BIRMINGHAM FIRE STATION No. 2

CITY OF BIRMINGHAM, MICHIGAN

BIDS DECEMBER 5, 2016



Corporate Headquarters 45650 Grand River Avenue Novi, Michigan 48374 Ph: (248)349-4500 • Fax: (248)349-1429

> Design Studio 43155 Main Street, Suite 2306 Novi, Michigan 48375

Novi • Wyandotte • Muskegon Lansing • Gaylord • Sault Ste. Marie

> www.sidockarchitects.com www.sidockgroup.com

> > No Scale

Key Plan:

CITY OF BIRMINGHAM

Project: BIRMINGHAM

FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

07/19/16	Issued Fo 95% REVIEV
07/29/16	FINAL REVIEW
12/05/16	BIDS

Drawn:	K. GILSC
Checked:	S. PETERSC
Annroved:	S PETERSO

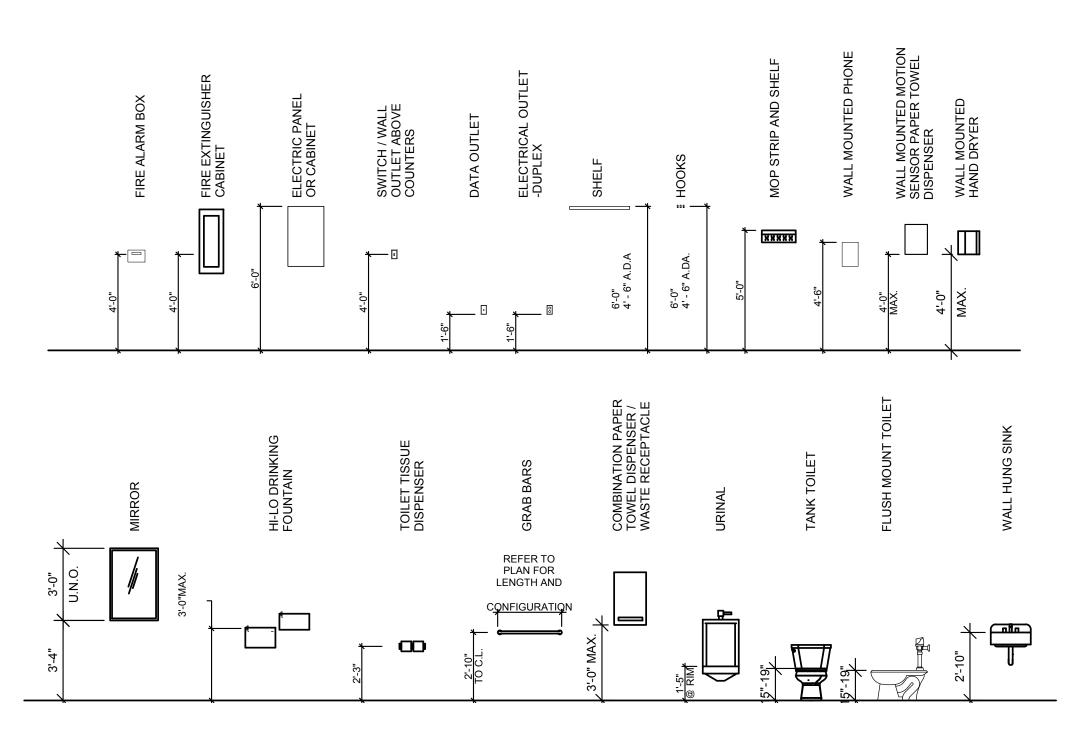
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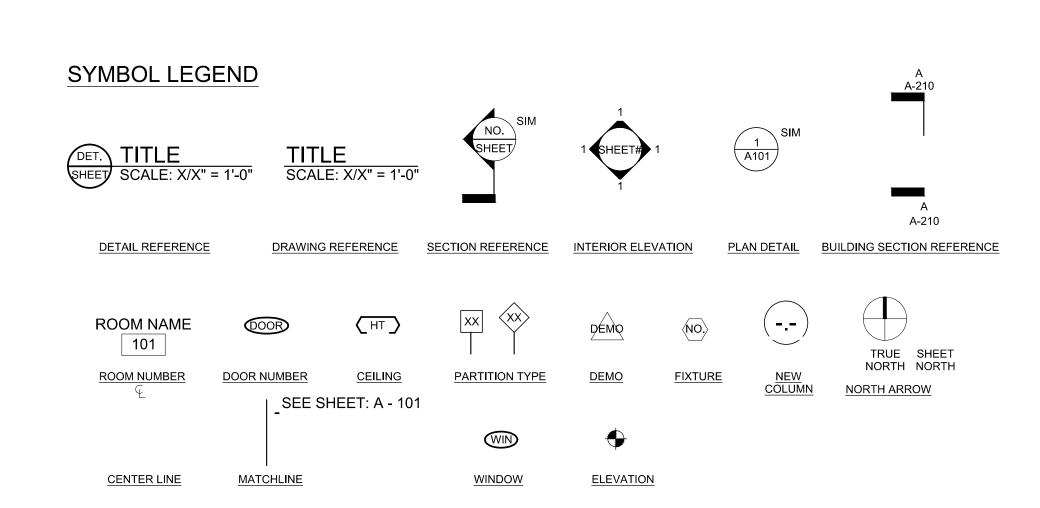
Project Number:

			ABBREVIATI	1			
ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION
A		F		М		STN	ROAD STATION
@	AT	F	HYDRANT BREAK FLANGE ELEVATION	MAX	MAXIMUM	STW	STORM SEWER
ACC	ACOUSTIC CEILING TILE	FF	FINISHED FLOOR	MTL	METAL		
ALUM	ALUMINUM	F/F	FACE TO FACE	MEZZ	MEZZANINE	Т	
ANOD	ANODIZED	FD	FLOOR DRAIN	MIN	MINIMUM	TEMP	TEMPORARY
APPROX or ~	APPOXIMATELY	FIN	FINISH/FINISHED	МО	MASONRY OPENING	THRESH	THRESHOLD
ASPH	ASPHALT	FL / FLR	FLOOR	MT	MARBLE THRESHOLD	TOS	TOP OF STEEL
		FT	FOOT/FEET	МН	MANHOLE	TYP	TYPICAL
В		FTG	FOOTING			T/	TOP OF
B/	BOTTOM OF	FOUND	FOUNDATION	N		T/C	TOP OF CURB
B/B	ВАСК ТО ВАСК	FRP	FIBERGLASS REINFORCED PANEL	NO	NUMBER	T/P	TOP OF PAVEMENT
B/C or B.O.C.	BACK OF CURB	FL	FLUSH	N	NORTH	T/W	TOP OF WALK
B.O.P.	BOTTOM OF PIPE					TD	TRENCH DRAIN
BF	BARRIER FREE	G		0		T.O.P.	TOP OF PIPE
ВК	BLOCK	GALV.	GALVANIZED	ОС	ON CENTER		
B.O.D.	BOTTOM OF DECK	GYP BD	GYPSUM BOARD	OD	OUTSIDE DIAMETER	U	
ВОТ	воттом	G	GUTTER ELEVATION	OHD	OVERHEAD DOOR	U.P.	UTILITY POLE
BRG	BEARING			OHE	OVERHEAD ELECTRICAL	UNGD.	UNDERGROUND
		Н				U.N.O.	UNLESS NOTED
			ШСП	5			OTHERWISE
С		Н	HIGH	Р	DDE ENGINICEDED MACTAL		
Ę	CENTERLINE	НС	HOLLOW CORE	PEMB	PRE-ENGINEERED METAL BUILDING	V	
CLG	CEILING	HDW	HARDWARE	PERIM	PERIMETER	VCT	VINYL COMPOSITE TILE
CMU	CONCRETE MASONRY UNIT	НМ	HOLLOW METAL	PL/PL	PLATE	VERT	VERTICAL
COL	COLUMN	HORIZ	HORIZONTAL	PLAM	PLASTIC LAMINATE		
COMP	COMPACTED	HT	HEIGHT	PRE-FIN	PRE-FINISHED	W	
CONC	CONCRETE	H.P.	HIGH POINT	PSF	POUNDS PER SQUARE	W	WEST
					FOOT		
CONT	CONTINUOUS	НҮ	HYDRANT	<u>የ</u>	PROPERTY LINE POUNDS PER SQUARE	W/	WITH
CLR	CLEAR			PSI	INCH	WM	WATER MAIN
СРТ	CARPET	I		PT	PAINT	WS	WATER SERVICE
СТ	CERAMIC TILE	IN	INLET	P.C.	POINT OF CURVATURE	WB	WALL BASE
СВ	CATCH BASIN	ID	INSIDE DIAMETER	PR. or PROP	PROPOSED	WD	WOOD
CL	CLASS	IN	INCHES	P.T.	POINT OF TANGENCY	WG	WIRED GLASS
СМР	CORRUGATED METAL PIPE	INSUL	INSULATED			WWF	WELDED WIRE FABRIC
C.O.	CLEAN OUT	IOHD	INSULATED OVERHEAD DOOR	Q			
C.P.	CENTER POINT	IRD	INSULATED ROLLING DOOR				
СРРР	CORRUGATED	I.E.	INVERT ELEVATION	R		Х	
CFFF	PERFORATED PLASTIC PIPE	1.L.	INVERTICE VALION		DAIL BOAD	^	
				RR	RAIL ROAD ROOF DRAIN/ROLLING		
D		J		RD	DOOR DRAIN/ROLLING		
DEMO	DEMOLITION			REINF	REINFORCING	Y	
DIA / Ø	DIAMETER			RO	ROUGH OPENING		
DF	DRINKING FOUNTAIN			R	RADIUS		
DL	DEAD LOAD	К		RCP	REINFORCED CONCRETE PIPE	Z	
DN	DOWN			ROW	RIGHT OF WAY		
DO	DOOR OPENING						
				S			
E				S	SOUTH		
E	EAST	L		SC	SOLID CORE		
EC	EXPOSED CONCRETE	LAV	LAVATORY	SCHED	SCHEDULE		
ELEV. or EL.	ELEVATION	LL	LIVE LOAD	SHT	SHEET		
EQ	EQUAL	LLH	LONG LEG HORIZONTAL	SQ FT	SQUARE FEET/ FOOT		
EWC	ELECTRIC WATER COOLER	LLV	LONG LEG VERTICAL	ST	STAIN		
EXP	EXPANSION	L.P.	LOW POINT	STL	STEEL		
ELE	ELECTRICAL			S	ARC LENGTH		
ES	END SECTION			SAN	SANITARY SEWER		
			 	 	 		

EX. or EXIST. EXISTING

STATEMENT OF SPECIAL INSPECTIONS						
CONSTRUCTION OPERATION	CODE SECTION	ARE SPECIAL INSPECTIONS REQUIRED?				
		YES	NO			
INSPECTION OF FABRICATIONS	(1704.2)	Х	-	TBD		
STEEL CONSTRUCTION	(1704.3)	Х	-	TBD		
CONCRETE CONSTRUCTION	(1704.4)	Х	-	TBD		
MASONRY CONSTRUCTION	(1704.5)	Х	-	TBD		
WOOD CONSTRUCTION	(1704.6)	Х	-	TBD		
SOILS	(1704.7)	Х	-	-		
PILE FOUNDATIONS	(1704.8)	-	Х	-		
PIER FOUNDATIONS	(1704.9)	-	Х	-		
WALL PANELS & VENEERS	(1704.10)	-	Х	-		
SPRAYED FIRE RESISTANT MATERIALS	(1704.11)	-	Х	-		
EXTERIOR INSULATION AND FINISH SYSTEMS	(1704.12)	-	Х	-		
SPECIAL CASES	(1704.13)	Х	-	TBD		
SMOKE CONTROL	(1704.14)	-	Х	-		









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S-211	ROOF FRAMING PLAN
S-301	LINTEL ELEVATIONS AND SCHEDULE
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S-803 S-804	FRAMING DETAILS FRAMING DETAILS
S-804 S-805	FRAMING DETAILS FRAMING DETAILS
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S-807	FRAMING DETAILS
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	ELECTRICAL
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EL-200	FLOOR PLAN - LIGHTING
EC-200	FLOOR PLAN - MISCELLANEOUS SYSTEMS
EP-200	POWER PLANS
EP-901	PANEL SCHEDULES



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No Scale Key Plan:

CITY OF BIRMINGHAM

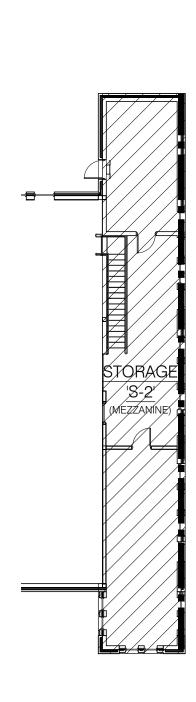
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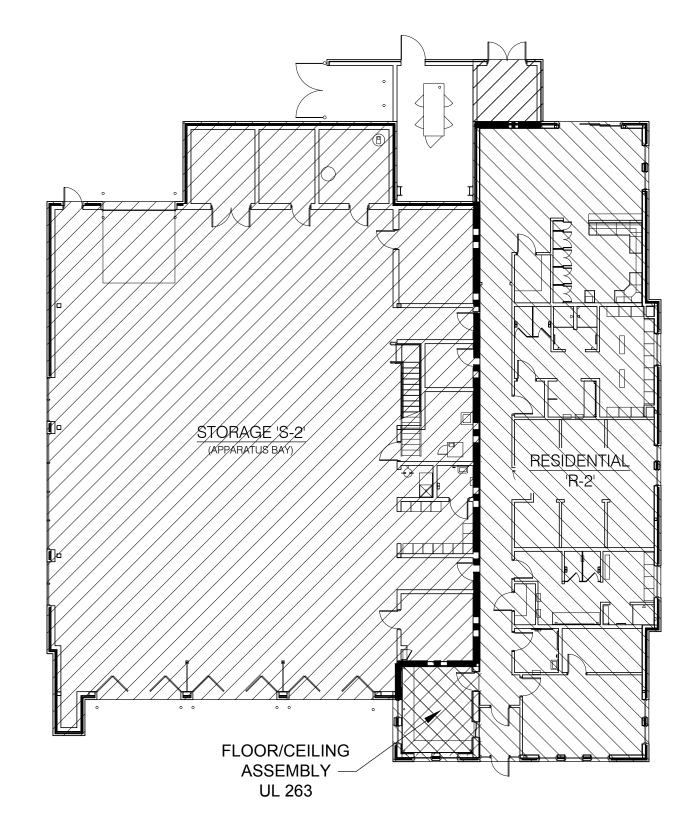
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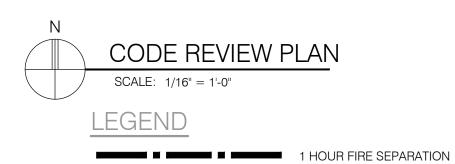
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K. GILSON Checked: S. PETERSON S. PETERSON

Sheet Title: DRAWING INDEX, LEGENDS AND **INSPECTIONS**







CODE COMPLIANCE CALCULATIONS PLUMBING FIXTURES

REQUIRED PLUMBING FIXTURE CALCULATIONS

RESIDENTIAL (R-2) AND STORAGE (S-2) AREA :
TOTAL CALCULATED OCCUPANT LOAD = 56 PEOPLE; (28 MALE/ 28 FEMALE)

TOTAL ACTUAL OCCUPANT LOAD = 6 PEOPLE; (4 MALE/ 2 FEMALE) *

*PER OWNER AFFADAVIT ACTUAL OCCUPANCY BASED ON USE.

TOILET FIXTURES REQUIRED:

ALE FEM

WATERCLOSETS: (1 PER 10 OCCUPANTS) (1 PER 10 OCCUPANTS) 4/10 = 0.4 = (1) FIXTURE REQUIRED 2/10 = 0.2 = (1) FIXTURE REQUIRED (2) PROVIDED + (2) URINALS (2) PROVIDED + (2) UNISEX

LAVATORIES: (1 PER 10 OCCUPANTS) (1 PER 10 OCCUPANTS) 4/10 = 0.4 = (1) FIXTURE REQUIRED 2/10 = 0.2 = (1) FIXTURE REQUIRED

(2) PROVIDED + (1) UNISEX (2) PROVIDED + (1) UNISEX

BATHTUBS/SHOWERS: (1 PER 8 OCCUPANTS) (1 PER 8 OCCUPANTS)
(LIVING QUARTERS) 4/8 = 0.5 = (1) FIXTURE REQUIRED
(2) PROVIDED (1) PROVIDED

DRINKING FOUNTAINS: (1 PER 100 OCCUPANTS) 6/100 = 0.06 = (1) FIXTURE REQUIRED

(2) PROVIDED

SERVICE SINKS: (1) FIXTURE REQUIRED

(1) PROVIDED

PROJECT DATA & CODE COMPLIANCE C	ALCULATIONS
CODE DATA 2012 MICHIGAN BUILDING CODE, 2012 MICHIGAN MECHANICAL CODE, 2012 MICHIGA 2006 INTERNATIONAL FUEL GAS CODE, MICHIGAN ELECTRICAL CODE, 2014 NEC w/PA ICC/ANSI A117.1-2009 MICHIGAN UNIFORM ENERGY CODE	N PLUMBING CODE
USE GROUPS: "R-2" / "S-2" MIXED USE, SEPARATED	MCB 302 MCB 508.4
R-2 RESIDENTIAL (Firefighter Living Quarters) S-2 STORAGE (Apparatus Bay and Support Areas)	MBC 2012 - 310.4 MBC 2012 - 311.3
CONSTRUCTION TYPE: IIIB (FULLY SPRINKLED)	MBC TABLE 503
USE GROUP "R-2" USE GROUP "S-2" ALLOWABLE BUILDING HEIGHT: 55'; 4 STORIES 55'; 3 STORIES	MCB 506.4.1
ALLOWABLE BUILDING AREA: 16,000 S.F. 26,000 S.F. (PER STORY)	MCB 508.3.2
ACTUAL BUILDING GROSS AREA: 11,133 S.F.	
BUILDING OCCUPANT LOAD CALCULATIONS:	MBC TABLE 1004.1.2
TABULAR OCCUPANCY USE GROUP "R-2" LIVING QUARTERS 3,400 S.F. GROSS/200 S.F. GROSS PER PERSON = 17 OCCUPANTS*	
USE GROUP "S-2" (APPARATUS BAY/MEZZANINE) 7,733 S.F. GROSS/200 S.F. GROSS PER PERSON = 39 OCCUPANTS	
NOTE: BASED ON OWNER AFFIDAVIT, ACTUAL BUILDING OCCUPANT LOAD = 6 FIREFIGHTERS (4	MALE, 2 FEMALE)
BUILDING EGRESS:	MBC 1005
APPARATUS BAY AREA ('S-2") CORRIDORS & DOORS: 0.30" / OCCUPANT x 39 TOTAL OCCUPANTS = 11.7" MIN. (2) 36" DOORS PROVIDED - O.K.	
LIVING QUARTERS ("R-2") CORRIDORS & DOORS: 0.30" / OCCUPANT x 17 OCCUPANTS = 5.1" MIN. (2) 36" DOORS AND 5'-0" CORRIDORS PROVIDED - O.K.	
TRAVEL DISTANCES: (WITH SPRINKLER SYSTEM)	MBC TABLE 1016.2
OCCUPANCY: R-2 250 FT. MAX ACTUAL = 83 FT O.K. OCCUPANCY: S-2 400 FT. MAX ACTUAL = 75 FT O.K.	



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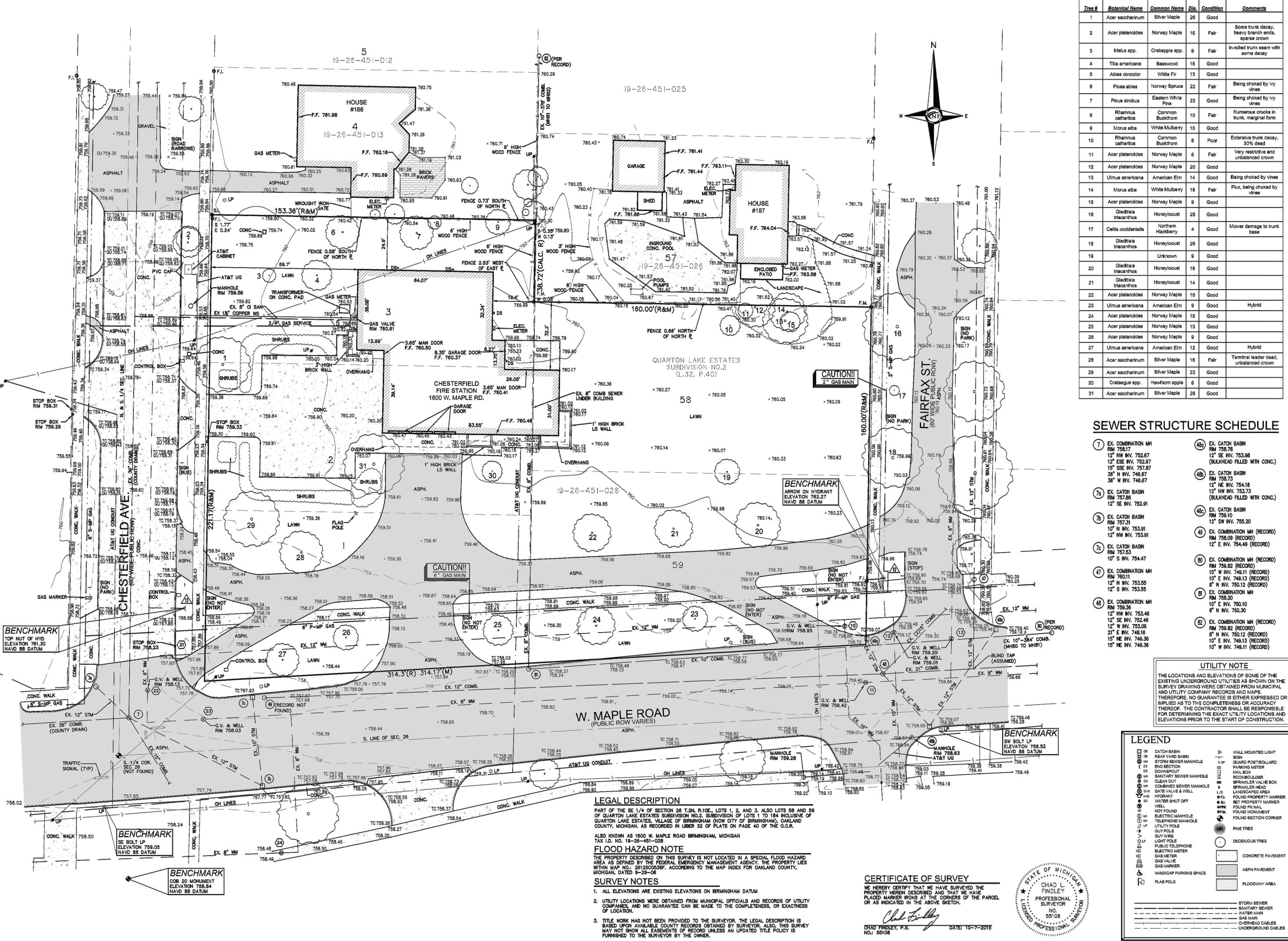
Drawn: K. GILSON
Checked: S. PETERSON
Approved: S. PETERSON

Sheet Title:
CODE
COMPLIANCE
CALCULATIONS

Project Number:

CS-003

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ENGINEERS CIVIL ENGINEERS LAND SURVEYORS LAND PLANNERS

Tree Information

NOWAK & FRAUS ENGINEERS 46777 WOODWARD AVE. PONTIAC, MI 48342-5032 TEL. (248) 332-7931 FAX. (248) 332-8257

PROJECT Chesterfield Fire Station 1600 W. Maple Birmingham, MI

CLIENT

Engineering Department 151 Martin Street Birmingham, MI 48012

PROJECT LOCATION

County, Michigan

Part of the SE 1/4 of

Range 10 East, City of

Birmingham, Oakland

Boundary / Topography

Survey

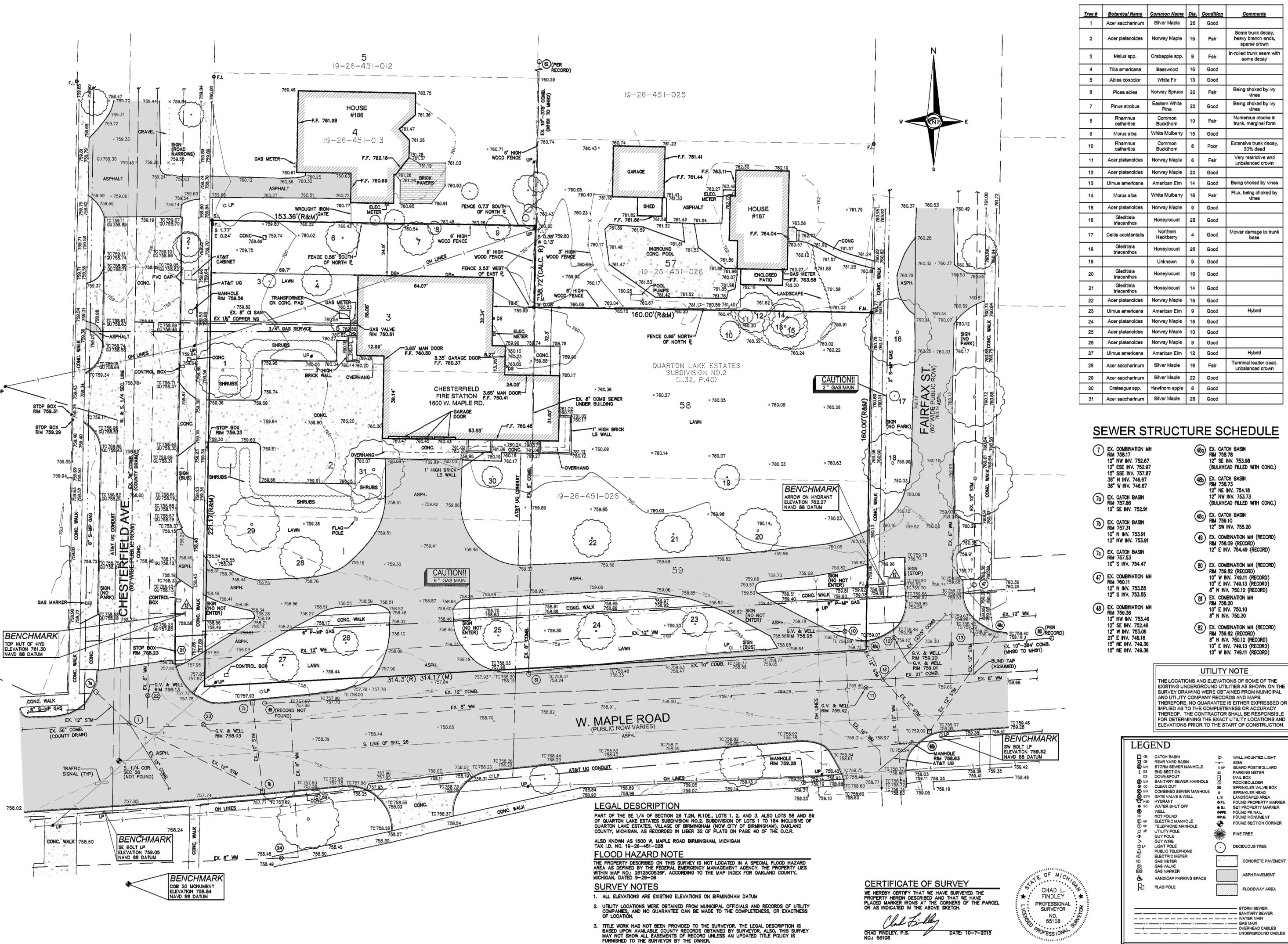
Sections 26, Town 2 North,

IBINATION MH (RECORD) 1.82 (RECORD) V. 750.12 (RECORD) IV. 749.13 (RECORD) NV. 749.11 (RECORD)	

LEG	END		
B B 圣 E E E E E E E E E E E E E E E E E	CATCH BASIN REAR YARD BASIN STORM SEWER MANHOLE END SECTION DOWNSPOUT SANITARY SEWER MANHOLE CLEAN OUT COMBINED SEWER MANHOLE GATE VALVE & WELL HYDRANT WATER SHUT OFF WELL NOT FOUND ELECTRIC MANHOLE TELEPHONE MANHOLE UTILITY POLE GUY WIRE LIGHT POLE PUBLIC TELEPHONE ELECTRIC METER GAS METER GAS MARKER HANDICAP PARKING SPACE FLAG POLE	D O GP	WALL MOUNTED LIGHT SIGN GUARD POST/BOLLARD PARKING METER MAIL BOX ROCK/BOULDER SPRINKLER VALVE BOX SPRINKLER HEAD LANDSCAPED AREA FOUND PROPERTY MARKER SET PROPERTY MARKER FOUND MONUMENT FOUND SECTION CORNER PINE TREE DECIDUOUS TREE CONCRETE PAVEMENT ASPH PAVEMENT FLOODWAY AREA
			STORM SEWER SANITARY SEWER WATER MAIN GAS MAIN OVERHEAD CABLES
			- UNDERGROUND CABLES

Know what's below Call before you dig

9-21-15 Issued Draft		
10-07-15 Issued Fina	l Survey	
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-		_
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		—
(a)		
DRAWN BY:		
RP		
DESIGNED BY:		
BB		
APPROVED BY:		
BB/GY		
DATE:		
9-22-15		
9-22-13		—
SCALE: $1" = 20'$		
20 10 0	10 20	30
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LAND SURVEYORS
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Sections 26, Town 2 North,

811

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Survey

REVISIONS
9-21-15 Issued Draft to Architect
10-07-15 Issued Final Survey

Know what's below

Call before you dig.

DRAWN BY:		
DESIGNED BY: BB		
APPROVED BY: BB/GY		
DATE: 9-22-15		
SCALE: $1" = 20'$		
20 10 0	10 2	0 :
NFE JOB NO.	SHEET	NO.
1757	TS-0	

GENERAL CIVIL NOTES

- 1. PRIOR TO SUBMITTING PROPOSAL, VERIFY ALL CONDITIONS GOVERNING OR AFFECTING THE CIVIL WORK; OBTAIN AND VERIFY ALL DIMENSIONS TO ENSURE THE PROPER FIT AND LOCATION OF THE CIVIL WORK, TAKE ADDITIONAL DIMENSIONS AS REQUIRED: REPORT TO THE ENGINEER ANY AND ALL CONDITIONS WHICH MAY INTERFERE WITH OR OTHERWISE AFFECT OR PREVENT THE PROPER EXECUTION AND COMPLETION OF THE WORK; FAMILIARIZE YOURSELF WITH THE ACTUAL CONDITIONS OF THE CIVIL WORK, ACCESS TO THE SITE, AVAILABLE STORAGE SPACE, FACILITIES AND OBSTRUCTIONS THAT MAY BE ENCOUNTERED DURING THE PROGRESS OF WORK.
- 2. CONTRACTOR TO FURNISH ALL NECESSARY LABOR, MATERIAL, EQUIPMENT AND FACILITIES TO FURNISH, FABRICATE AND PERFORM THE REQUIRED CIVIL WORK.
- 3. ANY EXISTING CONSTRUCTION TO BE MODIFIED AS A PART OF THIS CONTRACT SHALL BE REBUILT AS REQUIRED TO THE SATISFACTION OF THE OWNER/ENGINEER.
- 4. EXISTING CONSTRUCTION NOT UNDERGOING ALTERATION IS TO REMAIN UNDISTURBED. WHERE SUCH CONSTRUCTION IS DISTURBED AS A RESULT OF THE OPERATIONS OF THIS CONTRACT. THE EXISTING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AS REQUIRED AND TO THE SATISFACTION OF THE OWNER/ENGINEER.
- 5. ALL WORK SHOWN ON THESE DRAWINGS MAY BE CHECKED BY AN INDEPENDENT TESTING AGENCY RETAINED BY OWNER TO ENSURE COMPLIANCE WITH THE REQUIREMENTS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ACCESS AS REQUIRED FOR TESTING PURPOSES.
- 6. CONTRACTOR SHALL MAKE ALL NECESSARY FIELD VISITS FOR INSPECTION, MEASUREMENTS AND VERIFICATION OF EXISTING CONDITIONS.
- 7. THE GENERAL CIVIL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS, SPECIFICATION, AND/OR THE GENERAL CIVIL NOTES, THE STRICTEST PROVISION AS DETERMINED BY THE ENGINEER SHALL GOVERN.
- 8. WORK THE CIVIL DRAWINGS IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, STRUCTURAL, AND ELECTRICAL DRAWINGS.
- 9. ALL WORK SHALL CONFORM TO APPLICABLE STATE AND LOCAL CODES.
- 10. SOIL BORINGS: SOILS INFORMATION WILL BE AVAILABLE FROM THE CIVIL ENGINEER (SIDOCK ARCHITECTS). THE REPORT IS BY TESTING & ENGINEERING CONSULTANTS, INC., DATED JUNE 14, 2016. THE BORING LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.
- 11. THE CONTRACTOR SHALL COMPLY WITH THE CONSTRUCTION SAFETY STANDARDS AND THE OCCUPATIONAL SAFETY STANDARDS (OSHA) AS ISSUED BY THE U.S. DEPARTMENT OF LABOR AND THE MICHIGAN DEPARTMENT OF LABOR (MIOSHA). THE CONTRACTOR SHALL ALSO COMPLY TO REQUIREMENTS OF THE CITY OF BIRMINGHAM SPECIFIC SAFETY PLAN.
- 12. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH CITY OF BIRMINGHAM STANDARDS AND SPECIFICATIONS AND OTHER APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS AND UTILITY COMPANY REGULATIONS.
- 13. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL THE EXISTING CONDITIONS AT THE SITE INCLUDING UTILITIES, SERVICES, ETC. AND SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGES THEY CAUSE TO BOTH EXISTING, NEW CONSTRUCTION, PROPERTY AND ANY UNAUTHORIZED DISRUPTION TO ADJACENT OWNERS NORMAL USE OF UTILITIES, SERVICES AND THE SURROUNDING FACILITIES.
- 14. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION PRIOR TO MAKING CHANGES TO, OR INTERRUPTIONS OF UTILITIES AND SHALL COMPLY WITH SPECIAL INSTRUCTIONS FROM THE OWNER TO MINIMIZE THE EFFECT ON THEIR OPERATIONS. PRIOR TO ANY EXCAVATION, EARTH MOVING WORK OR REMOVAL OR REMOVAL OF ANY PIPE FROM SERVICE, THE CONTRACTOR SHALL REVIEW WITH THE OWNER'S REPRESENTATIVE THE LOCATION OF THE UNDERGROUND UTILITIES, SERVICE AND STRUCTURES IN THE AREA WHERE THE WORK IS BEING PERFORMED. PROVIDE FULL TIME SUPERVISION DURING ALL EXCAVATION AND EARTH MOVING OPERATIONS AND TAKE ALL RESPONSIBLE PRECAUTIONS TO PROTECT EXISTING UTILITIES, SERVICES AND OPERATIONS FROM DAMAGE OR DISRUPTION.
- 15. PROVIDE BARRIER PROTECTION FOR VEHICULAR AND PEDESTRIAN TRAFFIC AT EXCAVATIONS. TEMPORARY FENCING, BARRICADING AND PEDESTRIAN ROUTING SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
- 16. FOR PROTECTION OF UNDERGROUND UTILITIES THE CONTRACTOR SHALL CALL "MISS DIG" AT 800-482-7171 OR 811, A MINIMUM TOF THREE DAYS PRIOR TO EXCAVATION ON THE SITE. ALL "MISS DIG" PARTICIPATING MEMBERS WILL THUS ROUTINELY BE NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF NOTIFYING UTILITY OWNER'S WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT
- 17. DISPOSE OF ALL EXCAVATED SOILS AND WASTE MATERIALS (NEW AND EXISTING) OFF SITE IN A LEGAL MANNER.
- 18. PERFORM FINAL CLEANUP OF WORK AREAS, TO THE SATISFACTION OF THE OWNER.

- 1. TOPOGRAPHIC INFORMATION: EXISTING INFORMATION IS BASED ON A TOPOGRAPHIC SURVEY BY NOWAK & FRAUS ENGINEERS DATED 10-07-15. SUPPLEMENTED BY FIELD OBSERVATIONS.
- 2. VERTICAL CONTROL: ELEVATIONS SHOWN ARE BASED ON USGS/NAVD88 DATUM. THE BENCH MARKS USED ARE IDENTIFIED ON THE TOPOGRAPHIC & BOUNDARY SURVEY SHEET.
- 3. LAYOUT: LOCATE BUILDING ADDITIONS BY MEASUREMENTS FROM CONNECTING AREAS OF EXISTING BUILDINGS, & ENGAGE THE SERVICES OF A PROFESSIONAL SURVEYOR TO ASSIST IN LAYOUT, & CONSTRUCTION STAKING. CONFIRM HORIZONTAL AND VERTICAL CONTROL POINTS PRIOR TO CONSTRUCTION.

CLEARING, GRUBBING, & EARTHWORK

- AT THE START OF EARTHWORK OPERATIONS, ALL SURFACE VEGETATION SHALL BE CLEARED AND THE EXISTING TOPSOIL AND ANY OTHER ORGANIC SOILS SHALL BE REMOVED IN THEIR ENTIRETY FROM BELOW THE PROPOSED BUILDING AND PAVEMENT AREAS. EXISTING RANDOM CONCRETE AND OTHER DEBRIS SHALL BE REMOVED FROM WITHIN THE BUILDING AREA. REMOVE STUMPS TO 18 INCHES BELOW FINAL GRADE IN AREAS THAT WILL BE NEW LAWN. DISPOSE OF VEGETATIVE MATTER AND DEBRIS OFFSITE. REMOVE ROOT SYSTEMS ENTIRELY FROM DEMOLISHED TREES IN AREAS WHERE NEW PAVEMENT OR STRUCTURES WILL BE CONSTRUCTED.
- 2. THE SUB-GRADE SHOULD BE THOROUGHLY PROOF-ROLLED WITH A HEAVY RUBBER-TIRED VEHICLE SUCH AS A LOADED SCRAPER OR LOADED DUMP TRUCK. ANY AREAS THAT EXHIBIT EXCESSIVE PUMPING AND YIELDING DURING PROOF-ROLLING SHOULD BE STABILIZED BY AERATION, DRYING AND COMPACTION IF WEATHER CONDITIONS ARE FAVORABLE, OR REMOVAL AND REPLACEMENT WITH ENGINEERED FILL.
- 3. ALL EXCAVATIONS ARE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE WHO SHALL BE CONSULTED WHEN POOR SOIL, WATER, OBSTRUCTIONS, PIPING, EXISTING FOOTINGS, EXCAVATIONS, ETC., ARE
- 4. CONTRACTOR SHALL FURNISH ALL REQUIRED DEWATERING EQUIPMENT TO MAINTAIN A DRY EXCAVATION UNTIL BACKFILL IS COMPLETE.
- 5. MATERIAL FOR BACKFILL OR ENGINEERED FILL REQUIRED TO ACHIEVE DESIGN GRADES SHOULD CONSIST OF NON-ORGANIC SOILS. THE ON-SITE SOILS THAT ARE FREE OF ORGANIC MATTER AND DEBRIS MAY BE USED FOR ENGINEERED FILL WITH ENGINEER'S APPROVAL.
- 6. BACKFILL MATERIAL SHALL BE COMPACTED TO 95% OF ITS' MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR METHODS (ASTM D1557), IN LIFTS NOT EXCEEDING 12-INCHES IN LOOSE THICKNESS.
- 7. FROZEN MATERIAL SHALL NOT BE USED AS FILL, NOR SHALL FILL BE PLACED ON FROZEN SUB-GRADE
- 8. DO NOT PLACE BACKFILL AGAINST FOUNDATION WALLS UNTIL BASEMENT FLOOR LEVEL AND FIRST FLOOR LEVEL SLABS ARE IN PLACE AND HAVE REACHED 75% OF THEIR SPECIFIED DESIGN STRENGTH. SHORE AND BRACE WALLS AS REQUIRED IF BACKFILLING OPERATIONS ARE TO BE CARRIED OUT PRIOR TO PLACEMENT OF FLOOR
- 9. PLACE BACKFILL AGAINST BOTH SIDES OF GRADE BEAMS AND FOUNDATIONS AT EQUAL ELEVATIONS OF FILL. EXCEPT AS SHOWN ON THE DRAWINGS.
- 10. CRUSHED SLAG USED AS BACKFILL SHALL BE AGED, ENVIRONMENTALLY SAFE PROCESSED BLAST FURNACE
- 11. CONSTRUCTION DRAINAGE: STORM WATER ACCUMULATED IN THE PROJECT SITE EXCAVATIONS IS TO DRAIN BY NATURAL PERCOLATION.

CLEARING, GRUBBING & EARTHWORK CONT.

- 12. SLOPE SMOOTHLY BETWEEN INDICATED ELEVATIONS TO ACHIEVE POSITIVE DRAINAGE. SLOPE ALL EARTH BANKS 4:1 OR FLATTER.
- 13. NEW GRADES SHOWN ARE FINISHED GRADES AND INCLUDES TOP OF TOPSOIL OR SURFACES SUCH AS
- 14. PROVIDE 6 INCHES OF TOPSOIL, SEED AND MULCH AT DISTURBED LAWN AREAS, EXCEPT AS NOTED OTHERWISE.
- 15. TREES: TREES NOT INDICATED TO BE REMOVED OR TRANSPLANTED SHALL BE FENCED OFF WITH 4' HIGH ORANGE CONSTRUCTION FENCE 10' FROM THE DRIP LINE OF THE TREE. TREES INDICATED TO BE REMOVED, SHALL BE TRANSPLANTED WHERE SHOWN ON THE PLANS AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
- 16. GREAT CARE SHALL BE TAKEN BY CONTRACTOR'S TO AVOID DAMAGE TO VEGETATION OUTSIDE THE LIMITS OF CONSTRUCTION AND TO KEEP THE CONSTRUCTION AREAS TO A MINIMUM. DRIVING SHALL NOT BE PERMITTED OUTSIDE THE LIMITS OF CONSTRUCTION.
- 17. TOPSOIL (REUSE EXISTING), SEED, FERTILIZE AND MULCH LAWN AREAS DISTURBED BY NEW CONSTRUCTION. ALL NEW LAWN SHALL MATCH EXISTING LAWN SPECIES OR SEE LANDSCAPING PLANS/SPECS.

<u>UTILITIES</u>

1. MINIMUM COVER OF UNDERGROUND UTILITIES:

5.5 FT NATURAL GAS 2.5 FT SANITARY SEWERS 3.0 FT ALL OTHERS 2.5 FT

PRESSURE UTILITIES MAY BE LAID APPROXIMATELY PARALLEL TO FINISH GRADE, EXCEPT AS INDICATED, WITH LOCAL DEEPENING TO AVOID OTHER UTILITIES OR OBSTRUCTIONS. MAINTAIN COVER BELOW DITCHES AND SURFACE DEPRESSIONS. PROVIDE TEMPORARY PROTECTION AS REQUIRED UNTIL COVER IS COMPLETED. INFORM OWNER'S REPRESENTATIVE IF AVAILABLE COVER, AT INDICATED ELEVATIONS, IS LESS THAN MINIMUM. VERTICAL CLEARANCE FOR ALL PIPES SHALL BE 18" MINIMUM FROM THE OUTSIDE OF PIPE.

- 2. EXISTING UTILITIES: INFORMATION HAS BEEN OBTAINED FROM EXISTING AVAILABLE DRAWINGS AND SURFACE FEATURES SHOWN ON THE TOPOGRAPHIC SURVEY. VERIFY THE INFORMATION BEFORE CONSTRUCTION. NOTIFY THE OWNER'S REPRESENTATIVE OF DISCREPANCIES OR INTERFERENCES.
- 3. WATER MAIN RESTRAINTS: PROVIDE ANCHORAGE AS INDICATED AND AS REQUIRED TO RESTRAIN PIPING AND APPURTENANCES DURING PRESSURE TEST AND SERVICE. RODS AND CLAMPS SHALL BE PROVIDED AS INDICATED AND MAY BE USED ELSEWHERE FOR OPTIONAL ANCHORAGE, BUT SHALL NOT BE SUBSTITUTED FOR THRUST BLOCKS AND ANCHORED DEFLECTIONS.
- 4. ADJUST THE FRAME AND COVER OF CATCH BASINS AND MANHOLES THAT ARE NOT INDICATED TO BE ABANDONED OR REMOVED, TO FINISH GRADE ELEVATION. ADJUSTMENTS SHALL BE MADE USING PRECAST GRADE RINGS.
- 5. THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.
- 6. PRIOR TO CONSTRUCTION, EXISTING UTILITIES AT PROPOSED CONNECTIONS AND CROSSINGS SHALL BE FIELD EXCAVATED TO VERIFY LOCATIONS, ELEVATION AND SIZE. THE OWNER'S REPRESENTATIVE MAY CONFIRM, ADJUST OR REVISE DESIGN ELEVATIONS OF THE PROPOSED UTILITIES.
- 7. UNDERDRAIN: PROVIDE TYPICAL UNDERDRAIN UNDER PAVEMENT AT NEW CATCH BASINS & INLETS RECEIVING SURFACE DRAINAGE. UNDERDRAIN SHALL HAVE A MINIMUM OF 2'-6" COVER AND A MINIMUM SLOPE OF 0.5%. SEE DETAIL ON THE CONSTRUCTION PLANS.
- 8. PROVIDE A VALVE AND BOX ON FIRE HYDRANT ASSEMBLIES.

GENERAL PAVING NOTES

- 1. ALL HOT MIX ASPHALT & CONCRETE PAVEMENT SHALL CONFORM TO THE 2012 MDOT SPECIFICATIONS FOR
- 2. SURFACE RESTORATION: RESTORE PAVEMENT & OTHER SURFACES DISTURBED BY CONTRACT OPERATIONS TO THEIR ORIGINAL CONDITION OR BETTER.
- 3. PAVEMENT STRIPING: PROVIDE 4 INCH WIDE YELLOW PAINT STRIPING FOR STANDARD PARKING SPACES. AND HANDICAP BLUE FOR ADA SPACES. ALL PAVEMENT MARKINGS SHALL MEET THE REQUIREMENTS SET FORTH IN THE MDOT 2012 STANDARD SPECIFICATION FOR REGULAR DRY PAINT MARKINGS. ANY CURING COMPOUND ON THE NEW CONCRETE PAVEMENT SURFACE MUST BE REMOVED PRIOR TO APPLICATION OF ANY MARKINGS. ALL PAINT SHALL BE LEAD FREE, & APPLIED PER MANUFACTURERS RECOMMENDATIONS.
- 4. EXISTING PAVEMENT TO BE REMOVED SHALL BE SAW CUT, FULL DEPTH, & RECTANGULAR.
- 5. EXISTING MARKING INDICATED FOR REMOVAL SHALL BE SAND BLASTED OR POWER WIRE BRUSHED.
- WHEN PLACING NEW PAVEMENTS, MAINTAIN SLOPE OF EXISTING SURROUNDING SURFACES.

<u>ASPHALT</u>

1. AFTER FINAL ROLLING, PROTECT PAVEMENT FROM VEHICULAR TRAFFIC UNTIL THE SURFACE HAS COOLED SUFFICIENTLY TO ELIMINATE SURFACE ABRASION.

CAST-IN-PLACE CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301- LATEST REVISION "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING", EXCEPT AS MODIFIED BY STRUCTURAL REQUIREMENTS NOTED ON THE DRAWINGS.
- 2. ALL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH AS NOTED BELOW:
- A. INTERIOR FOOTINGS AND FOUNDATIONS: 3500 psi B. INTERIOR SLAB ON GRADE: 4000 psi
- C. INTERIOR SUPPORTED SLABS: 4000 psi D. EXTERIOR CONCRETE EXPOSED TO WEATHER: 4500 psi
- E. EXTERIOR FOUNDATIONS NOT EXPOSED TO WEATHER: 4000 psi F. GRADE WALLS: 4000 psi
- 3. ALL EXTERIOR CONCRETE INCLUDING WALLS SHALL BE AIR ENTRAINED 5% +/- 1%.
- 4. ALL EXTERIOR CONCRETE EXPOSED TO WEATHER SHALL HAVE A MAXIMUM WATER TO CEMENTITIOUS RATIO OF 0.45.
- UNLESS NOTED OTHERWISE, MINIMUM CONCRETE COVER SHALL BE:
 - CONCRETE CAST AGAINST EARTH
 - 3-INCHES CONCRETE EXPOSED TO EARTH OR WEATHER 2-INCHES CONCRETE NOT EXPOSED EARTH OR WEATHER 3/4-INCHES
- THE CONTRACTOR SHALL SUBMIT THE CONCRETE MIX DESIGN(S) TO THE ENGINEER FOR REVIEW. PROPORTION MIX DESIGNS AS DEFINED IN ACI 301 SECTION 4. THE SUBMITTAL SHALL INCLUDE AS A MINIMUM CEMENT TYPE AND SOURCE, CEMENT CUBE STRENGTH, AGGREGATE GRADATIONS, WATER TESTS, AD-MIXTURE CATALOG INFORMATION AND CYLINDER STRENGTH TEST RESULTS FOR THE CONCRETE.
- 7. THE CONTRACTOR SHALL SUBMIT A JOINTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL IF ONE HAS NOT BEEN PROVIDED ON THE PLAN SET. THE SUBMITTAL SHALL INCLUDE AS A MINIMUM A GRAPHIC REPRESENTATION WITH DIMENSIONS OF JOINT SPACING AND TYPES. SEE PAVING PLAN ON C-210 FOR MORE DETAIL OF JOINT TYPE AND SPACING.
- 8. ALL REINFORCEMENT TO BE DETAILED, FABRICATED AND ERECTED ACCORDING TO THE ACI STANDARDS: "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT", ACI 315 - LATEST REVISION AND "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES", ACI 315R - LATEST REVISION.

9. LAPS, ANCHORAGES AND SPLICES SHALL COMPLY WITH THE REQUIREMENTS OF ACI 318-LATEST REVISION,

SECTIONS 12.2 AND 12.15. LOCATIONS AND SPLICES SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION

JOINT LOCATIONS, DETAILS AND AS SHOWN ON THE REINFORCING STEEL SHOP DRAWINGS. 10. PROVIDE DOWELS OF SAME SIZE AND SPACING AS VERTICAL REINFORCEMENT AT ALL COLUMNS AND

CAST-IN-PLACE CONCRETE CONT.

- 10. UNLESS OTHERWISE SHOWN OR NOTED, AS A MINIMUM, PROVIDE TWO #5 BARS (ONE EACH FACE) AROUND UNFRAMED OPENINGS IN SLABS AND WALLS. PLACE BARS PARALLEL TO SIDES OF OPENINGS AND EXTEND THEM 24 INCHES BEYOND CORNERS.
- 11. ALL CONSTRUCTION JOINTS SHALL BE FURNISHED WITH KEYWAY CENTERED ON MEMBERS. WHERE THE SIZE OF KEY IS NOT SHOWN ON THE DRAWINGS, THE KEY DEPTH SHALL BE 10% OF THE CROSS SECTION DIMENSION OF THE MEMBER - MINIMUM 3/4".
- 12. LOCATE ALL SLEEVES, OPENINGS, EMBEDDED ITEMS, ETC., AS INDICATED ON THE DRAWINGS. THE CONCRETE CONTRACTOR SHALL CHECK WITH ALL OTHER TRADES TO MAKE SURE THE SLEEVES, OPENINGS AND EMBEDDED ITEMS THAT ARE TO BE PROVIDED AND SET BY THEM ARE IN PLACE PRIOR TO PLACING OF CONCRETE IN THE AREA INVOLVED.
- 13. CONTRACTORS SHALL OBTAIN APPROVAL FROM THE ENGINEER, PRIOR TO PLACING OPENINGS OR SLEEVES, NOT SHOWN ON THE DRAWINGS, THROUGH ANY STRUCTURAL MEMBERS, ROOF, WALLS OR FOUNDATIONS. REVIEW ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR BASES, OPENINGS, SLEEVES. ANCHORS, INSERTS, CONDUITS, RECESSES AND OTHER DEVICES IN CONCRETE WORK BEFORE CASTING CONCRETE.
- 14. PROVIDE POCKETS OR RECESSES IN CONCRETE WORK FOR STEEL COLUMNS AND BEAMS AS REQUIRED AND/OR AS CALLED FOR IN THE SPECIFICATIONS EVEN IF NOT SHOWN ON THE DRAWINGS. PROVIDE CONCRETE FILL AFTER STEEL ERECTION TO SEAL OPENINGS.
- 15. REFER TO ARCHITECTURAL DRAWINGS FOR SLAB RECESSES AND/OR FLOOR FINISH MATERIALS.
- WELDING OF REINFORCING STEEL IS PROHIBITED UNLESS SPECIFICALLY DETAILED. WELDING SHALL CONFORM TO AWS D1.4 SPECIFICATION.
- 17. THE CONCRETE SHALL BE THOROUGHLY COMPACTED BY VIBRATION SUPPLEMENTED BY SPADING. PUDDLING OR AGITATION, TO PREVENT HONEYCOMBING AND TO INSURE THE ELIMINATION OF VOIDS. VIBRATION MUST BE DIRECT ACTION IN THE CONCRETE AND NOT AGAINST FORMS OR REINFORCEMENT HONEYCOMBING. VOIDS AND LARGE AIR POCKETS WILL NOT BE ACCEPTABLE.

SOIL EROSION AND SEDIMENTATION CONTROL

- 1. COMPLY WITH THE REQUIREMENTS OF THE CITY OF BIRMINGHAM EROSION & SEDIMENTATION CONTROL PERMIT ALONG WITH ALL APPLICABLE FEDERAL, STATE, COUNTY, AND CITY LAWS, CODES, AND REGULATIONS PERTAINING TO THE IMPLEMENTATION, MAINTENANCE, AND DOCUMENTATION OF SEDIMENTATION AND **EROSION CONTROL PRACTICES.**
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION, MAINTENANCE, AND DOCUMENTATION OF SEDIMENTATION AND EROSION CONTROL AND STORMWATER QUALITY ISSUES RELATED TO THE PROJECT, AS REQUIRED AND AS NECESSARY TO COMPLY WITH APPLICABLE LAWS, CODES, AND REGULATIONS.
- 3. INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN EVENTS TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES. ANY NECESSARY IMPROVEMENTS OR REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
- 4. SEDIMENT AND EROSION FROM ALL WORK AREAS SHALL BE CONTAINED ON THE SITE, AWAY FROM WETLANDS, OUTFALLS, WATERWAYS, AND ENVIRONMENTALLY SENSITIVE AREAS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES, AND PONDS.
- 5. MAINTAIN EROSION CONTROL MEASURES UNTIL CONSTRUCTION IS COMPLETE AND LAWN AREAS ARE FULLY DEVELOPED.
- 6. PROVIDE JUTE MATTING OR NETTED MULCH ON TEMPORARY SLOPES 2:1 OR STEEPER. SEED AND MULCH OTHER SLOPES TO REMAIN UNFINISHED FOR MORE THAN 14 DAYS.
- 7. REMOVE SEDIMENTATION AND EROSION CONTROL MEASURES UPON COMPLETION OF PROJECT.

SEQUENCE OF EROSION AND SEDIMENTATION CONTROL OPERATIONS:

WILL BE REMOVED.

- 1. A PERIMETER DEFENSE WILL BE INSTALLED PRIOR TO CONSTRUCTION TO CONTAIN RUNOFF FROM ALL PROPOSED DISTURBED AREAS. SEDIMENT CONTROL WILL BE INITIATED WHICH WILL CONSIST OF MAINTAINING ALL EXISTING VEGETATION AND DIRECTING ALL RUNOFF ON SITE.
- 2. DURING CONSTRUCTION THE ENDS OF ALL OPEN PIPES WILL BE PROTECTED BY FILTER FABRIC, STONE FILTERS OR OTHER APPROVED MEANS.
- 3. ANY REMAINING DENUDED AREA SHALL BE SEEDED AND MULCHED DAILY, UPON COMPLETION OF FINAL
- 4. AT THE COMPLETION OF THE CONSTRUCTION, TEMPORARY CONTROL MEASURES WILL BE REMOVED AND CONVERTED TO PERMANENT CONTROLS. FINAL GRADING WILL BE COMPLETED AND THE GROUND WILL BE PERMANENTLY STABILIZED. FILTER FABRIC FENCES SHALL BE REMOVED AND ANY BARE SPOTS WILL BE SEEDED. CATCH BASINS AND DRAIN INLETS WILL BE CAREFULLY UNCOVERED AND ANY SEDIMENT OR DEBRIS
- 5. CONTRACTOR IS TO SEED CRITICAL AREAS IDENTIFIED BY OWNER OR OWNER'S REPRESENTATIVE DAILY, WHEN THOSE AREAS ARE SUBJECT TO EARTH CHANGES. CONTRACTOR IS ALSO RESPONSIBLE FOR REGULAR MAINTENANCE OF PLANT COVER IN THESE AREAS. COVER SHALL BE MAINTAINED SO AS TO CONTROL SOIL
- 6. AT THE CONCLUSION OF CONSTRUCTION, THE OWNER WILL ASSUME THE RESPONSIBILITY FOR PERMANENT MAINTENANCE OF THE EROSION AND SEDIMENTATION CONTROL MEASURES.
- 7. PROVIDE DUST CONTROL WITH AN ON-SITE WATER WAGON. WATER SHALL BE IMPLEMENTED AS NEEDED AND AT THE DIRECTION OF THE CITY AGENT.

CIVIL SYMBOLS LEGENDS **PROPOSED EXISTING** GRADE CONTOUR STORM SEWER __ _ _ _ _ _ SANITARY SEWER ARCHITECTS*ENGINEERS*CONSULTANT COMBINATION SEWER Corporate Headquarters 45650 Grand River Avenue Novi, Michigan 48374 WATER MAIN Ph: (248)349-4500 • Fax: (248)349-1429 GAS LINE Design Studio 43155 Main Street, Suite 2306 Novi, Michigan 48375 ELECTRICAL LINE CURB AND GUTTER Novi • Wyandotte • Muskegon Lansing • Gaylord • Sault Ste. Marie FENCE www.sidockarchitects.com www.sidockgroup.com CLEAN OUT WATER MANHOLE _____ STORM CATCH BASIN OPEN STORM CATCH BASIN/INLET STORM END SECTION SQUARE PIPE END PLUG, CAP OR BULKHEAD FIRE HYDRANT \otimes and GW \square WATER VALVE CITY OF BIRMINGHAM **GRADE ELEVATION** LIGHT POLE RIP RAP SILT FENCE **BIRMINGHAM** CHECK DAM FIRE STATION No. PIPE FLOW DIRECTIONAL ARROW SIGN CB/IN FILTER 1600 WEST MAPLE BIRMINGHAM, MI 48009 DRAINAGE FLOW ARROW **ASPHALT PAVING CONCRETE PAVING GRAVEL**



XX' - XX"

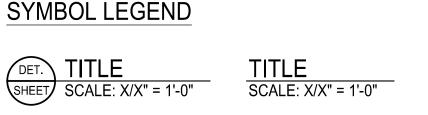
PIPE SIZE DESIGNATION

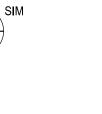
EX. 89' - 12" MEANS 89 FEET OF 12"Ø PIPE

— FEE⁻

THREE FULL WORKING DAYS BEFORE YOU DIG, CALL THE MISS DIG SYSTEM AT 800-482-7171 OR 811.

MISS DIG







Project Number:

CIVIL GENERAL

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FINAL REVIEW

DETAIL REFERENCE DRAWING REFERENCE SECTION REFERENCE

PLAN DETAIL

07/29/16

12/05/16

Drawn:

Checked:

Approved:

Sheet Title:

PROVIDE FENCE AROUND CRITICAL ROOT ZONE OF TREE.

FENCE SHALL BE PLACED IN A CIRCLE WITH A RADIUS OF 1' PER 1" DIAMETER OF THE TREE MEASURED AT 4.5' ABOVE GROUND, AT A MINIMUM.

4' HIGH PLASTIC SNOW FENCE W/ STEEL POST - 10' O.C..

ORGANIC LAYE TOPSOIL

TREE PROTECTION DETAIL

TREE PROTECTION SYMBOLS:

(1) INSTALL TREE PROTECTION PER DETAIL ABOVE.

TREE PROTECTION NOTES:

TREE PROTECTION SHALL BE ERECTED PRIOR TO START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.

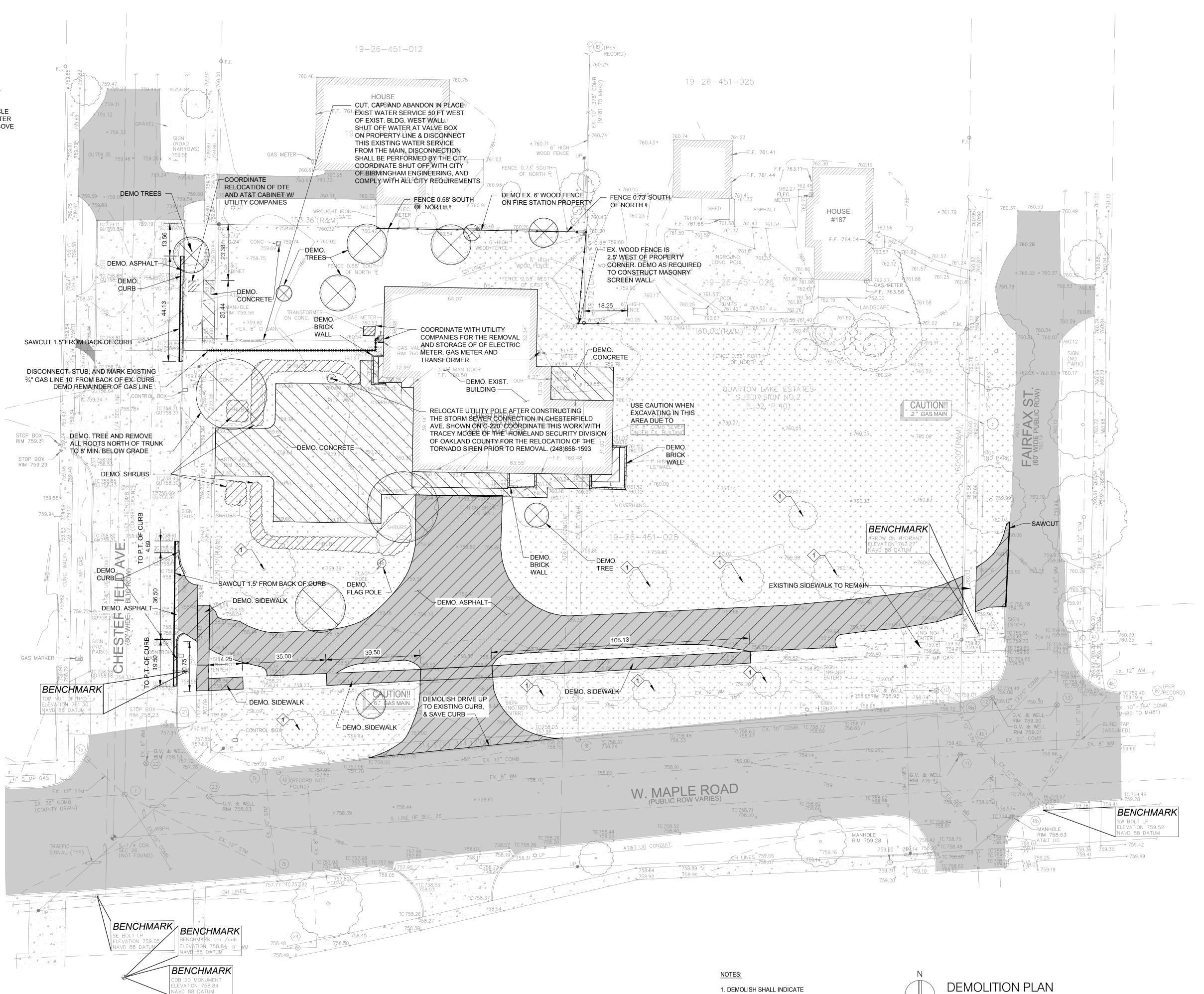
NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN; INCLUDING, BUT NOT LIMITED TO PLACING SOLVENTS, BUILDING MATERIAL, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN DRIP LINES.

GRADE CHANGES MUST BE MINIMAL WITHIN THE DRIP LINE OF PROTECTED TREES.

DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE.

ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING, WHERE POSSIBLE.

