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# MISSOURI DEPARTMENT OF TRANSPORTATION

CONCRETE BLOCK TRUCK WASH  
ST LOUIS DISTRICT  
BALLWIN, MISSOURI 63021  
2309 BARRETT STATION RD,  
ST LOUIS COUNTY

### CODE REQUIREMENTS

- BUILDING CODE - CURRENT IBC
- PLUMBING CODE - CURRENT IBC
- MECHANICAL CODE - CURRENT IBC
- ELECTRICAL CODE - CURRENT N.E.C.

### STANDARD CONSTRUCTION:

All storm and sanitary sewer structures and appurtenances to be dedicated to MSD, or to be Private Under MSD Inspection, shall conform to the Metropolitan St. Louis Sewer District, Standard Construction Specifications for Sewers and Drainage Facilities, 2009. That will include Standard Details shown therein, and shall include all subsequent changes made thereto.

Some recent changes concern Pipe Field Testing and performance, and include the following:

### PART 4 - PIPE SEWER CONSTRUCTION

Section B, Pipe Field Tests, Paragraph 1, General, subparagraph e. & f. parts added.

Section B, Pipe Field Tests, Paragraph 2, Reach Integrity Testing - delete the first sentence and the following replacement applies:

All sanitary and combined sewers shall sustain a maximum leakage limit of 100 gallons/inch of pipe diameter/mile of line/day, as required by the Missouri Department of Natural Resources Specifications.

Section B, Pipe Field Tests, Paragraph 2, Reach Integrity Testing, Subparagraph c, Infiltration/Exfiltration Testing - delete the sixth sentence, concerning leakage limits, and the following replacement applies:

The measurement of leakage shall not exceed 100 gallons/inch of pipe diameter/mile of line/day, as required by the Missouri Department of Natural Resources Specifications.

Section B, Pipe Field Tests, Paragraph 4, Manhole Testing, Subparagraph a, Vacuum Testing - after the first sentence, the following addition applies:

The vacuum test must be performed prior to backfilling around the manhole unless the contractor provides documentation from the precast manhole manufacturer stating that the manhole may be vacuum tested after backfilling has taken place. The contractor must submit this documentation prior to backfilling around any manhole.

Section B, Pipe Field Tests, Paragraph 4, Manhole Testing, Subparagraph b, Exfiltration Testing - delete the second sentence, concerning leakage limits, and the following addition applies:

For exfiltration testing, the allowable leakage limit is 100 gallons/inch of pipe diameter/mile of line/day when the average head on the test section is three feet (3') or less.

