Heartland Community Church
70 South Kansas Avenue, North Liberty, Iowa
AUGUST 2009

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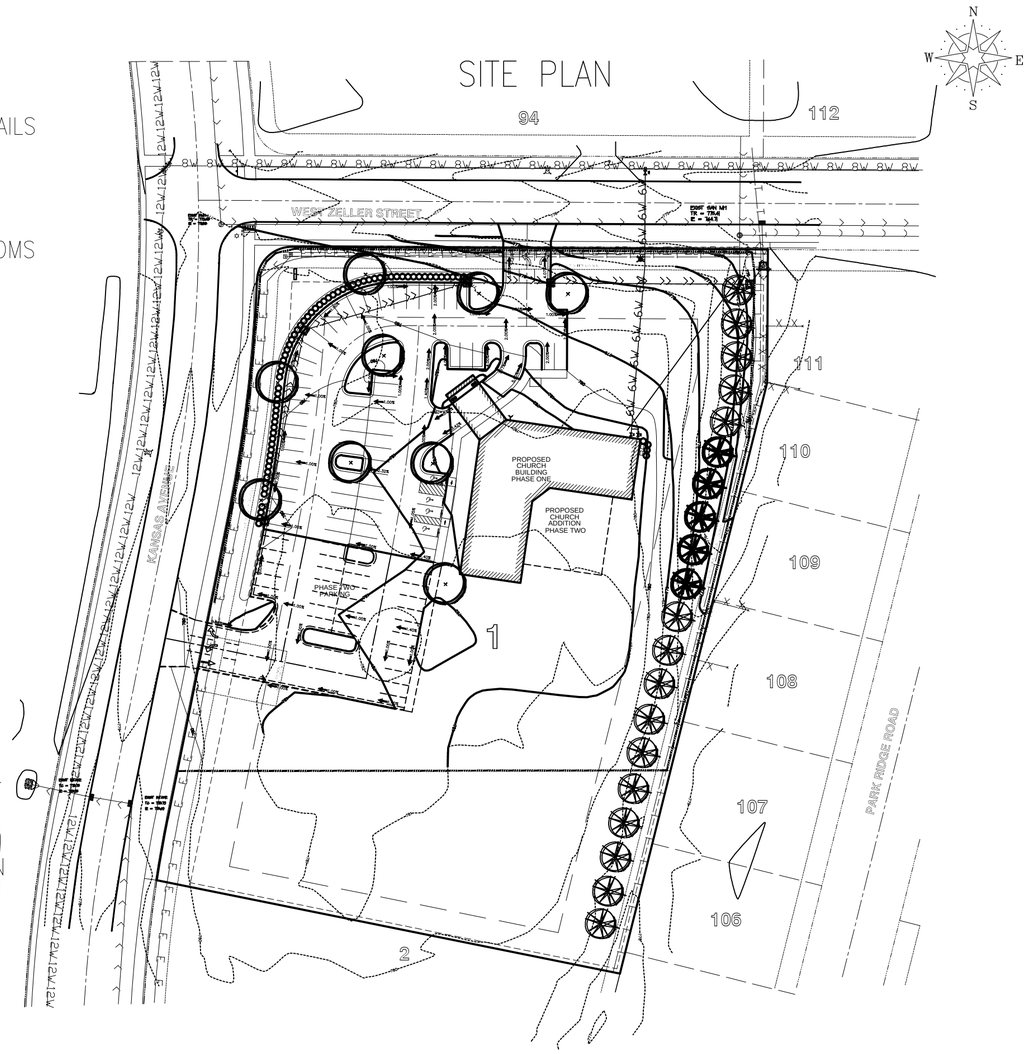
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GENERAL CODE DATA INFORMATION BLOCK

OCCUPANCY TYPE:	A–3	FLOOR NUMBER WORK IS BEING PERFORMED:	1
SEPERATED USE OR NON–SEPERATED USE	NON–SEPERATED	FIRE ALARMS:	YES
TYPE OF CONSTRUCTION:	V–A	EMEGENCY LIGHTING:	YES
SQUARE FOOTAGE:	8,016 S.F.	NUMBER OF EXITS REQUIRED:	2
ALLOWABLE AREA CALCULATION:	11,500 S.F.	EXITS PROVIDED:	3
ALLOWABLE INCREASE:	8,625 S.F.	NUMBER OF FLOORS IN THE BUILDING:	1
SPRINKLER INCREASE:	34,500 S.F.	SPRINKLERS: NFPA13	YES
TOTAL ALLOWABLE AREA:	54,625 S.F.	GOVERNING CODES:	2006 IBC



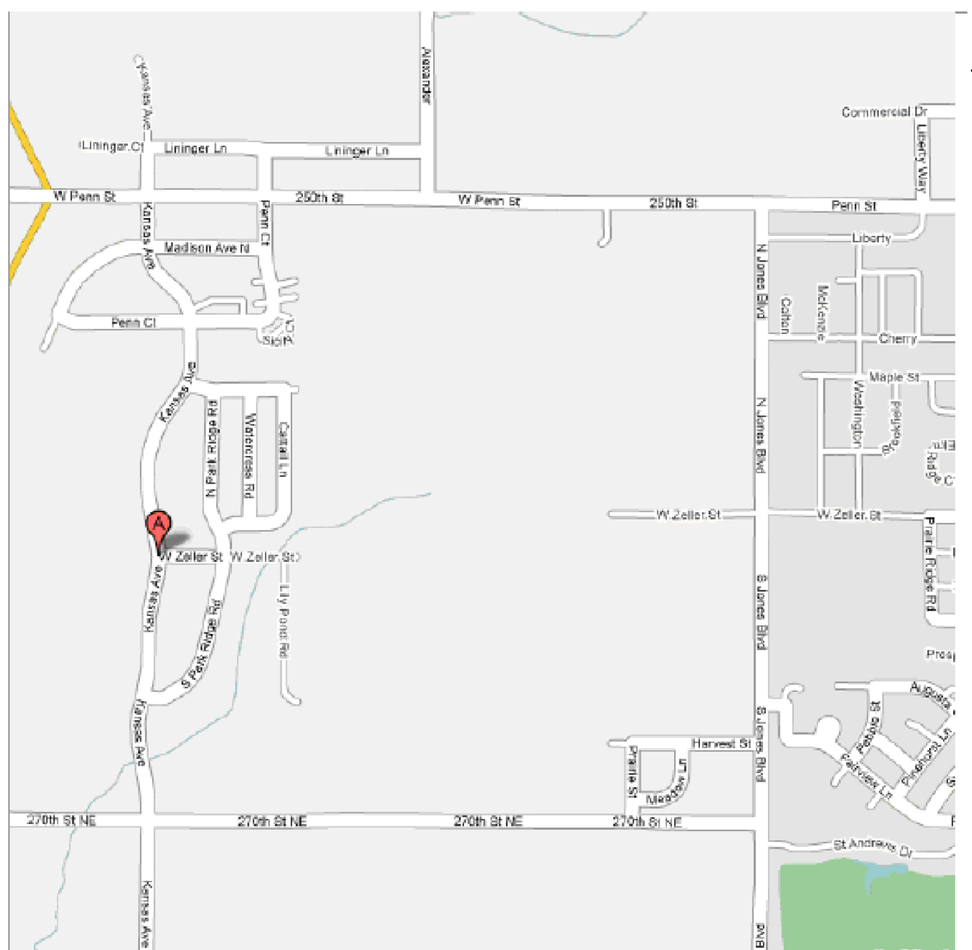
STATE OF IOWA
WILLIAM NOWYSZ
ARCHITECT No.1177
REGISTERED ARCHITECT

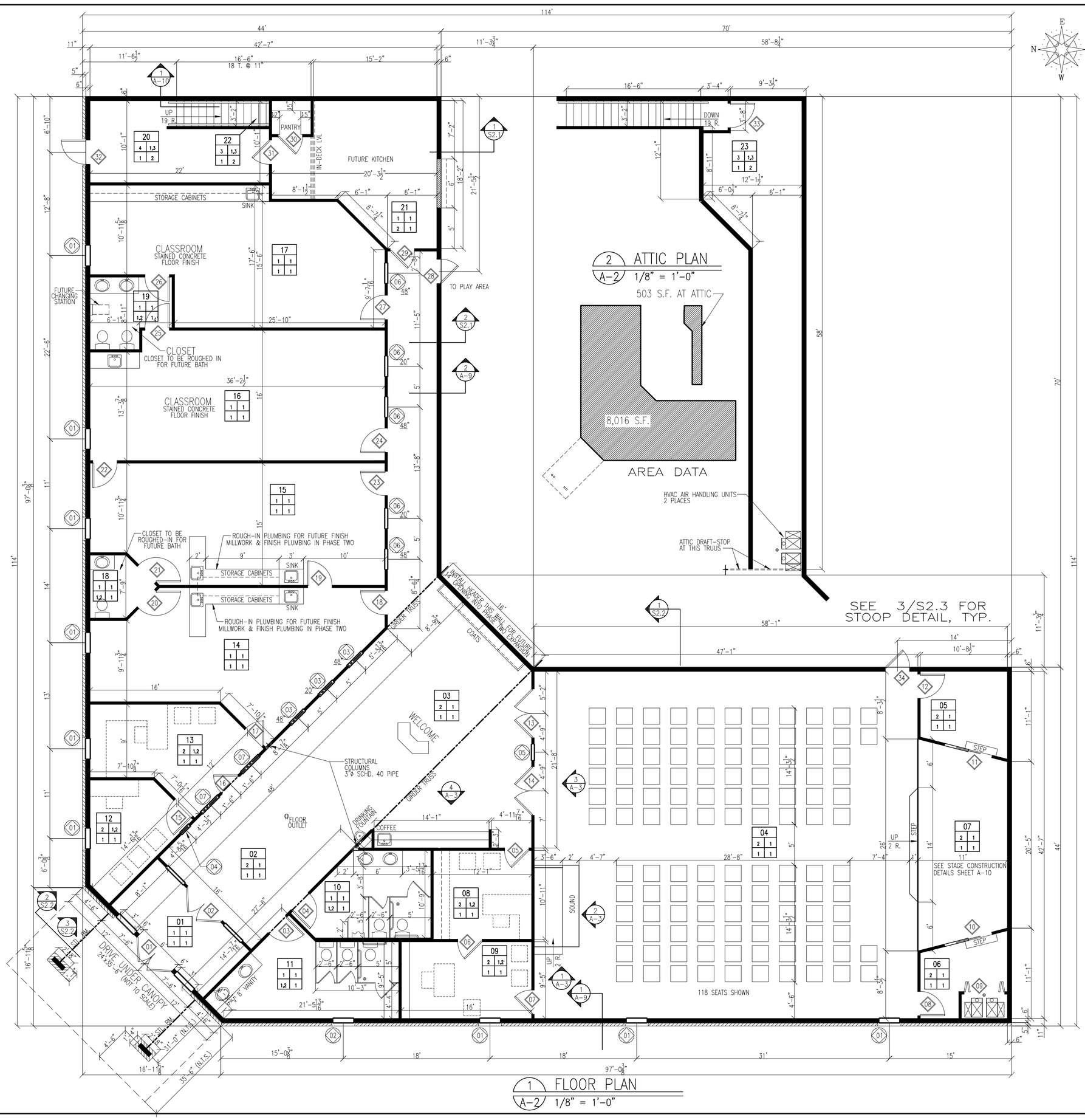
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LOCATION MAP





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project name
Heartland Community Church

drawing title
FLOOR PLAN

job no.

date
AUG. 10, 2009

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OCT. 6, 2009

sheet no.
A-2

WINDOW SCHEDULE

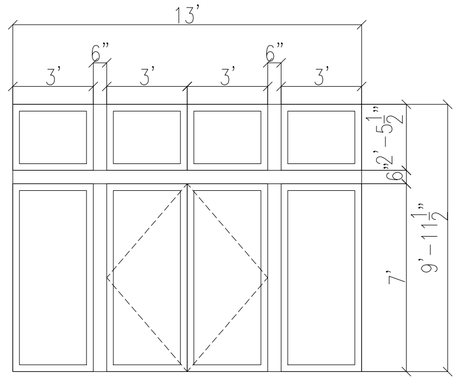
NOTES	WINDOW NUMBER	QUANTITY	R.O. WIDTH	R.O. HEIGHT	JAMB THICKNESS	TYPE: EGRESS CASEMENT (1)	TYPE: FIXED UNIT (2)	FEATURES: DRYWALL RETURN (3)	FEATURES: STONE SILL (4)	FEATURES: . (5)	FEATURES: . (6)	FEATURES: . (7)	GLAZING: LOW-E INSUL. W/ ARGON (A)	GLAZING: TINTED GLASS (B)	GLAZING: TEMPERED GLASS (C)	GLAZING: OBSCURE GLASS (D)	GLAZING: (E)
WINDOW NUMBER 01 XX" HEIGHT IN INCHES TO SILL FROM FINISHED FLOOR																	
2965 PELLA ARCHITECT SERIES	01	9	2'-5 3/4"	5'-5 3/4"	6 3/4"	1			5				A				
2965 PELLA ARCHITECT SERIES	02	1	2'-5 3/4"	5'-5 3/4"	6 3/4"		2		5				A			D	
SQUARE BUT ROTATED 45° (DIAMOND) SET AT VARIOUS HGTS.	03	3	2'-6"	2'-6"	4 3/4"		2	4									
RECTANGULAR	04	1	1'-6"	5'-0"	4 3/4"		2		5								
RECTANGULAR	05	1	2'-0"	5'-0"	4 3/4"		2		5								
SQUARE (SET AT VARIOUS HEIGHTS)	06	5	2'-0"	2'-0"	4 3/4"		2	4									
RECTANGULAR	07	2	3'-0"	5'-0"	4 3/4"		2		5								

DOOR SCHEDULE

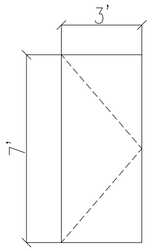
NOTES	DOOR NUMBER	WIDTH	HEIGHT	THICKNESS	TYPE: EXTERIOR GLASS (1)	TYPE: EXT. STL. INSUL. (2)	TYPE: INT. FULL GLASS (3)	TYPE: DUTCH DOORS (4)	TYPE: LOUVER BI-FOLD (5)	TYPE: INT. HALF GLASS (6)	TYPE: INT. SOLID CORE (7)	TYPE: POCKET DOOR (8)	HARDWARE: KEY LOCK (1)	HARDWARE: PASSAGE (2)	HARDWARE: PANIC (3)	HARDWARE: SELF CLOSING (4)	HARDWARE: PRIVACY (5)	HARDWARE: HANDLE/PUSH PLATE (6)
DOOR NUMBER 01	01	6'-0"	7'-0"	1 3/4"	1								1		3	4		
	02	6'-0"	7'-0"	1 3/4"	1									2	3	4		
	03	3'-0"	7'-0"	1 3/8"							7			2		4		
	04	3'-0"	7'-0"	1 3/8"							7			2		4		
	05	3'-0"	7'-0"	1 3/8"						6			1					
	06	3'-0"	7'-0"	1 3/8"							7		1					
	07	3'-0"	7'-0"	1 3/8"							7		1					
	08	3'-0"	7'-0"	1 3/8"							7			2				
	09	5'-0"	7'-0"	1 3/8"					5									
	10	3'-0"	7'-0"	1 3/8"								8		2				
	11	3'-0"	7'-0"	1 3/8"								8		2				
	12	3'-0"	7'-0"	1 3/8"							7			2				
	13	6'-0"	7'-0"	1 3/8"		3										4		6
	14	6'-0"	7'-0"	1 3/8"		3										4		6
	15	3'-0"	7'-0"	1 3/8"							7		1					
	16	3'-0"	7'-0"	1 3/8"							7		1					
	17	3'-0"	7'-0"	1 3/8"							7		1					
	18	3'-0"	7'-0"	1 3/8"				4						2				
	19	3'-0"	7'-0"	1 3/8"							7			2				
	20	3'-0"	7'-0"	1 3/8"							7			2				
	21	3'-0"	7'-0"	1 3/8"							7			2				
	22	3'-0"	7'-0"	1 3/8"							7			2				
	23	3'-0"	7'-0"	1 3/8"				4						2				
	24	3'-0"	7'-0"	1 3/8"				4						2				
	25	3'-0"	7'-0"	1 3/8"							7			2				
	26	3'-0"	7'-0"	1 3/8"							7			2				
	27	3'-0"	7'-0"	1 3/8"				4						2				
	28	3'-0"	7'-0"	1 3/4"	2							1			3	4		
	29	3'-0"	7'-0"	1 3/8"							7		1					
	30	3'-0"	7'-0"	1 3/8"							7			2				
	31	3'-0"	7'-0"	1 3/8"							7		1					
	32	3'-0"	7'-0"	1 3/4"	2							1			3	4		
	33	3'-0"	6'-8"	1 3/8"							7		1					
	34	3'-0"	7'-0"	1 3/4"	2							1			3	4		

ROOM FINISH SCHEDULE

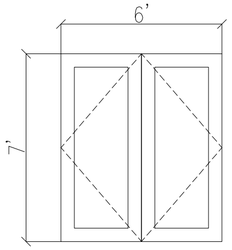
ROOM NUMBER / NAME (ROOM NUMBER / FLOOR / CEILING / WALL / BASE)		FLOOR: STAINED CONCRETE (1)	FLOOR: CARPET (2)	FLOOR: WOOD (3)	FLOOR: CONCRETE (4)	BASE: VINYL (1)	BASE: NONE (2)	EAST WALL: GYP BD/PAINT (1)	EAST WALL: GYP BD/SANI-PANEL (2)	EAST WALL: CERAMIC TILE WAINSCOT (3)	EAST WALL: GYP BD/ SLG. TAPE COAT (4)	NORTH WALL: GYP BD/PAINT (1)	NORTH WALL: GYP BD/SANI-PANEL (2)	NORTH WALL: CERAMIC TILE WAINSCOT (3)	NORTH WALL: GYP BD/ SLG. TAPE COAT (4)	WEST WALL: GYP BD/PAINT (1)	WEST WALL: GYP BD/SANI-PANEL (2)	WEST WALL: CERAMIC TILE WAINSCOT (3)	WEST WALL: GYP BD/ SLG. TAPE COAT (4)	SOUTH WALL: GYP BD/PAINT (1)	SOUTH WALL: GYP BD/SANI-PANEL (2)	SOUTH WALL: CERAMIC TILE WAINSCOT (3)	SOUTH WALL: GYP BD/ SLG. TAPE COAT (4)	CEILING: GYP BD (1)	CEILING: SUSP ACOUSTICAL TAPE COAT (2)	CEILING: (3)	CEILING HEIGHT
01	VESTIBULE	1				1		1				1				1				1				1			12'
02	ENTRY		2			1		1				1				1				1				1			12'
03	SOCIAL AREA		2			1		1				1				1				1				1			12'
04	SANCTUARY		2			1		1				1				1				1				1			12'
05	SOUTH STORAGE ROOM		2			1		1				1				1				1				1			12'
06	WEST STORAGE ROOM		2			1		1				1				1				1				1			12'
07	STAGE		2			1		1				1				1				1				1			11'
08	ADMINISTRATOR		2			1		1				1				1				1				1			10'
09	PASTOR		2			1		1				1				1				1				1			10'
10	MEN'S RESTROOM	1				1			2			1					2			1				1			10'
11	WOMEN'S RESTROOM	1				1			2					2		1				1				1			10'
12	DIRECTORY		2			1		1				1				1				1				1			10'
13	RECEPTION		2			1		1				1				1				1				1			10'
14	CLASSROOM A	1				1		1				1				1				1				1			10'
15	CLASSROOM B	1				1		1				1				1				1				1			10'
16	CLASSROOM C	1				1		1				1				1				1				1			10'
17	CLASSROOM D	1				1		1				1				1				1				1			10'
18	N.E. RESTROOM	1				1			2			1					2			1				1			10'
19	CLOSET (FUTURE RESTROOM)	1				1			2			1					2			1				1			10'
20	MECHANICAL / STORAGE			4		2				4				4				4				4		1	3		10'
21	KITCHEN (FUTURE)			4	1				2			1				1				1				1			10'
22	STAIR		3			2				4				4				4				4		1	3		
23	ATTIC STORAGE		3			2				4				4				4				4		1	3		



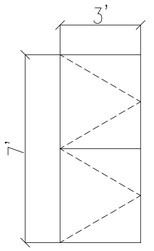
1 FRONT DOOR & VESTIBULE



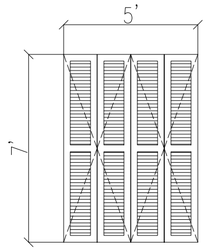
2 EXTERIOR STEEL INSULATED



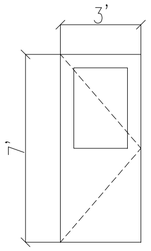
3 INTERIOR FULL GLASS



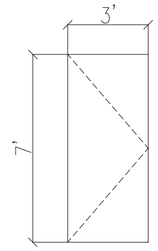
4 DUTCH DOOR



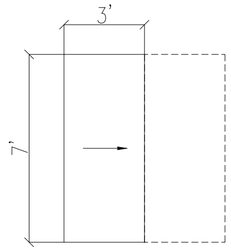
5 LOUVERED BI-FOLD



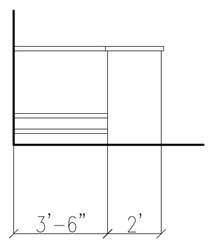
6 INTERIOR HALF GLASS



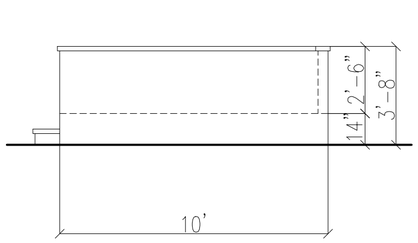
7 INTERIOR SOLID CORE



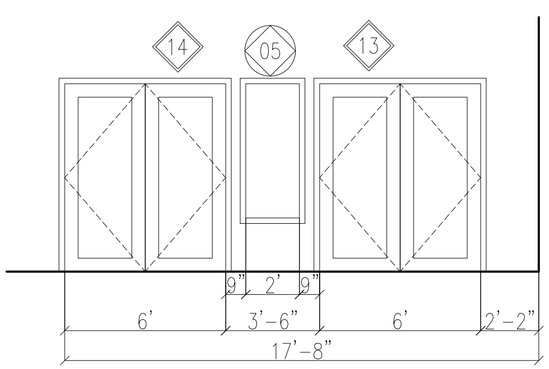
8 POCKET DOOR



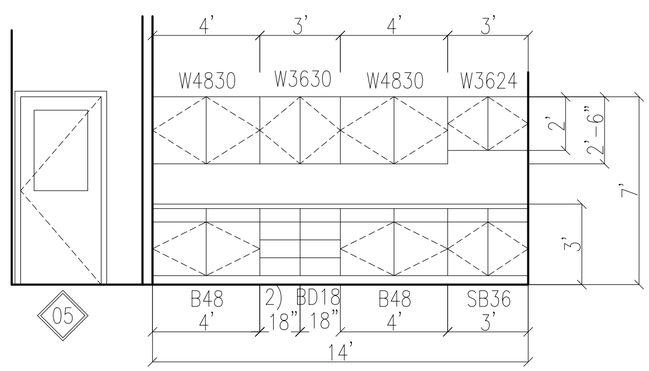
1 SOUND BOOTH
A-3 1/4" = 1'-0"



2 SOUND BOOTH
A-3 1/4" = 1'-0"



3 SANCTUARY DOORS
A-3 1/4" = 1'-0"



4 COFFEE STATION
A-3 1/4" = 1'-0"

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drawing title
SCHEDULES, DOOR TYPES & ELEVATIONS

job no.

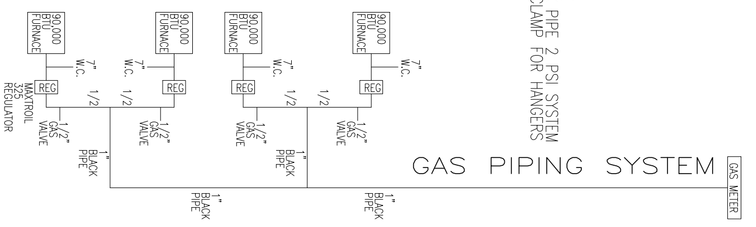
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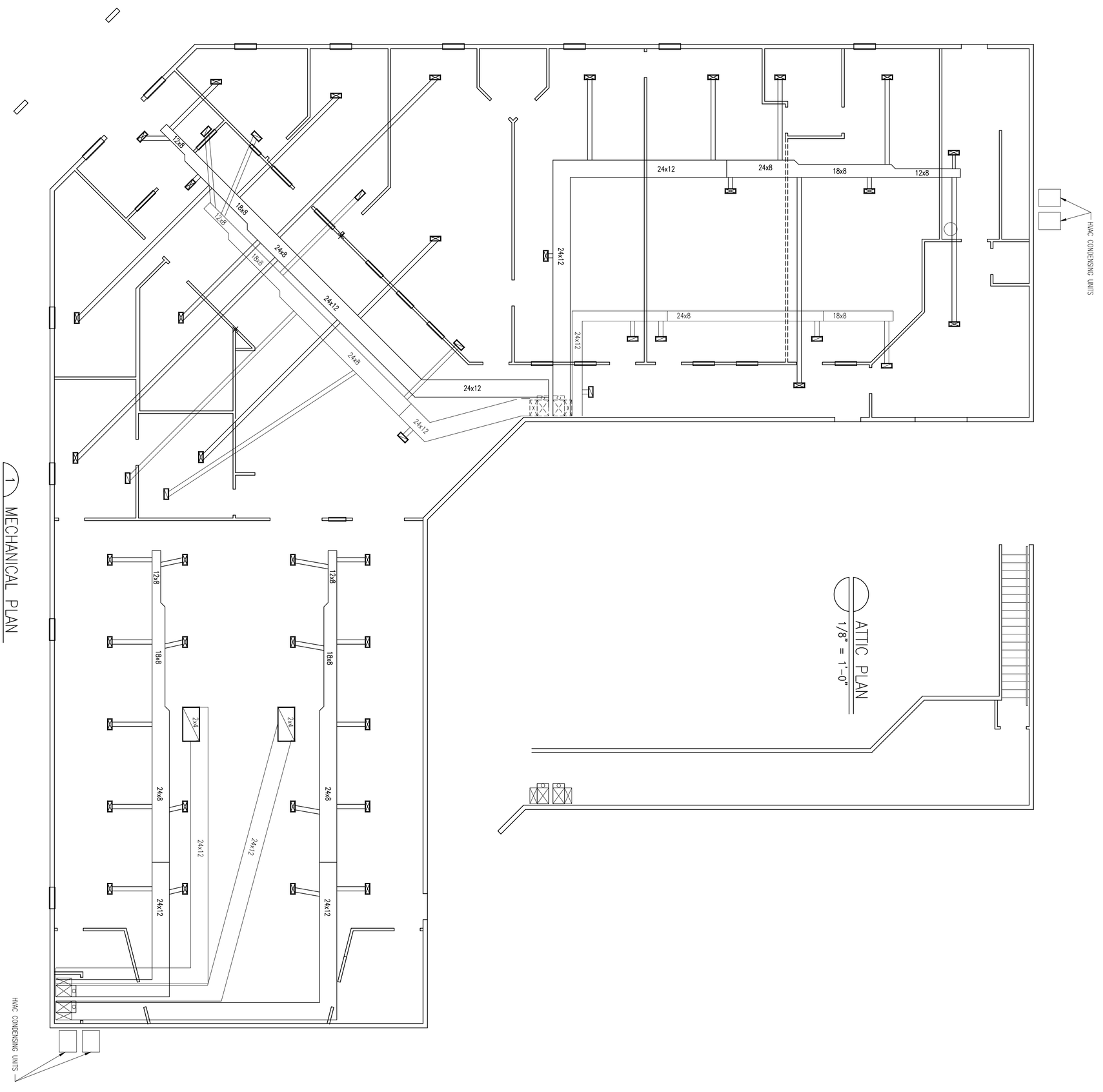
sheet no.
A-3

GAS PIPE
1" BLACK PIPE 2 PSI SYSTEM
2 HOLE CLAMP FOR HANGERS

GAS PIPING SYSTEM



2'x2' SUPPLY AIR
6"x14" SUPPLY AIR
2'x2' RETURN AIR
RETURN AIR, SIZE VARIES



1 MECHANICAL PLAN
A-4 1/8" = 1'-0"

ATTIC PLAN
1/8" = 1'-0"

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Community Church

■ drawing title
MECHANICAL
PLAN

■ job no.

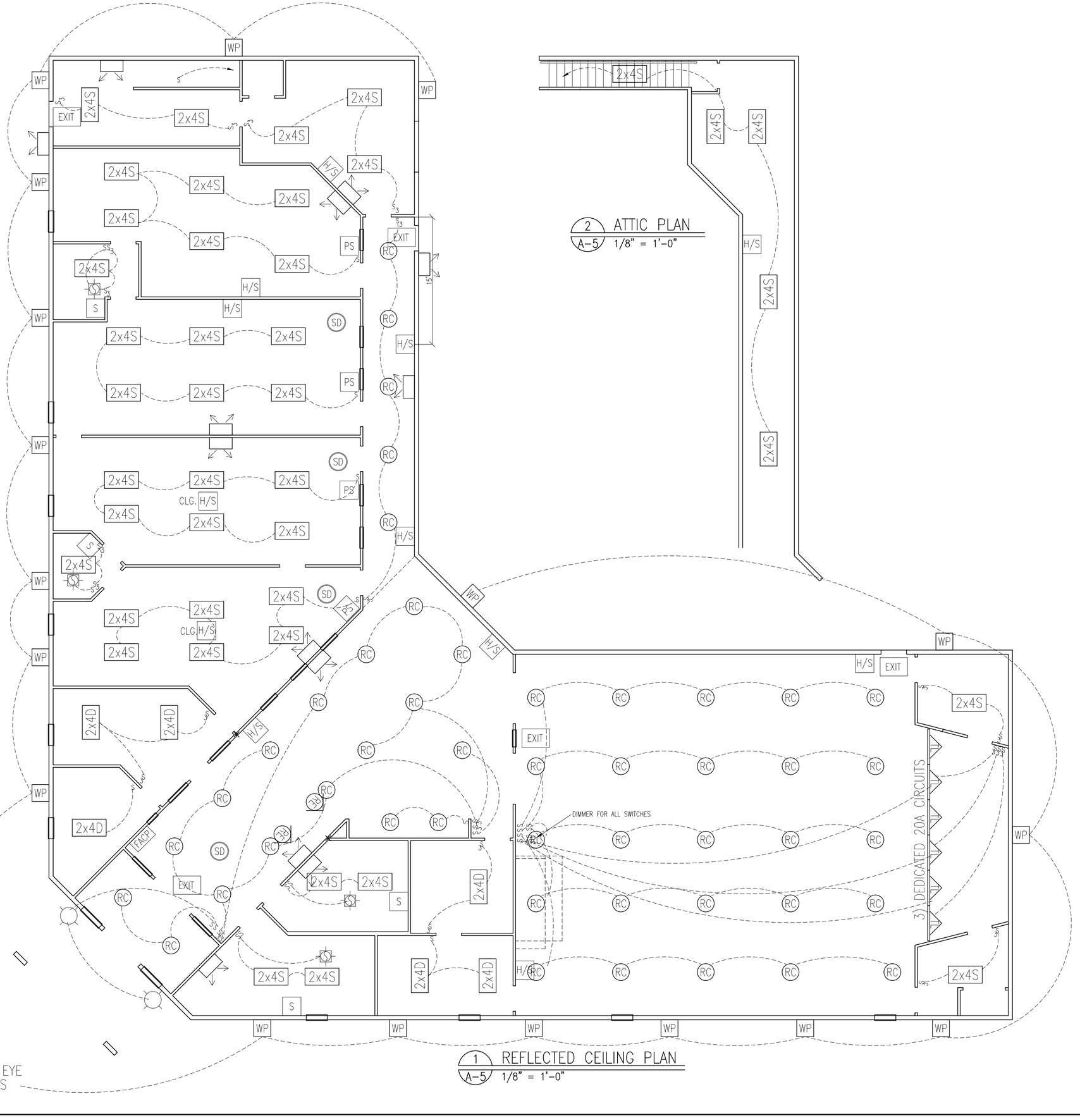
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■ revised
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A-4

		EMERGENCY LIGHTING
41	2x4S	2x4 FLURESCENT SURFACE MOUNT
10	2x4D	2x4 FLURESCENT DROP IN
0	2x2	2x2 FLURESCENT SURFACE MOUNT
52	RC	RECESSED CAN LIGHT (5")
4	RE	RECESSED CAN EYEBALL (5")
19	WP	EXTERIOR WALL PACK
6		TRACK LIGHTING (24'/6 HEADS)
2		WALL MOUNTED FIXTURE
4		BATH EXHAUST FANS
1	FACP	FL-MS9200UDLS PULL DOWN FIRE CONTROL PANEL 198 PT. ADDRESSABLE REQUIRES DEDICATED CIRCUIT
8	H/S	2 WIRE HORN/STROBE STD RED (TOP @ 90" A.F.F.)
3	H/S CLG.	2 WIRE HORN/STROBE STD RED CEILING MOUNT
4	S	STROBE (TOP @ 90" A.F.F.) STD CANDELA RED
3	PS	PULL STATION (48" A.F.F.)
4	SD	FL-SD355 SMOKE DETECTOR
5	EXIT	LED EXIT SIGN W/ POWER BACKUP

WIRE NEEDED FOR DATA: 18/2
WIRE NEEDED FOR HORN/STROBES: 16/2



1 REFLECTED CEILING PLAN
A-5 1/8" = 1'-0"

2 ATTIC PLAN
A-5 1/8" = 1'-0"

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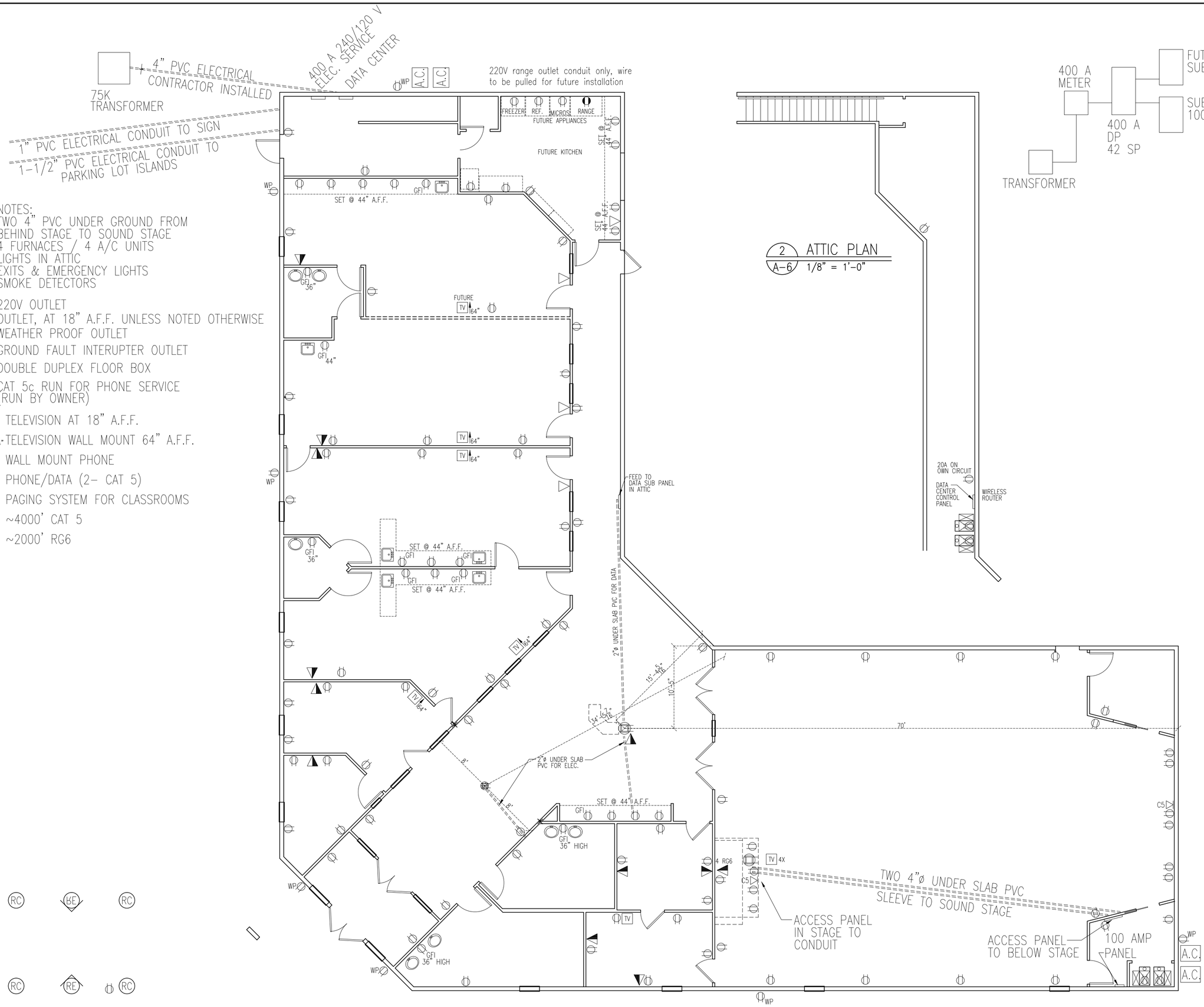
drawing title
REFLECTED CEILING PLAN

job no.