REGULATED TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.



REMOVAL & DISPOSAL U.N.O.

2. DEMO. TREE

3. DEMO PAVEMENT

SCALE: 1" = 20'



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Key Plan: N

Client

CITY OF BIRMINGHAM

Project:
BIRMINGHAM
FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

Seal:

 Date
 Issued For

 07/29/16
 FINAL REVIEW

 12/05/16
 BIDS

Drawn: MJS
Checked: CI

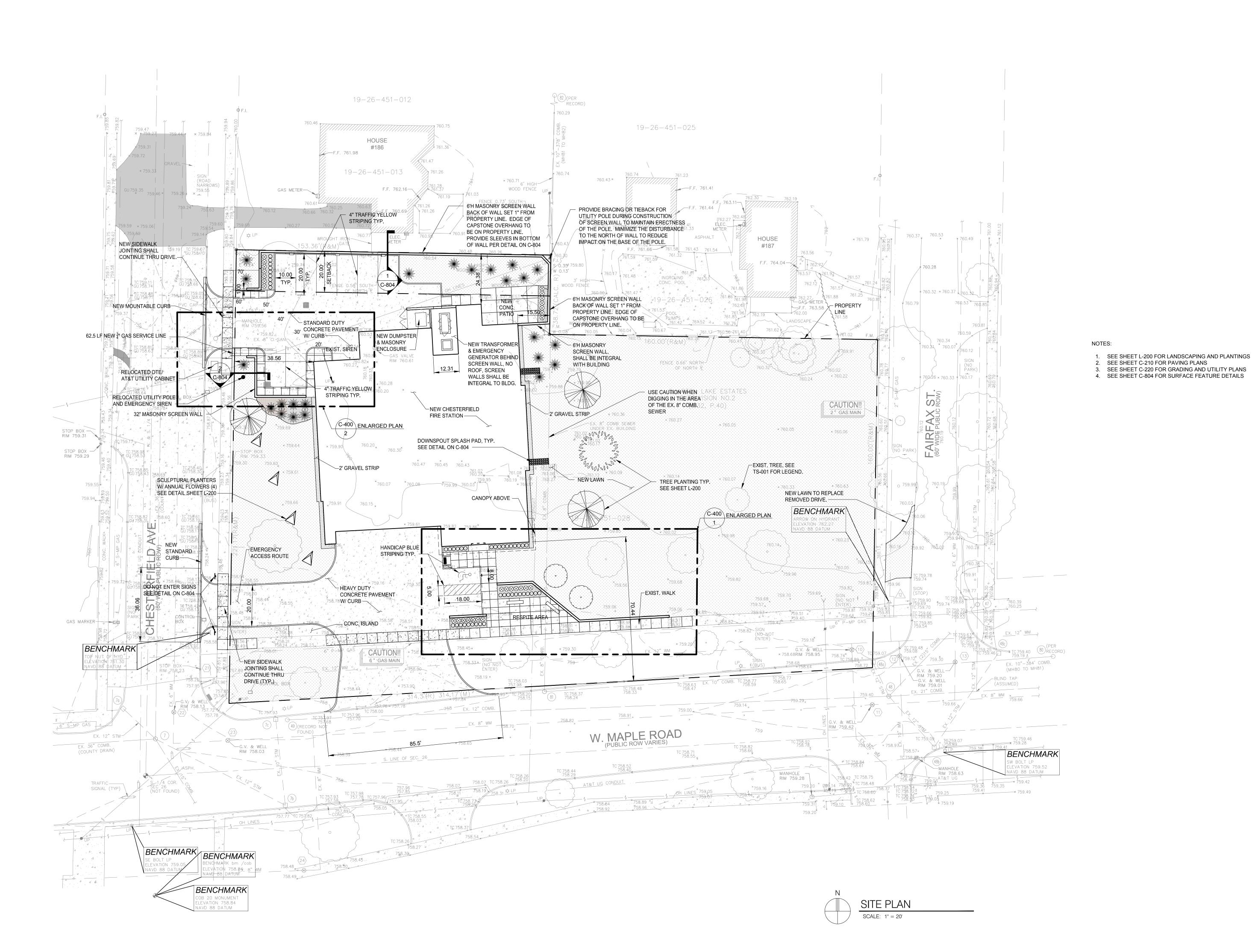
Sheet Title:
DEMOLITION PLAN

Project Number: 15566

Approved:

Shoot Number: C-101

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Key Plan:

CITY OF BIRMINGHAM

Project: BIRMINGHAM FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

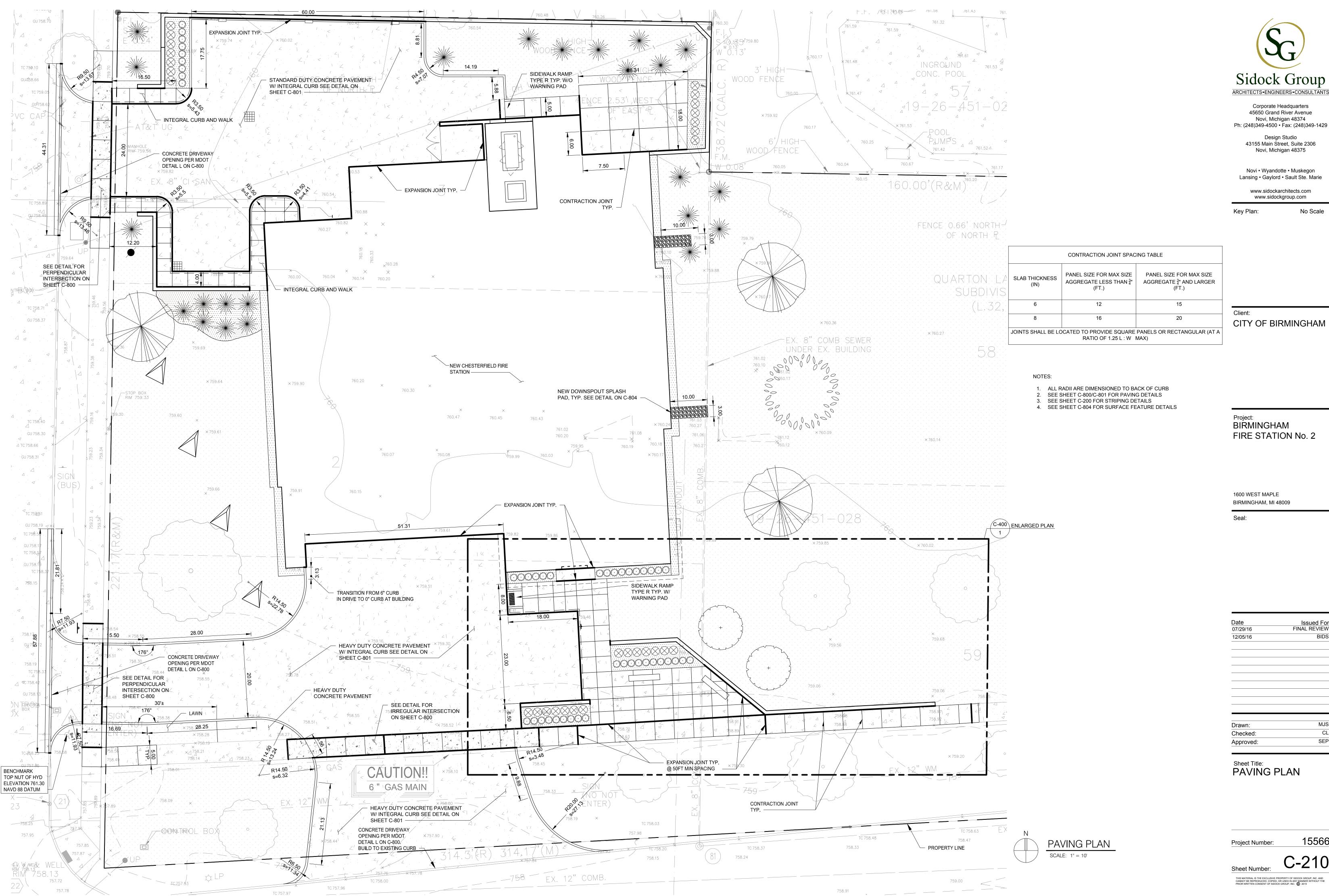
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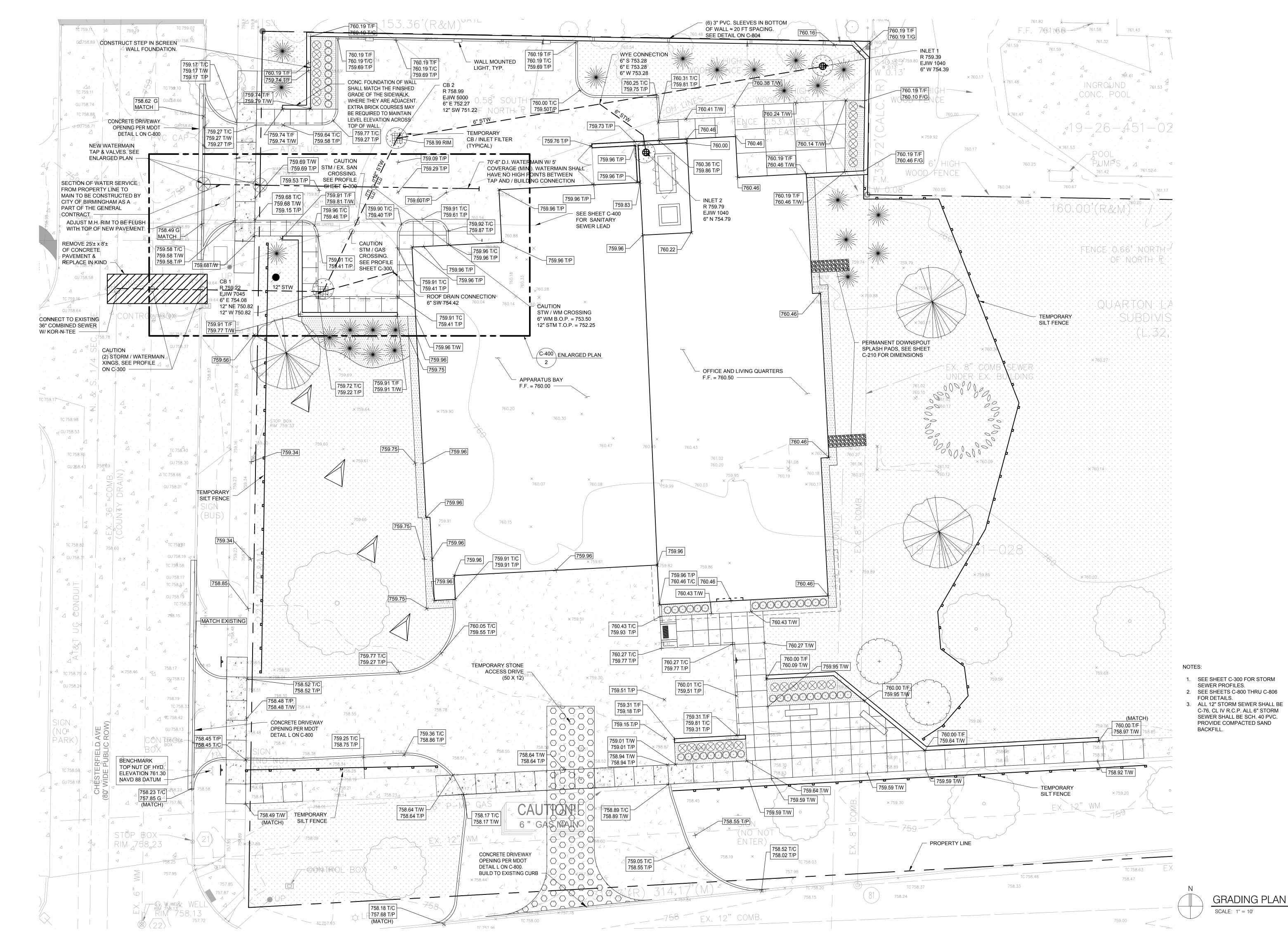
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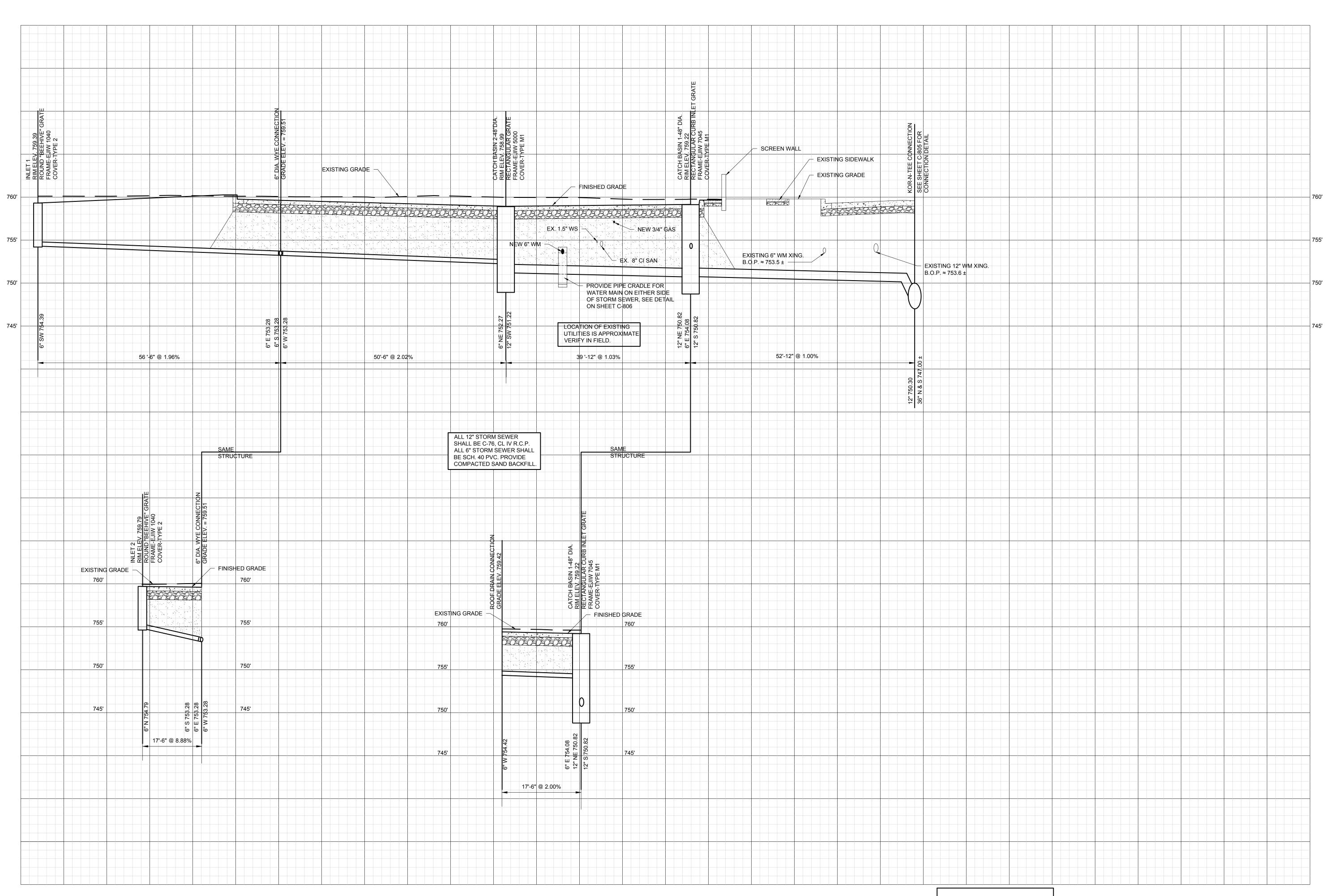
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Sheet Title: GRADING, UTILITY, & SESC PLAN

15566 Project Number:



SCALE:

HORIZONTAL SCALE: 1" = 10'

VERTICAL SCALE: 1" = 5'

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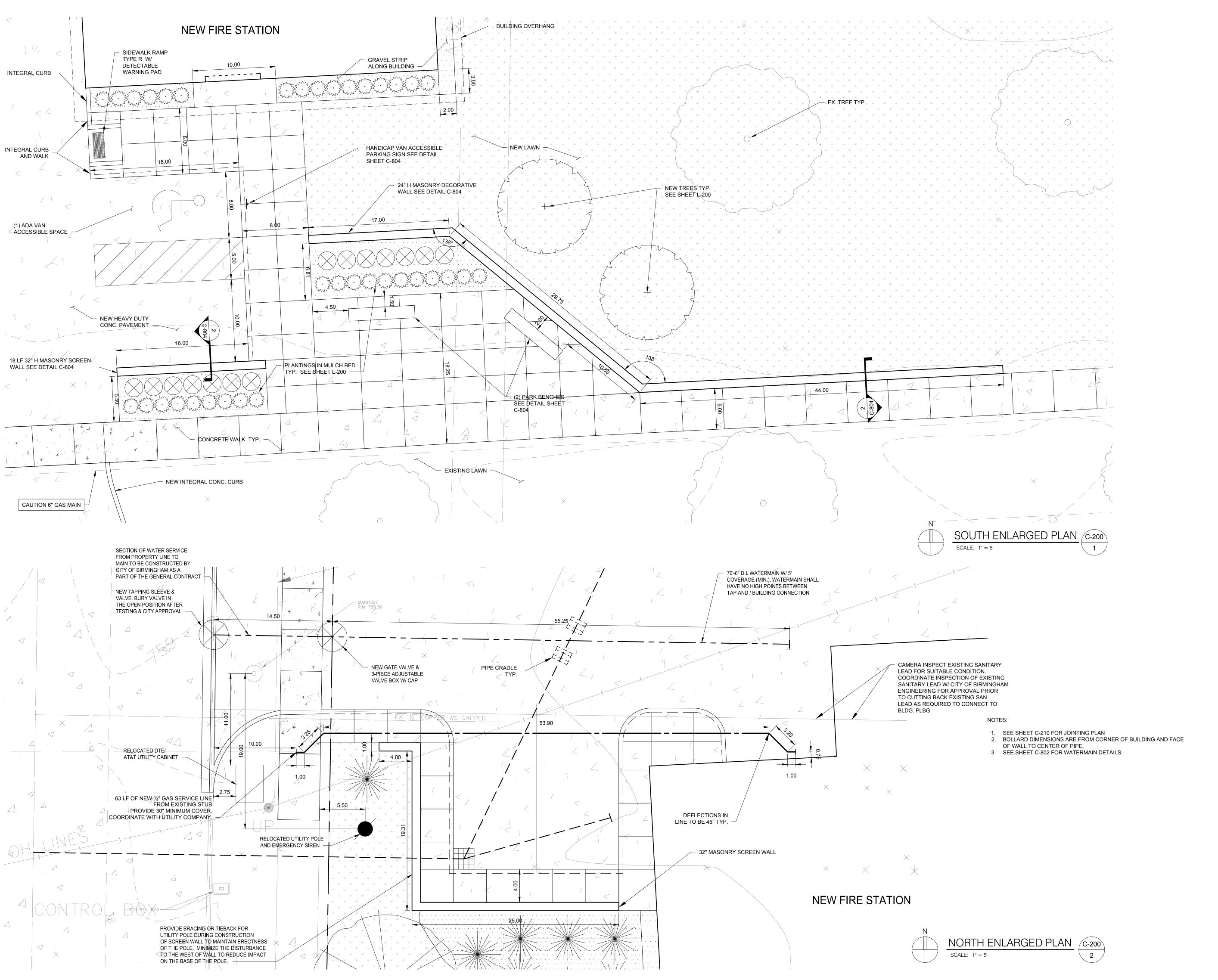
Sheet Title:
PROFILES STORM SEWERS

Project Number:

Sheet Number: C-30

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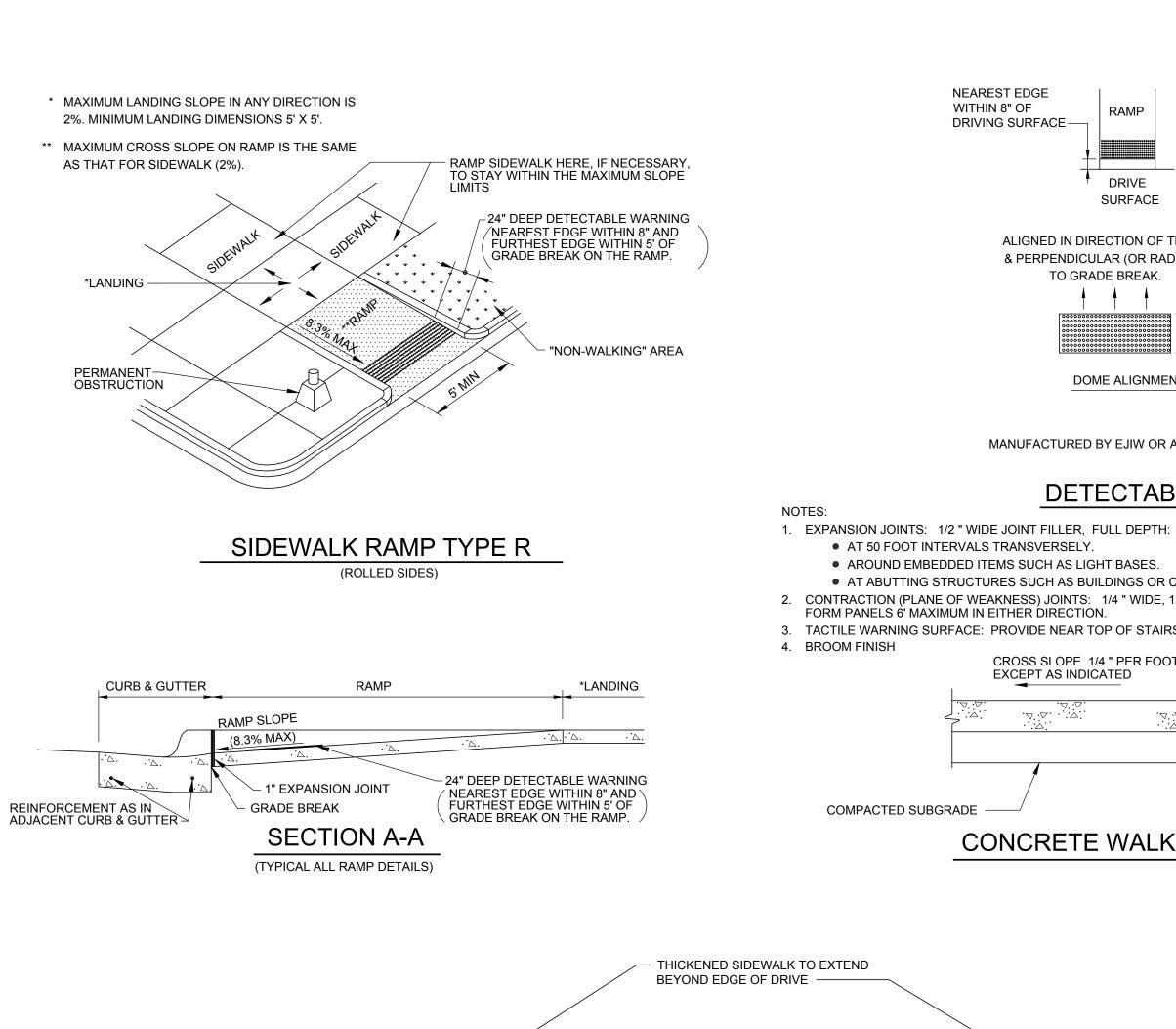
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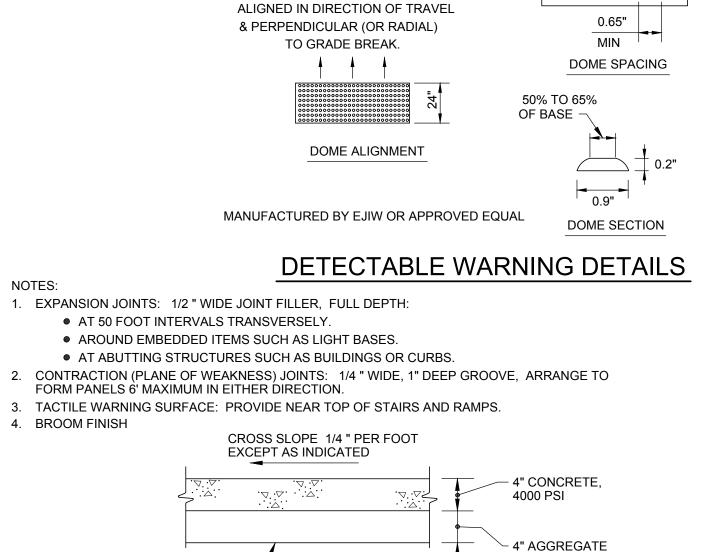
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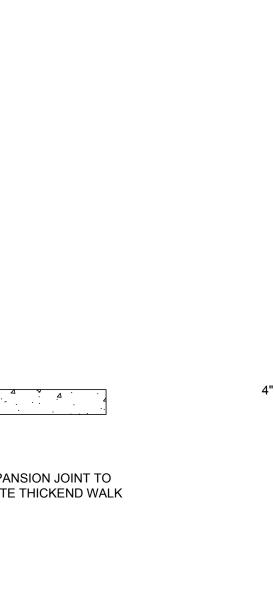
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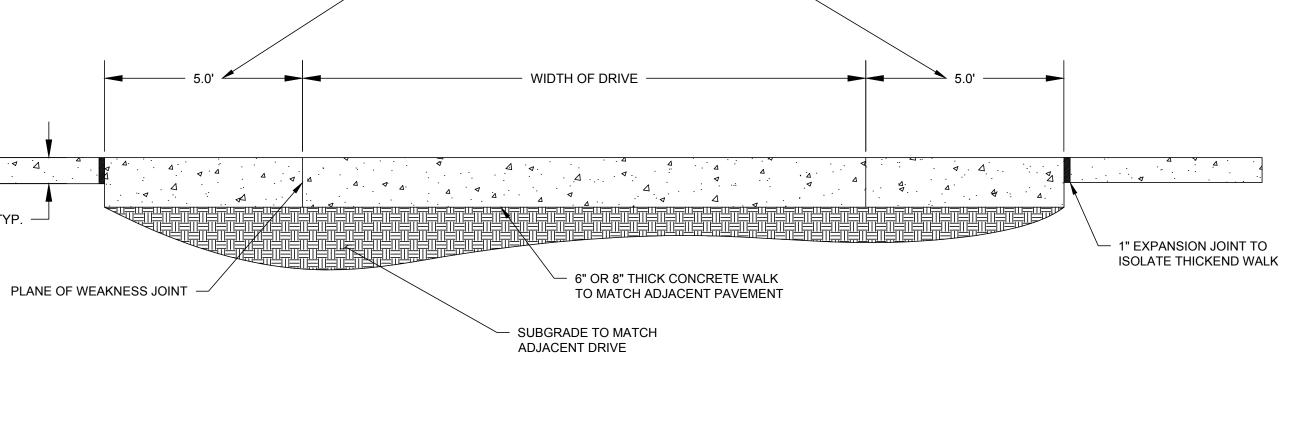
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BASE MDOT CLASS II

DRIVE

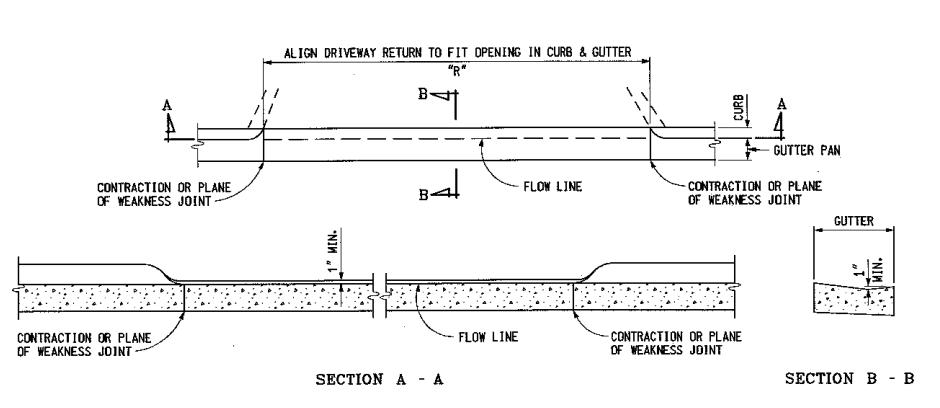
SURFACE







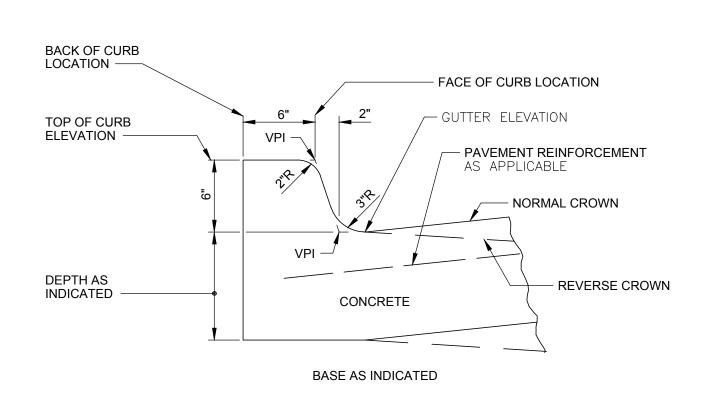
NOT TO SCALE



4" CONCRETE WALK TYP.

CONCRETE DRIVEWAY OPENING, MDOT DETAIL L

CONSTRUCT STREET CURB & GUTTER STRAIGHT THROUGH FIRST, THEN BUILD APPROACH TO UP TO STREET CURB.



DRIVEWAY GRADE TO

MATCH SIDEWALK

CURB FLAIR TO MEET

GRADE OF SIDEWALK

MDOT CONCRETE CURB AND GUTTER

(MDOT DETAIL L, THIS SHEET)

DRIVEWAY APPROACH

PROVIDE 1" CURB HEIGHT THRU

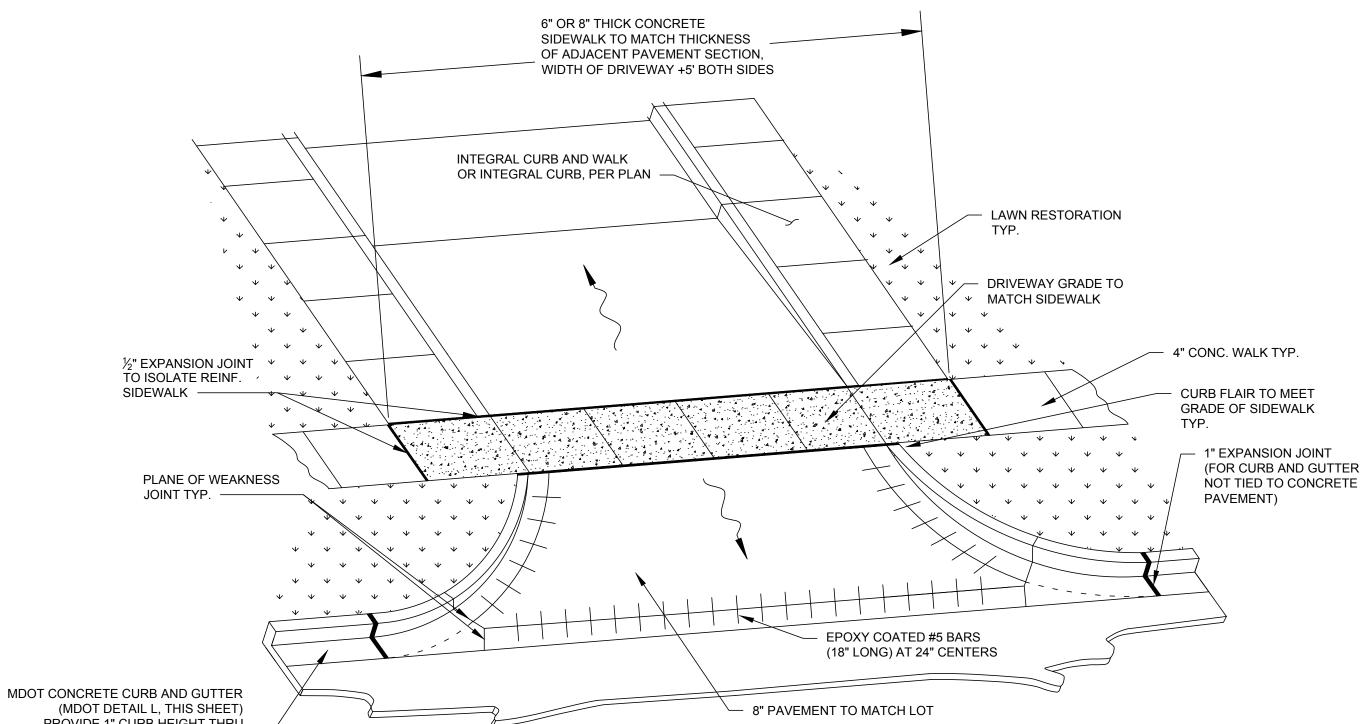
1" EXPANSION JOINT

PAVEMENT)

(FOR CURB AND GUTTER

NOT TIED TO CONCRETE

INTEGRAL CURB



SIDEWALK DETAIL AT PERPENDICULAR INTERSECTION

8" THICK REINFORCED CONCRETE SIDEWALK WIDTH OF DRIVEWAY +5' BOTH SIDES

SIDEWALK DETAIL AT IRREGULAR INTERSECTION

NOTES:

PROVIDE 1" CURB HEIGHT THRU Client: DRIVEWAY APPROACH -

NOT TO SCALE

EPOXY COATED #5 BARS

- 8" PAVEMENT TO MATCH LOT

NOT TO SCALE

1. EXPANSION JOINTS: 1/2 " WIDE JOINT FILLER, FULL DEPTH:

AT 50 FOOT INTERVALS TRANSVERSELY.

AROUND EMBEDDED ITEMS SUCH AS LIGHT BASES.

• AT ABUTTING STRUCTURES SUCH AS BUILDINGS OR CURBS.

(18" LONG) AT 24" CENTERS

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BIRMINGHAM FIRE STATION No. 2

INTEGRAL CURB

½" EXPANSION JOINT TO ISOLATE REINF.

SIDEWALK

LAWN RESTORATION

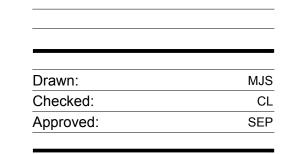
RADIUS AS SPECIFIED

PLANE OF WEAKNESS

JOINT TYP.

1600 WEST MAPLE BIRMINGHAM, MI 48009 Seal:

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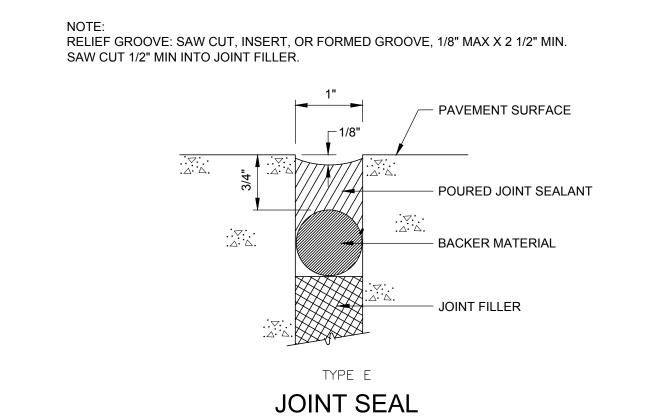


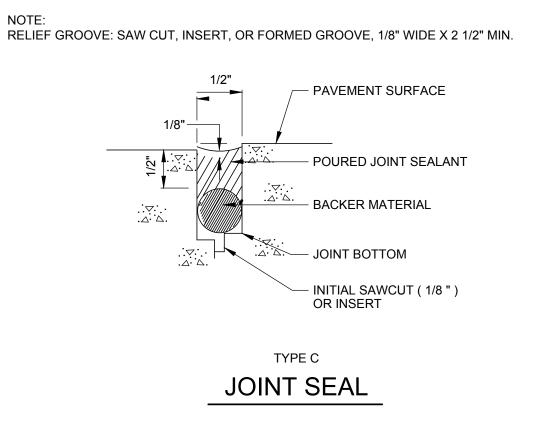
Sheet Title: **PAVING DETAILS**

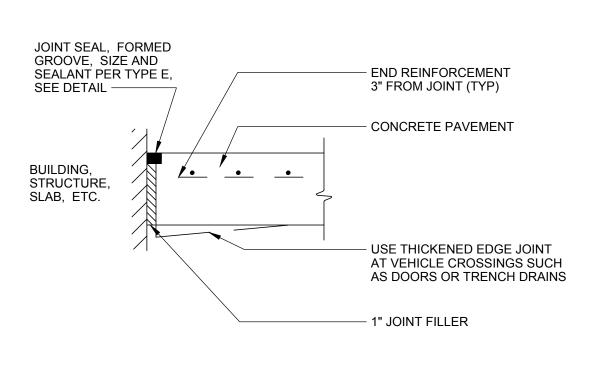
15566 Project Number:

2. CONTRACTION (PLANE OF WEAKNESS) JOINTS: 1/4 " WIDE, 1" DEEP GROOVE, ARRANGE TO FORM PANELS 6' MAXIMUM IN EITHER DIRECTION. 3. TACTILE WARNING TEXTURE: PROVIDE ON RAMPS AND NEAR TOP OF STAIRS. WIDTH **PAVEMENT** ELEVATION 7 2" 6" CROSS SLOPE 1/4 " PER FOOT — 4" CONCRETE, EXCEPT AS INDICATED 4000 PSI - 4" AGGREGATE 1/4 " X 1/4 " GROOVE - COMPACTED SUBGRADE

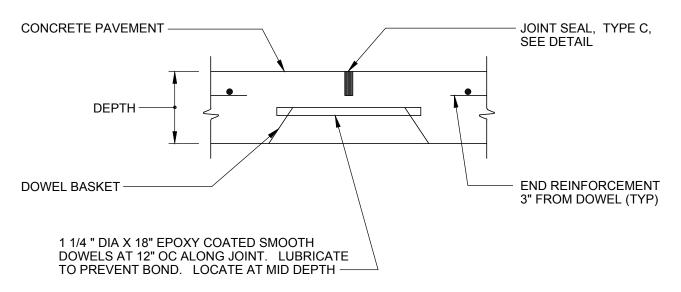
INTEGRAL CURB & WALK







EDGE EXPANSION JOINT



CONTRACTION JOINT



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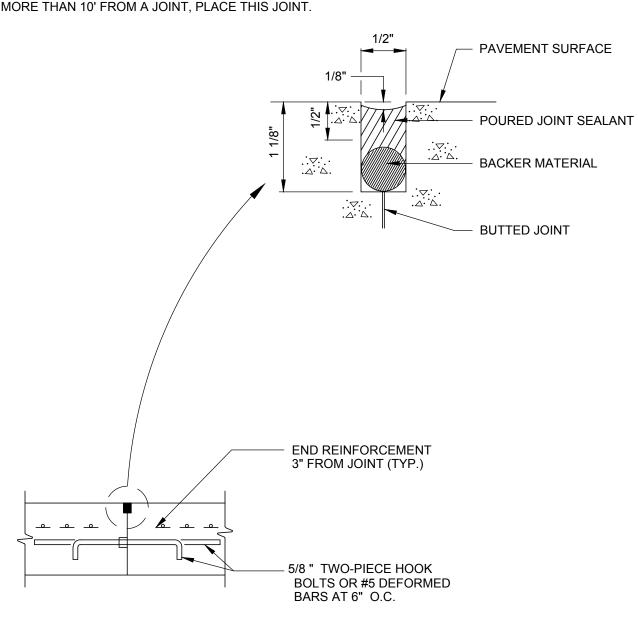
NOTES:

1. NORMALLY END PAVING AT PLANNED JOINTS.

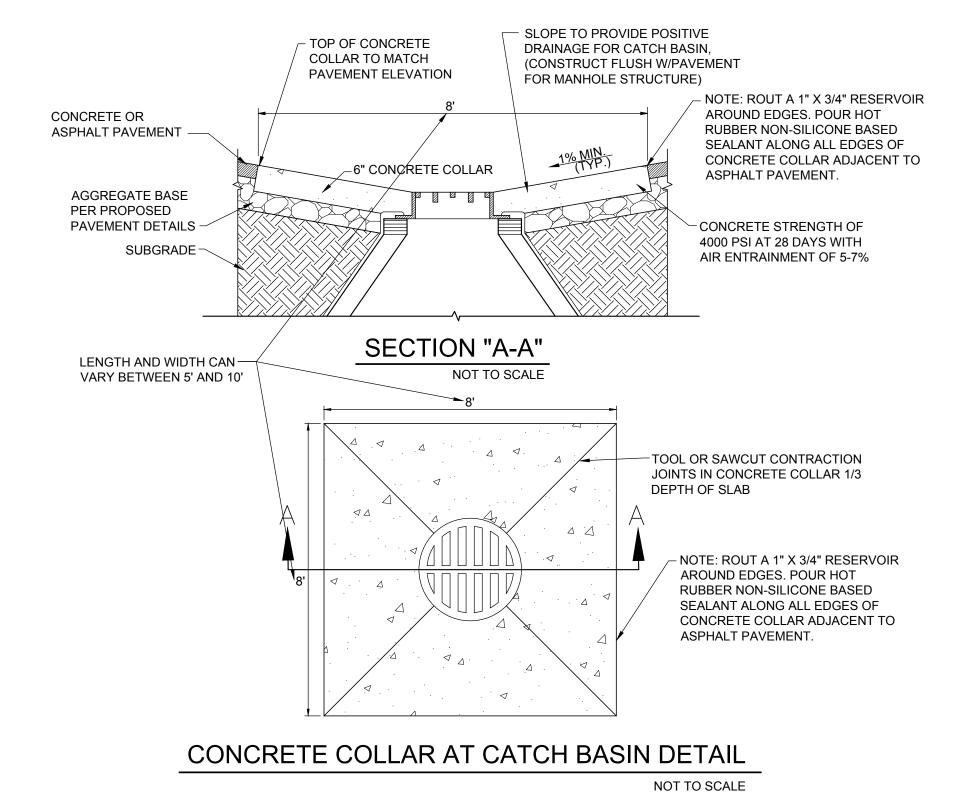
2. IF PAVING IS UNAVOIDABLY INTERRUPTED MORE THAN 1/2 HOUR BETWEEN PLANNED

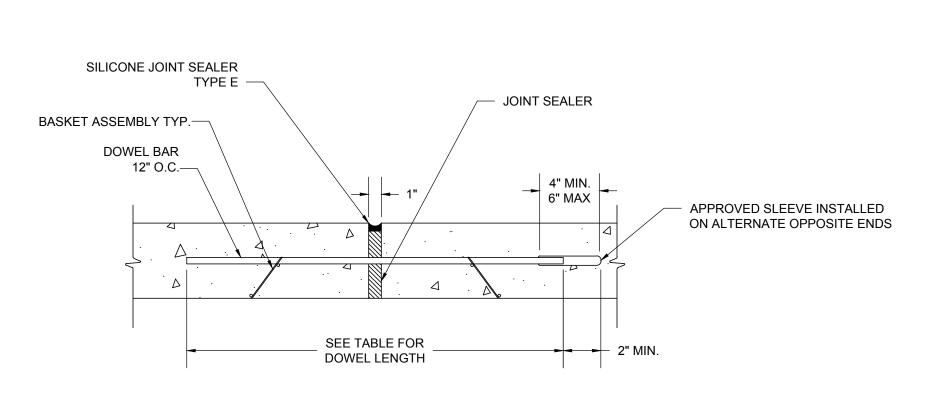
A. WITHIN 10' OF JOINT BEHIND, REMOVE CONCRETE, MODIFY TO TYPE "E". B. WITHIN 10' OF JOINT AHEAD, REMOVE CONCRETE TO 10' FROM JOINT AHEAD AND PLACE THIS JOINT.

C. MORE THAN 10' FROM A JOINT, PLACE THIS JOINT.



PAVING INTERRUPTION





LOI	NGITUDINAL TIE BAR LENG	STH
SLAB THICKNESS	TIE BAR DIA.	TIE BAR LENGTH
8½" OR LESS	1/2"	30 "
9" OR ABOVE	5/8"	30 "

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FIRE STATION No. 2

Project:

Seal:

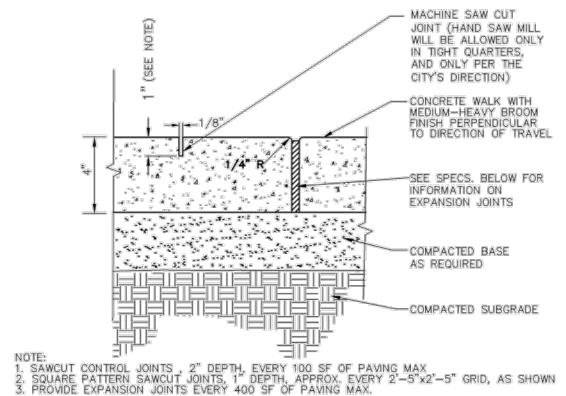
Date

07/29/16

12/05/16

BIRMINGHAM

EXPANSION JOINT



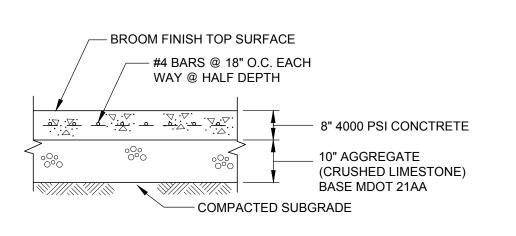
1. EXPANSION JOINT MATERIAL: RESILIENT, NON-EXTRUDING TYPE PREMOLDED BITUMINOUS IMPREGNATED FIBERBOARD. 2. SEALANT BACKER ROD: COMPRESSIBLE ROD STOCK OF POLYETHYLENE FOAM OR OTHER FLEXIBLE, PERMANENT, DURABLE NON-ABSORPTIVE MATERIAL AS RECOMMENDED FOR COMPATIBILITY BY SEALANT MANUFACTURE. TEMPORARLILY INSTALL ABOVE FIBER BOARD TO CREATE SPACE FOR JOINT SEALANT AT THE APPROPRIATE GRADE. REMOVE PRIOR TO INSTALLING

3. JOINT SEALANT: TWO PART POLYSULFIDE SEALANT, SELF LEVELING, LIGHT GRAY COLOR. SUBMIT COLOR SAMPLE FOR APPROVAL. FEDERAL SPECIFICATIONS TT—S—0027E, TYPE 1, DOW CORNING #780 OR EQUAL. INSTALL AFTER REMOVING BACKER ROD TO COMPLETELY COVER FIBER BOARD.

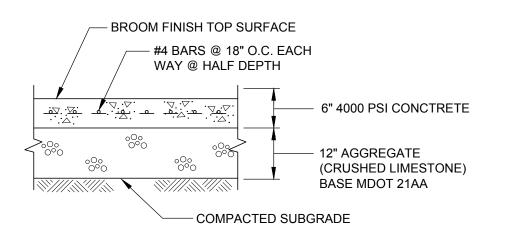
DETAIL FOR CONCRETE SIDEWALK

N.T.S.

SAWCUT AND EXPANSION JOINT







STANDARD DUTY CONCRETE PAVEMENT

Drawn: Checked: Approved:

Issued For

CL

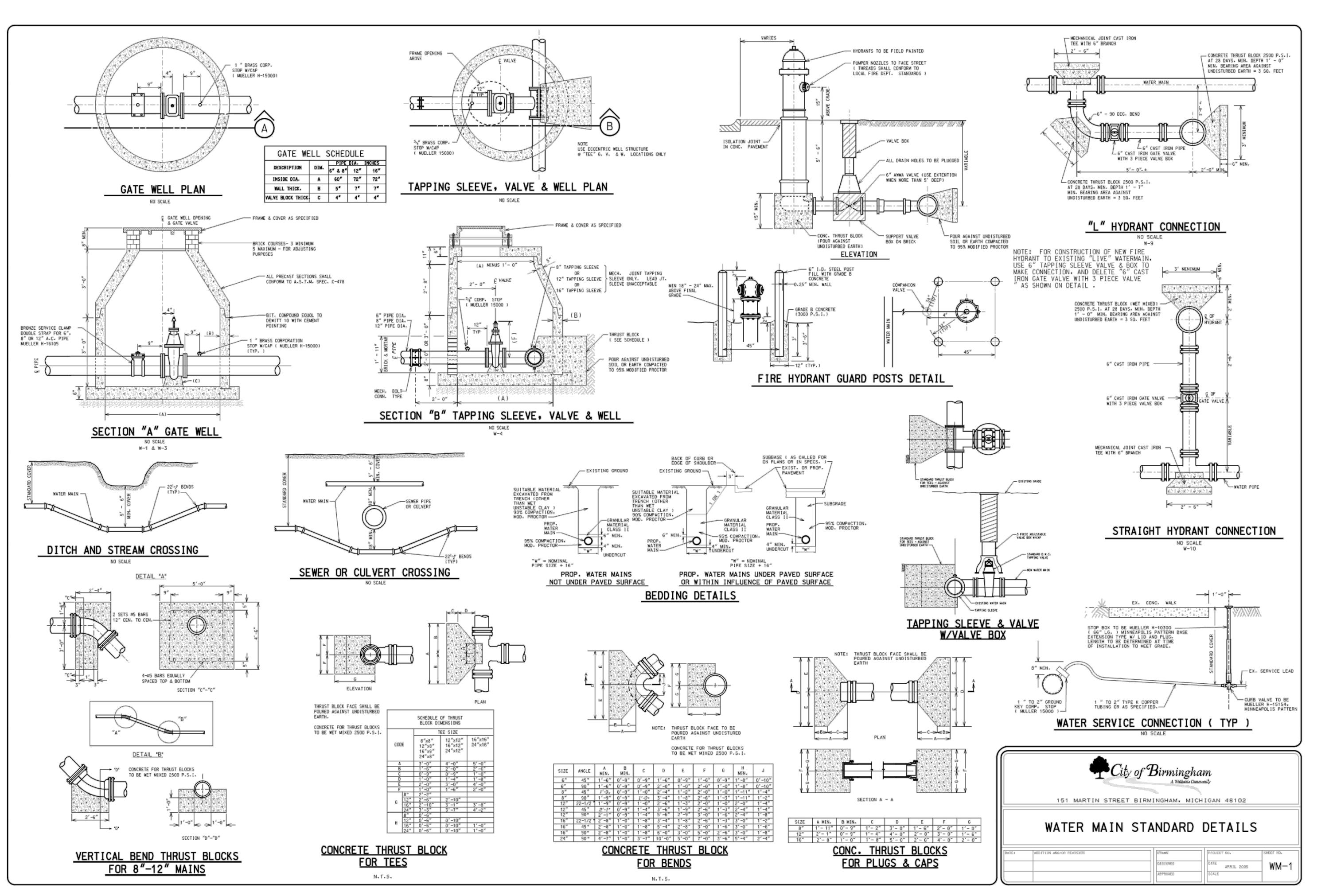
SEP

FINAL REVIEW

Sheet Title: PAVING DETAILS

15566 Project Number:

Sheet Number:





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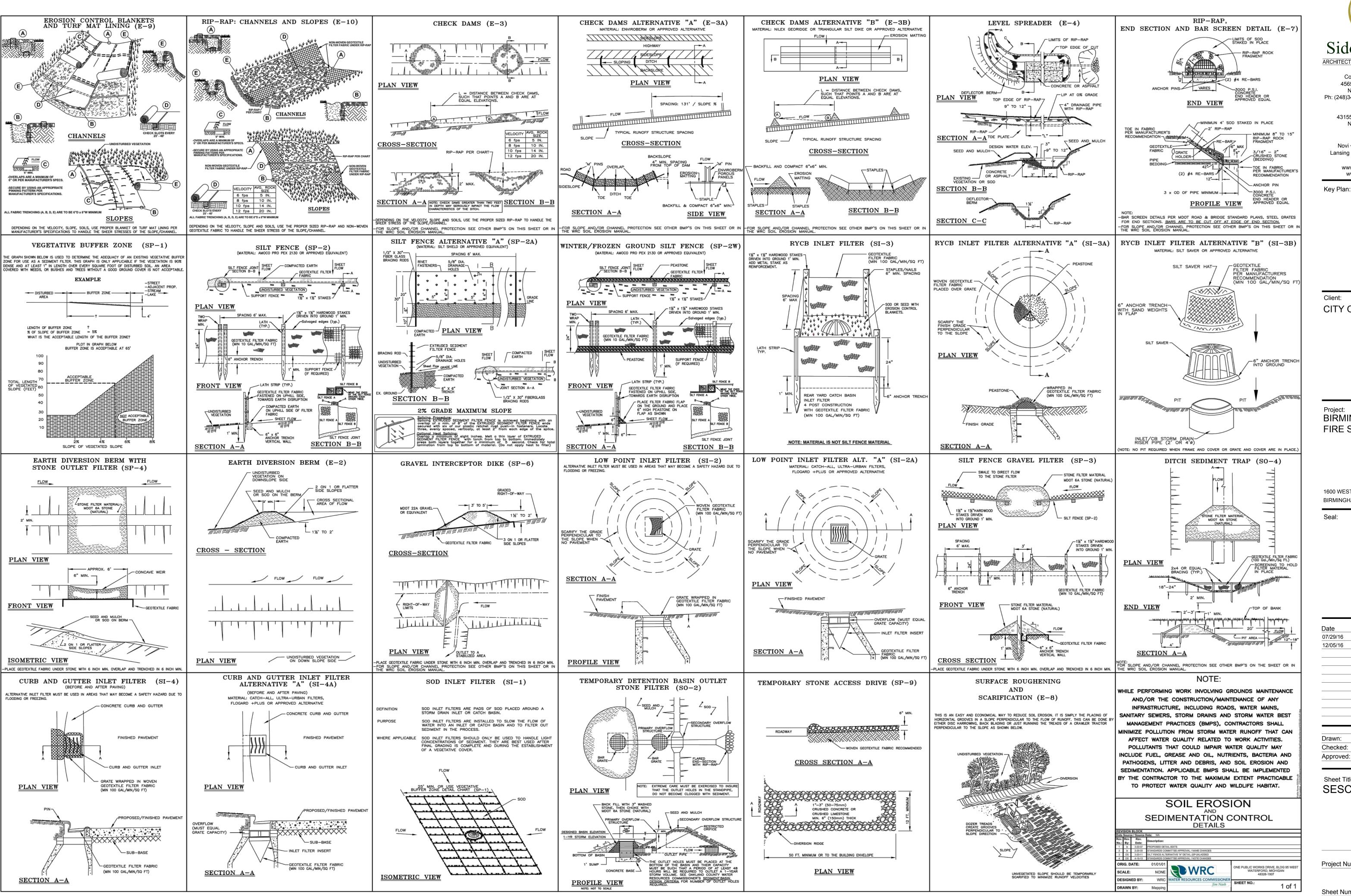
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Checked: C
Approved: SE

Sheet Title:
CITY OF
BIRMINGHAM
STANDARD WATER
DETAILS

Project Number: 15566

Sheet Number: C-802

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BIRMINGHAM FIRE STATION No. 2

1600 WEST MAPLE

BIRMINGHAM, MI 48009

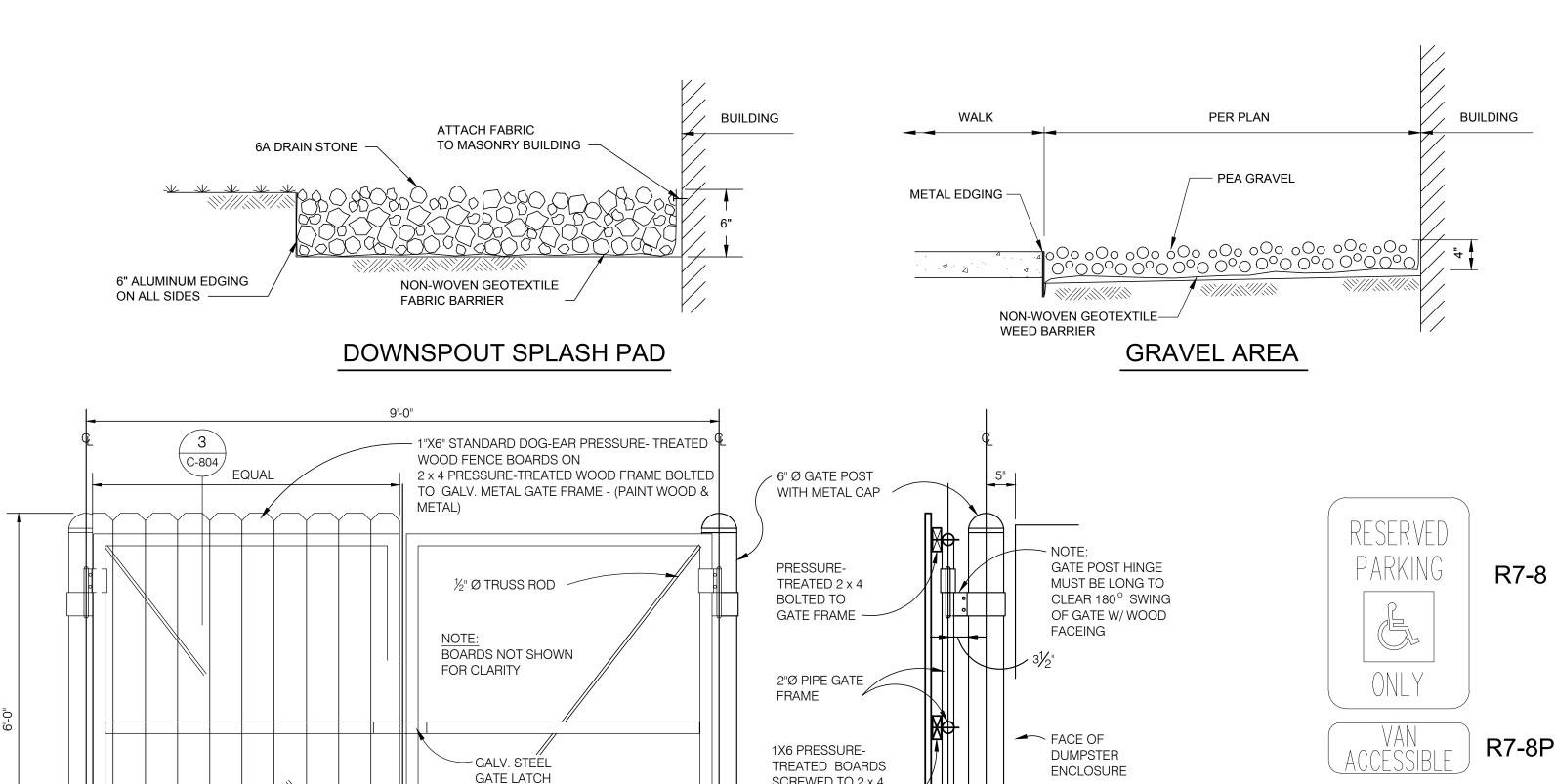
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24" CANE BOLT AND KEEPER

FINISH GRADE

— DRILL AND SET

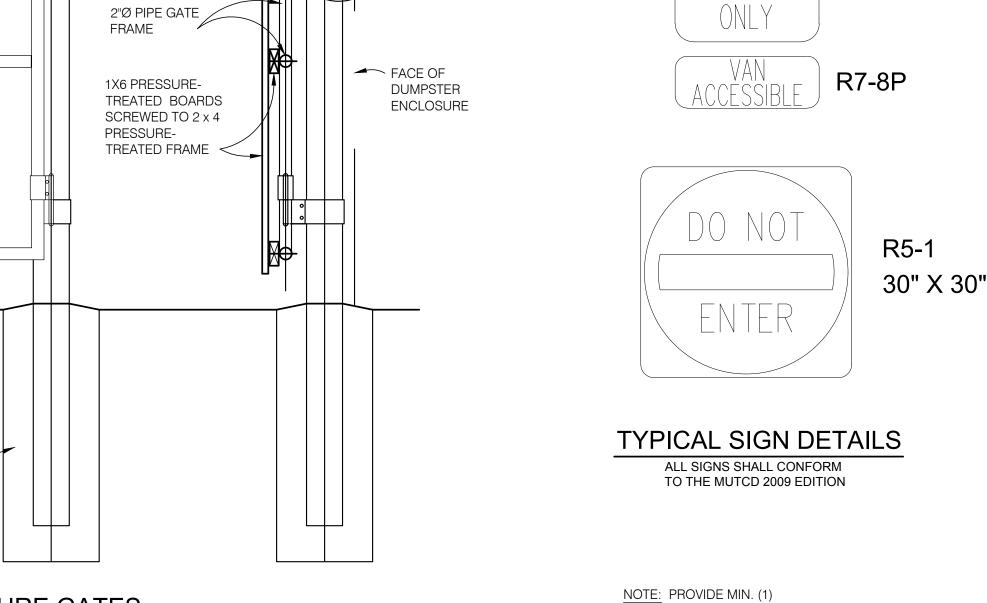
GATE POST SET IN CONCRETE FOUNDATION

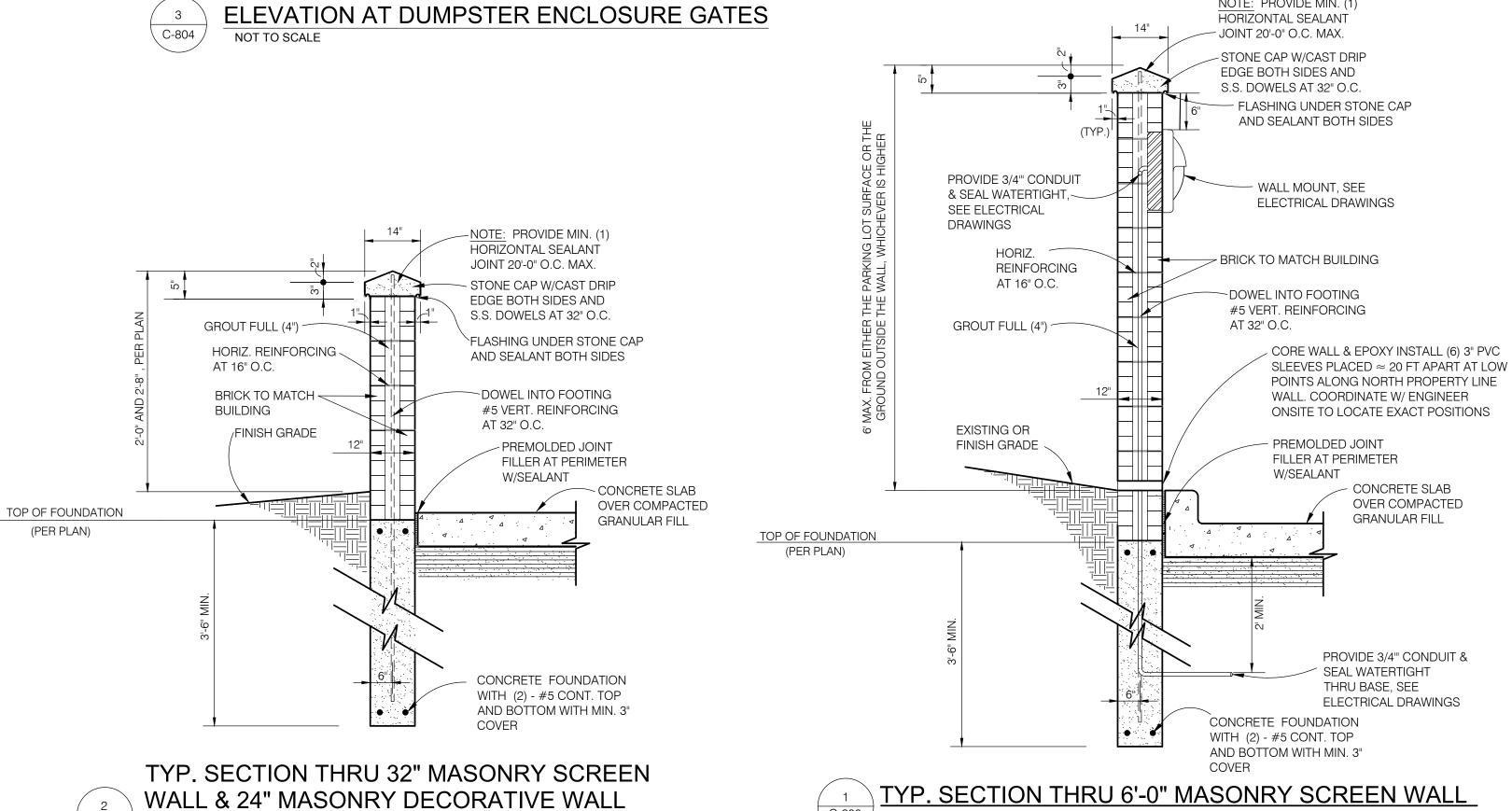
(MIN. 3'-6" DEEP BELOW GRADE)