COVER SHEET

MISSOURI DEPARTMENT  
OF TRANSPORTATION

DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

DESIGN BY: TOM HALL

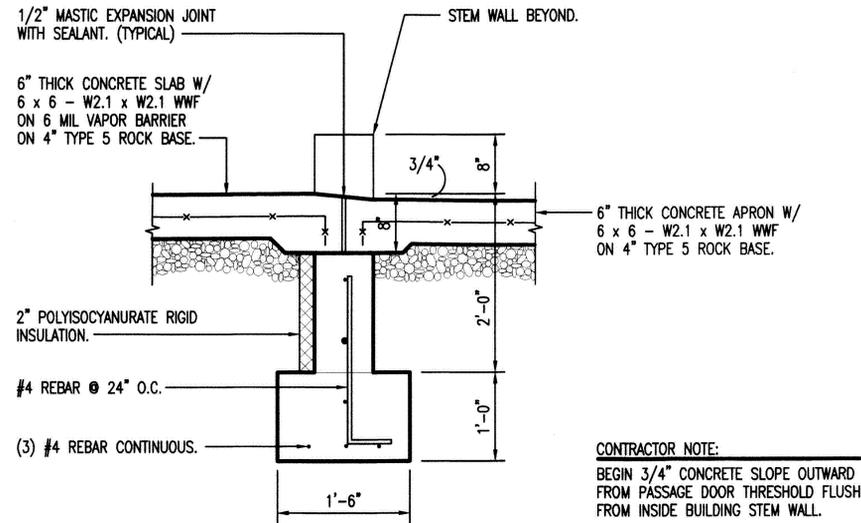
DRAWN BY: TOM HALL

DATE: 08.21.2015

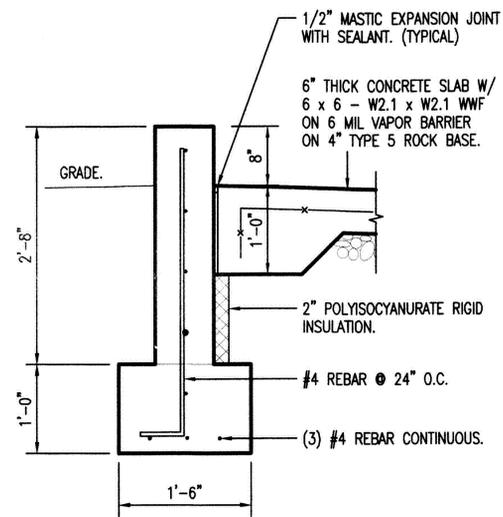
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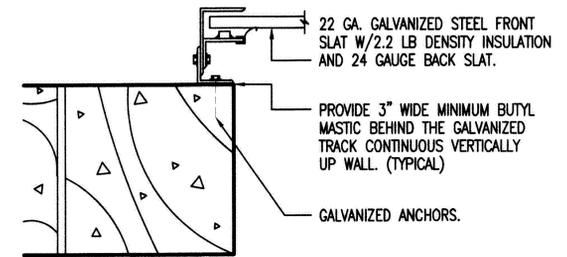




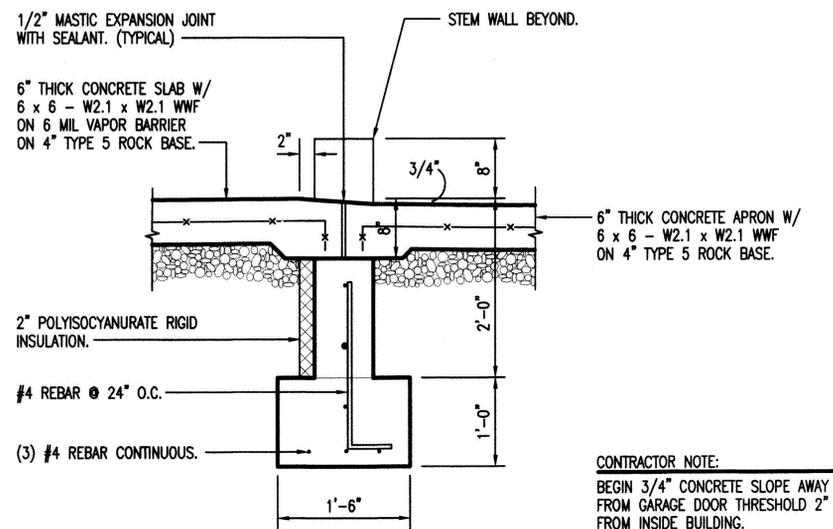
PASSAGE DOOR  
**D** THRESHOLD  
 3  
 SCALE: 1/2" = 1'-0"



**E** STEM WALL  
 3  
 SCALE: 1/2" = 1'-0"

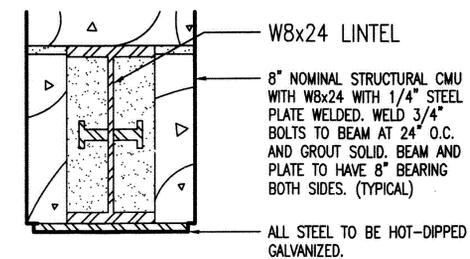


COILING  
**F** GARAGE DOOR JAMB  
 3  
 SCALE: 1-1/2" = 1'-0"

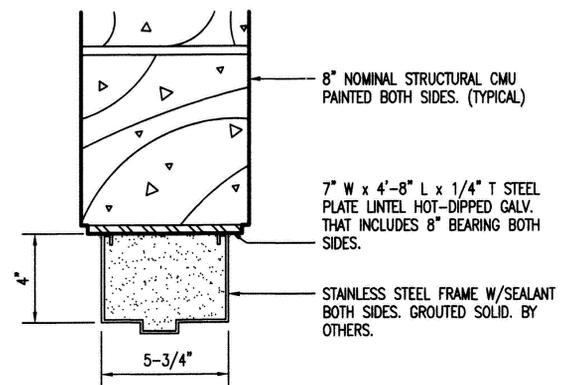


GARAGE DOOR  
**A** THRESHOLD  
 3  
 SCALE: 1/2" = 1'-0"

CONTRACTOR NOTE:  
 BEGIN 3/4" CONCRETE SLOPE AWAY FROM GARAGE DOOR THRESHOLD 2" FROM INSIDE BUILDING.



