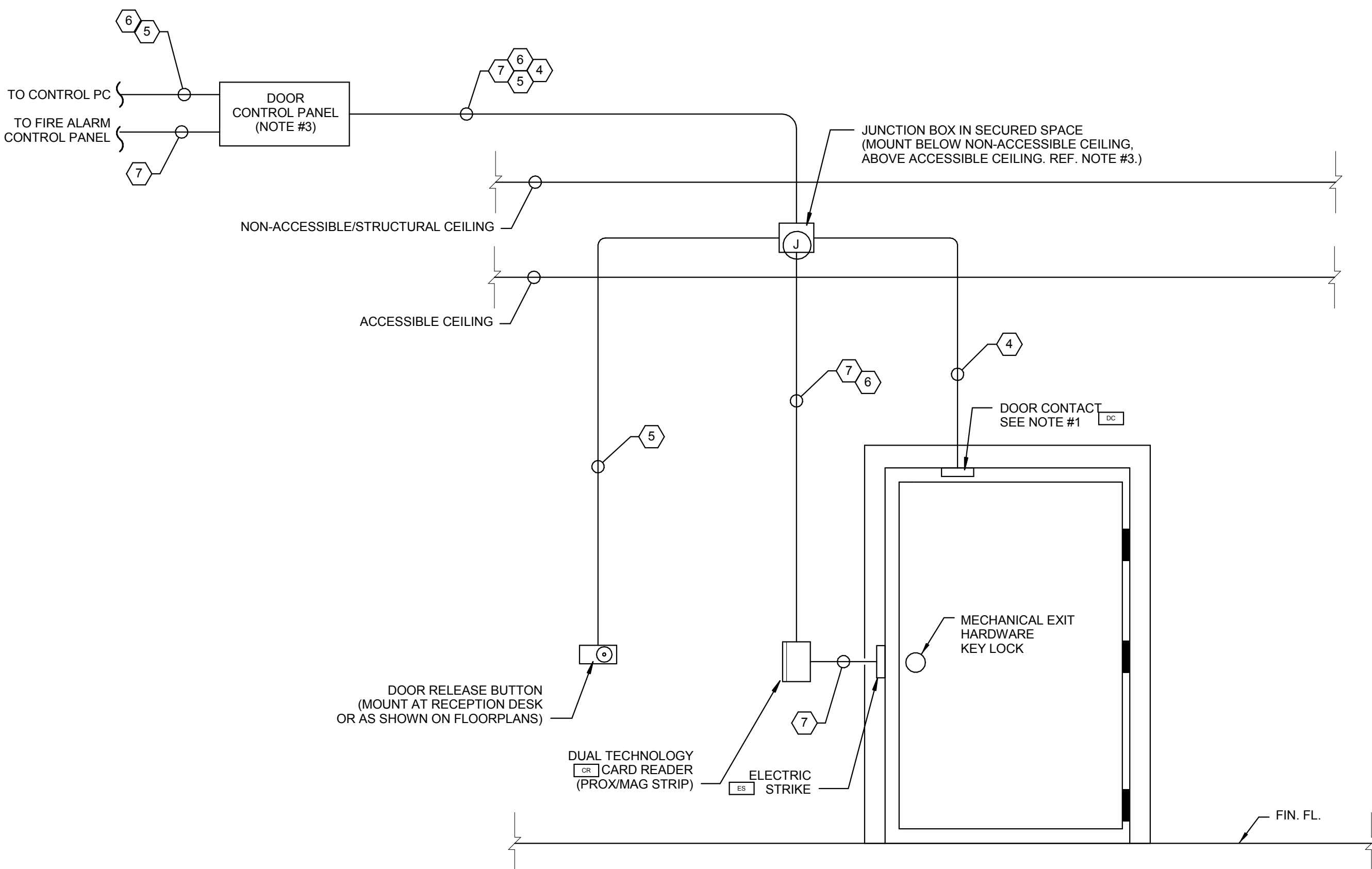
1. DETAIL REFLECTS TYPICAL RACEWAY, CABLING, AND INSTALLATION OF A VARIETY OF DOOR ACCESS CONTROL CONDITIONS. REFERENCE FLOORPLANS, CODE CONSULTANT, AND DOOR CONSULTANT DOCUMENTS FOR ADDITIONAL REQUIREMENTS. MORTISED TYPE RECESSED DOOR CONTACT. ROUTE CABLING FREERUN THROUGH FRAME. COORDINATE MANUFACTURE OF DOOR FRAME WITH SECURITY SYSTEM INSTALLER.
2. COORDINATE ELECTRIC STRIKE WITH FIRE ALARM SYSTEM TO RELEASE UNDER ALARM CONDITIONS (OVERRIDE RELEASE UNDER "TEST ALARM" STATE).
3. MOUNT ABOVE ACCESSIBLE CEILING. IF CEILINGS ARE NON-ACCESSIBLE, LOCATE IN NEAREST TELEPHONE CLOSET. IF NO CEILING EXISTS ON SECURED SIDE OF DOOR (STRUCTURAL CEILING), MOUNT EXPOSED MINIMUM 120" AFF.
4. PROVIDE ELECTRIC STRIKE AND DOOR CONTROLLER SYSTEM WITH UPS/BATTERY BACKUP (6 HOURS MINIMUM).
5. COORDINATE WITH NEARBY IP CAMERAS TO INITIALIZE REAL TIME RECORDING (15 FPS) OF ALL ENTRIES/EXITS.
6. DETAIL SHOWS REQUIREMENTS FOR SINGLE DOOR. ADJUST EQUIPMENT AND TERMINATIONS FOR DOUBLE DOOR AS REQUIRED.
7. SOLID LINES REPRESENT DEVICES/CABLING REQUIRED ON NON-SECURED (PUBLIC) SIDE OF DOOR. DASHED LINES REPRESENT DEVICES/CABLING REQUIRED ON SECURED SIDE OF DOOR.