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AUG. 10, 2009

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OCT. 6, 2009

sheet no.
A-5



NOTES:
1. TWO 4" PVC UNDER GROUND FROM BEHIND STAGE TO SOUND STAGE
2. 4 FURNACES / 4 A/C UNITS
3. LIGHTS IN ATTIC
4. EXITS & EMERGENCY LIGHTS
5. SMOKE DETECTORS

- 220V OUTLET
- 125 OUTLET, AT 18" A.F.F. UNLESS NOTED OTHERWISE
- 7 WP WEATHER PROOF OUTLET
- 10 GFI GROUND FAULT INTERUPTER OUTLET
- 2 DOUBLE DUPLEX FLOOR BOX
- C5 CAT 5c RUN FOR PHONE SERVICE (RUN BY OWNER)
- TV TELEVISION AT 18" A.F.F.
- TV 64" TELEVISION WALL MOUNT 64" A.F.F.
- WALL MOUNT PHONE
- PHONE/DATA (2- CAT 5)
- PAGING SYSTEM FOR CLASSROOMS
- ~4000' CAT 5
- ~2000' RG6

3 SIGN
A-6

2 ATTIC PLAN
A-6 1/8" = 1'-0"

1 ELECTRICAL PLAN
A-6 1/8" = 1'-0"

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project name
Heartland Community Church

drawing title
ELECTRICAL PLAN

job no.

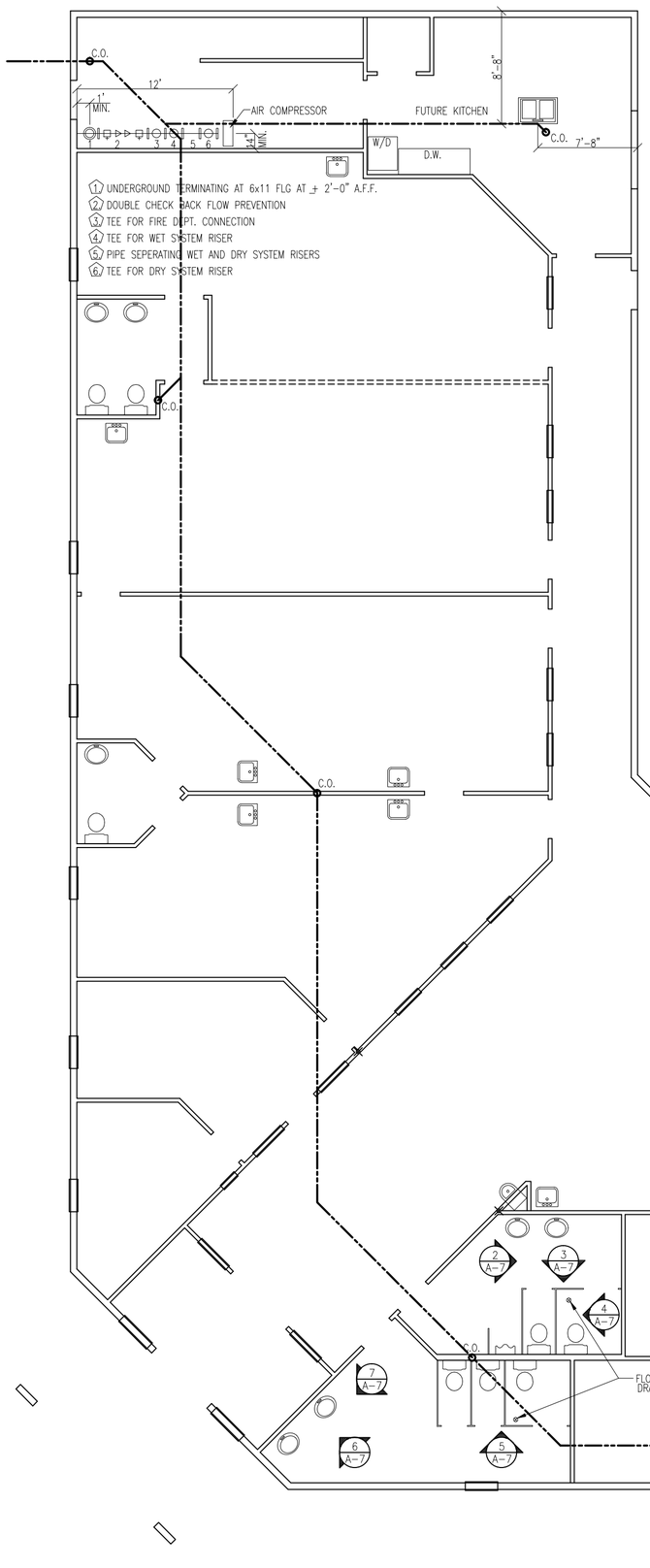
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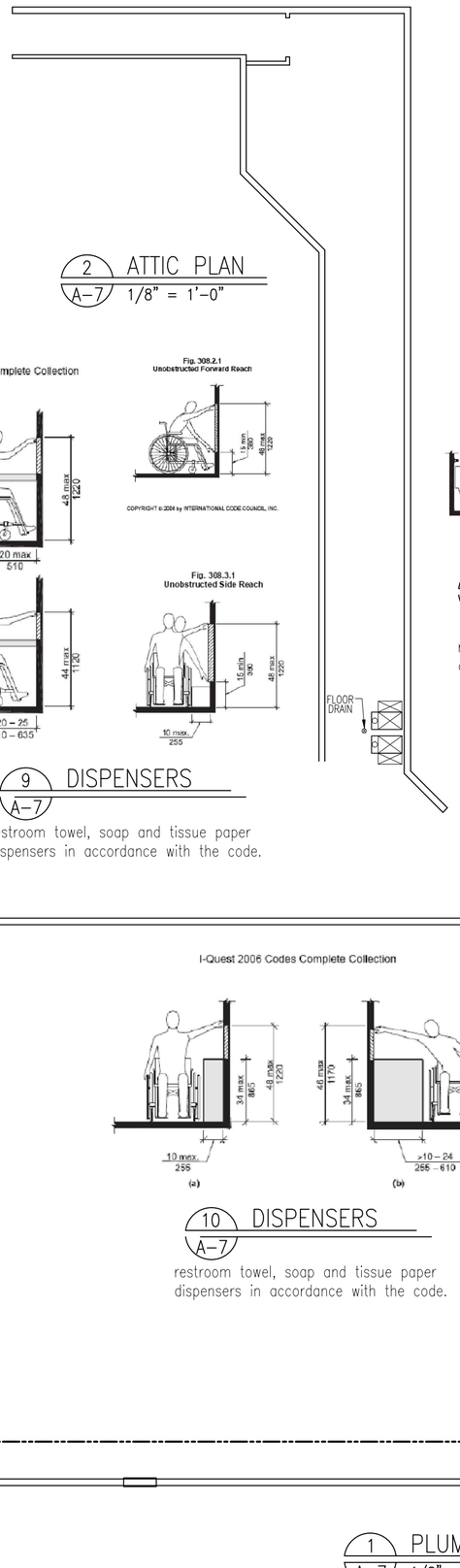
revised
OCT. 6, 2009

sheet no.
A-6

clean out locations on the drainage system in accordance with code section 708 of the 2006 IPC. Maximum 100-ft apart, changes of direction greater than 45 degrees, at the base of each waste or soil stacks and the building sewer drain line connection.

C.O.= CLEAN OUT





2 ATTIC PLAN
A-7 1/8" = 1'-0"

I-Quest 2006 Codes Complete Collection

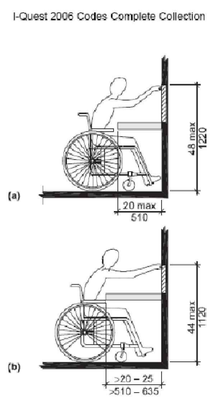


Fig. 308.2.1
Unobstructed Forward Reach

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Fig. 308.3.1
Unobstructed Side Reach

9 DISPENSERS
A-7

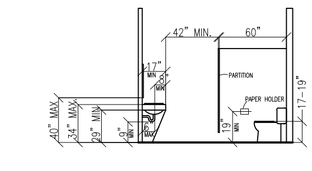
restroom towel, soap and tissue paper dispensers in accordance with the code.

I-Quest 2006 Codes Complete Collection

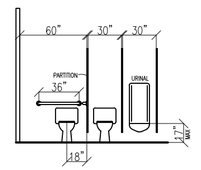
10 DISPENSERS
A-7

restroom towel, soap and tissue paper dispensers in accordance with the code.

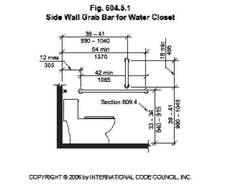
1 PLUMBING PLAN
A-7 1/8" = 1'-0"



2 BATH FIXTURES
A-7 1/8" = 1'-0"



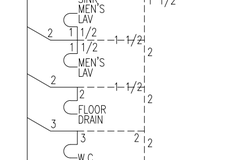
3 BATH FIXTURES
A-7 1/8" = 1'-0"



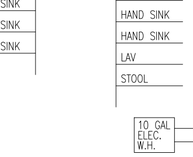
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4 BATH FIXTURES
A-7

5 BATH FIXTURES
A-7 1/8" = 1'-0"

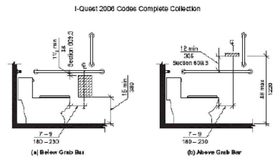


6 BATH FIXTURES
A-7 1/8" = 1'-0"



7 BATH FIXTURES
A-7 1/8" = 1'-0"

I-Quest 2006 Codes Complete Collection



8 DISPENSERS
A-7

restroom towel, soap and tissue paper dispensers in accordance with the code.

81 FIXTURE UNITS

¼ turn valves are required before and after the water meter & backflow preventer device.

APPROVED
By Tom at 7:48 am, Oct 14, 2009

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STATE OF IOWA
WILLIAM NOWYSZ
ARCHITECT No.1177
REGISTERED ARCHITECT

project name
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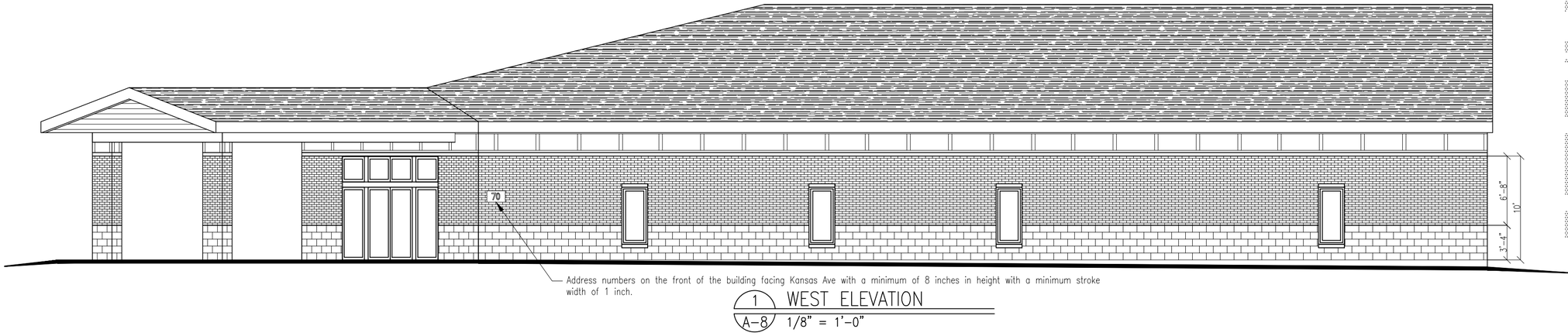
drawing title
PLUMBING PLAN

job no.

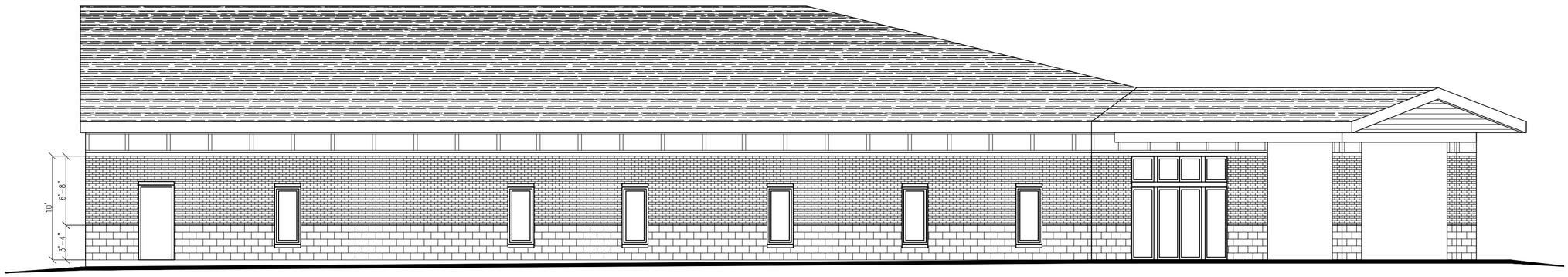
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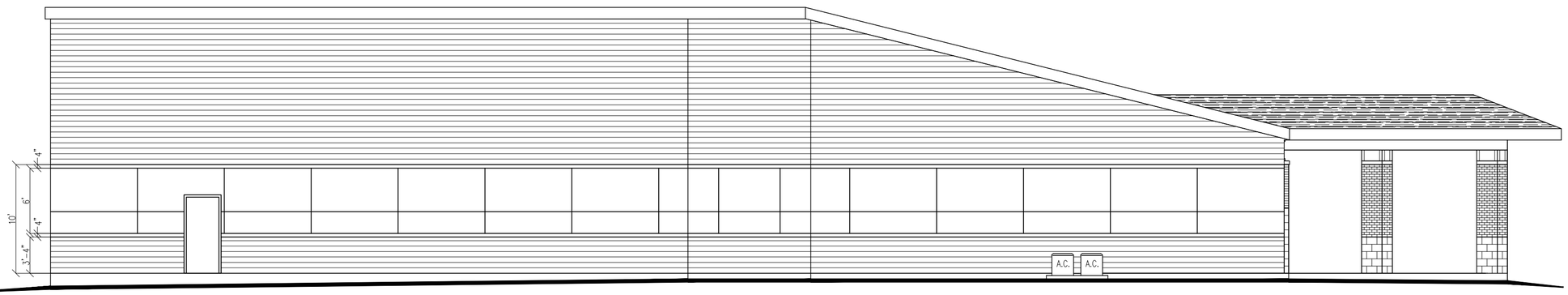
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A-7



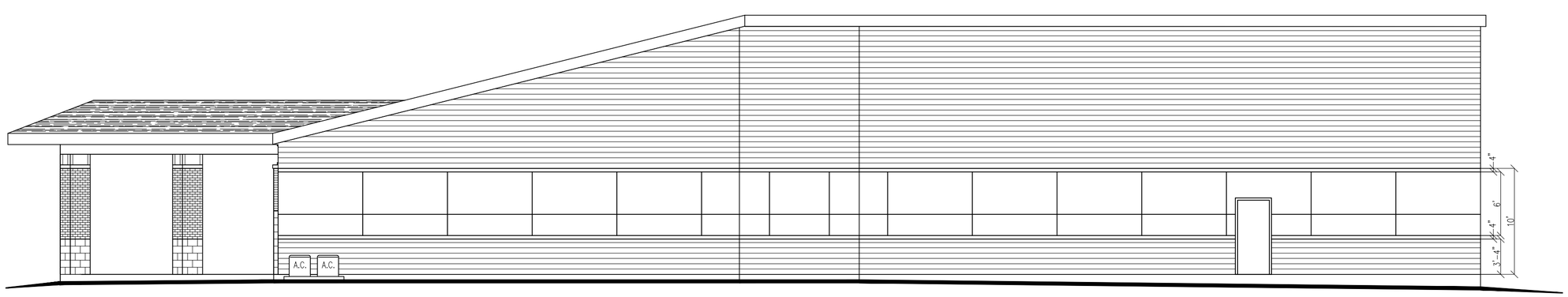
1 WEST ELEVATION
A-8 1/8" = 1'-0"



2 NORTH ELEVATION
A-8 1/8" = 1'-0"



3 EAST ELEVATION
A-8 1/8" = 1'-0"



4 SOUTH ELEVATION
A-8 1/8" = 1'-0"

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Community Church

drawing title ■
EXTERIOR
ELEVATIONS

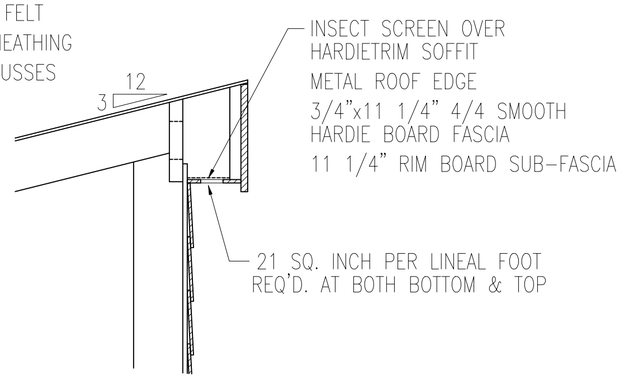
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sheet no. ■
A-8

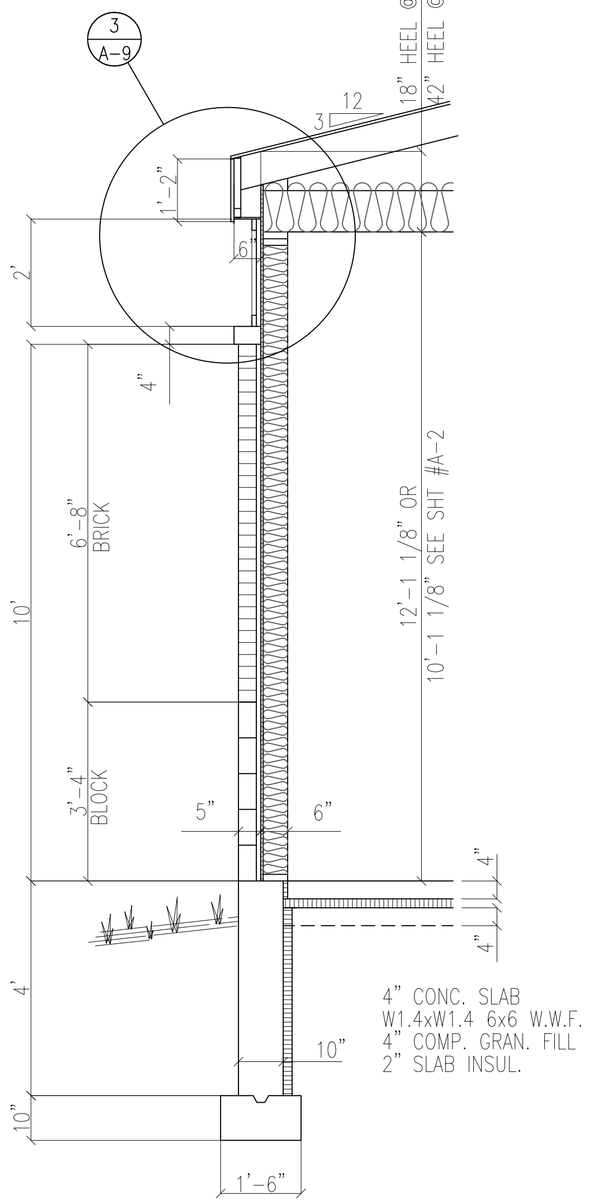
Ice dam membrane around roof perimeter (code requires from roof edge to at least 24" inside the exterior wall line of the building – IBC 1507.2.8.2)

ASPHALT SHINGLES
2 LAYERS 15# ROOF FELT
5/8" O.S.B. ROOF SHEATHING
ENGINEERED ROOF TRUSSES



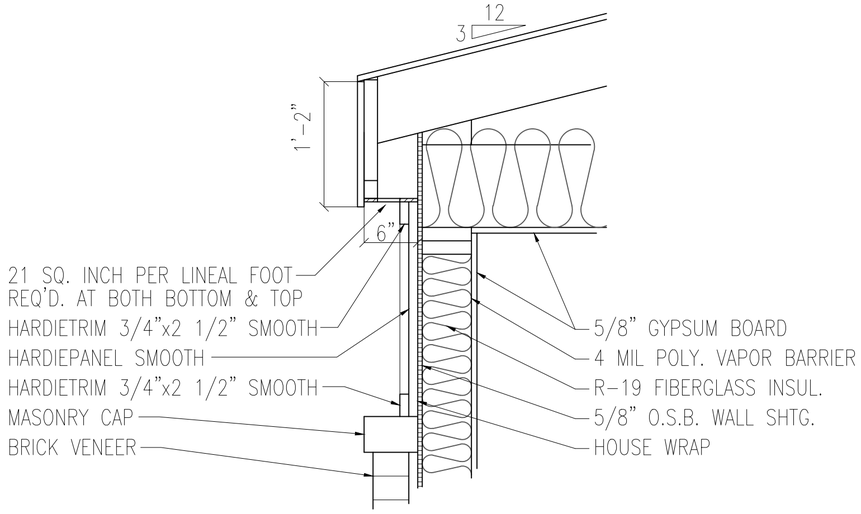
4 / A-9 WALL SECTION
1" = 1'-0"

5/8 type X gyp board on all exterior load bearing walls to meet 1 hr fire rating

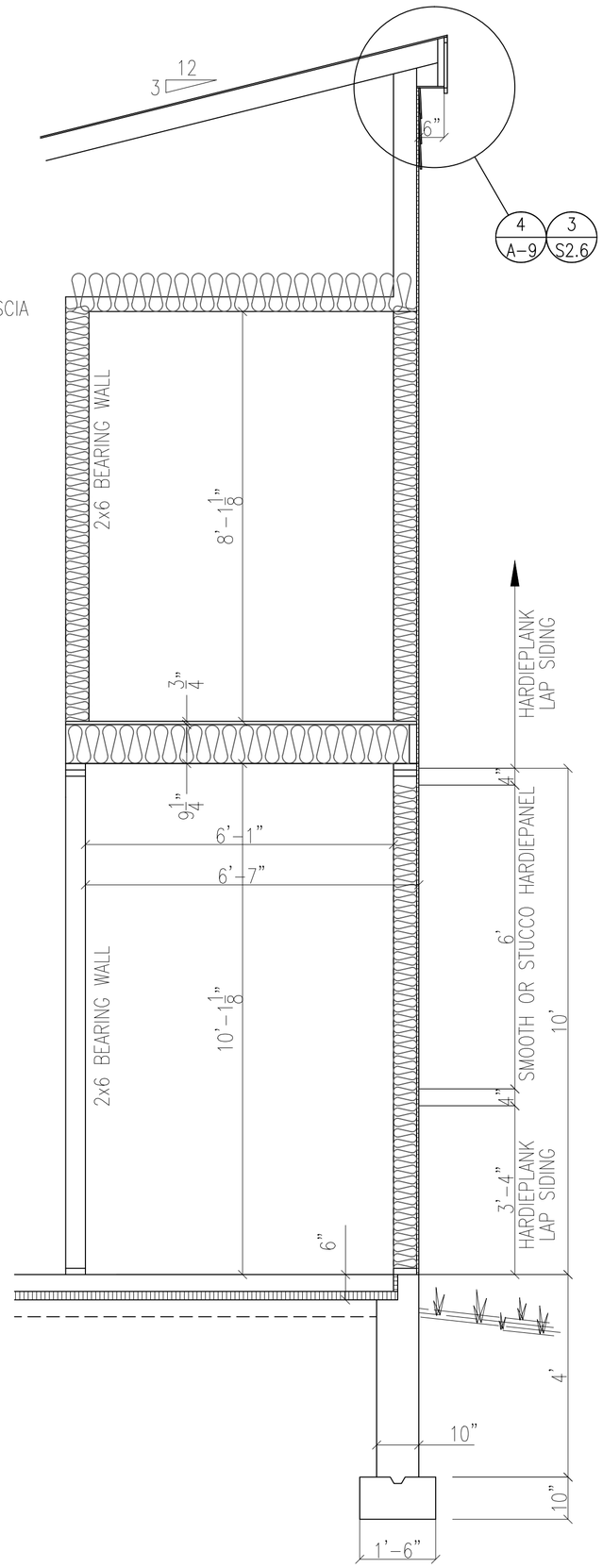


1 / A-9 WALL SECTION
1/2" = 1'-0"

SEE DETAIL 2/S2.3 FOR STRUCTURAL



3 / A-9 WALL SECTION
1" = 1'-0"



2 / A-9 WALL SECTION
1/2" = 1'-0"

SEE DETAIL 1/S2.3 FOR STRUCTURAL

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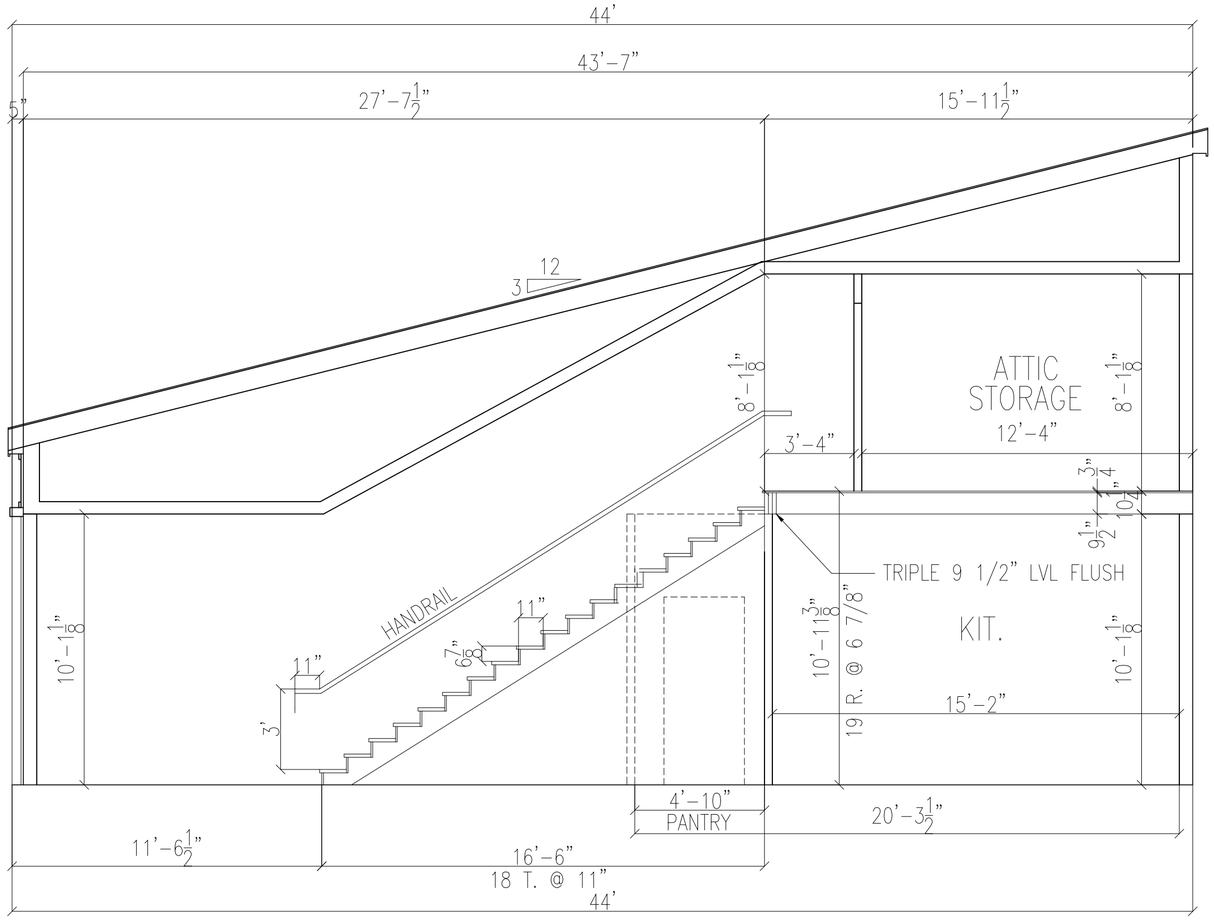
drawing title
SECTIONS
SHEET

job no.

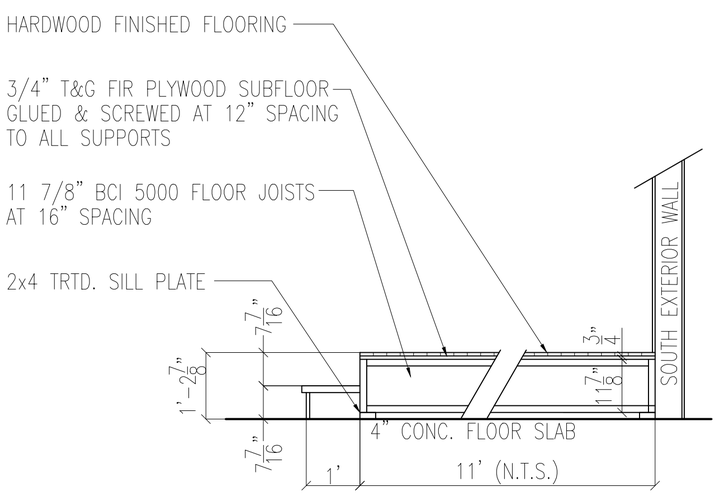
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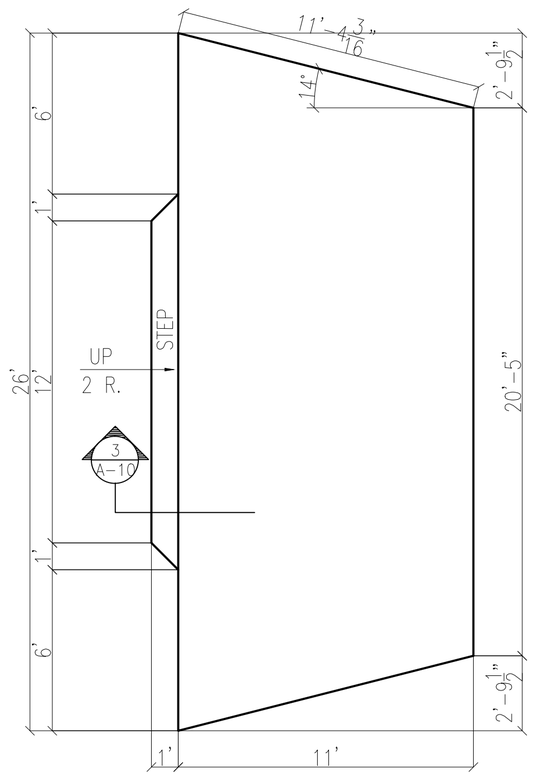
sheet no.
A-9



1 STAIR SECTION
A-10 1/4" = 1'-0"



3 STAGE SECTION
A-10 1/2" = 1'-0"



2 STAGE PLAN VIEW
A-10 1/4" = 1'-0"

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drawing title
STAIR
SECTION

job no.

date
AUG. 10, 2009

revised
OCT. 6, 2009

sheet no.
A-10

SPECIFICATION SECTION

DIVISION 1 GENERAL REQUIREMENTS

SUMMARY OF WORK
REFERENCES:
Documents listed below are included by reference and have the same meaning and force as though they were physically included herein:

Standard Form of Agreement Between Owner and Architect, AIA - B141-1997; General Conditions of the Contract for Construction, AIA - A201-1997; Performance Bond and Payment Bond, AIA - A312-December, 1984. Copies of these documents may be viewed at, or purchased from the Architect. Requirements of the work are contained in these abbreviated contract documents, and include cross-references herein to published information, which is not necessarily bound therewith.