C-200

NOT TO SCALE

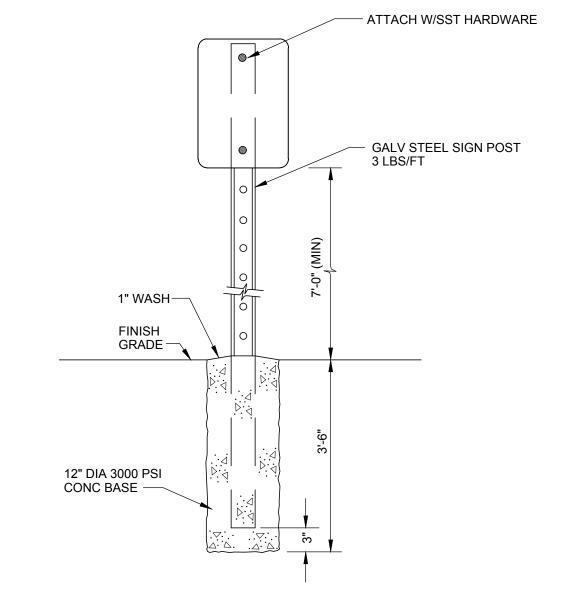
6" LG. PIPE SLEEVE FOR CANE





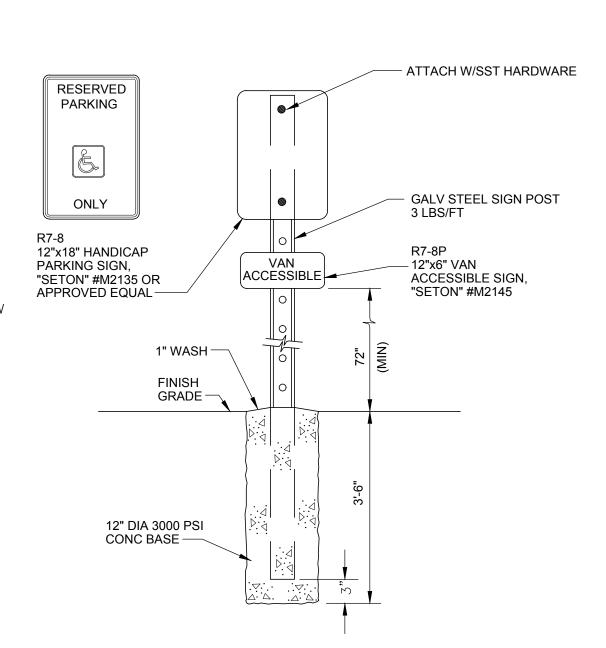
PAINT COLORS

Applications	Description	Vendor
Parking Meter Posts and Housings; Flag Holder; Handrails; Traffic Control Sign Backs; Pedestrian and Tall Streetlights; Bicycle Racks;	"John W. Hunter" Green DuPont Chromaone Paint- Various primers, activators, and reducers are required.	Johnson's Automotive Paint Supply
Streetlights; Sign Posts; Traffic Controllers; Irrigation Cabinets; and Pedestrian Crossing	Sherwin Williams Industrial & Marine Protective Coating, Color SW4072	Sherwin-Williams of Royal Oak
Benches and Waste Receptacles supplied by Michigan Playground Equipment and Traffic Signal	Sherman-Williams Powdura Powder Coating, Product #PGS8-3051, Park Bench Green.	Vendor is Sherwin- Williams of Royal Oak.
Wooden Objects, including Park Benches and Picnic Tables; and	Coronado Gloss Oil Product 31- 138 "Birmingham Green" Paint.	Teknicolors
Plastic Housings for Pedestrian Crossing Signals	Krylon Fusion Hunter Green- This product bonds to plastic without sanding or priming.	Neighborhood Hardware



TYPICAL SIGN MOUNTING

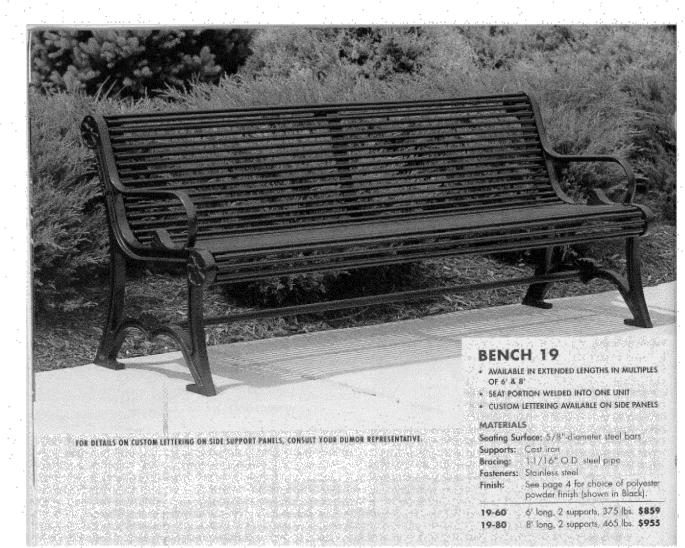
SIGNAGE NOTE: ALL SIGNS SHALL CONFORM TO THE MUTCD 2009 EDITION

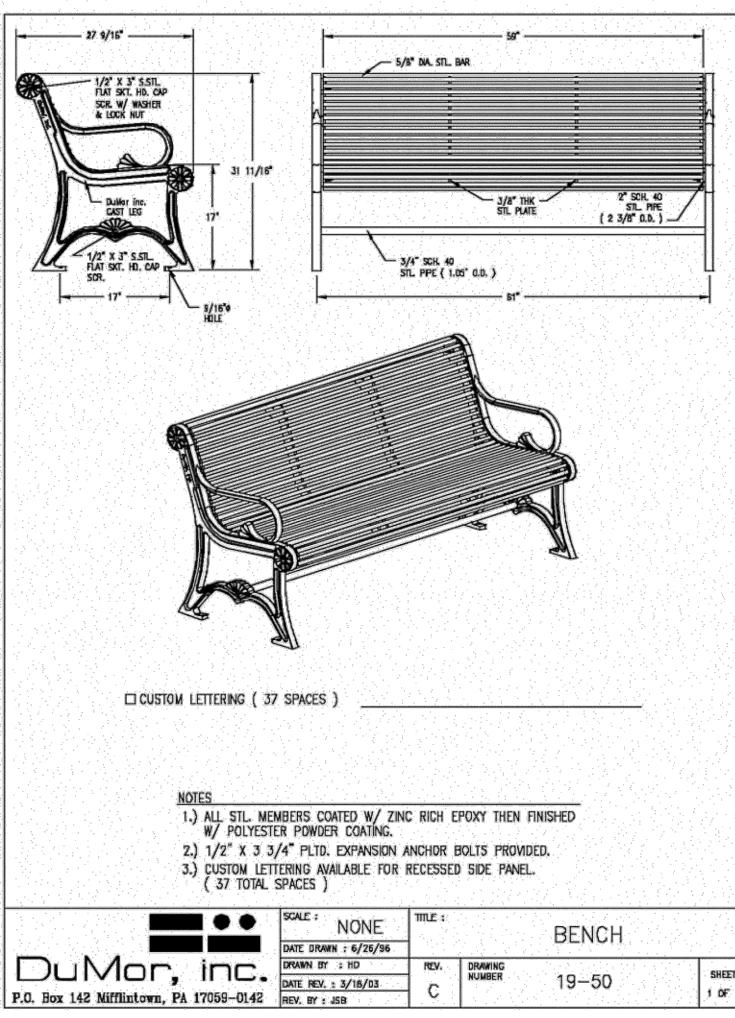


HANDICAPPED PARKING SIGN

VAN ACCESSIBLE

DOWNTOWN BENCH STANDARDS





BENCH DETAIL

BENCHES SHALL BE 8 FEET LONG, & MEET CITY OF BIRMINGHAM PARK BENCH STANDARDS. BENCH 88PL

BENCH STANDANDS. BENCH OUF E

SG ideals Cross

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Project:
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Seal:

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Checked: CL
Approved: SEP

Sheet Title:

SURFACE DETAILS

D : (N)

c-804

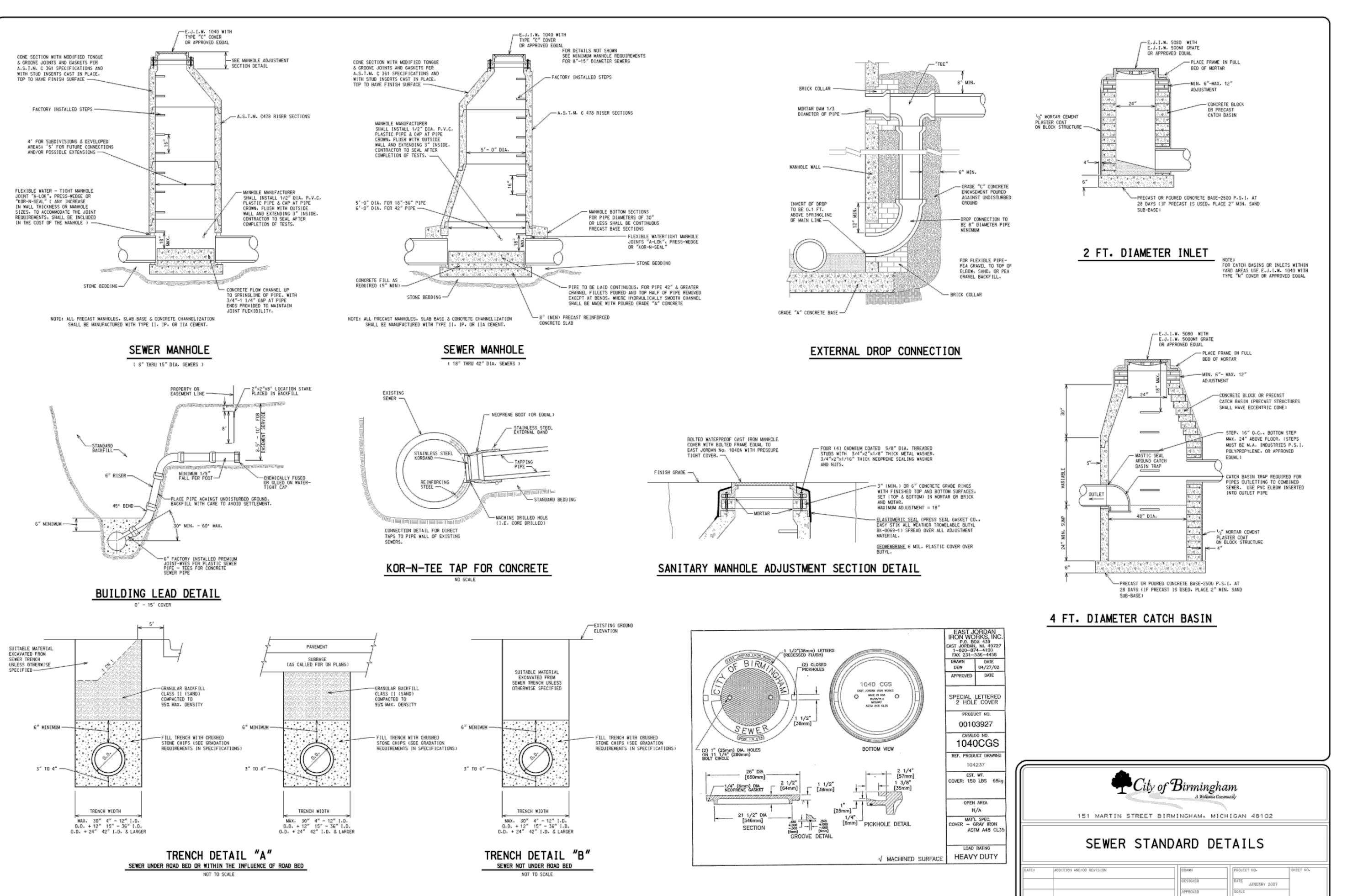
Sheet Number:

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1. COORDINATE WALL MOUNT LIGHT FIXTURE WITH ELECTRICAL TRADE.

ELECTRICAL NOTE:

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Checked: CL Approved: SEF

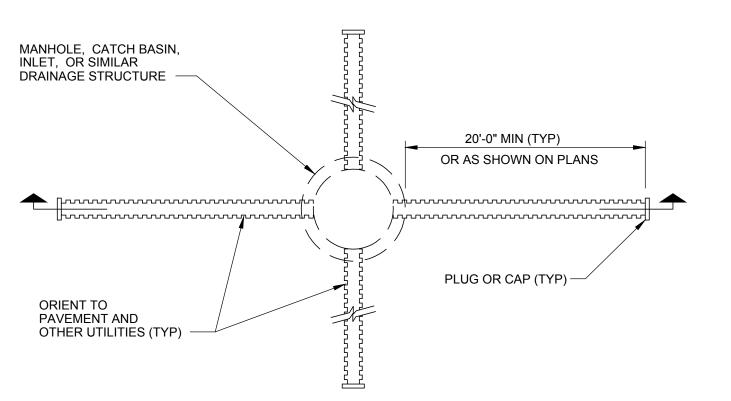
Sheet Title:
CITY OF
BIRMINGHAM
STANDARD SEWER
DETAILS

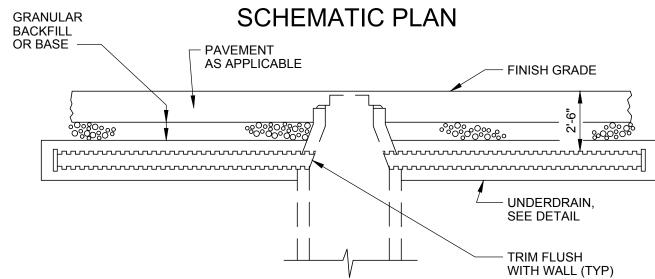
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Sheet Number: C-805

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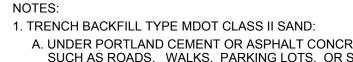
② 2015



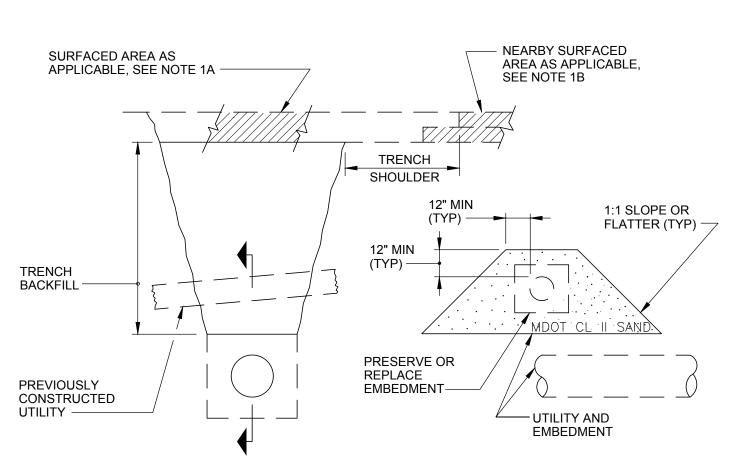


SECTION

STUB UNDERDRAIN



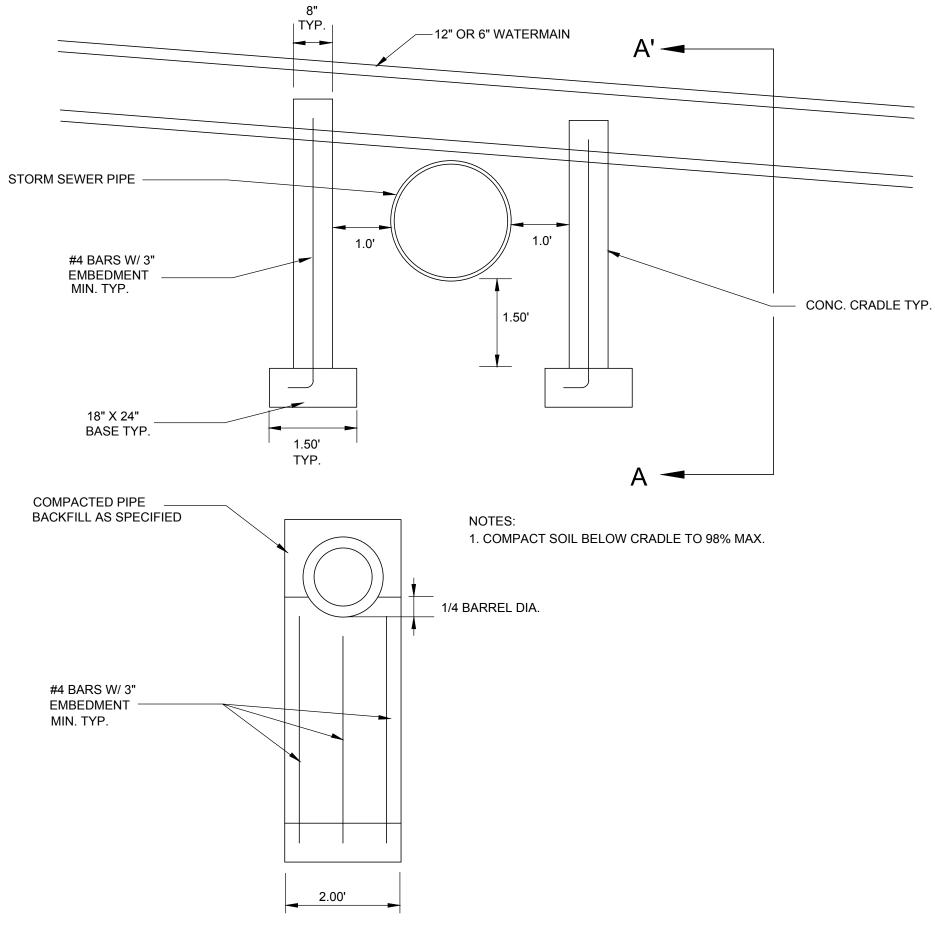
- A. UNDER PORTLAND CEMENT OR ASPHALT CONCRETE, OR AGGREGATE SURFACED AREAS. SUCH AS ROADS, WALKS, PARKING LOTS, OR SHOULDERS, INCLUDING TRENCHES IN EXISTING OR FUTURE LOCATIONS. B. WHERE TRENCH SHOULDER IS 2'-0" OR LESS.
- C. UNDER PREVIOUSLY-CONSTRUCTED UTILITIES, SEE SECTION. D. WITHIN BUILDING WALL LINES
- 2. TRENCH BACKFILL TYPE E:
- ALLOWED FOR OTHER EXTERIOR AREAS IF OTHER TYPES ARE NOT INDICATED. TYPE GM-2 MAY BE SUBSTITUTED.



SCHEMATIC TRENCH SECTION

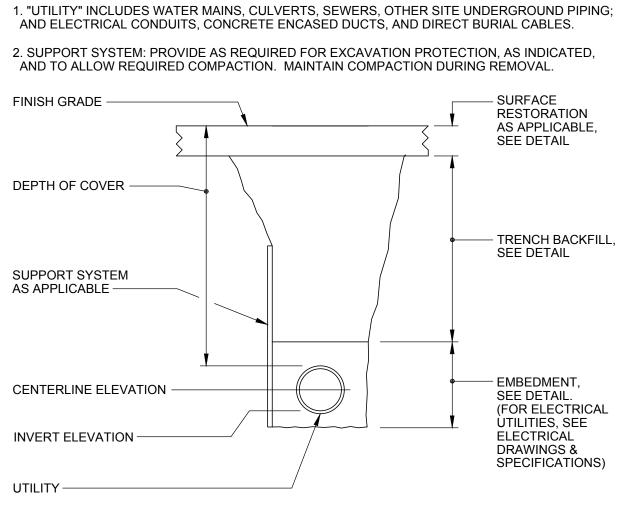
12" MINIMUM OVERLAP -UNDERDRAIN FABRIC - UNDERDRAIN PIPE, LAY PERFORATIONS DOWN INVERT ELEVATION -- EMBEDMENT, COARSE AGGREGATE (TYPE CA-2) 6" MIN

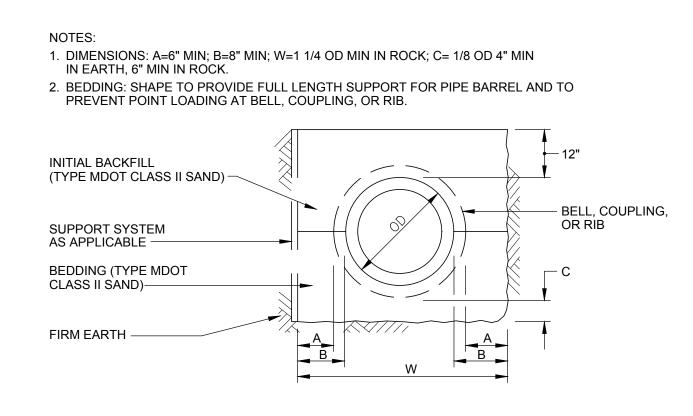
UNDERDRAIN

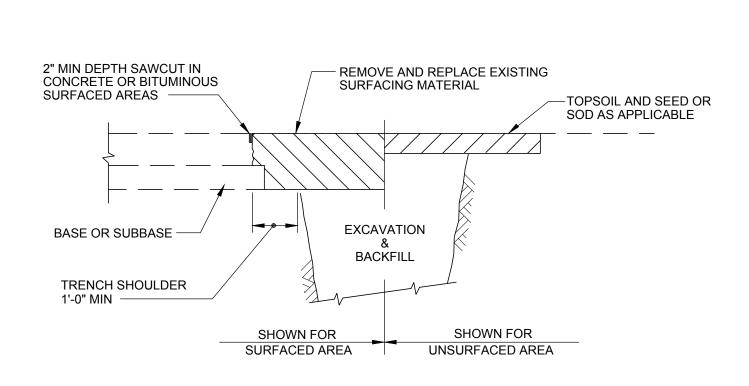


SECTION A-A'

TYPICAL PIPE CRADLE







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BIRMINGHAM

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Sheet Title: STORM SEWER DETAILS & **PROFILES**

Project Number:

15566

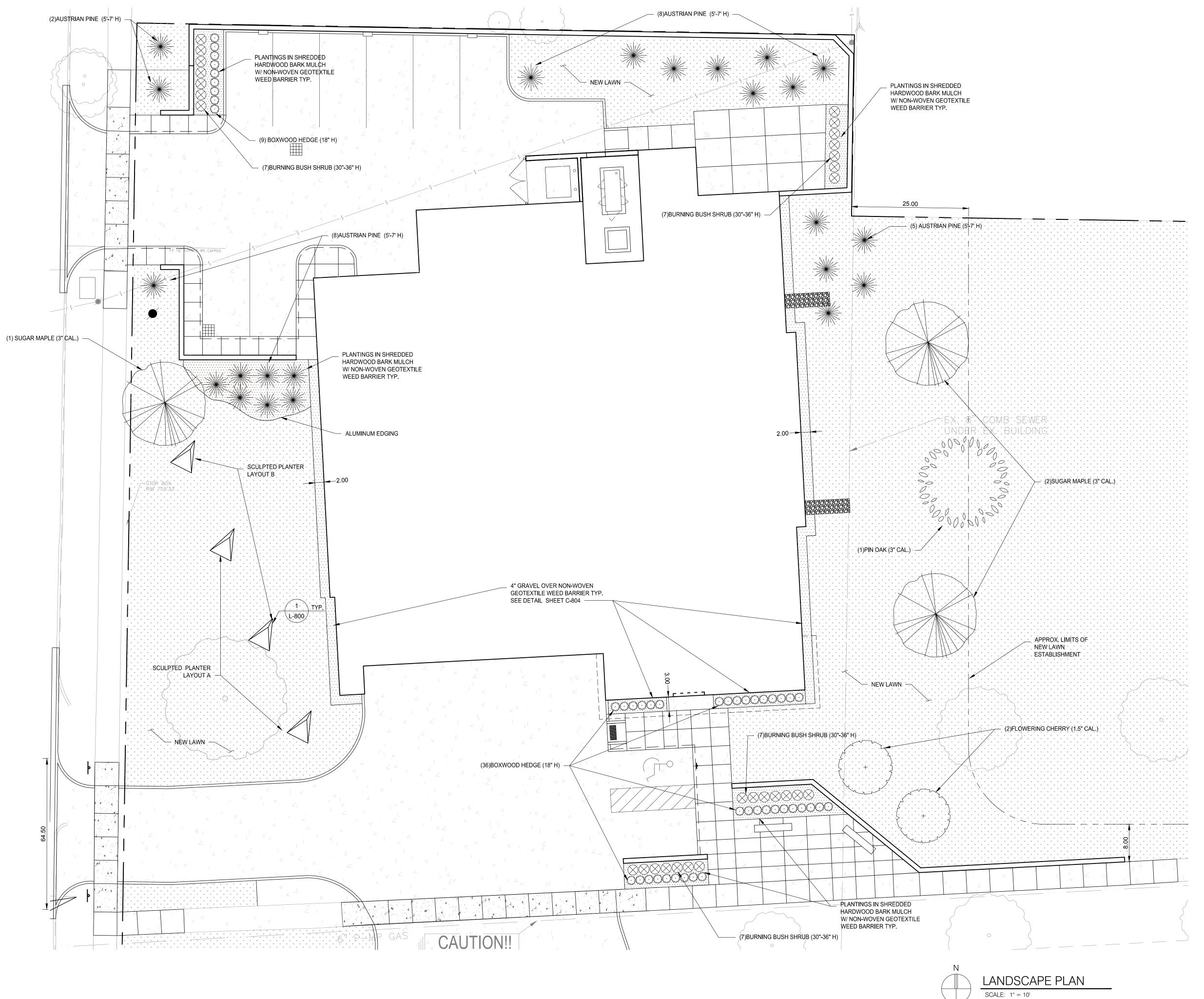
UTILITY/TRENCH SURFACE RESTORATION TRENCH BACKFILL **EMBEDMENT**

LANDSCAPING SCHEDULE

SYMBOL	SPECIES	QUANTITY	INSTALL SIZE
0	BOXWOOD HEDGE	45	18" HIGH
	AUSTRIAN PINE	23	6'-7' HIGH
\odot	FLOWERING CHERRY (SINGLE STEM)	2	1.5" CAL.
	SUGAR MAPLE	3	3" CAL.
14.14.14.14.14.14.14.14.14.14.14.14.14.1	PIN OAK	1	3" CAL.
\otimes	BURNING BUSH - (SHRUB FORM)	28	30"-36" HIGH

NOTES:

1. SEE SHEET L-800 FOR LANDSCAPING DETAILS





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 12/05/16
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Sheet Title:

LANDSCAPE PLAN

Project Number: 15566

Sheet Number: L-200

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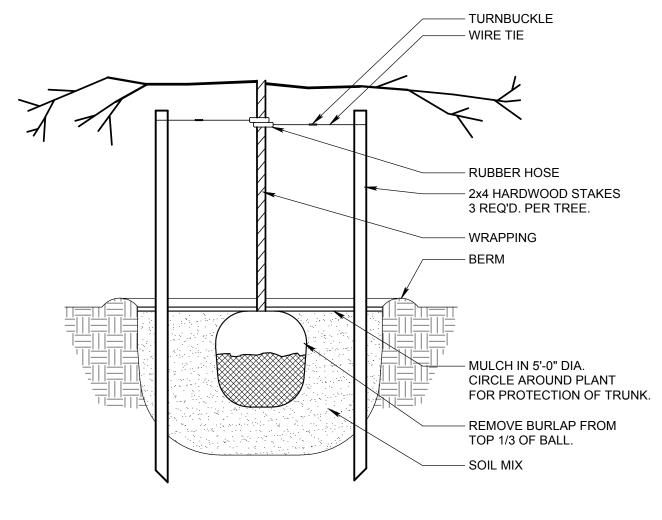
LAYOUT B

PLANT SPECIES AT SPECIFIED OFFSETS (IN) AT PERIMETER.
MAINTAIN SPACING AS CLOSE AS POSSIBLE IN SUCCESSIVE
INTERIOR ROWS. MINIMUM OVERLAPPING IS ACCEPTABLE TO ACHIEVE FULL BODIED, SYMMETRICAL LAYOUT.

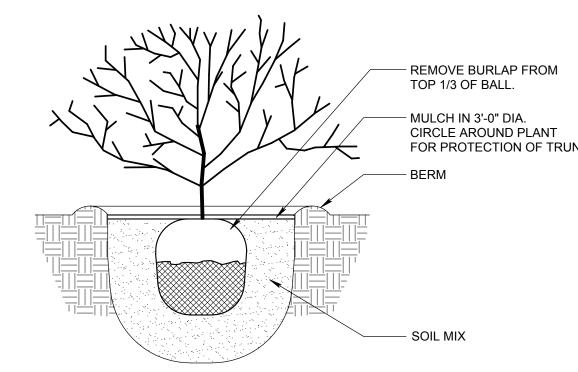
FINAL PLANT QUANTITY TO BE DETERMINED BY CONTRACTOR, DRAWING IS FOR LAYOUT PURPOSES ONLY.

SCULPTED PLANTER LAYOUT DETAIL

DETAIL N.T.S.



TREE PLANTING



SINGLE SHRUB PLANTING

MULCH IN 3'-0" DIA.
 CIRCLE AROUND PLANT
 FOR PROTECTION OF TRUNK.

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> > No Scale

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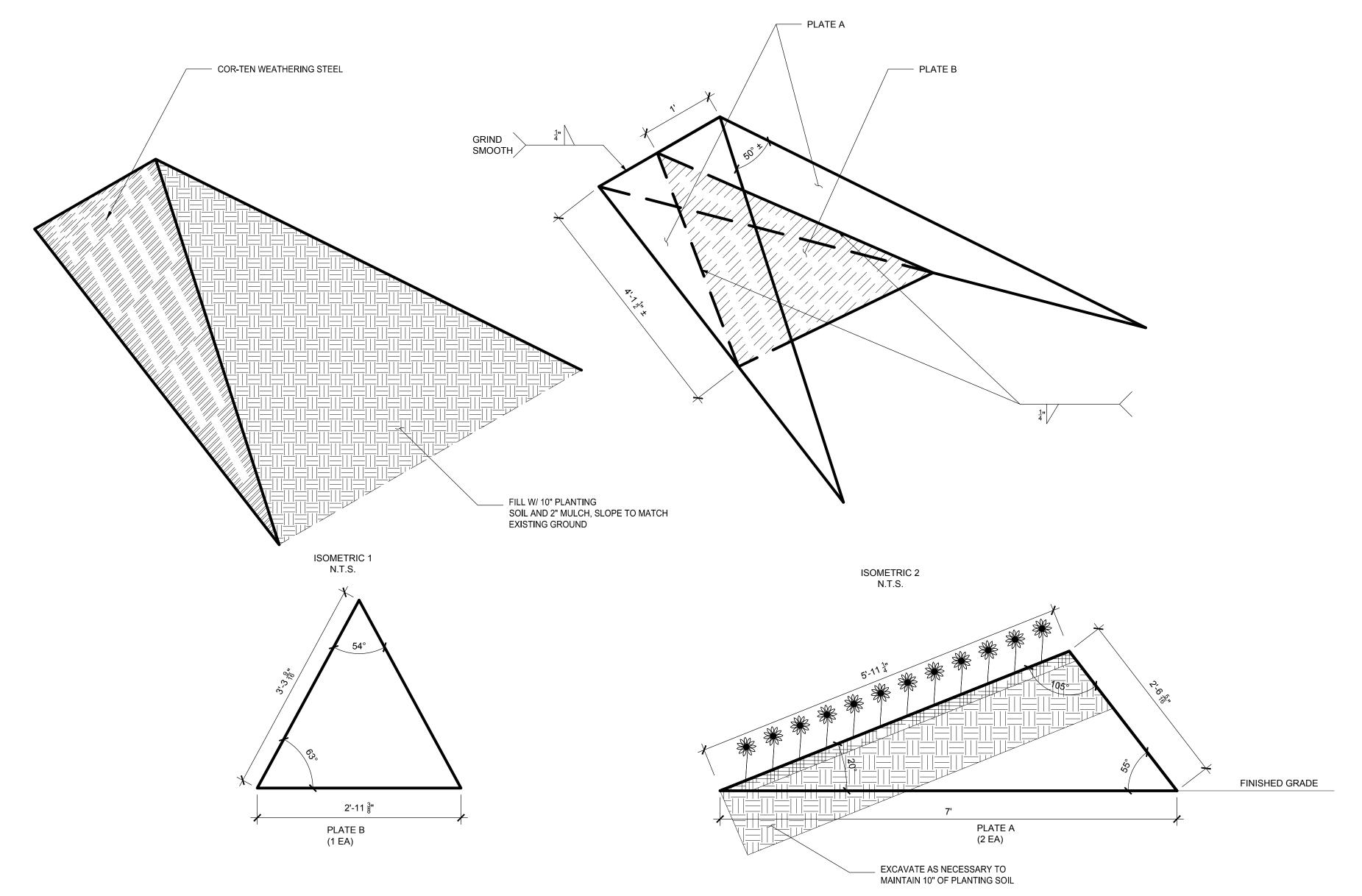
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Date	Issued For
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12/05/16	BIDS

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Sheet Title:
LANDSCAPE DETAILS

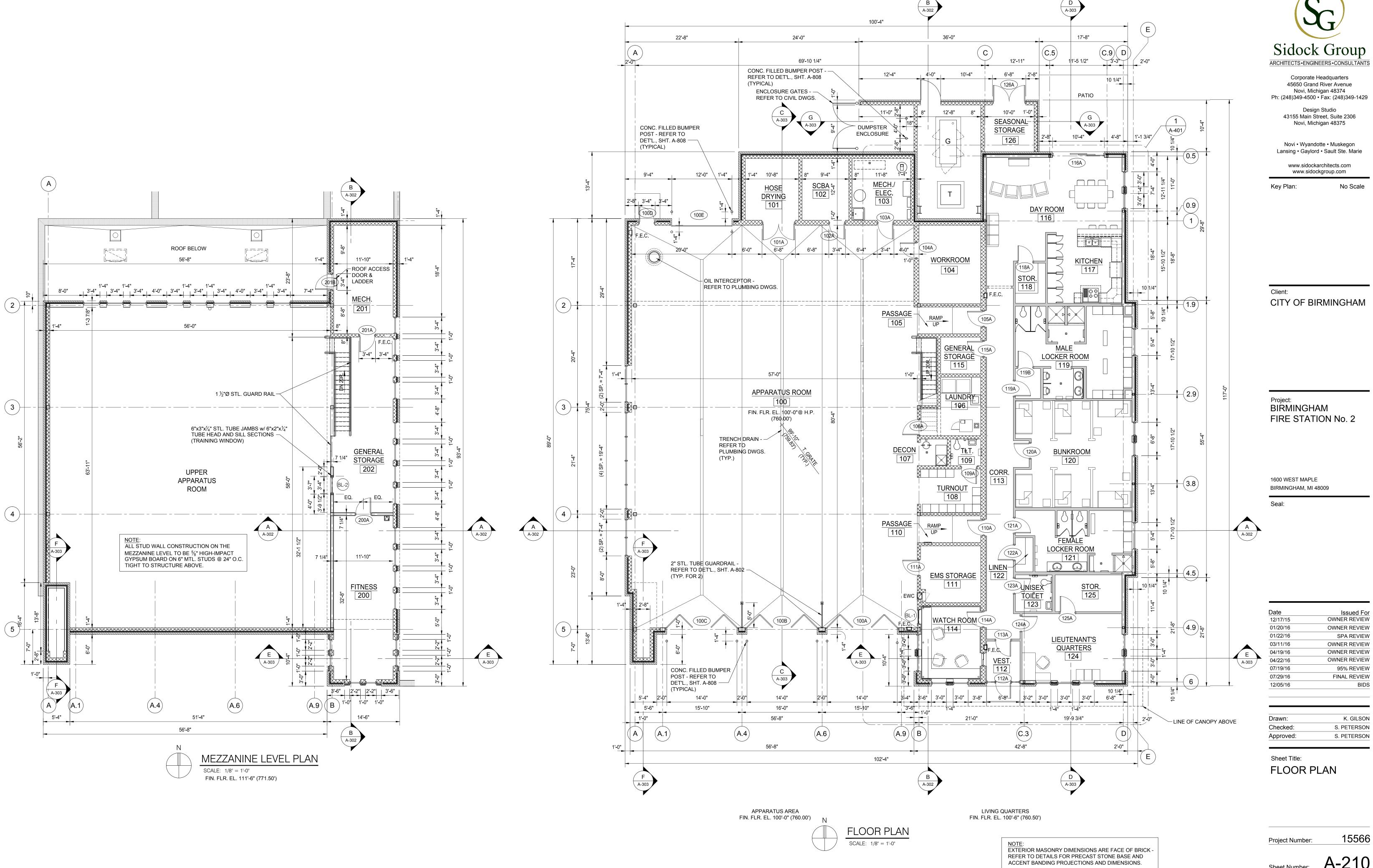
Project Number:



SCULPTED PLANTER PLAN

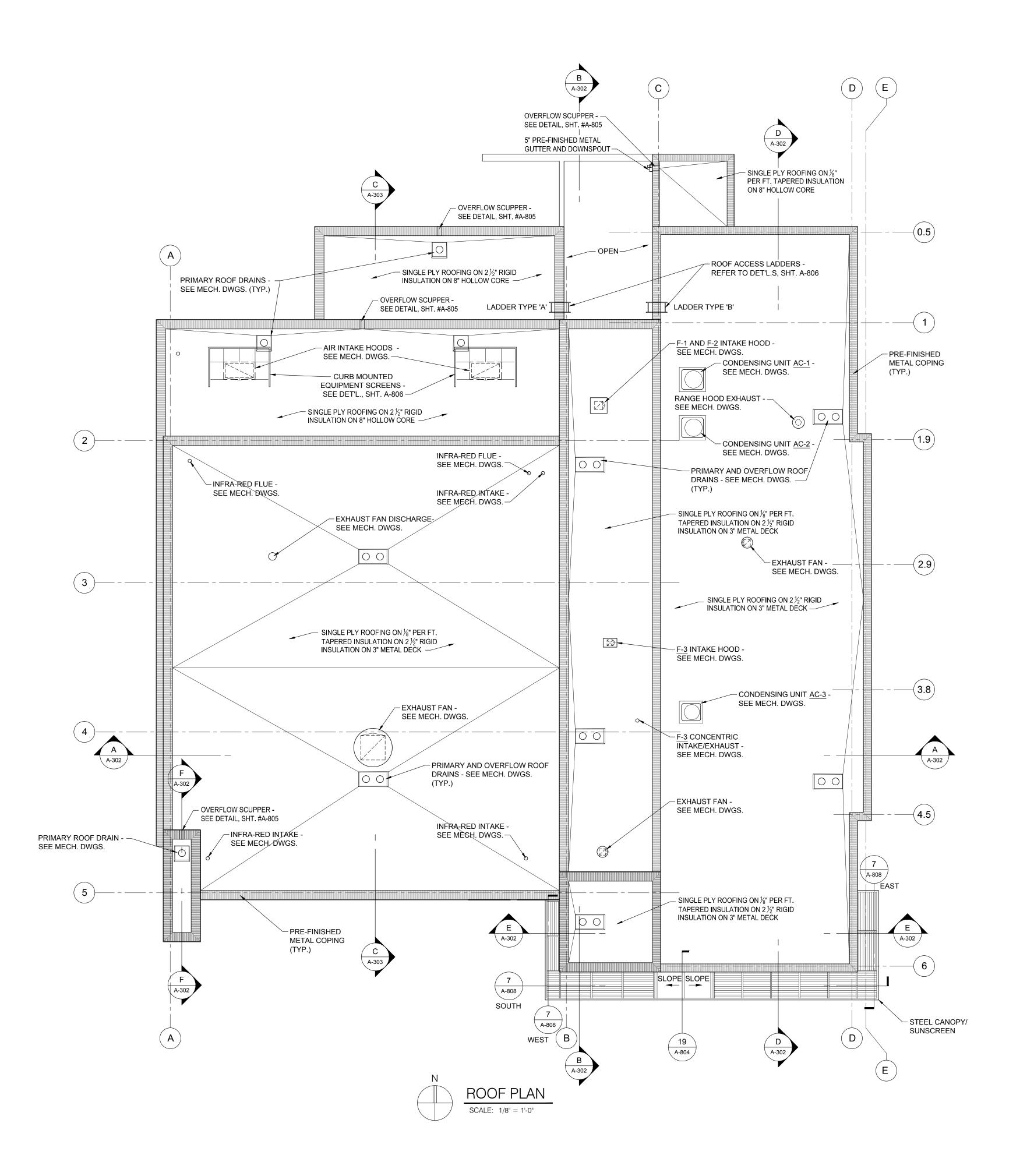
NOTES:

SURFACES TO BE CONSTRUCTED FROM COR-TEN WEATHERING STEEL, WITH ¹/₄" ¹/₄ THICKNESS.
 JOIN PLATES WITH FILLET WELDS, CONTINUOUS FOR LENGTH OF JOINT.
 GRIND ALL EXTERIOR SEEMS FLUSH TO FINISH



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Drawn:	K. GILSON
Checked:	S. PETERSON
Approved:	S. PETERSON

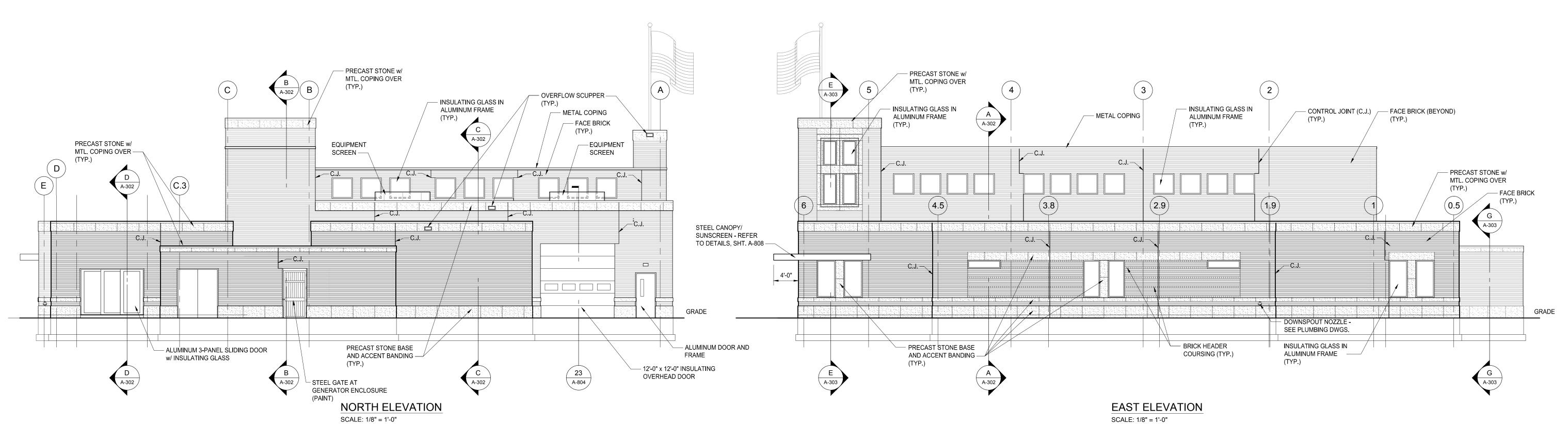
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ROOF PLAN

Project Number:

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Approved: S. PETERSON

Sheet Title:

EXTERIOR ELEVATIONS

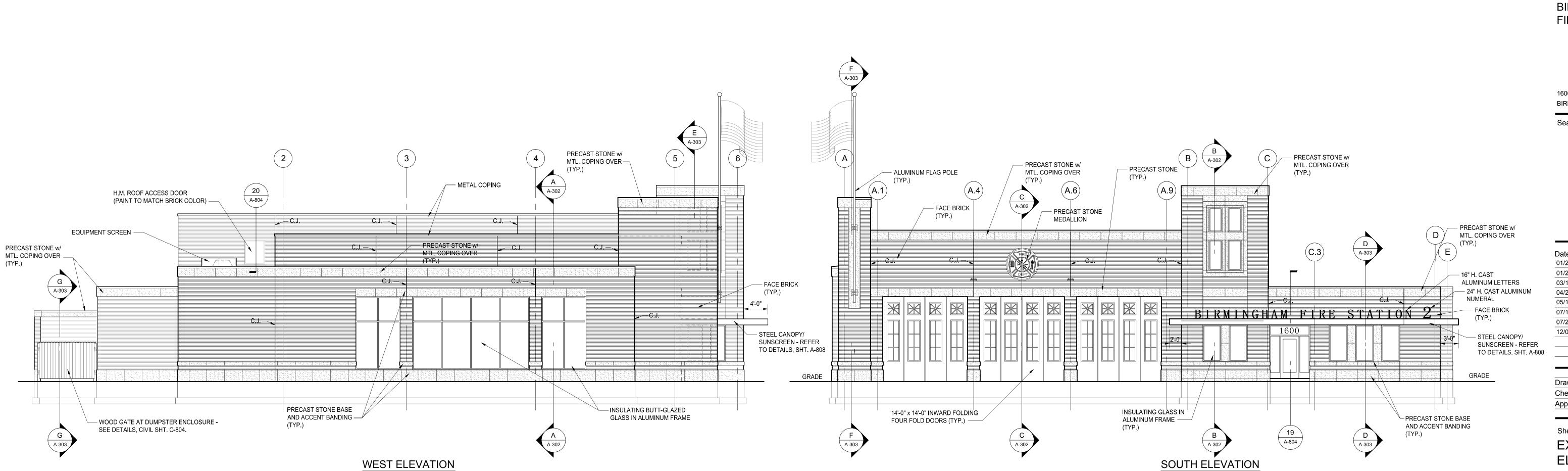
Project Number:

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

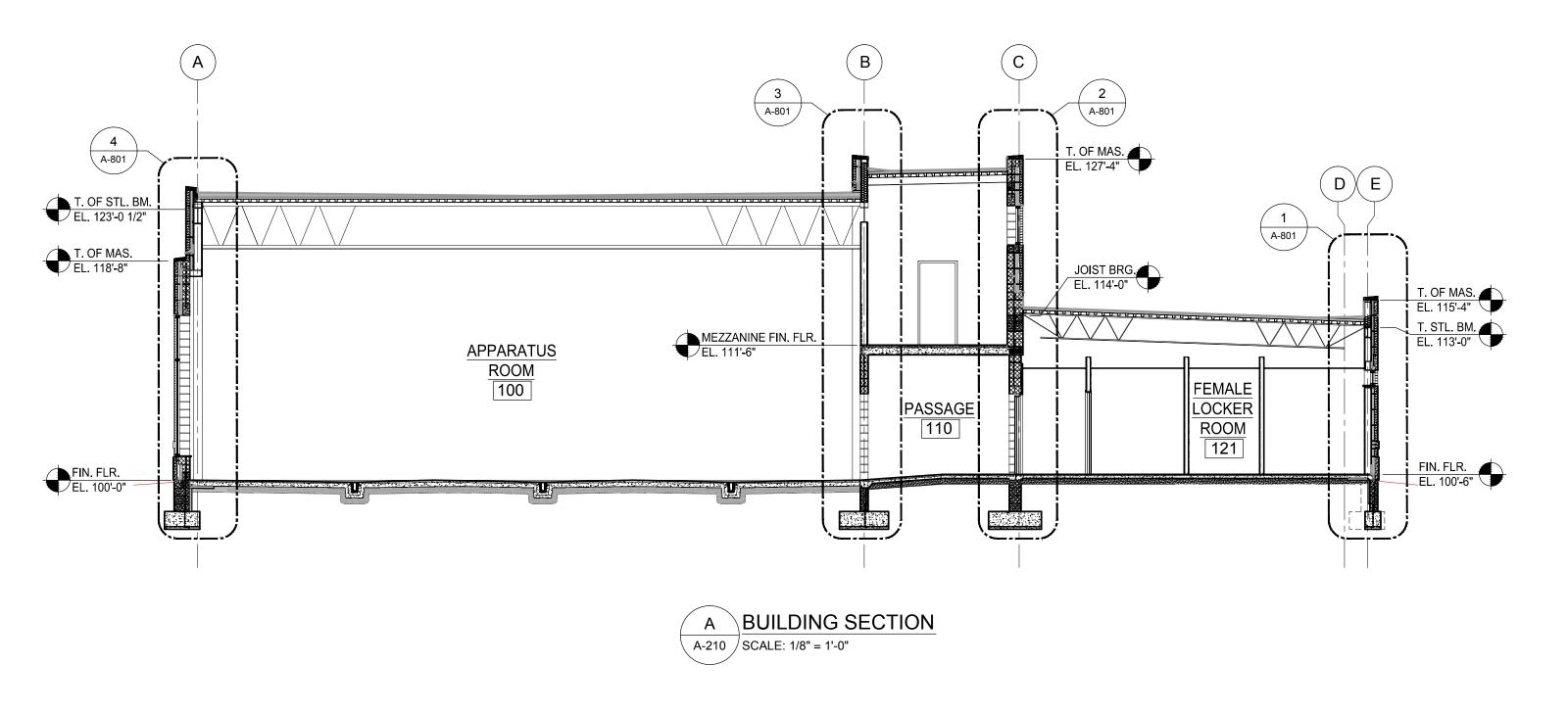
ALL EXTERIOR ALUMINUM DOORS, WINDOWS
AND FRAMING TO BE POWDER COATED RED.
FINAL COLOR TO BE APPROVED BY ARCHITECT.

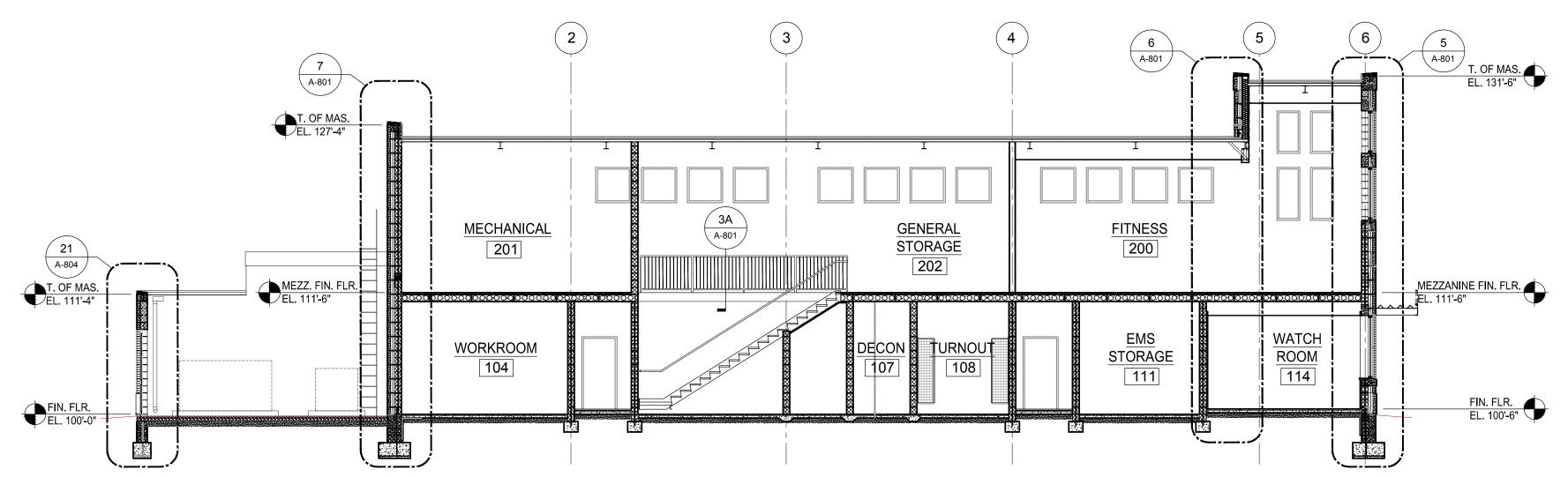
Sheet Number: A-30'

15566

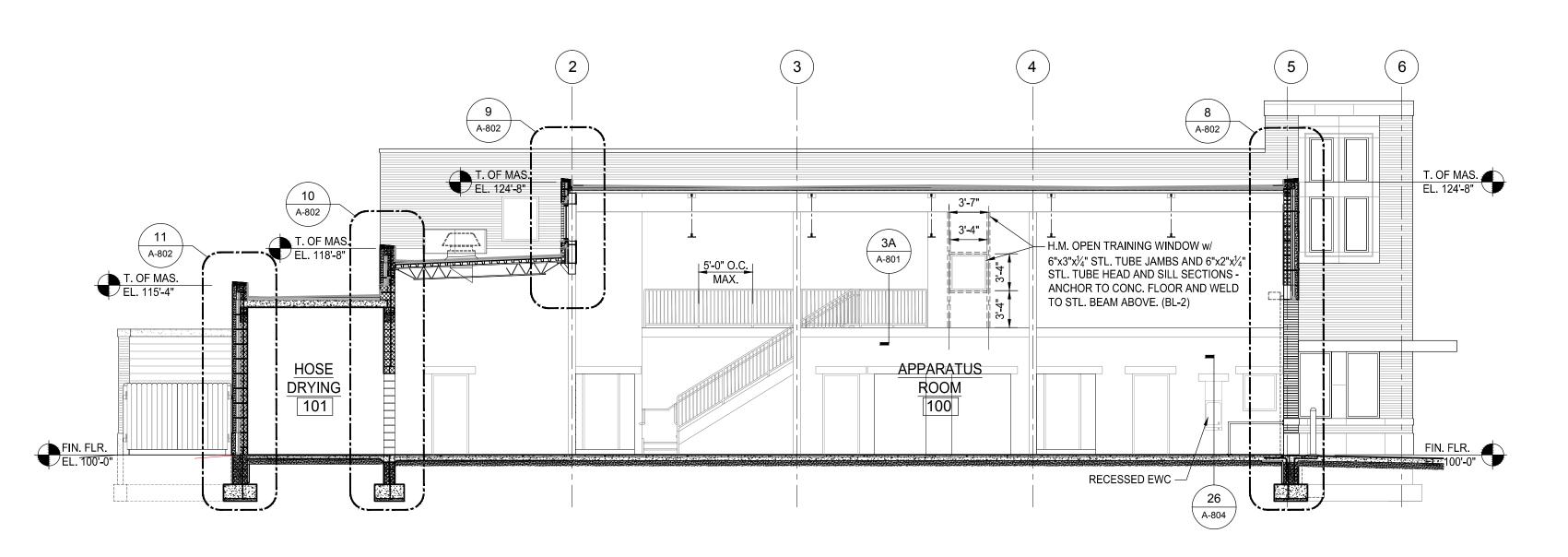


SCALE: 1/8" = 1'-0"





B BUILDING SECTION SCALE: 1/8" = 1'-0"







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No Scale

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Key Plan:

Client:
CITY OF BIRMINGHAM

Project: BIRMINGHAM FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

Seal

Date	Issued Fo
07/19/16	95% REVIE
07/29/16	FINAL REVIE
12/05/16	BID

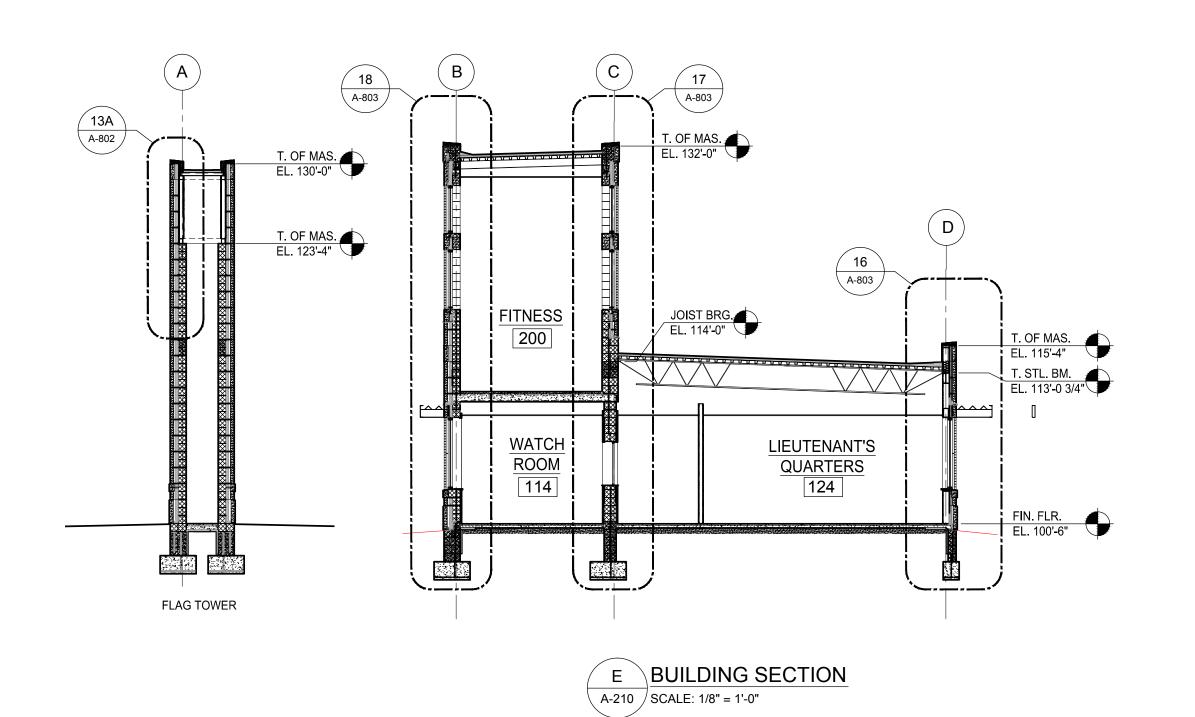
Drawn:	K. GILSC
Checked:	S. PETERSO
Approved:	S. PETERSO

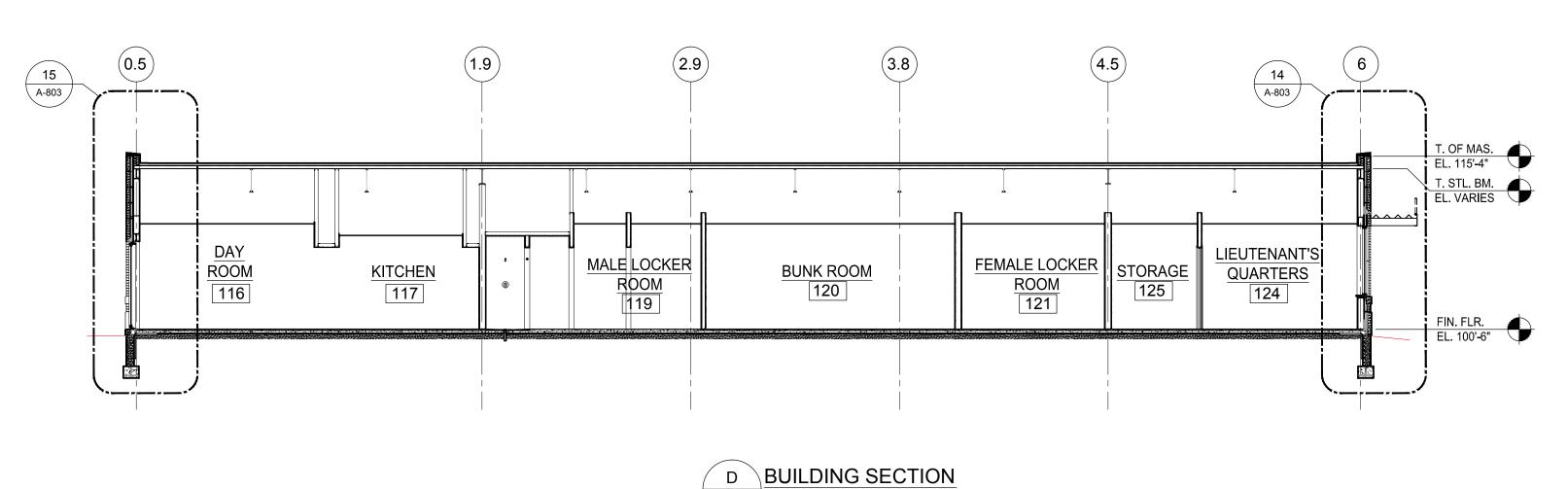
Sheet Title:
BUILDING
SECTIONS

Project Number:

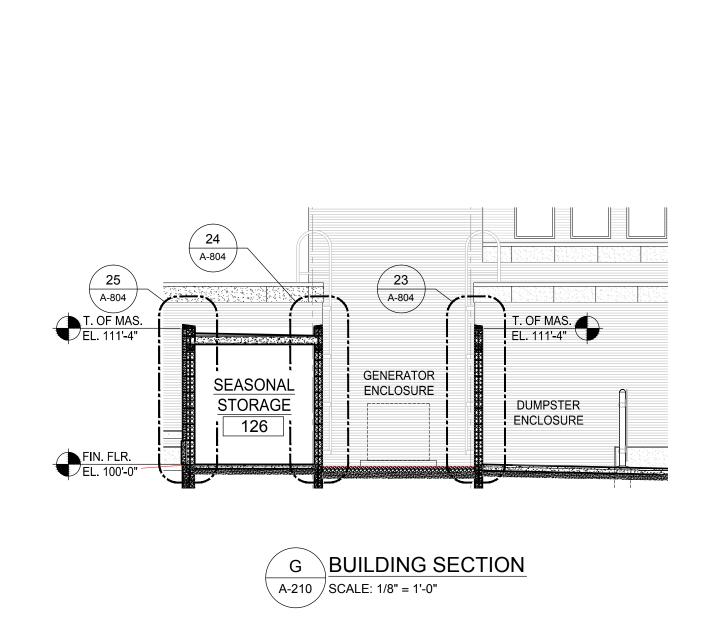
Sheet Number: A-302

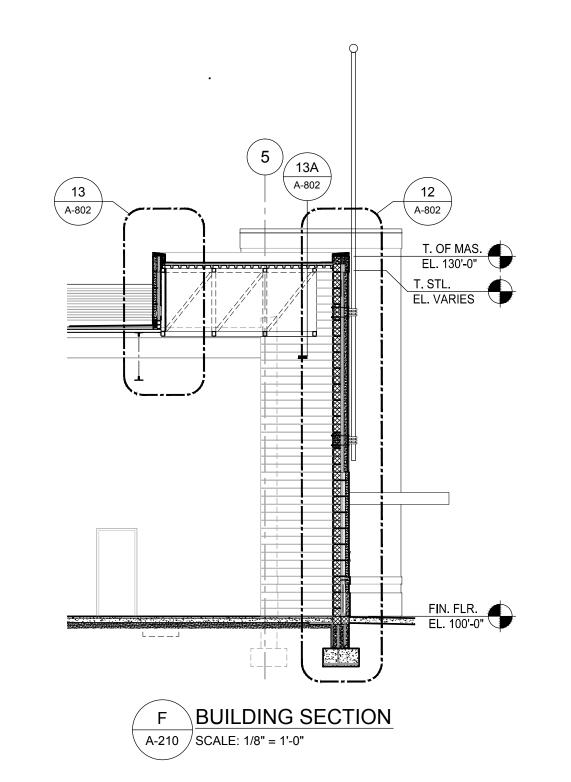
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A-210 SCALE: 1/8" = 1'-0"







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Key Plan:

Client:

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Approved: S. PETERSON

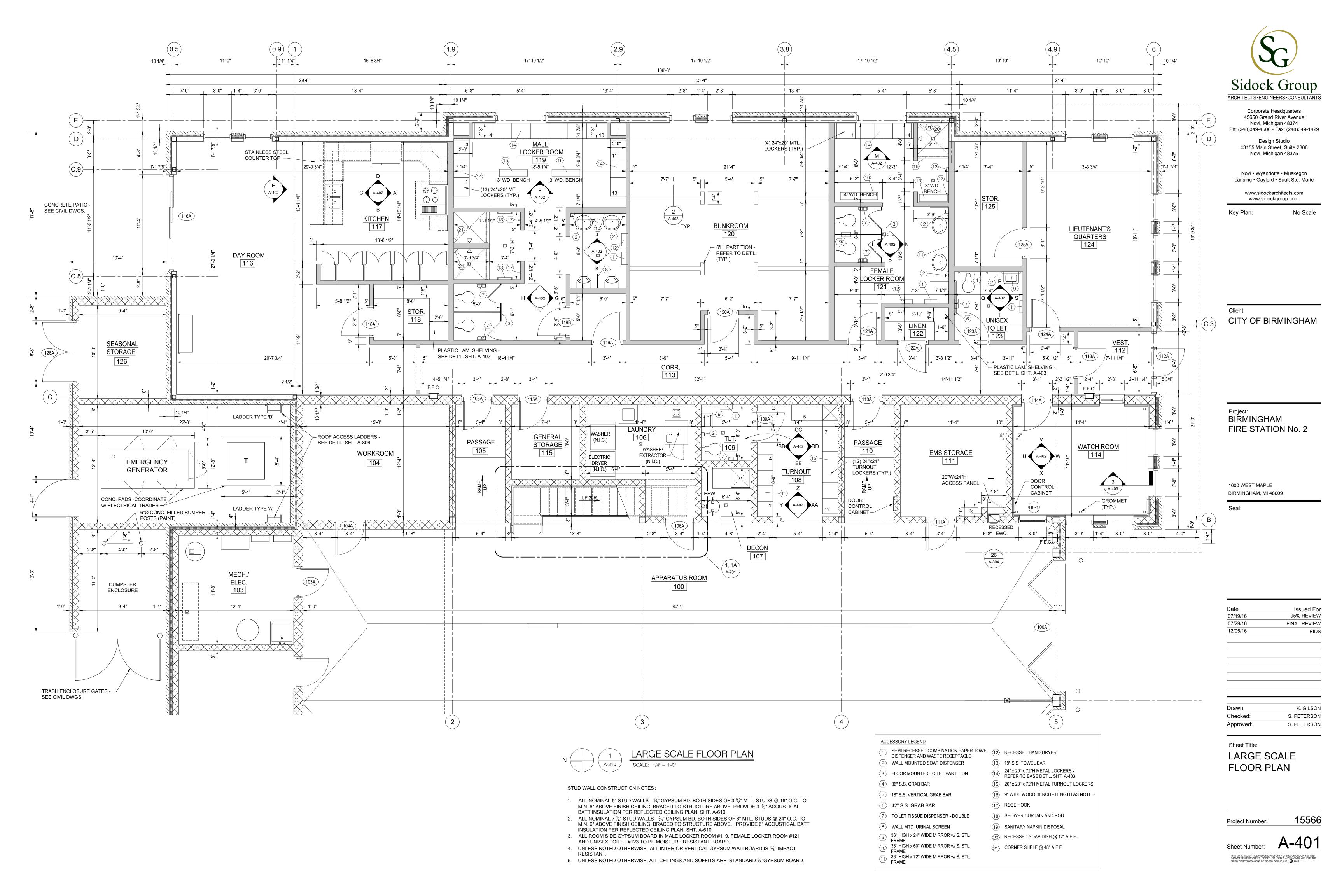
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BUILDING
SECTIONS

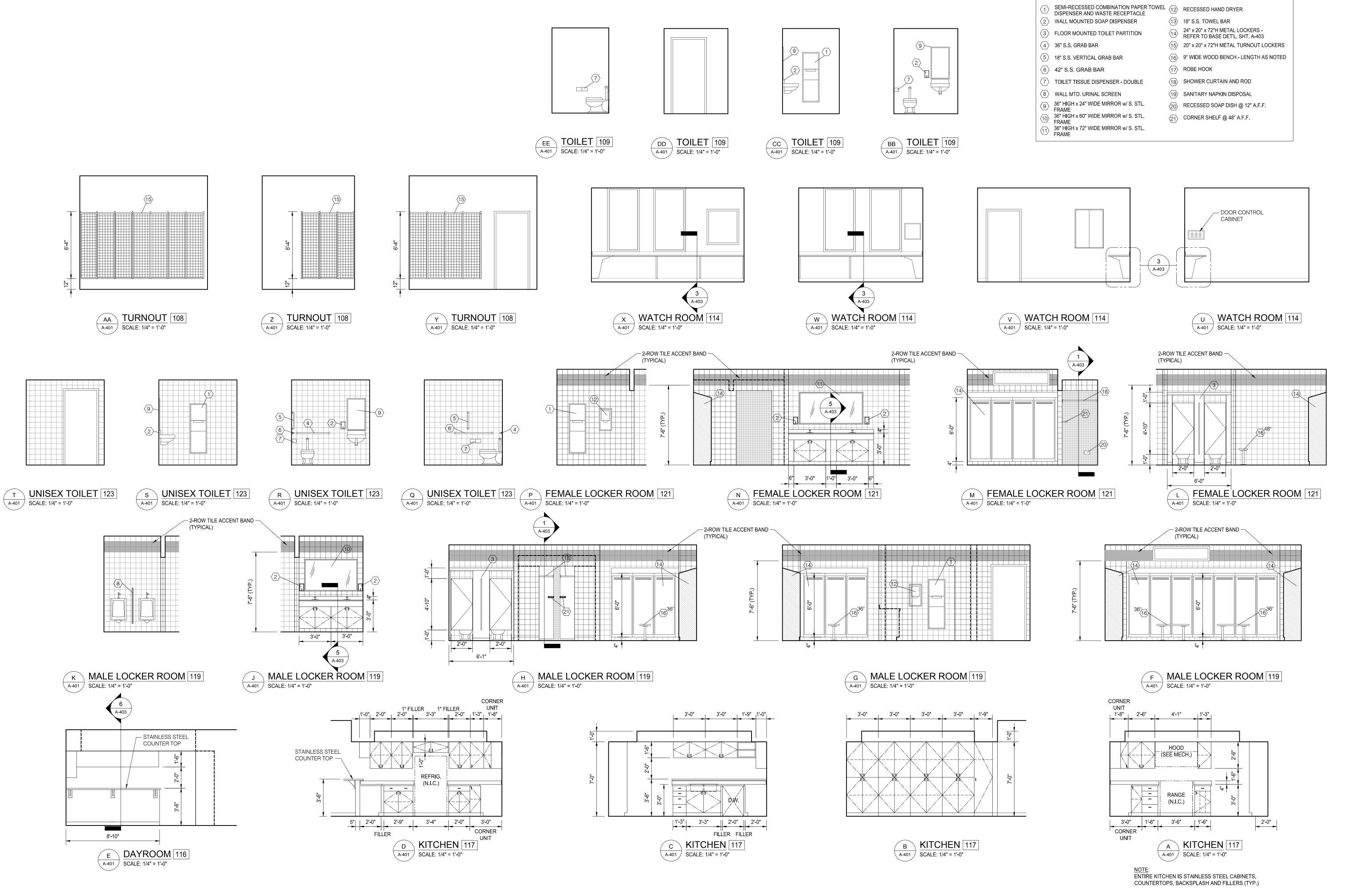
Project Number:

Sheet Number: A-303

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wn: K. GILSON

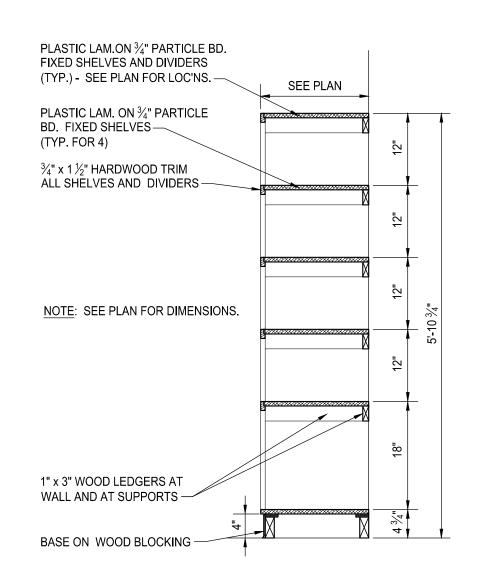
Checked: S. PETERSON
Approved: S. PETERSON

Sheet Title:
INTERIOR
ELEVATIONS

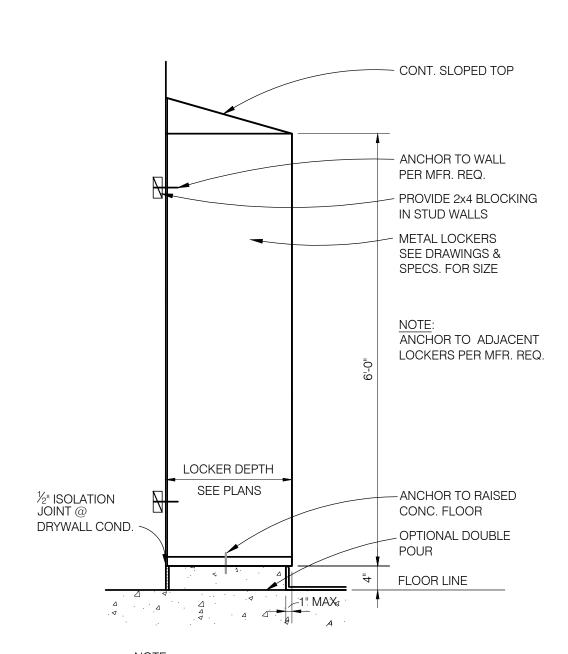
Project Number:

15566

Sheet Number: A-402



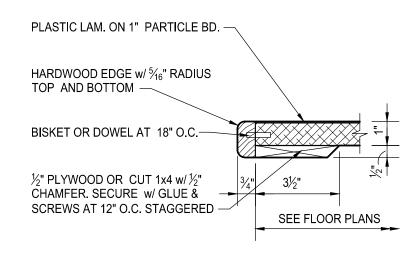
TYPICAL SECTION THRU FIXED SHELVING SCALE: 3/4" = 1'-0"



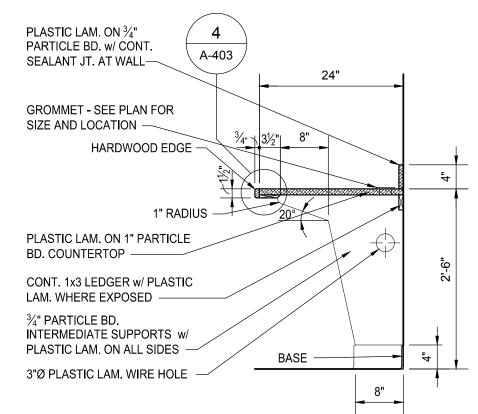
NOTE: SEE ROOM FINISH SCHEDULE FOR BASE, FLOOR AND WALL FINISH

SECTION THRU TYP. LOCKERS

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

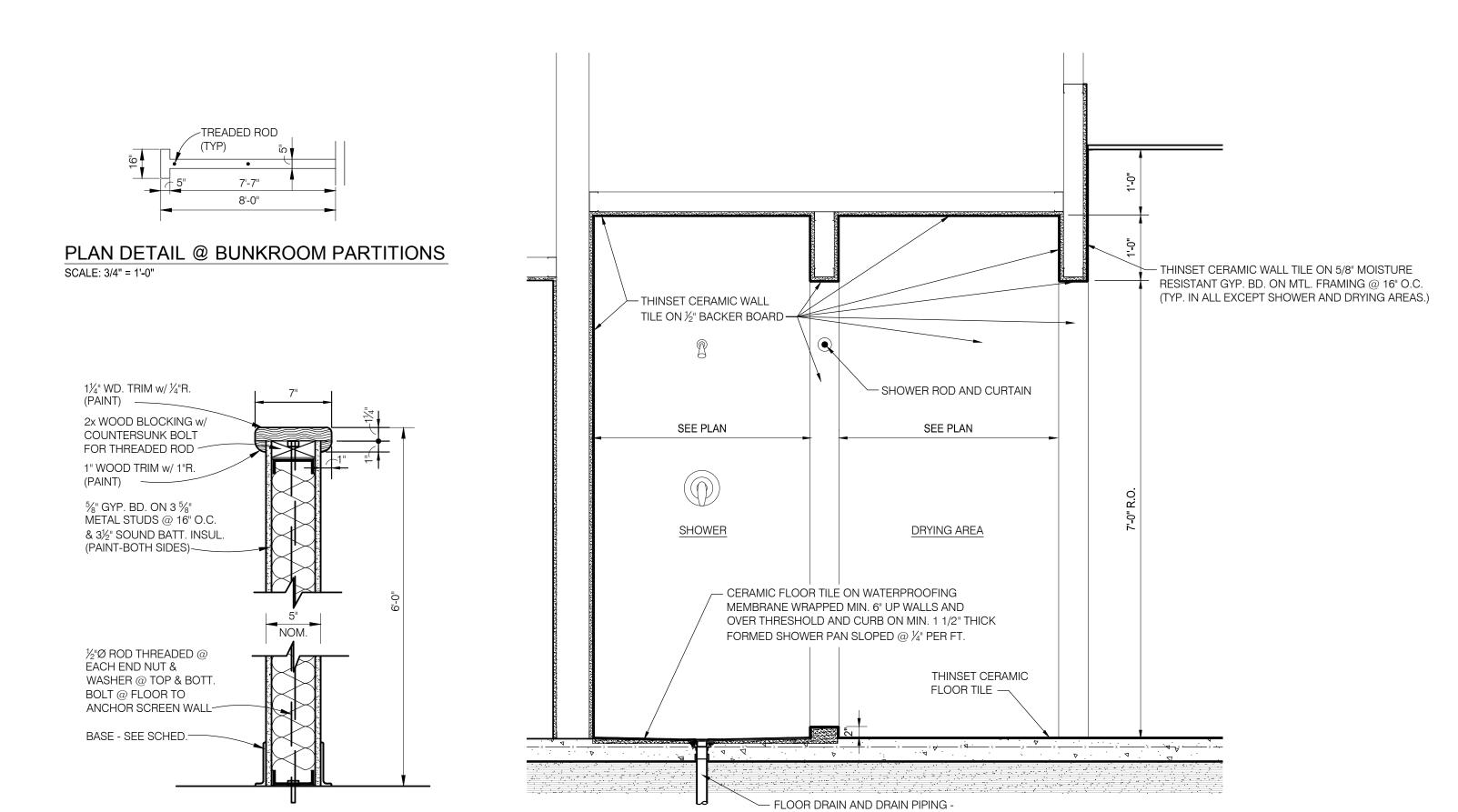


4 A-403 SECTION THRU WOOD EDGE
SCALE: 3" = 1'-0"



NOTE: DIMENSIONS GIVEN ARE TYPICAL U.O.N. ON INTERIOR ELEVATIONS.

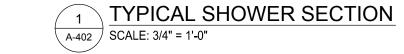
3 SECTION THRU WATCHROOM COUNTER SCALE: 3/4" = 1'-0"



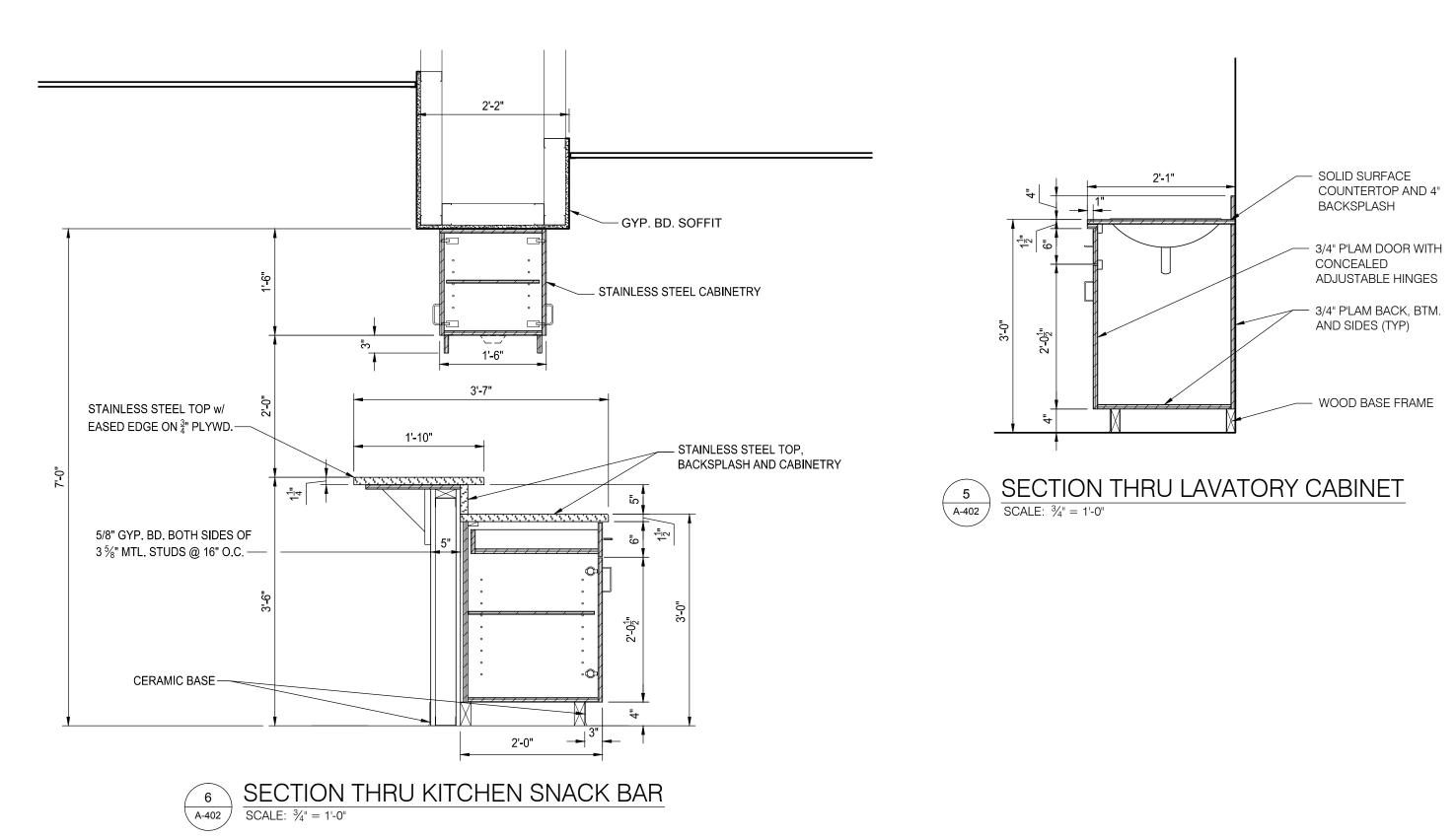


SECTION THRU BUNKROOM PARTITIONS

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



REFER TO MECH. DWGS.





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Client:

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Project:
BIRMINGHAM
FIRE STATION No. 2

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Approved: S. PETERSON

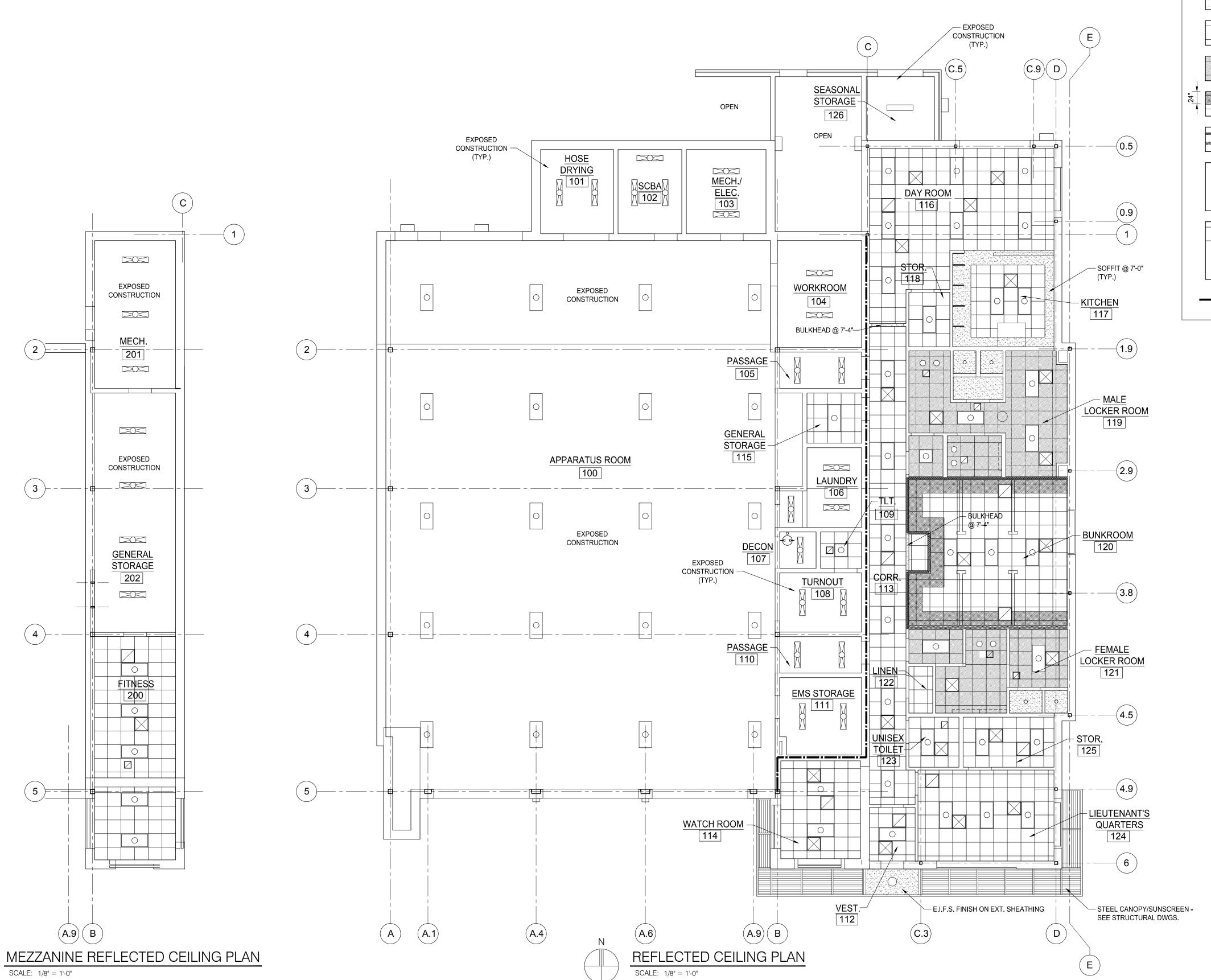
Sheet Title:
INTERIOR AND
CASEWORK
DETAILS

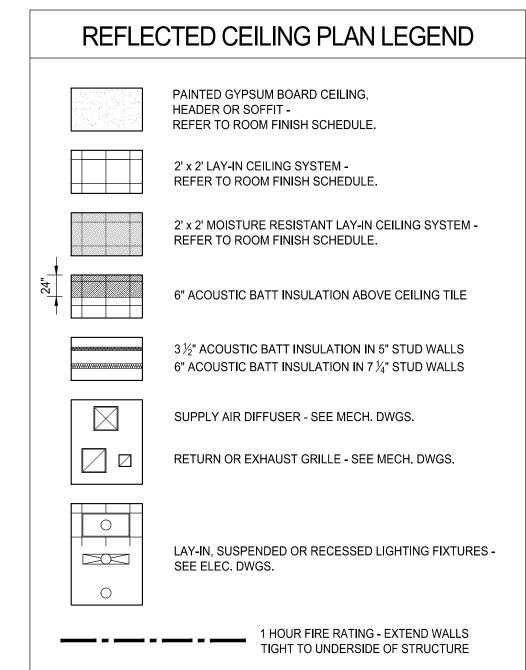
Project Number:

Sheet Number: A-403

15566

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Key Plan:

Key Plan: No Scale

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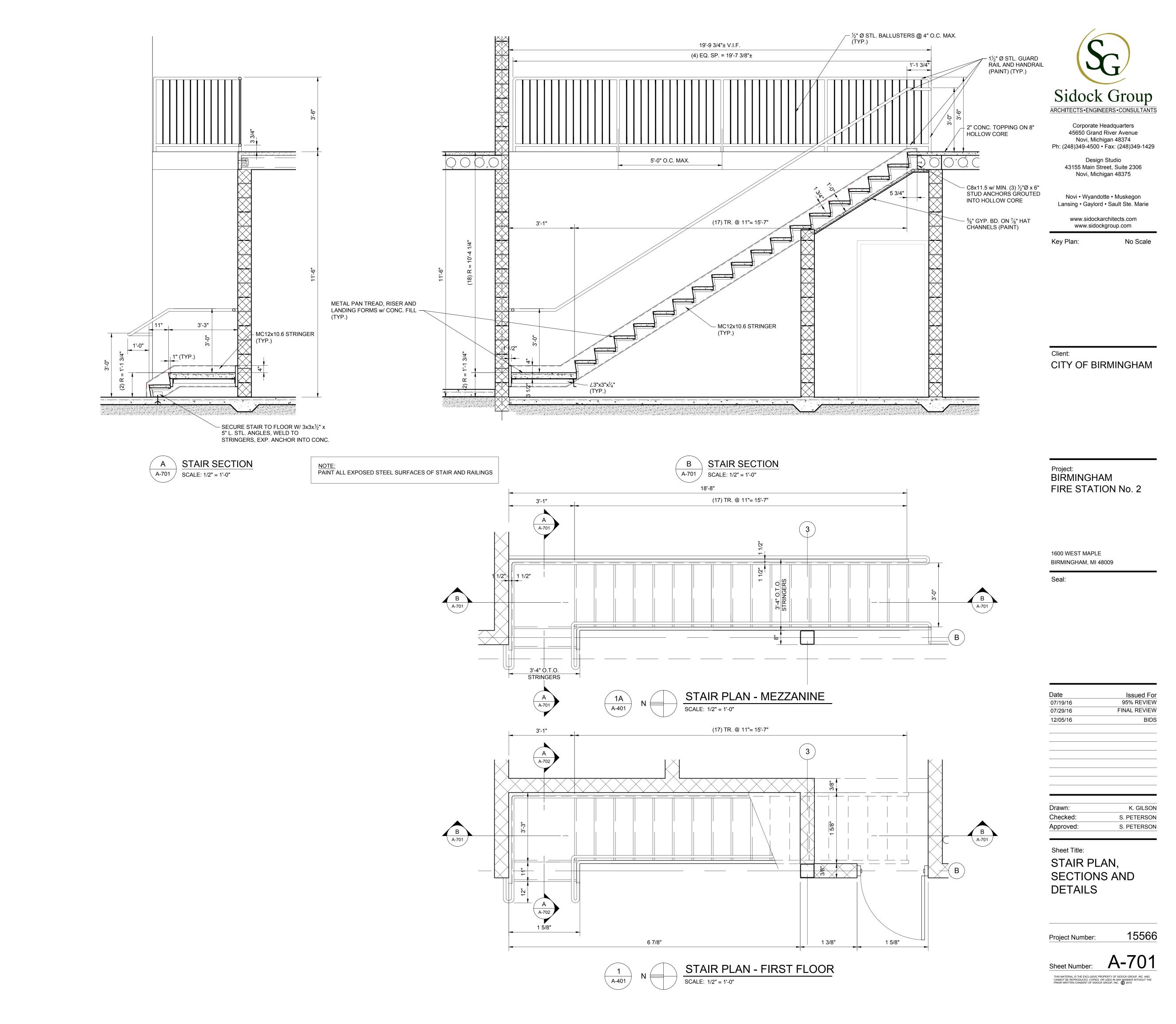
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Approved: S. PETERSON

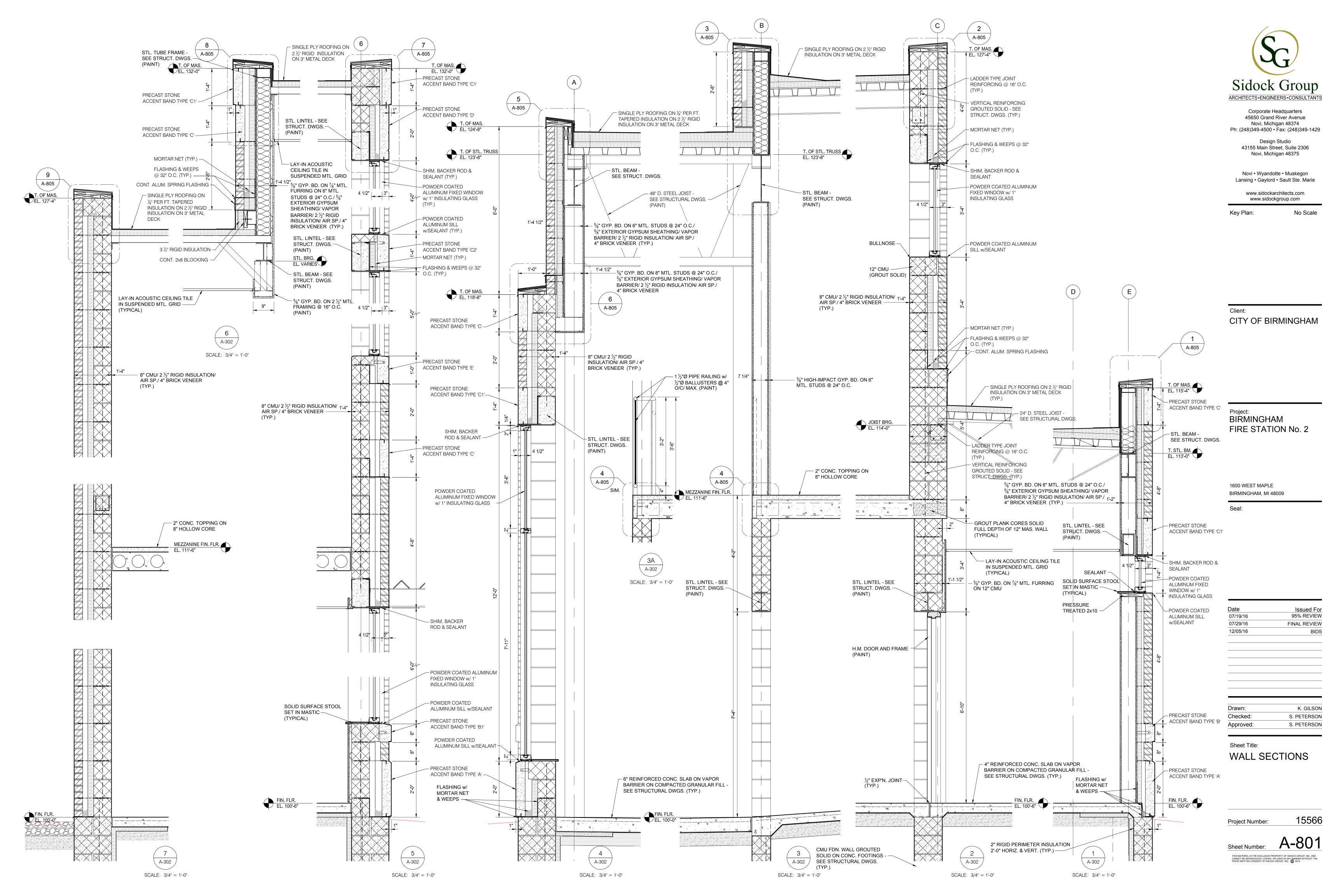
Sheet Title:
REFLECTED
CEILING PLAN

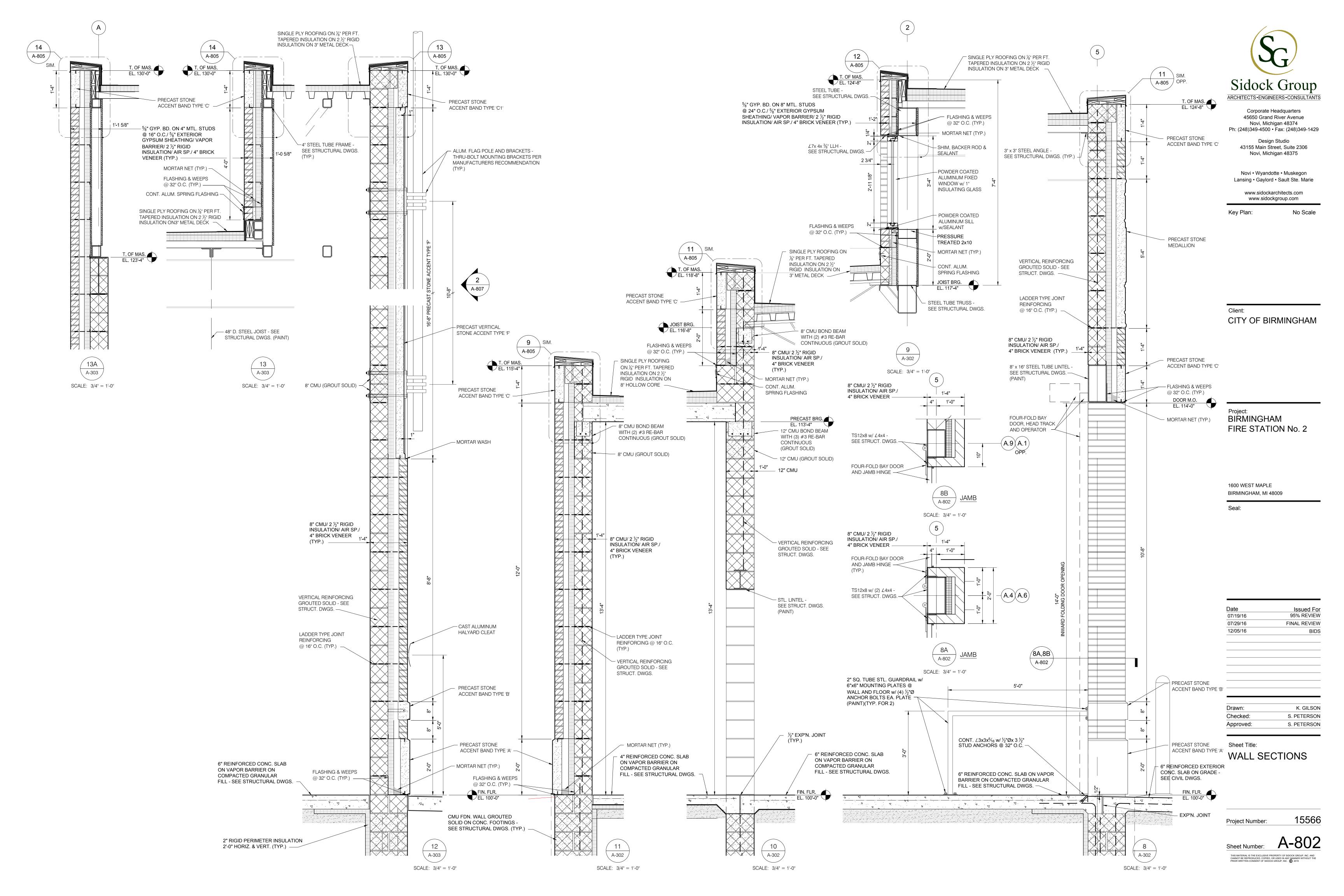
Project Number:

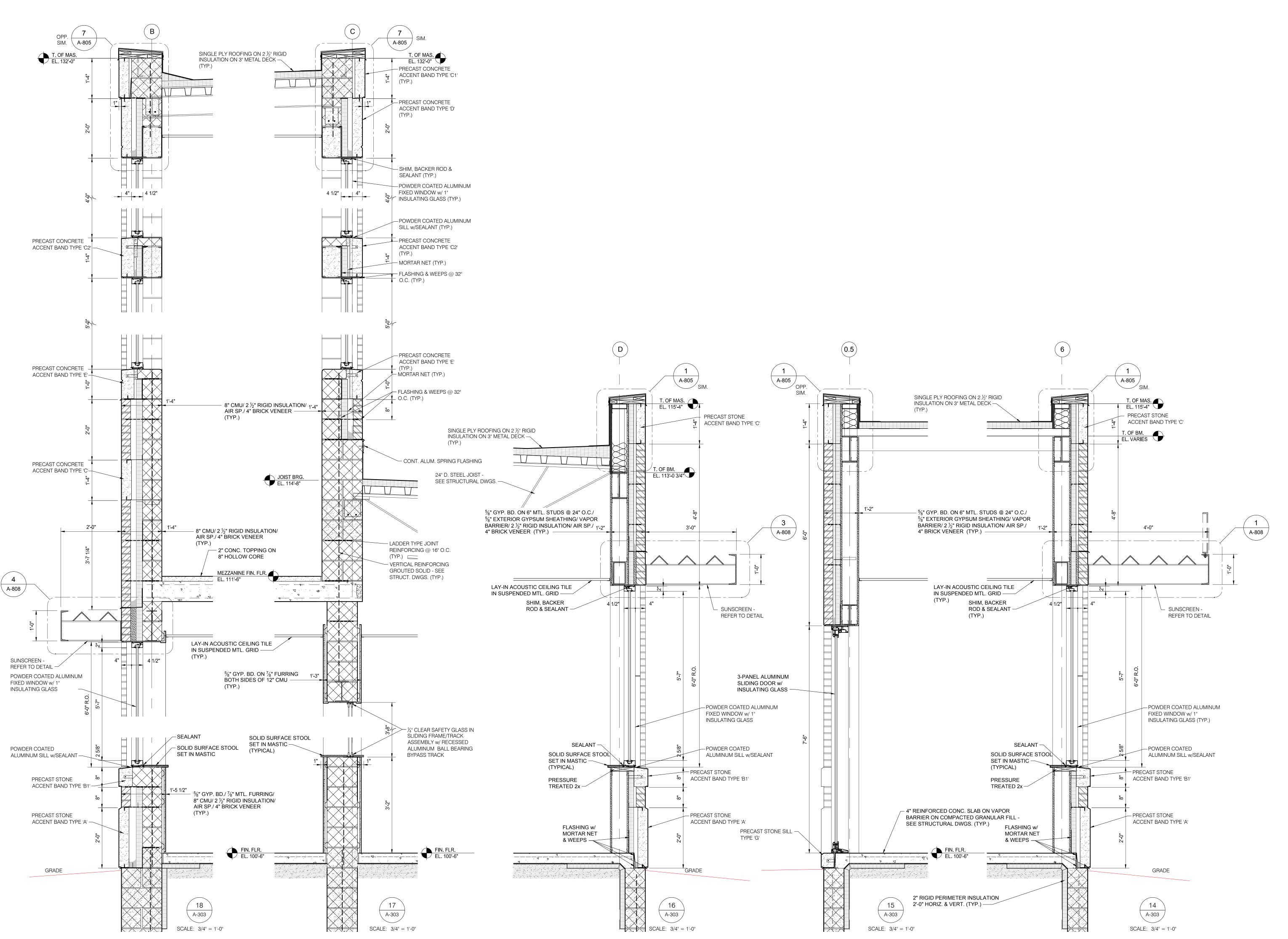
Sheet Number: A-610

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ient:

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FIRE STATION No. 2

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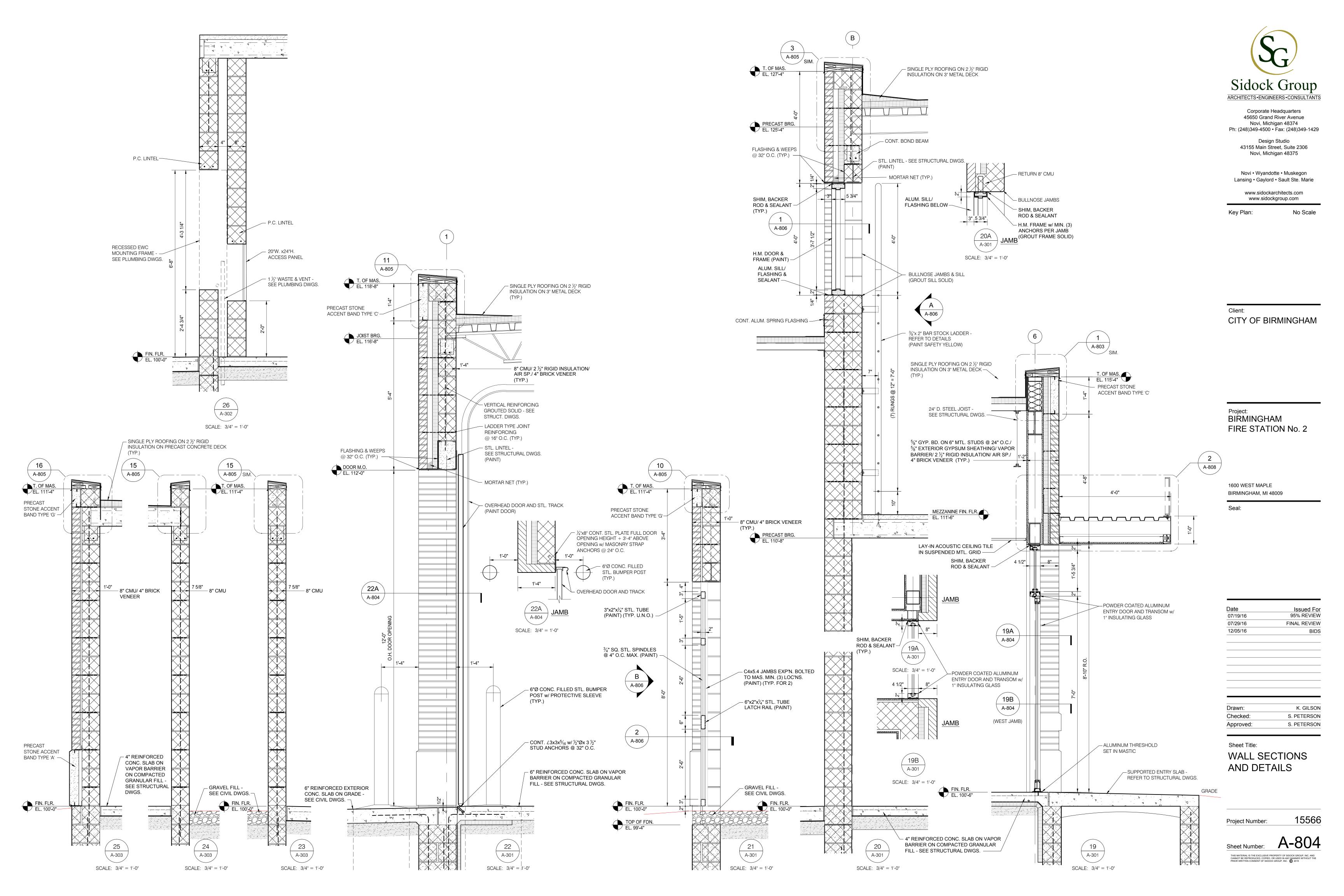
Sheet Title:

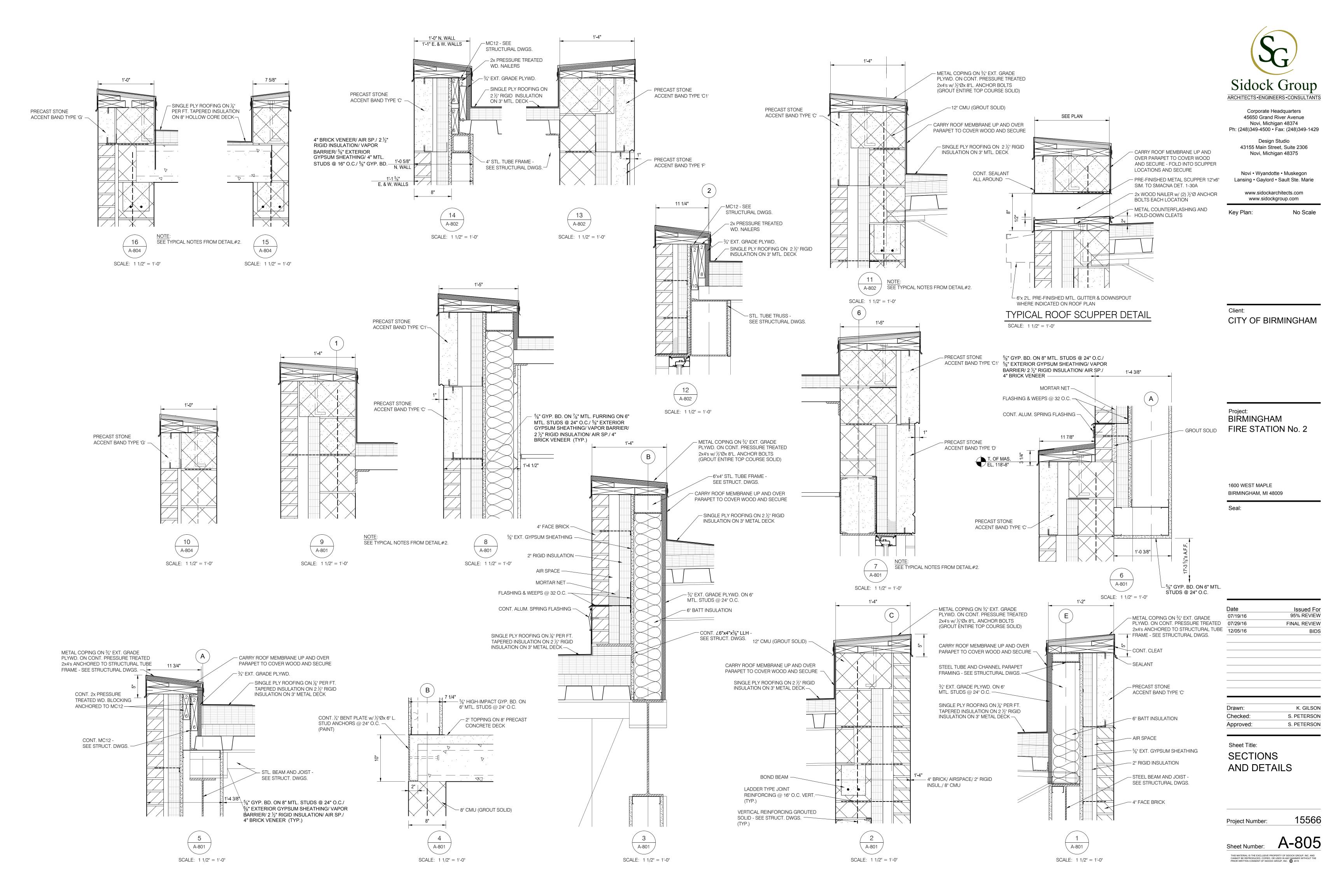
WALL SECTIONS

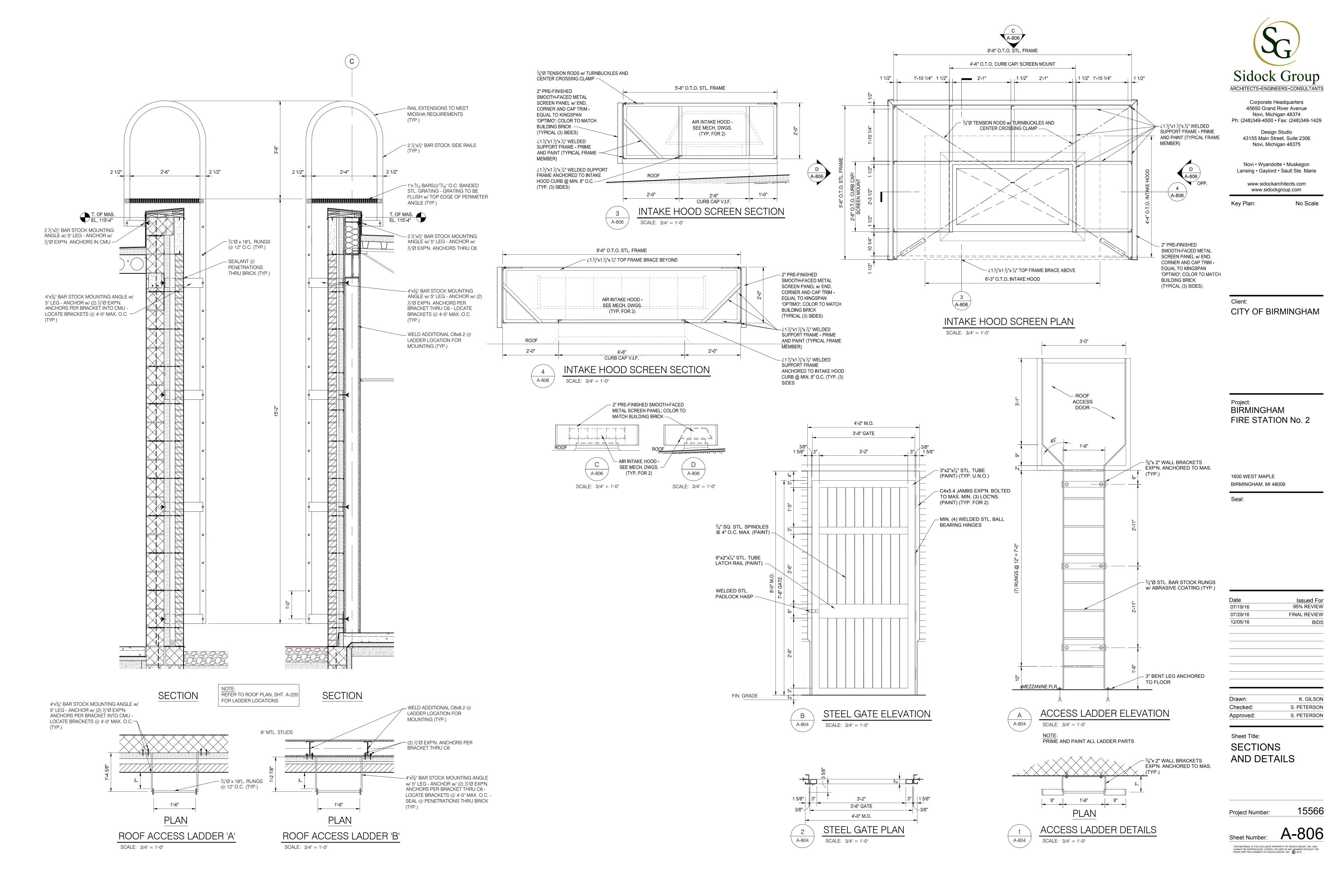
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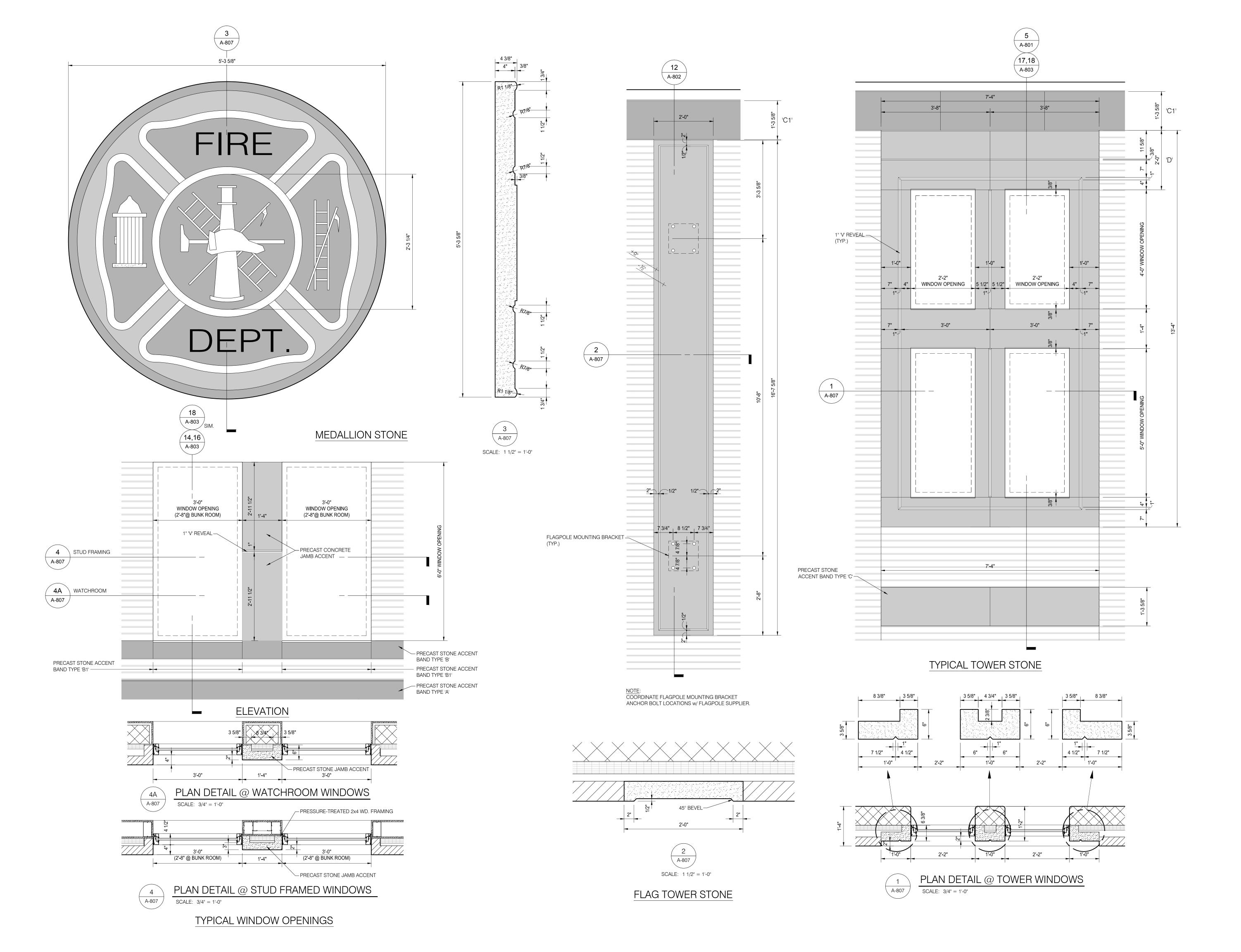
Sheet Number: A-80

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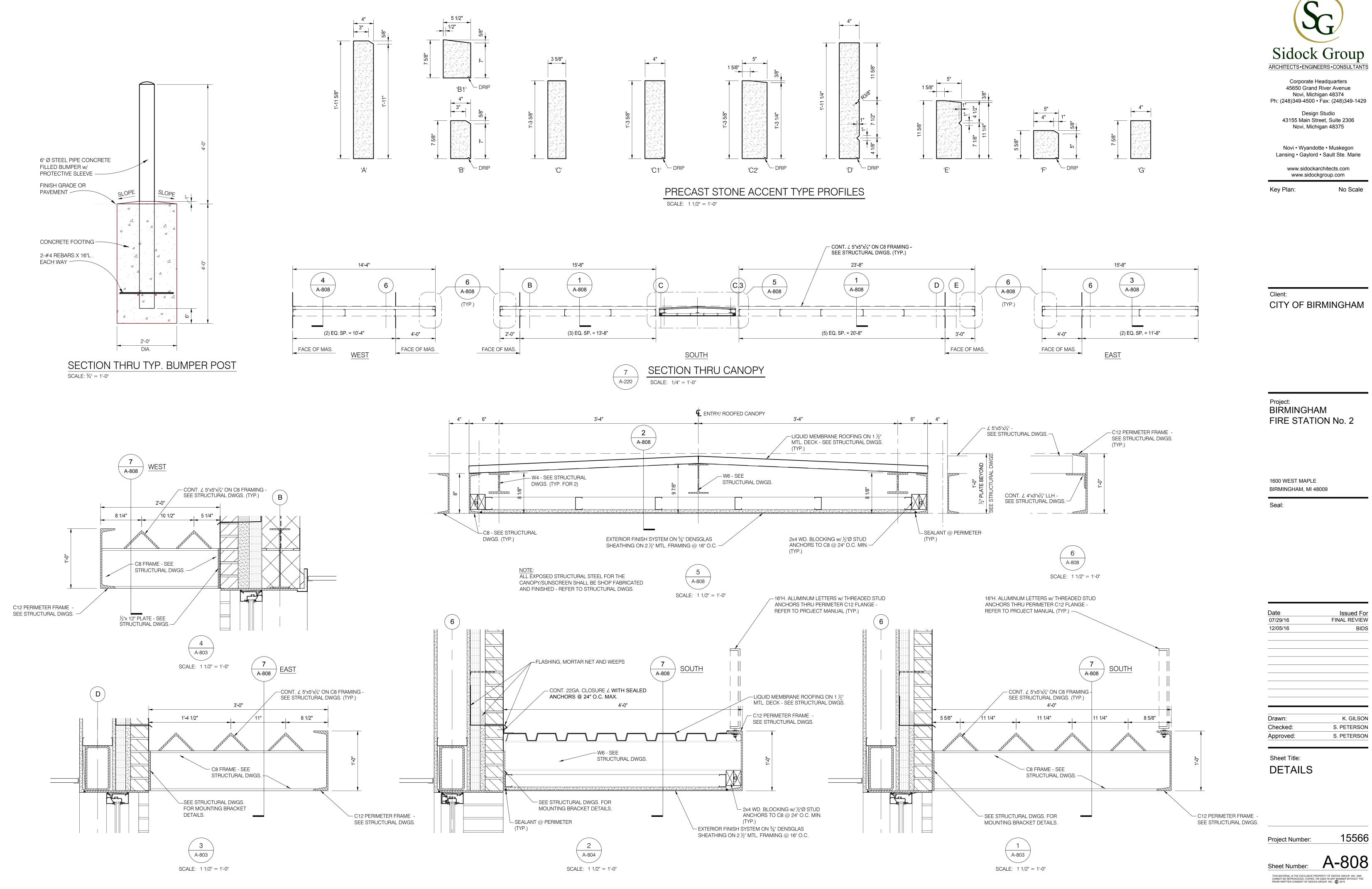
Sheet Title:
PRECAST STONE
SECTIONS
AND DETAILS

Project Number:

15566

Sheet Number: A-8U

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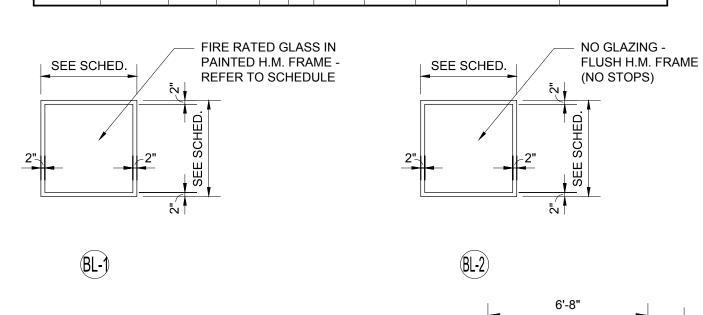
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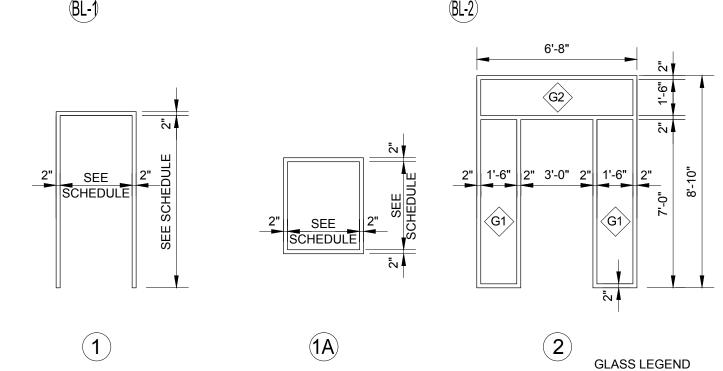
Issued For FINAL REVIEW BIDS

K. GILSON S. PETERSON

				000	R SC	HED	ULE			NOTE: REFER TO	SHEET A-902	FOR DOOR FRAM	ME DETAILS
				DOOR		FR	AME		OOR DETA	AIL	FIDE		
DOOR	ROOM NAME	SIZE	TYPE	MAT'L.	GLASS	TYPE	MAT'L.	HEAD	JAMB	SILL	FIRE RATING	HARDWARE SET	REMARKS
100A	APPARATUS ROOM	14'-0" x 14'-0"	FF	STL.	1" INSUL.	-	STL.	8/A-802	8A,8B/A-802	8/A-802	-	-	
100B	APPARATUS ROOM	14'-0" x 14'-0"	FF	STL.	1" INSUL.	-	STL.	8/A-802	8A/A-802	8/A-802	-	-	
100C	APPARATUS ROOM	14'-0" x 14'-0"	FF	STL.	1" INSUL.	-	STL.	8/A-802	8A,8B/A-802	8/A-802	-	-	
100D	APPARATUS ROOM	3'-0" x 7'-2"	N1	ALUM.	1" INSUL.	1	ALUM.	H1	J1	S1	-	1	
100E	APPARATUS ROOM	12'-0" x 12'-0"	ОН	STL.	1" INSUL.	-	STL.	22/A - 804	22A/A-804	22/A - 804	-	-	
101A	HOSE DRYING	(2)3'-2" x 7'-2"	(2)F	H.M.	-	1	H.M.	H2	J2	-	-	10	
102A	SCBA	3'-0" x 7'-2"	F	H.M.	-	1	H.M.	H2	J2	-	-	2	
103A	MECHANICAL	3'-0" x 7'-2"	F	H.M.	-	1	H.M.	H2	J2	-	-	2	
104A	WORK ROOM	3'-0" x 7'-2"	F	H.M.	-	1	H.M.	H2	J2	-	-	2	
105A	PASSAGE	3'-0" x 7'-0"	N2	H.M.	FIRELITE	1	H.M.	H3	J3	-	C-45 MIN.	3	
106A	LAUNDRY	3'-0" x 7'-2"	F	H.M.	-	1	H.M.	H2	J2	-	-	2	
109A	TOILET	3'-0" x 7'-2"	F	H.M.	-	1	H.M.	H2	J2	-	-	4	
110A	PASSAGE	3'-0" x 7'-0"	N2	H.M.	FIRELITE	1	H.M.	H3	J3 -		C-45 MIN.	3	
111A	EMS STORAGE	3'-0" x 7'-2"	F	H.M.	-	1	H.M.	H2	J2	-	-	2	
112A	VESTIBULE	3'-0" x 7'-0"	FG	ALUM.	1" INSUL.	2	ALUM.	19/A - 804	19A/A-804	19/A - 804	-	5	
113A	CORRIDOR	3'-0" x 7'-0"	N1	WD.	-	1	H.M.	H4	J4	-	-	6	
114A	WATCH ROOM	3'-0" x 7'-0"	G	WD.	1/4" TEMP.	1	H.M.	H3	J3	-	-	7	
115A	GENERAL STORAGE	3'-0" x 7'-0"	F	WD.	-	1	H.M.	H3	J3	-	C-45 MIN.	7	
116A	DAYROOM	10'-4" x 7'-6"	SL	ALUM.	1" INSUL.	-	ALUM.	H4	J4	-	-	-	
118A	STORAGE	3'-0" x 7'-0"	F	WD.	-	1	H.M.	H4	J4	-	-	7	
119A	MALE LOCKER ROOM	3'-0" x 7'-0"	F	WD.	-	1	H.M.	H4	J4	M.T.	-	11	
119B	MALE LOCKER ROOM	3'-0" x 7'-0"	F	WD.	-	1	H.M.	H4	J4	-	-	11	
120A	BUNK ROOM	3'-0" x 7'-0"	F	WD.	-	1	H.M.	H4	J4	-	-	11	
121A	FEMALE LOCKER ROOM	3'-0" x 7'-0"	F	WD.	-	1	H.M.	H4	J4	M.T.	-	11	
122A	LINEN	3'-0" x 7'-0"	F	WD.	-	1	H.M.	H4	J4	-	-	7	
123A	UNISEX TOILET	3'-0" x 7'-0"	F	WD.	-	1	H.M.	H4	J4	M.T.	-	4A	
124A	LIEUTENANT'S QUARTERS	3'-0" x 7'-0"	N1	WD.	1/4" TEMP.	1	H.M.	H4	J4	-	-	8	
125A	STORAGE	3'-0" x 7'-0"	F	WD.	-	1	H.M.	H4	J4	_	-	7	
126A	SEASONAL STORAGE	(2)3'-0" x 7'-0"	F	H.M.	-	1	H.M.	H5	J5	_	-	10A	
200A	FITNESS	3'-0" x 7'-2"	F	H.M.	-	1	H.M.	H6	J6	-	-	2	
201A	MECHANICAL	3'-0" x 7'-2"	F	H.M.	-	1	H.M.	H2	J2	-	-	2	
201B	MECHANICAL	3'-0" x 3'-8"	F	H.M.	_	1A	H.M.	20/A-804	20A/A-804	20/A - 804	-	9	

BORROWED LITE SCHEDULE													
		FIRE											
LITE				SIZ	<u> </u>	ט	ETAILS	5	RATING				
NO.	GLASS	TYPE	MAT	W	Н	HEAD	JAMB	SILL	HRS.	REMARKS			
BL-1	FIRELITE	BL-1	H.M.	3'-0"	3'-4"	H2 SIM	J2 SIM	H2 SIM	1 HR.				
BL-2	NONE	H7 SIM	-										





G1> 1" INSULATING SAFETY GLASS

G2> 1" INSULATING GLASS

FRAME TYPES

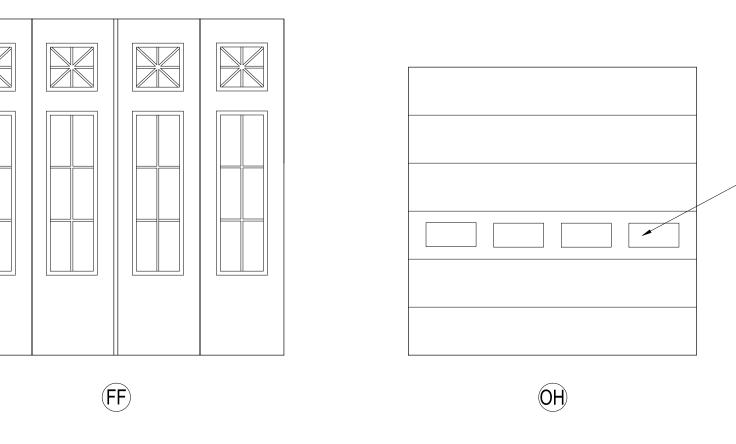
ALUM. OR H.M. FRAMES - REFER TO SCHEDULE (PAINT H.M.)