GARAGE DOOR  
**B** HEAD  
 3  
 SCALE: 1-1/2" = 1'-0"



STAINLESS STEEL DOOR  
**C** HEAD/JAMB @ 2"  
 3  
 SCALE: 1-1/2" = 1'-0"



# FOUNDATION DETAILS

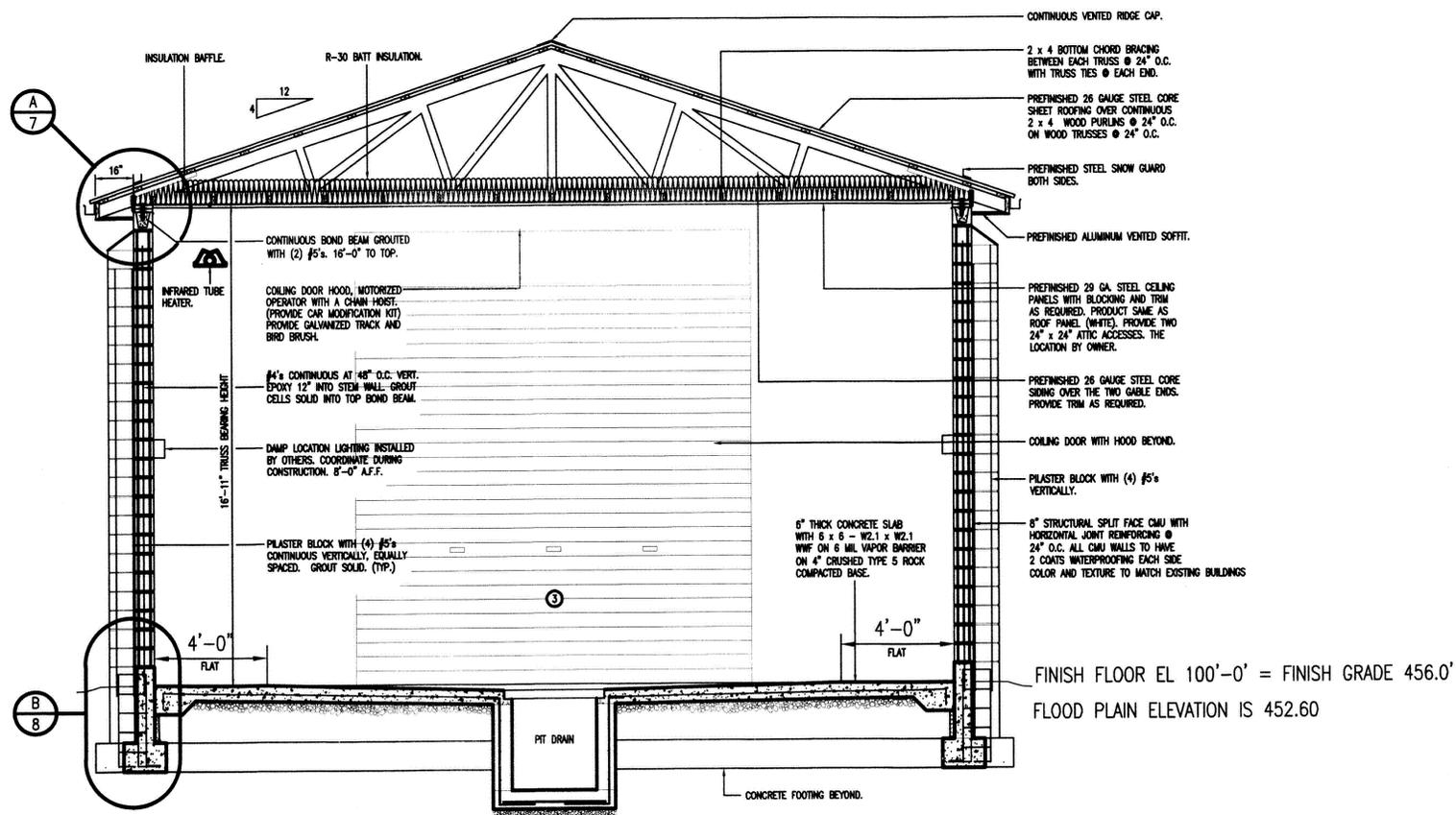
MISSOURI DEPARTMENT  
 OF TRANSPORTATION  
 DIVISION OF GENERAL SERVICES  
 FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
 2309 BARRETT STATION RD  
 BALLWIN, MO 63021