PROJECT DESCRIPTION:
Without force and effect on requirements of contract documents, the description of the work of the Contract can be summarized as NORTH LIBERTY VISITORS CENTER, North Liberty, IA, including site work, complete and ready to be equipped with furnishings by Owner.

ALTERNATES/ALLOWANCES:
Submit proposed product selections on work specified by allowances well in advance of required purchase dates, fully documented for Owner & Architect's review.

CUTTING AND PATCHING:
Do not cut-and-patch structural work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio. Submit proposal and request and obtain Architect's approval before proceeding with cut-and-patch of structural work. Limitation on Approvals: Architect's approval to proceed with cutting and patching does not waive right to later require removal/replacement of work found to be cut-and-patched in an unsatisfactory manner, as judged by Architect.

DEFINITIONS:
Except as specifically defined otherwise, the following definitions (shown by underlined words or phrases) supplement definitions of the Contract, General Conditions, Supplementary Conditions and other general contract documents, and apply generally to the work. General Requirements: Provisions of Division-1 sections of specifications. Indicated: Shown on drawings by notes, graphics or schedules, or written into other portions of contract documents. Terms such as "shown", "noted", "scheduled" and "specified" have same meaning as "indicated", and are used to assist the reader in locating particular information. Directed, Requested, Approved, Accepted, etc.: These terms imply "by the Architect", unless otherwise indicated. Approved by Architect: In no case releases Contractor from responsibility to fulfill requirements of contract documents. Project Site: Space available to Contractor at location of project, either exclusively or to be shared with separate contractors, for performance of the work. Furnish: Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar subsequent requirements. Install: Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar requirements. Provide: Furnish and install, complete and ready for intended use. Installer: Entity (firm or person) engaged to install work, by Contractor, subcontractor or sub-subcontractor. Installers are required to be skilled experts in work they are engaged to install. Specification Text Format: Underscoring facilities for scan reading, no other meaning. Imperative language is directed at Contractor, unless otherwise noted.

Overlapping/Conflicting Requirements: Most stringent applies and will be enforced, unless more detailed language written directly into contract documents clearly indicates that a less stringent requirement is acceptable. **Refer uncertainties to Architect for decision before proceeding.** Where optional requirements are specified in a parallel manner, option is intended to be Contractor's unless otherwise indicated. Minimum Requirements: Indicated requirements are for a specific minimum acceptable level of quality/quantity, as recognized in the industry. Actual work must comply (within specified tolerances), or may exceed minimums within reasonable limits. Refer uncertainties to Architect before proceeding. Testing Laboratory: An independent entity engaged for the project to provide inspections, tests, interpretations, reports and similar services.

INDUSTRY STANDARDS:
Applicable standards of construction industry have same force and effect on performance of the work as if copied directly into contract documents or bound and published therewith. Standards referenced in contract documents or in governing regulations have precedence over non-referenced standards, insofar as different standards may _____contain overlapping or conflicting requirements. Comply with standards in effect as of date of contract documents, unless otherwise indicated.

ABBREVIATIONS:
Where abbreviations or acronyms are used in contract documents, they mean the well-recognized name of entity in building construction industry; refer uncertainties to Architect before proceeding, or consult "Encyclopedia of Associations" by Gale Research Co.

PERMITS:
Contractor is responsible for obtaining all necessary permits required for construction, including, but not limited to, City and/or County building permits, and energy audits.

TESTING:
Contractor is responsible for making arrangements for required tests, inspections and approvals with an independent testing laboratory or entity, (including, but not limited to, soils engineer and concrete testing), acceptable to Owner and Architect, and shall bear all related costs of tests, inspections and approvals. Owner shall bear cost of tests, inspections and approvals with do not become requirements until after bids are received or negotiations concluded. Refer to individual sections of these Specifications and AIA Document, A201-1987, esp. Article 13, for further information.

SCHEDULES/REPORTS/PAYMENTS:
Prepare a Schedule of Values to show breakdown of Contract Sum corresponding with payment request breakdown and progress schedule line items. Show dollar value and percent of total for each unit of work scheduled. Submit not less than 7 days prior to first payment request, and revise each time schedule is affected by change order or other value revision (by Contractor). Include with submittal of Schedule of Values a list of principal subcontractors and suppliers, copies of building permits and similar start-up authorization or certifications, performance/payment bonds (if required), and evidence of insurance coverage.

Except as otherwise indicated, sequence of progress payments is to be regular, and each must be consistent with previous applications and payments. It is recognized that certain applications involve extra requirements, including initial application, application at times of substantial completion, and final payment application. Submit request for each calendar month, not later than 15th day of following month.

Use form AIA G702/G703-1983, or as provided by owner, fully completed and executed; submitted in triplicate, including attachment of lien waivers and similar documentation with one copy. The Owner will retain, until Final Payment, five (5) percent of the amount due the contractor on account of progress payments. The amount of each payment will be based on ninety-five (95) percent of all material and labor incorporated in the work, plus ninety-five (95) percent of all materials suitably stored at the site, less the sum of all previous payments.

Following issuance by Architect of Certificate of Substantial Completion, Contractor may submit special payment request, provided the following have been completed: Obtain permits, certificates of inspection and other approvals and releases by governing authorities, required for Owner's occupancy and use of project. Submit warranties and similar documentation. Submit maintenance manuals and provide instruction to Owner or Owner's personnel. Complete final cleaning of the work. Submit record documents. Submit listing of work to be completed before final acceptance.

Following completion of the following requirements, final payment request may be submitted: Complete work listed as incomplete at time of substantial completion, or otherwise assure Owner of subsequent completion of individual incomplete items. Settle liens and other claims, or assure Owner of subsequent settlement. Submit proof of payment on fees, taxes and similar obligations. Transfer operational, access, security and similar provisions to Owner; and remove temporary facilities, tools and similar items. Complete requirements specified in "Project Close-out" section.

PROCEDURES:
Contractor to coordinate various elements of the work and entities engaged to perform work; and coordinate the work with existing facilities/conditions, and with work by separate contractors (if any) and by Owner.
Surveying/Recording: Working from established lines and levels at or near project site, establish and maintain dependable markers for lines and levels of the work, including markers for each story of construction. Calculate dimensions and measure for layout of work; do not scale the drawings. **Report deviations (if any) from drawing information on existing conditions, to Architect at time of discovery.**

Preparation for Installers: Review significant aspects of requirements for the work. Record discussion and distribute as plan of action. Pre-installation conferences are specifically required for (but not limited to) the following installations: Footings & Footing Drains, Floor Tile, Waterproofing, Insulation, Drywall, and Roofing.

Installation: Comply with manufacturer's instructions and recommendations to extent printed information is more detailed or stringent than requirements contained directly in contract documents. Install work during time and under conditions which will ensure best possible results, coordinated with required inspection and testing. Anchor work securely in place, properly located by measured line and level, organized for best possible uniformity, visual effect, operational efficiency, durability, and similar benefit to Owner's use. Isolate non-compatible materials from contact, sufficiently to prevent deterioration. Mount individual units of work at industry-recognized mounting heights, if not otherwise indicated; **refer uncertainties to Architect before proceeding.** Locations of exterior utility meters require approval from Architect or Owner before installation. Clean each element of work at time of installation. Provide sufficient maintenance and protection during construction to ensure freedom from damage and deterioration at time of substantial completion.

SUBMITTALS:
Shop drawings include specially-prepared technical data for this project, including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for general application to a range of similar projects. Provide newly-prepared information, on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated), with name of preparer indicated (firm name). Show dimensions and note which are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards, and special coordination requirements. Do not allow shop drawing copies without appropriate final "Action" markings by Architect to be used in connection with the work. Shop Drawings may be submitted by facsimile machine (Fax) ONLY if the originals are prepared in 8-1/2" x 11" format. Larger formats may NOT be reduced or cut-up to fit the Fax machine format.

Product data include standard printed information on materials, products and systems; with the designation of selections from among available choices printed therein. Collect required data into one submittal for each unit of work or system; and mark each copy to show which choices and options are applicable to project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and special coordination requirements. Maintain one set of product data (for each submittal) at project site, available for reference by Architect and others.

Samples include both fabricated and non-fabricated physical examples of materials, products and units of work; both as complete units and as smaller portions of units of work; either for limited visual inspection or (where indicated) for more detailed testing and analysis. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples (not less than 3 units) where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where Architect's selection is required. Prepare samples to match Architect's sample where so indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by Architect. Architect will not "test" samples (except as otherwise indicated) for compliance with other requirements, which are therefore the exclusive responsibility of Contractor. Submit 2 sets of samples in final submittal; one set will be returned. Maintain returned final set of samples at project site, in suitable condition and available for quality control comparisons by Architect and by others.

Mock-ups are a special form of samples, which are too large or otherwise inconvenient for handling in specified manner for transmittal of sample submittals. Comply with requirements for "samples" to greatest extent possible.

Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the work and not processed as shop drawings, product data or samples. In addition to copies of warranties and maintenance agreements desired for Contractor's use, furnish 2 executed copies, except furnish 2 additional (conformed) copies where required for maintenance manuals. Survey Copies: Furnish 2 copies of survey data, except furnish 10 copies of final property survey (if any). "Close-out" Submittals: Record Document Copies: Furnish one set. Maintenance/ Operating Manuals: Furnish 2 bound copies. Materials and Tools: Refer to individual work sections for required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys and similar physical units to be submitted.

General Distribution: Provide additional distribution of submittals (not included in foregoing copy submittal requirements) to subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for proper performance of the work.

Scheduling: Where appropriate in administrative submittals (listing of products, manufacturers, suppliers and subcontractors, and in job progress schedule), show principal work-related submittals and time requirements for coordination of submittal activity with related work in each instance.

Coordination and Sequencing: Coordinate preparation and processing of submittals with performance of the work so that work will not be delayed by submittals. Coordinate and sequence different categories of submittals for same work, and for interfacing units of work, so that one will not be delayed for coordination of Architect's review with another. Do not proceed with installation of materials, products or systems until final copy of applicable product date is in possession of Installer.

Preparation of Submittals: Provide permanent marking on each submittal to identify project, date, Contractor, subcontractor, submittal name and similar information to distinguish it from other submittals. Show Contractor's executed review and approval marking and provide space for Architect's "Action" marking. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through Contractor's office will be returned by Architect "without action". Architect's action stamp, for use on submittals to be returned to Contractor, is self-explanatory as marked.

TEMPORARY UTILITY SERVICES:
Except as otherwise indicated, costs associated with temporary facilities are Contractor's (in Contract Sum), including power/fuel/water usage until time of substantial completion for each major area of project. Connect with local/municipal services and franchised utility companies where feasible. At earliest feasible date, use permanent utility services installed for project, and disconnect and remove temporary service lines. (Temporary facilities remain property of Contractor.) At time of substantial completion, clean sewers which have been affected by discharge of waste water or runoff from project during construction. Comply with governing regulations and requests by authorities.

TEMPORARY CONSTRUCTION FACILITIES:
Provide facilities and services as may be needed to properly support primary construction process and meet governing regulations. Use permanent facilities not permitted, except as otherwise indicated, and except after time of substantial completion. When usage of existing facilities and utilities is allowed, usage must be coordinated with Owner. Water Distribution: Minimum 1" pipe size, with 3/4" hose outlets and vacuum breakers, spaced to reach points of use with 100' maximum length of hose. Maintain 3/4" x 100' hose at each outlet, for both general use and incidental fire protection. Protect water distribution from freezing, by drainage, insulation or temporary heating. Dewatering: Maintain site and construction work free of water accumulation. Do not endanger the work or adjacent properties. Maintain protection against flooding. Endosure: Provide fire-retarding tarpaulins with UL label and flame-spread of 15 or less; reinforced translucent type where day lighting would be useful for performance of work. Use a minimum of wood framing and plywood enclosure; or, where expanse exceeds 100 sq. ft. area, use fire-retarding UL labeled "A" plywood. Enclose spaces requiring temporary heat, and other spaces where work would otherwise be adversely affected. Temporary Heat: Provide gas/oil fired space heaters which are UL labeled and approved for construction space heating by appropriate agency. Provide adequate ventilation and thermostatic control. Power Distribution: Provide weatherproof, grounded circuits with ground-fault interruption features, with proper power characteristics and either permanently wired or plug-in connections as appropriate for intended use. Provide overload-protected disconnect switch for each circuit at distribution panel. Space 4-gang convenience outlets (20 Amp circuit) so that every portion of work can be reached with 100' extension cord. Temporary Lighting: Provide lighting of intensity and quality sufficient for proper and safe performance of the work, and for access thereto and security thereof. Miscellaneous Facilities: Provide miscellaneous facilities as needed, including temporary stairs, temporary treads on permanent stairs, ramps, ladders, runways, staging, shoring, scaffolding, bridges, railings, bracing, barriers, closures, platforms, temporary partitions, waste chutes and similar items.

SECURITY AND PROTECTION:
Provide facilities and services as necessary to effectively protect project from losses and persons from injury during the course of construction. In addition to temporary water service for construction, and in placing of permanent fire protection facilities in operating condition at earliest feasible date, provide fire extinguishers of types and sizes recommended by NFPA. Provide barricades at hazardous locations, complete with signs, general lighting, warning lights and similar devices where appropriate or required by regulations. As construction of building structure or shell progresses and it becomes feasible to secure project against intrusion, provide temporary security enclosure, doors and locks as necessary to prevent unauthorized entrance. Review exposure to possible environmental problems, with Owner and Architect. Establish procedures and discipline among tradesmen and provide needed facilities which will protect against environmental problems (pollution of air, water and soil, excessive noise, and similar problems).

PRODUCTS AND SUBSTITUTIONS:
Single Product Named: Provide only that product, unless determined to be unavailable, non-compatible with the work, or non-complying with requirements or governing regulations. Two or More Products Named: Selection from named products is Contractor's option, provided selection complies with requirements.

NAMEPLATES:
Where indicated or needed for operation and maintenance, provide permanent nameplates on equipment, located in inconspicuous but accessible places, and containing suitable information and operational data. Otherwise, do not allow manufacturer's trademarks or similar labels or nameplates to be placed on products in locations where exposed to view after installation.

SUBSTITUTIONS:
Requests by Contractor will be considered when substantial advantage is offered Owner after deducting offsetting disadvantages including delays, additional compensation to Architect for redesign, investigation, evaluation and other necessary services, and similar considerations. Include full documentation, including product data, samples where appropriate, detailed performance comparisons and evaluation, testing laboratory reports where applicable, coordination information for effect on other work and time schedule, cost information for proposed change order, Contractor's general certification of recommended substitution, and similar information germane to circumstance. Approval of substitutions is possible only by change order procedure.

WARRANTIES (GUARANTEES):
Categories of warranties required for the work include special project warranty issued by Contractor and, where required, countersigned by Installer or other recognized entity involved in performance of the work; specified product warranty issued by a manufacturer or fabricator, for compliance with requirements in contract documents; and coincidental product warranty available on a product incorporated into the work, by virtue of manufacturer's publication of warranty without regard for application requirements (non-specified warranty).

PROJECT CLOSE-OUT:
Close-out provisions apply primarily to close-out of actual physical work, not to administrative matters such as final payment and changeover of insurance. Close-out requirements relate to both final completion and substantial completion of work, and apply to individual portions of completed work as well as the total work. Specific requirements in other sections have precedence over these general requirements.

Submit executed warranties, workmanship bonds, maintenance agreements, inspection certificates and similar required documentation for specific units of work, enabling Owner's unrestricted occupancy and use. Submit record documentation, maintenance manuals, tools, spare parts, keys and similar operational items. Provide complete written and on-location instruction to Owner or Owner's operating personnel, sufficient to ensure safe, secure, efficient, non-failing utilization, start-up and operation of systems. Provide instructions for mechanical/electrical/electronic systems, live plant materials, roofing, flashing, joint sealers, and floor finishes. Remove temporary facilities and tools.

At close-out time, clean or re-clean entire work to normal level for "first class" maintenance/cleaning of building projects of a similar nature. Remove non-permanent protection and labels, polish glass, clean exposed finishes, touch-up minor finish damage, clean or replace filters of mechanical systems, remove debris and broom-clean non-occupied spaces, sanitize plumbing/food service facilities, clean light fixtures and replace burned-out/dimmed lamps, sweep and wash paved areas, police yards and grounds, and perform similar cleanup operations needed to produce a "clean" condition as judged by Architect.

Upon receipt of Contractor's request, Architect will either proceed with inspection or advise Contractor of prerequisites not fulfilled. Following initial inspection, Architect will either prepare certificate of substantial completion, or advise Contractor of work which must be performed prior to issuance of certificate; and repeat inspection when requested and assured that work has been substantially completed. Results of completed inspection will form initial "punch list" for final acceptance. Upon receipt of Contractor's notice that work has been completed, including punch list items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, Architect will re-inspect work. Upon completion of re-inspection, Architect will either recommend final acceptance and final payment, or advise Contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, procedure will be repeated.

DIVISION 2 SITEWORK

02110 - SITE CLEARING:
Extent of site clearing shown on drawings. **Site clearing work** includes removing existing structures complete with footing, but is not limited to, protection of existing trees, removal of trees and other vegetation, topsoil stripping, clearing and grubbing, removing above-grade improvements, if any, as shown on drawings, and filling or otherwise treating other below-grade features, if any, as shown on drawings.

Protections: Provide temporary fences, barricades, coverings, or other protections to preserve existing items indicated to remain and to prevent injury or damage to persons or property. Protect existing trees and other vegetation indicated to remain with temporary guards. **Repair or replace** trees and vegetation indicted to remain which are damaged by construction operations. Employ licensed arborist to repair damages to trees and shrubs.

Remove trees, shrubs, grass and other vegetation, improvements, or obstructions interfering with installation of new construction as shown on site plan and as directed. Remove such items elsewhere on site or premises as specifically indicted. Removal includes digging out stumps and roots.

Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4". Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2" in diameter, and without weeds, roots and other objectionable material. Stockpile topsoil in storage piles to be replaced as directed at end of project. Construct storage piles to freely drain surface water. Remove waste materials and unsuitable topsoil from Owner's property and dispose of off site in legal manner.

02200 - EARTHWORK:

Extent of earthwork indicated on drawings. Preparation of sub-grade for building slabs, walks, and pavements is included as part of this work. Drainage fill course for support of building slabs is included as part of this work. Obtain prior approval for location of trench placement. Backfilling of trenches within building lines is included as part of this work. Soils to be replaced and compacted with no excess dirt left above surface after trenching work is completed.
Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.
Contractor to hire registered Soils Engineer to probe and inspect footing excavations at frequent enough intervals to determine suitability of materials at design bearing level prior to placement of concrete. Where unacceptable materials encountered, soils to be removed and replaced with controlled engineered fill. Contractor to provide Owner with results. Sufficient tests shall be taken by soils engineer to certify that cut and fill was performed in accordance with accepted and specified methods.

Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Use of explosives is not permitted. Barricade open excavations, post with warning lights as required. Comply with all regulations of authorities having jurisdiction. Under no circumstances should work encroach on adjacent property without prior approval of all Owners and Architect. If sub-surface rock base or other unforeseen, unusual sub-surface conditions are encountered, Contractor to stop work, and supply Owner, in writing, with unit price for removal of rock or correction of unusual conditions. Owner's written acceptance of extra costs for correcting work shall serve as approval to Contractor to resume work.

Contractor to establish and maintain during construction, grade and building lines. Set heights including crown and slope as necessary.
Unauthorized excavation consists of dimensions without specific direction of Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be at Contractor's expense.

Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling. Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area. Establish and maintain temporary drainage outside excavation limits to convey rain water and water removed from excavations away from excavation.

Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10', and extending a sufficient distance from footings and foundations to permit placing and removal of concrete form work, installation of services, other construction, and for inspection. In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F. (1 degree C.).

Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Place backfill and fill materials in layers not more than 4" in loose depth for material compacted by hand-operated tampers. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice. Place backfill and fill materials evenly adjacent to structures, piping or conduit, to required elevations. Prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping or conduit to approximately same elevation in each lift.

Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades. Grade areas adjacent to building lines to drain away from structures and to prevent ponding.

Grading Surface of Fill Under Building Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1/2" when tested with a 10' straightedge. Place drainage fill material to support the concrete building slabs on prepared sub-grade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations. Remove waste materials, including unacceptable excavated material, trash and debris, and dispose of it off Owner's property.

DIVISION 3 CONCRETE

03010 - CONCRETE:
Codes and Standards: ACI 301 "Specifications for Structural Concrete Buildings"; ACI 318," Building Code Requirements for Reinforced Concrete".
Testing: Employ acceptable concrete testing laboratory to perform materials evaluation, testing and design of concrete mixes. Certificates, signed by concrete producer and Contractor, may be submitted in lieu of material testing when acceptable to Architect.

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SPECIFICATIONS SHEET

job no.

date
AUG. 10, 2009

revised

sheet no.
A-11

Quality Control: Perform sampling and testing during concrete placement, as follows: (This testing does not relieve Contractor of responsibility of providing concrete in compliance with specifications. Contractor may perform additional testing as necessary, at no expense to Owner, to ensure quality of concrete.) Sampling: ASTM C 172; Slump: ASTM C 143, one test for each load at point of discharge; Air Content: ASTM C 173, one for each set of compressive strength specimens; Compressive Strength: ASTM C 39, one set for each 50 cu. yds. of fraction thereof of each class of concrete; 2 specimens tested at 7 days, 3 specimens tested at 28 days, and one retained for later testing if required; when the total quantity of a given class of concrete is less than 50 cu. yds., strength tests may be waived by Architect if field experience indicates evidence of satisfactory strength. Test results will be reported in writing to Architect, Contractor and concrete producer on same day tests are made.

Submit manufacturer's product data with installation instructions for proprietary materials including reinforcement and forming accessories, admixtures, joint materials, hardeners, curing materials and others as requested by Architect.

Proportion mixes by either laboratory trial batch or field experience method complying with ACI 301. Submit written report to Architect for each proposed concrete mix at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed and are acceptable to Architect. Mix designs may be adjusted when material characteristics, job conditions, weather, test results or other circumstances warrant. Do not use revised concrete mixes until submitted to and accepted by Architect. Use air-entering admixture in all concrete, providing not less than 4% nor more than 8% entrained air for concrete exposed to freezing and thawing, and from 2% to 4% for other concrete.

Concrete Materials: Portland Cement: ASTM C 150, Type as required. Aggregates: ASTM C 33, except local aggregates of proven durability may be used when acceptable to Architect. Clean, drinkable water. Air-entraining Admixture: ASTM C 260. Water-Reducing Admixture: ASTM C 494. Only use admixtures which have been tested and accepted in mix designs, unless otherwise acceptable.

Related Materials: Flat dumbbell or center bulb type waterstops, size to suit joints, of either rubber (CRD C 513) or PVC (CRD C 572). Clear 8-mils thick polyethylene; polyethylene-coated moisture barrier paper; 1/8" thick asphalt core membrane sheet. Membrane-Forming Curing Compound: ASTM C 309, Type I. See Division-7 for joint fillers. Provide form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection. Deformed Reinforcing Bars: ASTM A 615, Grade 40 unless otherwise indicated. Welded Wire Fabric: ASTM A 185.

Design, erect, support, brace and maintain formwork to support loads that might be applied. Construct form work so concrete members and structures are of correct size, shape, alignment, elevation and position. Provide for openings, offsets, key ways, recesses, and inserts, and other features required in work. Use selected materials to obtain required finished. Fabricate forms for easy removal without hammering or prying against concrete surfaces.

Factory-fabricated, removable or snap-off metal form ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal. Provide openings in concrete form work to accommodate work of other trades. Thoroughly clean forms and adjacent surfaces to receive concrete. Re-tighten forms and bracing after concrete placement, if required to eliminate mortar leaks and maintain proper alignment.

Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports. Clean reinforcement of materials which reduce or destroy bond with concrete. Place reinforcement to obtain at least minimum coverage for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

Construct isolation joints in slabs on ground at points of contact between slabs-on-ground and vertical surfaces, such as column pedestals, foundation walls, pavement and elsewhere as required. Joint filler and sealant materials specified in Division 7 sections of these specifications. Construct control joints in slabs-on-ground to form panels or patterns as shown.

Coat contact surfaces of forms with a form-coating compound before reinforcement is placed. Coordinate the installation of joint material and moisture barriers with placement of forms and reinforcing steel. Comply with ACI 304. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Do not use vibrators to transport concrete inside forms.

Deposit and consolidate slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed. Bring slab surfaces to correct level with straightedge and strikeoff. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surface prior to beginning finishing operations. Maintain reinforcing in proper position during concrete placement operations. Pull up wire mesh to center of slab during placement.

Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306. When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.

For formed concrete surfaces exposed to view, or that are to be covered or coated with covering material applied directly to concrete, such as waterproofing, damp proofing, painting, or other similar system, repair and patch defective areas with fins or other projections completely removed and smoothed. At tops of walls, horizontal offsets, surfaces occurring adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces.

Trowel Finish: Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/8" in 10' when tested with a 10' straightedge. Grind smooth surface defects which would telegraph through applied floor covering system.

Non-Slip Broom Finish: Apply non-slip finish to exterior concrete platforms, steps and ramps, and elsewhere as indicated. Immediately after trowel finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 72 hours. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Provide moisture curing by keeping concrete surface continuously moist by an approved method. Avoid rapid drying at end of final curing period.

Formwork may be removed after cumulatively curing at not less than 50 degrees F (10C) for a minimum of 48 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained. Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Architect.

DIVISION 4 MASONRY

04200 - UNIT MASONRY WORK:

Extent of each type of **limestone sills, bricks and concrete masonry units** shown on drawings. Provide masonry units from one manufacturer, of uniform texture and color for each kind required, for each continuous area and visually related areas. Submit samples of each exposed masonry unit, and colored masonry mortar, if any. Include in each set of samples the full range of exposed colors and textures to be expected in finished work.

Protect work by covering partially completed structures when work is not in progress. Prevent stains on exposed faces of masonry. Follow recommended procedures for protections, material handling and enclosures for cold weather work.

Brick: Standard Modular size, 2-1/4" x 3-5/8" x 7-5/8". Caps, sills, etc. For sills, caps and similar applications resulting in exposure of brick surfaces which otherwise would be concealed from view, provide uncored or un-frogged units will exposed surfaces finished. Facing Brick :ASTM C216, and as follows: grade SW, Type FBS(normal size and color variations), texture and color as selected by architect. Building Brick: ASTM C 62, Grade MW, except grade SW where indicated by ASTM 62 grade requirements for applicable weathering index and exposure.

Salvaged Brick: Salvaged brick may be provided by owner and is preferred for this project. Obtain salvaged matching brick for the foundation work.

Mortar: Portland Cement - ASTM C 150, Type I, non-staining, except Type III may be used for cold weather construction. Hydrated Lime - ASTM C 207, Type S. Mortar Aggregate - ASTM C 144, except for joints less than 1/4" use aggregated graded with 100% passing the No. 16 sieve. Colored Mortar Pigments - Natural and synthetic iron oxides and chromium oxides compounded for use in mortar mixes. Water - clean and potable. "Soft" mortar used in salvaged brick-work with appropriate sand and lime mix should be used for the restoration work.

Accessories: Horizontal Joint Reinforcing and Ties - provide prefabricated welded wire units in straight lengths of not less than 10", 9 gage cold-drawn steel wire complying with ASTM A 82. Truss type joint reinforcing with diagonal cross rods spaced more than 16" o.c. Anchors and Ties - Fabricate from not less than 16 gage sheet metal or 3/8" diameter rod stock, with hot-dip galvanized coating, ASTM A153, Class 82. **Flashings** -Concealed flashings of black, 20-mil thick virgin polyvinyl chloride flexible sheets. **Miscellaneous** - Deformed steel reinforcing bars, ASTM a 615, Grade 60. Plastic weep holes - 1/4" round x 4" long medium density polyethylene plastic tubes.

Installation: Build masonry construction to size shown, with chases and recesses shown and as required for work of other trades, but providing not less than 8" of masonry between chase or recess and jamb of openings, or adjacent chases and recesses. Cut brick masonry units with motor-driven saw designed to cut

masonry with clean, sharp, un-chipped edges. Use dry cutting saws for cutting CMU's. Wet bricks having ASTM C 67 initial rates of absorption of more than 30 grams per 30 sq. in. per minute. Pattern Bond: Lay exposed masonry in the bond pattern shown or in running bond vertical joint in each course centered on units in course above and below. Lay concealed masonry with all units in a wythe bonded by lapping not less than 2". Bond and interlock each course of each wythe at corners, unless otherwise shown. Avoid use of less-than-half size units at corners, jambs and wherever possible. Lay walls plumb with courses level, accurately spaced and coordinated with other work. Flush vertical joints and raked horizontal joints. Lay brick with completely filled bed, head and collar joints; butter ends with enough mortar to fill head joints and shove into place. Do not slush head joints. Maintain joint widths shown. Fill collar joints after each course is laid. If masonry units are disturbed or adjustments required after laying, remove units, clean off mortar and reset in fresh mortar. Provide anchoring devices of standard type for facing and back-up involved. Install loose lintels of steel and other material where shown. Provide concealed flashing at or above all shelf angles, lintels, ledges and other obstructions to downward flow of water in the wall. Install flashings in accordance with manufacturer's instructions. Seal penetrations in flashing with mastic before covering with mortar. Install reglets and nailers for flashing and other related work where shown to be built into masonry work. Loose, chipped, broken, stained or otherwise damaged units or units mismatched to adjoining units to be removed and replaced. Enlarge any voids or holes in joints, except weep holes, and completely fill with mortar. Clean exposed brick surfaces by bucket and hand brush cleaning methods. BIA Technical Notes No. 20, "Cleaning Brick Masonry". Install weep holes at 24" centers.

DIVISION 6 WOOD AND PLASTICS

06100 - ROUGH CARPENTRY

Rough carpentry includes carpentry work not specified as part of other sections and which is generally not exposed, except as otherwise indicated. Types of work in this section include rough carpentry for wood framing, grounds, nailers, blocking and sleepers, furring, sheathing, subflooring, and underlayment. Finish carpentry is specified in another section within Division 6. Comply with PS 20 and with applicable rules of respective grading and inspecting agencies for species and products indicated. Plywood Product Standards: Comply with PS 1 (ANSI A 199.1) or applicable APA Performance Standard for type of panel. Keep materials dry at all times. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber and plywood, and provide air circulation within stacks.

Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow proper attachment of other work.

Lumber, General: Factory-mark each piece of lumber with type, grade, mill and grading agency, except omit marking from surfaces to be exposed with transparent finish or without finish. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

Dressed lumber, S4S. Seasoned lumber with 19% maximum moisture content at time of dressing.

Exterior Framing: 2 x 6.

Framing Lumber (2" to 4" thick) (Wd-Frm): **Light framing** (less than 6" wide), provide construction grade, Douglas Fir/Larch. **Structural framing** (6" and wider and from 2" to 4" thick), provide No. 2 grade, Douglas Fir (WCLB or WWPA). **Exposed Framing** (2" to 4" thick) provide Wolmanized Douglas Fir. **Exposed Boards** (less than 2" thick) in Finished Work, provide 15% maximum, "MC-15" or "K-D", moisture content, Wolmanized Douglas Fir. **Concealed Boards**, provide lumber of 19% maximum moisture content (S-DRY), Southern Pine No. 3 Boards (SPIB), or any species graded Standard Boards (WCLB or WWPA).

Board Sizes: Provide standard board sizes.

Salvaged Wood: Salvage all lumber for reuse in restoration. Interior areas to be built from salvaged (aged) wood as possible.

Miscellaneous Lumber: Provide wood for support or attachment of other work including cant strips, bucks, nailers, blocking, furring, grounds, stripping and similar members. Provide lumber of sizes indicated, work into shapes shown, with 15% maximum moisture content for items not specified to receive wood preservative treatment, construction grade light framing size lumber of any species or board size as required. Provide construction grade boards (RIS or WCLB) or No. 2 boards (SPIB or WWPA).

Plywood: Identify each plywood panel with appropriate APA trademark. Where plywood panels will be used for the following concealed types of applications, provide APA Performance-Rated Panels complying with requirements indicated for grade designation, span rating, exposure durability classification, edge detail (where applicable) and thickness. Combination Subfloor-Underlayment: APA RATED STURDI-FLOOR, Exposure 2, Span Rating 24 o.c., Tongue and groove edge detail, 3/4" thick.

APA Rated **Roof Sheathing**, with exterior exposure durability classification, 32/16 span rating for shingled roof, 41/20 for membrane roof; 5/8" tongue-and-groove plywood roof sheathing for flat roofs or roofs with less than 3-in-12 pitch, Group 1 species.

Provide **hardboard underlayment**, Class 4 (service), Surface S1S, complying with ANSI A 135.4, in 1/4" thick, 4' x 4' panels, unless otherwise indicated, Masonite Brand Underlayment by Masonite Corp.

Miscellaneous Materials: **Fasteners and Anchorages**: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommending nails. Where rough carpentry work is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153). Asphalt saturated felt **building paper**, non-perforated ASTM D 226.

Where lumber or plywood is indicated as "Trt-Wd" or "Treated", or is specified herein to be treated, comply with applicable requirements of AWPA Standards C2 (Lumber) and C9 (Plywood) and of AWPB Standards. Mark each treated item with the AWPb Quality Mark Requirements. Pressure-treat with water-borne preservatives complying with AWPB LP-2. After treatment, kiln-dry to a maximum moisture content of 15%. Treat indicated items and wood cants, nailers, curbs, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers and waterproofing; wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with masonry or concrete; and band joists, sills and plates less than 8" above finished grade.