CABLING NOTES:

(applies this detail only)

- 1 #18AWG/3 PAIR/SH-O
2 #18AWG/4 PAIR/SH-O
3 #18AWG/12 COND/STRANDED SH-O
4 #18AWG/2 COND/SH-O
5 #22AWG/2 PAIR/SH-O/RS-485
6 #22AWG/6 COND/SH-O/RS-232
7 #18AWG/4 COND/SH-O
8 #24AWG/4PR, CAT-5e, UTP (0.205" O.D.)

NOTES: (THESE CABLING NOTES APPLY TO THIS DETAIL ONLY)

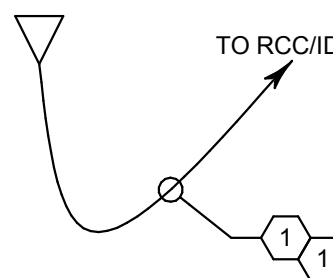


12 SINGLE DOOR ACCESS CONTROL
T401 N.T.S.

DETAIL NOTES:

(applies this detail only)

- ETHERNET DATA OUTLET. RJ-45 JACK, CAT-6 CABLE. TERMINATE TO RJ-45 PATCH PANEL WITHIN IDF.



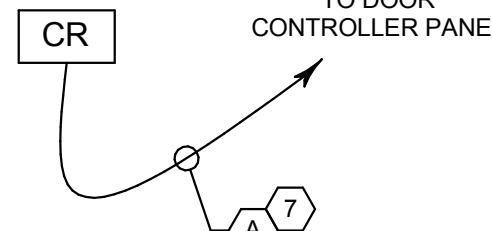
TYPICAL OF ON FLOORPLANS

5 TYP DATA OUTLET
T401 N.T.S.

DETAIL NOTES:

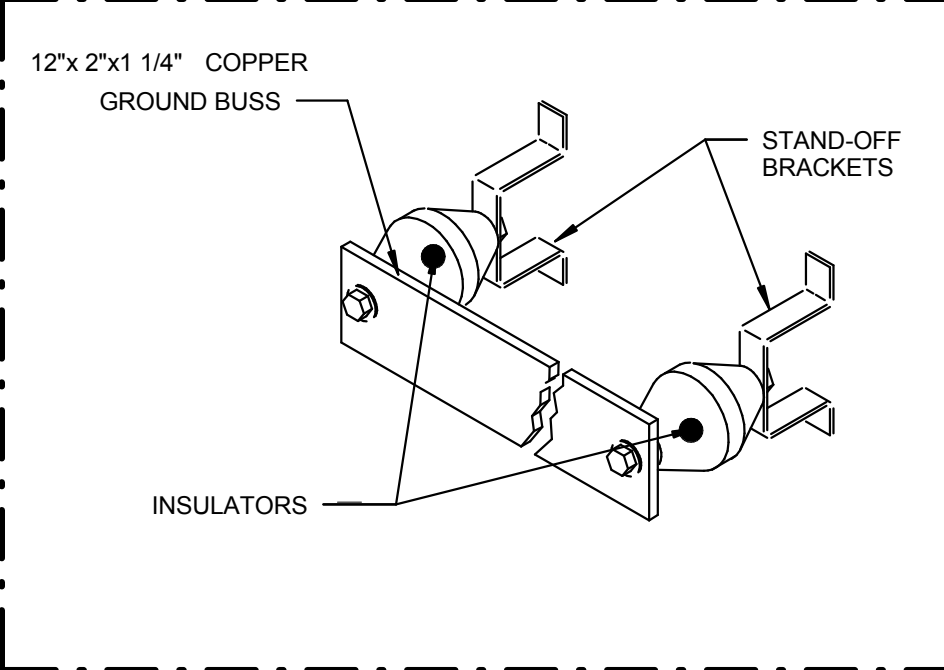
(applies this detail only)