MSD P 1953901  
 BASE MAP 23P2

DESIGN BY: TOM HALL  
 DRAWN BY: TOM HALL  
 DATE: 08.28.2016





**A**  
**5** BUILDING SECTION MSD P 1953901  
SCALE: 1/4" = 1'-0" BASE MAP 23P2

**ENGINEERING DESIGN AND SHOP DRAWINGS:**

1. PROFESSIONAL ENGINEER: ALL TRUSS DESIGNS SHALL BEAR THE NAME, SEAL, AND REGISTRATION NUMBER OF A LICENSED PROFESSIONAL ENGINEER.
2. TRUSS DESIGNS SHALL CONTAIN THE FOLLOWING DATA:
  - A. LOADING (UNIFORM)
    1. TOP CHORD
      - LIVE LOAD 20 PSF
      - DEAD LOAD 10 PSF
      - SNOW DRIFT - PER 2003 IBC
    2. BOTTOM CHORD
      - DEAD LOAD 5 PSF
      - TOTAL LOAD 35 PSF
  - B. METAL CONNECTORS - NOTE GAUGE SIZES OF CONNECTORS, NAME OF MANUFACTURER, AND CAPACITY OF EACH CONNECTION.
  - C. LUMBER SPECIFICATIONS
  - D. PITCH, SPAN, AND SPACING OF TRUSSES

- E. DESIGN LOADINGS AND ALLOWABLE UNIT STRESS INCREASE, IF ANY
  - F. FORCE ANALYSIS OF BAR FORCES IN EACH MEMBER
  - G. SIZE AND LOCATION OF ALL CONNECTOR PLATES
  - H. TRUSS SUPPORTS @ TOP PLATES & BOTTOM CHORD BRACING JOIST HANGERS.
  - I. CAMBER, IF ANY
  - J. PERMANENT BRACING
  - K. HANDLING AND ERECTION INSTRUCTIONS
  - L. PROVIDE SIMPSON STRONG TIE H1 RAFTER CONNECTOR EACH END TO SUBSTRATE. (TYP.)
3. FIVE COPIES OF EACH TRUSS DESIGN AND/OR SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW PRIOR TO THE FABRICATION OF ANY COMPONENTS.

4. STRUCTURAL ENGINEERS REVIEW OF DRAWINGS PREPARED BY THE CONTRACTORS, SUPPLIERS, ETC., ARE ONLY FOR CONFORMANCE WITH DESIGN CONCEPT. CONSTRUCTION SHALL NOT START WITHOUT SAID REVIEW.
- DESIGN CRITERIA:
1. BUILDING CODE: CURRENT IBC
  2. SEISMIC AV = 0.125; AA = 0.13
  3. BASIC WIND SPEED 90 MPH, EXPOSURE C
  4. PITCH 4:12