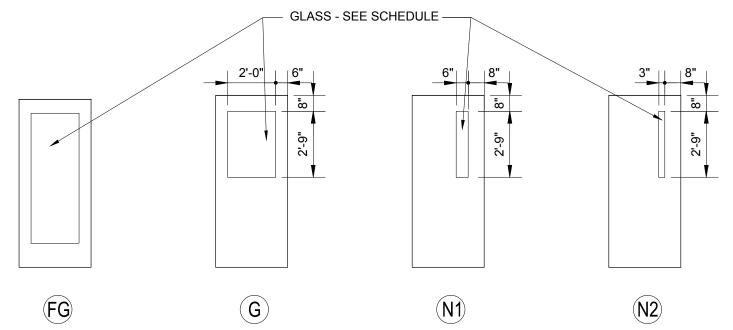
ALL ALUMINUM DOORS AND FRAMING TO BE POWDER COATED RED

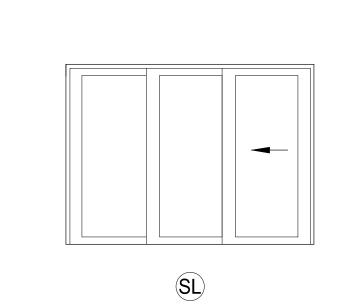
ROOM FINISH SCHEDULE CEILING ROOM NO ROOM NAME | FLOOR | BASE NOTES N S E W MATL HEIGHT WALLS EPOXY PAINTED UP CONC-EC | NONE | EC-P 23'-8"/17'-4" ROOM CMU-EP CMU-EP CMU-EP CMU-EP TO 8'-0" A.F.F. 101 HOSE DRYING CONC-S | NONE | CMU-P | CMU-P | CMU-P | CONC-P | 13'-4" 102 SCBA CONC-S NONE CMU-P CMU-P CMU-P CMU-P CONC-P 13'-4" MECHANICAL/ 103 CONC-S NONE CMU-P CMU-P CMU-P CMU-P CONC-P 13'-4" ELECTRICAL 104 WORK ROOM CONC-S NONE CMU-P CMU-P CMU-P CMU-P CONC-P 10'-8" 105 PASSAGE CONC-EC NONE CMU-EP CMU-EP CMU-EP CMU-EP CONC-P 10'-8" 106 LAUNDRY CONC-EC NONE CMU-EP CMU-EP CMU-EP CMU-EP CONC-EP 10'-8" 107 DECON CONC-EC NONE CMU-EP CMU-EP CMU-EP CMU-EP CONC-EP 10'-8" 108 TURNOUT CONC-S NONE CMU-P CMU-P CMU-P CMU-P CONC-P MARBLE THRESHOLD 109 TOILET CFT-1 CTB-1 CMU-EP CMU-EP CMU-EP CMU-EP ACT-2 PASSAGE CONC-EC NONE CMU-EP CMU-EP CMU-EP CMU-EP CONC-P 10'-8" 111 **EMS STORAGE** CONC-S NONE CMU-P CMU-P CMU-P CMU-P CONC-P 10'-8" 112 VESTIBULE VCT-1 VWB-1 GB-P GB-P GB-P GB-P ACT-1 9'-0" 113 CORRIDOR VWB-1 GB-P GB-P GB-P GB-P ACT-1 9'-0" WATCH ROOM VCT-1 GB-P GB-P GB-P VWB-1 GB-P GB-P GB-P GB-P ACT-1 9'-0" STORAGE DAYROOM GB-P GB-P ACT-1 9'-0" PAINT GYP. BD. SOFFITS KITCHEN PTB-1 GB-P GB-P GB-P GB-P ACT-1 MARBLE THRESHOLD STORAGE VWB-1 GB-P GB-P GB-P GB-P ACT-1 SHOWER: CFT-1 FLR.; CWT-2 WALLS MALE LOCKER CFT-2 CTB-2 CWT-1 CWT-1 CWT-1 CWT-1 ACT-2 9'-0" MARBLE THRESHOLD ROOM 120 BUNK ROOM GB-P GB-P GB-P GB-P ACT-1 SHOWER: CFT-1 FLR.; CWT-2 WALLS FEMALE LOCKER CTB-2 CWT-1 CWT-1 CWT-1 CWT-1 ACT-2 121 ROOM MARBLE THRESHOLD VWB-1 GB-P GB-P GB-P ACT-1 122 LINEN CFT-2 | CTB-2 | GB-EP | GB-EP | GB-EP | 123 UNISEX TOILET MARBLE THRESHOLD LIEUTENANT'S GB-P VWB-1 GB-P 9'-0" QUARTERS VCT-1 VWB-3 GB-P GB-P STORAGE GB-P GB-P ACT-1 125 SEASONAL CONC-S NONE CMU-P CMU-P CMU-P CMU-P CONC-P 10'-0" STORAGE RF-1 VWB-1 CMU-P CMU-P CMU-P ACT-1 17'-10"/13'-10" 200 FITNESS 201 MECHANICAL CONC-S NONE CMU-P CMU-P CMU-P CMU-P CONC-P 13'-10" GENERAL STORAGE | CONC-S | NONE | CMU-P | CMU-P | CMU-P | CMU-P | CONC-P | 13'-10"

DOOR SCHEDULE LEGEND:

ALUM. ALUMINUM H.M. **HOLLOW METAL** MTL. M.T. MARBLE THRESHOLD WD. WOOD







25" x 12" INSULATING LITES

DOOR TYPES

ROOM FINISH LEGEND

CONC-S CONCRETE - SEALED CONCRETE MASONRY UNIT - PAINTED CONC-EC CONCRETE - EPOXY FLOOR SYSTEM CONCRETE MASONRY UNIT - EPOXY PAINTED CMU-EP CARPET TILE GB-P GYPSUM WALLBOARD - PAINTED CFT-1 12"x12" THINSET CERAMIC FLOOR TILE GB-EP GYPSUM WALLBOARD - EPOXY PAINTED CFT-2 2"x2" THINSET CERAMIC FLOOR TILE CWT-1 6"x 6" CERAMIC WALL TILE PFT-1 PORCELAIN FLOOR TILE CWT-2 2"x 2" CERAMIC WALL TILE 12"x12" VINYL COMPOSITION FLOOR TILE RF-1 RUBBER FLOORING

ACT-1

2'x2' LAY-IN ACOUSTIC TILE IN SUSPENDED GRID

2'x2' LAY-IN MOISTURE RESISTANT ACOUSTIC TILE IN SUSPENDED GRID Date VWB-1 4" VINYL WALL BASE GYPSUM WALLBOARD - PAINTED 3"x 12" CERAMIC TILE BASE GB-EP GYPSUM WALLBOARD - EPOXY PAINTED PORCELAIN - 6"x 12" - COVE BASE

GENERAL ROOM FINISH NOTES:

PTB-1

DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES SHALL BE AT A MAXIMUM HEIGHT OF 48" ABOVE THE FINISHED FLOOR. THE OPERATING DEVICE SHALL BE CAPABLE OF OPERATION WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE. THRESHOLDS SHALL NOT BE MORE THAN 1/2" IN HEIGHT AND SHALL BE BEVELED AT BOTH SIDES. THE BEVEL SHALL NOT BE MORE THAN 1 VERTICAL TO TWO HORIZONTALS.

NOTE: PROVIDE TRANSITION STRIP AT ALL CHANGES IN FLOOR FINISH.

ALL TOILET ROOM FLOORS TO BE SLIP RESISTANT PER CABO ANSI A.117

ALL INTERIOR FINISHES TO HAVE A FLAME SPREAD RATING PER BOCA CODE SECTIONS 801.1, 803.2, TABLE 803.4, AND TABLE 805.1

ALL CONCEALED INSULATION TO HAVE A FLAME SPREAD RATING OF 75 (25 IF EXPOSED) OR LESS AND A MAXIMUM SMOKE DEVELOPED RATING OF 450 PER BOCA CODE SECTION 722.2, 722.3 AND 928.2.1

ALL CARPET SHALL COMPLY WITH DOC FF-1 "PILL TEST"

Sidock Group ARCHITECTS • ENGINEERS • CONSULTANTS

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Key Plan: No Scale

CITY OF BIRMINGHAM

Project: BIRMINGHAM FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

Seal:

Date	Issued For
07/19/16	95% REVIEW
07/29/16	FINAL REVIEW
12/05/16	BIDS

K. GILSON

S. PETERSON

S. PETERSON Approved: Sheet Title: DOOR AND **ROOM FINISH**

SCHEDULES

Drawn:

Checked:

Project Number:



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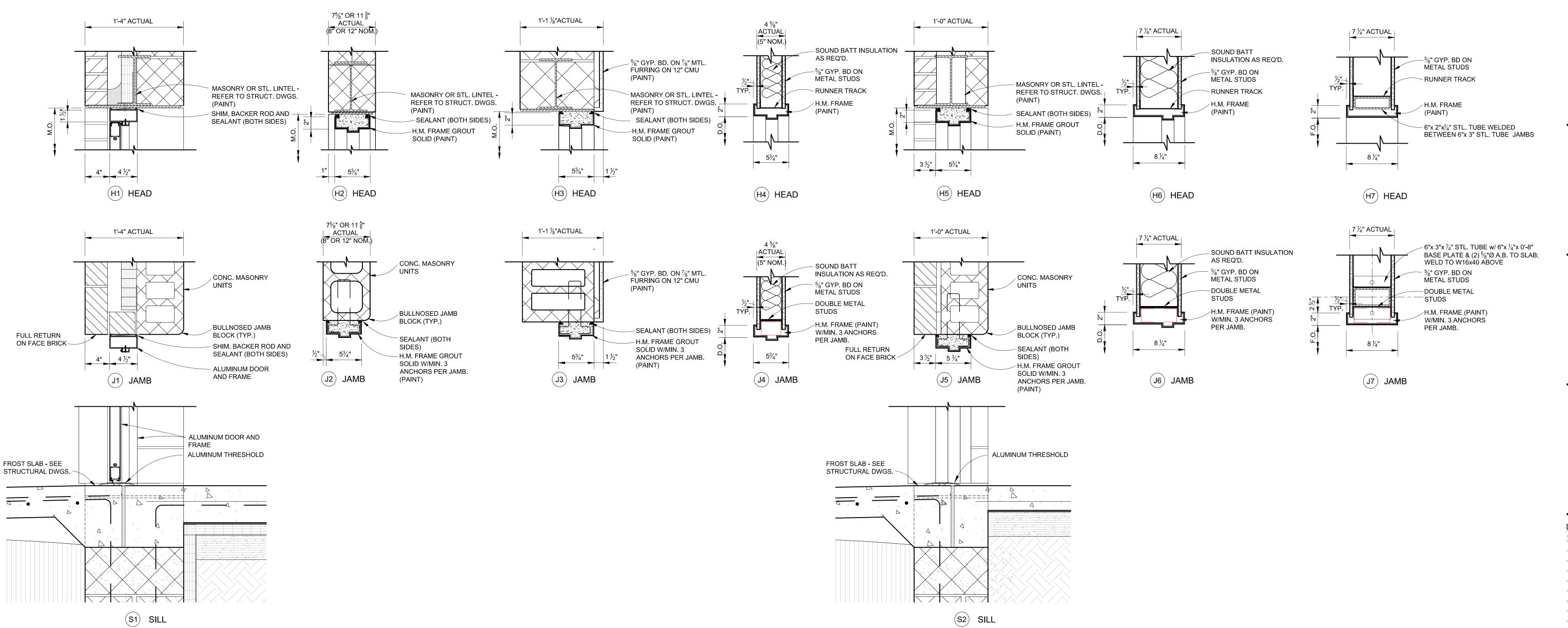
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Drawn: K. GILSON
Checked: S. PETERSON
Approved: S. PETERSON

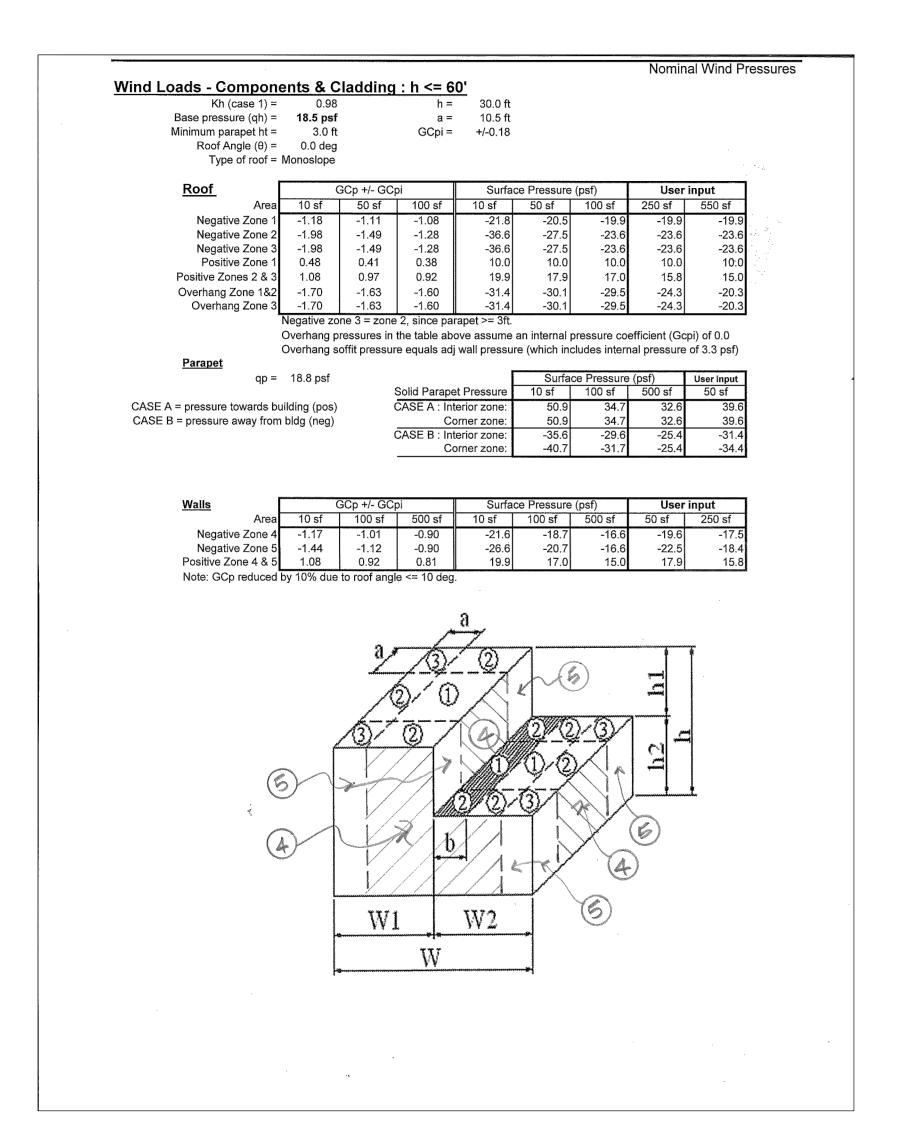
Sheet Title:
DOOR FRAME
DETAILS

Project Number: 15566

Sheet Number: A-902



SCALE: 1 ½" = 1'-0"



STRUCTURAL ABBREVIATIONS: HKD: HOOKED (RE-BARS)

A/E: ARCHITECT/ENGINEER ACI: AMERICAN CONCRETE INSTITUTE ADH: ADHESIVE

ADJ: ADJUST, ADJUSTABLE, ADJACENT AGG: AGGREGATE AHU: AIR HANDLING UNIT AIA: AMERICAN INSTITUTE OF ARCHITECTS AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION ALT: ALTERNATE **ALUM: ALUMINUM** ANCH: ANCHOR, ANCHORAGE

IN: INCH APPROX: APPROXIMATE ARCH: ARCHITECT, ARCHITECTURAL ASCE: AMERICAN SOCIETY OF CIVIL ENGINEERS J: JOIST ASME: AMERICAN SOCIETY OF MECHANICAL ENGINEERS

ASSOC: ASSOCIATION: ASSOCIATE ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS AVG: AVERAGE AWG: AMERICAN WIRE GAUGE AWS: AMERICAN WELDING SOCIETY B TO B: BACK TO BACK

B/: BOTTOM (OF) BAL: BALANCE BD: BOARD BEL: BELOW BETW: BETWEEN

BJF: BITUMINOUS JOINT FILLER BL: BASE LINE, BUILDING LINE, BLOCK **BLDG: BUILDING** BLK: BLOCK BLKG: BLOCKING BM: BEAM. BENCH MARK **BOT: BOTTOM BP: BASE PLATE** BRDG: BRIDGE, BRIDGING **BRG: BEARING** BRK: BRICK

BS: BOTH SIDES BSMT: BASEMENT BT: BOLT BTR BFTTFR BVL: BEVEL, BEVELLED BW: BOTH WAYS BYP: BY PASS C: CHANNEL (STRUCT STL) C/C: CENTER TO CENTER CAP: CAPACITY CB: CATCH BASIN, CONCRETE BLOCK CEM: CEMENT

CF: CUBIC FEET CFS: COLD FORMED STEEL CHAM: CHAMFER CI: CAST IRON CIP: CAST IRON PIPE, CAST-IN-PLACE CIR: CIRCLE, CIRCULAR CIRC: CIRCUMFERENCE CJ: CONTROL JOINT CL: CENTERLINE CLR: CLEAR CNTR: CENTER, COUNTER

CMU: CONCRETE MASONRY UNIT CO: COMPANY COEF: COEFFICIENT COL: COLUMN CONC: CONCRETE CONN: CONNECTION CONST: CONSTRUCTION CONT: CONTINUOUS, CONTINUE, CONTROL CONTR: CONTRACTOR

CRS: COURSE, COLD ROLLED STEEL CSN: CAISSON CTD: COATED CTR: CENTER CY: CUBIC YARD CYL: CYLINDER D: DEEP, DEPTH, DROP, DRAIN DBL: DOUBLE DEG: DEGREE DEMO: DEMOLISH, DEMOLITION **DEPT: DEPARTMENT**

DET: DETAIL DIAG: DIAGONAL DIA: DIAMETER DIM: DIMENSION DIV: DIVISION DL: DEAD LOAD DN: DOWN DO: DITTO, DOOR OPENING DR: DOOR, DRAIN DTL: DETAIL DWG(S): DRAWING(S) DWL: DOWEL E: EAST E TO E: END TO END

ECC: ECCENTRIC EE: EACH END EF: EACH FACE EIFS: EXTERIOR INSUL AND FINISH SYSTEM EJ: EXPANSION JOINT EL: ELEVATION ELEC: ELECTRICAL ELEV: ELEVATOR EMBED: EMBEDMENT

EA: EACH

ENGR: ENGINEER EQ: EQUAL **EQUIP: EQUIPMENT** ES: EACH SIDE EW: EACH WAY EXCAV: EXCAVATE EXIST: EXISTING EXP: EXPANSION, EXPOSED EXT: EXTERIOR, EXTINGUISH F: DEGREES FAHRENHEIT F TO F: FACE TO FACE FB: FLAT BAR, FACE BRICK

FD: FLOOR DRAIN FDN: FOUNDATION FF: FAR FACE, FINISHED FLOOR FH: FLAT HEAD FIN: FINISH, FINISHED FL: FLOOR, FRAME LINE FLEX: FLEXIBLE FLG: FLANGE, FLASHING, FLOORING FM: FACTORY MUTUAL COMPANY

FLR: FLOOR FO: FINISHED OPENING FOC: FACE OF CONCRETE FOS: FACE OF STUDS FR: FRAME, FRONT FS: FAR SIDE FT: FOOT, FEET FTG: FOOTING **FUT: FUTURE** G: GIRDER

GA: GAUGE, GAGE GAL: GALLON GALV: GALVANIZED GB: GLASS BLOCK, GYPSUM BOARD GC: GENERAL CONTRACTOR GEN: GENERAL, GENERATOR GND: GROUND **GOVT: GOVERNMENT** GRAN: GRANULAR GRND: GROUND **GRTG: GRATING**

GYP: GYPSUM H: HAND, HIGH HC: HOLLOW CORE HDR: HEADER **HEX: HEXAGONAL** HGR: HANGER HK: HOOK OR HOOKS

HORIZ: HORIZONTAL HP: HIGH POINT HR: HOT ROLLED. HOUR HRS: HOT ROLLED STEEL, HOURS HT: HEIGHT HVY: HEAVY

HWH: HOT WATER HEATER **ID: INSIDE DIAMETER** INFO: INFORMATION INSUL: INSULATION INT: INTERIOR, INTERNAL INV: INVFRT JST: JOIST JT: JOINT

KIP(S): KILOPOUND(S) (1000 POUNDS) **KO: KNOCKOUT** L: ANGLE, LEFT, LENGTH, LONG, LINE LAM: LAMINATED LAT: LATERAL LB(S): POUND(S) (WEIGHT) LBR: LUMBER LH: LEFT HAND

LIN: LINEAR LL: LIVE LOAD LLH: LONG LEG HORIZONTAL LLV: LONG LEG VERTICAL LNDG: LANDING LNTL: LINTEL LOC(S): LOCATION(S) LP: LOW POINT

LT: LIGHT M: BENDING MOMENT MAS: MASONRY MATL: MATERIAL MAU: MAKE UP AIR UNIT MAX: MAXIMUM MC: MISC CHANNEL (STRUCT STL)

MECH: MECHANICAL MED: MEDIUM MEZZ: MEZZANINE MFR: MANUFACTURE, MANUFACTURER MIN: MINIMUM MISC: MISCELLANEOUS MK: MARK MO: MASONRY OPENING

MONO: MONOLITHIC MTL: METAL N: NORTH NF: NEAR FACE NIC: NOT IN CONTRACT NMT: NON-METALLIC NO: NUMBER NOM: NOMINA NS: NEAR SIDE NTS: NOT TO SCALE O TO O: OUT TO OUT

OA: OVERALL OC: ON CENTER **OD: OUTSIDE DIAMETER** OF: OUTSIDE FACE OH: OVERHEAD OPNG: OPENING **OPP: OPPOSITE** OR: OUTSIDE RADIUS

PAF: POWDER ACTUATED FASTENERS PAR: PARALLEL PCF: POUNDS PER CUBIC FOOT PED: PEDESTAL PERF: PERFORATED PERIM: PERIMETER PERP: PERPENDICULAR PH: PAN HEAD PL: PLATE, PLAN, PROPERTY LINE

PLBG: PLUMBING PLF: POUNDS PER LINEAL FOOT PLTF: PLATFORM PLYWD: PLYWOOD PNL: PANEL PR· PAIR PRCST: PRECAST PREFAB: PREFABRICATED

PROJ: PROJECTION PRSTR: PRESTRESSED PSF: POUNDS PER SQUARE FOOT PSI: POUNDS PER SQUARE INCH PT(S): POINT(S) PVC: POLYVINYL CHLORIDE PVMT: PAVEMENT QTR: QUARTER QTY: QUANTITY R: RISER RAD: RADIUS

RD: ROOF DRAIN, ROUND REBAR: REINFORCING BAR REF: REFER, REFERENCE REG: REGULAR REINF: REINFORCEMENT, OR REINFORCE REQD: REQUIRED REV: REVERSE, REVISE, REVISION RH: RIGHT HAND

SPEC: SPECIFICATION, SPECIFICATIONS

STR: STRAIGHT (RE-BARS), STRUCTURAL

STRUCT: STRUCTURAL

S: SOUTH

SCHED: SCHEDULE

SHTHG: SHEATHING

SS: STAINLESS STEEL

SCR: SCREW

SHT: SHEET

SIM: SIMILAR

SQ: SQUARE

SL: SNOW LOAD

STD: STANDARD

STGR: STAGGER

STIFF: STIFFENER

STWY: STAIRWAY

T: TREAD

T/: TOP (OF)

TAN: TANGENT

TD: TRENCH DRAIN

TEMP: TEMPORARY

THRD: THREADED

THRU: THROUGH

TOL: TOLERANCE

VERT: VERTICAL

TYP: TYPICAL

VOL: VOLUME

W/O: WITHOUT

WL: WIND LOAD

WP: WORKING POINT

X STR: FXTRA STRONG

WD: WOOD

WT: WEIGHT

YD: YARD

YR: YEAR

W/: WITH

SYM: SYMMETRICAL

T&B: TOP AND BOTTOM

T&G: TONGUE & GROOVE

THK: THICK, THICKNESS

VIF: VERIFY IN THE FIELD

W: WEST, WIDTH, WIDE

UNO: UNLESS NOTED OTHERWISE

WWR: WELDED WIRE REINFORCING

XX STR: DOUBLE-EXTRA STRONG

SECT: SECTION

RLL: ROOF LIVE LOAD **RO: ROUGH OPENING** RTN: RETURN RTU: ROOF TOP UNIT

> DEAD LOADS FOR ROOF: ROOFING MEMBRANE INSULATION DECK STEEL MECHANICAL/ELECTRICAL CEILING MISCELLANEOUS 24 PSF TOTAL DEAD LOADS FOR LIVING QUARTERS ROOF: PLYWOOD 3 PSF TRUSSES 4 PSF 1 PSF INSULATION 3 PSF CEILING MECHANICAL/ELECTRICAL 3 PSF SPRINKLER SYSTEM 0 PSF

AS TO PRODUCE THE MAXIMUM LOAD EFFECTS IN THE STRUCTURAL MEMBERS.

SNOW DRIFTING PER CODE

STRUCTURAL GENERAL NOTES

ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

GENERAL REQUIREMENTS

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS AND DESIGN DRAWINGS OF OTHER DISCIPLINES, WHICH TOGETHER WILL BE REFERRED TO AS THE "CONTRACT DOCUMENTS"

2. "CONTRACTOR" IS DEFINED TO INCLUDE ANY OF THE FOLLOWING: GENERAL CONTRACTOR AND THEIR SUBCONTRACTORS, CONSTRUCTION MANAGER AND THEIR SUBCONTRACTORS, OR DESIGN-BUILD CONTRACTOR AND THEIR SUBCONTRACTORS.

3. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETED STRUCTURE, AND ARE NOT INTENDED TO INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCES, AND FOR JOB SAFETY.

4. THE CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION METHODS USED WILL NOT CAUSE DAMAGE TO ADJACENT BUILDINGS. UTILITIES. OR OTHER PROPERTY.

5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL WORK WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACT DOCUMENTS, AS WELL AS ANY OTHER APPLICABLE TRADES. NOTIFY THE

6. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AND COORDINATE WITH THE STRUCTURAL DRAWINGS, ARCHITECTURAL DRAWINGS, DRAWINGS FROM OTHER CONSULTANTS, PROJECT SHOP DRAWINGS AND FIELD CONDITIONS.

7. IN CASES OF CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND OTHER DISCIPLINES OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH

8. THE CONTRACTOR SHALL VERIFY ALL OPENING SIZES AND LOCATIONS WITH OTHER DISCIPLINES. THE DRAWINGS DO NOT SHOW ALL OPENINGS REQUIRED. ADDITIONAL OPENINGS, BLOCKOUTS AND SLEEVES MAY BE REQUIRED BY OTHER DISCIPLINES AND SHALL BE CONSTRUCTED USING THE TYPICAL DETAILS AND/OR THE CRITERIA INDICATED ON THE DRAWINGS. OPENINGS REQUIRED BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED BY THE STRUCTURAL ENGINEER.

9. APPLY DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.

10. DO NOT SCALE DRAWINGS. ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS. 11. ASSUME EQUAL SPACING BETWEEN ESTABLISHED DIMENSIONS, IF NOT INDICATED ON

DRAWINGS. 12. CENTERLINES OF FRAMING MEMBERS COINCIDE WITH COLUMN CENTERLINES, UNLESS

13. CENTERLINES OF COLUMNS AND FOUNDATIONS COINCIDE WITH GRID LINE INTERSECTIONS, UNLESS NOTED OTHERWISE.

14. THE CONTRACTOR SHALL OBTAIN COPIES OF THE LATEST CONTRACT DOCUMENTS, INCLUDING ALL ADDENDA, AND PROVIDE THE RELEVANT PORTIONS TO ALL SUB-CONTRACTORS AND SUPPLIERS PRIOR TO SUBMITTAL OF SHOP DRAWINGS AND FABRICATION AND ERECTION OF STRUCTURAL MEMBERS.

15. STRUCTURAL ENGINEER'S ACCEPTANCE MUST BE SECURED FOR ALL STRUCTURAL SUBSTITUTIONS.

16. NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED, OR OTHERWISE REDUCED IN STRENGTH WITHOUT STRUCTURAL ENGINEER'S APPROVAL

17. PERIODIC SITE OBSERVATION VISITS MAY BE PROVIDED BY THE ARCHITECT/ENGINEER. THE SOLE PURPOSE OF THESE OBSERVATIONS IS TO REVIEW THE GENERAL CONFORMANCE OF THE CONSTRUCTION WITH THE CONTRACT DOCUMENTS. THESE LIMITED OBSERVATIONS SHOULD NOT BE CONSTRUED AS CONTINUOUS OR EXHAUSTIVE TO VERIFY THAT ALL CONSTRUCTION IS IN COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL WORK IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.

REFERENCED CODES AND STANDARDS

NOTED OTHERWISE.

PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE CONTRACT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, UNLESS NOTED OTHERWISE:

2012 MICHIGAN BUILDING CODE, REFERENCING: 2012 INTERNATIONAL BUILDING CODE ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

COLD-FORMED METAL FRAMING: AISI S100--07 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS

ACI 301--08 SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS ACI 318--08 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE WITH 2012 MBC AMENDMENTS

ACI 530--08 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES ACI 530.1--08 SPECIFICATIONS FOR MASONRY STRUCTURES

WITH 2012 MBC AMENDMENTS **ROUGH CARPENTRY:** NDS--05 NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION WITH 2005

STRUCTURAL STEEL: AISC 2010 STEEL CONSTRUCTION MANUAL, FOURTEENTH EDITION AISC 303-05 CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AISC 360-05 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS

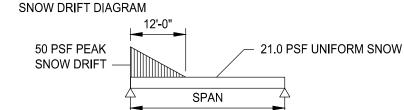
DESIGN CRITERIA

3.0 PSF 3.0 PSF 5.0 PSF 5.0 PSF 3.0 PSF 4.0 PSF **EQUIPMENT** 0 PSF TOTAL 20 PSF LIVE LOADS: APPARATUS ROOM: 100 PSF OR ACTUAL WEIGHT LIVING QUARTERS: 40 PSF ROOFS: 20 PSF OR 300 LBS

UNLESS OTHERWISE SPECIFIED, THE INDICATED CONCENTRATED LOAD SHALL BE ASSUMED TO BE UNIFORMLY DISTRIBUTED OVER AND AREA 2 1/2 FT BY 2 1/2 FT AND SHALL BE LOCATED SO

LIVE LOADS THAT EXCEED 100 PSF SHALL NOT BE REDUCED.

SEE SNOW DRIFT DIAGRAM



WIND DESIGN DATA: MAIN WIND FORCE RESISTING SYSTEM PER ASCE 7-10 ULT. WIND SPEED 120 MPH NOMINAL WIND SPEED 93 MPH RISK CATAGORY EXPOSURE CATAGORY ENCL. CLASS ENCLOSED INT. PRESSURE +0.18 DIRECTIONALITY (kd) 0.85 ROOF SLOPE

WIND BASE SHEAR: EAST-WEST DIRECTION 65.0 KIPS NORTH-SOUTH DIRECTION 55.0 KIPS

EARTHQUAKE DESIGN DATA: SEISMIC IMPORTANCE FACTOR (Ie): 1.5 (OCCUPANCY CATEGORY IV) MAPPED SPECTRAL RESPONSE ACCELERATIONS

SHORT PERIOD (Ss): 1-SECOND PERIOD (S1) 0.045 g SITE CLASS: DESIGN SPECTRAL RESPONSE ACCELERATIONS SHORT PERIOD (SDS): 0.0831-SECOND PERIOD (SD1) 0.072 g SEISMIC DESIGN CATEGORY

BASIC SEISMIC-FORCE-RESISTING SYSTEM(S) EAST-WEST DIRECTION: ORDINARY REINFORCED MASONRY SHEAR WALLS NORTH-SOUTH DIRECTION ORDINARY REINFORCED MASONRY SHEAR WALLS SEISMIC DESIGN BASE SHEAR FAST-WEST DIRECTION: 86 KIPS

NORTH-SOUTH DIRECTION 86 KIPS SEISMIC RESPONSE COEFFICIENT(S) EAST-WEST DIRECTION (Cs): 0.045 NORTH-SOUTH DIRECTION (Cs): RESPONSE MODIFICATION FACTOR(S) EAST-WEST DIRECTION (R): NORTH-SOUTH DIRECTION (R): **EQUIVALENT LATERAL FORCE** ANALYSIS PROCEDURE USED:

GEOTECHNICAL INFORMATION: FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT PREPARED BY TESTING ENGINEERS & CONSULTANTS, INC. TEC REPORT 56844, DATED JUNE 14, 2016.

THE PUBLISHED DESIGN ALLOWABLE VALUES ARE AS FOLLOWS:

FOUNDATIONS SHOULD BEAR ON NATIVE SOIL AND CAN BE DESIGNED FOR MAXIMUM NET ALLOWABLE BEARING PRESSURE OF 1500 PSF.

A 33% INCREASE IN THESE VALUES HAS BEEN USED IN THE DESIGN OF FOUNDATIONS TO RESIST WIND

THE FROST LINE FOR THIS LOCALITY IS 42 INCHES BELOW GRADE.

THE FOUNDATION DESIGN IS BASED ON THE PRESUMPTIVE LOAD-BEARING VALUES FOUND IN THE BUILDING CODE ASSUMING SOIL CLASSIFICATIONS OF CLAY, SANDY CLAY, SILTY CLAY, CLAYEY SILT, SILT AND SANDY SILT (CL, ML, MH AND CH). THE OWNER SHALL CONTRACT WITH A GEOTECHNICAL CONSULTANT TO VERIFY THIS ASSUMPTION AND PREPARE A GEOTECHNICAL INVESTIGATION REPORT TO BE SUBMITTED TO THE ARCHITECT/ENGINEER.

THE BUILDING IS NOT LOCATED IN WHOLE OR IN PART IN A FLOOD HAZARD AREA AS ESTABLISHED IN SECTION 1612.3 OF THE BUILDING CODE.

BALCONY RAILINGS AND GUARDRAILS: 50 PLF APPLIED HORIZONTALLY AT RIGHT ANGLES TO THE TOP RAIL OR 200 LBS APPLIED IN ANY DIRECTION AT ANY POINT.

INTERMEDIATE RAILS, PANEL FILLERS AND THEIR CONNECTIONS; LL=25 PSF APPLIED HORIZONTALLY AT RIGHT ANGLES OVER THE ENTIRE TRIBUTARY AREA, INCLUDING OPENINGS AND SPACES BETWEEN RAILS. REACTIONS DUE TO THIS LOADING NEED NOT BE COMBINED

ADDITIONAL LOADS FROM MECHANICAL EQUIPMENT IS NOTED SPECIFICALLY ON THE DRAWINGS.

SUBMITTALS

1. THE CONTRACTOR SHALL SUBMIT FOR ARCHITECT/ENGINEER'S REVIEW A SCHEDULE WHICH DETAILS THE ESTIMATED QUANTITY OF SUBMITTALS AND THE DATE THEY WILL BE RECEIVED, AT LEAST TWENTY WORKING DAYS PRIOR TO THE FIRST SUBMITTAL. THE SCHEDULE SHOULD ACCOUNT FOR AT LEAST TEN WORKING DAYS OF REVIEW TIME BY THE ARCHITECT/ENGINEER FOR EACH SUBMITTAL. THE ARCHITECT/ENGINEER SHALL REVIEW THE PROPOSED SCHEDULE AND SUBMIT COMMENTS TO THE CONTRACTOR, WHICH SHALL BE RE-SUBMITTED FOR RECORD.

2. THE CONTRACTOR IS TO REVIEW EACH SUBMITTAL PRIOR TO FORWARDING TO ARCHITECT/ENGINEER. THE CONTRACTOR IS TO STAMP EACH SUBMITTAL VERIFYING THAT THE FOLLOWING HAS BEEN ADDRESSED:

A) THE SUBMITTAL IS REQUESTED.

B) THE SUBMITTAL IS BASED ON THE LATEST DESIGN. C) THE SUBMITTAL IS COMPLETE. D) THE PROJECT NAME, LOCATION AND SUBMITTAL NUMBER ARE NOTED. E) THE WORK IS COORDINATED AMONG ALL CONSTRUCTION TRADES. F) THE SUBMITTAL DOES NOT INCLUDE SUBSTITUTION REQUEST. G) IF REQUIRED, SPECIALTY ENGINEER HAS SEALED SUBMITTAL

H) PREVIOUS ARCHITECT/ENGINEER'S COMMENTS HAVE BEEN ADDRESSED. I) REVISIONS ARE CLEARLY MARKED BY CIRCLING OR CLOUDS. 3. THE ARCHITECT/ENGINEER MAY RETURN, WITHOUT COMMENT, SUBMITTALS WHICH THE

CONTRACTOR HAS NOT STAMPED OR WHICH DO NOT MEET THE ABOVE REQUIREMENTS. 4. THE CONSTRUCTION, MANUFACTURE OR FABRICATION OF ANY ITEMS PRIOR TO ARCHITECT/ENGINEER REVIEW WILL BE ENTIRELY AT THE RISK OF THE CONTRACTOR.

5. ARCHITECT/ENGINEER'S REVIEW IS FOR GENERAL CONFORMANCE AND COMPLIANCE WITH DESIGN CONCEPT AND CONTRACT DOCUMENTS. ANY ACTION NOTED DOES NOT WAIVE ANY REQUIREMENTS OF CONTRACT DOCUMENTS; COORDINATION OF TRADES; AND SATISFACTORY PERFORMANCE OF THEIR WORK ARE CONTRACTOR'S COMPLETE RESPONSIBILITY.

6. FOR COMPONENTS THAT REQUIRE A SPECIALTY ENGINEER, THE SUBMITTAL SHALL BE SEALED BY THE ENGINEER RESPONSIBLE FOR THE DESIGN. SEALING OF THE SUBMITTAL IMPLIES THAT THE SPECIALTY ENGINEER HAS REVIEWED THE CONTRACT DOCUMENTS AND HAS TO THE BEST OF THEIR KNOWLEDGE INCORPORATED ALL OF THE SPECIAL DESIGN CRITERIA CONTAINED THEREIN.

7. "SPECIALTY ENGINEER" IS DEFINED AS THE STRUCTURAL ENGINEER EMPLOYED BY THE SUPPLIER TO DESIGN PRODUCTS TO MEET THE SPECIFIC CRITERIA OUTLINED IN THE CONTRACT DOCUMENTS.

8. THE ITEMS THAT REQUIRE SUBMITTALS FOR STRUCTURAL REVIEW ARE AS

FOLLOWS:

SPECIALTY **ENGINEER** REQUIRED REMARKS **CONCRETE MIX DESIGNS** NO CONCRETE REINFORCING LAYOUT NO MASONRY MATERIALS MASONRY REINFORCEMENT LAYOUT STRUCTURAL STEEL

8. THE ITEMS THAT REQUIRE SUBMITTALS FOR REVIEW OF INTERACTION WITH THE BASE BUILDING STRUCTURE ARE AS FOLLOWS:

REMARKS

ARCHITECTURAL ORNAMENTATION I.E. FLAGPOLES, CANOPIES, BANNERS, MASTS, ETC. HANGING EQUIPMENT OVER 300 LBS

NOTE: THE SUBMITTALS SHALL INDICATE THE MAGNITUDES, DIRECTIONS, LOCATIONS AND CONNECTION CONDITIONS OF ALL LOADS IMPOSED ON THE SUPPORTING STRUCTURE.



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No Scale

Key Plan

CITY OF BIRMINGHAM

BIRMINGHAM FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

Seal:

Issued For 07/29/16 FINAL REVIEW 12/05/16 BIDS

K.GILSON

M. EAGEN

S. PETERSON

Sheet Title: **STRUCTURAL**

Drawn:

Checked:

Approved:

Project Number:

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BACKFILLING

- 1. MATERIAL FOR BACKFILL OR ENGINEERED FILL REQUIRED TO ACHIEVE DESIGN GRADES SHOULD CONSIST OF NON-ORGANIC SOILS. THE ON-SITE SOILS THAT ARE FREE OF ORGANIC MATTER AND DEBRIS MAY BE USED FOR ENGINEERED FILL WITH ENGINEER'S APPROVAL.
- 2. BACKFILL MATERIAL SHALL BE COMPACTED TO 95% OF ITS' MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR METHODS (ASTM D1557), IN LIFTS NOT EXCEEDING 12-INCHES IN LOOSE THICKNESS.
- 3. FROZEN MATERIAL SHALL NOT BE USED AS FILL, NOR SHALL FILL BE PLACED ON FROZEN SUB-GRADE.
- 4. DO NOT PLACE BACKFILL AGAINST FOUNDATION WALLS UNTIL BASEMENT FLOOR LEVEL AND FIRST FLOOR LEVEL SLABS ARE IN PLACE AND HAVE REACHED 75% OF THEIR SPECIFIED DESIGN STRENGTH. SHORE AND BRACE WALLS AS REQUIRED IF BACKFILLING OPERATIONS ARE TO BE CARRIED OUT PRIOR TO PLACEMENT OF FLOOR SLABS.
- 5. PLACE BACKFILL AGAINST BOTH SIDES OF GRADE BEAMS AND FOUNDATIONS AT EQUAL ELEVATIONS OF FILL. EXCEPT AS SHOWN ON THE DRAWINGS.
- 6. CRUSHED SLAG USED AS BACKFILL SHALL BE AGED, ENVIRONMENTALLY SAFE PROCESSED BLAST FURNACE SLAG.

FOOTINGS & FOUNDATIONS

- 1. CONTRACTOR SHALL VERIFY ALL CONDITIONS, INCLUDING UNDERGROUND UTILITIES, AND FIELD MEASUREMENTS AT JOB SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
- 2. PROVIDE ALL NECESSARY SHEETING, SHORING, BRACING, ETC. AS REQUIRED FOR EXCAVATIONS TO PROTECT SIDES OF EXCAVATIONS AND ADJACENT STRUCTURES.
- 3. CONTRACTOR SHALL COMPLY FULLY WITH THE REQUIREMENTS OF MIOSHA, OTHER REGULATORY AGENCIES AND THE OWNER'S SITE SPECIFIC SAFETY PLAN AND REGULATIONS FOR SAFETY PROVISIONS.
- 4. BOTTOM OF FOOTING ELEVATIONS NOTED ON PLAN ARE MINIMUM VALUES. IN ALL CASES, FOOTINGS ARE TO BEAR ON UNDISTURBED NATURAL SOILS OR ENGINEERED FILL HAVING A MINIMUM NET ALLOWABLE BEARING CAPACITY OF 2,000 PSF.
- 5. FOOTINGS SHALL BE CENTERED UNDER COLUMNS AND WALLS UNLESS SPECIFICALLY DETAILED OTHERWISE ON THE DRAWINGS.
- 6. NO FOOTINGS OR SLABS SHALL BE PLACED ON OR AGAINST SUB-GRADE CONTAINING FREE WATER, FROST OR ICE. SHOULD WATER OR FROST, HOWEVER SLIGHT, ENTER A FOOTING EXCAVATION AFTER SUB-GRADE APPROVAL, THE SUB-GRADE SHALL BE RE-INSPECTED BY THE TESTING LABORATORY AFTER REMOVAL OF WATER OR FROST.
- 7. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUB-GRADE BEFORE AND AFTER PLACING OF CONCRETE UNTIL THE CONCRETE HAS REACHED ITS' DESIGN STRENGTH.
- 8. ALL FOUNDATION BEARING SOILS SHALL BE INSPECTED BY A QUALIFIED GEOTECHNICAL ENGINEER. THE TESTING SHALL INCLUDE, BUT NOT BE LIMITED TO, IDENTIFICATION OF SOILS AT AND BELOW THE FOUNDATION BEARING LEVEL, AND THE ALLOWABLE BEARING CAPACITY.
- 9. CONTRACTOR SHALL FURNISH ALL REQUIRED DEWATERING EQUIPMENT TO MAINTAIN A DRY EXCAVATION UNTIL BACKFILL IS COMPLETE.
- 10. AT LOCATIONS WHERE NEW FOUNDATIONS ARE TO BE DOWELED INTO EXISTING CONSTRUCTION, CLEAN THE CONTACT SURFACE USING THE BEST AVAILABLE MEANS AND APPLY A BONDING AGENT (LARSON WELDCRETE OR APPROVED ALTERNATE) PRIOR TO PLACING NEW CONCRETE.

CAST-IN-PLACE CONCRETE

- 1. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301- LATEST REVISION, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING", EXCEPT AS MODIFIED BY STRUCTURAL REQUIREMENTS NOTED ON THE DRAWINGS.
- 2. ALL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH AS NOTED BELOW:
 A. INTERIOR FOOTINGS AND FOUNDATIONS: 4000 psi
 B. INTERIOR SLAB ON GRADE: 4000 psi
 C. INTERIOR SUPPORTED SLABS: 4000 psi
 D. EXTERIOR CONCRETE EXPOSED TO WEATHER: 4500 psi
 E. EXTERIOR FOUNDATIONS NOT EXPOSED TO WEATHER: 4000 psi
- 3. ALL EXTERIOR CONCRETE INCLUDING WALLS SHALL BE AIR ENTRAINED 5% +/- 1%.

5. UNLESS NOTED OTHERWISE, MINIMUM CONCRETE COVER SHALL BE:

- 4. ALL EXTERIOR CONCRETE EXPOSED TO WEATHER SHALL HAVE A MAXIMUM WATER TO CEMENTITIOUS RATIO OF 0.45.
- CONCRETE CAST AGAINST EARTH 3-INCHES
 CONCRETE EXPOSED TO EARTH OR WEATHER 2-INCHES
 CONCRETE NOT EXPOSED EARTH OR WEATHER 3/4-INCHES
- 6. ALL REINFORCING SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60.
- 7. WELDED WIRE FABRIC SHALL BE FURNISHED IN FLAT SHEETS AND SHALL CONFORM TO ASTM A185 (FY = 75 KSI) AND HAVE A MINIMUM SIDE AND END LAP OF 8 INCHES.
- 8. THE CONTRACTOR SHALL SUBMIT THE CONCRETE MIX DESIGN(S) TO THE ENGINEER FOR REVIEW. PROPORTION MIX DESIGNS AS DEFINED IN ACI 301 SECTION 4. THE SUBMITTAL SHALL INCLUDE AS A MINIMUM CEMENT TYPE AND SOURCE, CEMENT CUBE STRENGTH, AGGREGATE GRADATIONS, WATER TESTS, AD-MIXTURE CATALOG INFORMATION AND CYLINDER STRENGTH TEST RESULTS FOR THE CONCRETE.
- 9. ALL REINFORCEMENT TO BE DETAILED, FABRICATED AND ERECTED ACCORDING TO THE ACI STANDARDS:
 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT", ACI 315 LATEST REVISION AND "MANUAL OF
 ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES", ACI 315R LATEST
 REVISION
- 10. THE CONTRACTOR SHALL PREPARE AND SUBMIT REINFORCEMENT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. THE SHOP DRAWINGS SHALL CLEARLY SHOW ALL REINFORCEMENT LENGTHS AND BENDS, LOCATIONS OF ALL BARS, VIBRATION AND CONSTRUCTION JOINTS. THE DRAWINGS SHALL ALSO INDICATE ALL OPENINGS, SLEEVES, CURBS AND CONCRETE DIMENSIONS IN ACCORDANCE WITH ACI 315.
- 11. LAPS, ANCHORAGES AND SPLICES SHALL COMPLY WITH THE REQUIREMENTS OF ACI 318-LATEST REVISION, SECTIONS 12.2 AND 12.15. LOCATIONS AND SPLICES SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION JOINT LOCATIONS, DETAILS AND AS SHOWN ON THE REINFORCING STEEL SHOP DRAWINGS.
- 12. PROVIDE DOWELS OF SAME SIZE AND SPACING AS VERTICAL REINFORCEMENT AT ALL COLUMNS AND
- 13. UNLESS OTHERWISE SHOWN OR NOTED, AS A MINIMUM, PROVIDE TWO #5 BARS (ONE EACH FACE) AROUND UNFRAMED OPENINGS IN SLABS AND WALLS. PLACE BARS PARALLEL TO SIDES OF OPENINGS AND EXTEND THEM 24 INCHES BEYOND CORNERS.
- 14. HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS WITH LAPS COMPLYING WITH THE REQUIREMENTS OF ACI 318-LATEST REVISION, SECTIONS 12.2 AND 12.15. UNLESS DETAILED OTHERWISE. CORNER BARS SHALL BE PROVIDED AT ALL CHANGE IN WALL DIRECTIONS AND SHALL BE OF THE SAME SIZE AND SPACING AS THE HORIZONTAL STEEL. EACH CORNER BAR LEG TO PROVIDE A LAP COMPLYING WITH THE REQUIREMENTS OF ACI 318-LATEST REVISION, SECTIONS 12.2, 12.5 AND 12.15. SPLICE UNLESS DETAILED OTHERWISE. EXTEND ALL HORIZONTAL WALLS REINFORCING THROUGH PIERS.
- 15. ALL CONSTRUCTION JOINTS SHALL BE FURNISHED WITH KEYWAY CENTERED ON MEMBERS. WHERE THE SIZE OF KEY IS NOT SHOWN ON THE DRAWINGS, THE KEY DEPTH SHALL BE 10% OF THE CROSS SECTION DIMENSION OF THE MEMBER MINIMUM 3/4".
- 16. ANCHOR RODS (FURNISHED BY STRUCTURAL STEEL CONTRACTOR) SHALL BE SET USING A TEMPLATE TO WITHIN 1/8" TOLERANCE IN ANY PLAN DIRECTION IN PIERS, FOOTINGS AND FOUNDATION WALLS, WITH THE MINIMUM PROJECTION AND EMBEDMENT LENGTHS AS INDICATED ON THE DRAWINGS.
- 17. PROVIDE 3/4" CHAMFER STRIP AT ALL EXPOSED CORNERS OF CONCRETE WALLS, INCLUDING EXPOSED CORNERS OF CONCRETE PIERS.
- 18. LOCATE ALL SLEEVES, OPENINGS, EMBEDDED ITEMS, ETC., AS INDICATED ON THE DRAWINGS. THE CONCRETE CONTRACTOR SHALL CHECK WITH ALL OTHER TRADES TO MAKE SURE THE SLEEVES, OPENINGS AND EMBEDDED ITEMS THAT ARE TO BE PROVIDED AND SET BY THEM ARE IN PLACE PRIOR TO PLACING OF CONCRETE IN THE AREA INVOLVED.

- 19. CONTRACTORS SHALL OBTAIN APPROVAL FROM THE ENGINEER, PRIOR TO PLACING OPENINGS OR SLEEVES, NOT SHOWN ON THE DRAWINGS, THROUGH ANY STRUCTURAL MEMBERS, ROOF, WALLS OR FOUNDATIONS. REVIEW ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR BASES, OPENINGS, SLEEVES, ANCHORS, INSERTS, CONDUITS, RECESSES AND OTHER DEVICES IN CONCRETE WORK BEFORE CASTING CONCRETE.
- 20. PROVIDE POCKETS OR RECESSES IN CONCRETE WORK FOR STEEL COLUMNS AND BEAMS AS REQUIRED AND / OR AS CALLED FOR IN THE SPECIFICATIONS EVEN IF NOT SHOWN ON THE DRAWINGS. PROVIDE CONCRETE FILL AFTER STEEL ERECTION TO SEAL OPENINGS.
- 21. REFER TO ARCHITECTURAL DRAWINGS FOR SLAB RECESSES AND/OR FLOOR FINISH MATERIALS.
- 22. WELDING OF REINFORCING STEEL IS PROHIBITED UNLESS SPECIFICALLY DETAILED. WELDING SHALL CONFORM TO AWS D1.4 SPECIFICATION.
- 23. CONCRETE CONTRACTOR SHALL INCLUDE IN HIS ESTIMATE ADDITIONAL CONCRETE QUANTITY AS REQUIRED TO COMPENSATE FOR DEFLECTIONS OF METAL DECK AND TO PROVIDE A LEVEL CONCRETE SURFACE. REFER TO STRUCTURAL STEEL AND METAL DECK NOTES FOR ADDITIONAL CONSIDERATIONS.
- 25. THE CONCRETE SHALL BE THOROUGHLY COMPACTED BY VIBRATION SUPPLEMENTED BY SPADING, PUDDLING OR AGITATION, TO PREVENT HONEYCOMBING AND TO INSURE THE ELIMINATION OF VOIDS. VIBRATION MUST BE DIRECT ACTION IN THE CONCRETE AND NOT AGAINST FORMS OR REINFORCEMENT. HONEYCOMBING, VOIDS AND LARGE AIR POCKETS WILL NOT BE ACCEPTABLE.
- 26. LOCATIONS OF CONTRACTION JOINTS ARE SHOWN ON THE PLAN DRAWING. THE JOINTS SHOWN MAY SERVE AS CONSTRUCTION JOINTS IF CONVENIENT FOR THE CONSTRUCTION SEQUENCE. THE LOCATION OF ANY ADDITIONAL CONSTRUCTION JOINTS PROPOSED BY THE CONTRACTOR SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER. ALL CONCRETE SLABS AND WALLS WITH CONSTRUCTION JOINTS SHALL BE PLACED PER ACI 302 1R.

STRUCTURAL STEEL

- 1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATION:
 - * WIDE FLANGE AND WT SHAPES A992
 - * HSS RECT. A500 GRADE B (FY = 46 KSI) * HSS ROUND - A500 GRADE B (FY = 42 KSI)
 - * PIPE A53 GRADE B TYPE E OR A106 GRADE B (FY = 35 KSI)

 * HP SHAPES A572 GR. 50
 - * ALL OTHER SHAPES AND PLATES A36
- " ALL OTHER SHAPES AND PLATES A30
- 2. THE FABRICATOR/ERECTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW, ENGINEERED AND CHECKED DRAWINGS SHOWING SHOP FABRICATION DETAILS, FIELD ASSEMBLY DETAILS AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL.
- 3. BEAM CONNECTIONS SHALL BE STANDARD TWO ANGLE WEB CONNECTIONS CAPABLE OF SUPPORTING 55% OF THE ALLOWABLE UNIFORM LOAD FROM THE ALLOWABLE LOADS ON BEAM TABLES IN THE AISC CODE, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.
- 4. ALL CONNECTIONS NOT SPECIFICALLY DETAILED, SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR. DETAILING SHALL BE PERFORMED USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE GENERAL DETAILS SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES, UNLESS SPECIFICALLY NOTED.
- 5. ALL CONNECTIONS SHALL BE SHOP WELDED IN ACCORDANCE WITH LATEST AWS SPECIFICATION USING E70XX ELECTRODES AND FIELD BOLTED WITH ASTM A325 SNUG TIGHT BOLTS INSTALLED IN ACCORDANCE WITH THE LATEST "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS."
- 6. EXCEPT AS NOTED ON THE DRAWINGS, STRUCTURAL STEEL BOLTS SHALL BE ASTM A325, 3/4" DIAMETER ALL VERTICAL BOLTS ARE TO BE INSTALLED "HEAD UP" UNLESS SPECIFICALLY NOTED. IF A BOLT CANNOT BE INSTALLED "HEAD UP", THE THREAD IS TO BE "SPOILED" AFTER THE BOLT HAS BEEN PROPERLY TIGHTENED AND THEN INSPECTED BY THE TESTING AGENCY.
- 7. HIGH STRENGTH BOLT INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF AISC AND THE "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS." PROVIDE FULLY PRETENSIONED JOINTS AT CONNECTIONS OF BRACING, WHERE BOLTS ARE IN TENSION, ARE SUBJECT TO LOAD REVERSALS OR FATIGUE, AND AT MOMENT CONNECTIONS. PROVIDE SLIP-CRITICAL JOINTS AT CONNECTIONS SUBJECT TO FATIGUE AND LOAD REVERSALS, OVERSIZED HOLES, SLOTTED HOLES AND WHERE SLIP AT THE FAYING SURFACES WOULD BE DETRIMENTAL TO THE PERFORMANCE OF THE STRUCTURE. ALL OTHER CONNECTIONS MAY HAVE SNUG-TIGHTENED CONNECTIONS UNLESS OTHERWISE NOTED.
- 8. ALL SIMPLE SHEAR CONNECTIONS SHALL BE CAPABLE OF END ROTATION AS PER THE REQUIREMENTS OF THE AISC CODE SECTION ON UNRESTRAINED MEMBERS, SECTION 1.15.4.
- 9. ALL ANCHOR RODS SHALL CONFORM TO ASTM F1554, GR. 36.
- 10. CONTRACTOR SHALL REFERENCE ARCHITECTURAL DRAWINGS FOR MISC. SHAPES AND PLATES WHICH MAY BE SHOP WELDED TO THE STRUCTURAL FRAMING SECTIONS TO MINIMIZE FIELD WELDING.
- 11. ALL FLOOR AND ROOF OPENINGS, UNLESS OTHERWISE NOTED, ARE TO BE FRAMED WITH L5X3X1/4 (LLV). VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH THE TRADE INVOLVED.
- 12. PROVIDE L4X4X1/4 SEATS AT COLUMN WEBS, WHERE REQUIRED FOR SUPPORT OF ROOF AND FLOOR DECKS.
- 13. ALL BEAMS SHALL BE FABRICATED WITH THE NATURAL CAMBER UP. PROVIDE CAMBERS AS INDICATED ON THE DRAWINGS.
- 14. ALL STIFFENER PLATES AND BEARING STIFFENERS ARE TO BE PROVIDED IN PAIRS.
- 15. SHEAR CONNECTORS SHALL BE MANUFACTURED BY NELSON STUD WELDING, DIV. OF TRW, OR ENGINEER APPROVED SUBSTITUTE, AND WELDED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 16. ALL STEEL TO RECEIVE ONE SHOP COAT OF PRIMER. OMIT PAINT AT HOLES FOR SLIP CRITICAL TYPE CONNECTIONS, AT STRUCTURAL STEEL TO BE FIREPROOFED, ENCASED OR IN CONTACT WITH CONCRETE, AND ON TOP FLANGE OF BEAMS RECEIVING SHEAR CONNECTORS.
- 17. NOT USED
- 18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES WITH RELATION TO TEMPERATURE DIFFERENTIALS, ESPECIALLY WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO CONCRETE WALLS, BEAMS OR COLUMNS.
- 19. PROVIDE TEMPORARY BRACING AS REQUIRED TO ENSURE STABILITY OF THE STRUCTURE UNDER FULL DESIGN LOADS UNTIL THE PERMANENT BRACING IS IN PLACE. CONTRACTOR SHALL PROVIDE NECESSARY SHORING WHERE REQUIRED DURING CONSTRUCTION.
- 20. SHOP AND FIELD TESTING OF WELDS AND OR BOLTS SHALL BE AS FOLLOWS:

BE PERFORMED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

ACCORDANCE WITH ASTM E709.

- A. ALL WELDS SHALL BE VISUALLY INSPECTED. 5% AT RANDOM SHALL BE MEASURED.B. FILLET WELDS FOR BEAM AND GIRDER SHEAR CONNECTION PLATES (10% AT RANDOM) SHALL BE
- CHECKED BY MAGNETIC PARTICLE IN ACCORDANCE WITH ASTM E709 FOR FINAL PASS ONLY.

 C. ULTRASONICALLY TEST 100% OF ALL FULL PENETRATION WELDS IN ACCORDANCE WITH AWS D1.1 2010
- CLAUSE 6, PART 'F', "ULTRASONIC TESTING (UT) OF GROOVE WELDS".

 D. CHECK BY CALIBRATED TORQUE WRENCH, 25% OF BOLTS IN EACH FULLY PRETENSIONED CONNECTION
- JOINT OR SLIP-CRITICAL CONNECTION JOINT, BUT NOT LESS THAN TWO (2) BOLTS PER CONNECTION.

 E. ULTRASONICALLY TEST 100 % OF ALL PARTIALLY PENETRATION COLUMN SPLICE WELDS IN ACCORDANCE WITH AWS D1.1 2010 CLAUSE 6, PART 'F', "ULTRASONIC TESTING (UT) OF GROOVE
- ACCORDANCE WITH AWS D1.1 2010 CLAUSE 6, PART 'F', "ULTRASONIC TESTING (UT) OF GROOVE WELDS".

 F. CHECK 100% OF CONTINUITY PLATE FILLET WELDS BY MAGNETIC PARTICLE ON LAST LAYERS IN
- G. THE OWNER'S TESTING AGENCY SHALL PERFORM ALL SHOP AND FIELD INSPECTION AND TESTING AS OUTLINED ABOVE.
- H. THE STRUCTURAL STEEL FABRICATOR AND ERECTOR SHALL SCHEDULE ALL WORK TO ALLOW THE ABOVE TESTING REQUIREMENTS TO BE COMPLETED.
- 21. STRUCTURAL STEEL SHALL NOT BE ALTERED IN THE FIELD FROM THAT SHOWN ON THE DESIGN DRAWINGS.
 MISMATCHED HOLES SHALL BE REAMED TO LARGER DIAMETER AND PROPERLY SIZED BOLTS AND WASHERS

USED FOR FINAL HOLE SIZE. CUTTING, BURNING OR WELDING NOT SHOWN ON DESIGN DRAWINGS SHALL NOT

- 22. ALL STRUCTURAL STEEL SHALL BE DETAILED, SHOP PRIME PAINTED OR HOT-DIPPED GALVANIZED, PIECE MARKED, FURNISHED, FABRICATED AND ERECTED ACCORDING TO THE AISC "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS", LATEST EDITION AND TO THE AISC "CODE OF STANDARD PRACTICE".
- 23. NON-SHRINK GROUT SHALL CONFORM TO "CORPS OF ENGINEERS SPECIFICATION FOR NON-SHRINK GROUT", CRD-C 621-LATEST EDITION. GROUT SHALL BE PREMIXED, NON-SHRINK, NON-CATALYZED NATURAL AGGREGATE GROUT FOR: (1) COLUMN LEVELING PLATES, WHICH ARE NOT BOLTED DOWN BEFORE COLUMN ERECTION, (2) ITEMS SET INTO CONCRETE BLOCKOUTS, DEPRESSIONS, OR TOPPINGS, AND (3) OTHER STRUCTURAL LOAD BEARING APPLICATIONS. THE SEVEN-DAY COMPRESSIVE FOR THE SPECIFIED CONSISTENCY SHALL BE AT LEAST, 7,000 PSI PLASTIC, 6,000 PSI FLOWABLE, AND 5,000 PSI FLUID CONSISTENCY.