Installation: Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.

Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Counter-sink nail heads on exposed carpentry work. Use common wire nails, except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or soil receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; pre-drill as required.

Provide **wood grounds, nailers, blocking and sleepers** wherever required for screeding or attachment of other work.

Provide permanent grounds of dressed, preservative treated, key-bevelled lumber not less than 1-1/2" wide and of thickness required to bring face of ground to exact thickness of finish material involved. Remove temporary grounds when no longer required. Install **wood furring** plumb and level with closure strips at edges and openings. Shim with wood as required for tolerance of finished work. For furring to receive gypsum drywall, provide 2" x 2" furring at 16" o.c., vertically.

Provide **wood framing** members of sizes and on spacings shown, and frame openings as shown, or in compliance with recommendations of "Manual for House Framing" of National Forest Products Association. Do not splice structural members between supports.

Anchor and nail to comply with "Recommended Nailing Schedule" or "Manual for House Framing" and other recommendations of N.F.P.A.

Provide **stud framing** where shown. Unless otherwise shown, use 2 x 4 wood studs for interior partitions and 2 x 4 and 2 x 6 wood studs at exterior walls, spaced 16" o.c. with long face perpendicular to direction of wall or partition. Provide single bottom plate and double-top plates 2" thick by width of studs; except single top plate may be used for non-load-bearing partitions. Nail or anchor plates to supporting construction. Construct corners and intersections with not less than 3 studs.

Provide miscellaneous blocking and framing as required for support of facing materials, fixtures, specialty items and trim. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Set headers on edge and support on jamb studs. **For non-bearing partitions**, provide double-jamb studs and headers not less than 4" deep for openings 2' and less in width, and not less than 6" deep for wider openings. **For load-bearing partitions**, provide double-jamb studs for openings 6' and less in width, and triple-jamb studs for wider openings. Provide **headers** of depth as recommended by N.F.P.A. "Manual for House Framing" or as shown.

Provide joist framing of sizes and spacings shown. Install with crown edge up and support ends of each member with not less than 1-1/2" of bearing on wood or metal, or 3" on masonry. Attach to wood bearing members by toe nailing or metal connectors; frame to wood supporting members with wood ledgers as shown, or if not shown, with metal connectors. Frame openings with headers and trimmers supported by metal joist hangers; double headers and trimmers where span of header exceeds 4'. Do not notch in middle third of joists; limit notches to 1/6-depth of joist, 1/3 at ends. Do not bore holes larger than 1/3-depth of joist or locate closer than 2" from top or bottom. Provide solid blocking (2" thick by depth of joist) at ends of joists unless nailed to header or brand member. Lap members framing from opposite sides of beams, girders or partitions not less than 4" or securely tie opposing members together. Provide solid blocking (2" thick by depth of joist) over supports. Under jamb studs at openings, provide solid blocking between joists. Under non-load-bearing partitions, provide double joists separated by solid blocking equal to depth of studs above. Provide bridging between joists where nominal depth-to-thickness ratio exceeds 4, at intervals of 8'. Use bevel cut 1" x 4" or 2" x 3" wood bracing,

double-crossed and nailed both ends to joists, or use solid wood bridging 2" thick by depth of joist, end nailed to joist. Provide member size and spacing shown, and as previously specified for ceiling joist framing.

Provide special **framing for eaves, overhangs, dormers** and similar conditions, if any.

Provide **stair framing** members of size, space and configuration indicated, or as required to support a min. uniform live load of 100 psf and a min. concentrated load of 300 lbs. applied to an area of 4 sq. in. at center of tread. Fabricate stair framing members to provide exact fit with treads and riser with no change in dimensions between landings.

Comply with applicable recommendations for installation of plywood contained in Form No. E 304, "APA Design/Construction Guide - Residential and Commercial", for types of plywood products and applications indicated. **Fasten panels** glue-nail to framing for combination subflooring-underlayment; nail to framing for **sheathing**; and nail to supports for plywood backing panels. All roof sheathing joints to be supported underneath joint.

Comply with hardboard manufacturer's printed recommendations for preliminary work and **application of hardboard underlayment**. Nail underlayment to subflooring.

06200 - FINISH CARPENTRY

Provide finish carpentry work which is exposed to view, is non-structural, and which is not specified as part of other sections.

Work includes exterior and interior running and standing trim, wood shelving, exterior soffits, exterior window trims, interior window sills. Comply with applicable requirements of "Architectural Woodwork Quality Standards" published by AWI (Architectural Woodwork Institute), and "Manual of Millwork" by WIC.

Submit shop drawings for each item of architectural woodwork. Protect finish carpentry materials during transit, delivery, storage and handling to prevent damage, soiling and deterioration. Do not deliver finish carpentry materials, until other work which could damage woodwork has been completed in installation areas. Comply with PS 20, PS 1 ANSI A199.1 (Plywood), National Hardwood Lumber Association (NHLA) rules, PS 51, PS 56 (glued-up lumber) and all applicable standards.

Provide kiln-dried (KD) lumber with an average moisture content range of 9% to 13% for exterior work and 6% to 11% for interior work. Maintain operations so that moisture content values for woodwork at time of installation do not exceed the values required by the applicable grading and inspecting agency for the species and product indicated.

Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain measurements and verify dimensions and shop drawing details as required for accurate fit.

Lumber for painted finish: Use either glued-up or solid lumber stock.

Exterior finish carpentry (siding, decks): Species: Western Red Cedar; WWPA or WCLIB, Grade B & BTR - 1 & 2 clear, or treated lumber, at locations as shown on drawings.

Interior Finish Carpentry: Standing/running trim: Match profile and sizes as shown on drawings. Install with minimum number of joints possible using full-length pieces from maximum length of lumber available. Cope at returns, miter at corners. Use salvaged lumber in exposed areas to match interior fabric of restoration.

Provide nails, screws and other anchoring devices of type, size, material and finish required for application indicated to provide secure attachment, concealed where possible, and complying with applicable Federal Specifications.

Work to be installed plumb, level, true and straight with no distortions. Scribe and cut work to fit adjoining work. Install casework without distortion so that doors and drawers fit openings and are properly aligned. Joints to be uniform and tight. Repair or replace damaged or defective finish work.

DIVISION 7 THERMAL AND MOISTURE PROTECTION

07193 - VAPOR BARRIERS

Extent of work is shown on drawings.

Product Handling: Protect vapor barrier materials from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.

Products: Provide Polyethylene Elastic Sheet VB, (8-mil polyethylene film, 0.20 perm rating) under the drywall of all exterior walls and roof. Provide Polyethylene Elastic Sheet UB, (8-mil polyethylene film) under the concrete slab-on-grade and footing walls.

Installation: Seal VB at seams, perimeter, obstructions and penetrations, with adhesive, sealant or tape recommended by manufacturer. Anchor VB in place with adhesive or sealed mechanical anchorage.

07200 - INSULATION

Extent of Insulation work is as shown on drawings. Applications of insulation specified in this section include blanket-type building insulation and rigid roof insulation.

Quality Assurance: Thicknesses indicated are for thermal conductivity (K-value at 75 degrees F. or 24 degrees C) specified for each material. Provide adjusted thicknesses as directed for equivalent use of material having a different thermal conductivity. Where insulation is identified by "R" value, provide thickness required to achieve indicated value.

Product Handling: Protect insulation from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation. Do not expose plastic insulation to sunlight, except to extent necessary for period of installation and concealment.

Materials: Extruded Polystyrene Board Insulation: Rigid, closed-cell, expanded polystyrene insulation board with integral high-density skin; complying with FS HH-I-524, Type IV, min. 20 psi. compressive strength; k-value of 0.20; 0.3% maximum water absorption; 1.1 perm-inch max. water vapor transmission; manufacturer's standard lengths and widths. Use for work below grade, exterior. Manufacturers offering products which may be incorporated in the work include, but are not limited to, Dow Chemical Co.; Midland, MI, and UC Industries/U.S. Gypsum, Chicago, IL.

Glass Fiber Blanket/Batt Insulation: Manufacturer's standard lengths and widths as required to coordinate with spaces to be insulated. Provide Type I unfaced unit; semi-rigid where required for self-support. Provide Type III reflective vapor barrier faced units where indicated, with integral nailing flanges; aluminum foil barrier with rating of 0.5 perms. Use at band joists and other areas where sheet vapor is ineffective. Flame Spread Rating: 25 (ASTM E 84). Insulation shall be R-21 at 5-1/2" walls, R14 at 3-1/2" walls, R38 for ceilings, use 2 layers of 5 1/4" fiberglass batt, sound control batt R-11 for all bathrooms, around mechanical rooms. Manufacturers, subject to compliance with requirements, Certain-Teed Products Corp., Valley Forge, PA; Clecon Inc., Cleveland, OH; Misell Bros. Co., Atlanta, GA; or Owens-Corning Fiberglass Corp., Toledo, OH.

Auxiliary Insulating Materials: Polyethylene Vapor Barrier: 6-mil polyethylene film, with laboratory tested vapor transmission rating of 0.2 perms, natural color. Adhesive for Bonding Insulation: Type recommended by insulation manufacturer, and complying with fire-resistance requirements. Mechanical Anchors: Type and size as recommended by insulation manufacturer for type of application and condition of substrate.

Inspection and Preparation: Installer must examine substrates and conditions under which insulation work is to be performed, and must notify Contractor of unsatisfactory conditions. Do not proceed with insulation work until unsatisfactory conditions have been corrected. Clean substrates of substances harmful to insulation or vapor barriers, including removal of projections which might puncture vapor barriers.

Installation: Comply with insulation manufacturer's printed instructions for particular conditions of installation in each case, or consult manufacturer's technical representative for specific recommendations before proceeding with work. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

Vapor Barrier Insulation: Extend vapor barrier to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage system as needed. Secure in place with adhesives or other anchorage system as indicated. Extend vapor barriers to cover miscellaneous voids in insulated substrates, including those which have been stuffed with loose fiber-type insulation. Seal joints/seams in vapor barriers, seal to objects penetrating barriers, and seal to other surfaces at extremities of coverage by lapping with adhesive or taping to form a continuous barrier. Repair punctures and tears in vapor barriers, immediately before concealment by other work. Cover with adhesive applied vapor barrier material or with self-adhesive vapor barrier tape.

Protection: Protect installed insulation and vapor barriers from harmful weather exposures and from possible physical abuses, where possible by non-delayed installation of concealing work or, where that is not possible, by temporary covering or enclosure.

07200 - ROOF INSULATION

References: American Society for Testing and Materials - D312 Specification for Asphalt used in roofing, Federal Specifications - FA (GSA) (HH-1-1972/GEN) (HH-11972/2) (HH-1972/1) (HH-1-1972/3) Faced Polyisocyanurate Thermal Insulation Board, Factory Mutual Standard 4450/4470 - Class 1 fire rating, Windstorm Classification (1-60) (1-90), Atlas Roof Insulation Catalog.

Delivery, Storage, and Handling: Insulation packages shall be labeled to include material name, thermal value, and product code. When stored outdoors, insulation shall be stacked on pallets or dunnage at least 4 inches above ground level and covered with tarpaulins or other suitable covering. Condensation can be removed by slitting the bottom of the factory applied packaging.

Project Conditions: Follow local, state, and Federal regulations, safety standards and codes. When a conflict exists, use the stricter document. Follow insurance underwriter's requirements acceptable of use with Atlas Products. Do not apply any roofing materials when water in any form is present or proper adhesive temperature cannot be maintained. The roof deck shall be dry and structurally sound to support the live and dead load requirements of roofing systems and sufficiently rigid to support construction traffic.

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Heartland Community Church

drawing title
SPECIFICATIONS SHEET

job no.

date
AUG. 10, 2009

revised

sheet no.
A-12

Acceptable Manufacturers: AC Foam-11, AC Foam Nail Base Insulation, as manufactured by Atlas, or approved equal.

Materials: Before roof insulation application is started, remove trash, debris, grease, oil, water, moisture, and contamination which may affect the attachment of the insulation to the surface. The deck shall be sufficiently rigid to support the roofers and mechanical equipment without deflection that will strain or rupture any of the roofing components or deform the deck. All depressions, holes, deformations, etc., shall be made smooth prior to the roof insulation application. Treated wood insulation stops, the same thickness as the insulation, shall be mechanically fastened at the edges of the deck and around all projections and opening through the deck.

Application/Installation: Apply 3.5' AC Form nail base insulation over 2" AC Foam 11 insulation in accordance with Atlas roof insulation catalog and as required by codes and insurance. When a vapor-retarder is required, follow vapor-retarder manufacturer's recommendations.

Cleaning: Installed insulation shall not be left exposed to the weather. It shall be covered and waterproofed at once. All exposed edges left at the end of the days work shall be temporarily sealed by lapping roofing membrane over the exposed edge of the installation and sealing it in place. Remove this membrane seal when work resumes. Installed insulation which has become wet and/or damaged shall be removed and replaced with solid and dry materials. Protect installed insulation and membrane from roof traffic damage and/or abuse by using surface protect such as plywood in areas when heavy and/or repeated traffic is anticipated both during and after installation.

07410- METAL ROOF

Section includes: Prefinished, prefabricated, mechanically seamed, structural standing seam roof system and accessories.

SYSTEM DESCRIPTION: Performance Requirements: Provide factory formed, prefinished, snap- together, concealed clip, structural standing seam metal roof system, that has been pretested and certified by manufacturer to comply with specified requirements under installed conditions. Provide UL90 rated roofing system that has been tested in accordance with UL 580 test procedure.

Structural Requirements: Engineer panels for structural properties in accordance with latest edition of American Iron and Steel Institute's Cold Formed Steel Design Manual using "effective width" concept and Aluminum Association's Aluminum Design Manual.

QUALITY ASSURANCE: Panel manufacturer shall have a minimum of ten (10) years of experience in manufacturing architectural roofing in a permanent stationary indoor facility. Panel installer shall have a minimum of two (2) years experience in the installation of concealed clip architectural standing seam metal roofing and show evidence of successful completion of at least three (3) projects of similar size, scope, and complexity.

DELIVERY, STORAGE, and HANDLING: Panels and flashings shall be protected and properly packaged to protect against transportation damage in transit to the jobsite. Upon delivery, exercise care in unloading, stacking, moving, storing, and erecting panels and flashings to prevent twisting, bending, scratching, or denting. Store panels and flashings in a safe dry environment under a waterproof covering, to prevent water damage and allow adequate ventilation to prevent condensation. Panels and flashings with strippable film shall not be stored in direct sunlight. Upon installation immediately remove strippable film from panels and flashings. Protect panels and flashings from foot traffic and from all other trades.

PROJECT CONDITIONS: Field dimensions shall be taken prior to fabrication to verify jobsite conditions.

WARRANTIES: Panel manufacturer shall provide a twenty (20) year warranty on the paint
finish covering chalking, cracking, checking, chipping, blistering, peeling,
flaking, and fading. Applicator shall furnish written warranty for a two (2) year period from date of
substantial completion of building covering repairs required to maintain roof
and flashings in watertight conditions.

PRODUCT DESCRIPTION: High Seam integral standing seam roof system as manufactured by Fabral,
3449 Hempland Road, Lancaster, PA 17601, ph.: 800-477-2741; fax: 800-
283-4289.

Panels: the High Seam panel shall have a 1½" seam height with a maximum seam width of ¼" and a panel coverage of 12", 14", 16", 18", or 20". Roof panels shall use a one-piece roof clip allowing for thermal movement of the panel system. The panel shall snap lock together without the use or need of an electric seaming machine. Roof panels shall be removable for replacement of damaged materials during and after installation is completed. The panel system shall be as a true standing seam shape requiring no trapezoidal foam closures, plugs, or fillers at eaves. Panels are available smooth or with 1" shadowlines.

PRODUCT SUBSTITUTIONS: Requests to use alternate systems shall be submitted in writing to the project designer at least ten (10) days prior to bid date. Request shall demonstrate proposed substitution meets or exceeds specified performance requirements.

Certified statements, samples and descriptive data shall be included in this submittal request. Manufacturers listed in this section are prequalified manufacturers.

Substitution of manufacturer's products for those specified shall not be allowed at anytime during construction.

MATERIALS AND FINISHES: Roof panel materials
24 gauge, Grade 50 (50 ksi yield strength) structural steel with G90 (0.90 oz./ft.) hot dipped galvanized coating, both conforming to ASTM A 653.

Texture: panels shall be smooth.

Finish: paint shall be full strength 70% polyvinylidene fluoride (Kynar/Hylar® fluorocarbon) baked-on coating, factory applied prior to roll forming. The treatment shall be a two-coat system consisting of a single coat of 0.2 mil primer followed by a finish coat of 0.8 mil Kynar topcoat for a total dry film thickness of 1.0 mil ± 0.2 mil. The reverse side of the panels shall be treated with a back coat system consisting of a 0.2 mil primer with a 0.3 mil topcoat
for a total dry film thickness 0.5 mil.

ACCESSORIES:

Concealed roof clips: 1 piece clip, 2" long, 24 ga. galvanized or stainless steel.

Flashing and Trim: All flashing and trim shall be of the same material, gauge, finish, and color as the roof panels and fabricated in accordance with standard SMACNA procedure and details. Provide transition rib covers where roofing changes pitch. Fabricate gutters and downspouts in the same gauge, material, finish, and color as the roof panels.

Fasteners: Clips to substrate: screws shall be #10 or #12 diameter, low-profile pancake head, self tapping type, zinc-plated steel. Flashings to panels: exposed screws shall be zinc plated with a #14 x " combination steel and neoprene washer, color to match panel. Pop rivets: #43 stainless steel, color finish to match panel.

Sealants: Shall not contain oil, asbestos, or asphalt. Field applied panel end sealant shall be mastic tape sealant. Exposed sealant shall be one-part polyurethane joint sealant. Coordinate color with roof panels.

Closures: Ridge and hip closures shall be protected and supported by a formed metal closure manufactured from the same material, color, and finish as the panels. Metal closures shall be factory fabricated and field-cut as needed.

FABRICATION:

Roof panels shall be formed in continuous lengths. Endlaps will not be allowed. Panels shall to be roll formed on a stationary industrial type rolling mill to gradually shape the sheet metal. Portable rollformers, rented or owned by the installer, are not acceptable. Fabricate flashings from the same material as the roof system.

SOURCE QUALITY:

Source Quality: obtain metal panels and accessories from a single manufacturer.
Fabrication tolerances: follow tolerances in MCA's Preformed Metal Wall Guidelines.
Tests and inspections
Verification of performance

EXECUTION:

MANUFACTURER'S INSTRUCTIONS

Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions, and product cartons for installation.

EXAMINATION: Installer shall: Inspect roof deck to verify deck layout complies with shop drawing layout and is smooth, even, sound, and free of depressions. Report variations and potential problems in writing to the architect.

INSTALLATION:

Conform to the standard set forth in the SMACNA architectural sheet metal manuals and the approved shop drawings detailed for the project. Install panels plumb, level, and straight with the seams parallel, conforming to the design as indicated. Install panel system so it is watertight, without waves, warps, buckles or distortions, and allow for thermal movement considerations. Abrasive devices shall not be used to cut on or near roof panel system. Apply sealant tape or caulking as necessary at flashing and panel joints to
prevent water penetration. Remove any strippable film immediately upon exposure to direct sunlight.

Underlayment (solid substrate): Provide one layer of 30# felt with horizontal overlaps and endlaps staggered between layers. Provide ice and water shield membrane at all valley and eave conditions as well as any area at less than a 3:12 slope. Lay parallel to ridge line with 2½" horizontal laps and 6" vertical laps

CLEANING:

Dispose of excess materials and debris from jobsite. Remove filings, grease, stains, marks, or excess sealants from roof panel system to prevent staining. Protect work from damage from other trades until final acceptance.

07600 - FLASHING AND SHEET METAL

Flashing And Sheet Metal Materials: Sheet Metal work includes metal counter flashing and base flashing(if any), metal wall flashing and expansion joints, gutters and down spouts (if any), valleys, sups, scuppers and built in gutters, gravel stops, fascias and trim, sheet metal expansion joints, exposed metal trim units, fireplace chimney, miscellaneous sheet metal accessories.

Job Conditions: Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of the work and protection of materials and finishes.

Sheet Metal Flashing/Trim: Zinc-Coated Steel: Commercial quality with 0.20% copper, ASTM A 525, except ASTM A 527 for lock-forming, G90 hot-dip galvanized, mill phosphatized where indicated for painting (Prt); 0.0359" thick (20 gage) except as otherwise indicated. Stainless Steel: AISI Type 302/304, ASTM A 167, 2D annealed finish, soft except where harder temper required for forming or performance; 0.015" thick (28 gage)

except as otherwise indicated. Aluminum Sheet: ASTM B 209, alloy 3003, temper H14, C22A41 clear anodized finish; 0.032" thick (20 gage), except as otherwise indicated.

Miscellaneous Materials and Accessories: Solder: For use with steel or copper, provide 50-50 tin/lead solder (ASTM B 32), with rosin flux. Solder: For use with stainless steel, provide 60-40 tin/lead solder (ASTM B 32), with acid-chloride type flux, except use rosin flux over tinned surfaces. Fasteners: Same metal as flashing/sheet metal or, other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened. Bituminous Coating: FS TT-C-494 or SSPC - Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, nondrying, non-migrating sealant. Epoxy Seam Sealer: 2-part non-corrosive metal seam cementing compound, recommended by manufacturer for exterior/interior non moving joints including riveted joints. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/weather-resistant seaming and adhesive application of flashing sheet. Paper Slip Sheet: 5 lb. rosin-sized building paper. Polyethylene Underlayment: 6-mil carbonated polyethylene film; FS L-P-512. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, non corrosive, size and gauge required for performance. Roofing Cement: ASTM D 2822, asphalt.

Fabricated Units: General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels as indicated, with exposed edges folded back to form hems. Seams: Fabricate non moving seams in sheet metal with flat-lock seams. For metal other than aluminum, tin edges to be seamed, form seams and solder. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be sufficiently waster/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant (concealed within joints). Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with industry standards. Separations: Provide for separation of metal from non compatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator. Shop Finish: Provide manufacturer's standard baked-on acrylic shop finish on exposed sheet metal. Color to be chosen by Architect.

Installation Requirements: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams which will be permanently watertight and weatherproof. Where stainless steel or aluminum is to be installed directly on cementitious or wood substrates, install a course of paper slip sheet and a course of polyethylene underlayment. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.

Cleaning and Protection: Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes. Protection: Installer shall advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction, to ensure that work will be without damage or deterioration, other than natural weathering, at time of substantial completion.

07800 - ROOF ACCESSORIES

Roof Accessory Materials; Miscellaneous Units: Sheet Metal: Except as otherwise indicated, same as metal roofing or 16 oz. lead-coated copper (ASTM B101) with 0.06 lb. lead coating on exposed surfaces. Sheet Metal: Except as otherwise indicated, 20 gage, copper-bearing zinc-coated steel, ASTM A 526, G90 hot-dip galvanized, mill phosphatized. Fasteners: Match metal and finish of metal work, or provide non magnetic stainless steel, unless another type fastener is recommended by manufacturer of accessory unit. Roofing Cement: FS SS-C-153, type which is compatible with roofing, and which is normally free of sulfur. Bituminous Coating: 15 mil bituminous mastic coating, FS TT-C-494 or SSPC-Paint 12, nominally free of sulfur. Mastic Sealant: Polyisobutylene type. Roof Insulation Vents: 4" sheet metal vent stack 12" high with 4" outstanding roof flange, and with 6" diameter x 3" high cap. Fill stack with loosely-packed resilient glass fiber. Equivalent prefabricated insulation vents may be provided in lieu of above, at Contractor's option.

07900 - JOINT SEALERS

Joint sealer applications include pavement and sidewalk joints, wall joints (exterior), flashing and coping joints, and gasketing of assemblies. Establish and maintain airtight, waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application.

Job Conditions: Do not proceed with installation of liquid sealants under unfavorable weather conditions. Install sealants in temperature range recommended by manufacturer for installation.

Products: Manufacturers listed indicated category of prime joint sealer material, either as a nominally pure generic product or as an equivalent-performance modification thereof. Provide colors indicated or as selected by Architect from manufacturer's standard colors. Select materials for compatibility with joint surfaces and other indicated exposures, and select modules of elasticity and hardness or grade recommended by manufacturer for each application indicated. Where exposed to foot traffic, select non-tracking materials of sufficient strength and hardness to withstand stiletto heel traffic without damage or deterioration of sealer system.

Non-Elastomeric Sealants and Caulking Compounds: One-Component Acrylic Sealant, complying with FS TT-S-00230, Class B, Type II; recommended by manufacturer for general use as an exposed building construction sealant. Comply with either ASTM C 920 Type S Class 12-1/2 Grade NS, or FS TT-S-00230C Class B Type Non-Sag. Color to be selected. Approved Products: Pecora 60+ Unicrylic, and Tremco Mono.

Bituminous Caulking Compound: Provide manufacturer's standard one-part bituminous, general-purpose crack filler or caulking compound, containing butyl rubber mineral fiber, or other modifiers or fillers.

Joint Fillers, Pavement Types: Provide resilient and non-extruding type premolded self-expanding cork units complying with ASTM D 1752 Type III; FS HH-F-341, Type II, Class C; or AASHTO M 153, & Type III. Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed.

Miscellaneous Materials: Joint Primer/Sealer: Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed. Bond Breaker tape: Provide polyethylene bond breaker tape or other plastic tape as recommended by sealant manufacturer, to be applied to sealant-contact surfaces where bond to substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape where available. Sealer backer rod: Provide compressible rod stock of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam, or other flexible, permanent, durable non absorptive material as recommended by sealant manufacturer for backup of and compatibility with sealant. Where used with hot applied sealant, provide heat resistant type which will not be deteriorated by sealant application temperature as indicated.

Installation: Installer must examine substrates, (joint surfaces) and conditions under which joint sealer work is to be performed. Clean joint surfaces immediately before installation of gaskets, sealant or caulking compounds. Remove substances which could interfere with seal of gasket or bond of sealant or caulking compound. Etch concrete joint surfaces and roughen vitreous and glazed joint surfaces as recommended by sealant manufacturer.

Set joint filler units at depth or position in joint as indicated to coordinate with other work, including installation of bond breakers, backer rods and sealants. Do not leave voids or gaps between ends of joint filler units.

Install sealant backer rod for liquid-applied sealants. Install bond breaker tape where indicated and where required by manufacturer's recommendations to ensure that liquid-applied sealants will perform as intended.

Employ only proven installation techniques, which will ensure that sealants are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides.

Install liquid-applied sealant to depths as recommended by sealant manufacturer. Do not allow sealants or compounds to overflow from confines of joints, or to spill onto adjoining work, or to migrate into voids of exposed finishes. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage. Bond ends of gaskets together with adhesive or "weld" by other means as recommended by manufacturer to ensure continuous watertight and airtight performance. Miter-cut and bond ends at corners unless molded corner units are provided. Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations.

Advise Contractor of procedures required for cure and protection of joint sealers during construction period, so that they will be without deterioration or damage at time of substantial completion. Replace or restore sealants which are damaged or deteriorated during construction.

DIVISION 8 DOORS AND WINDOWS

08210 - WOOD DOORS

Extent and location of each type of wood door is shown on drawings and in schedules. Types of doors required include solid wood, panel type, architectural grade wood door to match existing, and salvage doors provided by Owner. Obtain doors from a single manufacturer to ensure uniformity in quality of appearance and construction, unless otherwise indicated. Comply with the applicable requirements of the following standards unless otherwise indicated. ANSI/NWMA I.S. 1, "Industry Standard for Wood Flush Doors", published by National Woodwork Manufacturers Association (NWMA); AWI Quality Standard: Section 1300 of AWI "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI). Designations for grade and core construction under types of doors refer to this standard.

Submittals: Submit written agreement on door manufacturer's standard from signed by manufacturer, installer and Contractor, agreeing to repair or replace defective doors which have warped (bow, cup or twist), or which show telegraphing of core construction bellow in face veneers. Warranty shall be in effect during following period of time after date of substantial completion: Solid Core Flush Interior doors: 5 years, Hollow core flush interior doors: 2 years, Stile and Rail doors: 1 year, Solid Wood Panel Doors: Life of installation.

Product Delivery: Protect wood doors during transit, storage and handling to prevent damage, soiling and deterioration. Comply with the "On-Site Care" recommendations for NWMA pamphlet "Care and Finishing of Wood Doors" and with manufacturer's instructions, and as otherwise indicated.

Provide wood doors complying with applicable requirements of referenced standards for kinds and types of doors indicated and as specified. Manufacturer's standard 2- or 3-ply face panels, unless otherwise indicated. Provide kind shown or scheduled and as further specified. Provide same exposed surface material on both faces of each door, except as otherwise indicated. Cut and trim openings through doors and panels as shown. Comply with applicable requirements of referenced standards for kind(s) of doors required. Provide new doors in style and species of wood to match existing. Panel doors of solid wood construction to match existing. Owner may provide other salvaged panel doors for Contractor use.

Installer must examine door frames and verify that frames are correct type and have been installed as required for proper hanging of corresponding doors. Do not proceed with installation until unsatisfactory conditions have been corrected. Condition doors to average prevailing humidity in installation area prior to hanging.

For installation of hardware, see Division-8 "Builders Hardware" section of these specifications. Install wood doors in accordance with manufacturer's instructions and as shown. Align doors to frame for proper fit and uniform clearance at each edge and machine for hardware. Seal cut surfaces after fitting and machining. Fit to frames and machine for hardware to whatever extent not previously worked at factory as required for proper fit and uniform clearance at each edge. Provide clearances of 1/8" at jambs and heads; 1/8" at meeting stiles for pairs of doors; and ½" from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide ½" clearance from bottom of door to top of threshold.

Job Site Finished Doors: see painting sections in Division-9 of these specifications for requirements for finishing wood doors.

Re-hang or replace doors which do not swing or operate freely, as directed by Architect. Refinish or replace doors damaged during installation, as directed by Architect. Advise Contractor of proper procedures required for protection of installed wood doors from damage or deterioration until acceptance of work.

08610 - WOOD WINDOWS

Extent of each type (operation) of wood window unit, hereby defined to include wood units clad with other materials, is shown on drawings. Comply with General Requirements of ANSI A200.1, "Industry Standard for Wood Window Units I.S.2-73" by National Woodwork Manufacturers Association (NWMA), except to extent more stringent requirements are indicated. Provide each type of wood window produced by a single fabricator who is capable of showing prior successful production of units similar to those required. Provide fixed and double-hung windows, in sizes indicated on drawings, by Marvin Windows or equal. Finish to match existing. See Building Elevations for window size and manufacturer's numbers. Architect reserves the right to require sample submittals which will show fabrication techniques and workmanship, hardware and accessory designs. Submit shop drawings, including wall elevations at ¼" scale, unit elevations at ¾" scale, and half-size section details of every typical composite member, including glazing. Architect reserves the right to require additional sample submittals which will show fabrication techniques and workmanship, hardware and accessory designs.

Wood: Ponderosa Pine or other suitable fine-grained lumber which has been treated with water repellent preservatives after machining. Manufacturer's standard vinyl gaskets. Hardware: Manufacturer's standard design for operation indicated. Factory-primed units using treated lumber ready for finish paint coat application. Provide manufacturer's standard double glazing, at minimum, except as noted. Glass to be tempered for all units so indicated as recommended by the manufacturer or when required by Code. Conform to size and profile limitations as shown, which may be based on one or more manufacturer's published details, and as it will match existing building window profiles. Shop-Finished Units: Provide fabricator's standard exterior finish.

Adjust operating sash and hardware to provide smooth operation with tight, weatherproof closure. Lubricate hardware and moving parts. Refer to Division 9 sections for required interior finish to be applied on wood window units at project site. Clean glass of window units promptly after installation and before final acceptance. Institute protection required through remainder of construction period, to ensure that wood window units will be without damage at time of acceptance.

08700 - BUILDERS HARDWARE

"Builders Hardware" includes items known commercially as builders hardware which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame. Types of items in this section include, but are not necessary limited to

hinges, lock and latch sets, bolts, sliding door equipment, miscellaneous door control devices. Furnish hardware items of proper design as necessary for proper installation and function.

Provide 2 hinges per door, stand (open) strike plates, and four keys per master lock to Owner. Acceptable finishes selected to match existing hardware. Provide protective lacquer coating on all exposed hardware finishes of brass, bronze, and aluminum, except as otherwise indicated. Install each hardware item in compliance with the manufacturer's instructions and recommendation. Set units level, plum and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation. Space fasteners and anchors in accordance with industry standards. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application.

Hardware finishes: Provide matching finishes for hardware units at each door or opening, to the greatest extent possible, and except otherwise indicated. In general, match items to the manufacturer's standard finish for the latch and lock set for color and texture. Salvage hardware is preferred in this project to maintain authenticity.

08800 - GLASS AND GLAZING

Provisions of this section are specified for general compliance with the following standards: Prime Nonprocessed Glass: FS DD-G-451. Heat Treated Glass: FS DD-G-1403. CPSC Safety Glass: 16 CFR 1201. ANSI Safety Glazing: ANSI Z97.1.

Submit manufacturer's product specifications and instructions for handling/installation/protection for each type of glass and glazing material required.

PRODUCTS: **Float/Plate Glass:** Quality q3; clear; thickness indicated, 3/16" if not otherwise indicated. **Tempered Glass**: Clear float glass, heat treated to 4.0 x annealed strength; 3/16" thick except as otherwise indicated.

Comply with glass manufacturer's instructions, glazing materials manufacturer's instructions, and "Glazing Manual" by FGMA and other technical publications of recognized authorities in the industry.

INSTALLATION: Install each piece to achieve watertight and airtight performance and to minimize breakage. Clean channel surfaces and prime or seal surfaces where recommended by sealant manufacturer. Inspect glass edge at time of setting, and discard pieces with significant edge damage. Set each piece in each series to match other pieces and other characteristics uniformly oriented.

Immediately prior to time of substantial completion, replace glass which is broken or otherwise damaged, and wash and polish glass inside and out.

DIVISION 9 FINISHES

09550 - WOOD FLOORING

Restore existing wood floors, patching openings as required with salvaged flooring. Use wood cleaner and refinish to obtain an oiled, clean floor finish. Use manufactured wood refinisher as Formby Wood Refinisher or equal. Final finish for floors to be an oiled finish floor.