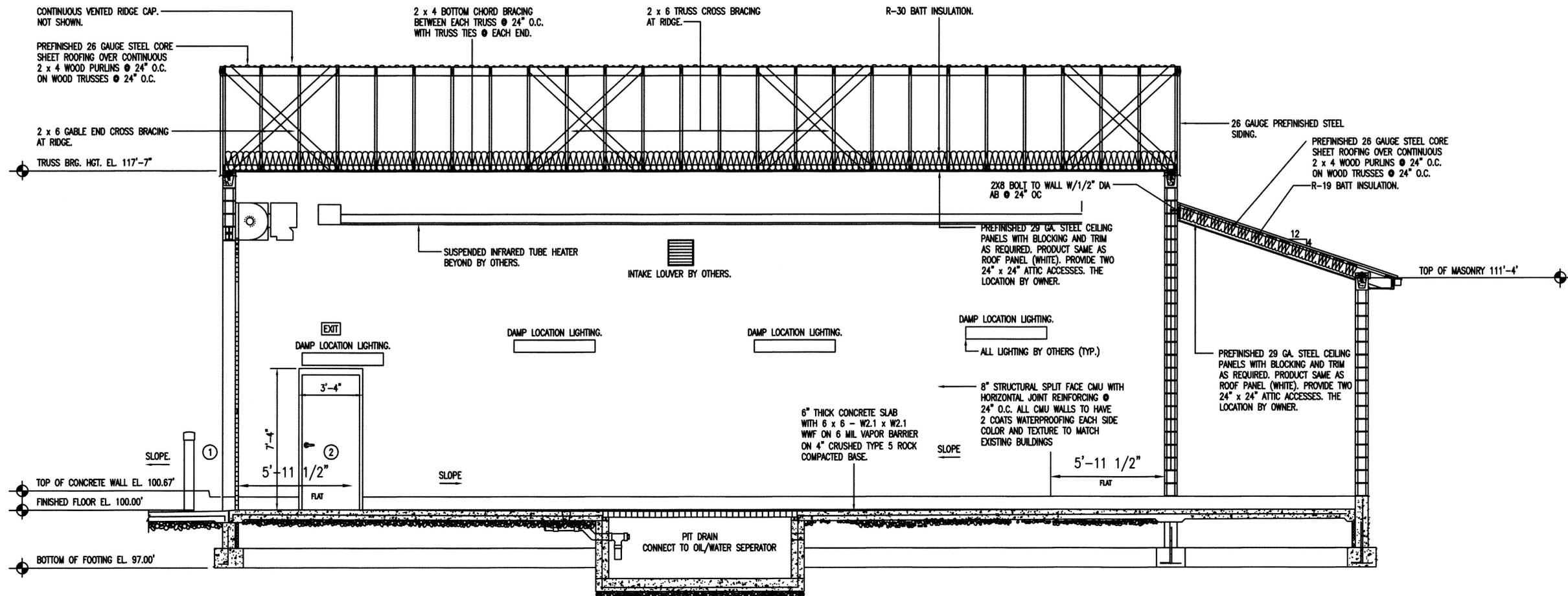
**BUILDING SECTION**

MISSOURI DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

MSD P 1953901  
BASE MAP 23P2

DESIGN BY: TOM HALL  
DRAWN BY: TOM HALL  
DATE: 06.28.2016  
5 of 21



**A**  
**6** BUILDING SECTION  
SCALE: 3/16" = 1'-0"

MSD P 1953901  
BASE MAP 23P2  
FINISH FLOOR EL 100'-0" = FINISH GRADE 456.0'  
FLOOD PLAIN ELEVATION IS 452.60

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  2. TRUSS DESIGNS SHALL CONTAIN THE FOLLOWING DATA:
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      2. BOTTOM CHORD
        - DEAD LOAD 5 PSF
        - TOTAL LOAD 35 PSF
    - B. METAL CONNECTORS - NOTE GAUGE SIZES OF CONNECTORS, NAME OF MANUFACTURER, AND CAPACITY OF EACH CONNECTION.
    - C. LUMBER SPECIFICATIONS
    - D. PITCH, SPAN, AND SPACING OF TRUSSES

- E. DESIGN LOADINGS AND ALLOWABLE UNIT STRESS INCREASE, IF ANY
  - F. FORCE ANALYSIS OF BAR FORCES IN EACH MEMBER
  - G. SIZE AND LOCATION OF ALL CONNECTOR PLATES
  - H. TRUSS SUPPORTS @ TOP PLATES & BOTTOM CHORD BRACING JOIST HANGERS.
  - I. CAMBER, IF ANY
  - J. PERMANENT BRACING
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  4. PITCH 4:12



**BUILDING SECTIONS**

MISSOURI DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

MSD P 1953901  
BASE MAP 23P2  
CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

DESIGN BY: TOM HALL
DRAWN BY: TOM HALL
DATE: 09.21.2015
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SNOW GUARD BOTH SIDES.  
 PREFINISHED 26 GAUGE STEEL SHEET ROOFING  
 OVER CONTINUOUS 2 x 4 WOOD PURLINS @ 24"  
 O.C. ON WOOD TRUSSES @ 24" O.C.

PROVIDE SIMPSON STRONG TIE H1 RAFTER  
 CONNECTOR EACH END. (TYPICAL)

(2) TREATED 2 x 8's WITH EXPANSION  
 BOLTS @ 32" O.C.

RAT GUARDS @ ENDS (TYPICAL)

PREFINISHED 5" SEAMLESS  
 ALUMINUM GUTTERS AND  
 DOWNSPOUTS.

PREFINISHED ALUMINUM FASCIA AND  
 VENTED SOFFIT.

F-CHANNEL.