OPEN WEB JOISTS

- 1. ALL OPEN WEB STEEL JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST "STEEL JOIST INSTITUTE" (SJI) SPECIFICATIONS.
- 2. WHERE NOTED, JOISTS SHALL BE DESIGNED FOR ADDITIONAL CONCENTRATED LOADS AND MOMENTS INDICATED IN SCHEDULES. SUBMIT DESIGN CALCULATIONS FOR REVIEW BY ARCHITECT-ENGINEER.
- 3. ALL JOISTS TO RECEIVE ONE COAT OF PAINT OR BE HOT-DIPPED GALVANIZED PER SPECIFICATIONS.
- 4. JOIST TO STEEL CONNECTIONS SHALL BE A MINIMUM OF TWO 1-1/2"x3/16" FILLET WELDS EXCEPT AT COLUMNS OR AS REQUIRED TO RESIST LOADS SHOWN ON THE DRAWINGS. AT COLUMNS, JOISTS SHALL BE ATTACHED BY 3/4" DIAMETER BOLTS. JOISTS BEARING ON MASONRY OR CONCRETE SHALL BE FIELD WELDED TO ANCHORED BEARING PLATES, SIZED AS INDICATED.
- 5. EXTEND JOIST BOTTOM CHORDS AT COLUMNS. CONNECT BOTTOM CHORD AFTER DEAD LOAD IS APPLIED. SIZE CONNECTION TO SUIT DETAILED LOADS.
- 6. MODIFY STANDARD JOIST FOR ADDITIONAL LOADS GIVEN ON PLAN OR FOR THE SPECIAL LOADING DIAGRAMS ON THE DRAWINGS. MODIFY JOIST SEATS WHERE INDICATED.
- 7. BRIDGING SHALL MEET THE MINIMUM REQUIREMENTS OF SJI UNLESS DETAILED OTHERWISE. HORIZONTAL BRIDGING SHALL BE CONTINUOUS TOP AND BOTTOM, ANCHORED AT EACH END AND WELDED TO EACH JOIST. DIAGONAL BRIDGING SHALL BE BOLTED TO EACH JOIST AND CLAMPED AT THE INTERSECTION WITH THE OPPOSITE BRIDGING.
- 8. ALL STEEL JOISTS SHALL BE CAMBERED FOR DEFLECTION DUE TO DEAD LOADS OR AS SPECIFICALLY NOTED ON PLAN.
- 9. FOR JOISTS AND SPECIAL JOISTS LIVE LOAD DEFLECTION SHALL NOT EXCEED L/360.
- FOR POINT LOADS SUPPORTED BY THE JOIST NOT AT THE PANEL POINTS, ADD SUPPLEMENTAL BRACING OR STRUTS IN ACCORDANCE WITH SJI.
 FABRICATION AND ERECTION
- 1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC 303-10 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
- 2. ALL HOLES SHALL BE DRILLED OR PUNCHED. NO BURNING OF HOLES WILL BE PERMITTED. SLOTTED HOLES MUST HAVE STRAIGHT AND SMOOTH SIDES.
- 3. THE SIZE OF A HOLE SHALL BE SUCH THAT A BOLT 1/16" LESS IN DIAMETER THAN THAT OF HOLE CAN BE INSERTED THEREIN. ALL BOLT HOLES SHALL BE PERFECTLY MATCHED.
- 4. IN PLANNING THE METHOD OF ERECTION AND DISTRIBUTION OF MATERIAL BEFORE AND DURING ERECTION, THE CONTRACTOR SHALL MAKE FULL ALLOWANCE FOR ANY OBSTRUCTIONS ENCOUNTERED WHICH MAY RESULT FROM WORK PERFORMED BY OTHER TRADES, AS WELL AS THE OPERATIONS OF THE OWNER.
- CONTRACTOR ON ACCOUNT OF ANY OBSTRUCTIONS NOW ON THE SITE OF THE BUILDING.

5. IT SHALL BE UNDERSTOOD THAT THERE WILL BE NO EXTRA CHARGE BY THE

- 6. FURNISH AND INSTALL ANY AND ALL NECESSARY TEMPORARY BRACING TO SQUARE AND PLUMB UP ALL WORK, AS REQUIRED, BEFORE BOLTING OR WELDING.
- 7. IN CASES WHERE MEMBERS DO NOT FIT OR HOLES DO NOT MATCH, THE HOLES SHALL BE REAMED OUT AND THE NEXT LARGER SIZE BOLT INSERTED. IF THE CONNECTION REQUIRES NEW HOLES, THEN NEW HOLES SHALL BE DRILLED. NO SUCH CORRECTIONS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER'S RESIDENT ENGINEER. BURNING OF HOLES IS STRICTLY PROHIBITED.
- 8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED BY THE ERECTION OF STRUCTURAL STEEL AS HEREIN SPECIFIED. THE CONTRACTOR SHALL REIMBURSE THE OWNER ACTUAL COST OF REPAIR AND OR REPLACEMENT.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE/DEMOLISH AND PROPERLY DISPOSE OF EXISTING STEEL, AS REQUIRED FOR THE INSTALLATION OF NEW STEEL.
- 10. TEMPORARILY SUPPORT ALL EXISTING UTILITIES IN WORK AREA AS REQUIRED TO COMPLETE SCOPE-OF-WORK ITEMS.
- 11. PRIOR TO THE COMPLETION OF THE SCOPE OF WORK, INSTALL PERMANENT SUPPORTS TO ALL EXISTING UTILITIES AFFECTED BY WORK AREA AS REQUIRED TO

THE SATISFACTION OF THE OWNER.

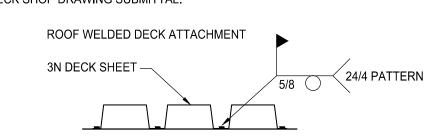
- 12. THE STRUCTURE HAS BEEN DESIGNED TO RELY UPON THE ROOF AND FLOOR SYSTEMS FOR STABILITY. IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO PROVIDE ADEQUATE TEMPORARY BRACING UNTIL THE ROOF DECK, PERMANENT BRACING, MOMENT CONNECTIONS, FLOOR SLABS, ETC. HAVE BEEN INSTALLED IN ACCORDANCE WITH THE DRAWINGS. THIS SHALL ALSO INCLUDE ANY SUPERIMPOSED CONSTRUCTION LOADS.
- 13. REPRODUCTIONS OF CONTRACT STRUCTURAL DRAWINGS SHALL NOT BE USED FOR SHOP DRAWINGS. ELECTRONIC FILES ARE NOT AVAILABLE FOR USE BY SUBCONTRACTORS.
- 14. FRAMING CONDITIONS NOT SPECIFICALLY DETAILED OR INDICATED SHALL BE FRAMED SIMILAR TO DETAILS SHOWN FOR THE RESPECTIVE MATERIAL OR CONDITION.

METAL DECK

- ALL METAL DECKS SHALL BE AS NOTED ON DRAWINGS, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST "STEEL DECK INSTITUTE" (SDI) SPECIFICATIONS.
- 2. THE CONTRACTOR SHALL FURNISH ALL ACCESSORIES INCLUDING CLOSURES, "Z" CLOSURES, COLUMN CLOSURES, SCREED ANGLES AND GIRDER FILLERS AS REQUIRED.
- 3. ROOF DECK SHALL HAVE A GALVANIZED COATING CONFORMING TO ASTM A653 COATING DESIGNATION G-60.
- 4. DESIGN OF FLOOR DECK AS A FORM SHALL CONFORM TO THE REQUIREMENTS OF SDI SPECIFICATIONS AND COMMENTARIES FOR COMPOSITE STEEL FLOOR DECK, EXCEPT THAT CALCULATED THEORETICAL DEFLECTIONS AS DEFINED UNDER PARAGRAPH 3.3 SHALL NOT EXCEED L/240 OR 1 INCH, WHICHEVER IS SMALLER.
- 5. THE METAL DECK SHALL BE DESIGNED TO BE CONTINUOUS OVER THREE (3) SPANS IN THE DIRECTION INDICATED. SINGLE AND DOUBLE SPANS, IF REQUIRED, SHALL SATISFY LOAD AND DEFLECTION REQUIREMENTS.
- 6. COMPOSITE FLOOR DECK SHALL HAVE A GALVANIZED COATING CONFORMING TO ASTM A653 COATING DESIGNATION G-60.
- 7. THE FABRICATOR/ERECTOR SHALL PROVIDE ENGINEERING CALCULATIONS, PUBLISHED MANUFACTURE'S DATA AND INDEPENDENTLY CERTIFIED TEST DATA, VERIFYING THE SPECIFIED DECK REQUIREMENTS TO THE ENGINEER FOR REVIEW. PROVIDE ENGINEERING AND CHECKED SHOP DRAWINGS, INDICATING LOCATION, GAGE AND SIZE OF EACH PIECE OF DECKING. THE DRAWING SHALL CLEARLY SHOW WELDING DETAILS TO STRUCTURAL FRAMING AND SIDE LAP CONNECTION DETAILS.
- 8. ALL NON-CELLULAR METAL DECK SHALL BE WIDE RIB, SUITABLE FOR SHEAR STUD PLACEMENT WHERE STUDS ARE REQUIRED. THE CONFIGURATION OF THE METAL DECK SHALL BE SUCH AS TO DEVELOP THE FULL SHEAR VALUE OF THE STUD FOR THE PARTICULAR WEIGHTS OF THE CONCRETE AS LISTED IN THE AISC SPECIFICATIONS, LATEST EDITION. THE METAL DECK CONTRACTOR SHALL PROVIDE VERIFICATION OF THE STUD VALUES AND PROVIDE ADDITIONAL STUDS AS REQUIRED.
- 9. METAL DECK ANCHORAGE 9a) WELDING

ALL WELDING OF METAL DECK SHALL BE IN STRICT ACCORDANCE WITH ANSI/AWS D1.3 STRUCTURAL WELDING CODE - SHEET STEEL. DECKING SHALL BE WELDED TO THE STRUCTURAL STEEL BY QUALIFIED WELDERS USING PRE-QUALIFIED PROCEDURES IN ACCORDANCE WITH AWS D1.1 CLAUSE 7, LATEST EDITION. THE ERECTOR SHALL ESTABLISH A WELDING PROCEDURE FOR THE STEEL DECKING TO THE STRUCTURAL STEEL FOR THE PARTICULAR GAGE USED. PRIOR TO THE START OF ERECTION OF THE STEEL DECK, EACH WELDER SHALL BE QUALIFIED USING THIS PROCEDURE AS WITNESSED BY THE OWNER'S TESTING AGENCY.

9b) MECHANICAL FASTENERS MAY BE SUBSTITUTED FOR WELDING AT THE ERECTORS OPTION. ACCEPTABLE METHODS INCLUDE POWDER ACTUATED, SCREWS AND PNEUMATICALLY DRIVEN FASTENERS. DOCUMENTATION OF THE STRENGTH AND STIFFNESS OF THE PROPOSED FASTENING SYSTEM SHALL ACCOMPANY THE METAL DECK SHOP DRAWING SUBMITTAL.



PAF/MECH FASTENER ALTERNATE
HILTI ENPZK/X - EDNK 22 ON 24/4 PATTERN FOR PRIMARY
STRUCTURAL @ ENDS & INTERIOR SUPPORTS

SIDELAP - HILTI #10 SCREW - 4 PER SPAN EDGE FAST HILTI PLN @ 1'-0' O.C.

SIDELAP - 5/8"Ø ARC SPOT - 4 PER SPAN

EDGE FAST - 5/8" ARC SPOT@ 1'-0" O.C.

ALTERNATE MANUFACTURERS ARE ACCEPTABLE WITH APPROVAL OF ENGINEER OF RECORD.

FOR CEILINGS, DUCTWORK, ELECTRICAL CONDUIT, PIPING, ETC. SHALL BE HUNG DIRECTLY FROM STRUCTURAL STEEL WORK OR SUPPLEMENTARY MEMBERS.

10. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM ANY ROOF DECK. ALL HANGERS

11. ALL METAL DECK CONSIDERATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING DOCUMENTS:
 1) STEEL DECK INSTITUTE

CDI COSP-2012
CODE OF STANDARD PRACTICE

2) STEEL DECK INSTITUTE SDI MANUAL OF CONSTRUCTION WITH STEEL DECK MOCZ-2006 (OR LATER ADOPTION)

GUANDRAIL

1. GUARDRAILS SHALL BE 1 1/2" SCHEDULE 40 STEEL PIPE ASTM A53 GRADE B (FY = 35 KSI).

- 2. INTERMEDIATE RAILINGS SHALL BE PROVIDED SUCH THAT A 21-INCH DIAMETER SPHERE CANNOT PASS THROUGH ANY OPENING.
- 3. POSTS SHALL NOT INTERRUPT THE CONTINUATION OF THE TOP RAIL AT ANY POINT ALONG THE RAILING, INCLUDING CORNERS AND END TERMINATIONS. THE TOP SURFACE OF THE TOP RAILING SHALL BE SMOOTH AND SHALL NOT BE INTERRUPTED BY PROJECTED FITTINGS.
- 4. ALL WELDS ARE TO BE GROUND SMOOTH.
- 5. ALL RETURNS AND TRANSITIONS SHALL BE CONTINUOUSLY SMOOTH AND FLOWING.
- 6. TOEBOARD SHALL CONFORM TO OSHA STANDARDS. TOEBOARD SHALL BE A MINIMUM OF 4" HIGH AND BE SET 1/4" ABOVE WALKING SURFACE.
- 7. ALL GUARDRAIL AND TOEBOARD SHALL BE PAINTED "SAFETY YELLOW".

MASON

- 1. CONCRETE MASONRY UNITS (CMU) SHALL BE LAID WITH TYPE S OR N MORTAR AND ALL MORTAR SHALL CONFORM TO ASTM C270. MORTAR MAY BE EITHER TYPE N OR S U.N.O. USE PORTLAND CEMENT/LIME FOR MORTAR.
- 2. CONCRETE MASONRY UNIT (CMU) PANELS SHALL HAVE HORIZONTAL JOINT REINFORCEMENT SPACED NOT MORE THAN 16 INCHES ON CENTER, LOCATED IN THE MORTAR BED JOINT, AND EXTENDING THE ENTIRE LENGTH OF THE PANEL, BUT NOT ACROSS EXPANSION JOINTS. LONGITUDINAL WIRES SHALL BE LAPPED A MINIMUM OF 6 IN. AT SPLICES. JOINT REINFORCEMENT SHALL BE PLACED IN THE PANEL. THE REINFORCEMENT SHALL BE PLACED IN THE BED JOINT IMMEDIATELY BELOW AND ABOVE OPENINGS IN THE PANEL. THE REINFORCEMENT SHALL HAVE NOT LESS THAN TWO PARALLEL LONGITUDINAL WIRES OF SIZE W1.7, AND HAVE WELDED CROSS WIRES OF SIZE W1.7.
- 3. CONCRETE MASONRY HAS BEEN DESIGNED IN ACCORDANCE WITH THE ACI 530.1/ ASCE 5-11/6-11 / TMS 602-11 BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES AND SPECIFICATIONS FOR MASONRY STRUCTURES.
- 4. ALL CONCRETE MASONRY UNITS (CMU) SHALL CONFORM TO ASTM C-90 GRADE N-1. CONCRETE MASONRY TO HAVE 28 DAY COMPRESSIVE STRENGTH FOR AN AVERAGE OF 3 UNITS OF FM=1500 psi.
- SPECIAL INSPECTION OF MASONRY CONSTRUCTION IS REQUIRED. REFER TO ACI 530, PART 3 AND IBC 2006, TABLE 1704.5.1 AND 1704.5.2 FOR MINIMUM QUALITY ASSURANCE REQUIREMENTS.
- 6. CONCRETE MASONRY UNITS (CMU) SHALL CONFORM TO THE FOLLOWING STANDARDS:
 HOLLOW LOAD-BEARING UNITS:
 ASTM C90
 TYPE I, GRADE N
 SOLID LOAD-BEARING UNITS:
 ASTM C145

7. POURABLE CONSISTENCY GROUT SHALL BE USED TO FILL CAVITIES AT BEAM, JOIST AND

MEDIUM WEIGHT UNITS: 110 TO 125 PCF REGULAR WEIGHT UNITS: 145 PCF

- METAL DECK BEARING, AT VERTICAL FILL OF HOLLOW CORES, AND IN BOND BEAMS AND REINFORCED MASONRY BEAMS, PIERS OR COLUMNS. GROUT SHALL CONFORM TO ASTM C476 WITH MINIMUM 28 DAY COMPRESSION STRENGTH OF 3000 PSI.
- 8. STEEL BAR REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60. HORIZONTAL JOINT REINFORCEMENT SHALL BE LADDER OR TRUSS TYPE.
- FREE OF MORTAR DROPPINGS.

 10. VERTICAL REINFORCING SHALL BE FULLY GROUTED IN THE CORES OF THE CONCRETE MASONRY UNITS AND SHALL BE LAPPED A MINIMUM OF 40 BAR DIAMETERS BUT NOT LESS THAN 24 INCHES. THE VERTICAL REINFORCEMENT SHALL BE LAPPED WITH DOWELS OF SAME SIZE AND SPACING WHICH HAVE BEEN PREVIOUSLY INSTALLED IN THE FOUNDATIONS.

9. VERTICAL CELLS CONTAINING REINFORCING AND GROUT SHALL FORM A CONTINUOUS CAVITY,

11. VERTICAL REINFORCING SHALL BE PLACED IN THE CENTER OF THE CELL, UNLESS SPECIFICALLY SHOWN OTHERWISE. ALLOWABLE SPACING TOLERANCE IS ± ½". THE USE OF

EMBEDMENT OF DOWELS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318.

- REINFORCEMENT BAR POSITIONERS IS REQUIRED.

 12. GROUTING OF MASONRY WALLS SHALL CONFORM TO THE RECOMMENDED PROCEDURE FOR "LOW LIFT GROUTING" OR "HIGH LIFT GROUTING" AS OUTLINED IN THE NCMA TEK NOTE #23A -
- 13. LIFTS OF GROUT SHALL BE KEYED 2 INCHES INTO THE PREVIOUS COURSE OF MASONRY

GROUTING FOR CONCRETE MASONRY WALLS.

MORTAR AND GROUT.

- SAMPLING AND TESTING OF MORTAR AND GROUT SHALL BE IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN THE NCMA - TEK NOTE #107 LABORATORY AND FIELD TESTING OF
- 15. TESTING OF MASONRY PRISMS SHALL BE IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN THE NCMA-TEK NOTE #22A PRISM TESTING FOR ENGINEERED CONCRETE MASONRY.
- 16. GRANULAR FILL INSULATION TO BE PERLITE OR OWNER APPROVED EQUIVALENT.
- 17. A REINFORCING BAR SHALL BE PLACED IN THE CORE DIRECTLY NEXT TO ALL OPENINGS AND FULLY GROUTED IN PLACE.

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Client:
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Project:
BIRMINGHAM
FIRE STATION No. 2

1600 WEST MAPLE

BIRMINGHAM, MI 48009

Cool

Date Issued For 07/29/16 FINAL REVIEW 12/05/16 BIDS

Drawn: K.GILSON

M. EAGEN

S. PETERSON

Sheet Title:
STRUCTURAL
NOTES

Checked:

Approved:

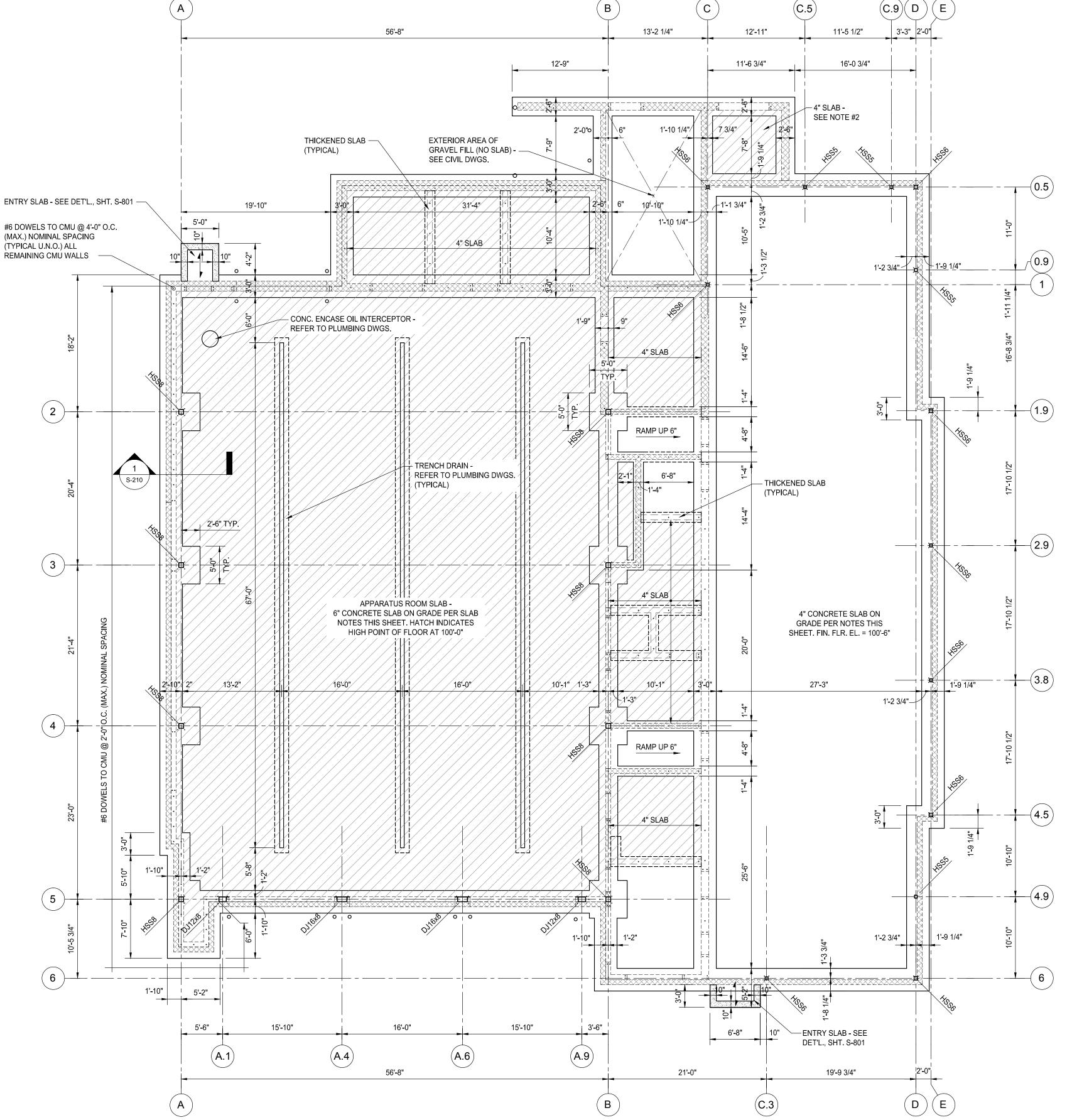
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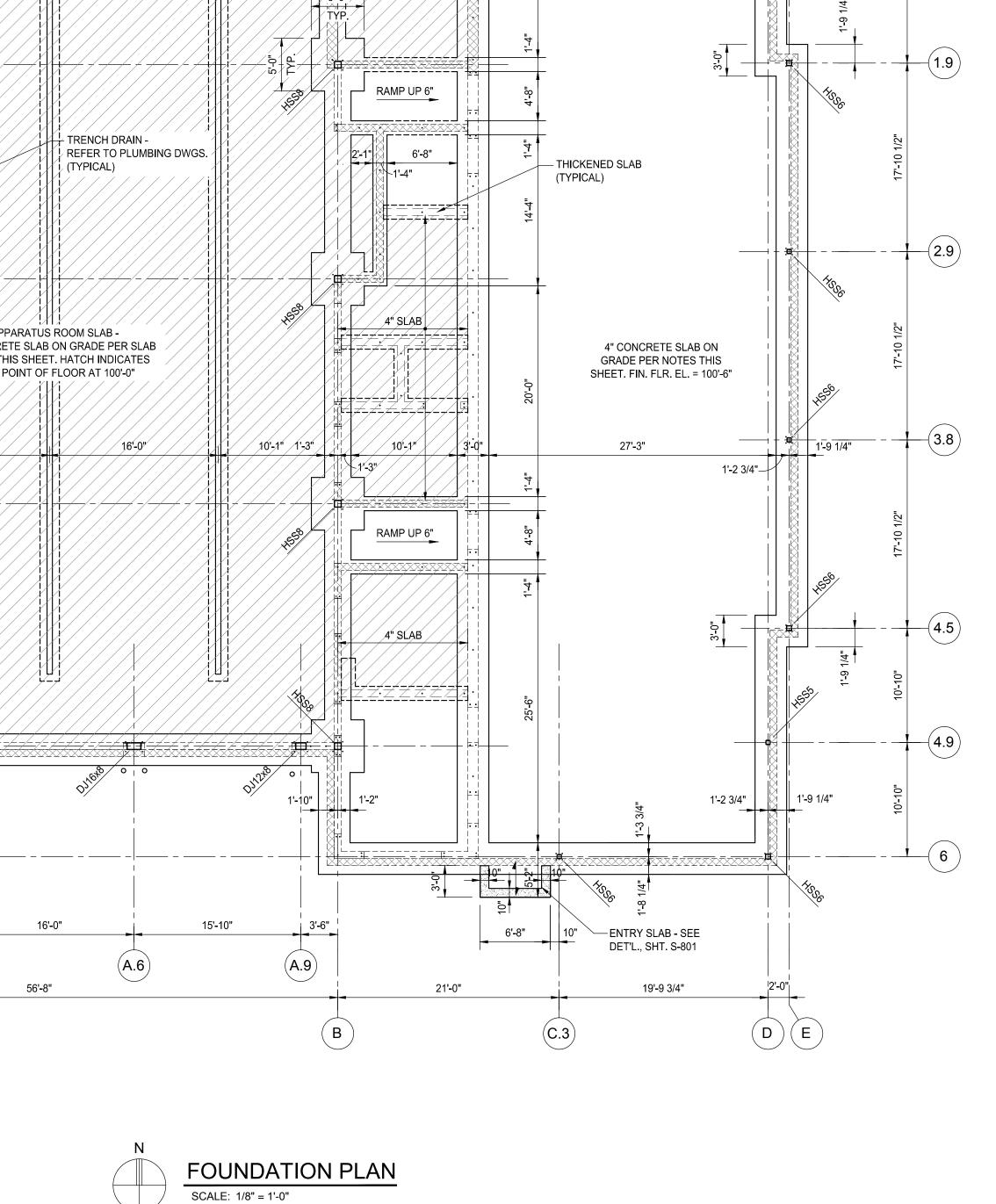
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SLAB ON GRADE NOTES:

A. APPARATUS ROOM SLAB:

- 1. TOP OF SLAB ELEVATION AT HIGH POINT = 100'-0", SLOPE SURFACE TO TRENCH DRAINS AS INDICATED ON THE PLUMBING DRAWINGS
- 2. 6" CONCRETE SLAB ON GRADE WITH 3#/CY OF EUCLID TUF-STRAND SF, PLACED ON 8"
- OF CLEAN SAND SUB-BASE AS FOLLOWS: PLACE AND COMPACT 1st 4" LIFT OF FILL
- INSTALL 10 MIL STEGOWRAP VAPOR BARIER per MANUFACTURER'S INSTRUCTIONS PLACE AND COMPACT 2nd LIFT OF SUB-BASE
- 3. WIRE MESH ALTERNATE 6" SLAB ON GRADE WITH 6 X 6 X 2.9 X 2.9 WELDED WIRE FABRIC REINFORCING MESH, SET AND MAINTAINED at 4" ABOVE THE PREPARED SLAB SUB-BASE.
- 4. CONSTRUCTION/CONTRACTION JOINT SPACING SHALL NOT EXCEED 15'-0" CENTER TO CENTER AND THE ASPECT RATIO OF SLAB PANELS BETWEEN JOINTS SHALL NOT EXCEED 1.5.
- 5. PROVIDE DIAMOND SHAPED ISOLATION JOINTS AT ALL REQUIRED COLUMN LOCATIONS WITH ½" PREMOLDED JOINT FILLER AND SEALANT AS INDICATED IN THE SPECIFICATIONS
- B. ALL OTHER FLOOR SLABS
- 6. TOP OF SLAB ELEVATION SHALL BE AS INDICATED
- 7. 4" CONCRETE SLAB ON GRADE WITH 3#/CY OF EUCLID TUF-STRAND SF, PLACED ON 8"
- OF CLEAN SAND SUB-BASE AS FOLLOWS: PLACE AND COMPACT 1st 4" LIFT OF FILL
- INSTALL 10 MIL STEGOWRAP VAPOR BARIER per MANUFACTURER'S INSTRUCTIONS PLACE AND COMPACT 2nd LIFT OF SUB-BASE
- 8. WIRE MESH ALTERNATE 6" SLAB ON GRADE WITH 6 X 6 X 1.4 X 1.4 WELDED WIRE
- FABRIC REINFORCING MESH, SET AND MAINTAINED at 2.5" ABOVE THE PREPARED SLAB
- 9. CONSTRUCTION/CONTRACTION JOINT SPACING SHALL NOT EXCEED 12'-0" CENTER TO CENTER AND THE ASPECT RATIO OF SLAB PANELS BETWEEN JOINTS SHALL NOT EXCEED 1.5.







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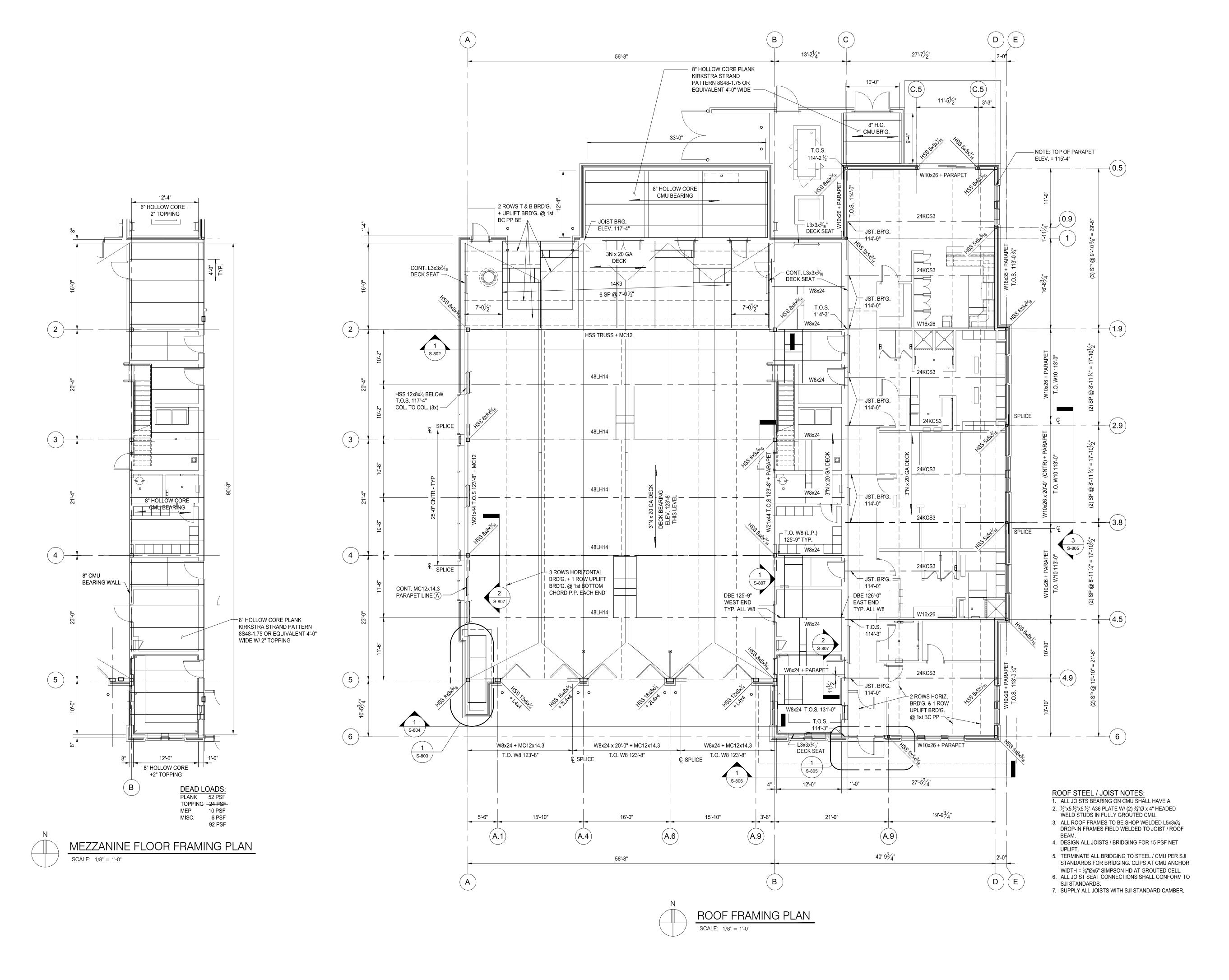
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FOUNDATION PLAN

Project Number:

15566

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12/05/16

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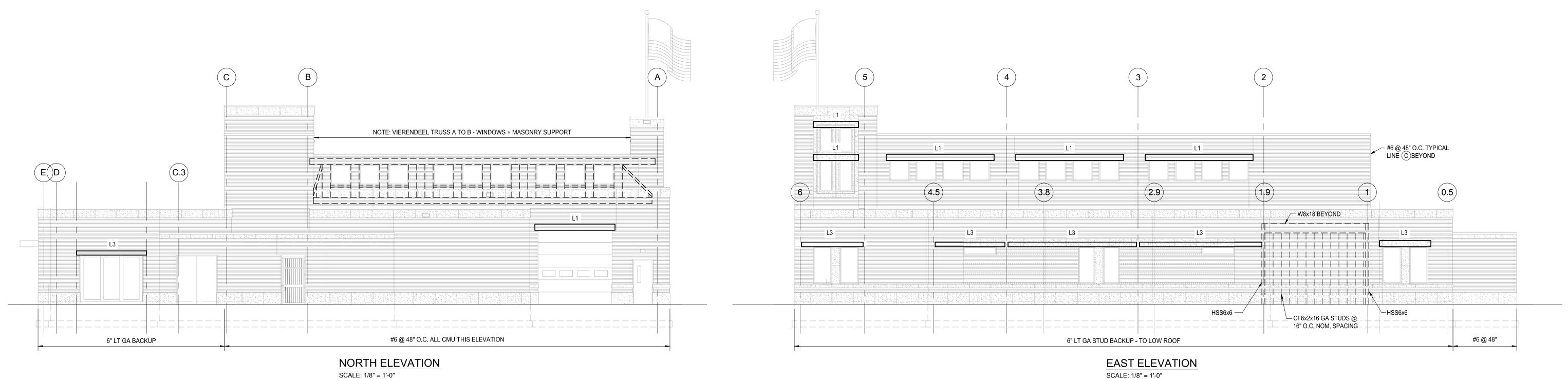
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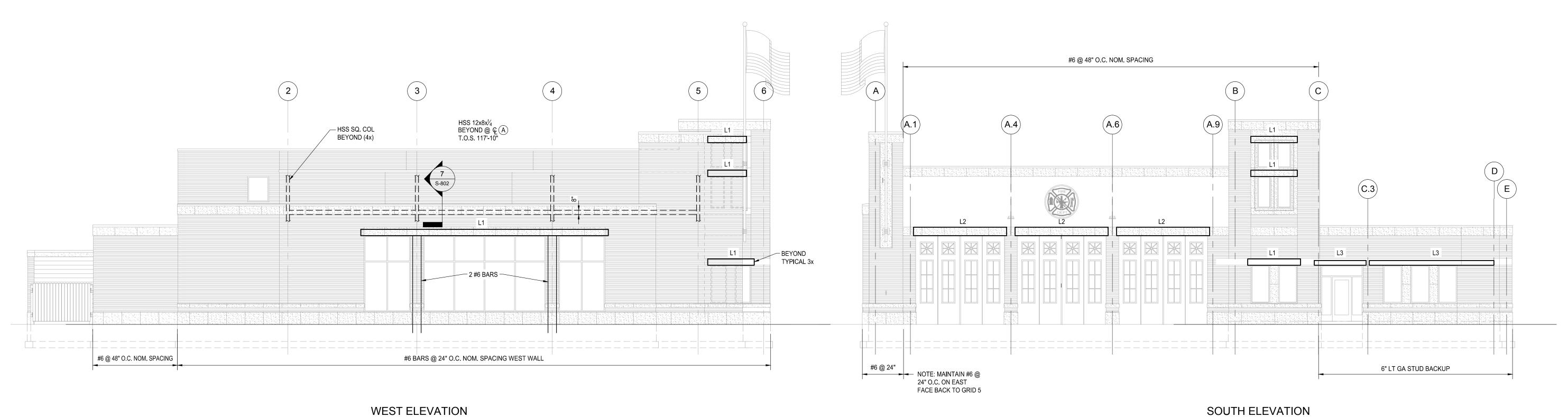
ROOF FRAMING PLAN

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Sheet Number: S-21

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

> LINTEL SCHEDULE MARK L-1 L-2 HSS 16x8 + PL. L-3 HSS 9x5 + PL. L-4 COORDINATE W8x24 + $\frac{3}{8}$ " MAS. PL. W/ ARCHITECTURAL FOR ALL INTERIOR LINTELS

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

LINTEL NOTES:

1. PROVIDE ¾"Ø NELSON DEFORMED BAR ANCHORS ON L4 LINTELS @ SPACING TO MATCH WALL REINFORCING STEEL.

2. L4 LINTELS SHALL BEAR ON ½"x7x8" A36 PLATES W/ 2 - 1/2"Øx4" HEADED WELD STUDS.

LINTEL TYPE L1 SCALE: 1 1/2"=1'-0"

3/8"x1'-3 3/8" PLATE -

_MC12x14.3 (2x)

-GROUT SOLID -

FULL LENGTH

PROVIDE CLEARANCE OPENINGS FOR VERT.

BARS AS REQ'D

REINF.

 $-\frac{1}{4}$ "x2" TIE @ 4'-0" O.C.± COORDINATE W/ PAT CMU



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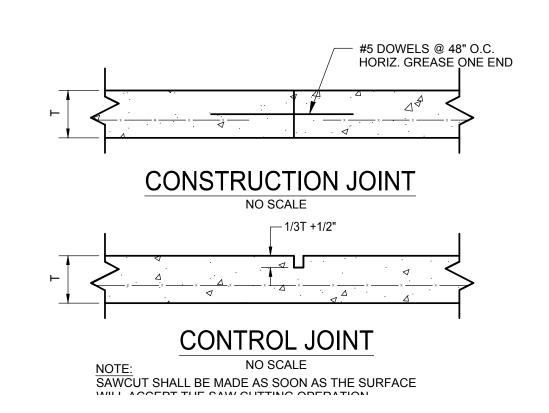
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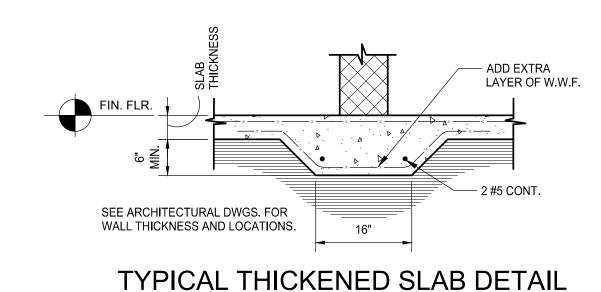
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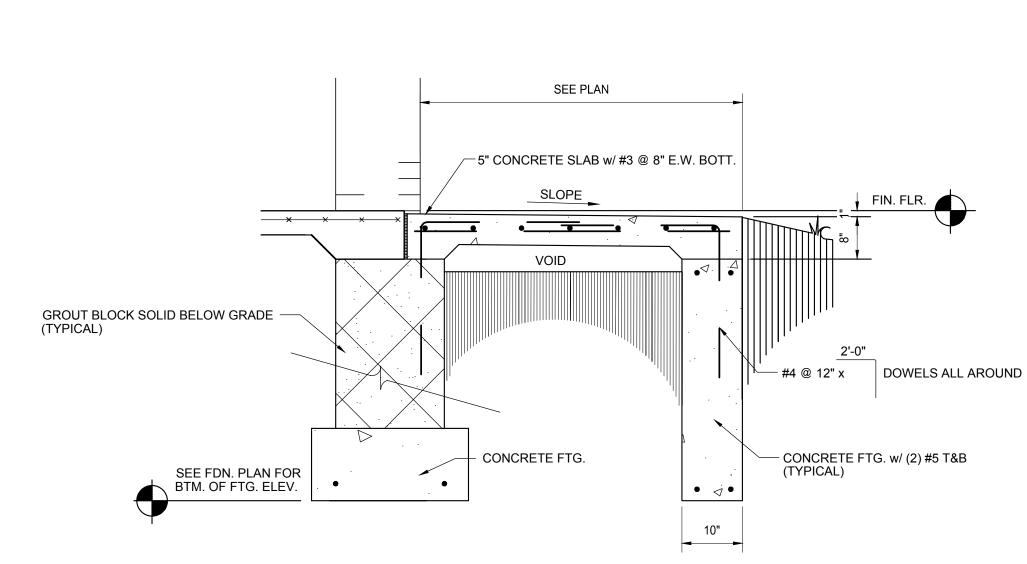
Sheet Title: LINTEL **ELEVATIONS &** SCHEDULE

Project Number:

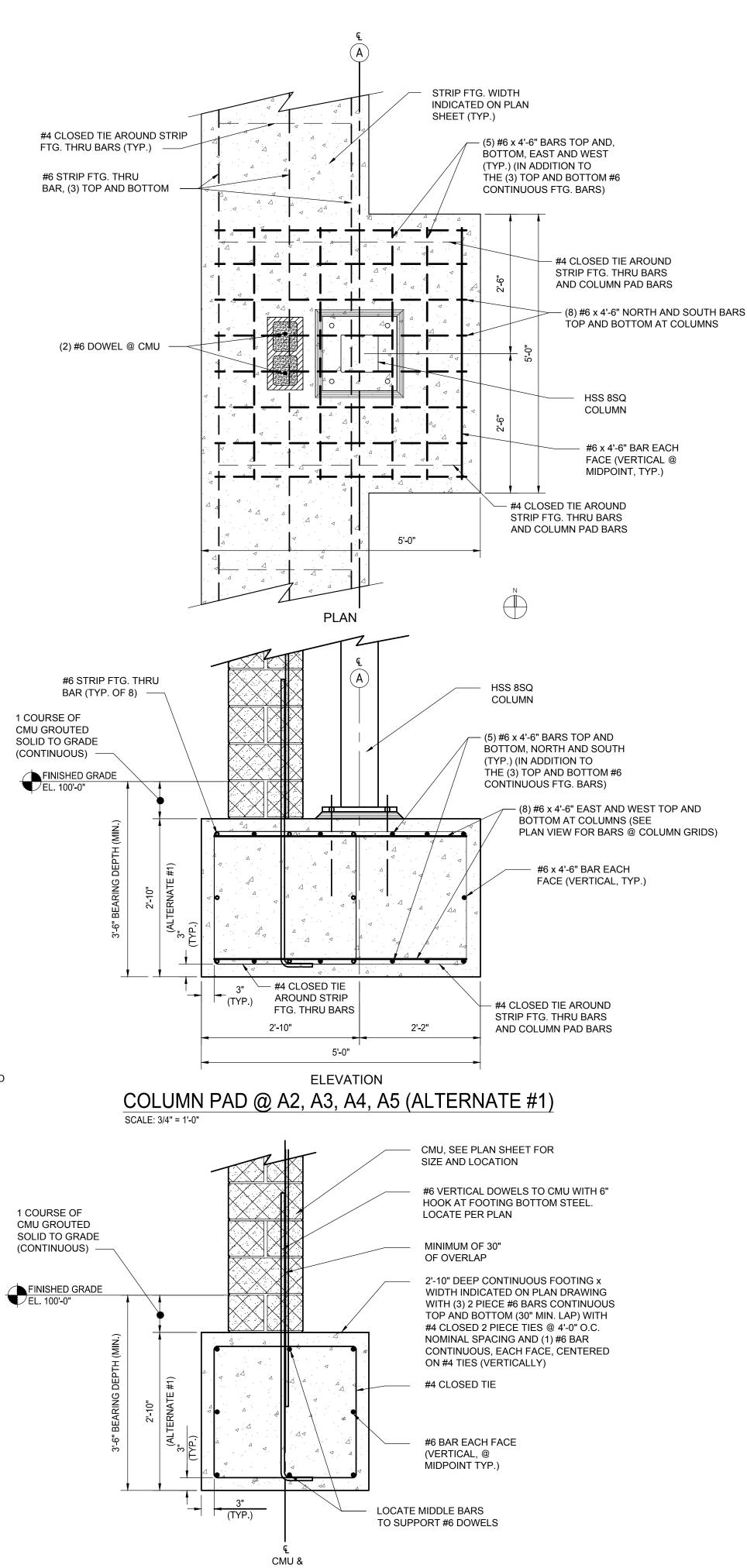




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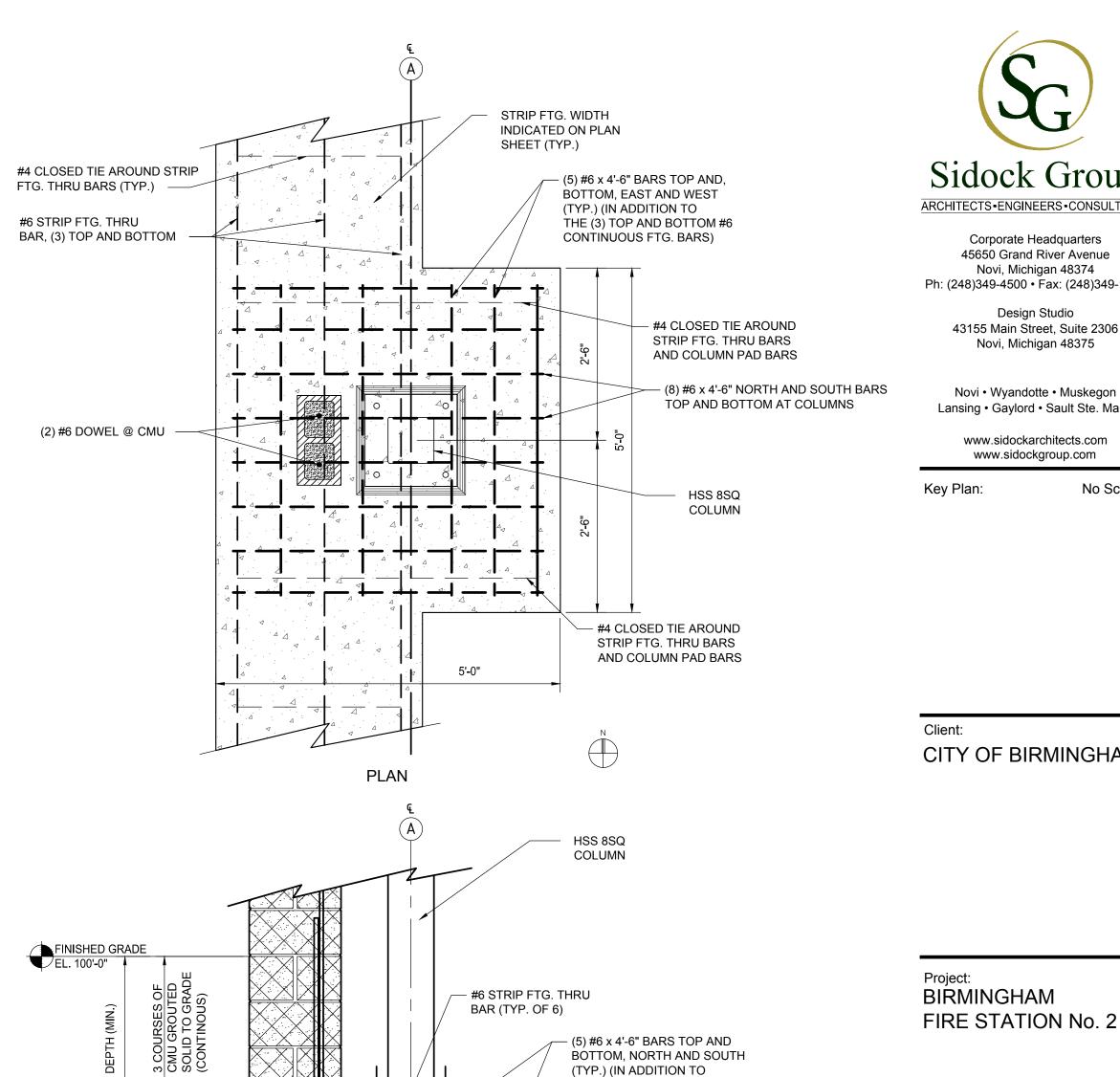


TYPICAL ENTRY SLAB DETAIL SCALE: 3/4" = 1'-0"



TYPICAL FOOTING AND REINFORCED MASONRY FOUNDATION DETAIL (ALTERNATE #1)

DOWELS



THE (3) TOP AND BOTTOM #6

(8) #6 x 4'-6" EAST AND WEST TOP AND

PLAN VIEW FOR BARS @ COLUMN GRIDS)

BOTTOM AT COLUMNS (SEE

CONTINUOUS FTG. BARS)

- #4 CLOSED TIE AROUND

STRIP FTG. THRU BARS

AND COLUMN PAD BARS

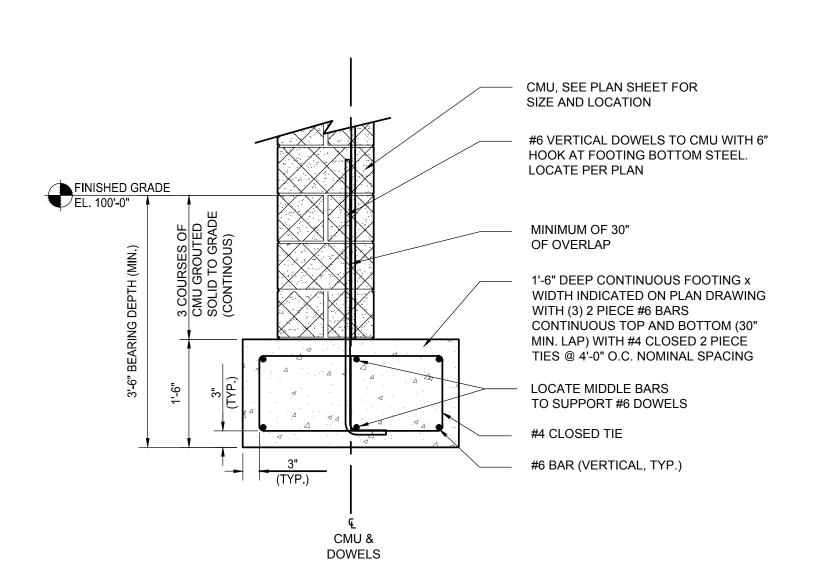
COLUMN PAD @ A2, A3, A4, A5 (BASE BID) SCALE: 3/4" = 1'-0"

5'-0"

ELEVATION

#4 CLOSED TIE

AROUND STRIP FTG. THRU BARS



TYPICAL FOOTING AND REINFORCED MASONRY FOUNDATION DETAIL (BASE BID) SCALE: 3/4" = 1'-0"



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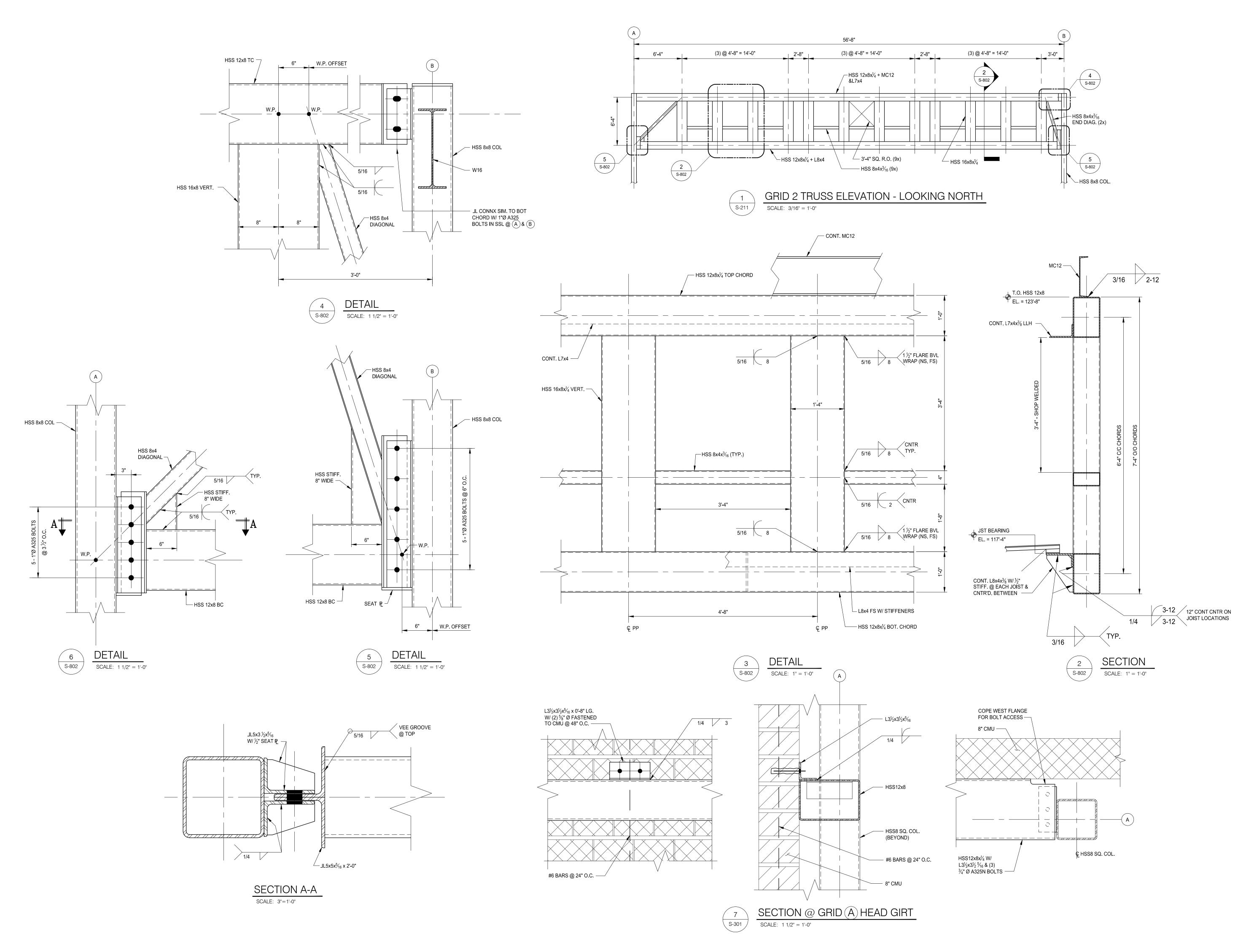
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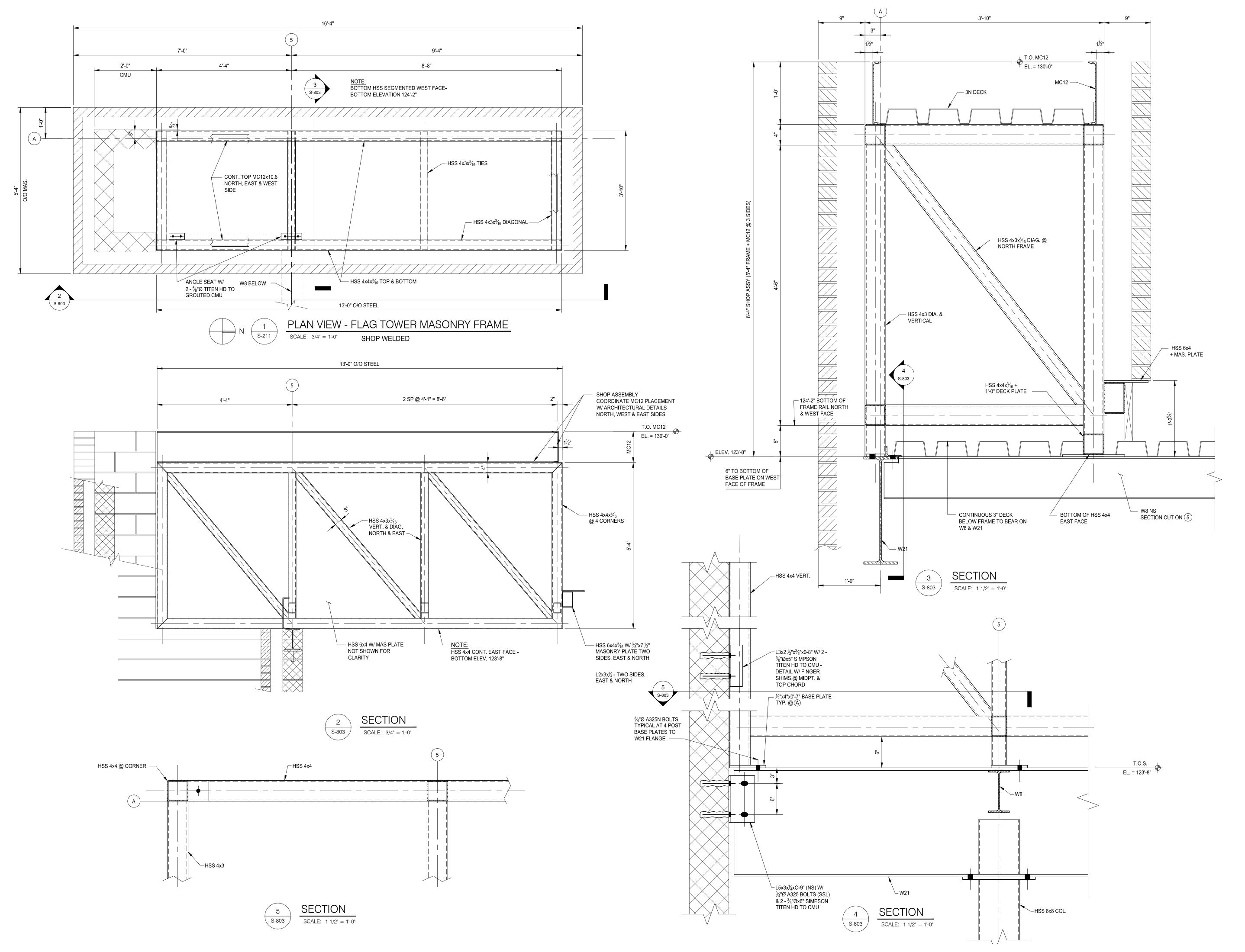
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FRAMING DETAILS

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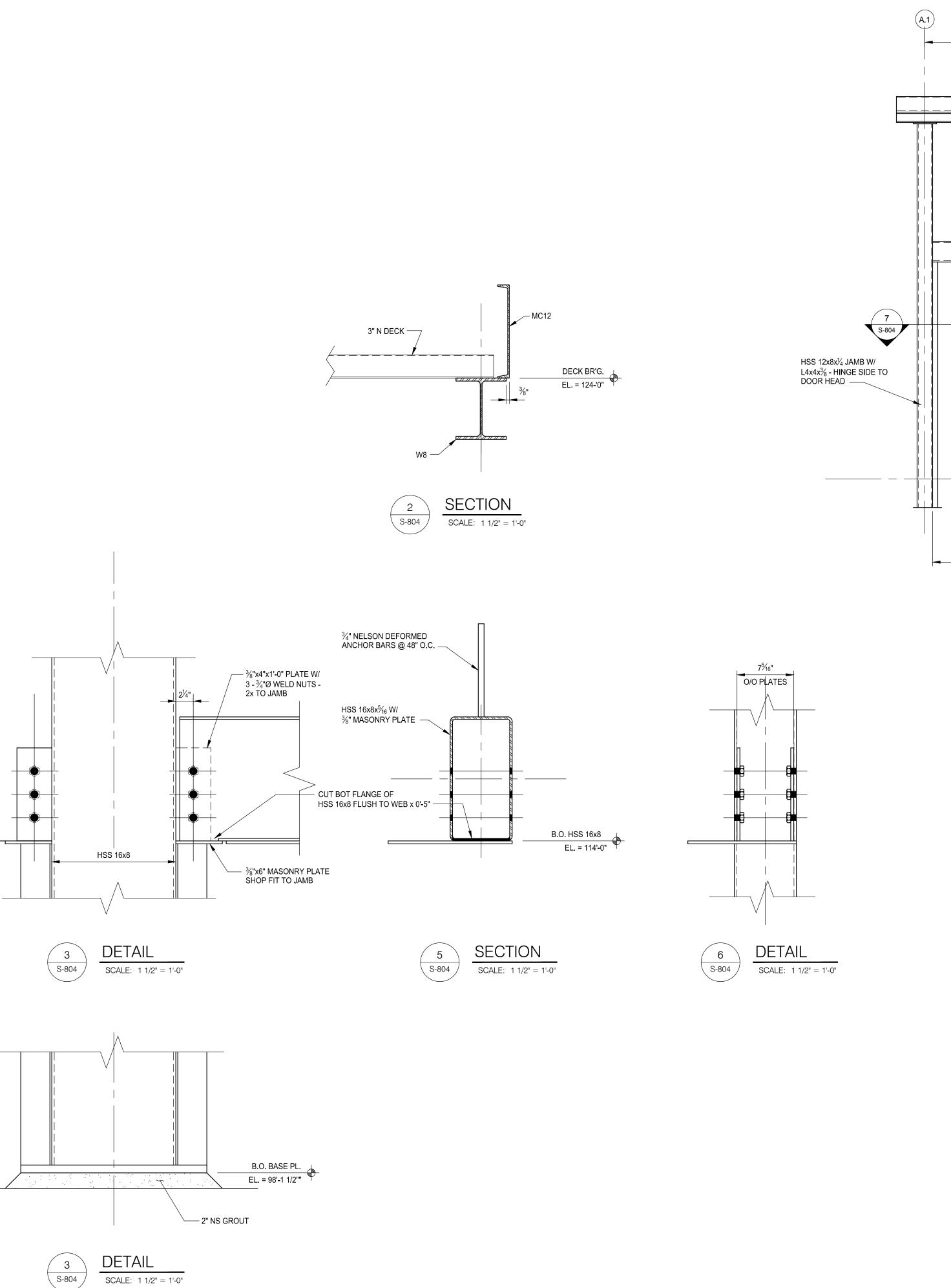
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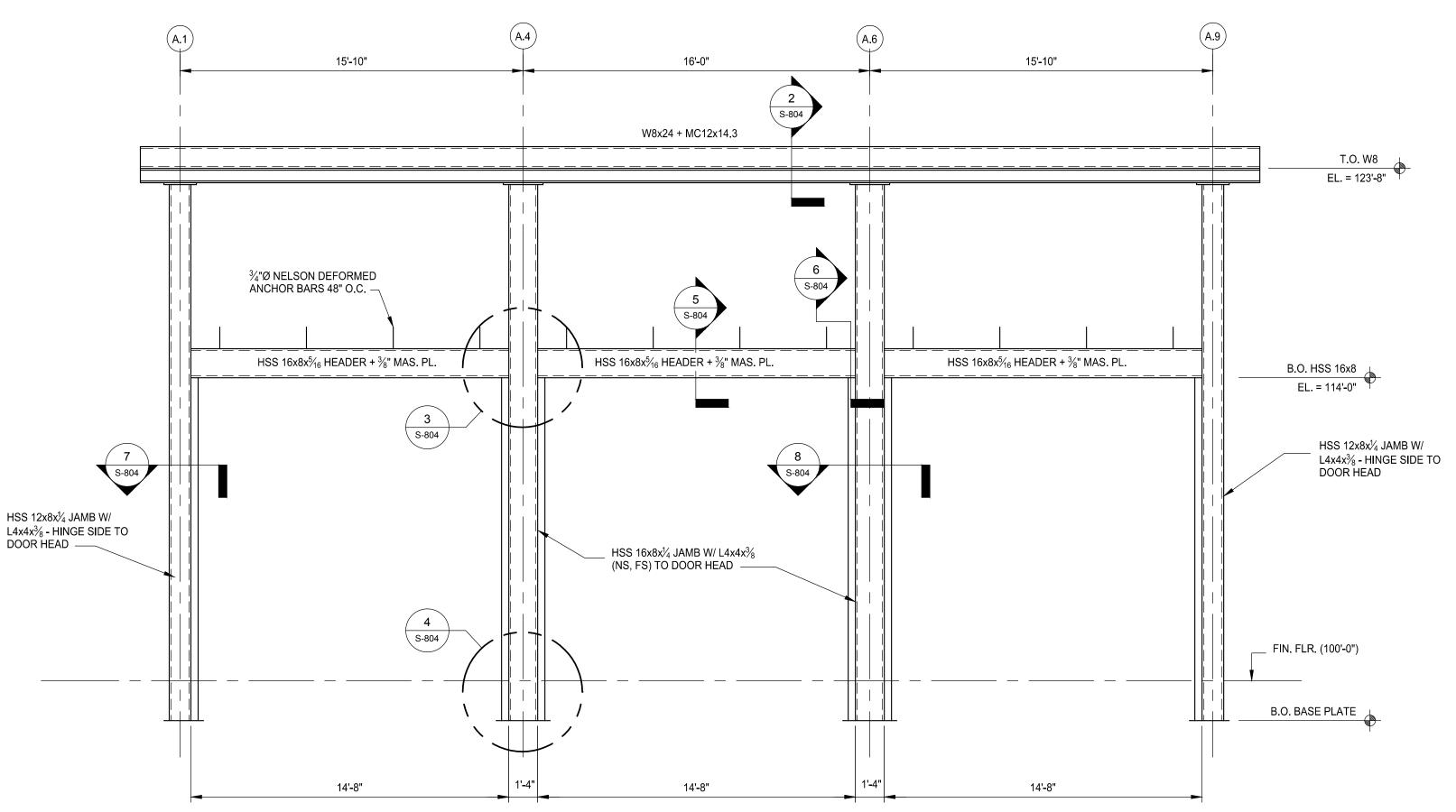
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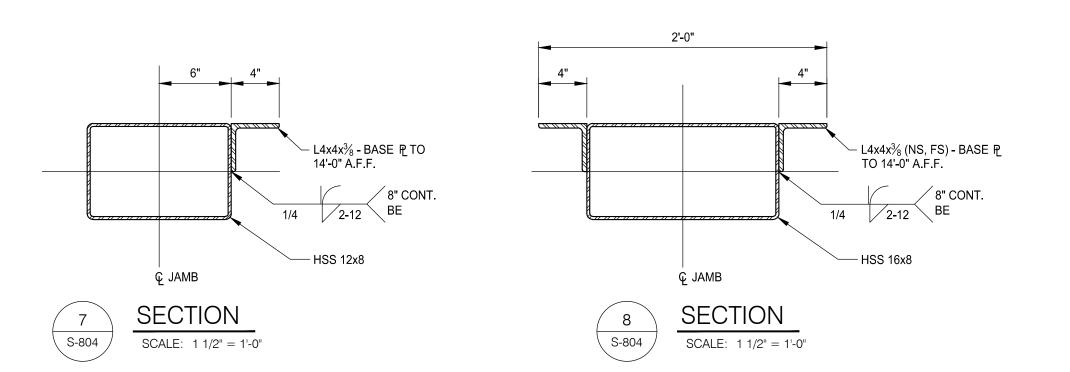
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ELEVATION @ APPARATUS BAY SOUTH WALL FRAMING S-211 SCALE: 1/4" = 1'-0"