Remove all painted areas by stripping with citrus-based strippers and brush clean all areas free of dirt and grime. Use 3M floor scrubbers to remove surface of raised-grain and rough areas when applying floor refinishers.

09900 - PAINTING

Description of Work: Extent of painting and refinishing work is shown on drawings and schedules, and as herein specified. The work includes painting and finishing, and some stripping and refinishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment may be specified under other sections of work. The work includes field painting of exposed work installed under mechanical and electrical work, except as otherwise indicated. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coat. Paint exposed surfaces whether or not colors are designated in "schedules", except where natural finish of material in specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint same as adjacent similar materials or areas. If color or finish is not designated, Architect will select these from standard colors available for materials systems specified.

Following categories of work are not included as part of field-applied finish work, or are included in other sections of these specifications.

Shop Priming: When otherwise indicated, shop priming of ferrous metal items is included under various sections for structural steel, miscellaneous metal, hollow metal work, and similar items.

Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items as (but not limited to) architectural woodwork and casework, finished mechanical and electrical equipment including light fixtures and switch gear.

Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require finish painting, unless otherwise indicated.

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Operating Parts and Labels: Moving parts of operating units, mechanical and electrical parts will not require finish painting, unless otherwise indicated.

Do not paint over any code-required labels, or any equipment identification, performance rating, name or nomenclature plates.

Delivery and Storage: Deliver materials to job site in new, original, and unopened packages and containers bearing manufacturer's name and label, and following information: Name or title of material, Manufacturer's stock number and date of manufacture, Manufacturer's name, Contents by volume, for major pigment and vehicle constituents, Thinning instructions, Application instructions, Color name and number.

Job Conditions: Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F (10 degrees C) and 90 degrees F (32 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

Apply solvent-thinned paints only when temperature of surface to be painted and surrounding air temperature are between 45 degrees F (7 degrees C) and 95 degrees F (35 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

Do not apply paint in snow, rain, fog or mist or when relative humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by paint manufacturer's printed instructions.

Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

Color and Finishes: Surface treatments and finishes are indicated in "schedules" of the contract documents. Prior to beginning work, Architect will furnish color chips and schedule for surfaces to be painted. Use representative colors when preparing samples for review. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

Pigments and dryers are to be mercury-free and lead-free. This limitation is extended to interior surfaces and those exterior surfaces, such as stairs, decks, porches, railings, windows and doors which are readily accessible to children under seven years of age.

Paint Coordination: Provide finish costs which are compatible with prime paints used. Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers but are used only for quality requirements. Contractor may submit products of other manufacturers and they will be considered, but written approval of the Architect will be required NOT LATER THAN 6 WEEKS AFTER BID OPENING DATE. Colors will be selected only from approved manufacturers. Provide undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

Exterior Paint Systems: Provide the following paint systems for various substrates, as indicated:

Painted Wood Trim:
EPS-8: 1st coat - P & L Permalize Exterior Primer Latex Primer
2nd coat - P & L Effecto Enamel
3rd coat - P & L Effecto Enamel

Zinc Coated Metal:
EPS-18: 1st Coat-P&L Galvanized Metal
2nd Coat-P&L Effecto Enamel
3rd Coat-P&L Effecto Enamel

Interior Paint Finishes: Provide the following paint systems for various substrates, as indicated:

Gypsum Drywall Systems:
IPS-21: 1st Coat - P & L Vapex Wall Primer
2nd Coat - P & L Lyt-All Flowing Flat
3rd Coat - P & L Lyt-All Flowing Flat
Not less than 2.5 mils dry film thickness.

Ferrous Metal:
IPS-35: 1st coat - P & L Interior Trim Paint
2nd coat - P & L Effecto Enamel
3rd coat - P & L Effecto Enamel

Painted Woodwork:
IPS-39: 1st Coat - P & L Interior Trim Primer
2nd Coat - P & L Cellu-Tone Satin Enamel
3rd Coat - P & L Cellu-Tone Satin Enamel

Stained Woodwork and Doors:
IPS-43: 1st Coat - P & L Tonetic Wood Stain
2nd Coat - P & L Filler Sealer
3rd Coat - P & L 38 Clear Finish Gloss
4th Coat - P & L 38 Clear Finish Satin

All selected manufacturers or equal to major brands.

Inspections: Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

Surface Preparation: Perform preparation and cleaning procedures in strict accordance with coating manufacturer's instructions and as herein specified, for each particular substrate condition. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures and similar items in place and not to be finish-painted or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items. Clean surfaces to be painted before applying paint or other surface treatments.

Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces. Wood: Clean wood surfaces to be painted of dirt, oil or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried. Prime, stain, or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, face, undersides and backsides of such wood, including cabinets, counters, cases, paneling. When transparent finish is required, use spar varnish for backpriming. Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job. Ferrous Metal: Clean ferrous surfaces which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning. Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch-up with same type shop primer. Galvanized Surfaces: Clean surfaces free of oil and surface contaminants with non-petroleum based solvent.

Material Preparation: Mix and prepare painting materials in accordance with manufacturer's directions. Store materials not in actual use in tightly covered containers. Maintain container used in storage, mixing and application of paint in a clean condition. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

Application: General-Apply painting and finishing materials in accordance with manufacturer's directions. Use applicators, and techniques best suited for substrate and type of material being applied. Apply additional coats when undercoats, stains or other conditions show through final paint coat, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint. Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated. Sand lightly between each succeeding enamel or varnish coat. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration. Allow sufficient time between successive coatings to permit proper drying. Minimum Coating Thickness: Apply material at not less than the manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed in finished spaces. Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable. Transparent (Clear) Finishes: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections. Provide satin finish for final coats, unless otherwise indicated. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

Clean-up and Protection: Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day. Upon completion of painting work, clean window glass and other paint-splattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

DIVISION 10 SPECIALTIES

10800 - BATHROOM ACCESSORIES:

Mirrors: Frameless mirrors shall be ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality q1 mirror select; 1/4" thick; with manufacturer's standard full silver coating, plus copper coating, plus organic coating. Provide polished edges. Adhesive installation using mirror adhesive. Set mirror glass in mastic spots or strips as recommended my mirror manufacturer, but with not less than 75% of back surface ventilated and free of mastic.

Bathroom accessories: (grab-bars, towel bars, paper holders, napkin holder etc,) will be selected as shown on schedules, or as provided by Owner.

DIVISION 15 MECHANICAL

15010 - MECHANICAL WORK:

Description of work: Work to include all materials, equipment and labor required for complete and properly functioning plumbing, heating, cooling, and ventilating systems. Work shall include all materials, equipment and labor for complete and properly functioning plumbing, heating, ventilating and air conditioning systems. Drawings for plumbing and heating work are in part diagrammatic, intended to convey the scope of work and general arrangement of equipment, piping and approx. sizes and locations of equipment and materials. Where job conditions require reasonable changes in indicated locations and arrangements, make such changes without additional cost to owner.

Work to be in compliance with all applicable codes and standards.

It is the intention of the owner to install a geothermal heating/cooling system.

Scope of Work: The mechanical contractor includes, but is not necessary limited to, the following: Plumbing System, Heating and Air-conditioning work, ventilating system. The mechanical contractor shall furnish all labor, materials, equipment and devices as required to complete all systems and related specialties. The omissions of direct references to essential components, materials or devices as may be required for the proper and safe operation of the systems, shall not be construed to mean that such items will not be required. Contractor shall provide all such items whether or not they are called for specifically.

Mechanical Drawings: Drawings are intended to convey the scope of the work and to indicate the general arrangement and locations of the ducts. Contractor shall layout his own work and shall be responsible for determining the exact locations for equipment and rough-ins and the exact routing of piping and ducts so as to best fit the layout of the work. Contractor shall take his on field measurements for verifying locations and dimensions.

Site Inspection: Contractor shall inspect the site prior to submitting bid for work to familiarize himself with conditions of the site which will affect his work and shall verify points of connection with utilities, routing of outside piping to include required clearances from any existing structures, trees or other obstacles.

Coordination and cooperation: It shall be the Contractor's responsibility to schedule and coordinate his work with the schedule of the General Contractor or so as to progress the work expeditiously and to avoid unnecessary delays. Contractor shall fully examine the drawings and specifications for other trades and shall coordinate the installation of his work with the work of the other contractors. Contractor shall consult and cooperate with the other contractors for determining space requirements and for determining that adequate clearance is allowed with respect to his equipment, other equipment and building. The Architect reserves the right to determine space priority of the contractors in the event of interference between piping, conduit, ducts, and equipment of the various contractors. Conflicts between drawings and specifications, or between the requirements set forth for the various contractors shall be called to the attention of the Architect. Protection of all equipment during the painting of the building shall be the responsibility of the Painting Contractor, but this shall not relieve the Contractor of the responsibility for checking to assure that adequate protection is being provided. Where the final installation or connection of equipment in the building requires the contractor to work in areas previously finished by the General Contractor, the Mechanical contractor shall be responsible that such areas are protected and are not marred, soiled or otherwise damaged during the course of such work. Mechanical contractor shall arrange with General Contractor for patching and refinishing of such areas which may be damaged in this respect.

Openings, cutting and patching: Mechanical Contractor will coordinate the placing of openings in the new structure as required for the installation of the mechanical work with the General Contractor. General Contractor to provide openings and lintels in the new structure for the mechanical construction. Mechanical Contractor shall furnish to General Contractor the accurate locations and sizes for required openings, but this shall not relieve Mechanical Contractor of the responsibility of checking to assure that proper size openings are provided. When additional cutting and patching is required due to Mechanical Contractor's failure to coordinate the work, then Mechanical Contractor shall make arrangements for the cutting and patching required. This shall include patch painting, and Mechanical Contractor shall pay any additional cost incurred in this respect. Prior to installation of metering devices on exterior of building, Architect shall be notified and shall approve location of metering device.

Excavation and Backfilling: Mechanical Contractor shall do all excavating as necessary for sanitary sewers, water piping, gas piping, etc. and shall backfill trenches and excavations after work has been inspected. Care shall be taken in excavating that walls and footings and adjacent load bearing soils are not disturbed in any way, except where lines must cross under a wall footing. Where a line must pass under a footing, the crossing shall be made by the smallest possible trench to accommodate the pipe. No greater length of pipe shall be kept open, in advance of pipe laying, than that which is authorized or directed by the Architect.

Materials and Equipment: All materials and products shall be the standard products of a reputable U.S.A manufacturer regularly engaged in the manufacture of the specified item. All material and equipment shall be installed in strict accordance with the manufacturer's recommendations.

Shop Drawings: The Architect review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Any section from review is still subject to the requirements of the plans and specifications and does not relieve the Contractor from compliance with those requirements. Among other requirements set forth in the Contract Documents, Contractor is responsible for: dimensions which shall be confirmed and correlated at the job site, fabrication processes and techniques of construction, Coordination of the Contractors work with that of all trades, and the satisfactory and safe performance of the Contractor's work. The contractor shall be responsible for all dimensions, electrical characteristics, connections, construction details, and shall verify all field measurements, field construction criteria, and similar data necessary to fulfill the requirements of the work and of Contract documents. Contractor shall submit to the Architect, for record purposes only, a complete schedule of materials, equipment and fixtures to be installed on the project.

Completion: Systems at time of completion shall be complete, efficiently operating, non-hazardous and ready for normal use by owner. The Contractor shall clean up and remove from the site all debris, excess material and equipment left during the progress of this contract at job completion.

Wiring by electrical Contractor: Electrical Contractor shall provide services for motors and equipment furnished by others, i.e. Mechanical contractors, Equipment Contractors and Owner. Electrical Contractor shall make final connections for all motors and equipment furnished by others.

15240 - PLUMBING

This section consists of all labor, miscellaneous materials and equipment as necessary for a complete an proper residential plumbing system, including but not limited to: water service extension and metering system, Waste and vent piping system, Domestic water distribution system, Fixtures and equipment, Gas piping and connections.

Work to be in compliance with all applicable codes and standards.

Drawings are in part diagrammatic, intending to show the general location and arrangement of equipment and fixtures. Contractor shall lay out his own work, avoid interference with other trades. Contractor shall take his own field measurements, verify locations and dimensions, do not rely on scaling drawings alone. The following items are to be furnished by the Contractor for job site installation

Underground Waste - Standard weight cast iron under slabs.
Roof Water Drainage – Galvanized gutters and downspouts.
Other Waste and Vent - Cast iron, DMV copper, plastic or other code approved material
Domestic Water Lines - Type "M" hard copper
Fixtures
Gas Piping - Schedule 40 Black Steel
Water Purification system - By owner, installation by contractor.
Provide screws, straps, and other miscellaneous attachment devices required for system installation.

Properly grade all drainage lines, with sweeps, wyes and bends to provide smooth uniform invert throughout. Provide protection against damage to other work. All connections to be physical, permanent and screwed; do not use cloth duct tape. Domestic water lines to be Type M, hard copper. Fixtures as scheduled on drawings.

Locate duct work, return air and registers, or baseboard heating units, as required for proper heating operations in entire building. Heating system to be in proper operating condition and balance to provide uniform heating throughout. Provide isolation breaks in ductwork to reduce vibration noises. System to be free of whistles, squeaks, and other objectionable noises.

All gas-fired equipment to be supplied with fresh air combustion ducts. Notify Architect, Utility Company, and Owner before mounting installation of all metering equipment for approval of location.

Equipment to be minimum 90% efficiency rated.

Plumbing Fixture schedule on drawings. Approved equals may be used.

15460 - HEATING AND AIR CONDITIONING WORK

This section consists of all labor, miscellaneous materials and equipment as necessary for a complete and proper installation of the geothermal heating and air conditioning systems including the final wiring connection. Work to be in compliance with all applicable codes and standards.

Drawings are in part diagrammatic, intending to show the general location and arrangement of equipment and fixtures. Contractor shall lay out his own work, avoid interference with other trades. Contractor shall take his own field measurements, verify locations and dimensions, do not rely on scaling drawings alone.

The Contractor shall furnish the following items for installation purposes: Furnace, humidifier, condensing unit, flues, ductwork, supply and return registers, thermostats, and dampers. Furnaces to be 80% + efficiency - type.

Heating system shall be installed in such a manner as to provide a uniform 70 degrees inside at an outside temperature of -20 degrees F. with a 15 mph wind. Air Conditioning units system to provide 75 degrees inside at an outside temperature of + 95 degrees F.

Submit a proposed layout for equipment, ductwork, and registers for Architects review PRIOR to starting installation of any work. System shall be free from, whistles, squeaks and other objectionable noises.

DIVISION 16 ELECTRICAL

16010 - Electrical Work:

Provide all labor, miscellaneous materials and equipment as necessary for a complete and properly functioning electrical system, including arrangement for underground primary, secondary and service entrance panels, wiring for all power, lighting, appliances and equipment. Make final connections to all appliances and equipment. Provide wiring for light fixtures, convenience outlets and switches. Provide any necessary wiring for telephone, cable television (if applicable), smoke/fire alarm system, intercom/door speaker system (if applicable), security system (if applicable), or wiring for other equipment furnished by Owner.

All work and materials shall be performed in a neat, workmanlike manner in keeping with the highest standards of the craft and conforming to all state and local regulations, National Electrical Code, National Fire Protection Assoc. Code, and Uniform Building Code requirements.

All elements of the construction shall be performed by workers skilled in and regularly employed in that particular craft. All connections to be physical, permanent and screwed; do not use cloth duct tape.

Fixtures shall be of manufacturer, style and model numbers as per Light Fixture Schedule. Fixtures shall be furnished complete with lamps, ballasts, and mounting hardware. All fixtures shall bear UL label. Recessed fixtures shall be furnished with gaskets, so designed and installed that light leakage between flange and ceilings will be completely eliminated.

Furnish lamps as required by Fixture Schedule. ACCEPTABLE MANUFACTURERS: General Electric, Westinghouse or Sylvania. Incandescent lamps to be 120 volt, inside frosted, or as required to suit fixture.

Provide the following from **Leviton, Inc., Decora Series**:

For Single Pole and Three Way: Rocker switches with integral dimmers. White.

For Wall Receptacles: White, rectangular. Note locations where bottom outlets are n a wall switch. Receptacles to
13' above floor, 8' above counters.

For Cover Plates: Switches & Receptacles to be white color.

For Waterproof Outlets: GFCI, White.

For Fan Speed Controls, Telephone Jacks, Cable TV Jacks: White.

Provide code-approved smoke/fire detectors. Detectors to be 110 V, permanently wired and installed.

Ground all systems, neutrals and equipment. Fixtures shall be neatly and securely installed. All shop-primed metal exposed to weather must be painted. When all electrical work is completed, Contractor shall thoroughly clean all material and equipment installed as part of this contract.

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Chapter 2003, Section 3 - Signs

703 Signs

703.1 General.

Accessible signs shall comply with Section 703.

703.2 Visual Characters.

703.2.1 General.

Visual characters shall comply with Section 703.2.

EXCEPTION: Visual characters complying with Section 703.3 shall not be required to comply with Section 703.2.

703.2.2 Case.

Characters shall be uppercase, lowercase, or a combination of both.

703.2.3 Style.

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

703.2.4 Character Height.

The uppercase letter "I" shall be used to determine the allowable height of all characters of a font. The uppercase letter "I" of the font shall have a minimum height complying with Table 703.2.4. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign.

Table 703.2.4—Visual Character Height

Height above Floor to Baseline of Character	Horizontal Viewing Distance	Minimum Character Heig
40 inches (1015 mm) to less than or equal to 70 inches (1780 mm)	Less than 6 feet (1830 mm)	$^5/_8$ inch (16 mm)
	6 feet (1830 mm) and greater	$^5/_8$ inch (16 mm), plus $^1/_5$ inch (3.2 mm) per foot (30 mm) of viewing distance above 6 feet (1830 mm)
Greater than 70 inches (1780 mm) to less than or equal	Less than 13 feet (4570 mm)	2 inches (51 mm)
		2 inches (51 mm), plus $^1/_8$ i

to 120 inches (3050 mm)	15 feet (4570 mm) and greater	(3.2 mm) per foot (305 m of viewing distance above feet (4570 mm)
Greater than 120 inches (3050 mm)	Less than 21 feet (6400 mm)	3 inches (75 mm)
	21 feet (6400 mm) and greater	3 inches (76 mm), plus $^1/_8$ i (3.2 mm) per foot (305 m of viewing distance above feet (6400 mm)

703.2.5 Character Width.

The uppercase letter "O" shall be used to determine the allowable width of all characters of a font. The width of the uppercase letter "O" of the font shall be 55 percent minimum and 110 percent maximum of the height of the uppercase "I" of the font.

703.2.6 Stroke Width.

The uppercase letter "I" shall be used to determine the allowable stroke width of all characters of a font. The stroke width shall be 10 percent minimum and 30 percent maximum of the height of the uppercase "I" of the font.

703.2.7 Character Spacing.

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

703.2.8 Line Spacing.

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

703.2.9 Height Above Floor.

Visual characters shall be 40 inches (1015 mm) minimum above the floor of the viewing position, measured to the baseline of the character. Heights shall comply with Table 703.2.4, based on the size of the characters on the sign.

EXCEPTION: Visual characters indicating elevator car controls shall not be required to comply with Section 703.2.9.

703.2.10 Finish and Contrast.

Characters and their background shall have a nonglare finish. Characters shall contrast with their background, with either light characters on a dark background, or dark characters on a light background.

703.3 Tactile Characters.

703.3.1 General.

Tactile characters shall comply with Section 703.3, and shall be duplicated in braille complying with Section 703.4.

703.3.2 Depth.

Tactile characters shall be raised $^1/_{32}$ inch (0.8 mm) minimum above their background.

703.3.3 Case.

Characters shall be uppercase.

703.3.4 Style.

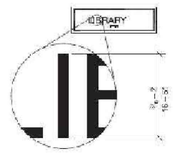
Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.3.5 Character Height.

The uppercase letter "I" shall be used to determine the allowable height of all characters of a font. The height of the uppercase letter "I" of the font, measured vertically from the baseline of the character, shall be $^5/_8$ inch (16 mm) minimum, and 2 inches (51 mm) maximum.

EXCEPTION: Where separate tactile and visual characters with the same information are provided, the height of the tactile uppercase letter "I" shall be permitted to be ½ inch (13 mm) minimum.

Fig. 703.3.5
Character Height



703.3.6 Character Width.

The uppercase letter "O" shall be used to determine the allowable width of all characters of a

font. The width of the uppercase letter "O" of the font shall be 55 percent minimum and 110 percent maximum of the height of the uppercase "I" of the font.

703.3.7 Stroke Width.

Tactile character stroke width shall comply with Section 703.3.7. The uppercase letter "I" of the font shall be used to determine the allowable stroke width of all characters of a font.

703.3.7.1 Maximum.

The stroke width shall be 15 percent maximum of the height of the uppercase letter "I" measured at the top surface of the character, and 30 percent maximum of the height of the uppercase letter "I" measured at the base of the character.

703.3.7.2 Minimum.

When characters are both visual and tactile, the stroke width shall be 10 percent minimum of the height of the uppercase letter "I".

703.3.8 Character Spacing.

Character spacing shall be measured between the two closest points of adjacent tactile characters within a message, excluding word spaces. Spacing between individual tactile character shall be $^1/_8$ inch (3.2 mm) minimum measured at the top surface of the characters, $^1/_{16}$ inch (1.6 mm) minimum measured at the base of the characters, and four times the tactile character stroke width maximum. Characters shall be separated from raised borders and decorative elements $^3/_8$ inch (9.5 mm) minimum.

703.3.9 Line Spacing.

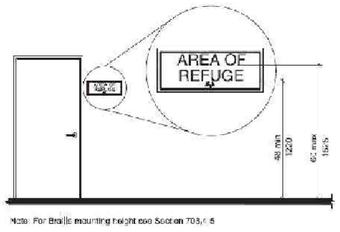
Spacing between the baselines of separate lines of tactile characters within a message shall be 135 percent minimum and 170 percent maximum of the tactile character height.

703.3.10 Height above Floor.

Tactile characters shall be 48 inches (1220 mm) minimum above the floor, measured to the baseline of the lowest tactile character and 60 inches (1525 mm) maximum above the floor, measured to the baseline of the highest tactile character.

EXCEPTION: Tactile characters for elevator car controls shall not be required to comply with Section 703.3.10.

Fig. 703.3.10
Height of Tactile Characters above Floor or Ground



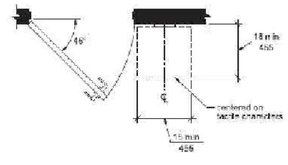
Note: For Braille mounting height see Section 703.4.6

703.3.11 Location.

Where a tactile sign is provided at a door, the sign shall be alongside the door at the latch side. Where a tactile sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a tactile sign is provided at double doors with two active leaves, the sign shall be to the right of the right-hand door. Where there is no wall space on the latch side of a single door, or to the right side of double doors, signs shall be on the nearest adjacent wall. Signs containing tactile characters shall be located so that a clear floor area 18 inches (455 mm) minimum by 18 inches (455 mm) minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 degree open position.

EXCEPTION: Signs with tactile characters shall be permitted on the push side of doors with closers and without hold-open devices.

Fig. 703.3.11
Location of Tactile Signs at Doors



703.3.12 Finish and Contrast.

Characters and their background shall have a nonglare finish. Characters shall contrast with their background with either light characters on a dark background, or dark characters on a light background.

EXCEPTION: Where separate tactile characters and visual characters with the same information are provided, tactile characters are not required to have nonglare finish or to contrast with their background.

703.4 Braille.

703.4.1 General.

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

703.4.2 Uppercase Letters.

The indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, or acronyms.

703.4.3 Dimensions.

Braille dots shall have a domed or rounded shape and shall comply with Table 703.4.3.

Table 703.4.3— Braille Dimensions

Measurement range	Minimum in inches Maximum in inches
Dot base diameter	0.059 (1.5 mm) to 0.063 (1.6 mm)
Distance between two dots in the same cell	0.090 (2.3 mm) to 0.100 (2.5 mm)
Distance between corresponding dots in adjacent cells[1]	0.241 (6.1 mm) to 0.300 (7.6 mm)
Dot height	0.025 (0.6 mm) to 0.037 (0.9 mm)
Distance between corresponding dots from one cell directly below[1]	0.395 (10.0 mm) to 0.400 (10.2 mm)

[1]Measured center to center

Fig 703.4.3
Braille Measurement

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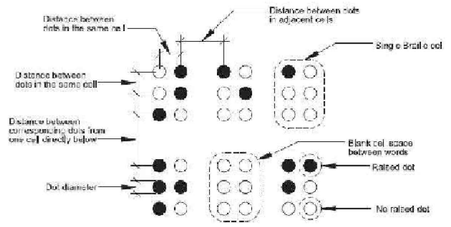
drawing title
SPECIFICATIONS SHEET

job no.

date
AUG. 10, 2009

revised

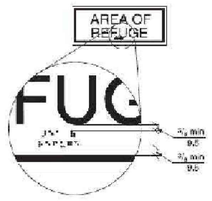
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703.4.4 Position.

Braille shall be below the corresponding text. If text is multilined, braille shall be placed below entire text. Braille shall be separated $^{3}/_{8}$ inch (9.5 mm) minimum from any other tactile characters and $^{3}/_{8}$ inch (9.5 mm) minimum from raised borders and decorative elements. Braille provided on elevator car controls shall be separated $^{3}/_{10}$ inch (4.8 mm) minimum either directly below or adjacent to the corresponding raised characters or symbols.

Fig. 703.4.4
Position of Braille



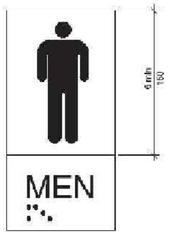
703.4.5 Mounting Height.

Braille shall be 48 inches (1220 mm) minimum and 60 inches (1525 mm) maximum above the floor, measured to the baseline of the braille cells.

EXCEPTION: Elevator car controls shall not be required to comply with Section 703.4.5.

703.5 Pictograms.

Fig. 703.5
Pictogram Field



703.5.1 General.

Pictograms shall comply with Section 703.5.

703.5.2 Pictogram Field.

Pictograms shall have a field 6 inches (150 mm) minimum in height. Characters or braille shall not be located in the pictogram field.

703.5.3 Finish and Contrast.

Pictograms and their fields shall have a nonglare finish. Pictograms shall contrast with their fields, with either a light pictogram on a dark field or a dark pictogram on a light field.

703.5.4 Text Descriptors.

Where text descriptors for pictograms are required, they shall be located directly below the pictogram field. Text descriptors shall comply with Sections 703.3 and 703.4.

703.6 Symbols of Accessibility.

703.6.1 General.

Symbols of accessibility shall comply with Section 703.6.

703.6.2 Finish and Contrast.

Symbols of accessibility and their backgrounds shall have a nonglare finish. Symbols of accessibility shall contrast with their backgrounds, with either a light symbol on a dark background or a dark symbol on a light background.

703.6.3 Symbols.

703.6.3.1 International Symbol of Accessibility.

The International Symbol of Accessibility shall comply with Figure 703.6.3.1.

Fig. 703.6.3.1
International Symbol of Accessibility



703.6.3.2 International Symbol of TTY.

The International Symbol of TTY shall comply with Figure 703.6.3.2.

Fig. 703.6.3.2
International TTY Symbol



703.6.3.3 Assistive Listening Systems.

Assistive listening systems shall be identified by the International Symbol of Access for Hearing Loss complying with Figure 703.6.3.3.

Fig. 703.6.3.3
International Symbol of Access for Hearing Loss



703.6.3.4 Volume-Controlled Telephones.

Telephones with volume controls shall be identified by a pictogram of a telephone handset with radiating sound waves on a square field complying with Figure 703.6.3.4.

Fig. 703.6.3.4
Volume-Controlled Telephone



703.7 Remote Infrared Audible Sign (RIAS) Systems.

703.7.1 General.

Remote Infrared Audible Sign Systems shall comply with Section 703.7.

703.7.2 Transmitters.

Where provided, Remote Infrared Audible Sign Transmitters shall be designed to communicate with receivers complying with Section 703.7.3.

703.7.3 Remote Infrared Audible Sign Receivers.

703.7.3.1 Frequency.

Basic speech messages shall be frequency modulated at 25 kHz, with a +/– 2.5 kHz deviation, and shall have an infrared wavelength from 850 to 950 nanometer (nm).

703.7.3.2 Optical Power Density.

Receiver shall produce a 12 decibel (dB) signal-plus-noise-to-noise ratio with a 1 kHz modulation tone at +/– 2.5 kHz deviation of the 25 kHz subcarrier at an optical power density of 26 picowatts per square millimeter measured at the receiver photosensor aperture.

703.7.3.3 Audio Output.

The audio output from an internal speaker shall be at 75 dBA minimum at 18 inches (455 mm) with a maximum distortion of 10 percent.

703.7.3.4 Reception Range.

The receiver shall be designed for a high dynamic range and capable of operating in full-sun background illumination.

703.7.3.5 Multiple Signals.

A receiver provided for the capture of the stronger of two signals in the receiver field of view shall provide a received power ratio on the order of 20 dB for negligible interference.

703.8 Pedestrian Signals.

Accessible pedestrian signals shall comply with Section 4E.06 - Accessible Pedestrian Signals, and Section 4E.08 - Accessible Pedestrian Signal Detectors, of the Manual on Uniform Traffic Control Devices listed in Section 105.2.1.

EXCEPTION: Pedestrian signals are not required to comply with the requirement for choosing audible tones.

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drawing title
SPECIFICATIONS SHEET

job no.

date
AUG. 10, 2009

revised

sheet no.
A-16

1. BASIS OF DESIGN / LOAD CRITERIA

1.1. DESIGN IS BASED ON THE REQUIREMENTS OF "THE INTERNATIONAL BUILDING CODE 2006" AND REFERENCED DOCUMENTS.

1.2. FLOOR LIVE LOADS:

ATTIC SPACE SERVED BY STAIR.....40 PSF
STAGE.....125 PSF
CLASSROOMS.....40 PSF
OFFICES.....50 PSF
CORRIDORS.....100 PSF
ASSEMBLY AREAS.....100 PSF

1.3. SNOW LOADING:

GROUND SNOW LOAD.....30 PSF
FLAT ROOF SNOW LOAD (Pf).....21 PSF
SNOW EXPOSURE FACTOR (Ce).....1.0
SNOW IMPORTANCE FACTOR (I).....1.0
THERMAL FACTOR (Ct).....1.0
(MINIMUM SNOW LOAD FOR CALCS.....30 PSF)

1.4. WIND LOADING:

BASIC WIND SPEED (V).....90 MPH
(3-SECOND GUST)
WIND IMPORTANCE FACTOR (I).....1.0
OCCUPANCY CATEGORY.....2
WIND EXPOSURE.....B
INTERNAL PRESSURE COEFFICIENT.....±0.18
COMPONENTS AND CLADDING:
EXTERIOR NET WIND PRESSURE.....25 PSF

1.5. EARTHQUAKE LOADING:

SEISMIC IMPORTANCE FACTOR (I).....1.0
OCCUPANCY CATEGORY.....2

SPECTRAL RESPONSE ACCELERATIONS:
Ss.....0.10
S1.....0.05

SEISMIC SITE CLASS.....D

SPECTRAL RESPONSE COEFFICIENTS:
Sds.....0.10
Sd1.....0.08

SEISMIC DESIGN CATEGORY.....B

BASIC SEISMIC FORCE RESISTING SYSTEM:
LIGHT FRAMED WALLS SHEATHED WITH WOOD
DESIGN BASE SHEAR(V).....0.01W
(WIND GOVERNS OVER SEISMIC)

SEISMIC RESPONSE COEFF(Cs).....0.017

RESPONSE MODIFICATION FACTOR(R).....6

ANALYSIS PROCEDURE USED:
EQUIVALENT LATERAL FORCE METHOD

2. GENERAL NOTES

2.1. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS. DETAILING AND FABRICATION OF THE STRUCTURAL ELEMENTS WILL REQUIRE INFORMATIONAND DIMENSIONS SHOWN ON OTHER DISCIPLINE SHEETS. THE CONTRACTOR SHALL COORDINATE SUCH INFORMATION FROM THE ARCHITECTURAL, ELECTRICAL, MECHANICAL, CIVIL SHEETS ETC, DISCREPANCIES SHALL BE RESOLVED WITH THE ARCHITECT. DO NOT USE SCALED DIMENSIONS.

2.2. UNLESS NOTED OTHERWISE, ELEVATIONS SHOWN AS (X'-X") ARE TO THE TOP OF THE STRUCTURAL ELEMENT (WALL, FOOTING, BEAM. ETC). UNLESS NOTED OTHERWISE THE ELEVATION (0'-0") IS AT THE TOP OF THE FINISHED STRUCTRURAL FLOOR SLAB OF THE MAIN LEVEL.

2.3. THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS, METHOD, TECHNIQUE, OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: SHORING, BRACING, SUPPORT OF TEMPORARY CONSTUCTION LOADS, ETC.

2.4. WHERE THE STRUCTURAL DRAWINGS MAY APPEAR TO CONFLICT WITH OSHA STANDARDS, THE DRAWINGS REPRESENT THE FINAL COMPLETED STRUCTURE ONLY; THE CONTRACTOR SHALL ADD ALL ERECTION FRAMING AS REQUIRED TO COMPLY WITH OSHA.

2.5. ARCHUTECTURAL FEATURES INCLUDING (BUT NOT LIMITED TO) INSULATION, VAPOR BARRIERS, WATER BARIERS, ETC ARE NOT SHOWN ON THE STRUCTURAL PLANS - SEE ARCHITECTURAL.

2.6. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.

2.7. CONTRACTOR SHALL ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

2.8. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT. FOR BIDDING PURPOSES, WHERE ANY MEMBER IS SHOWN BUT NOT CALLED OUT, THE LARGEST SIMILAR MEMBER SHALL BE UTILIZED.

2.9. ALL DETAILS SHALL BE INCORPORATED INTO THE PROJECT AT ALL APPROPRIATE LOCATIONS, WHETHER SPECIFICALLY CUT OR NOT. TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS, BUT APPLY UNLESS NOTED OTHERWISE.