1. REFERENCE MANUFACTURERS INSTALLATION REQUIREMENTS.
2. REF. XITS.X.3x FOR ADDITIONAL REQUIREMENTS.



TYPICAL OF ON FLOORPLANS

4 TYP CARD READER
T401 N.T.S.

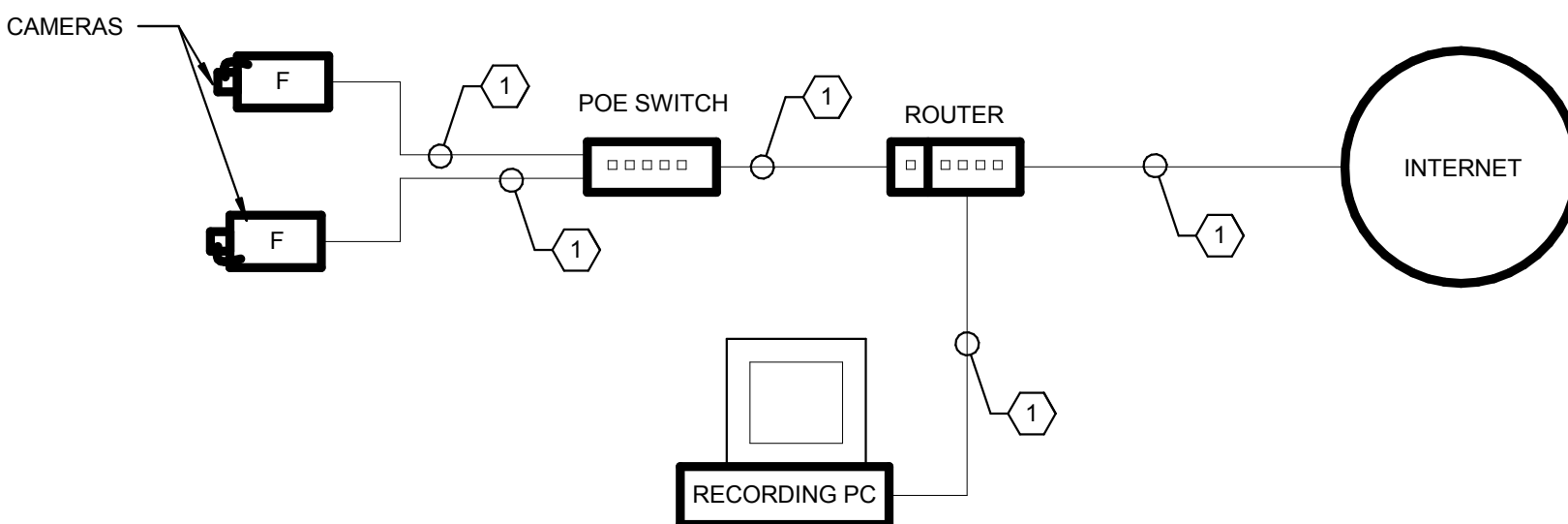


3 GROUND BAR DETAIL
T401 N.T.S.

DETAIL NOTES:

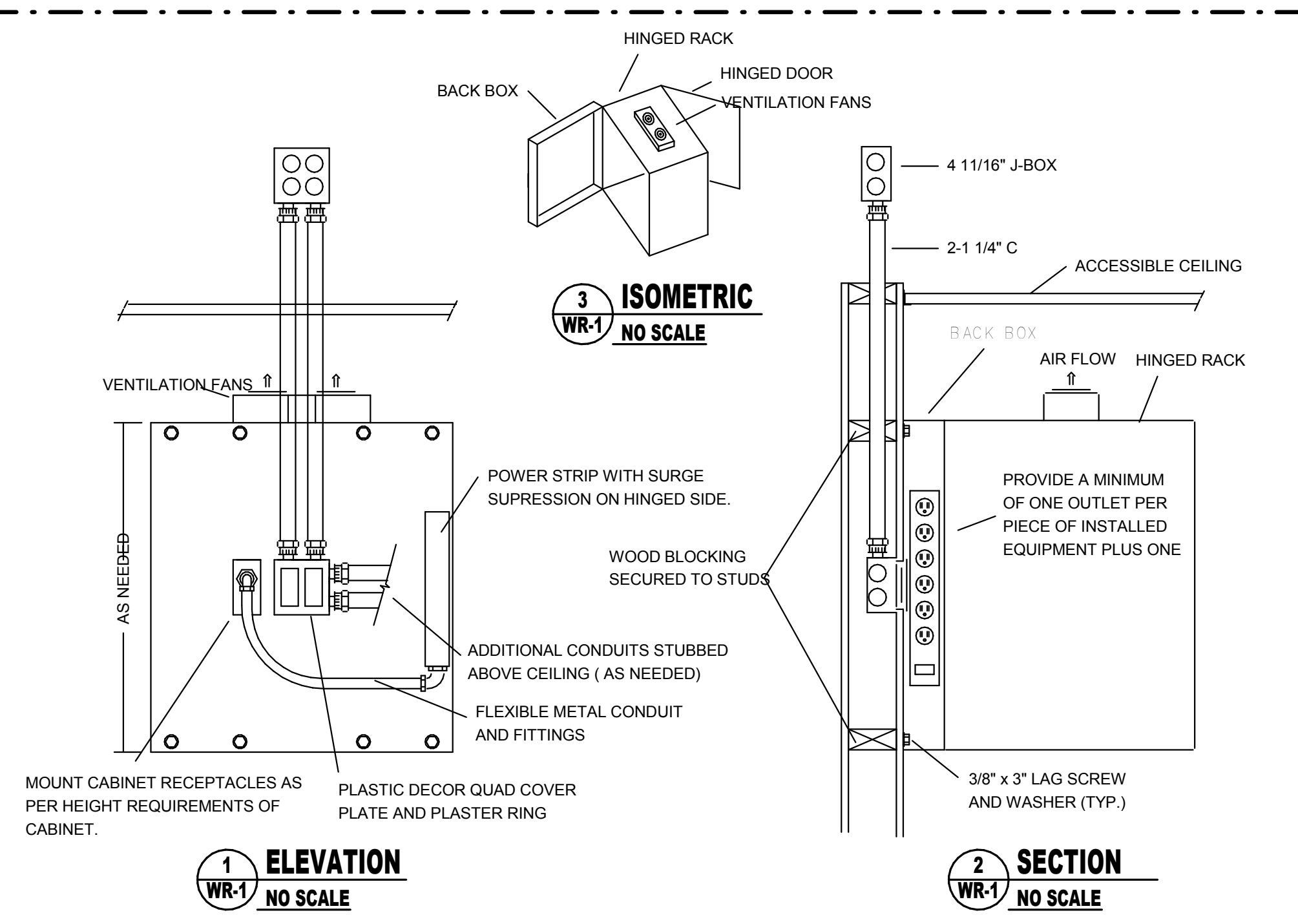
(applies this detail only)

1. PROVIDE TCP/IP CONNECTIVITY TO FACILITY INFRASTRUCTURE.
2. PROVISION ALL CAMERAS FOR 15 FPS RECORDING (MINIMUM).
3. ONE-LINE DIAGRAM IS TYPICAL. MAY NOT REFLECT ALL REQUIRED FIELD DEVICES.
4. REFERENCE FLOORPLANS, DETAILS, AND SPECS FOR ADDITIONAL IP CAMERA REQUIREMENTS.



NOTE: SEE T001 FOR CAMERA SCHEDULE

2 IP CAMERA ONE-LINE DIAGRAM
T401 N.T.S.



1 ELEVATION
NO SCALE

2 SECTION
NO SCALE

1 542 WALL MOUNTED HINGED RACK - DETAIL "WR-1"
T401 N.T.S.