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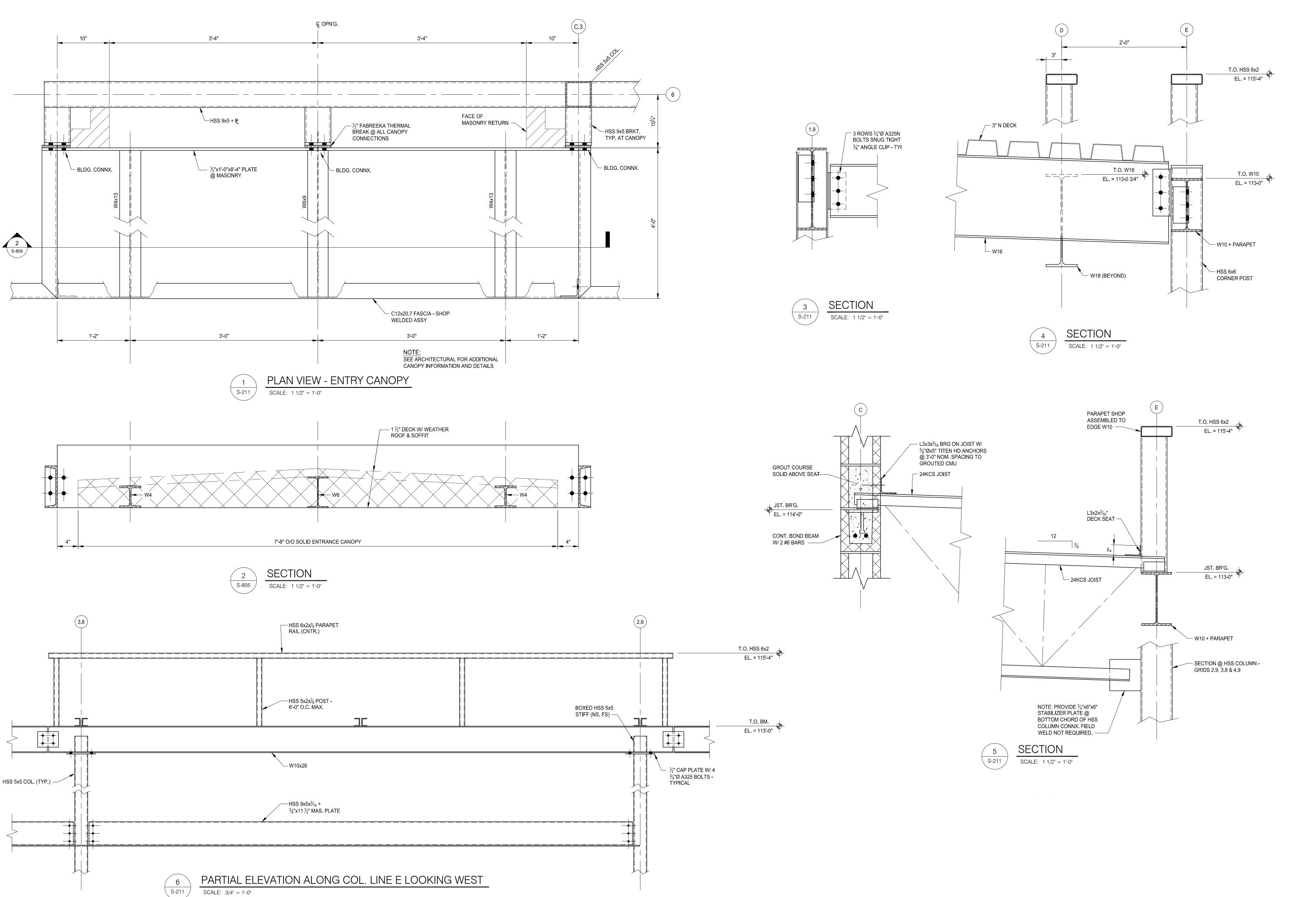
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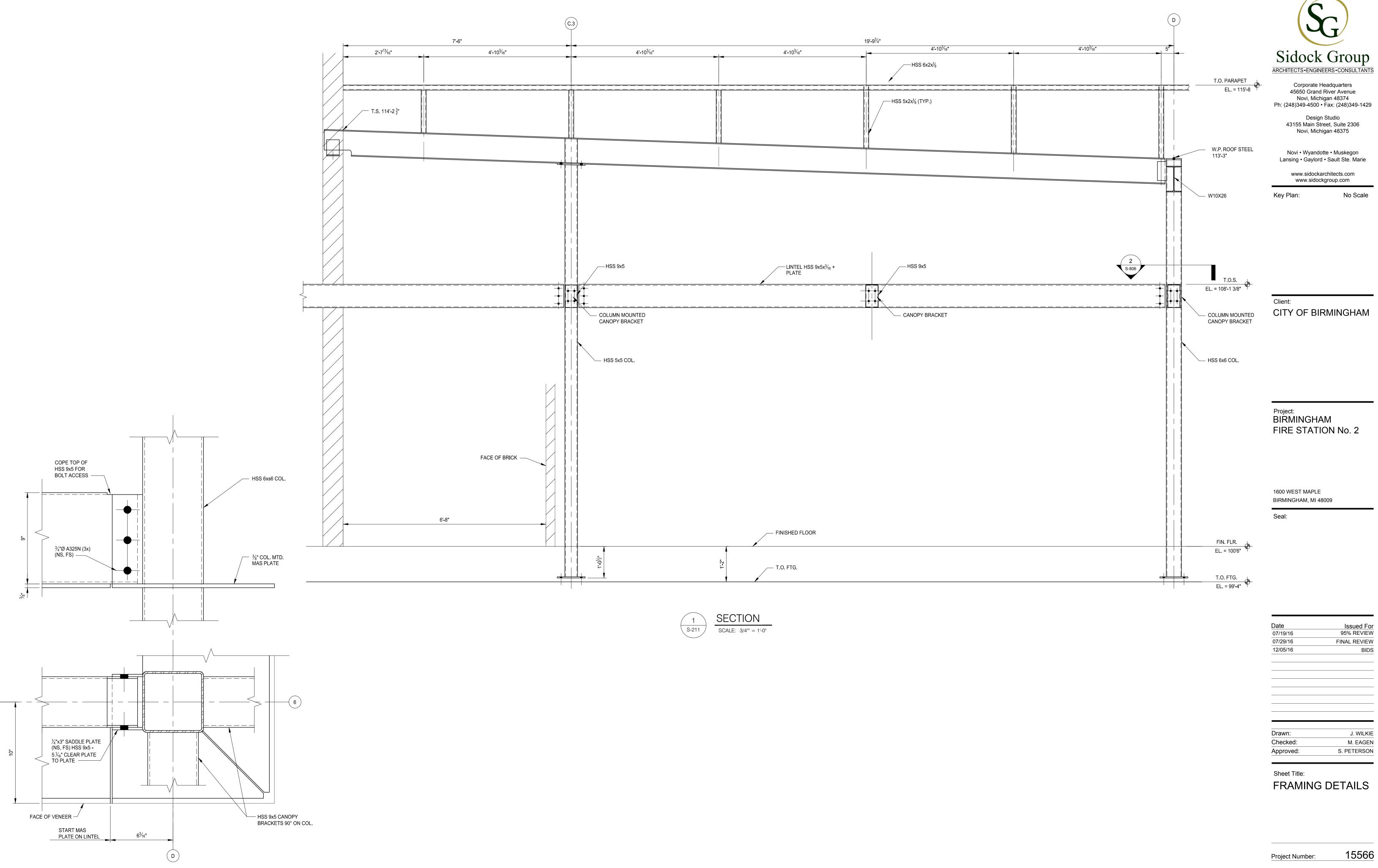
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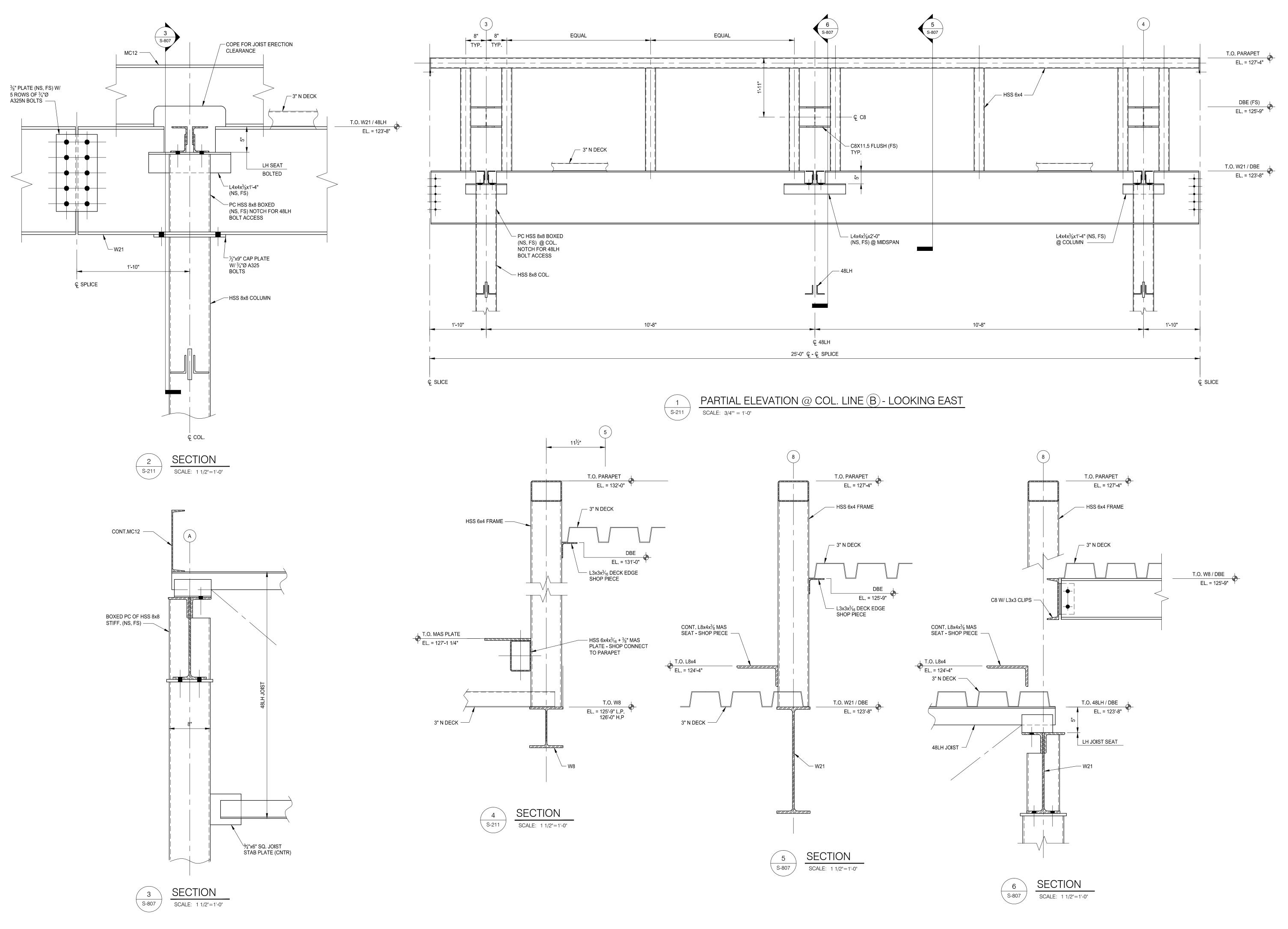
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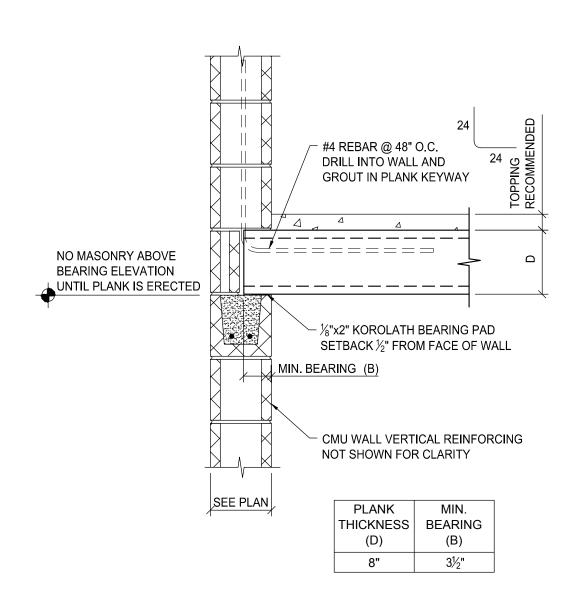
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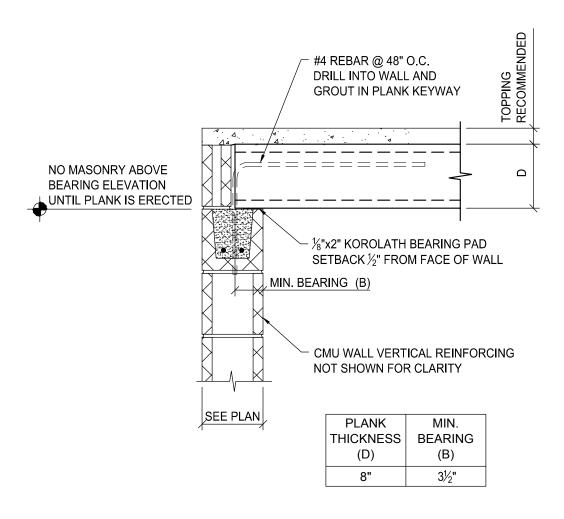
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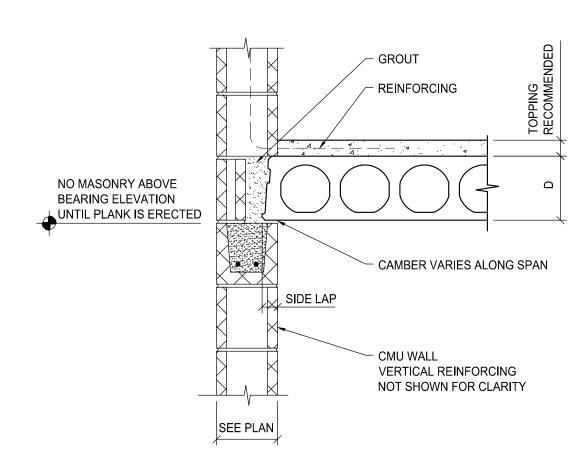
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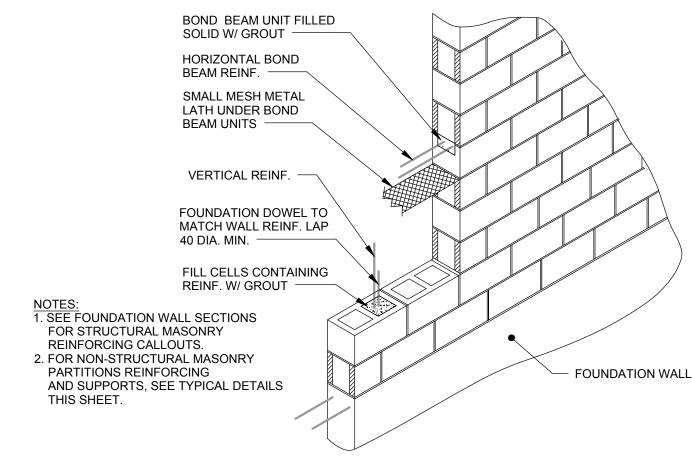
PLANK BEARING ON CMU WALL - REBAR UP SCALE: 1"=1'-0"



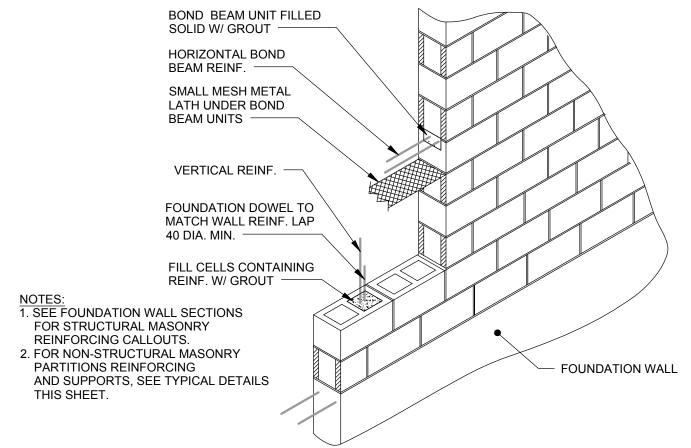
PLANK BEARING ON CMU WALL - REBAR DOWN SCALE: 1"=1'-0"



PLANK SIDELAP AT CMU WALL



TYPICAL REINFORCED HOLLOW MASONRY



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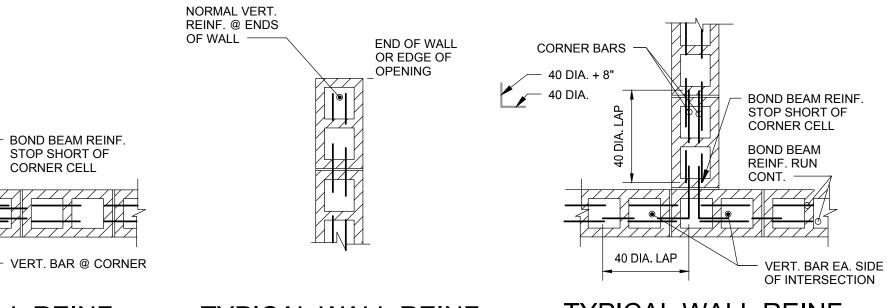
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TYPICAL WALL REINF. @ CORNERS

STOP SHORT OF

CORNER CELL

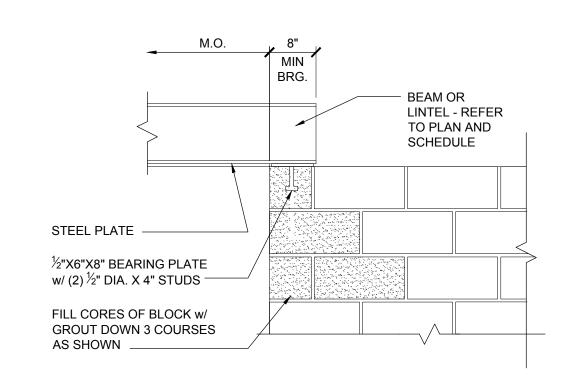
TYPICAL WALL REINF. @ END OF WALL

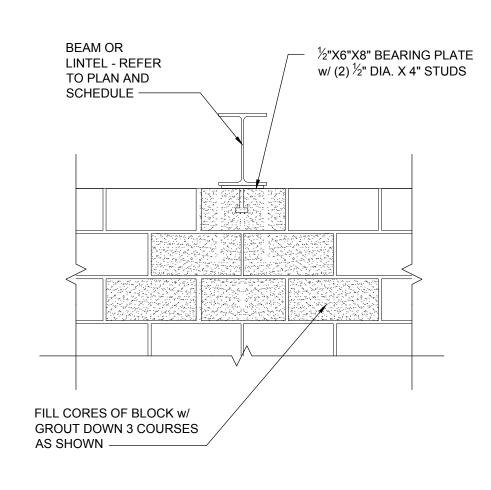
TYPICAL WALL REINF. @ INTERSECTION

Seal:

NOTES:

1. HOOK ALL REINF. THAT CANNOT BE EXTENDED.
2. GROUT ALL CELLS CONTAINING REINF., ANCHOR BOLTS OR OTHER EMBEDDED ITEMS.
3. TYPICAL REINF. SHOWN. USE MORE IF REQ'D. BY SPECIAL DETAIL.





Issued
FINAL REVI
В

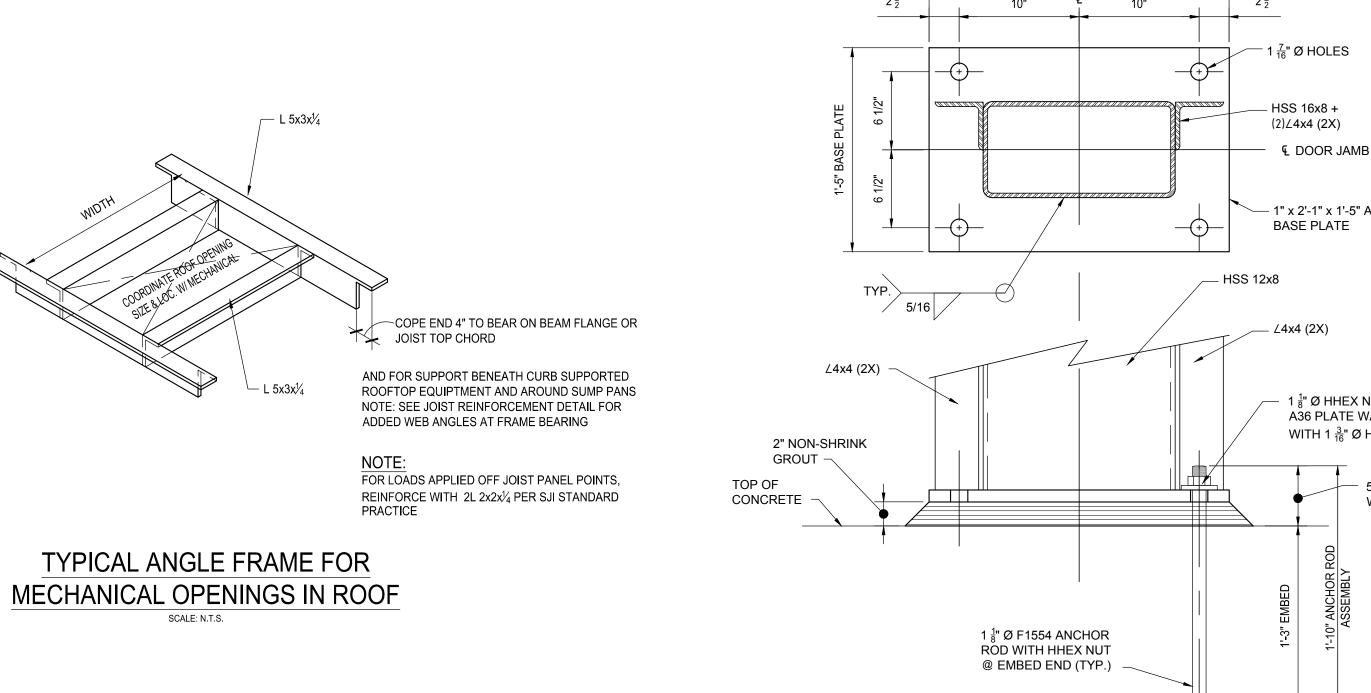
C. JOHNSON
S. PETERSON
S. PETERSON

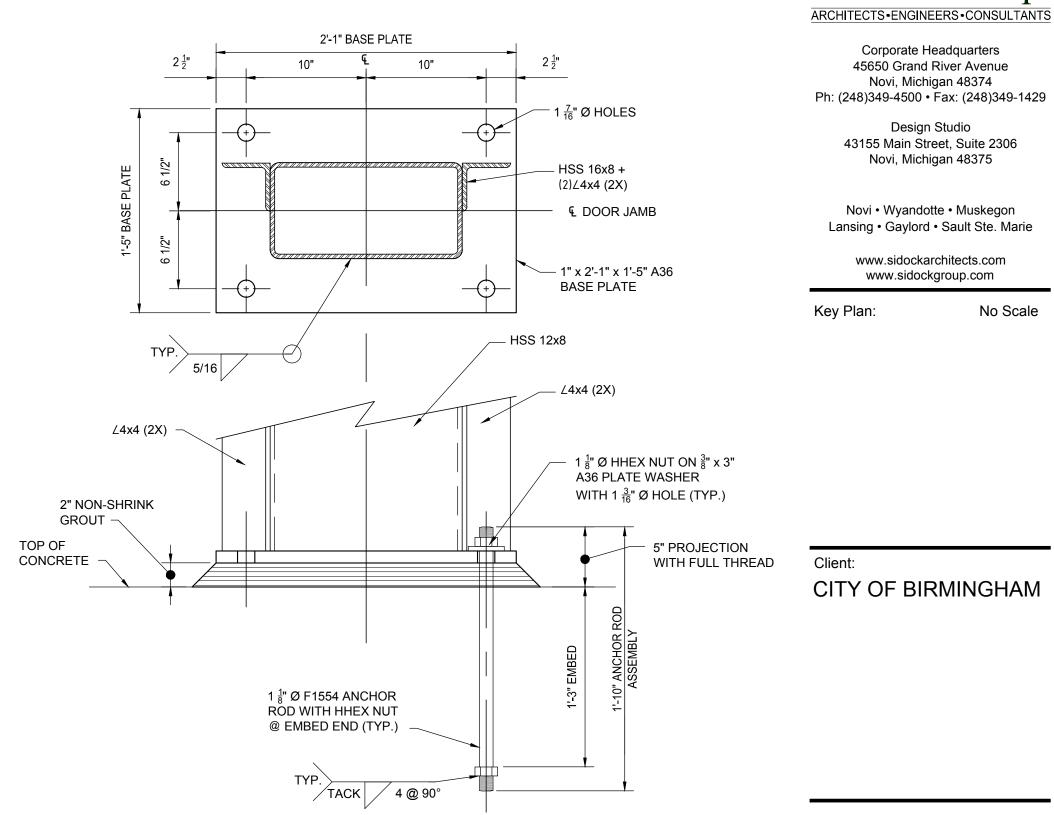
Sheet Title:

TYPICAL MASONRY DETAILS

Project Number:





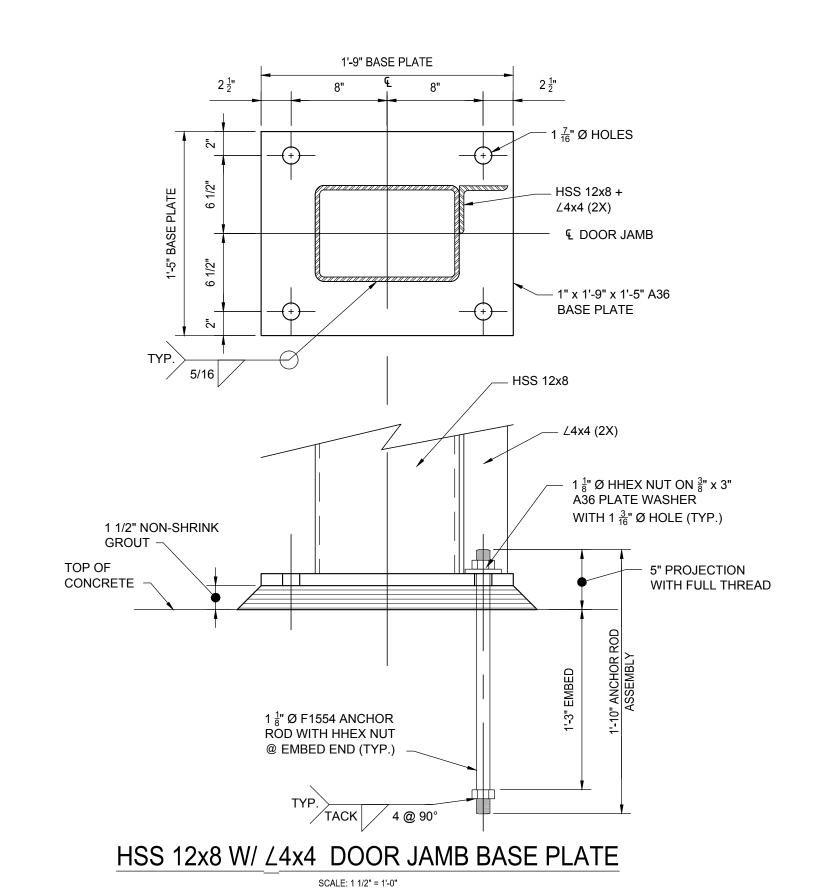


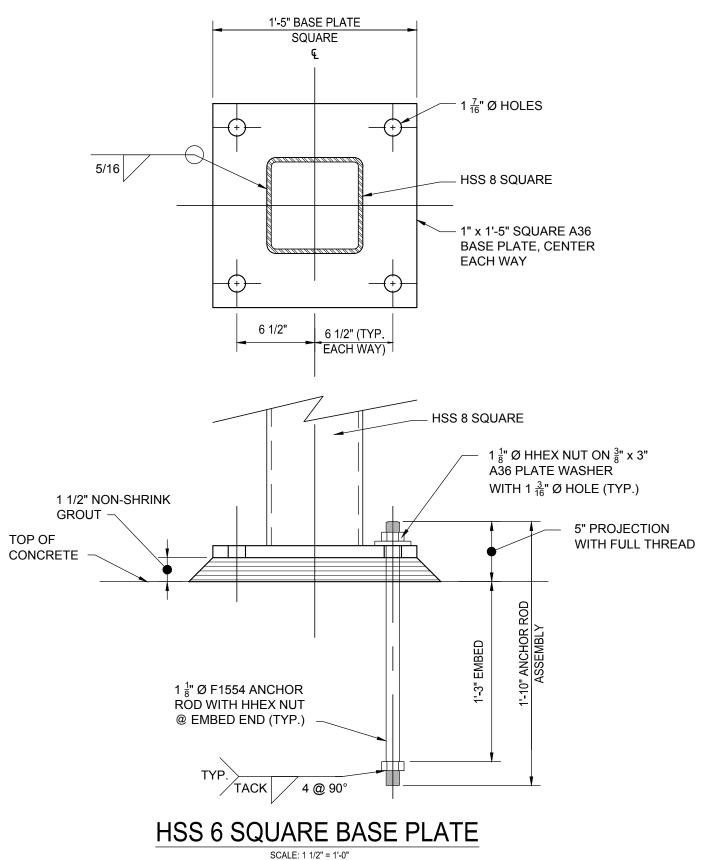
Project: BIRMINGHAM FIRE STATION No. 2

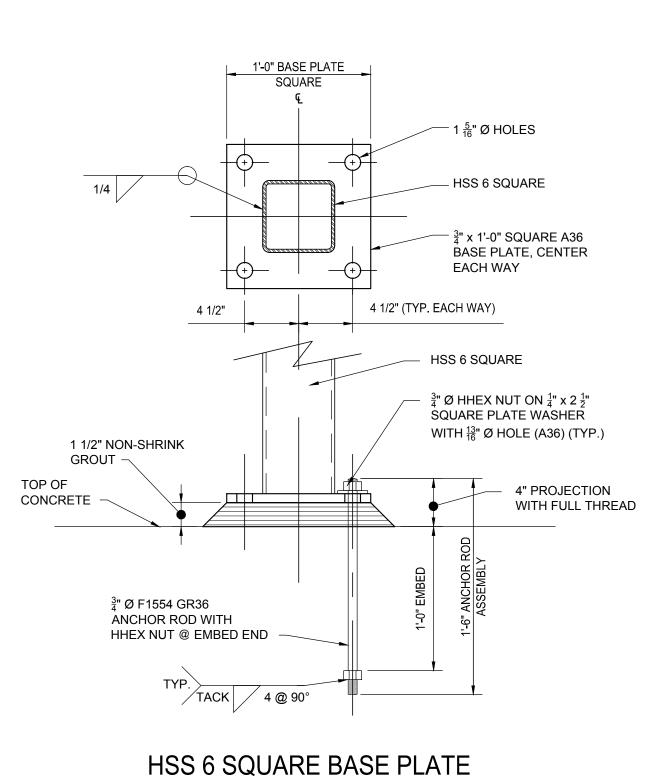
1600 WEST MAPLE

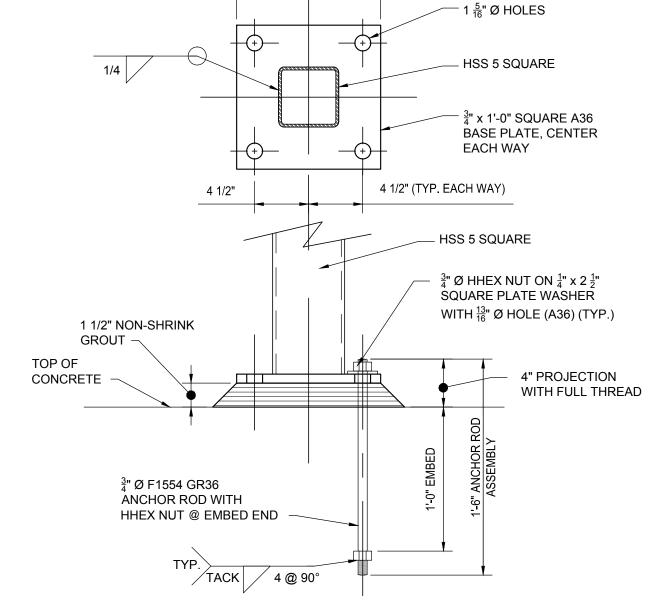
Seal:

BIRMINGHAM, MI 48009









HSS 5 SQUARE BASE PLATE

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

HSS 16x8 W/ 2 \(\alpha 4x4 \) DOOR JAMB BASE PLATE

1'-0" BASE PLATE

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

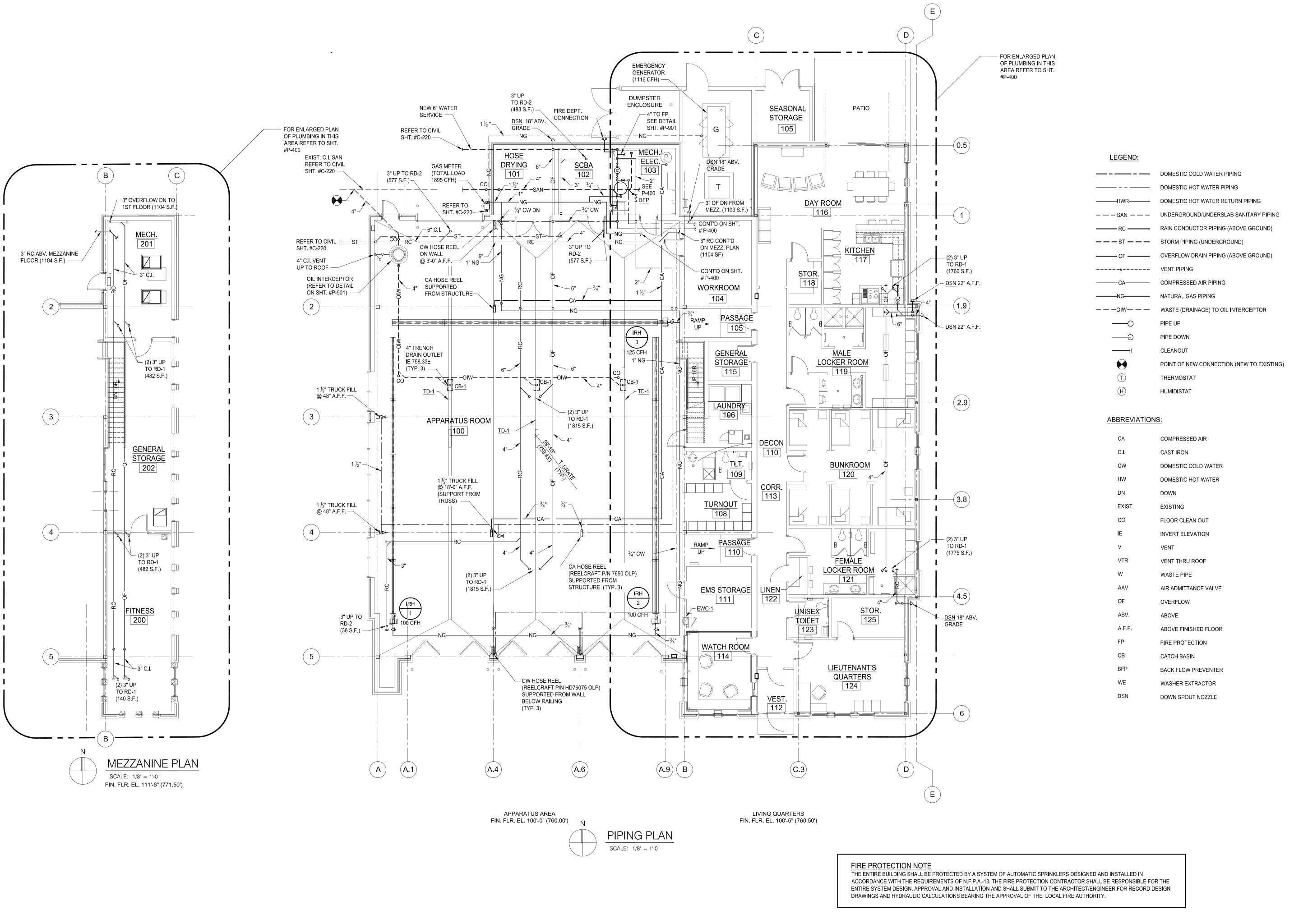
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	Drawn:	C. JOHNSON
	Checked:	M. EAGEN
	Approved:	S. PETERSON

Project Number:

Sheet Title:

DETAILS

BASE PLATE



Sidock Group

ARCHITECTS ENGINEERS CONSULTANTS

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> Design Studio 43155 Main Street, Suite 2306 Novi, Michigan 48375

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Key Plan:

CITY OF BIRMINGHAM

Project: BIRMINGHAM FIRE STATION No. 2

1600 WEST MAPLE

BIRMINGHAM, MI 48009

Seal:

 Date
 Issued For

 05/11/16
 ESTIMATE

 07/19/16
 95% REVIEW

 07/29/16
 FINAL REVIEW

 12/05/16
 BIDS

: R. McCARTI

Drawn: R. McCARTHY
Checked: S. PETERSON
Approved: S. PETERSON

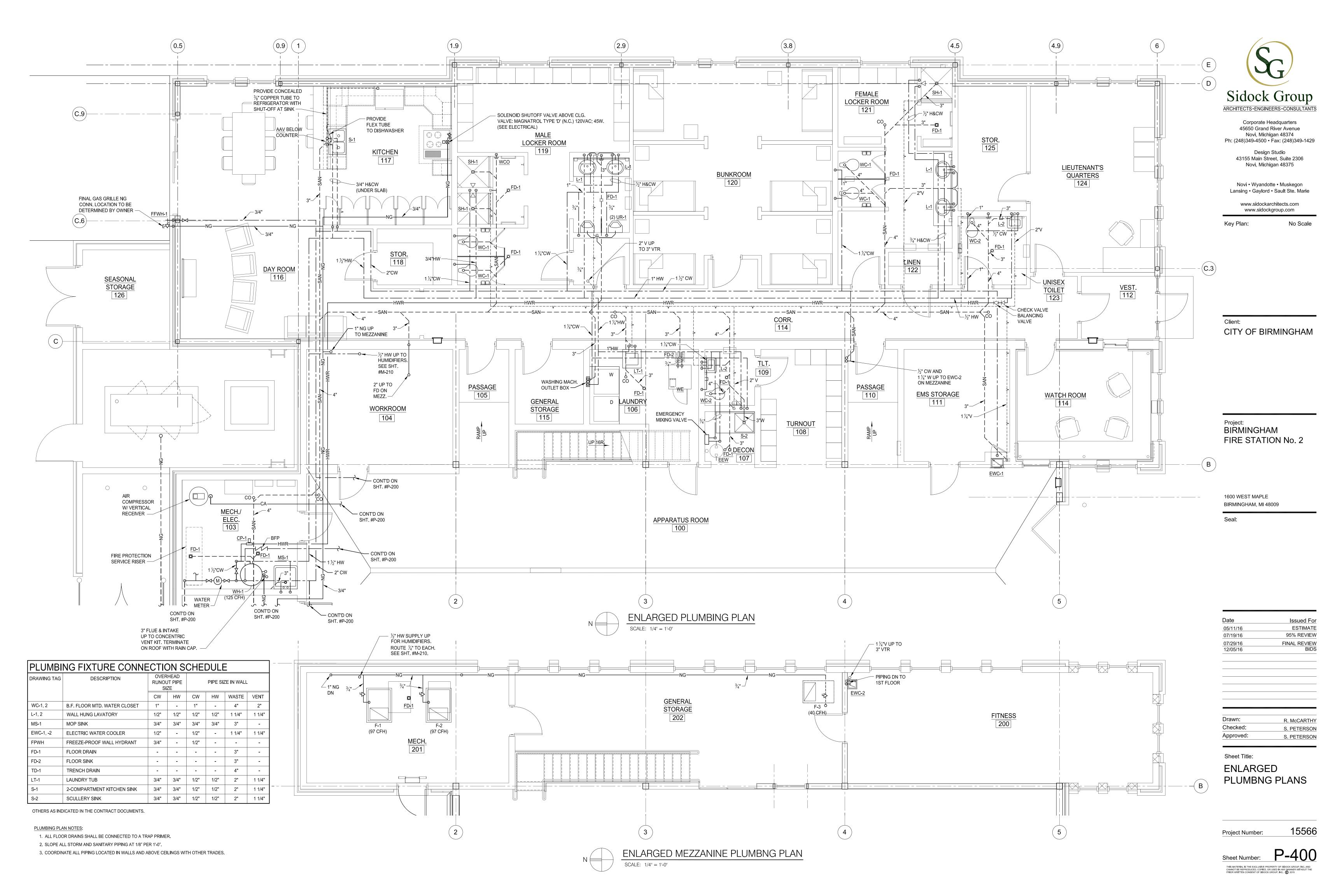
Sheet Title:
PLUMBING PLAN

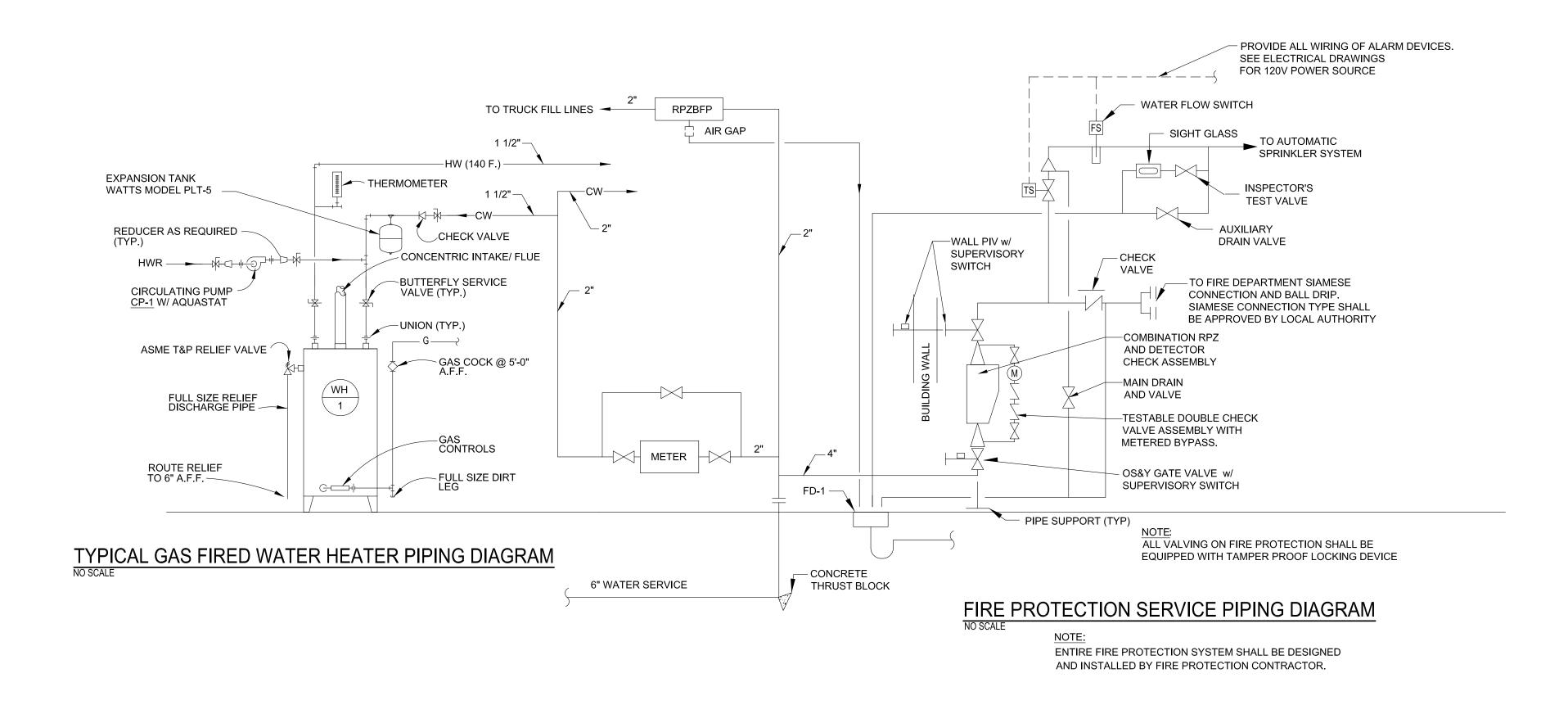
Project Number:

P-210

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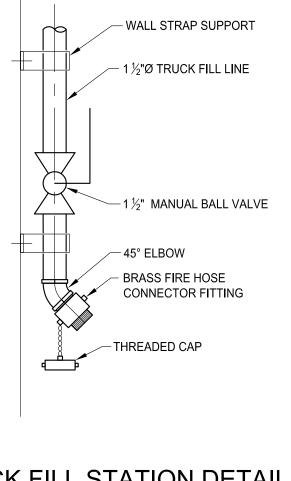




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OCCURS IN CONCRETE

CONCRETE OR FIN. GRADE



TRUCK FILL STATION DETAIL

SCALE: NOT TO SCALE

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Key Plan:

CITY OF BIRMINGHAM

Project: BIRMINGHAM FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

Seal:

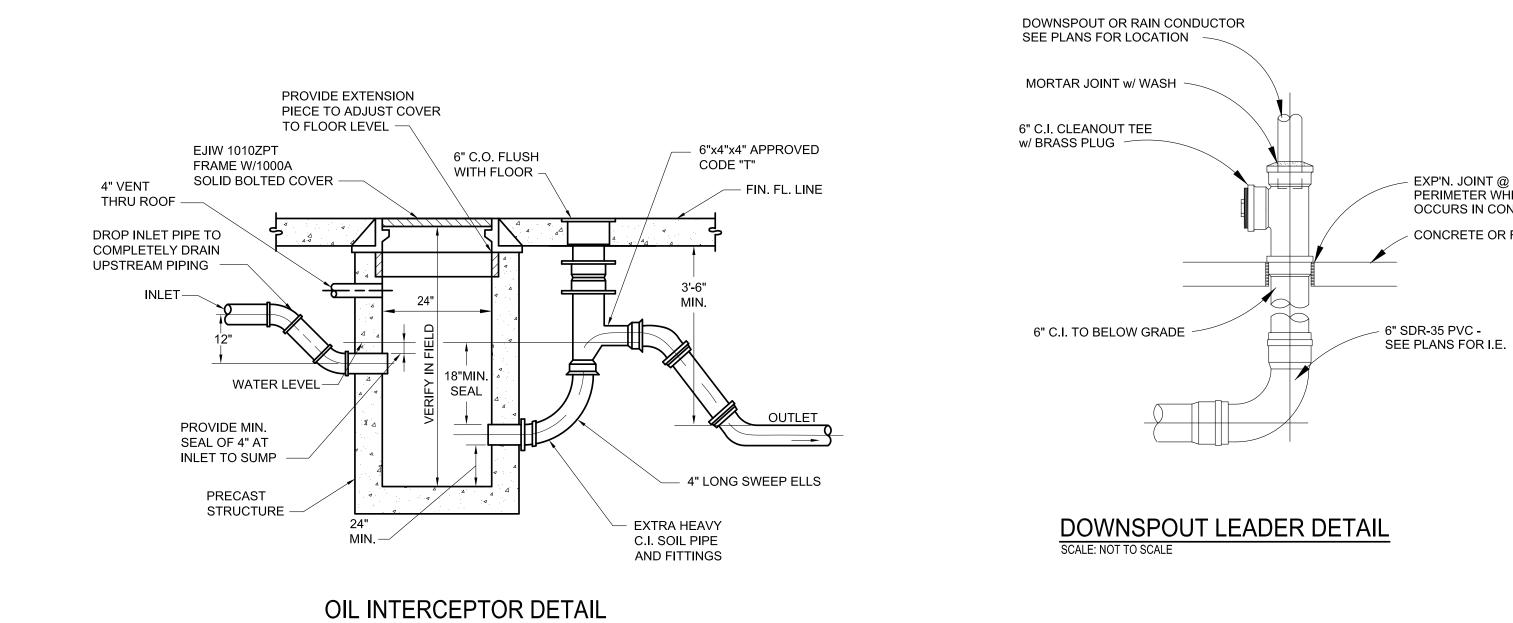
Date	Issued For
07/19/16	95% REVIEW
07/29/16	FINAL REVIEW
12/05/16	BIDS

Drawn: R. McCARTHY Checked: C. MIRANDA Approved: S. PETERSON

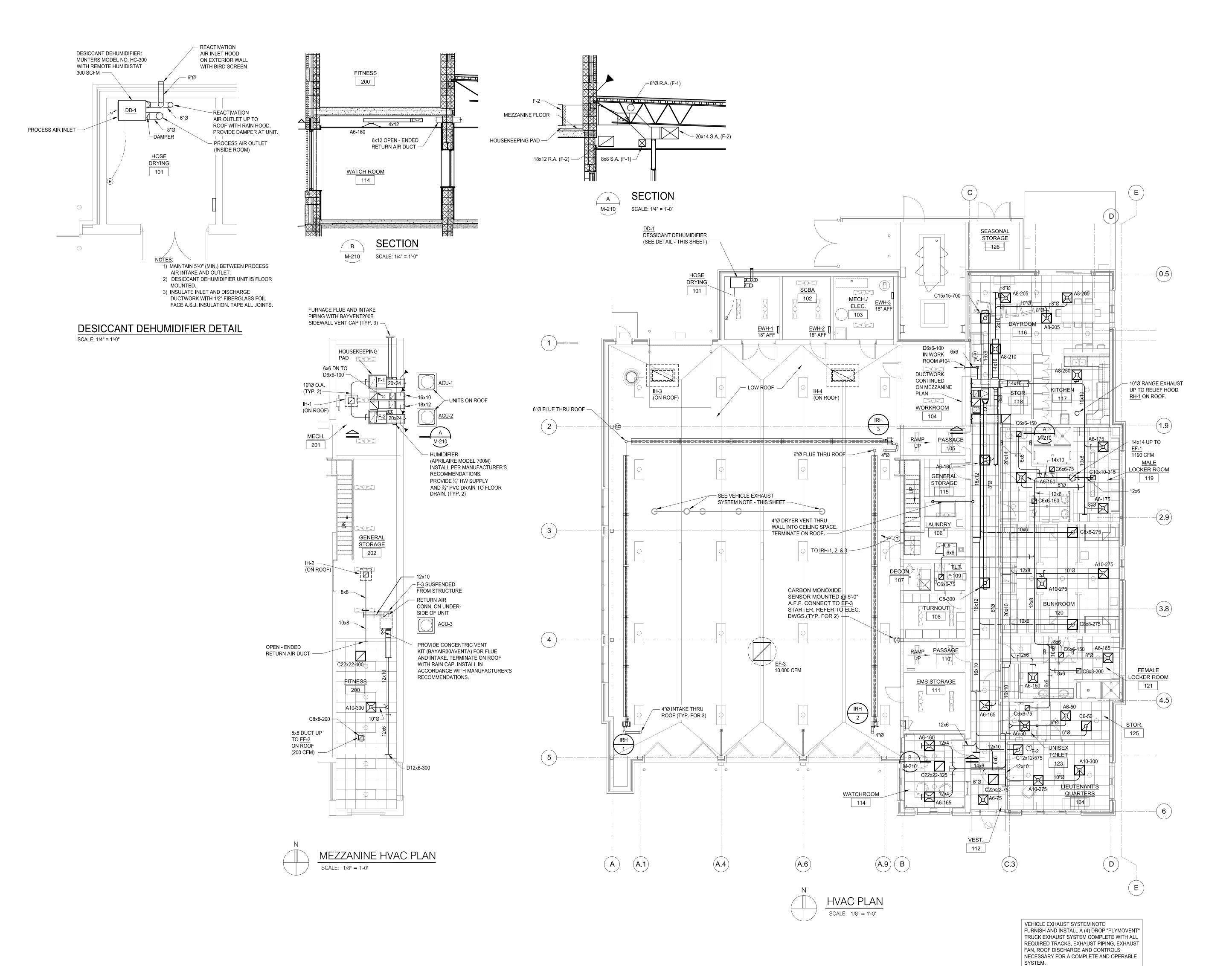
Sheet Title:

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15566 Project Number:



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Key Plan:

Client

CITY OF BIRMINGHAM

Project:
BIRMINGHAM
FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

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Date	Issued Fo
07/19/16	95% REVIE
07/29/16	FINAL REVIE
12/05/16	BID

awn:	R. McCARTH

Drawn:	R. McCARTH
Checked:	S. PETERSON
Approved:	S. PETERSON

Sheet Title:
HVAC PLAN

Project Number:

et Number: M-210

15566

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FURNACE UNITS (F-1, F-2 & F-3) & AIR-COOLED CONDENSING UNITS (ACU-1, ACU-2 & ACU-3) SCHEDULE SUPPLY FAN DATA DX COOLING COIL DATA **HEATING SECTION (INDIRECT GAS-FIRED)** ONE (1) AIR-COOLED CONDENSING UNIT (FOR EACH FURNACE UNIT) **FILTER DATA** SYSTEM AND/OR MIN. O.A. LOCATION (FURNACE REMARKS EAT EAT LAT LAT DB WB **DESIGN BASIS** AIR FLOW DRIVE MOTOR MOTOR DB FACE FACE GAS GAS NO. OF MOTOR REFRIG. COND SPEED FAN HP (CFM) ROWS EAT LAT OUTPUT INPUT WHEEL NO. OF UNIT) CONS. | PRESS. | CONN. | TYPE & EFFICIENCY | SIZE ESP TAG ELEC MCA MOP / FPI (°F) (°F) (MBH) (MBH) COMPR. TYPE RPM TYPE **FANS** (CFM) (CFH) (PSIG) ("DIA.) (RPM) FURNACE TYPE UNIT (TRANE 2" THROWAWAY TUH1D100A9601A) WITH (1) 5-TON F-1 LIVING QUARTERS 115/1/60 2,000 | CENTR. | 11x10 | 0.75 | DIRECT | 1,100 | 0.75 | 78.0 | 67.0 | 60.0 | 57.5 | 60 | 34 | 250 | 3/14 60 102 92.15 97 0.5 0.5 **ACU-1** 1 208/3/60 21 R-410 825 0.20 SEE NOTES: 1, 2 35 MATCHING REMOTE AIR-COOLED MECH. ROOM CONDENSING UNIT (TRANE 4TTA3060) FURNACE TYPE UNIT (TRANE TUH1D100A9601A) WITH (1) 5-TON MEZZANINE 2" THROWAWAY F-2 LIVING QUARTERS 1,950 | CENTR. | 11×10 | 0.75 | DIRECT | 1,100 | 0.75 | 78.0 | 67.0 | 60.0 | 57.5 | 60 | 34 | 250 | 106 92.15 97 97 0.5 0.5 ACU-2 1 R-410 825 SEE NOTES: 1, 2 115/1/60 3/14 60 208/3/60 21 35 0.20 MECH. ROOM (MERV 11) MATCHING REMOTE AIR-COOLED CONDENSING UNIT (TRANE 4TTA3060) FURNACE TYPE UNIT (TRANE TUH1B040A9241A) WITH (1) 2.0-TON 2" THROWAWAY F-3 FITNESS AREA STORAGE 115/1/60 200 600 | CENTR. | 9x7 | 0.75 | DIRECT | 1,075 | 0.20 | 78.0 | 67.0 | 60.0 | 57.5 | 24 18 250 60 109 38 40 0.5 0.5 ACU-3 1 208/3/60 20 R-410 825 SEE NOTE: 1 3/14 40 12 MATCHING REMOTE AIR-COOLED **CEILING AREA** CONDENSING UNIT (TRANE 4TTR3024)

NOTE 1: FURNACE UNIT MANUFACTURER SHALL FURNISH CONTROLS AS SHOWN ON DRAWING M-910 (CONTROL DIAGRAMS AND SEQUENCE OF OPERATION, ETC.) AND AS SPECIFIED IN DIRECT DIGITAL CONTROLS SPECIFICATION SECTION 230923.

NOTE 2: MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL APRILAIRE MODEL 700A HUMIDIFIER (AS SHOWN ON THE RETURN DUCTWORK. PROVIDE 1/4" HOT WATER SUPPLY LINE, 3/4" DRAIN CONNECTION AND 120/1/60 ELECTRICAL POWER SOURCE.

						EXH	AUST FA	N SCH	EDULE									
												ELECT	RICAL	DESIGN	BASIS			
MARK	SERVING	LOCATION	FAN TYPE	WHEEL DIA. (INCHES)	TYPE	AIR QUANTITY (CFM)	EXT. ST. PR. (IN. W.C.)	RPM	DRIVE	внр	НР	VOLT	PHASE	E MAKE MODEL		DRAWING NUMBER	REMARKS	
EF-1	LOCKER ROOMS & TOILET ROOMS	ROOF	ROOF MTD.	10.0	CENTRIFUGAL	1,190	0.375	1,660	BELT	0.25	1/4	120	1	GREENHECK	GB-101	M-210	1	
EF-2	FITNESS AREA	ROOF	ROOF MTD.	7.0	CENTRIFUGAL	200	0.100	1,000	BELT	0.02	1/6	120	1	GREENHECK	GB-071	M-210	1	
EF-3	APPARATUS ROOM	ROOF	ROOF MTD.	30.0	CENTRIFUGAL	10,000	0.250	665	BELT	2.05	2	208	3	GREENHECK	GB-300	M-210	1,2	
	REMARKS/ACCESSORIES								1									
1	GRAVITY BACKDRAFT DAMPER & PRE-FA	AB ROOF CURB																
2	INTERLOCK WITH CO SYSTEM - SEE ELE	CTRICAL DRAWINGS																

		DIFFUS	SEF	R, RE	GIS	TER	AN	D G	RIL	LE	SC	HE	EDL	JLE						
				ACCESSOR			RIES		MATERIAL		FINISH		COLOR		?					
REF	SERVICE & TYPE	MODEL NUMBERS (DESIGN BASIS)	CONTROL GRID	OPPOSED BLADE DAMPER	SQ. TO ROUND ADAPTER	SEPARATE PLASTER FRAME	OTHER DAMPER	STEEL	OTHER	BAKED ENAMEL	LACQUER	ANODIZED		CLEAR OR LACQUER	7 1	MAICH I-BAK	MATCH CEILING	DEFLECTION	BLADE SPACING	REMARKS
Α	LOUVERED FACE CEILING DIFFUSER	TITUS - TMS-AA			Х				x	X	(Х					BORDER TYPE - LAY IN
В	LOUVERED FACE CEILING DIFFUSER	TITUS - TMS-AA			Х				x	X					Х					BORDER TYPE - SURFACE MOUNT
С	PERFORATED CEILING DIFFUSER	TITUS - PAR							x	х	(х					BORDER TYPE LAY IN (FOR LAY-IN CEILING) SURFACE MOUNT (FOR PLASTERED CEILING)
D	SUPPLY, RETURN OR EXHAUST AIR GRILLE	TITUS - 271 RL		Х				х		X	<				Х		6.50		3	

NOTES: DIFFUSER, REGISTER AND GRILLE SCHEDULE

SINGLE OR COMMON ROOF VENT AND INTAKE PACKAGE PER PLAN

MOUNTING HANGER AND CHAIN SET

MILLIVOLT THERMOSTAT OPERATION

1. MODEL NUMBERS ARE FOR GENERAL IDENTIFICATION. SPECIFIC MODEL NUMBERS DEPEND ON APPLICABLE NOTES AND ARCHITECTURAL PLANS. SPECIAL ATTENTION MUST BE GIVEN TO SIZING AND INSTALLATION OF LINEAR DIFFUSERS. VERIFY MOUNTING TYPE AND DIMENSIONS WITH ARCHITECTURAL WORK. REFER TO ARCHITECTURAL SPECIFICATIONS, REFLECTED CEILING PLANS AND ROOM FINISH SCHEDULE FOR DETAILS AFFECTING SELECTION AND INSTALLATION OF UNITS.