2.10. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES, AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

2.11. ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF IOWA

2.12. UNLESS NOTED OTHERWISE, ANY LOADS LISTED ON STRUCTURAL DRAWINGS ARE WORKING LOADS (ASD), NOT FACTORED LOADS (LRFD)

3. SPECIAL INSPECTION

3.1. THE OWNER SHALL EMPLY INSPECTORS AND SPECIAL INSPECTORS AS REQUIRED DURING CONSTRUCTION TO PROVIDE INSPECTIONS OF THE ITEMS OF WORK LISTED BELOW. THESE INSPECTORS SHALL BE QUALIFIED PERSON(S) WHO DEMONSTRATE COMPETENCE IN EACH PARTICULAR TYPE OF CONSTRUCTION TO THE SATISFACTION OF THE BUILDING OFFICIAL

3.2. THE FOLLOWING SYSTEMS AND COMPONENTS REQUIRE SPECIAL INSPECTION:

3.2.1. SOIL BENEATH BUILDING FOOTINGS
3.2.2. CAST-IN-PLACE CONCRETE
3.2.3. BOLTS OTHER THAN SNUG-TIGHTENED
3.2.4. FIELD WELDED STRUCTURAL CONNECTIONS
3.2.5. EPOXY ANCHOR/DOWELS
3.2.6. EXPANSION ANCHORS

4. FOUNDATIONS

4.1. DESIGN OF FOUNDATION IS BASED ON AN ASSUMED ALLOWABLE BEARING PRESSURE OF 1500 PSF.

4.1. IF UNDESIRABLE SOIL CONDITIONS ARE FOUND CONTACT THE ENGINEER IMMEDIATELY.

4.2. VERIFY DIMENSIONS AND LOCATIONS OF STOOPS, BLOCK-DOWNS, ETC WITH ARCHITECTURAL DRAWINGS. VERIFY ELEVATIONS OF FOUNDATION LEDGES WITH ARCHITECTURAL OR CIVIL DRAWINGS.

4.3. GRADING AROUND THE BUILDING SHALL BE SLOPED TO DRAIN AWAY FROM THE BUILDING. ROOF DRAINAGE SHALL BE PIPED AWAY FROM THE BUILDING. COORDINATE SITE GRADING AND FOUNDATION SUBDRAINS WITH CIVIL.

5. SLABS ON GRADE

5.1. UNLESS NOTED OTHERWISE, FLOOR SLABS SHALL BE TROWEL FINISHED AND MOIST CURED FOR SEVEN DAYS.

5.2. VERIFY NEED FOR SLAB RECESSES AND TOP OF SLAB ELEVATION WITH ARCHITECTURAL PLANS AND FINISHED FLOORING SUPPLIERS.

5.3. SLAB THICKNESS AND REINFORCEMENT IS AS SHOWN ON PLANS OR A MINIMUM 4" THICKNESS WITH 6X6-W1.4XW1.4 WELDED WIRE REINFORCEMENT CENTERED IN THE SLAB THICKNESS.

5.4. LOCATE WELDED WIRE REINFORCEMENT IN CENTER OF SLAB THICKNESS.

5.5. LAP WELDED WIRE REINFORCEMENT 8" AT SPLICES.

5.6. CONTROL AND CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ARCHITECT.

5.7. SEE ARCHITECTURAL FOR LOCATION OF VABOR BARRIER, INSULATION, ETC.

5.8. UNLESS NOTED OTHERWISE, PROVIDE (1) #5 BAR 4'-0" LONG ORIENTED AT 45 DEGREES AT EACH RE-ENTRANT CORNER AROUND WALLS, PIERS, ETC. ALSO PROVIDE SAME BAR AT EACH CORNER OF OPENINGS IN SLAB.

6. STRUCTURAL CONCRETE

6.1. CONCRETE DESIGN IS BASED ON ACI-318. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF ACI 301 EXCEPT WHERE MODIFIED BY THESE CONTRACT DOCUMENTS.

6.2. ALL CONCRETE EXCEPT FOOTINGS SHALL HAVE COMPRESSIVE STRENGTH OF 4000PSI AFTER 28 DAYS. FOOTINGS SHALL HAVE COMPRESSIVE STRENGTH OF 3000 PSI AFTER 28 DAYS.

6.3. MAXIMUM SLUMP OF 4" (8" AFTER ADDING WATER-REDUCING OR PLASTICIZING ADD MIXTURES.)

6.4. AIR ENTRAINMENT SHALL BE 6% ±1% FOR ALL STRUCTURAL CONCRETE EXPOSED TO WEATHER OR SUBJECT TO FREEZE-THAW CONDITIONS.

6.5. MATERIALS SHALL BE:
REINFORCING BARS.....GRADE 60 PER ASTM A 615
WELDED WIRE REINF.....ASTM A 185
PORTLAND CEMENT.....ASTM C 150 (TYPE I OR II)
FLY ASH.....ASTM C 618 (TYPE C OR F)
AGGREGATE.....ASTM C33
AIR ENTRAINING.....ASTM C 260

6.6. AT ALL WALL CORNERS AND INTERSECTIONS PROVIDE CORNER BARS HAVING A CLASS "B" SPLICE WITH ADJACENT WALL BARS.

6.7. NO SPLICES OF REINFORCEMENT SHALL BE MADE EXCEPT AS DETAILED OR AUTHORIZED BY STRUCTURAL ENGINEER. ALL LAP SPLICES TO BE CLASS "B" UNLESS OTHERWISE NOTED.

6.8. DETAIL ALL REINFORCING AND PROVIDE BAR SUPPORTS IN ACCORDANCE WITH A.C.I. DETAILING MANUAL, LATEST EDITION.

6.9. PROVIDE LATERAL SUPPORT FOR WALLS WHILE EARTH BACKFILL IS BEING PLACED AND COMPACTED.

6.10. REINFORCEMENT PROTECTION: BAR COVER SHALL BE AS NOTED IN DRAWINGS. WHERE NOT EXPLICITLY STATED IN THE DRAWINGS, THE FOLLOWING MINIMUMS SHALL APPLY:
CONCRETE POURED AGAINST EARTH 3"
CONCRETE POURED IN FORMS BUT EXPOSED TO WEATHER OR EARTH 2"
WALLS, SLABS AND JOISTS 1"
BEAMS AND COLUMNS 1 1/2"

6.11. UNLESS OTHERWISE SHOWN, PLACE ON EACH SIDE OF ANY OPENING THE FOLLOWING: (2) #5 WITH 2'-0" PROJECTION PAST EACH END OF OPENING. APPLIES TO ALL OPENINGS IN CONCRETE WALLS, GRADE BEAMS, OR SLABS.

6.12. NO HORIZONTAL JOINTS ARE PERMITTED IN SLABS, JOISTS, WALLS, OR BEAMS. SEE ARCHITECTURAL DRAWINGS FOR CHAMFERS, KERFS, NOSINGS, ETC.

7. EPOXY RODS/DOWELS AND EXPANSION BOLTS

7.1. EPOXY BOLTS OR DOWELS IN CONCRETE SHALL BE A THREADED ROD OR REINFORCING STEEL INSTALLED WtTH HILTI HIT-RE500-SD PER ICC-ES REPORT ESR-2322.

7.2. EXPANSION BOLTS FOR CONCRETE SHALL BE A "KWIK BOLT TZ" BY HILTI INSTALLED PER ICC-ES REPORT ESR 1917.

7.3. THE CONTRACTOR MAY NOT USE SUBSTITUTES FOR EPOXY OR EXPANSION ANCHORS WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.

7.4. FOR MINIMUM EMBEDMENT LENGTH SEE DETAILS. INSTALL ALL BOLTS AS OUTLINED IN MANUFACTURER'S SPECIFICATIONS, UTILIZING PROPER SIZE AND TYPE OF DRILL, CLEANING HOLE, DRIVING AND TIGHTENING BOLT.

7.5. SPECIAL INSPECTION OF ALL EPOXY AND EXPANSION ANCHORS IS REQUIRED.

LICENSED PROFESSIONAL ENGINEER
Adam J. Cannon
17363
IOWA

I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly Licensed Structural Engineer under the laws of the State of Iowa.

Adam J. Cannon Lic. 17363 Date

My license renewal date is December 31, 2010.

Pages or sheets covered by this seal:
S0.1, S0.2, S1.1, S1.2, S2.1, S2.2, S2.3, S2.4, S2.5, S2.6

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HEARTLAND COMMUNITY CHURCH
70 Kansas Avenue
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REVISION	DATE	BY
ISSUED FOR PERMIT	08/11/09	AC

SHEET TITLE:
STRUCTURAL NOTES

SHEET NO.
S0.1

1. STRUCTURAL STEEL

1.1. FABRICATION AND CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING CODES AND STANDARDS:
AISC'S "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS",
AISC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS",
AWS D1.1 "STRUCTURAL WELDING CODE–STEEL".

1.2. MATERIALS SHALL BE:
W SHAPES.....ASTM A992 GRADE 50
RECTANGULAR HSS.....ASTM A500 GRADE B (Fy=46 KSI)
ROUND HSS.....ASTM A500, GRADE B (Fy=42 KSI).
OTHER SHAPES.....ASTM A36
BOLTS, NUTS, WASHERS.....ASTM A 325 TYPE 1 HEAVY HEX
ANCHOR RODS.....ASTM F1554 GRADE 36
ANCHOR NUTS.....ASTM A563 HEAVY HEX CARBON STEEL
ANCHOR PLATE WASHERS.....ASTM A–36 CARBON STEEL
ANCHOR WASHERS.....ASTM F436 HARDENED CARBON STEEL
WELD ELECTRODES.....E70XX PER AWSD1.1
PRIMER: LEAD & CHROMATE FREE, RUST INHIBITING PRIMER
GROUT: ASTM C1107 NONMETALLIC, NON–SHRINK, FACTORY PACKAGED

1.3. BOLTED JOINTS SHALL BE SNUG TIGHTENED U.N.O.

1.4. BOLTS NOTED AS "FULLY TIGHTENED" SHALL UTILIZE TWIST–OFF BOLTS TO VISUALLY INDICATE A FULLY–TENSIONED CONDITION HAS BEEN ACHEIVED.

1.5. CONNECTIONS NOT DETAILED IN PLANS SHALL BE DESIGNED BY FABRICATOR AND SUBMITTED FOR REVIEW AND APPROVAL BY STRUCTURAL ENGINEER.

1.6. CONNECTIONS SHALL BE DESIGNED FOR HALF OF UNIFORM LOAD CAPACITY OF BEAM UNLESS NOTED OR DETAILED OTHERWISE.

1.7. SUBMIT SHOP DRAWINGS TO ARCHITECT/ENGINEER FOR APPROVAL

1.8. ALL WELDING PER LATEST AMERICAN WELDING SOCIETY STANDARDS. ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY. ALL WELDING DONE BY E70 SERIES LOW HYDROGEN RODS UNLESS NOTED OTHERWISE.

1.9. ALL BEAM BEARINGS SHALL HAVE ⅜" WEB STIFFENERS INSTALLED ON EACH SIDE OF THE WEB ABOVE EACH BEARING LOCATION. USE ¼" FILLET WELD ALL AROUND EACH SIDE OF WEB STIFFENERS.

2. SHOP DRAWINGS

2.1. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS.

2.2. CONSTRUCTION DOCUMENTS SHALL NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS.

2.3. NO MORE THAN FOUR SETS SHALL BE REVIEWED FOR EACH SUBMITTAL.

2.4. REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTAL ITEMS NOT IN ACCORDANCE WITH CONTRACT DOCUMENTS SHALL BE FLAGGED UPON HIS REVIEW. VERIFY ALL DIMENSIONS WITH ARCHITECT.

2.5. THE ENGINEER HAS THE RIGHT TO APPROVE OR DISAPPROVE ANY CHANGES TO CONTRACT DOCUMENTS AT ANY TIME BEFORE OR AFTER SHOP DRAWING REVIEW.

2.6. THE SHOP DRAWINGS DO NOT REPLACE THE CONTRACT DOCUMENTS. ITEMS OMITTED OR SHOWN INCORRECTLY AND ARE NOT FLAGGED BY THE STRUCTURAL ENGINEER OR ARCHITECT ARE NOT TO BE CONSIDERED CHANGES TO CONTRACT DOCUMENTS.

2.7. REVIEWING IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. RESPONSIBILITY FOR CORRECTNESS AND COMPLETENESS SHALL REST WITH THE CONTRACTOR.

2.8. SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF MAJOR ERRORS ARE FOUND DURING REVIEW.

2.9. ALLOW FIVE WORKING DAYS FOR REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL ENGINEER.

3. WOOD FRAMING

3.1. WOOD FRAMING SHALL BE IN ACCORDANCE WITH THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTUCTION" AS PUBLICHED BY THE AF&PA AND THE AWC. CONVENTIONAL LIGHT WOOD FRAMING SHALL BE IN ACCORDANCE WITH SECTION 2308 OF THE 2006 INTERNATIONAL BUILDING CODE.

3.1. UNLESS NOTED OTHERWISE, WALL SHEETING SHALL BE 5/8" APA RATED SHEATHING FASTENED WITH 8d RING–SHANK NAILS AT 12" OC AT INTERMEDIATE SUPPORTS AND 6" OC AT PANEL EDGES. EXTERIOR WALL STIDS ARE 2X6 AT 16" U.N.O.

3.2. UNLESS NOTED OTHERWISE, ROOF SHEETING SHALL BE 5/8" APA RATED SHEATHING FASTENED WITH 8d RING–SHANK NAILS AT 12" OC AT INTERMEDIATE SUPPORTS AND 6" OC AT PANEL EDGES. USE PLY–CLIPS BETWEEN TRUSSES.

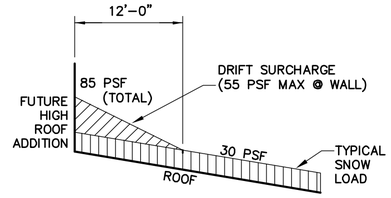
3.3. WOOD SUBFLOOR SHALL BE NAILED AT ALL SUPPORTS (EDGE AND INTERIOR) WITH 8D RING SHANK NAILS AT 12" MAX SPACING. ALL WOOD SUBFLOOR SHALL BE TONGE AND GROOVE AT UNSUPPORTED EDGES AND SHALL RUN IN THE LONG DIRECTION ACROSS SUPPORTS SO THAT A MINIMUM TWO–SPAN CONDITION IS PROVIDED IN ALL LOCATIONS.

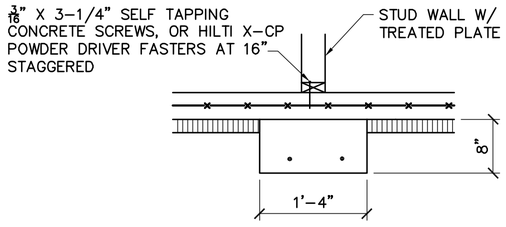
3.4. ALL ROOF TRUSSES SHALL BE FASTENED TO DOUBLE TOP PLATE OF WALL USING SIMPSON H2.5 AND TO BEAM PLATES WITH SIMPSON H3 TIE–DOWNS OR EQUIVALENT.

3.5. HEADER MATERIAL SHALL BE #1 DOUG–FIR. STUDS SHALL BE STUD GRADE SPRUCE–PINE–FIR. TREATED LUMBER SHALL BE #1 SOUTHERN YELLOW PINE. FASTENERS PLACED IN TREATED LUMBER SHALL HAVE CORROSION RESISTANT, ACQ–COMPATIBLE COATING (G185 GALVANIZED OR EQUIVALENT).

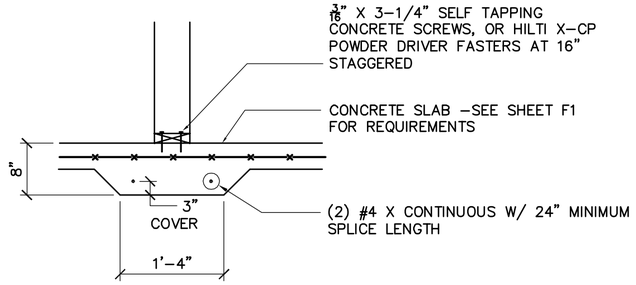
3.6. LAMINATED VENEER LUMBER (LVL) SHALL HAVE THE FOLLOWING PROPERTIES: ALLOWABLE BENDING STRESS (Fb)=3.0 KSI, ELASTIC MODULUS (E)=2.0 KSI

3.7. TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER. PROPOSED TRUSS LAYOUTS AND PROFILES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. DESIGN OF TRUSS SYSTEM SHALL INCLUDE THE DESIGN OF TEMPORARY AND PERMANENT BLOCKING OR BRACING TO PREVENT BUCKLING OF CHORDS OR WEB MEMBERS AND TO PREVENT THE TRUSSES FROM ROLLING OVER (DOMINOEING). TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING LOADS: (SNOW 30 PSF, TOP CHORD DEAD LOAD 10 PSF, BOTTOM CHORD DEAD LOAD 10 PSF). TRUSSES SHALL ALSO BE DESIGNED FOR A NET UPLIFT OF 15 PSF AND A DRIFT LOAD AS SHOWN IN THE DIAGRAM BELOW.

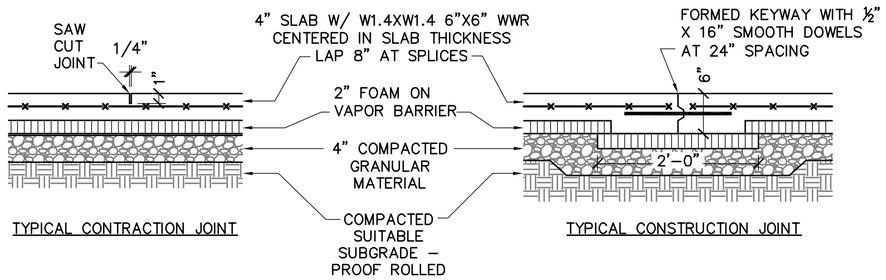




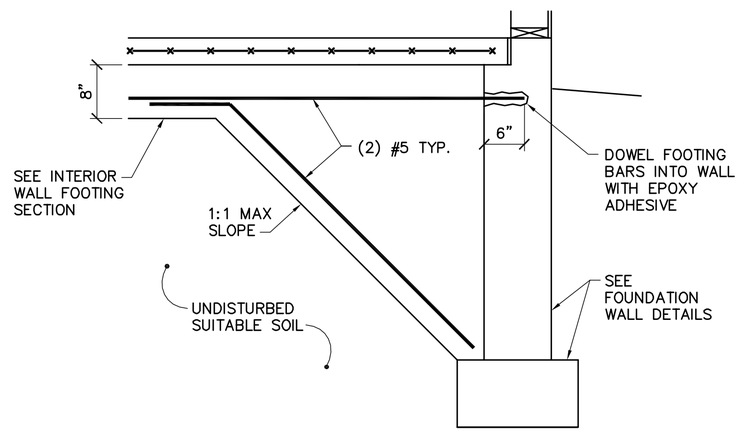
LOAD BEARING INTERIOR WALL FOOTING (1 / S0.2)
3/4" = 1'-0"



THICKENED SLAB DETAIL (2 / S0.2)
3/4" = 1'-0"



SLAB ON GRADE DETAILS (3 / S0.2)
3/4" = 1'-0"



INTERIOR WALL FOOTING AT EXTERIOR WALL (4 / S0.2)
3/4" = 1'-0"

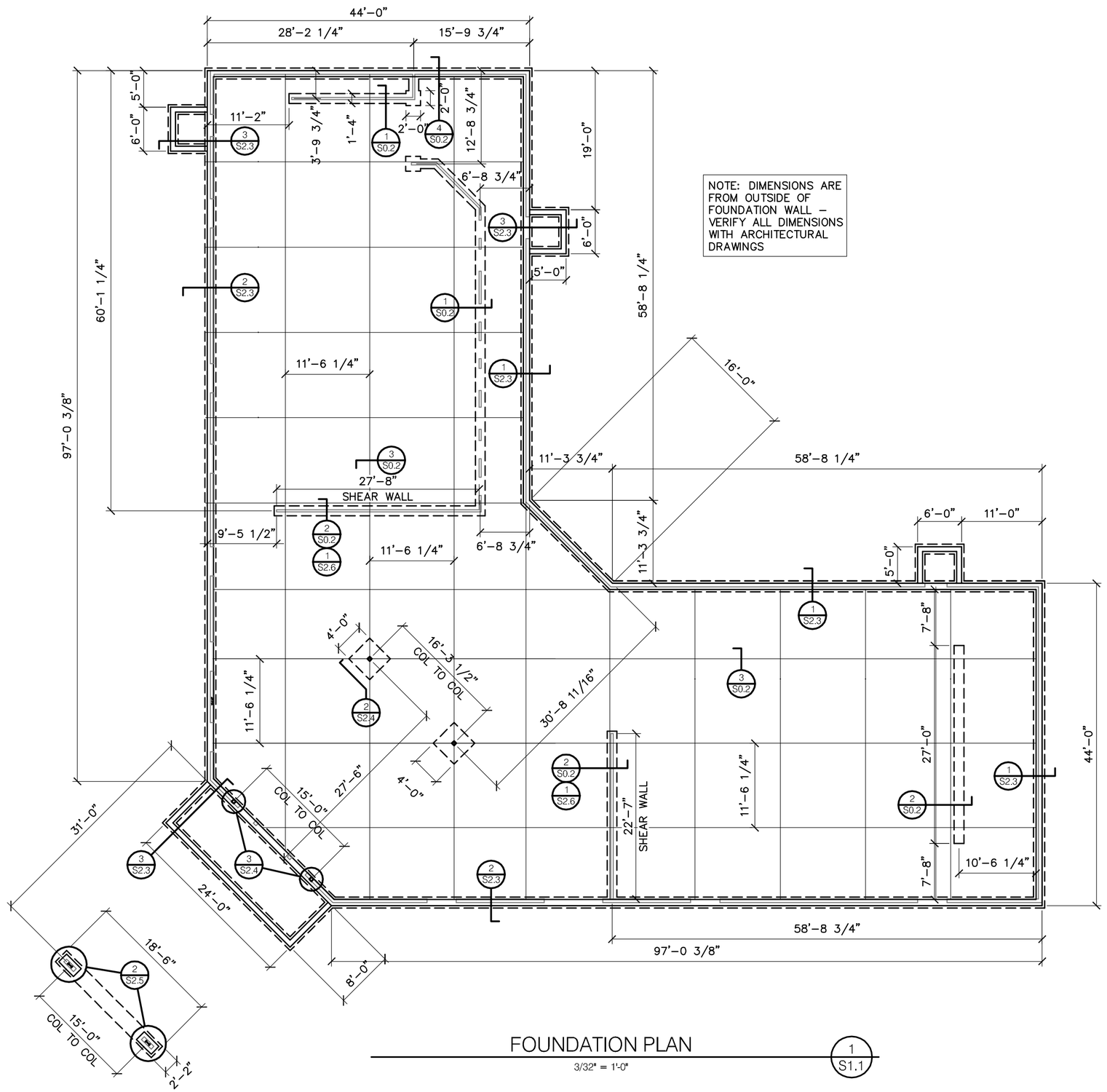
CANNON STRUCTURAL DESIGN
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319.338.7691 fax
adam@cannonsd.com

HEARTLAND COMMUNITY CHURCH
70 Kansas Avenue
North Liberty, Iowa

REVISION	DATE	BY
ISSUED FOR PERMIT	08/11/09	AC

SHEET TITLE:
STRUCTURAL NOTES AND STANDARD DETAILS

SHEET NO.
S0.2



NOTE: DIMENSIONS ARE FROM OUTSIDE OF FOUNDATION WALL – VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS

FOUNDATION PLAN

3/32" = 1'-0"

1 S1.1

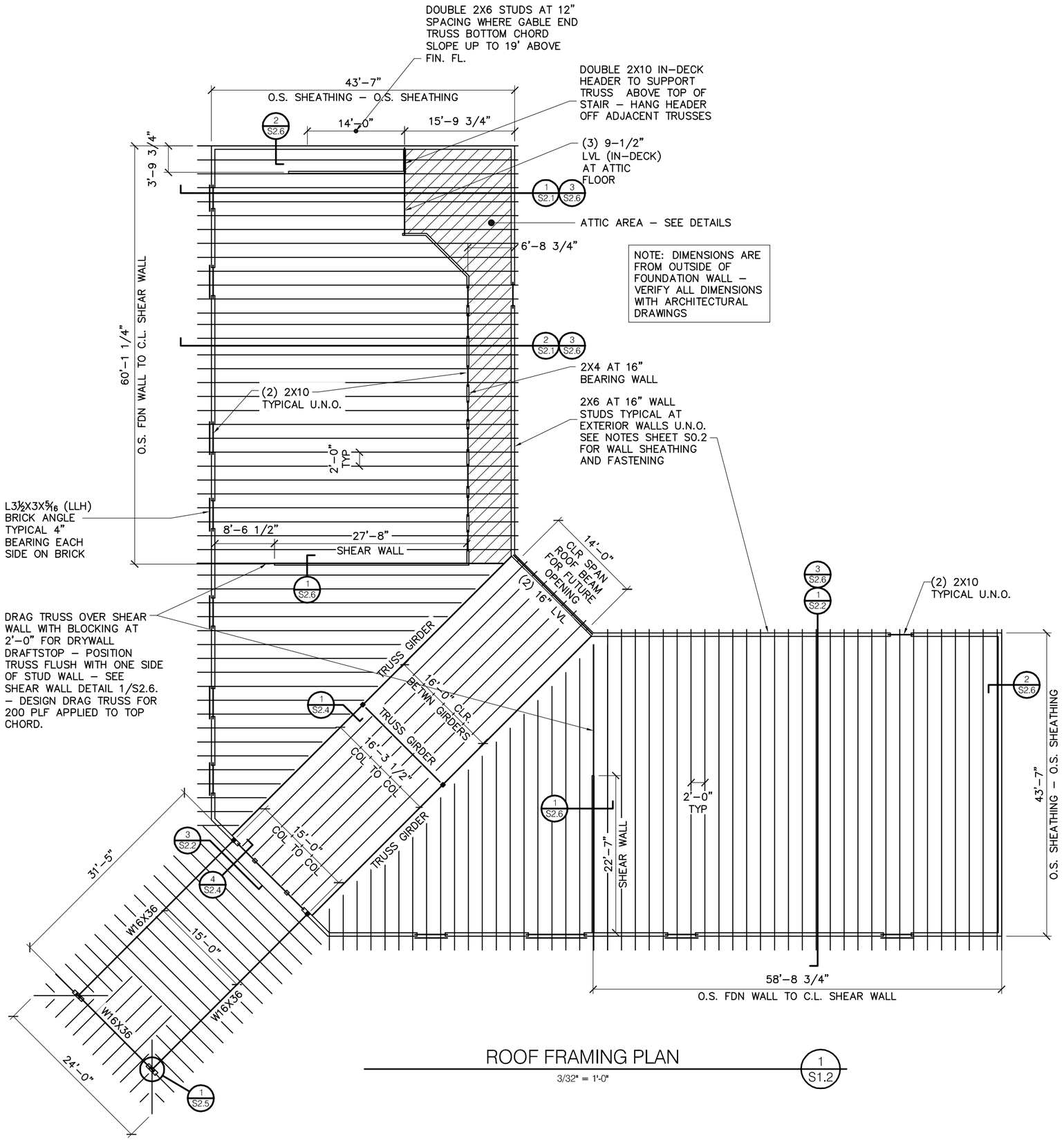
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FOUNDATION PLAN

SHEET NO.
S1.1



ROOF FRAMING PLAN

3/32" = 1'-0"

1 S1.2

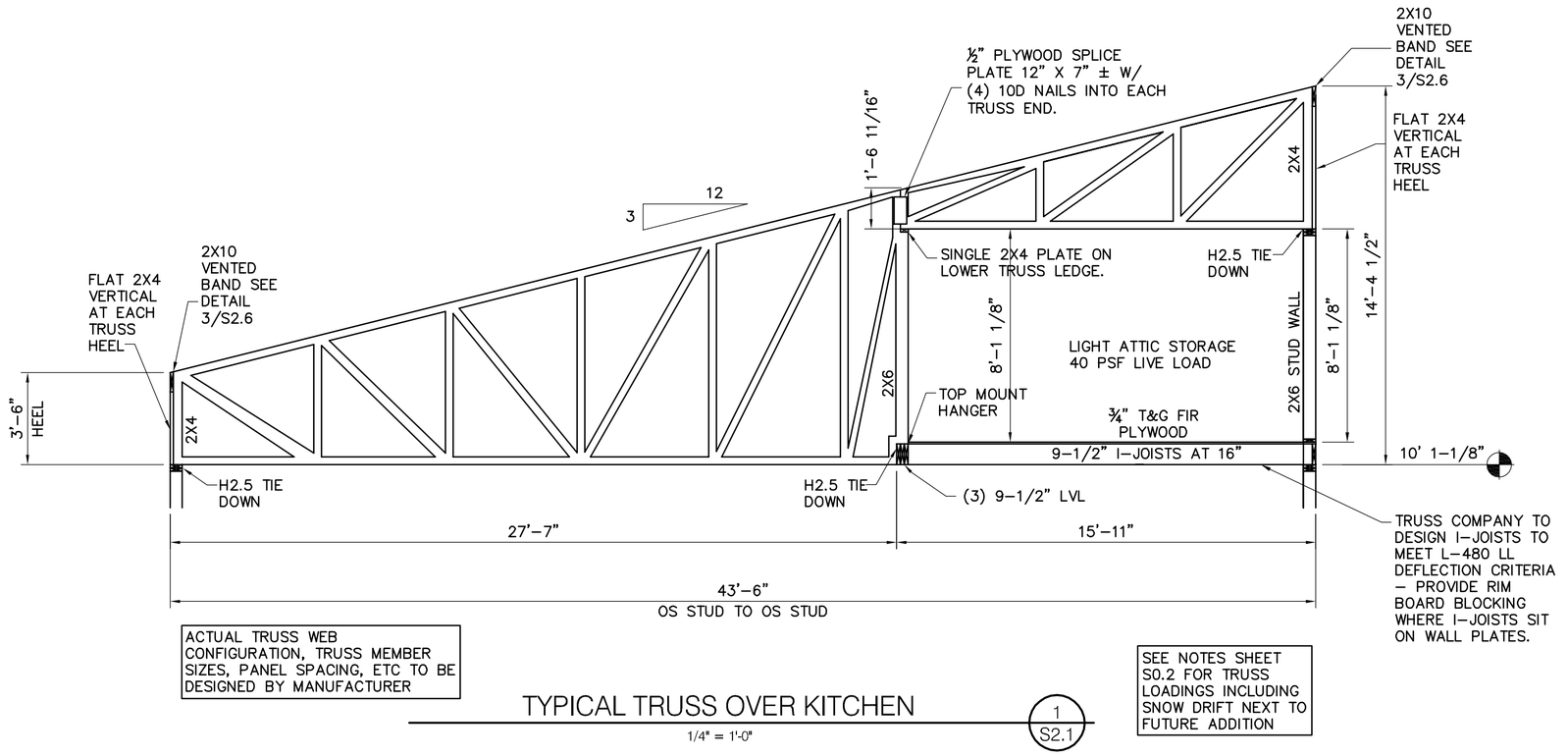
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SHEET TITLE: ROOF FRAMING PLAN

SHEET NO. S1.2



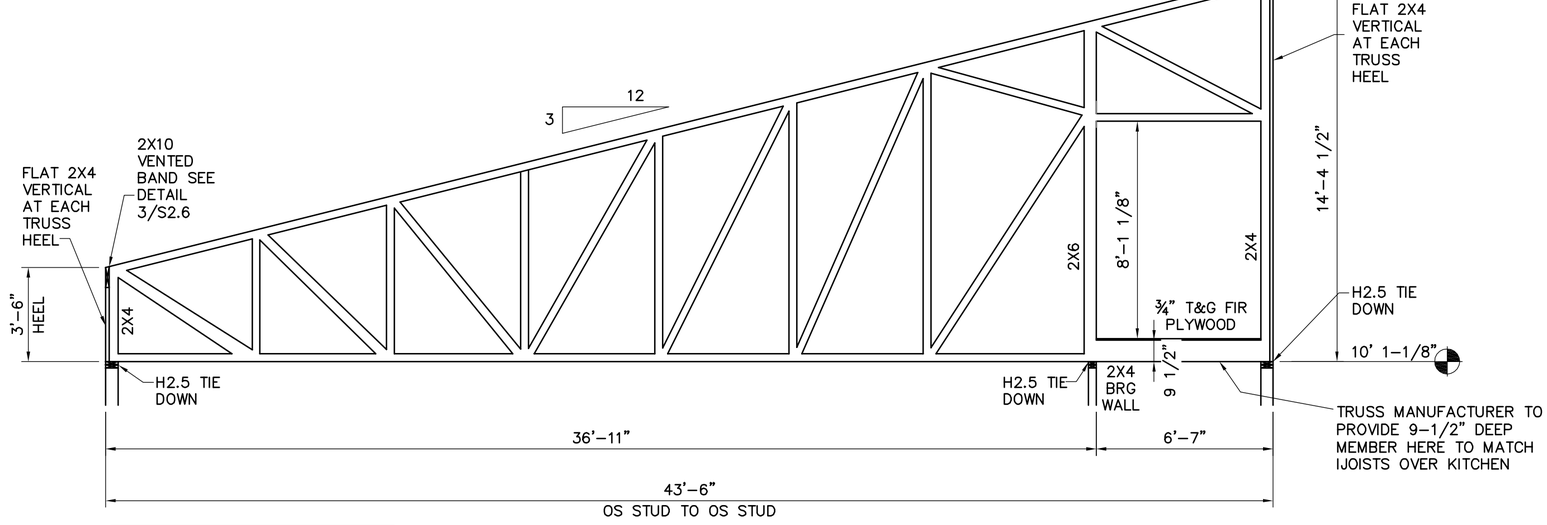
ACTUAL TRUSS WEB CONFIGURATION, TRUSS MEMBER SIZES, PANEL SPACING, ETC TO BE DESIGNED BY MANUFACTURER

SEE NOTES SHEET S0.2 FOR TRUSS LOADINGS INCLUDING SNOW DRIFT NEXT TO FUTURE ADDITION

TYPICAL TRUSS OVER KITCHEN

1/4" = 1'-0"