2. ALL TYPE A CEILING DIFFUSERS SHALL HAVE 18" x 18" BACK PAN AND ROUND NECK, SIZES AS INDICATED ON THE DRAWINGS.

3. REFERENCE NOTES USED ON THE DRAWINGS.

REF. TYPES A &B: A6 -200

A: REFERENCE; 6: CONECTION SIZE IN INCHES; (2): THROW - IF NOT SHOWN, THROW SHALL BE STANDARD (4-WAY TYPICAL); 200: CFM

REF. TYPE C: C22x22 -750

C: REFERENCE; 22X22: CONNECTION SIZE IN INCHES; 750: CFM

REF. TYPE D: D6x8 -150

D: REFERENCE; 6x8: CONNECTION SIZE IN INCHES; 150: CFM

GAS-FIRED	INFRARED	HEATER	SCHEDULE
O/ 10 1 11 1ED			COLLEGE

		-				400							
MARK	LOCATION		HEATING SE	ECTION		MOU	INTING		ELECTRICAL		DESIGN	BASIS	REMARKS
		GAS TYPE	INPUT (MBH)	TUBE LENGTH FT.		HEIGHT CENTER OF TUBE	ANGLE	VOLTAGE	PHASE	IGNITION/ RUNNING CURRENT	MAKE	MODEL	
IRH-1, 2	APPARATUS ROOM	NAT.	100	50	1/2"	21'-0"	0 DEG.	120	1	4.8A/ 1.1A	RE-VERBER-RAY	DX3-50-100-NF-2S	1, 2, 3, 4
IRH-3	APPARATUS ROOM	NAT.	125	50	1/2"	21'-0"	0 DEG.	120	1	4.8A/ 1.1A	RE-VERBER-RAY	DX3-50-125-NFS-2	1, 2, 3, 4
REMA	RKS:												
	NLESS STEEL TUB												
2. MOD	EL No. TH-ET5 LINE	VOLTAGE T	HERMOSTA	T - SEE PL	AN FOR	QUANTITIE	S AND LOC	CATIONS					

						DESICCAN	T DEHUMIC	IFIER SCHEDU	LE							
MARK	LOCATION	AREA AND/OR	TVDE	ROOM	OUTSIDE (REACTIVATION)	EXT STATIC PRESSURE (PROCESS	EXT STATIC PRESSURE	MOISTURE REMOVAL CAPACITY AT 75 DEGF		DIMENSIONS	5	ELEC	OWER		REMARKS	
MARK	LOCATION	BLDG SERVED	TYPE	,	AIR FLOW (CFM)		AIR BLOWER) (INCHES W.C.)	& 50% RH (LBS/HR)	LENGTH (IN.)	WIDTH (IN.)	HEIGHT (IN.)	REACTIVATION HEATER (KW)	MAX FLA	PHASE	VOLT	
DD-1	HOSE DRYING ROOM #101	HOSE DRYING ROOM #101	PACKAGED FLOOR MOUNTED	300	100	1.75	1.25	7.9	30	23.5	24	6.0		3	208	MAKE: MUNTERS MODEL: HC-300

				INT	AKE H	OOD SC	HEDU	JLE			
MARK	LOCATION	SYSTEM AND/OR SERVICE	TYPE	TYPE APPLICATION THROAT SIZE AIR FLOW APD DAMPER		DAMPER TYPE	DESIG	N BASIS	REMARKS		
					INCHES	CFM	IN W.C.		MAKE	MODEL	
IH-1	ROOF	F-1 & F-2	INTAKE	DUCTED	16x16	1,190	0.059	BACKDRAFT	GREENHECK	FABRA-HOOD	22"x22" CURB CAP
IH-2	ROOF	F-3	INTAKE	DUCTED	12 x 12	200	0.01	BACKDRAFT	GREENHECK	FABRA-HOOD	18" x18" CURB CAP
IH-3	ROOF	APPARATUS BAY EXHAUST, EF-3	INTAKE	NON-DUCTED	24x48	5,000	0.1	BACKDRAFT	GREENHECK	FABRA-HOOD	30" x 54" CURB CAP
IH-4	ROOF	APPARATUS BAY EXHAUST, EF-3	INTAKE	NON-DUCTED	24x48	5,000	0.1	BACKDRAFT	GREENHECK	FABRA-HOOD	30" x 54" CURB CAP
RH-1	ROOF	KITCHEN RANGE HOOD	RELIEF	DUCTED	10.25 DIAM.	50.00	0.04	BACKDRAFT	GREENHECK	GRSR-10	19"x19' CURB CAP WITH 16" HIGHROOF CURB

			ı	ELEC	TRIC WALI	L HEAT	TER SC	CHEDU	LE		
MARK	LOCATION	HEAT	ING SECTION	ON	MOUNTING	Γ	DIMENSIONS	8	DESIG	N BASIS	REMARKS
400000000000000000000000000000000000000		VOLT/ PHASE	WATTS	CFM	SURFACE MOUNT ON THE WALL	WIDTH	HEIGHT	DEPTH	MAKE	MODEL (CATALOG #)	
EWH-1	HOSE DRYING #101	120 / 1	1500	160	1'-6" AFF TO THE BOTTOM OF THE HEATER	14 1/2"	19 7/8"	4 1/2"	INDEECO	932U01500B	1, 2
EWH-2	SCBA #102	120 / 1	1500	160	1'-6" AFF TO THE BOTTOM OF THE HEATER	14 1/2"	19 7/8"	4 1/2"	INDEECO	932U01500B	1, 2
EWH-3	MECH / ELEC #103	120 / 1	1500	160	1'-6" AFF TO THE BOTTOM OF THE HEATER	14 1/2"	19 7/8"	4 1/2"	INDEECO	932U01500B	1, 2
REMARK	0.00										
250 6231 253				Particular Investor College	/ERRIDE AND THERI						
2. PRO	VIDE FIELD INSTALL	ED SURFAC	CE MOUNTI	NG BOX (CATALOG # 932-1245	500)					



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No Scale

Key Plan:

Client:

CITY OF BIRMINGHAM

Project:
BIRMINGHAM
FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

Seal:

 Date
 Issued For

 7/19/16
 95% REVIEW

 07/29/16
 FINAL REVIEW

 12/05/16
 BIDS

Drawn: R. McCARTHY
Checked: S. PETERSON
Approved: S. PETERSON

Sheet Title:
MECHANICAL
SCHEDULES

Project Number:

M-90

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SEQUENCE OF OPERATIONS F-1/ACU-1 & F-2/ACU-2

BUILDING AUTOMATION SYSTEM INTERFACE:

THE BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE CONTROLLER OCCUPIED BYPASS, PRE-COOL, OCCUPIED / UNOCCUPIED, HEAT / COOL MODES AND OUTSIDE AIR FLOW SETPOINT. IF A BAS IS NOT PRESENT, OR COMMUNICATION IS LOST WITH THE BAS THE CONTROLLER SHALL OPERATE USING DEFAULT MODES AND SETPOINTS.

OCCUPIED MODE

DURING OCCUPIED PERIODS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY. THE GAS HEATING AND DX COOLING SHALL STAGE TO MAINTAIN THE OCCUPIED SPACE TEMPERATURE SETPOINT.

UNOCCUPIED MODE:
WHEN THE SPACE TEMPERATURE IS BELOW THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F

(ADJ.) THE SUPPLY FAN SHALL START AND THE GAS HEATING SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) PLUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP AND THE GAS HEATING SHALL BE DISABLED.

WHEN THE SPACE TEMPERATURE IS ABOVE THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL START AND THE DX COOLING SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) MINUS THE

UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP, THE DX COOLING SHALL

BE DISABLED.

OPTIMAL START:

THE BAS SHALL MONITOR THE SCHEDULED OCCUPIED TIME, OCCUPIED SPACE SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL START OCCURS.

MORNING WARM-UP MODE:

DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT A MORNING WARM-UP MODE SHALL BE ACTIVATED. WHEN MORNING WARM-UP IS INITIATED THE UNIT SHALL ENABLE THE HEATING AND SUPPLY FAN. WHEN THE SPACE TEMPERATURE REACHES THE OCCUPIED HEATING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.

PRE-COOL MODE

DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT, PRE-COOL MODE SHALL BE ACTIVATED. WHEN PRE-COOL IS INITIATED THE UNIT SHALL ENABLE THE FAN AND COOLING. WHEN THE SPACE TEMPERATURE REACHES OCCUPIED COOLING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.

OPTIMAL STO

THE BAS SHALL MONITOR THE SCHEDULED UNOCCUPIED TIME, OCCUPIED SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL STOP OCCURS. WHEN THE OPTIMAL STOP MODE IS ACTIVE THE UNIT CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE TO THE SPACE TEMPERATURE OFFSET SETPOINT.

OCCUPIED BYPAS

THE BAS SHALL MONITOR THE STATUS OF THE "ON" AND "CANCEL" BUTTONS OF THE SPACE TEMPERATURE SENSOR. WHEN AN OCCUPIED BYPASS REQUEST IS RECEIVED FROM A SPACE SENSOR, THE UNIT SHALL TRANSITION FROM ITS CURRENT OCCUPANCY MODE TO OCCUPIED BYPASS MODE AND THE UNIT SHALL MAINTAIN THE SPACE TEMPERATURE TO THE OCCUPIED SETPOINTS (ADJ.).

COOLING MOI

THE UNIT CONTROLLER SHALL USE SPACE TEMPERATURE AND SPACE TEMPERATURE SETPOINT TO DETERMINE WHEN TO STAGE THE COOLING. WHEN THE SPACE TEMPERATURE RISES ABOVE THE SETPOINT, THE UNIT CONTROLLER SHALL STAGE THE DX COOLING AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE FALLS BELOW THE SETPOINT THE CONTROLLER SHALL DISABLE DX COOLING.

HEATING MOD

THE UNIT CONTROLLER SHALL USE THE SPACE TEMPERATURE AND SPACE TEMPERATURE SETPOINT TO DETERMINE WHEN TO INITIATE REQUESTS FOR HEAT. WHEN THE SPACE TEMPERATURE DROPS BELOW THE SETPOINT, THE UNIT CONTROLLER SHALL STAGE THE GAS HEAT TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. ONCE THE SPACE TEMPERATURE RISES ABOVE THE SETPOINT THE GAS

SUPPLY FAN:

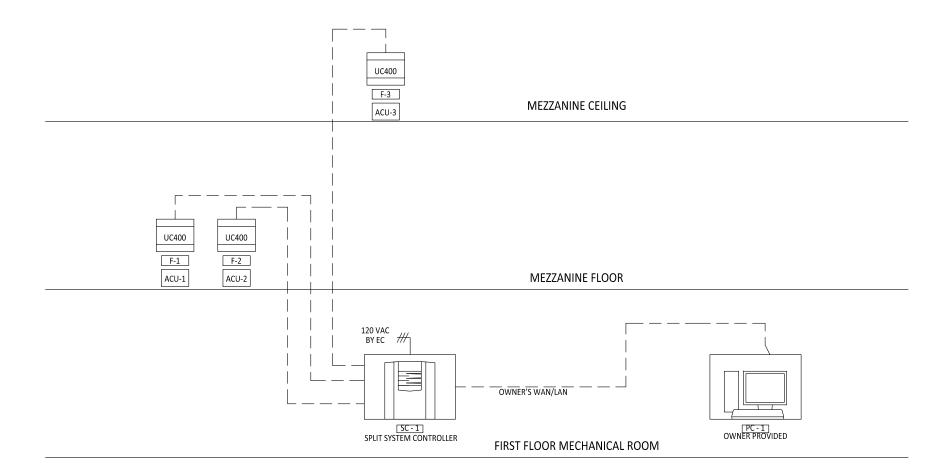
HEAT SHALL BE DISABLED.

THE SUPPLY FAN SHALL BE ENABLED WHILE IN THE OCCUPIED MODE AND CYCLED ON DURING THE

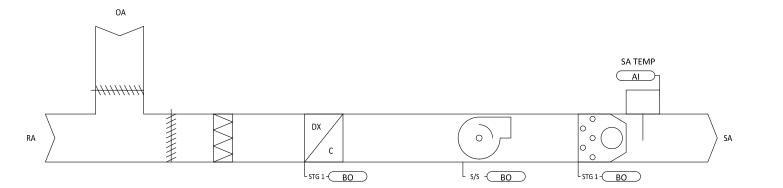
FILTER TIMER:

THE FAN-RUN TIME (HRS) SHALL BE COMPARED TO THE FILTER MAINTENANCE TIMER SETPOINT. ONCE THE SETPOINT IS REACHED A FILTER TIMER ALARM DIAGNOSTIC SHALL BE ANNUNCIATED AT THE BAS. WHEN THE DIAGNOSTIC IS CLEARED, THE FILTER-MAINTENANCE TIMER IS RESET TO ZERO, AND THE TIMER BEGINS ACCUMULATING FAN-RUN TIME AGAIN.

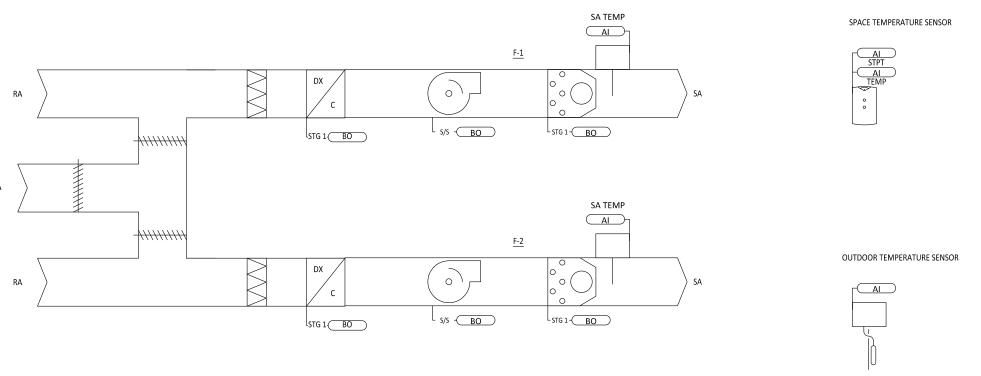
 ${\underline{\sf NOTE}}$: SIMILAR SEQUENCE OF OPERATIONS FOR F-3/ACU-3.



SYSTEM CONTROL SCHEMATIC



FURNACE F-3 CONTROL DIAGRAM



Furnace F-1 & F-2 contr	OL DIAGRAM
-------------------------	------------

CONTROLLER: UC400 2H2C			PΩI	יד דא	/PF					ALARI	MS					
			01		· · ·				1		1					
SYSTEM POINT DESCRIPTION	GRAPHIC	HARDWARE INPUT	HARWARE OUTPUT	SOFTWARE POINT	HARDWARE INTERLOCK	WIRELESS	NETWORK	DEFAULT VALUE	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	LATCH DIAGNOSTIC	SERSOR FAIL	COMMUNICATION FAIL	DIAGNOSTICS	NOTES
DISCHARGE AIR TEMPERATURE LOCAL	X	Al							X	X			Х			
OUTSIDE AIR TEMPERATURE LOCAL		Al							\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			^			
SPACE TEMPERATURE LOCAL		Al														
SPACE TEMPERATURE SETPOINT LOCAL		Al														
COMPRESSOR OUTPUT 1		/ 11	ВО													
HEATING OUTPUT 1			ВО													
SUPPLY FAN START/STOP			BO													
3011 21 17 11 317 11 17 11																
OCCUPANCY				Х												
OCCUPIED COOLING SETPOINT				Х				74.0 deg. F								<u> </u>
OCCUPIED HEATING SETPOINT				Х				70.0 deg. F								
OCCUPIED STANDBY COOLING SETPOINT				Х				80.0 deg. F								
OCCUPIED STANDBY HEATING SETPOINT				Х				65.0 deg. F								
UNOCCUPIED COOLING SETPOINT				Х				85.0 deg. F								
UNOCCUPIED HEATING SETPOINT				Х				60.0 deg. F								
OCCUPIED BYPASS TIMER				Х				2.0 HRS								
HEATING MODE SETPOINT				Х												
COOLING MODE SETPOINT				Х												
SETPOINT OFFSET				Х												
COMPRESSOR ENABLE				Х				AUTO								
ECONOMIZER ENABLE				Х				AUTO								
HEAT / COOL MODE				Х				COOL								
FAN MODE COMMAND				Х				ON								
APPLICATION MODE				Х				AUTO								
EFFECTIVE OCCUPANCY				Х												
EFFECTIVE HEAT / COOL MODE				Х												
EFFECTIVE SPACE TEMPERATURE	Х			Х												
EFFECTIVE SPACE SETPOINT				X												
LOCAL SETPOINT				X												
HEAT OUTPUT				X												
COOL OUTPUT				X												
ALARM				X												
SPACE HEATING/COOLING SETPOINT	Х			X				COOLUBC								
MAINTENANCE REQUIRED	V			X				600 HRS								
BAS COMMUNICATION STATE	^			Х												
GENERAL NOTES			<u> </u>	<u> </u>	I	1		l	1	1	1	1				



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No Scale

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Key Plan:

Client:

CITY OF BIRMINGHAM

Project: BIRMINGHAM FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

Cool

Date	Issued F
07/19/16	95% REVIE
07/29/16	FINAL REVIE
12/05/16	ВІС

Drawn:	K. GILSON

Checked:	S. PETERSON
Approved:	S. PETERSON
Sheet Title:	

CONTROL DIAGRAMS

FURNACE

Project Number:

theet Number: M-910

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ELECTRICAL SERVICE DEMO NOTES

1. DEMO ELECTRICAL SERVICE TO EXISTING
BUILDING BEFORE DEMOLITION. PULL BACK SERVICE
DROP/LATERAL AND REMOVE/RELOCATE TRANSFORMER AS
REQUIRED. COORDINATE WITH UTILITY.

REQUIRED. COORDINATE WITH UTILITY.

2. PROVIDE NEW ELECTRICAL SERVICE PER DRAWINGS.
COORDINATE WORK WITH UTILITY.

COORDINATE WORK WITH UTILITY.

3. FLOODLIGHT FOR FLAG TO BE MOUNTED ON 12"x12"x3"

CONCRETE PAD. PROVIDE A ½" NPT RGS STUB UP 4" ABOVE
GRADE. TRANSITION TO 1" SCHEDULE 40 PVC FOR RUN BACK
TO EXTERIOR LIGHTING CONTACTOR. PROVIDE 10'
HORIZONTAL SET BACK FROM POLE.

ELECTRICAL SITE PLAN

SCALE: 1" = 20'

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Client:

Key Plan:

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Project:
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FIRE STATION No. 2

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Seal:

 Date
 Issued For

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 07/29/16
 FINAL REVIEW

 12/05/16
 BIDS

Drawn: R. McCARTHY
Checked: J. ORANCHAK

Checked: J. ORANCHAK
Approved: S. PETERSON

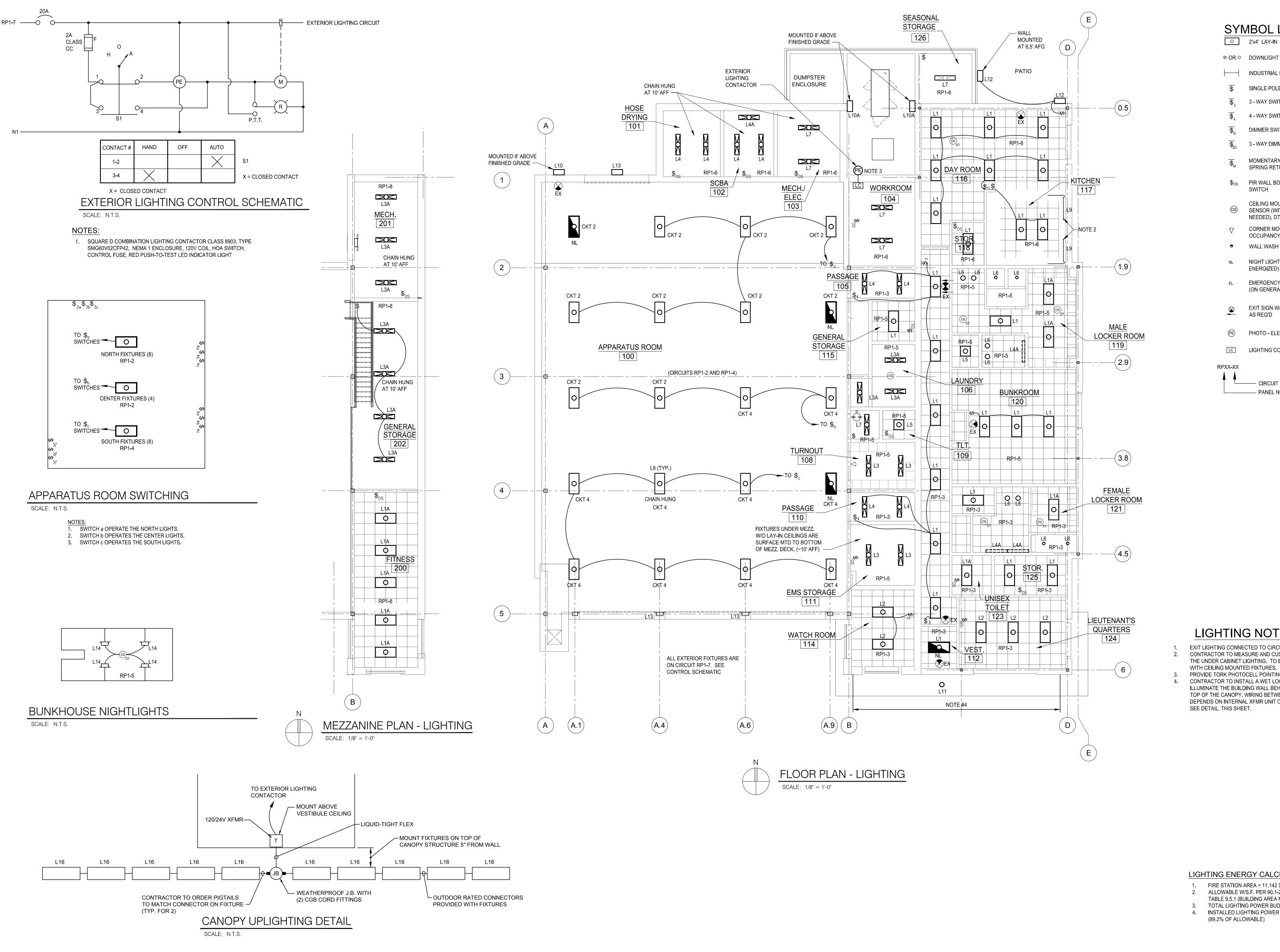
Sheet Title: ELECTRICAL SITE PLAN

Project Number: 155

Sheet Number: SE-001

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:\PROJECTS\15566 BIRMINGHA



SYMBOL LEGEND

Ø OR ○ DOWNLIGHT

INDUSTRIAL FLUORESCENT

SINGLE POLE SWITCH

3 - WAY SWITCH

4 - WAY SWITCH

DIMMER SWITCH

3 - WAY DIMMER SWITCH

MOMENTARY SWITCH W/ SPRING RETURN TO CENTER

PIR WALL BOX OCCUPANCY

CEILING MOUNTED OCCUPANCY SENSOR (WITH POWER PACK IF NEEDED). DT = DUAL TECHNOLOGY

CORNER MOUNTED PIR OCCUPANCY SENSOR

WALL WASH DOWNLIGHT

NIGHT LIGHT (CONTINUOUSLY ENERGIZED)

EMERGENCY LIGHT (ON GENERATOR)

EXIT SIGN W/ ARROWS AS REQ'D

PHOTO - ELECTRIC CELL

LIGHTING CONTACTOR

- CIRCUIT NUMBER - PANEL NUMBER

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Project: BIRMINGHAM FIRE STATION No. 2

1600 WEST MAPLE

BIRMINGHAM, MI 48009

LIGHTING NOTES

- EXIT LIGHTING CONNECTED TO CIRCUIT RP1-1. CONTRACTOR TO MEASURE AND CUSTOM ORDER THE UNDER CABINET LIGHTING. TO BE SWITCHED WITH CEILING MOUNTED FIXTURES.
- PROVIDE TORK PHOTOCELL POINTING NORTH. CONTRACTOR TO INSTALL A WET LOCATION LISTED LED STRIP TO ILLUMINATE THE BUILDING WALL BEHIND THE LETTERS ON THE TOP OF THE CANOPY. WIRING BETWEEN THE XFMR AND JB DEPENDS ON INTERNAL XFMR UNIT CONFIGURATION.

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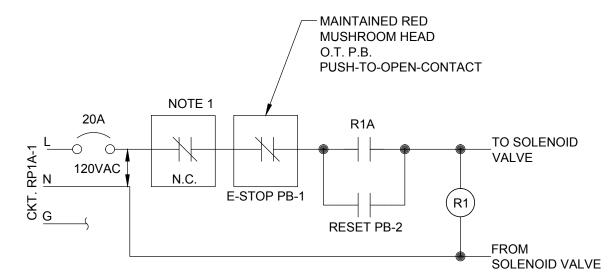
FLOOR PLAN -LIGHTING

LIGHTING ENERGY CALCULATION

- FIRE STATION AREA = 11,142 S.F.
- 2. ALLOWABLE W/S.F. PER 90.1-2007
- TABLE 9.5.1 (BUILDING AREA METHOD) = 1.0 W/S.F.

TOTAL LIGHTING POWER BUDGET = 11,142W INSTALLED LIGHTING POWER = 9,935W (89.2% OF ALLOWABLE)

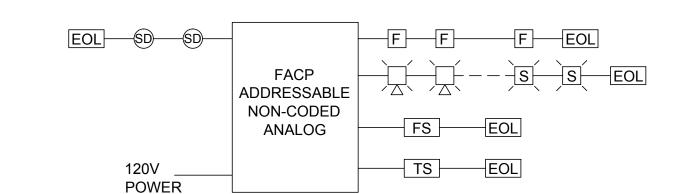
15566 Project Number:



GAS STOVE E-STOP CONTROL SCHEMATIC

SCALE: N.T.S.

- 1. N.C. CONTACT OPENS ON STATION MASTER ALARM, DROPS OUT R1 AND DE-ENERGIZES (CLOSES) GAS SOLENOID VALVE. PUSHING THE E-STOP P.B. ALSO DE-ENERGIZES R1 AND CLOSES THE GAS VALVE. IF STATION MASTER ALARM HAS CLEARED AND THE E-STOP P.B. IS PULLED OUT, PUSHING PB-2 WILL OPEN THE GAS VALVE. PB-2 MUST BE PUSHED TO RESET THE GAS VALVE AFTER ANY POWER LOSS, ANY MASTER STATION ALARM OR MANUAL E-STOP (PB-1).
- 2. STATION MASTER ALARM CONTACT BY OWNER. CONTRACTOR TO WIRE CIRCUIT.
- 3. PB-1 AND PB-2 ARE SQUARE D CLASS 900, TYPE K H.D. OPERATORS, CONTACT BLOCKS ARE AS REQUIRED. PB-2 IS A GREEN, FULLY GUARDED MOMENTARY P.B.
- 4. PROVIDE ENGRAVED LABELS FOR P.B.'S, "E-STOP" FOR PB-1 AND "PUSH TO RESET" FOR PB-2. PROVIDE NEMA 1 ENCLOSURE FOR PUSH BUTTONS AND R1. R1 TO BE SQUARE D CLASS 8501, TYPE KP12-V20 WITH 10A DPDT CONTACTS,



NOTE: FIRE ALARM CONTRACTOR TO ADJUST

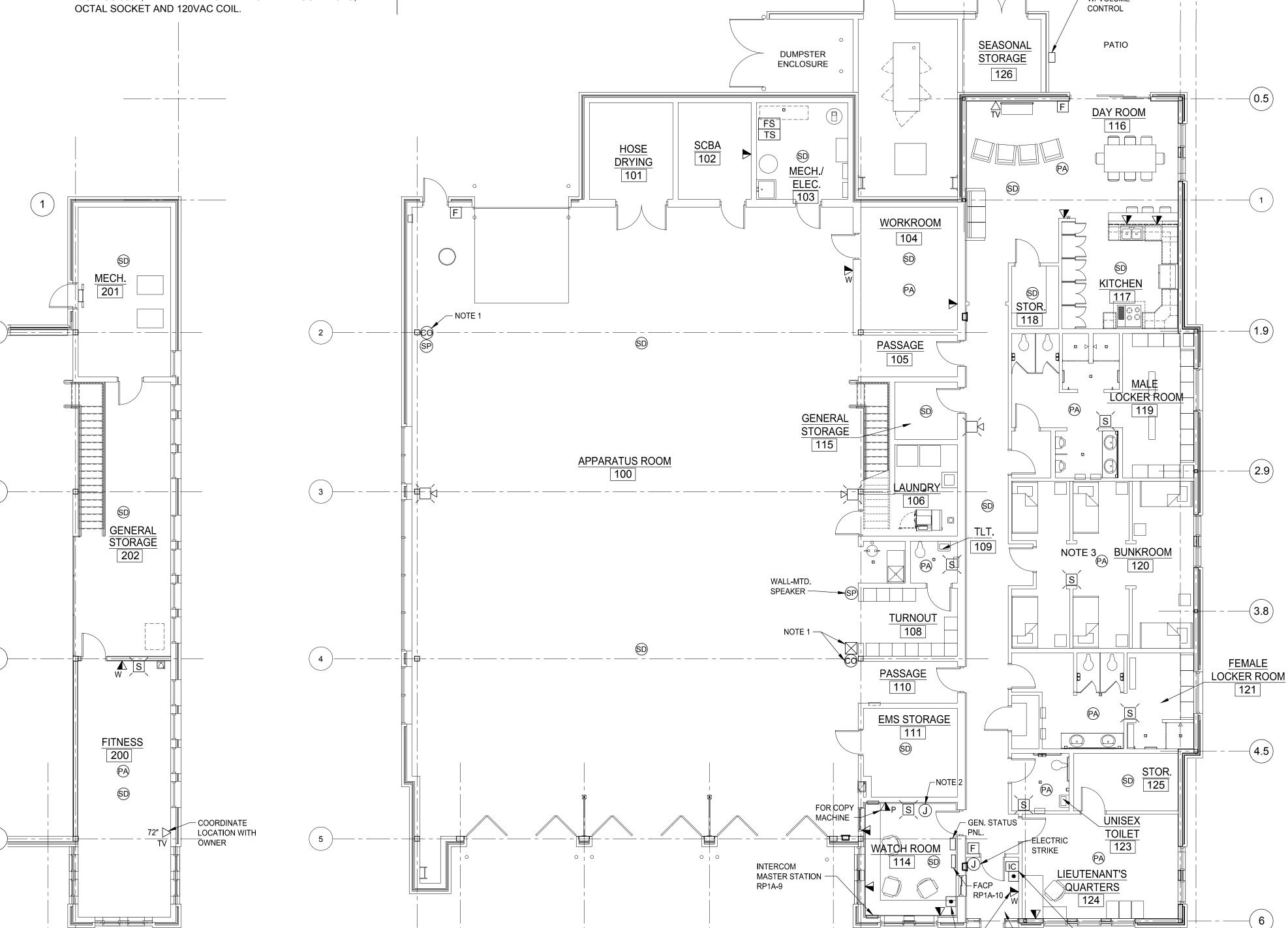
QUANTITIES AND LOCATIONS PER THE LATEST

CODE AND AHJ FIRE ALARM RISER DIAGRAM SCALE: N.T.S. -W.P. PA SPEAKER W/ VOLUME CONTROL **SEASONAL** DUMPSTER STORAGE **ENCLOSURE**

P.B. FOR ELECTRIC STRIKE —

EMERGENCY

PHONE/911 -



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

(A.1)

SYMBOL LEGEND

- SINGLE GANG BOX w/ $\frac{3}{4}$ " C. STUB TO ABOVE CLG. FOR TELCO/DATA JACK
- SINGLE GANG BOX W/ 3/4" STUB UP TO ABOVE CEILING SPACE FOR DATA JACK TO PRINTER
- SINGLE GANG BOX W/ 3/4" STUB UP TO ABOVE CEILING SPACE FOR TV VIDEO JACK. COORDINATE ELEVATION AND DETAILS W/ OWNER
- SINGLE GANG BOX W/ 3/4" STUB UP TO ABOVE CEILING SPACE FOR WALL MOUNTED TELEPHONE
- PA SPEAKERS (OR (PA))
- INTERCOM MASTER
- CO MONITOR

 $\left(D\right)$

- FACP FIRE ALARM CONTROL PANEL
- FIRE ALARM PULL STATION
- FIRE ALARM HORN STROBE
- FIRE ALARM STROBE
- END OF LINE DEVICE
- FIRE ALARM FLOW SWITCH
- SMOKE DETECTOR
- JUNCTION BOX (ROUTER IN CLG.)

FIRE ALARM TAMPER SWITCH

- MANUAL STARTER
- COMBINATION STARTER
- SIMPLEX CLOCK RECEPTACLE

ELECTRICAL NOTES

- 1. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR. SEE CONTROL SCHEMATIC ON DRAWING EP-902.
- 2. JB FOR INTERFACE CONTACT WITH STATION MASTER FIRE ALARM. SEE CONTROL SCHEMATIC ON THIS SHEET. N.O. CONTACT CLOSES UPON STATION ALARM.
- 3. OVERHEAD LIGHTING CONTROL AND PA SYSTEM CONTROLLED BY WESTNET SYSTEM, ALERTING STROBE AT EACH BED. COORDINATE WITH

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Project: BIRMINGHAM

FIRE STATION No. 2

1600 WEST MAPLE

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Sheet Title: FLOOR PLAN -**MISCELLANEOUS**

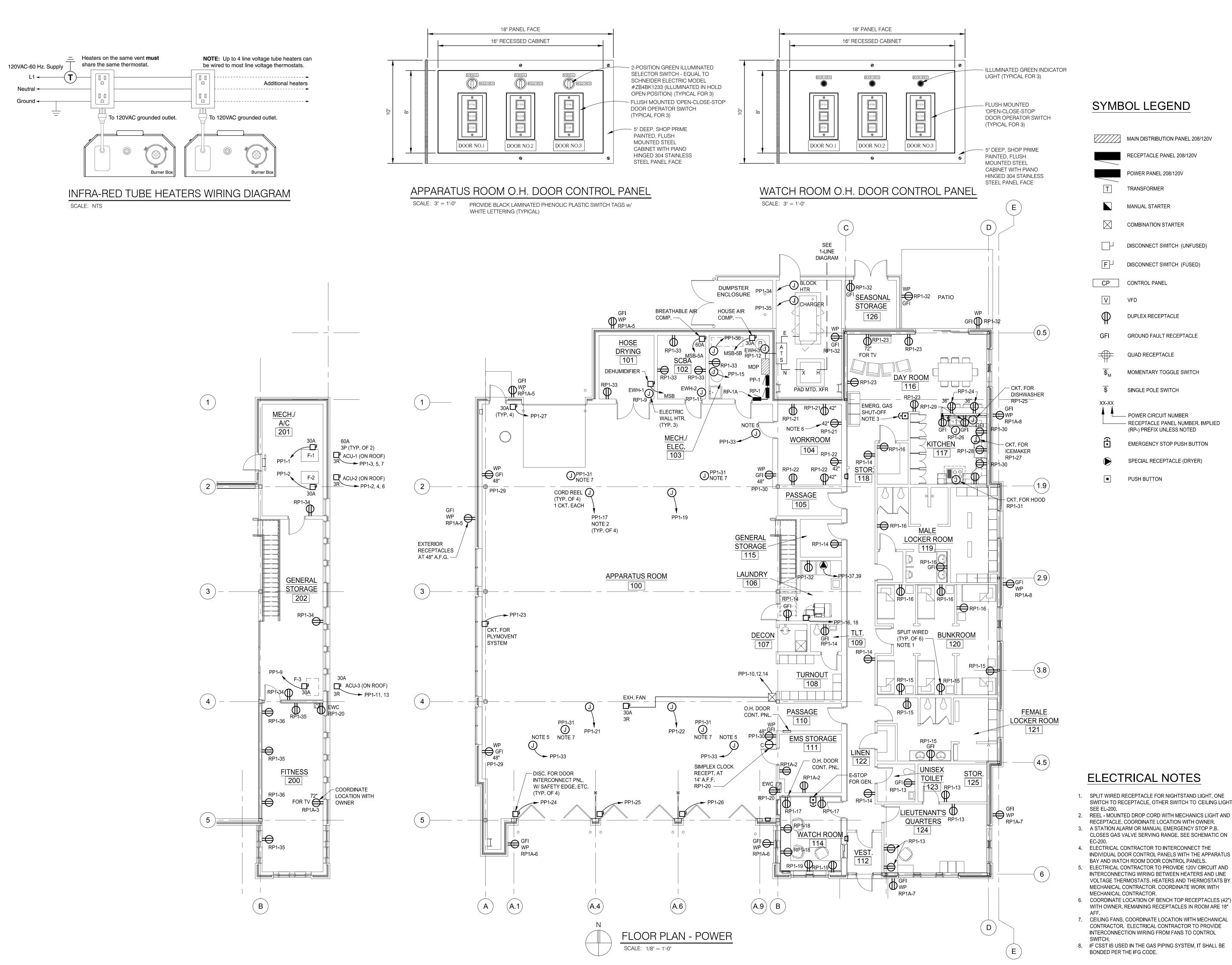
Project Number:

SYSTEMS

15566 FLOOR PLAN - COMMUNICATION SYSTEMS

SPEAKER W/ DOORBELL PUSH

BUTTON



SYMBOL LEGEND

MAIN DISTRIBUTION PANEL 208/120V

MANUAL STARTER

CP CONTROL PANEL

COMBINATION STARTER

DISCONNECT SWITCH (UNFUSED)

DISCONNECT SWITCH (FUSED)

DUPLEX RECEPTACLE

QUAD RECEPTACLE

SINGLE POLE SWITCH

POWER CIRCUIT NUMBER

(RP-) PREFIX UNLESS NOTED

EMERGENCY STOP PUSH BUTTON

SPECIAL RECEPTACLE (DRYER)

SWITCH TO RECEPTACLE, OTHER SWITCH TO CEILING LIGHT

INDIVIDUAL DOOR CONTROL PANELS WITH THE APPARATUS

INTERCONNECTING WIRING BETWEEN HEATERS AND LINE VOLTAGE THERMOSTATS. HEATERS AND THERMOSTATS BY

WITH OWNER. REMAINING RECEPTACLES IN ROOM ARE 18"

CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE

RECEPTACLE. COORDINATE LOCATION WITH OWNER.

SEE EL-200.

PUSH BUTTON

- RECEPTACLE PANEL NUMBER. IMPLIED

XX-XX

GROUND FAULT RECEPTACLE

MOMENTARY TOGGLE SWITCH

Design Studio RECEPTACLE PANEL 208/120V 43155 Main Street, Suite 2306 Novi, Michigan 48375 POWER PANEL 208/120V Novi • Wyandotte • Muskegon TRANSFORMER Lansing • Gaylord • Sault Ste. Marie

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CITY OF BIRMINGHAM

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Sheet Title: FLOOR PLAN -**POWER**

Project Number:

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MANUF.: TBD MODEL: NQOB OR EQUAL LOCATION: ELECTRICAL ROOM SERVICE: APPARATUS BAY/ ME	CHANICA	il loai	os				A	В	C		EN	TRY/M	VOL FEEDI MAII OUNTII	ER: NS:		120V M.L.O. SURFACE
SERVICE	,	LOAD WATTS		BKR. AMP.	CKT.						CKT. NO.	BKR. AMP.	LO WA	TTS		SERVICE
-1 FAN	A 1550	В	С	45	1					<u> </u>		45	A 1550	В	С	F-2 FAN
	1550			15	1					$\overline{}$	2	15	1550			
		2522		35	3					°	4	35		2522		-
ACU-1			2522	-	5					⁰	6	-			2522	ACU-2
	2522			3P	7	0 0	•			0	8	3P	2522			-
-3 FAN		625		15	9	óò		•	$+ \circ$	ìò	10	20		901		-
ACU-3			936	15	11				+ -6		12	-			901	EXHAUST FAN (APPARATUS BAY)
	936			2P	13	0	+		+-6	0	14	3P	901			SPARE
VATER HEATER		240		20	15	0		+			16	20		1500		-
CORD REEL #1			700	20	17	000			+ 6		18	-			1500	WASHER/ EXTRACTOR (2HP)
CORD REEL #2	700			20	19	00	+		 	0	20	3P	-			SPARE
CORD REEL #3		700		20	21	00		+	+6	0	22	20		700		CORD REEL #4
/EHICLE EXHAUST FAN			1075	20	23	00			+ 6	0	24	20			1656	DOOR #1 ACTUATOR
DOOR #2 ACTUATOR	1656			20	25		+		+6	0	26	20	1656			DOOR #3 ACTUATOR
OOOR #4 ACTUATOR		1656		20	27	0 0		+	+6	0	28	20		-		SPARE
APPARATUS BAY WEST RECEPTACLE			360	20	29				—	0	30	20			360	APPARATUS BAY EAST RECEPTACLE
CEILING FANS	500			20	31		+		+6	0	32	20	1200			WASHING MACHINE
APPARATUS BAY IR HEATERS		1730		-	33	0 0		+	+6	0	34	20		900		GENERATOR BLOCK HEATER
GENERATOR BATTERY CHARGER			800	20	35	0 0			— 6	0	36	20			800	AIR DRYER & DRAIN VALVE
CLOTHES DRYER	2080			30	37		+		+6		38	30	-			-
		2080		2P	39	0	+	•	+6	10	40	-		-		RESERVED FOR HOSE DEHUMIDIFIER
SPARE			-	20	41	00			— 6	+0	42	3P			-	(NOTES 1 AND 2)
		<u> </u>			l	A 17,775		B 076	C C 14,132	TO 47,9		<u> </u>		\S	S/N	_

L	PANEL RP-1																	
	MANUF.: TBD MODEL: NQOB OR EQUAL LOCATION: ELECTRICAL ROOM SERVICE: RECEPTACLES/ LIGHTING								A B	(2		EN	TRY/M	VOL FEEDI MAII OUNTIN	ER: NS:		120V M.L.O. /SURFACE
	SERVICE		LOAD WATTS		BKR. AMP.								CKT.	BKR. AMP.	LO WA			SERVICE
		A	В	С	Alvii .	110.						_	110.	Alvii .	Α	В	С	
	EXIT SIGNS	30			20	1	ó	ò-	•		<u></u>	ò	2	20	1500			APPARATUS BAY LIGHTING CIRCUIT
	LIGHTING CIRCUIT 3		775		20	3	6	0	+			0	4	20		1000		APPARATUS BAY LIGHTING CIRCUIT 2
	LIGHTING CIRCUIT 4			887	20	5	6	\bigcirc		_		0	6	20			670	LIGHTING CIRCUIT 5
	OUTDOOR LIGHTING CIRCUIT (LIGHTING CIRCUIT 7)	490			20	7	6	\bigcirc	+		_	0	8	20	475			LIGHTING CIRCUIT 6
	WALL HEATER 1		1500		20	9	6	\bigcirc	+		_	0	10	20		-		SPARE
	WALL HEATER 2			1500	20	11	6	\bigcirc		_		0	12	20			1500	WALL HEATER 3
	RECEPTACLE - 123, 124, 125	900			20	13	6	\(\rightarrow \)	+			0	14	20	1080			RECEPTACLE - CORRIDOR, 105, 109,
	RECEPTACLE - 121, 120 (SOUTH)		900		20	15	6	0	+			0	16	20		1080		RECEPTACLE - 120 (NORTH), 118, 126
	RECEPTACLE - WATCH ROOM NORTH			720	20	17	6	\bigcirc		_	—	0	18	20			720	RECEPTACLE - WATCH ROOM - WEST
	RECEPTACLE - WATCH ROOM SOUTH	720			20	19	6	\bigcirc	<u> </u>			0	20	20	800			RECEPTACLE - EWC'S (2)
	RECEPTACLE - WORK ROOM NORTH		540		20	21	6	\bigcirc	+		_0	0	22	20		540		RECEPTACLE - WORK ROOM SOUTH
	RECEPTACLE - DAYROOM			740	20	23	6	_		_	—	0	24	20			360	DAYROOM BAR RECEPTACLE
	DISHWASHER	1200			20	25	6	\bigcirc	+			0	26	20	1000			DISPOSAL
	ICE MAKER		750		20	27	6	_	+		_	0	28	20		800		REFRIGERATOR
	KITCHEN COUNTER NORTH			360	20	29	6	\(\rightarrow\)		—	—	0	30	20			1200	KITCHEN COUNTER EAST
	KITCHEN COUNTER SOUTH - HOOD	1200			20	31	6	\ <u>\</u>	+		0	0	32	20	720			OUTDOOR RECEPTACLE NORTH
	RECEPTACLE: ELECTRICAL, SCBA, DEHUMIDIFIER		900		20	33	6	\bigcirc	+			0	34	20		540		MEZZANINE RECEPT MECH, STORA
	EXERCISE ROOM CIRCUIT 1			800	20	35	6	\bigcirc		—		0	36	20			800	EXERCISE ROOM CIRCUIT 2
	SPARE	-			20	37	6	\bigcirc	+			0	38	100	1330			-
	SPARE		-		20	39	6	\bigcirc	+			0	40	-		1700		RP-1A
	SPARE			ı	20	41	6	$\overline{\bigcirc}$				0	42	3P			900	-
•	* LOCKED ON BREAKER					•			A B			ı					 S/N	
								Α	В		С	TOT	AL				•	_

MANUF.: TBD MODEL: NQOB OR EQUAL LOCATION: ELECTRICAL ROOM SERVICE: RECEPTACLES/ LIGHTING								A I	3	С		VOLTS: 208/120V FEEDER: #2 AWG MAINS: 100A M.L.O. ENTRY/MOUNTING: TOP/SURFACE					WG .M.L.O.
SERVICE					CKT.									LOAD WATTS			CEDVICE
SERVICE	А	В	С	AMP.	NO.							NO.	AMP.	А	В	С	SERVICE
EMERGENCY GAS SHUTOFF	50			20	1	0	0	 		+6	0	2	20	360			RECEPT EMS STORAGE
EXERCISE ROOM TV		400		20	3	0	\bigcirc	+		+6	0	4	20		-		SPARE
EXTERIOR RECEPT. CKT 1			540	20	5	0	\bigcirc			\	0	6	20			360	EXTERIOR RECEPT. CKT 2
EXTERIOR RECEPT. CKT 3	360			20	7	0	_	+		+6	0	8	20	360			EXTERIOR RECEPT. CKT 4
INTERCOM AND WESTNET SYSTEM		700		20	9	0		+		-6	0	10	20		600		FACP AND ELECTRIC STRIKE
CANOPY LETTER LIGHTING			200	20	11	0	\			• 6	0	12	20			-	SPARE
SPARE	-			20	13	0	_	+		+6	0	14	20	-			SPARE
SPARE		-		20	15	0	\bigcirc	-	_	+6	0	16	20		_		SPARE
SPACE			-		17	0	_			\	0	18				-	SPACE
SPACE	-				19	0	\bigcirc	<u> </u>		-6	0	20		-			SPACE
SPACE		-			21	0	\bigcirc	-		-6	0	22			=		SPACE
SPACE			-		23	0	_			• 6	0	24				-	SPACE
SPACE	-				25	0	_	+		+6	0	26		-			SPACE
SPACE		-			27	0	\	+-		+6	0	28			-		SPACE
SPACE			-		29	10	__				(0	30				i	SPACE
							Α	В	3	C		TOTAL			;	5/N	_
						1	330	1700	1	900	39	930			_		



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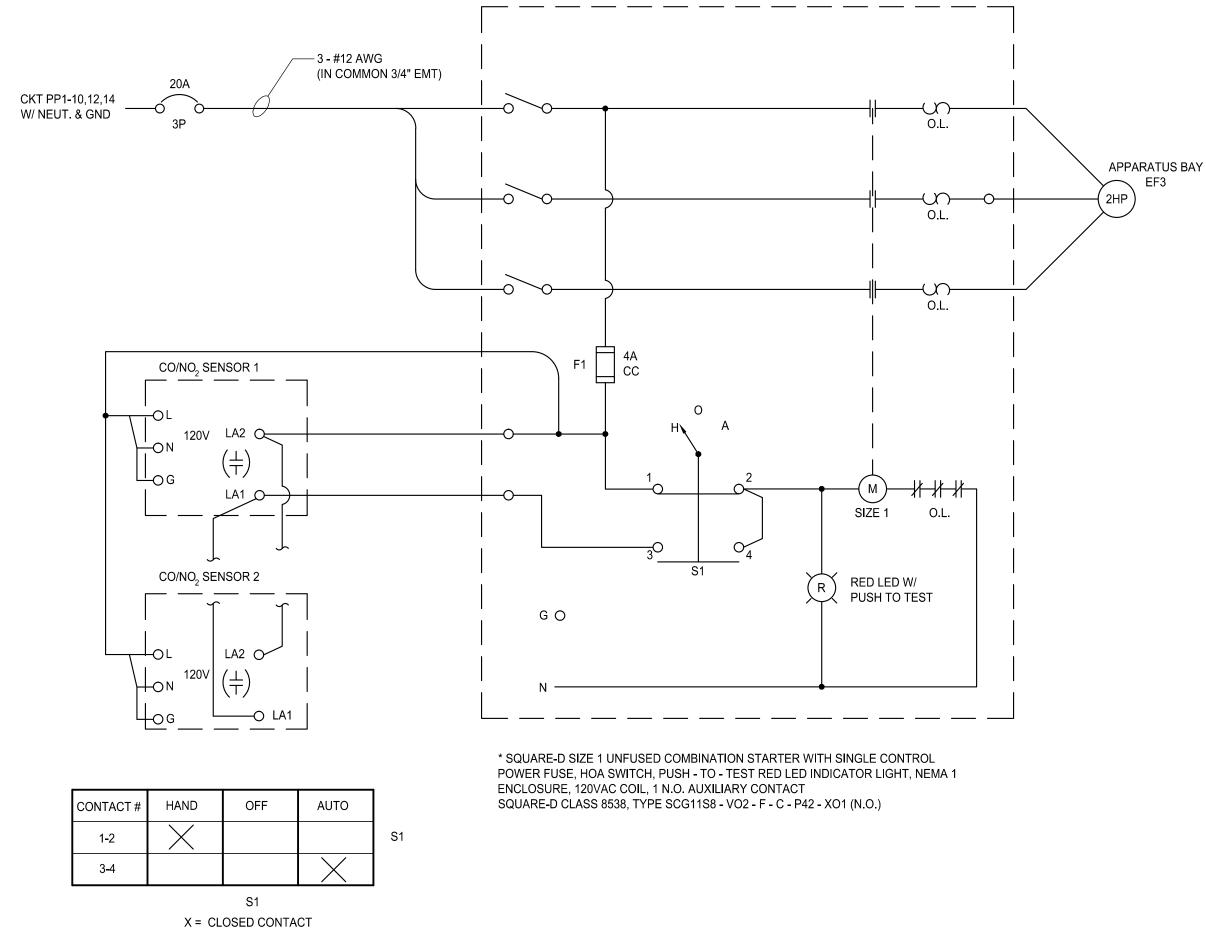
Drawn:	R. McCARTH
Checked:	J. ORANCHAŁ
Approved:	J. ORANCHAŁ

Sheet Title:

PANEL SCHEDULES

Project Number: 15566

		FIXTURE SCHEDULE	Ξ				
SYMBOL	DESCRIPTION	MODEL	VOLTS/WATTS	SOURCE	COMMENTS		
L1	2' x 4' RECESSED LENSED LED TROFFER	LITHONIA 2TL4-30L-FW-A19-EZ1-LP840-GLR OR EQUAL BY COOPER/METALUX, PHILLIPS/DAYBRITE	120V/25W	4000°K, 3000 LUMEN	A19 LENS, FUSED DIMMING (0-10V) 1% DRIVER, SINGLE FUSE		
L1A	2' x 4' RECESSED LENSED LED TROFFER	LITHONIA 2TL4-40L-FW-A19-EZ1-LP840-GLR OR EQUAL BY COOPER/METALUX, PHILLIPS/DAYBRITE	120V/32W	4000°K, 4000 LUMEN	A19 LENS, FUSED DIMMING (0-10V) 1% DRIVER, SINGLE FUSE		
L2	2' x 4' RECESSED LED VOLUMETRIC TROFFER	LITHONIA 2RTL4-40L-FW-A19-EZ1-LP840-GLR OR EQUAL BY COOPER/METALUX, PHILLIPS/DAYBRITE	120V/38.5W	4000°K, 4000 LUMEN	FUSED DIMMING (0-10V) 1% DRIVER, SINGLE FUSE		
L3	LENSED LED STRIPLIGHT	LITHONIA ZL2N-L48-5000LM-MDD-MVOLT-40K-80CRI-WH-GLR OR EQUAL BY COOPER/METALUX, PHILLIPS/DAYBRITE	MVOLT/72W	4000°K, 5000 LUMEN	48", MEDIUM DIFFUSE DRIVER. 80 CRI, WHITE FINISH, SINGLE FUSE		
L3A	SAME AS L3 BUT 2000 LUMENS	LITHONIA ZL2N-L48-2000LM-MDD-MVOLT-40K-80CRI-WH-GLR OR EQUAL BY COOPER/METALUX, PHILLIPS/DAYBRITE	MVOLT/34W	4000°K, 2000 LUMEN	48", MEDIUM DIFFUSE DRIVER. 80 CRI, WHITE FINISH, SINGLE FUSE		
L4	4' WALL BRACKET/SURFACE LED	LITHONIA WL4-40L-EZ1-LP840-GLR OR EQUAL BY COOPER/METALUX, PHILLIPS/DAYBRITE	MVOLT/39.5W	4000°K, 4000 LUMEN	48" WALL/SURFACE MOUNT. DIMMING (0-10V) 1% DRIVER, SINGLE FUSE		
L4A	SAME AS L4 BUT 2000 LUMENS	LITHONIA WL4-20L-EZ1-LP840-GLR OR EQUAL BY COOPER/METALUX, PHILLIPS/DAYBRITE	MVOLT/18.7W	4000°K, 2000 LUMEN	48" WALL/SURFACE MOUNT. DIMMING (0-10V) 1% DRIVER, SINGLE FUSE		
L5	2'X2' RECESSED LENSED LED TROFFER	LITHONIA 2TL2-33L-FW-A19-EZ1-LP840-GLR OR EQUAL BY COOPER/METALUX, PHILLIPS/DAYBRITE	MVOLT/29W 4000°K, 3300 LUMEN		A19 LENS, FUSED DIMMING (0-10V) 1% DRIVER, SINGLE FUSE		
L6	6" LENSED LED DOWNLIGHT	LITHONIA EVO-40/10-6-DFRAMF-120-EZ1-SF OR EQUAL BY COOPER/PORTFOLIO, PHILLIPS/OMEGA	120V/40W 4000°K, 1000 LUMEN		DEAD FRONT REGRESSED ANTIMICROBIAL LENS, DIMMING (0-10V) 1% DRIVER, SINGLE FUSE		
L7	48" VAPOR RESISTANT, ROUGH SERVICE	LITHONIA VAP-4000LM-PCL-MD-MVOLT-GZ10-40K-80CRI-SF OR EQUAL BY COOPER/METALUX, PHILLIPS/DAYBRITE	MVOLT/44W	4000°K, 4000 LUMEN	CLEAR GASKETED POLYCARBONATE LENS, MEDIUM DISTRIBUTION, 80CRI, DIMMING (0-10V) 10% DRIVER, SINGLE FUSE		
L8	HIGH BAY LED	LITHONIA IBL-12L-WD-120-LP840-GLR-CS3W OR EQUAL BY COOPER, PHILLIPS	120V/125W	4000°K, 12000 LUMEN	WIDE DISTRIBUTION, SINGLE FUSE, 80 CRI, W/CORD AND TWIST-LOCK RECEPTACLE		
L9	LED UNDERCABINET LIGHT	LUCIFER LIGHTING FLS-1-XXX-B-C-C OR ENGINEER APPROVED EQUAL	120V/1.5W PER FT	COOL	CONTRACTOR TO MEASURE AND ORDER FOUR LENGTHS AS SHOWN ON LIGHTING PLAN. PROVIDE INTERCONNECTING CABLES AND POWER SUPPLY AS REQUIRED (POWER SUPPLY IS PSA-40-10DC-JB-1)		
L10	ARCHITECTURAL WALLPACK	LITHONIA WSTLED-2-10A700/40K-SR4-120-SF-DDBXD OR EQUAL BY COOPER/LUMARK, PHILLIPS/GARDCO	120V/47W	4000°K, 3851 LUMEN	SINGLE FUSE, FORWARD THROW OPTICS (SR4)		
L10A	SAME AS L10 BUT W/SR2 OPTICS	LITHONIA WSTLED-2-10A700/40K-SR2-120-SF-DDBXD OR EQUAL BY COOPER/LUMARK, PHILLIPS/GARDCO	120V/47W	4000°K, 3851 LUMEN	SINGLE FUSE, ROADWAY OPTICS (SR2)		
L11	OUTDOOR LED CANOPY FIXTURE, SURFACE MOUNT	LITHONIA OLCFM-15-DDB OR EQUAL BY COOPER/LUMARK, PHILLIPS/GARDCO	120V/16.6W	4000°K, 1077 LUMEN			
L12	ARCHITECTURAL ROUGH SERVICE LED	LITHONIA VGR2C-40LED-120-DDBT-SF OR EQUAL BY COOPER/LUMARK, PHILLIPS/GARDCO	120V/40W	4000°K, 940 LUMEN	POLYCARBONATE LENS, 120V OPERATION, SINGLE FUSE, DARK BRONZE FINISH W/ RK1 T20BIT		
L13	ARCHITECTURAL LED WALLPACK	LITHONIA KAXWLED-P1-40K-R4-120-SF OR EQUAL BY COOPER/LUMARK, PHILLIPS/GARDCO	120V/29W	4000°K, 3415 LUMEN	FORWARD THROW OPTICS, SINGLE FUSE		
L14	LED LOUVERED NIGHTLIGHT	KIRLIN MNT-07912-120V-HW-37 OR ENGINEERS APPROVED EQUAL	120V/6W	4000°K, 35 LUMEN	DARK BRONZE FINISH, 120V OPERATION, HIGHER LIGHT OUTPUT		
L15	LED FLOODLIGHT (FOR FLAGPOLE)	LITHONIA DSXF2LED-4-A530/40K-MSP-120-THK-SF-FV-DDBXD OR EQUAL BY COOPER/LUMARK, PHILLIPS/GARDCO	120V/74W	4000°K, 6933 LUMEN	KNUCKLE MOUNT w/ ${\cal V}_2$ " NPT PIPE, SINGLE FUSE, FULL VISOR, DARK BRONZE FINISH		
L16	OUTDOOR LED STRIP	CELESTIAL LIGHTING SERPENS-GX-W40-A-49	120V/175W (XFMR)	4000°K, 366 LUMEN	UL WET LOCATION LISTED (IP68 RATED), FACTORY SUPPLIED OUTDOOR RATED CONNECTORS, SER-FX-120-300 POWER TRANSFORMER, ANGLE MOUNTING BRACKET		
EX	LED EXIT SIGN	LITHONIA LQM-S-W-3-R-120/277 OR EQUAL BY COOPER/SURE-LITE, PHILLIPS/MCPHILBIN	120V/5W	RED LED	RED STENCIL LETTERS, WHITE HOUSING		



SIZE 1 COMBINATION STARTER



Project:
BIRMINGHAM
FIRE STATION No. 2

1600 WEST MAPLE BIRMINGHAM, MI 48009

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 Date
 Issued For

 07/19/16
 95% REVIEW

 07/29/16
 FINAL REVIEW

 12/05/16
 BIDS

Drawn: R. McCARTHY
Checked: J. ORANCHAK

Approved:

Sheet Title:

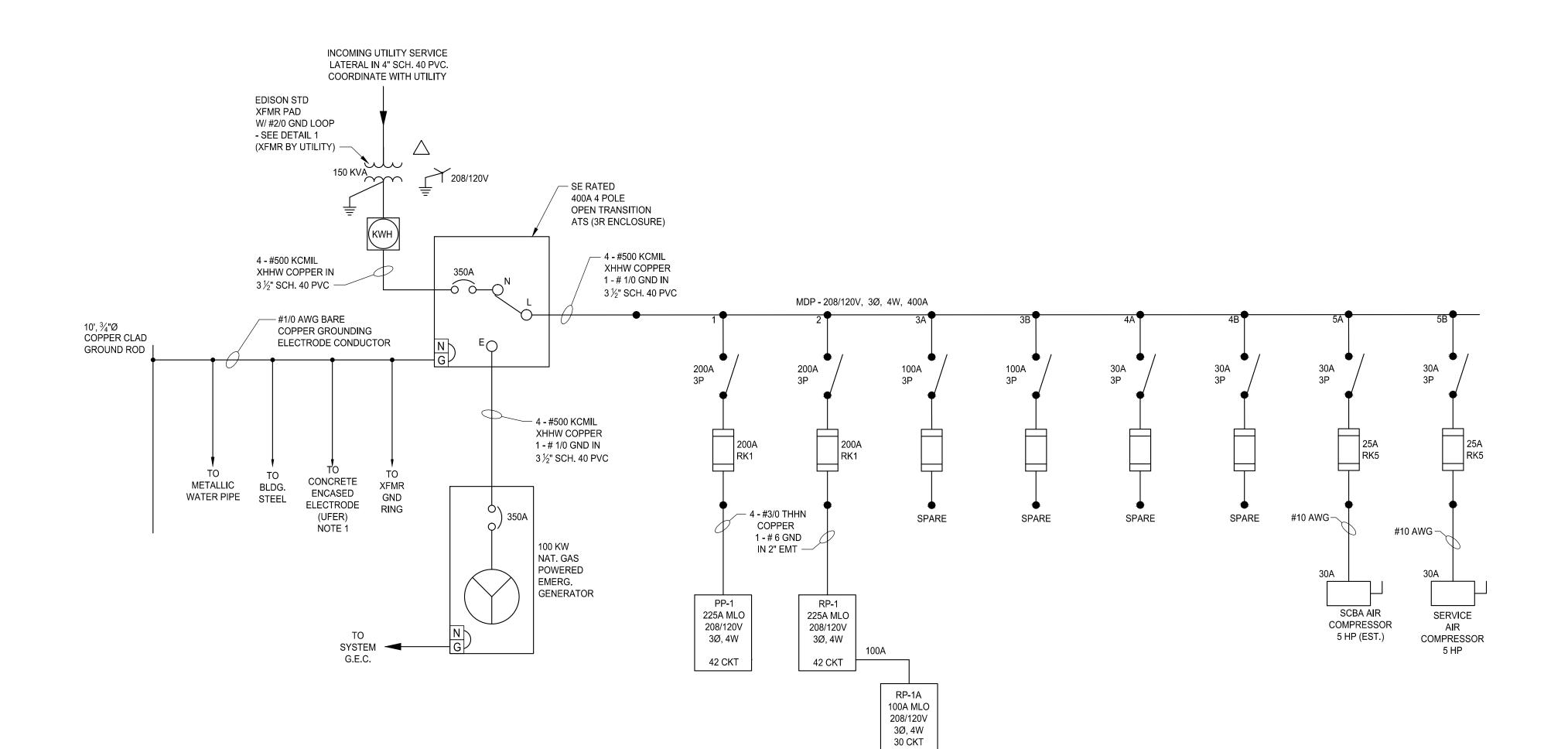
ELECTRICAL ONE LINE DIAGRAMS

Project Number:

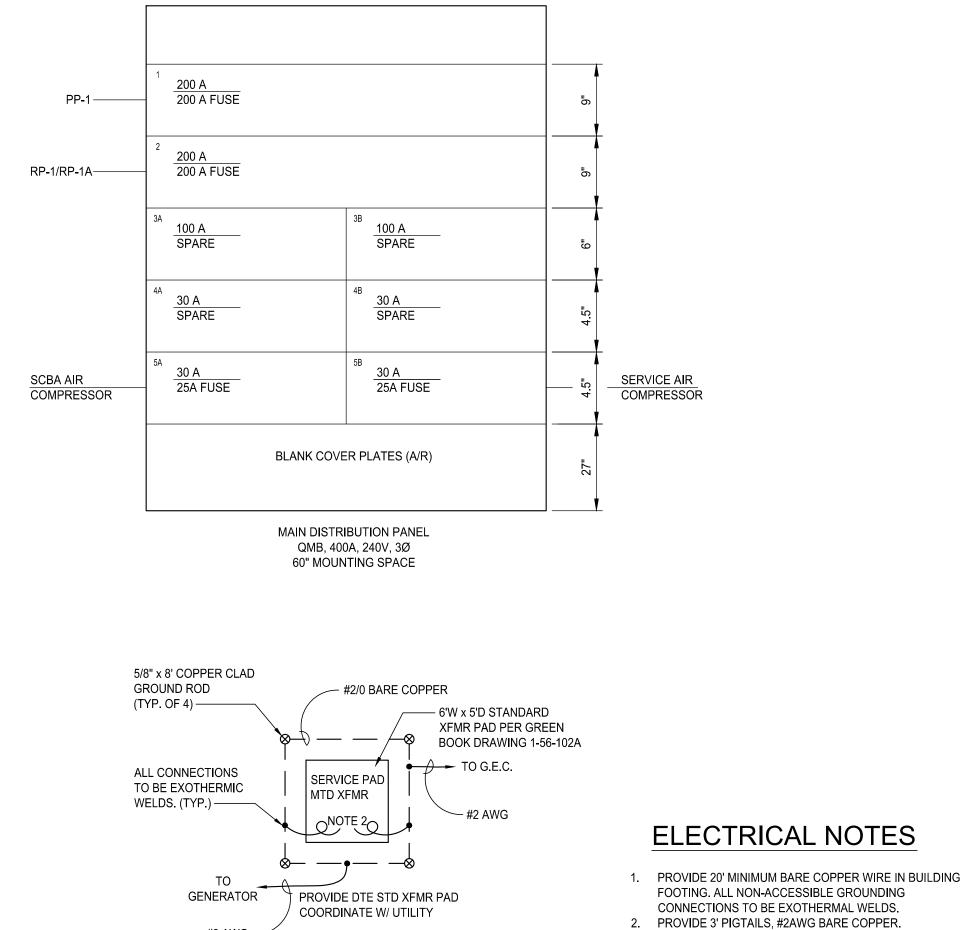
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ONE LINE DIAGRAM
SCALE: NOT TO SCALE



CO/NO₂ MONITORING CONTROL SCHEMATIC

SCALE: N.T.S.

#2 AWG —

DETAIL 1

SCALE: NOT TO SCALE