1 / S2.1



ACTUAL TRUSS WEB CONFIGURATION, TRUSS MEMBER SIZES, PANEL SPACING, ETC TO BE DESIGNED BY MANUFACTURER

SEE NOTES SHEET S0.2 FOR TRUSS LOADINGS INCLUDING SNOW DRIFT NEXT TO FUTURE ADDITION

TYPICAL TRUSS OVER CLASSROOMS

1/4" = 1'-0"

2 / S2.1

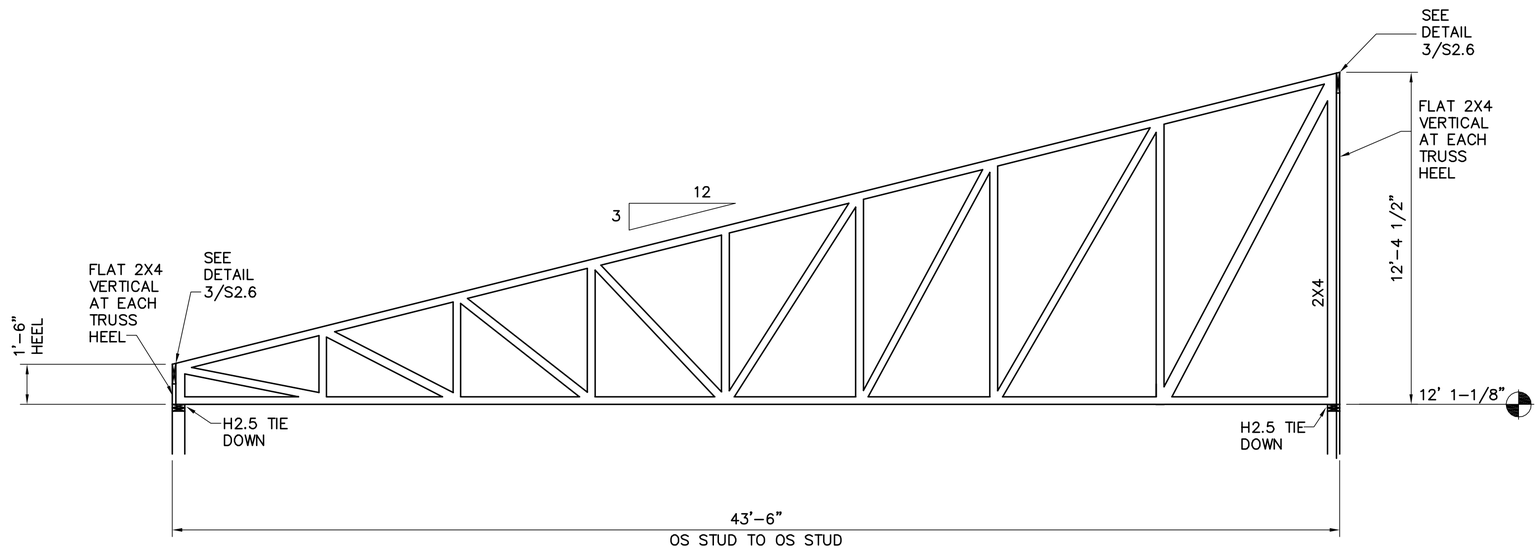
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SHEET TITLE:
CONSTRUCTION DETAILS

SHEET NO.
S2.1



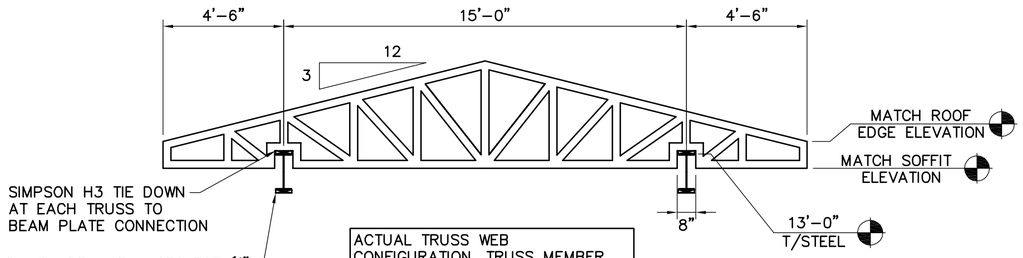
ACTUAL TRUSS WEB CONFIGURATION, TRUSS MEMBER SIZES, PANEL SPACING, ETC TO BE DESIGNED BY MANUFACTURER

SEE NOTES SHEET S0.2 FOR TRUSS LOADINGS INCLUDING SNOW DRIFT NEXT TO FUTURE ADDITION

TYPICAL TRUSS OVER SANCTUARY AREA

1/4" = 1'-0"

1 / S2.2

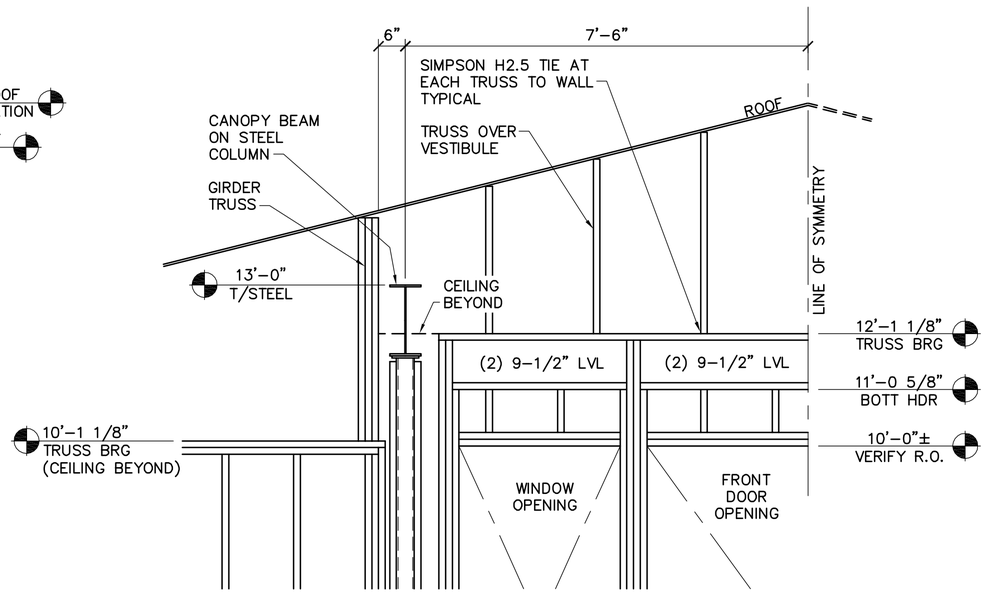


ACTUAL TRUSS WEB CONFIGURATION, TRUSS MEMBER SIZES, PANEL SPACING, ETC TO BE DESIGNED BY MANUFACTURER

SECTION THROUGH CANOPY

1/4" = 1'-0"

2 / S2.2



WALL ELEVATION AT FRONT ENTRY

1/2" = 1'-0"

3 / S2.2

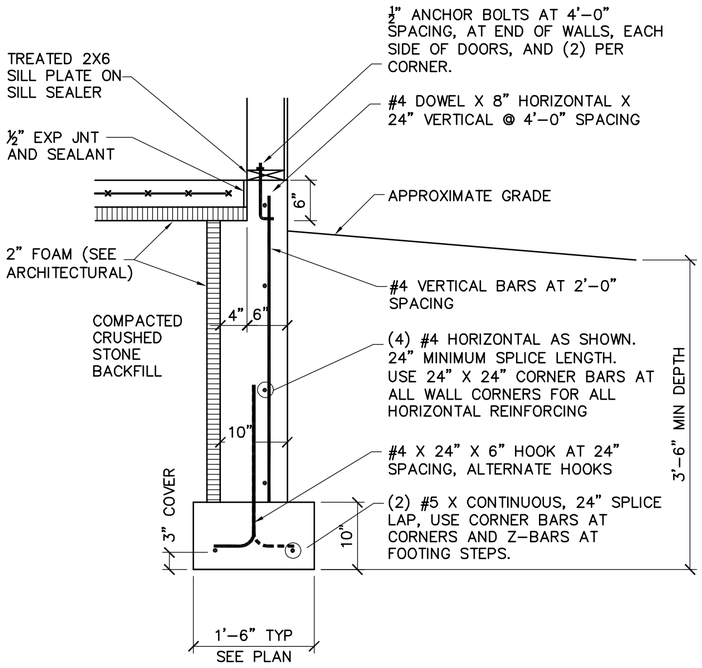
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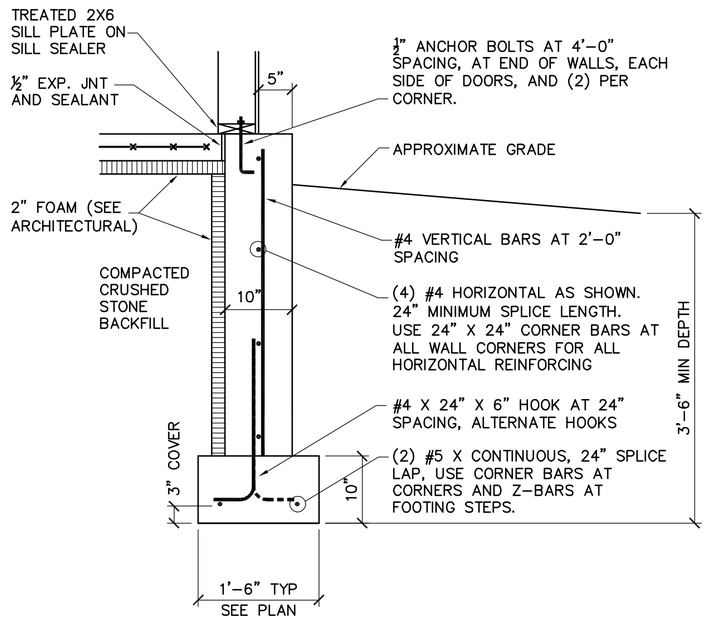
SHEET NO.
S2.2



TYPICAL EXTERIOR WALL FOUNDATION AT WALL WITHOUT BRICK

3/4" = 1'-0"

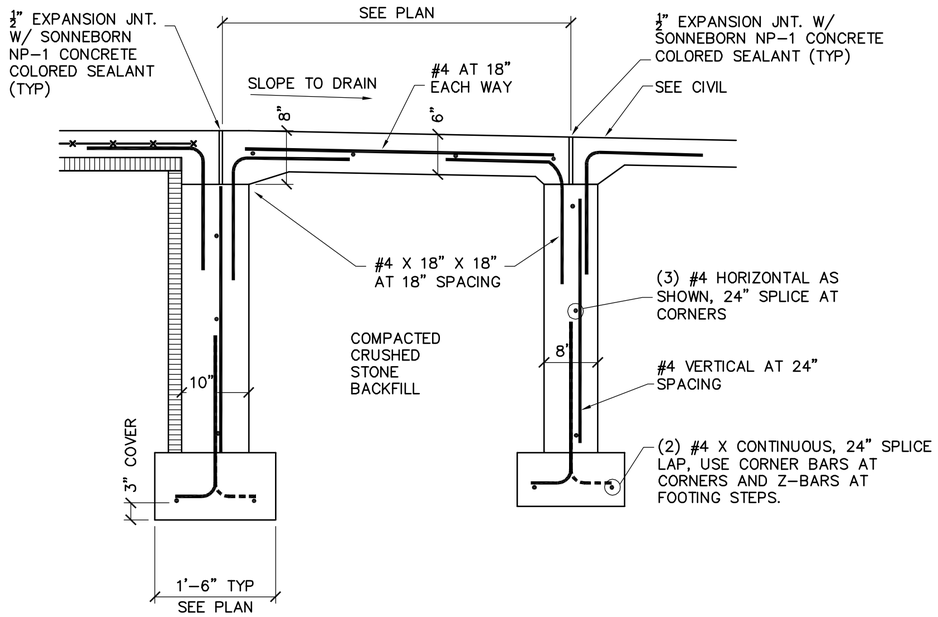
1 S2.3



TYPICAL EXTERIOR WALL FOUNDATION AT WALL WITH BRICK

3/4" = 1'-0"

2 S2.3



TYPICAL STOOP FOUNDATION

3/4" = 1'-0"

3 S2.3

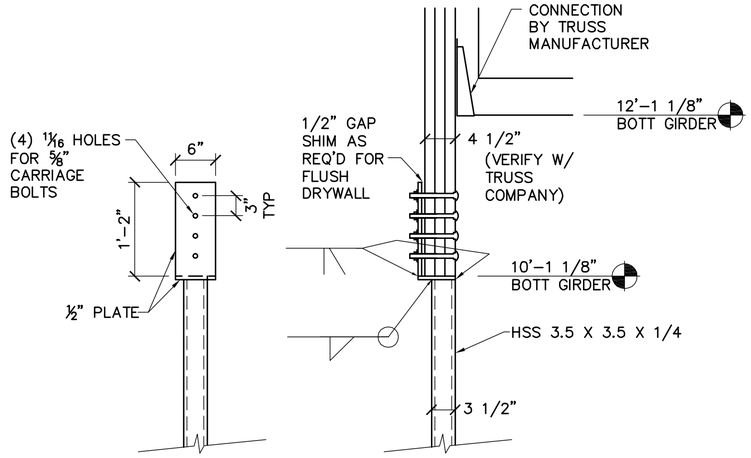
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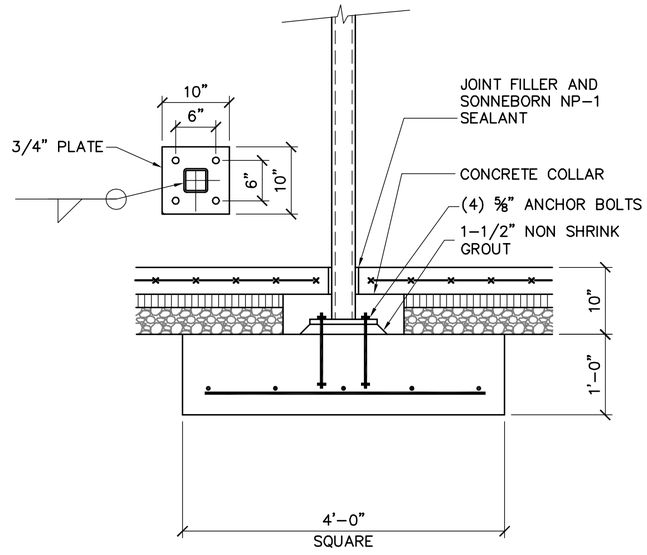
SHEET NO.
S2.3



TOP OF COLUMN AT TRUSS GIRDER

3/4" = 1'-0"

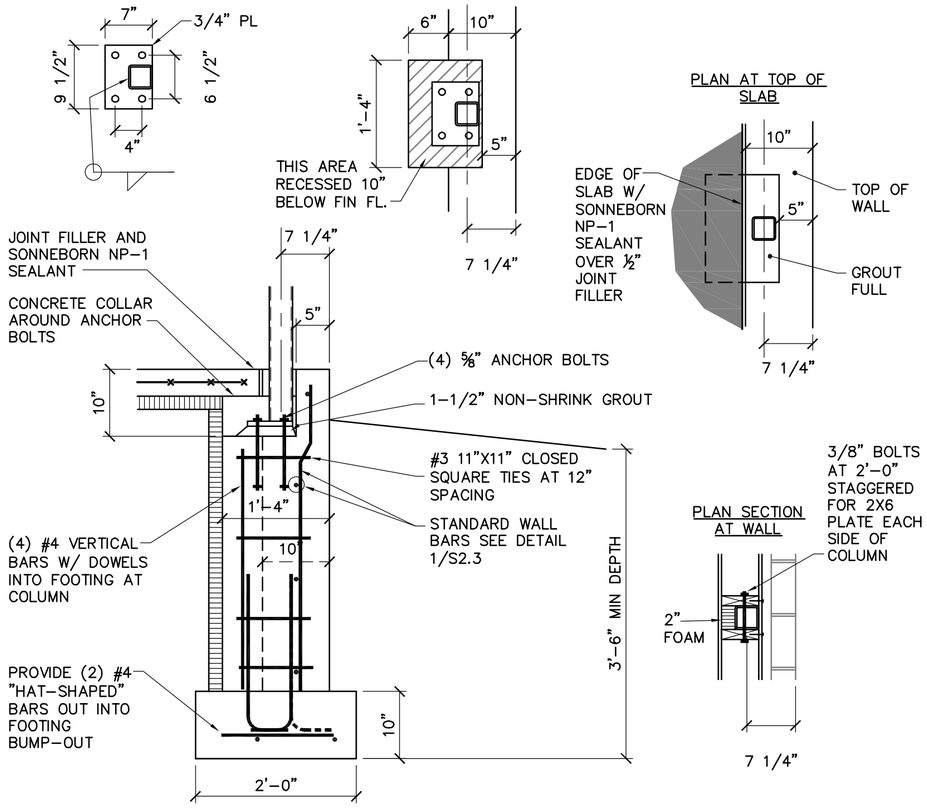
1 S2.4



SPREAD FOOTING AT TRUSS GIRDER COLUMN

3/4" = 1'-0"

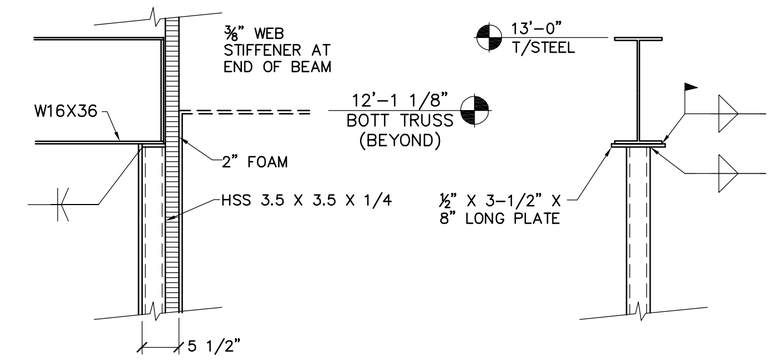
2 S2.4



FOUNDATION WALL AT CANOPY COLUMN

3/4" = 1'-0"

3 S2.4



CANOPY BEAM TO WALL COLUMN

3/4" = 1'-0"

4 S2.4

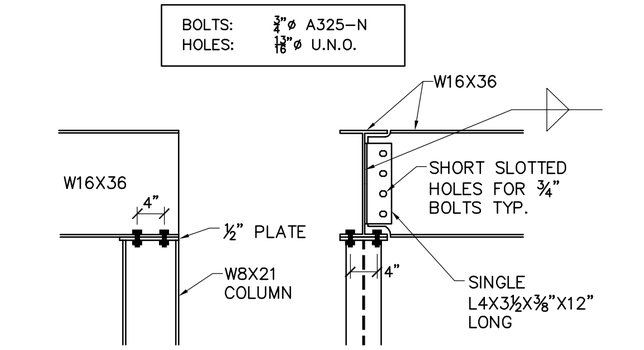
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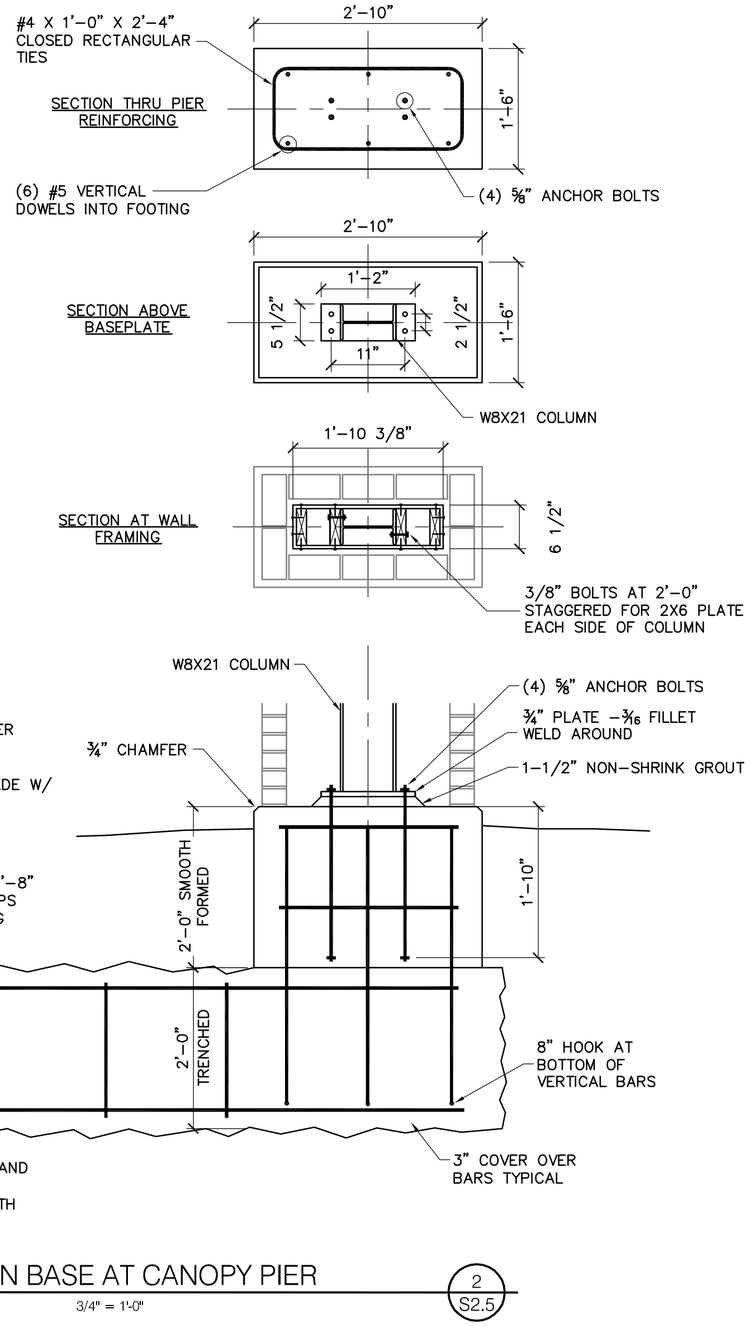
SHEET NO.
S2.4



COLUMN TO BEAM AT CANOPY END

3/4" = 1'-0"

1 S2.5



COLUMN BASE AT CANOPY PIER

3/4" = 1'-0"

2 S2.5

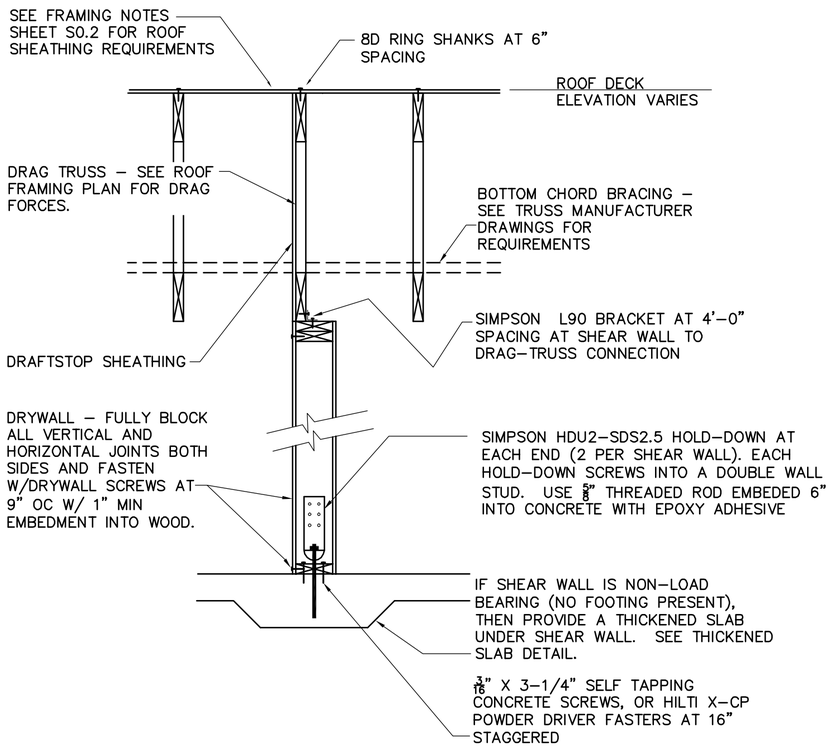
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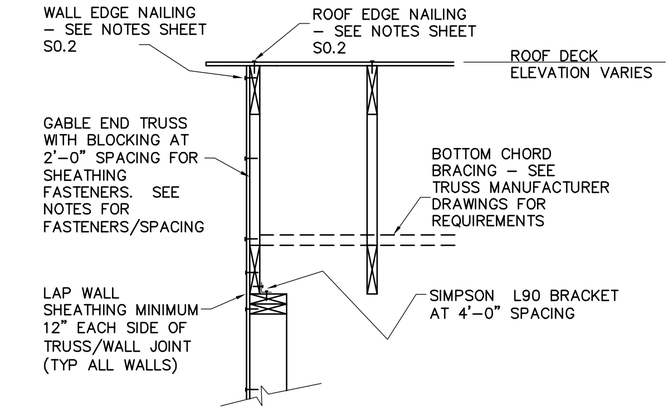
SHEET TITLE:
CONSTRUCTION DETAILS

SHEET NO.
S2.5



PARTITION SHEAR WALL DETAIL — 1 / S2.6

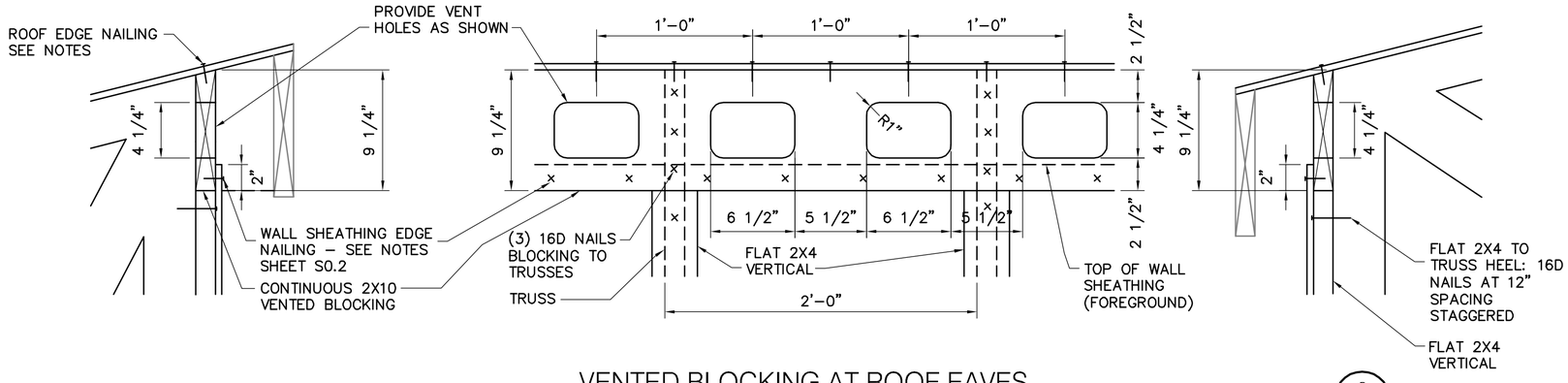
3/4" = 1'-0"



GABLE END TRUSS TO WALL CONNECTION — 2 / S2.6

3/4" = 1'-0"

NOTE: DETAIL SHOWN PROVIDES 26.7 SQUARE INCHES OF VENT SPACE PER FOOT OF EAVE. CODE MINIMUM IS 21 SQUARE INCHES. ARCHITECT TO VERIFY ADEQUACY OF VENT SPACE. SEE ARCHITECTURAL FOR SOFFIT AND FASCIA REQUIREMENTS.



VENTED BLOCKING AT ROOF EAVES — 3 / S2.6

3/4" = 1'-0"

CANNON STRUCTURAL DESIGN
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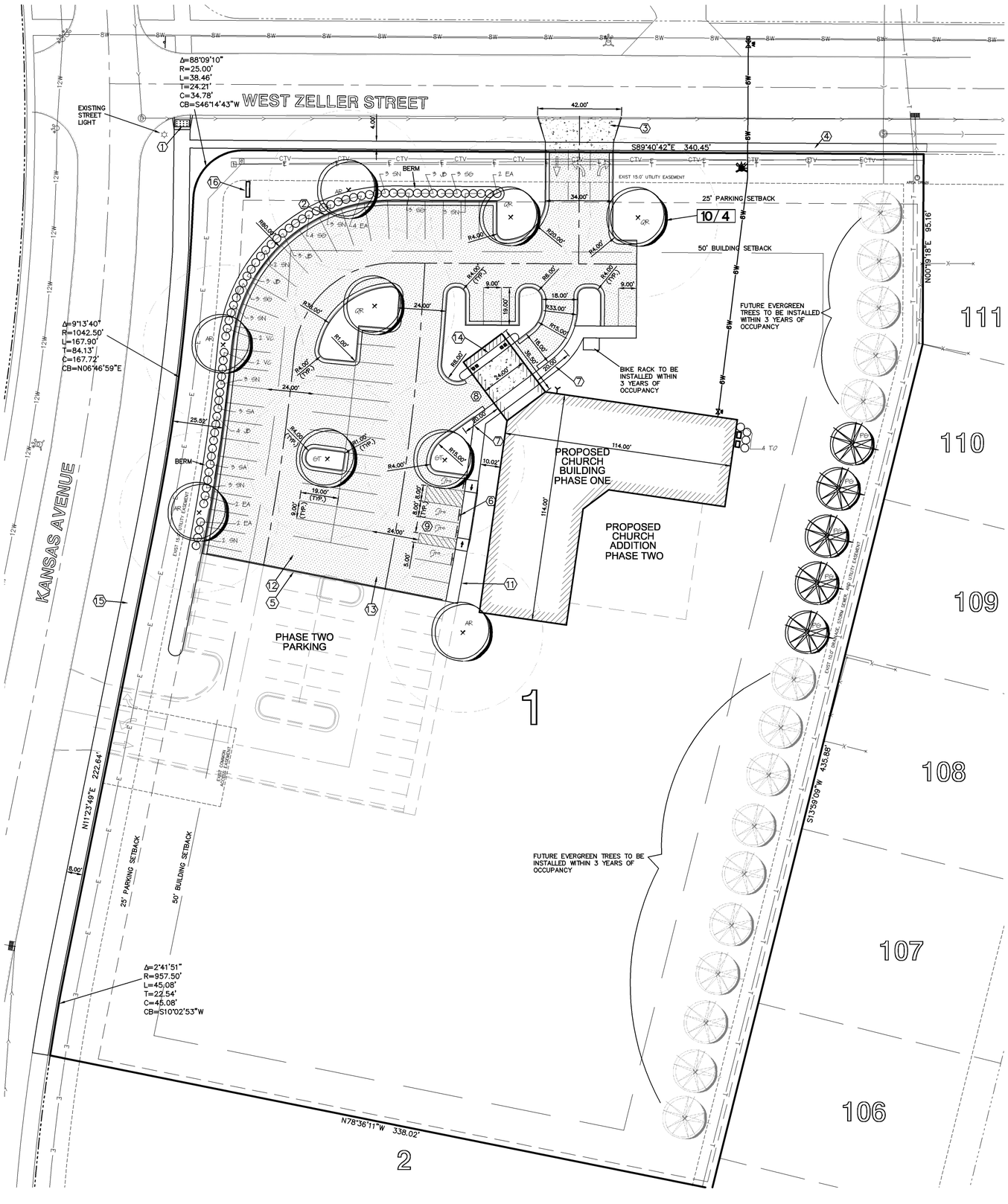
HEARTLAND COMMUNITY CHURCH
70 Kansas Avenue
North Liberty, Iowa

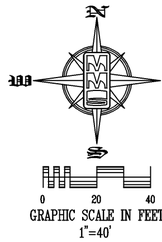
REVISION	ISSUED FOR PERMIT	DATE	BY
		08/11/09	AC

SHEET TITLE:
CONSTRUCTION DETAILS

SHEET NO.
S2.6

SITE PLAN
HEARTLAND COMMUNITY CHURCH
70 SOUTH KANSAS AVENUE, NORTH LIBERTY, IOWA





PLAN PREPARED BY :
MMS CONSULTANTS INC.
1917 SOUTH GILBERT ST.
IOWA CITY, IOWA, 52240
5741 C ST SW SUITE C
CEDAR RAPIDS, IA 52404

OWNER/APPLICANT:
HEARTLAND COMMUNITY CHURCH
555 W. CHERRY ST. NO'S 4 & 5
P.O. BOX 576
NORTH LIBERTY, IA 52317
PHONE: 319-655-5607

LEGAL DESCRIPTION
Lot 1, West Lake Addition – Part Twleve, North Liberty, Johnson County, Iowa, in accordance with the recorded Plat thereof, containing 4.00 acres and subject to easements and restrictions of record.

PLANT LIST – TREES

QTY	KEY	BOTANICAL NAME	COMMON NAME	INSTALL SIZE	COMMENT	MATURE SIZE
4	AR	ACER x FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE RED MAPLE	2" CAL.	B & B	50' X 50'
2	GT	GLEDITSIA TRIACANTHOS INERMIS 'SUNBURST'	SUNBURST THORNLESS HONEYLOCUST	2" CAL.	B & B	60' X 50'
5	PG	PICEA GLAUCA DENSATA	BLACK HILLS SPRUCE	6' HT.	B & B	50' X 20'
5	QR	QUERCUS RUBRA	RED OAK	2" CAL.	B & B	70' X 50'

PLANT LIST – SHRUBS, PERENNIALS, ORNIMENTAL GRASSES & GROUNDCOVER

QTY	KEY	BOTANICAL NAME	COMMON NAME	INSTALL SIZE	COMMENT	MATURE SIZE
57	EA	EUONYMUS ALATUS 'COMPACTUS'	COMPACT WINGED EUNOYMUS	24" HT.	CONT.	5' X 5'
13	JD	JUNIPERUS HORIZONTALIS 'BLUE CHIP'	BLUE CHIP JUNIPER	24" DIA.	CONT.	1' X 5'
6	SA	SPIREA 'ANTHONY WATERER'	ANTHONY WATERER SPIREA	12" HT.	CONT.	5' X 5'
15	SG	SPIRAEA x BUMALDA 'GOLDFLAME'	GOLDFLAME SPIREA	12" HT.	CONT.	5' X 5'
22	SN	SORGHASTRUM NUTANS	INDIAN GRASS	12" HT.	CONT.	5' X 5'
4	TO	THUJA OCCIDENTALIS 'WOODWARDII'	GLOBE ARBORVITAE	15" HT.	CONT.	5' X 5'
4	VC	VIBURNUM TRILOBUM 'COMPACTA'	COMPACT AMERICAN CRANBERRY BUSH VIBURNUM	24" HT.	CONT.	5' X 5'

NOTE:
ALL CONSTRUCTION SHALL BE COMPLETED ACCORDING TO THE CURRENT VERSION OF THE CITY OF NORTH LIBERTY MUNICPAL DESIGN STANDARDS.

KEYNOTES:

1. INSTALL CURB RAMP WITH DECTABLE WARNING PER DETAIL 1/4
2. INSTALL 2' WIDE CURB AND GUTTER PER DETAIL 6/4
3. INSTALL 7" PCC DRIVEWAY PER DETAIL 7/4
4. INSTALL 4' WIDE PCC SIDEWALK PER NORTH LIBERTY MUNICIPAL DESIGN STANDARDS
5. INSTALL TEMPORARY CONCRETE PARKING BUMPERS AT END OF PHASE ONE PARKING
6. INSTALL HANDICAP PARKING SIGN PER ADA REQUIREMENTS (TYP. OF 4)
7. CONSTRUCT 20' CURB TRANSITION
8. CONSTRUCT 6" THICK P.C.C. PICK-UP/DROP-OFF LANE
9. PAINTED HANDICAP SYMBOL PER ADA REQUIREMENTS (TYP. OF 4)
10. INSTALL 5' WIDE, 4" THICK P.C.C. SIDEWALK
11. INSTALL 6' WIDE, 4" THICK P.C.C. SIDEWALK WITH THICKENED EDGE PER DETAIL 4/4
12. 4" WIDE PAVEMENT MARKINGS (TYP.)
13. 5 1/2" THICK HMA PAVING ON COMPACTED SUBGRADE PER DETAIL 6/4
14. INSTALL 4' WIDE P.C.C. DRIVE-UP ISLAND PER DETAIL 5/4
15. INSTALL 8' WIDE PCC SIDEWALK PER NORTH LIBERTY MUNICIPAL DESIGN STANDARDS
16. INSTALL PROPOSED SIGN PER ARCHITECTURAL PLANS

NOTE:
SEE DETAIL 12/4 FOR BERM

STANDARD LEGEND AND NOTES

- PROPERTY &/or BOUNDARY LINES
- CONGRESSIONAL SECTION LINES
- RIGHT-OF-WAY LINES
- EXISTING RIGHT-OF-WAY LINES
- CENTER LINES
- EXISTING CENTER LINES
- LOT LINES, INTERNAL
- LOT LINES, PLATTED OR BY DEED
- PROPOSED EASEMENT LINES
- EXISTING EASEMENT LINES
- BENCHMARK
- RECORDED DIMENSIONS
- CURVE SEGMENT NUMBER

–EXIST– –PROP–

- UTILITY POLE
- LIGHT POLE
- SANITARY MANHOLE
- FIRE HYDRANT
- WATER VALVE
- DRAINAGE MANHOLE
- CURB INLET
- FENCE LINE
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- WATER LINES
- ELECTRICAL LINES
- TELEPHONE LINES
- GAS LINES
- CONTOUR LINES (1' INTERVAL)
- PROPOSED GROUND
- EXISTING GROUND
- EXISTING TREE LINE
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREES

THE ACTUAL SIZE AND LOCATION OF ALL PROPOSED FACILITIES SHALL BE VERIFIED WITH CONSTRUCTION DOCUMENTS, WHICH ARE TO BE PREPARED AND SUBMITTED SUBSEQUENT TO THE APPROVAL OF THIS DOCUMENT.

PROPOSED COVERAGES:
TOTAL LOT AREA = 174,245 SF
TOTAL BUILDING COVERAGE = 7,970 SF (4.5%)
TOTAL PAVING COVERAGE = 19,092 SF (11.0%)
TOTAL OPEN SPACE = 147,183 SF (84.5%)

BUILDING CHARACTERISTICS:
ONE STORY CHURCH BUILDING
7,970 SF

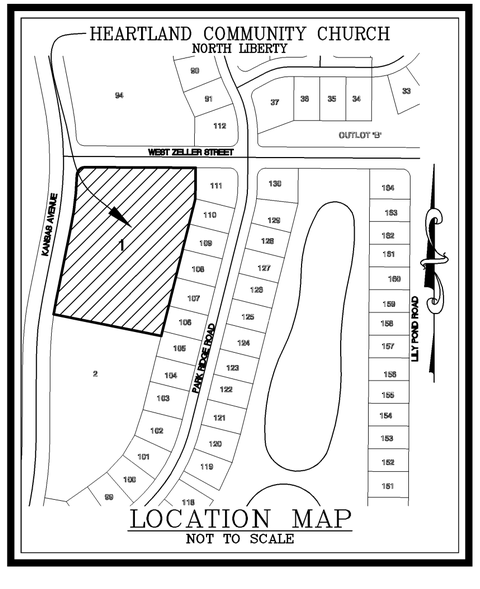
SETBACK REQUIREMENTS:
BUILDING SETBACK
FRONT = 50'
SIDE = 20'
REAR = 50'
PARKING SETBACK
FRONT = 25'
SIDE = 3'
REAR = 3'

PARKING REQUIREMENTS:
1 SPACE FOR EVERY 4 SEATS
174 SEATS / 4 = 44 SPACES REQUIRED

59 SPACES PROVIDED
55 REGULAR
4 HANDICAP

TREE REQUIREMENTS
BUILDING COVERAGE = 7,970 SF
1 TREE/ 750 SF COVERAGE
7,970 SF @ 1/750 SF = 11 TREES
1 TREE WITHIN 40' OF EACH PARKING SPACE
14 TREES PROVIDED

NOTES
1. APPLICANT: HEARTLAND COMMUNITY CHURCH
2. REQUESTED LAND USE: CHURCH
3. EXISTING ZONING: RM-12
4. LOT AREA: 174,245 SF (4.00 ACRES)
5. EXTERIOR LIGHTING SHALL BE LOCATED ON THE FACADE OF THE PROPOSED BUILDINGS. REFER TO THE BUILDING PLANS FOR LOCATIONS OF PROPOSED LIGHTING.
6. ALL PROPOSED STORM SEWER SHALL BE PRIVATE.
7. NO ADDITIONAL DRIVES WILL BE ALLOWED ON KANSAS AVENUE WITHOUT A REVISED SITE PLAN.



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(319) 841-5188

Date	Revision
09-24-08	PER CITY COMMENTS DAM/lls
9/29/08	add spot elev to berm DAM
10-08-08	PER CITY COMMENTS DAM/lls
07-01-09	PER CLIENT REQUEST DAM/lls
07/14/09	PER CITY COMMENTS -JDM

LAYOUT AND LANDSCAPE PLAN

HEARTLAND COMMUNITY CHURCH
NORTH LIBERTY
JOHNSON COUNTY
IOWA

MMS CONSULTANTS, INC.

Date: 09/02/08	
Designed by: KJB	Field Book No:
Drawn by: LLS	Scale: 1"=40'
Checked by: KJB	Sheet No: 1
Project No: IOWA CITY 7811001	of: 4

SITE PLAN
HEARTLAND COMMUNITY CHURCH
70 SOUTH KANSAS AVENUE, NORTH LIBERTY, IOWA

EROSION CONTROL LEGEND

- SILT FENCE/FILTER SOCK
- TEMPORARY ROCK CONSTRUCTION ENTRANCE/EXIT
- TEMPORARY PARKING AND STORAGE
- (CW) CONCRETE TRUCK/EQUIPMENT WASHOUT
- (PR) PORTABLE RESTROOM
- (DL) DOCUMENT LOCATION (PERMITS, SWPPP, INSPECTION FORMS, ETC.)
- FILTER SOCK INLET PROTECTION
- FILTER SOCK BEHIND CURB AT CURB RAMP
- PERIMETER SILT FENCE
- (SA) TEMPORARY SOIL STOCKPILE AREA
- DIRECTION OF OVERLAND FLOW
- (D) DUMPSTER FOR CONSTRUCTION WASTE
- RIP RAP OUTLET PROTECTION
- (01) OTHER MEASURE: _____
- (02) OTHER MEASURE: _____
- (03) OTHER MEASURE: _____

THE ABOVE LISTED ITEMS ARE SHOWN IN THEIR RECOMMENDED LOCATIONS. IF A CONTROL MEASURE IS ADDED OR MOVED TO A MORE SUITABLE LOCATION, INDICATE THE REVISION ON THIS SHEET. THE BLANKS LEFT FOR OTHER MEASURES SHOULD BE USED IF AN ITEM NOT SHOWN ABOVE IS IMPLEMENTED ON SITE, ADDITIONAL PRACTICES FOR EROSION PREVENTION AND SEDIMENT CONTROL CAN BE FOUND IN APPENDIX D OF THE SWPPP.

GRADING AND EROSION CONTROL NOTES

EROSION CONTROL NOTES:

TOTAL LOT AREA: 4.0 ACRES
TOTAL AREA TO BE DISTURBED: 2.8 ACRES

ADDITIONAL STORM WATER POLLUTION PREVENTION MEASURES CAN BE FOUND IN THE STORM WATER POLLUTION PREVENTION PLAN PREPARED (SWPPP) FOR THE SITE.

THE EROSION CONTROL CONTRACTOR SHALL INSTALL FILTER SOCKS OR OTHER APPROVED FORM OF INLET PROTECTION AT EACH NEW INTAKE UNTIL THE ADJACENT GROUND HAS BEEN STABILIZED WITH SEEDING. FILTER SOCKS SHALL ALSO BE INSTALLED BEHIND THE CURB AT ALL CURB CUT LOCATIONS AS SHOWN.

CONTRACTOR SHALL INSTALL A ROCK ENTRANCE AND PERFORM REGULAR CLEANING OF VEHICLES THAT LEAVE THE SITE.

FOLLOWING INSTALLATION OF PERIMETER SILT FENCE, TEMPORARY CONSTRUCTION ENTRANCE, AND OTHER INITIAL SEDIMENT CONTROL DEVICES, THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR TO SCHEDULE A SITE INSPECTION PRIOR TO ANY SOIL DISTURBING ACTIVITIES.

THE CONTRACTOR SHALL FOLLOW THE NPDES PERMIT, SWPPP, AND THE CITY CSR REGULATIONS (ORDINANCE NO. 2006–1039)

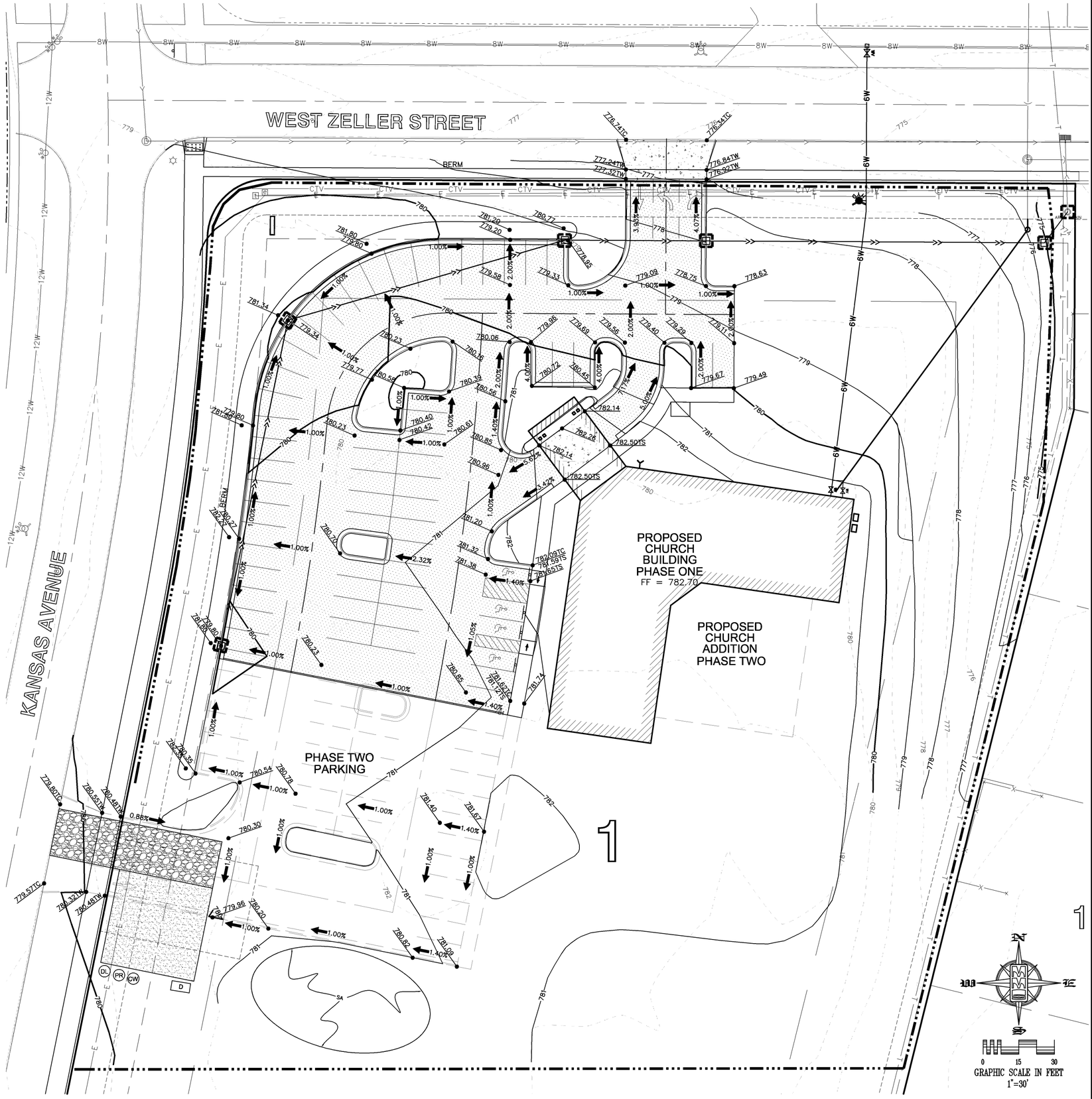
NPDES STORM WATER CONSTRUCTION PERMIT

1. THIS SUBDIVISION FALL UNDER THE NPDES STORM WATER PERMIT REQUIREMENT.

2. THE POLLUTION PREVENTION PLAN (PPP), OR EROSION CONTROL PLAN SHEET, MUST BE KEPT SOMEWHERE ON SITE AT ALL TIMES.

3. THE DEVELOPER (OR CONSULTANT) SHALL SUBMIT APPLICATION TO THE IDNR, AND THE IDNR SHALL RECEIVE THIS APPLICATION AT LEAST 24 HOURS PRIOR TO THE START OF WORK. THIS PERMIT APPLICATION SHALL INCLUDE PROOF OF PUBLIC NOTIFICATION AS WELL AS THE PERMIT FEE. A COPY OF THE PERMIT FORM IDNR SHALL BE SUBMITTED TO THE CITY OF NORTH LIBERTY DEPARTMENT OF BUILDING SAFETY.

4. ONCE WORK IS COMPLETED, A NOTICE OF DISCONTINUATION SHALL BE SUBMITTED TO THE IDNR AND A COPY GIVEN TO THE NORTH LIBERTY DEPARTMENT OF BUILDING SAFETY WITH 30 DAYS AFTER FINAL STABILIZATION.



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GRADING AND EROSION CONTROL PLAN

HEARTLAND COMMUNITY CHURCH
NORTH LIBERTY
JOHNSON COUNTY
IOWA

MMS CONSULTANTS, INC.

Date:	09/02/08
Designed by: KJB	Field Book No:
Drawn by: LLS	Scale: 1"=20'
Checked by: KJB	Sheet No: 2
Project No: IOWA CITY 7811001	of: 4

SITE PLAN
HEARTLAND COMMUNITY CHURCH
70 SOUTH KANSAS AVENUE, NORTH LIBERTY, IOWA

0 15 30
GRAPHIC SCALE IN FEET
1"=30'

94

112

111

110

109

108

1

WEST ZELLER STREET

KANSAS AVENUE

INTK #3
TC = 779.45
IE IN = 773.47
IE OUT = 773.42
DETAIL/SHEET 9/4

INTK #4
TC = 779.84
IE IN = 774.58
IE OUT = 774.53
DETAIL/SHEET 9/4

INTK #2
TC = 778.49
IE IN = 772.74
IE OUT = 772.69
DETAIL/SHEET 9/4

INTK #1
TC = 776.51
IE IN = 770.99
IE OUT = 770.94
DETAIL/SHEET 9/4

INTK #5
TC = 780.30
IE IN = 775.64
IE OUT = 775.59
DETAIL/SHEET 9/4

EXIST INTAKE
TC = 774.62
IE IN = 768.72
IE OUT = 768.52

EXIST RA-4 INTAKE
TR = 775.79
IE IN (PROP) = 770.79
IE OUT = 770.59

EXISTING TELEPHONE BOX

EXISTING TRANSFORMER

EXIST 15.0' UTILITY EASEMENT

61' - 15"ø RCP @ 1.12%

121' - 15"ø RCP @ 0.88%

142' - 15"ø RCP @ 1.20%

140' - 15"ø RCP @ 0.72%

EXIST 36"ø RCP @ 0.99%

EXIST 15"ø RCP @ 5.34%

16' - 18"ø RCP @ 0.94%

INSTALL 6" TAPPING SLEEVE & VALVE

FIRE HYDRANT W/AUX. GATE VALVE

CONNECT TO EXISTING 8"ø PVC TRUSS SANITARY SEWER

TYPICAL CLEANOUT DETAIL/SHEET 11/4

INSTALL 4"ø SEWER SERVICE

6"ø FIRE SERVICE

1 1/2" ø WATER SERVICE

FIRE DEPARTMENT CONNECTION

PROPOSED CHURCH BUILDING PHASE ONE

PROPOSED CHURCH ADDITION PHASE TWO

PHASE TWO PARKING

EXIST 75.0' UTILITY EASEMENT

EXIST COMMON ACCESS EASEMENT

EXIST 10.0' DRAINAGE, STORM SEWER, AND UTILITY EASEMENT

8W 12W 6W E CTV

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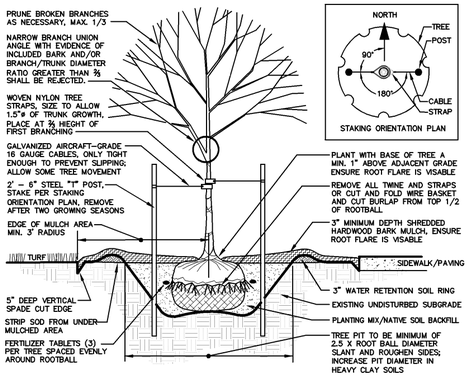
UTILITY PLAN

HEARTLAND COMMUNITY CHURCH
NORTH LIBERTY
JOHNSON COUNTY
IOWA

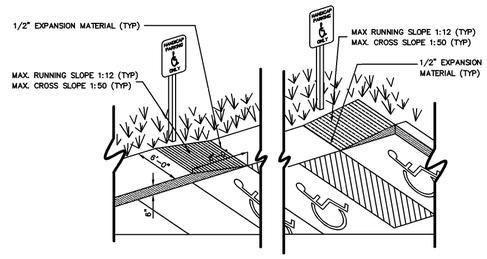
MMS CONSULTANTS, INC.

Date: 09/02/08	
Designed by: KJB	Field Book No:
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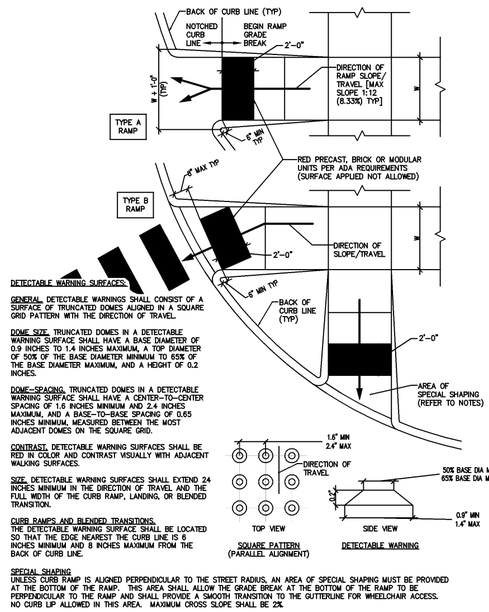
10/1 TYPICAL TREE PLANTING DETAIL
N.T.S.



2/1 CURB DROP FOR SIDEWALK
N.T.S.



1/1 DETECTABLE WARNING DETAIL
N.T.S.



DETECTABLE WARNING SURFACES:

GENERAL. DETECTABLE WARNINGS SHALL CONSIST OF A SURFACE OF TRUNCATED DOMES ALIGNED IN A SQUARE GRID PATTERN WITH THE DIRECTION OF TRAVEL.

DOME SIZE. TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL HAVE A BASE DIAMETER OF 0.9 INCHES TO 1.4 INCHES MAXIMUM, A TOP DIAMETER OF 50% OF THE BASE DIAMETER MINIMUM TO 65% OF THE BASE DIAMETER MAXIMUM, AND A HEIGHT OF 0.2 INCHES.

DOME-SPACING. TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL HAVE A CENTER-TO-CENTER SPACING OF 1.6 INCHES MINIMUM AND 2.4 INCHES MAXIMUM, AND A BASE-TO-BASE SPACING OF 0.65 INCHES MINIMUM, MEASURED BETWEEN THE MOST ADJACENT DOMES ON THE SQUARE GRID.

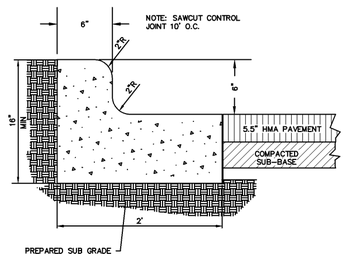
CONTRAST. DETECTABLE WARNING SURFACES SHALL BE RED IN COLOR AND CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES.

SIZE. DETECTABLE WARNING SURFACES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION.

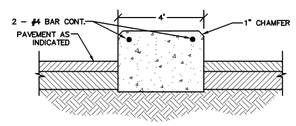
CURB RAMPS AND BLENDED TRANSITIONS. THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE BACK OF CURB LINE.

SPECIAL SHAPING
UNLESS CURB RAMP IS ALIGNED PERPENDICULAR TO THE STREET RADIUS, AN AREA OF SPECIAL SHAPING MUST BE PROVIDED AT THE BOTTOM OF THE RAMP. THIS AREA SHALL ALLOW THE GRADE BREAK AT THE BOTTOM OF THE RAMP TO BE PERPENDICULAR TO THE RAMP AND SHALL PROVIDE A SMOOTH TRANSITION TO THE GUTTERLINE FOR WHEELCHAIR ACCESS. NO CURB LIP ALLOWED IN THIS AREA. MAXIMUM CROSS SLOPE SHALL BE 2%

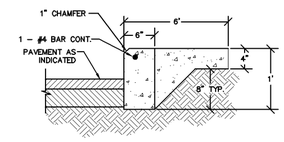
6/1 COMBINED CURB AND GUTTER DETAIL
N.T.S.



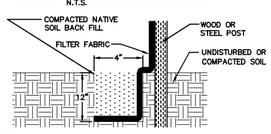
5/1 DRIVE-UP ISLAND DETAIL
NTS.



4/1 SIDEWALK THICKENED EDGE
NTS.



8/2 SILT FENCE DETAIL
N.T.S.



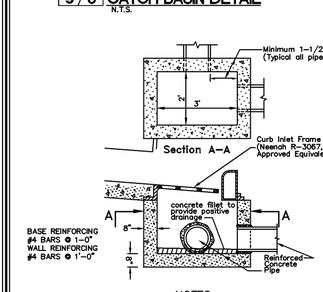
INSTALLATION

1. POSTS SHALL BE EITHER 4" DIAMETER WOOD OR 1.33 POUNDS PER LINEAL FOOT STEEL WITH A MINIMUM LENGTH OF 5 FEET. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM.
2. SILT FENCE FABRIC SHALL CONFORM TO I.D.O.T. STANDARD SPECIFICATION SECTION 4196.01.A. SILT FENCING SHALL BE A MINIMUM OF 24" AND A MAXIMUM OF 36" HIGH WHEN COMPLETE.
3. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE FENCE TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, THE FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND SECURELY SEALED.
4. POSTS SHALL BE SPACED A MAXIMUM OF 8 FEET APART AND DRIVEN SECURELY INTO THE GROUND ALONG THE FENCE ALIGNMENT. POSTS SHALL BE DRIVEN INTO THE GROUND A MINIMUM OF 28".
5. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4" WIDE BY 12" DEEP ALONG THE UPSLOPE SIDE OF THE POSTS.
6. FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE POSTS SUCH THAT THE FABRIC EXTENDS INTO THE TRENCH AS SHOWN ABOVE. THE FABRIC SHALL BE FASTENED A MINIMUM OF THREE PLACES ON EACH POST.
7. THE TRENCH SHALL BE BACK FILLED WITH EXCAVATED MATERIAL AND THOROUGHLY COMPACTED.

MAINTENANCE

1. SILT FENCES SHALL BE INSPECTED WEEKLY AND AFTER EACH RAIN–FALL EVENT OF 0.5 INCHES OR MORE. DURING PERIODS OF PROLONGED RAIN INSPECTIONS SHALL BE AT LEAST DAILY. ANY REPAIRS NEEDED TO MAINTAIN THE SILT FENCE'S EFFECTIVENESS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO STABILIZING THE UPSLOPE AREAS THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN THE DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE FENCE. SILTS REMOVED SHALL BE PLACED IN A PROTECTED PLACE THAT WILL PREVENT THEIR ESCAPE FROM THE CONSTRUCTION SITE.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER NEEDED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
5. SILT FENCE SHALL REMAIN IN PLACE UNTIL IT IS NO LONGER NEEDED AS DIRECTED BY THE POLLUTION PREVENTION PLAN. GENERALLY SILT FENCES SHALL REMAIN UNTIL THE UPSLOPE AREAS ARE STABILIZED WITH AN ESTABLISHED GRASS COVER AS A MINIMUM.

9/3 CATCH BASIN DETAIL
N.T.S.

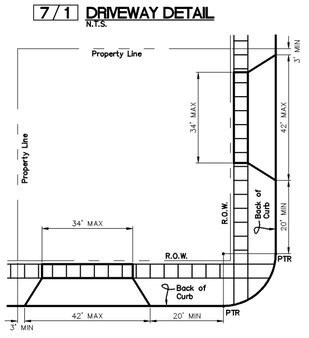


NOTES

1) INTAKE BOXES MAY BE CAST IN PLACE OR PRECAST CONSTRUCTION.

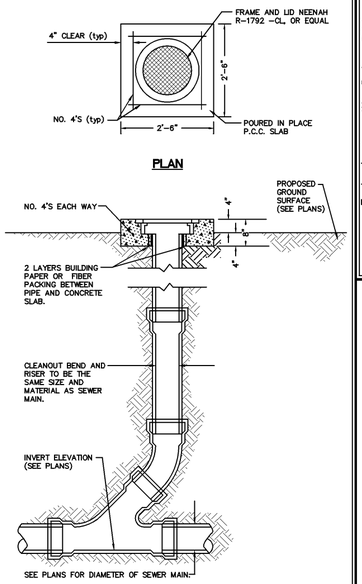
2) CONSTRUCTION OF TOP SHALL BE COORDINATED WITH PAVING CONTRACTOR TO ALLOW CLEARANCE FOR PAVING OPERATIONS.

7/1 DRIVEWAY DETAIL
N.T.S.

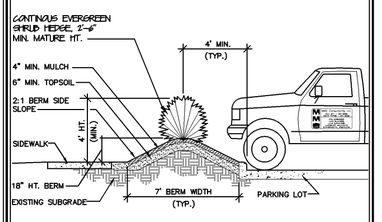


INSTALL DRIVE ACCORDING TO THE CURRENT REVISION OF SECTION 3 OF THE CITY OF NORTH LIBERTY DESIGN STANDARDS

11/3 STANDARD CLEANOUT
N.T.S.



12/1 TYPICAL HEADLIGHT SCREENING DETAIL
N.T.S.



STABILIZATION SEEDING

STABILIZATION SEEDING SHALL BE IN ACCORDANCE WITH I.D.O.T. STANDARD SPECIFICATION SECTION 2601.05 STABILIZING CROP SEEDING AND FERTILIZING.

SEED MIXTURES SHALL BE ONE OF THE FOLLOWING:

SPRING– MARCH 1 TO MAY 20	
WINTER RYE OR OATS	1 BUSHEL PER ACRE
SUDANGRASS (PIPER)	25 LBS. PER ACRE
FESCUE, KENTUCKY 31 OR FAWN	15 LBS. PER ACRE
ALFALFA (RANGER OR VERNAL)	5 LBS. PER ACRE
SUMMER – MAY 21 TO JULY 20	
OATS	1 BUSHEL PER ACRE
SUDANGRASS (PIPER)	35 LBS PER ACRE
FESCUE, KENTUCKY 31 OR FAWN	15 LBS PER ACRE
ALFALFA (RANGER OR VERNAL)	5 LBS PER ACRE
FALL – JULY 21 TO SEPTEMBER 30	
WINTER RYE	2 BUSHEL PER ACRE
FESCUE, KENTUCKY 31 OR FAWN	15 LBS PER ACRE
ALFALFA (RANGER OR VERNAL) *	5 LBS PER ACRE

*AFTER AUGUST 31, HAIRY VETCH SHALL BE SUBSTITUTED FOR ALFALFA AT THE RATE OF 10 LBS PER ACRE

FERTILIZER SHALL BE APPLIED AT A RATE OF 450 LBS PER ACRE USING CHEMICALLY COMBINED COMMERCIAL 13–13–13 FERTILIZER.

GRADING NOTES

1.) MAXIMUM SLOPE ON CUTS AND FILLS SHALL BE 3.5: HORIZONTAL TO 1: VERTICAL .

2.) NO EXCAVATION SHALL BE ALLOWED WITHIN 2' OF PROPERTY LINES.

3.) WHERE HEIGHT OF FILL IS GREATER THAN 30' AN INTERMEDIATE TERRACE OF AT LEAST 6' WIDE SHALL BE ESTABLISHED AT MID HEIGHT. SEE TYPICAL FILL SECTION.

4.) COMPACTION TO BE 90% MODIFIED STANDARD PROCTOR WHERE > 6:1 SLOPE.

5.) ALL TREES OUTSIDE THE LIMITS OF GRADING OPERATIONS SHALL BE SAVED, UNLESS OTHERWISE INDICATED TO BE REMOVED. TREES NEAR THE EDGES OF GRADING LIMITS AND IN THE STORM WATER DETENTION BASIN AREAS SHALL BE SAVED IF POSSIBLE, WITHIN THE REQUIREMENTS OF THE SPECIFICATIONS.

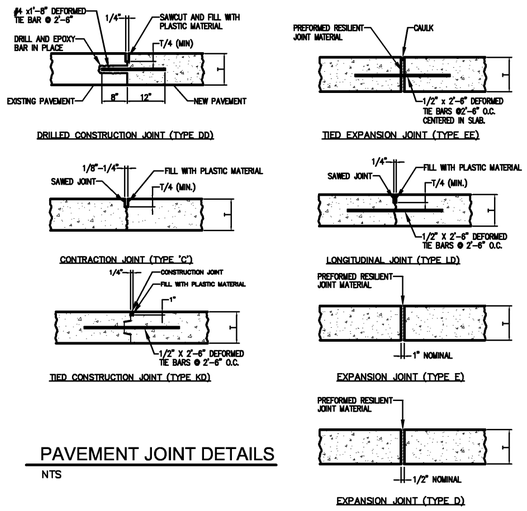
6.) PRIOR TO ANY GRADING A CONSTRUCTION SAFETY FENCE SHALL BE INSTALLED 50 FEET FROM TRUNKS OF TREES TO BE PROTECTED.

7.) STABILIZATION SEEDING SHALL BE COMPLETED AS SOON AS POSSIBLE, BUT NOT MORE THAN 14 DAYS, UPON COMPLETION OF GRADING IN ANY AREA OF GRADING OPERATIONS. DISTURBED AREAS SHALL BE KEPT AS SMALL AS POSSIBLE TO PREVENT LARGE SCALE EROSION PROBLEMS. IF THE GRADING CONTRACTOR STOPS GRADING OPERATIONS FOR MORE THAN 14 DAYS, THEN STABILIZATION SEEDING SHALL BE DONE ON ALL DISTURBED AREAS.

8.) SILT FENCE LOCATIONS AND LENGTHS, AS INDICATED, ARE APPROXIMATE ONLY. FINAL LOCATIONS AND LENGTHS WILL BE DETERMINED, AS NEEDED, UPON COMPLETION OF GRADING OPERATIONS IN AN AREA.

9.) ALL STREET SUBGRADES SHALL BE CONSTRUCTED AND COMPACTED IN ACCORDANCE WITH CITY OF NORTH LIBERTY DESIGN AND CONSTRUCTION STANDARDS AND PROCEDURES.

PAVEMENT JOINT DETAILS
NTS



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Date	Revision
09-24-08	PER CITY COMMENTS DAM/lls
9/29/08	add spot elev to berm DAM
10-08-08	PER CITY COMMENTS DAM/lls
07-01-09	PER CLIENT REQUEST DAM/lls
07/14/09	PER CITY COMMENTS -JDM

DETAILS AND NOTES

HEARTLAND COMMUNITY CHURCH
NORTH LIBERTY
JOHNSON COUNTY
IOWA

MMS CONSULTANTS, INC.

Date: 09/02/08	
Designed by: KJB	Field Book No:
Drawn by: LLS	Scale: NTS
Checked by: KJB	Sheet No: 4
Project No: IOWA CITY 7811001	of: 4