CONTINUOUS BOND BEAM GROUTED WITH (2) #5's.

PREFINISHED 29 GA. STEEL CEILING PANELS WITH  
 BLOCKING AND TRIM AS REQUIRED.

SLOPE TOP WITH CONCRETE.

PILASTER BLOCK WITH (4) #5's CONTINUOUS  
 VERTICALLY, EQUALLY SPACED. GROUT SOLID.  
 (TYPICAL)

#4's CONTINUOUS AT 48" O.C. VERTICALLY  
 VERTICALLY. EPOXY 12" INTO STEM WALL.  
 GROUT CELLS SOLID INTO BOND BEAM.

INSULATION BAFFLE.

PREFINISHED  
 TRIM TO COVER  
 TOP PLATES.

PILASTER BLOCK WITH (4)  
 #5's CONTINUOUS VERTICALLY.  
 EPOXY 12" INTO EXISTING  
 CONCRETE STEM WALL. GROUT  
 CELLS SOLID. (TYPICAL)

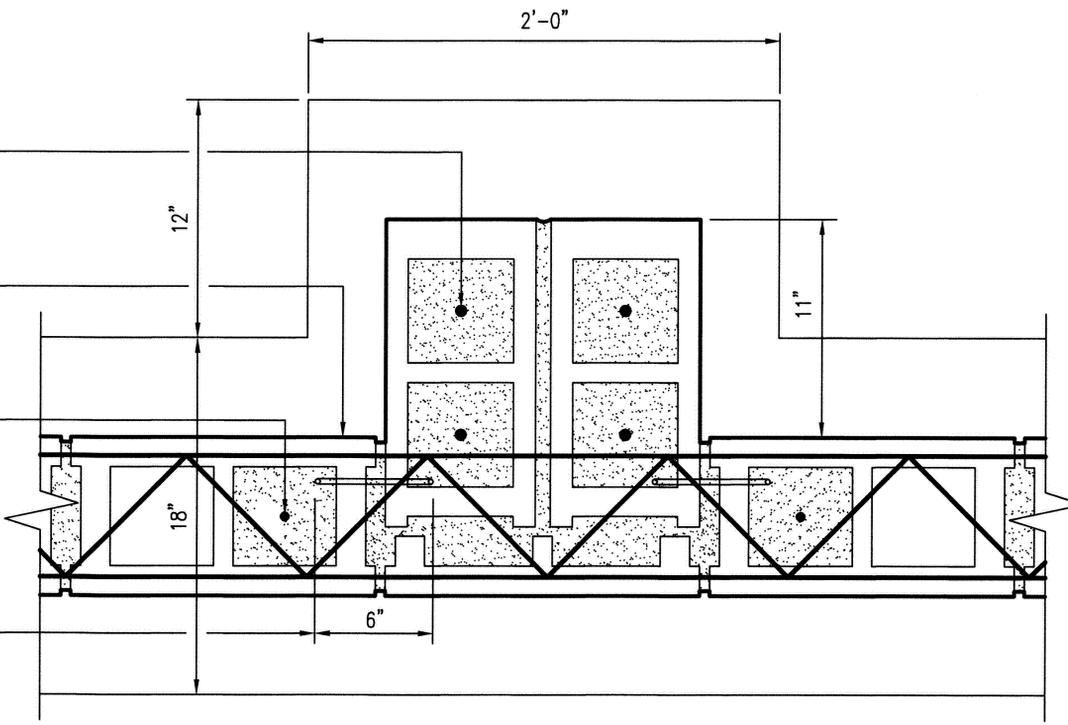
8" STRUCTURAL SPLIT CMU/W  
 HORIZONTAL JOINT REINF'G.  
 AT 24" O.C. CMU WALL TO  
 BE WATERPROOFED BOTH SIDES

#4's CONTINUOUS AT 48" O.C.  
 VERTICALLY. EPOXY 12" INTO  
 WALL. GROUT CELLS SOLID  
 INTO BOND BEAM.

(2) #4's HORSESHOE SHAPED  
 WITH (2) 12" LEGS TURNED  
 DOWN PLACED EVERY THIRD  
 COURSE VERTICALLY. (TYPICAL)

**A**  
 WALL SECTION  
 SCALE: 3/8" = 1'-0"

**B**  
 PILASTER DETAIL  
 SCALE: 3/8" = 1'-0"



**DETAILS**

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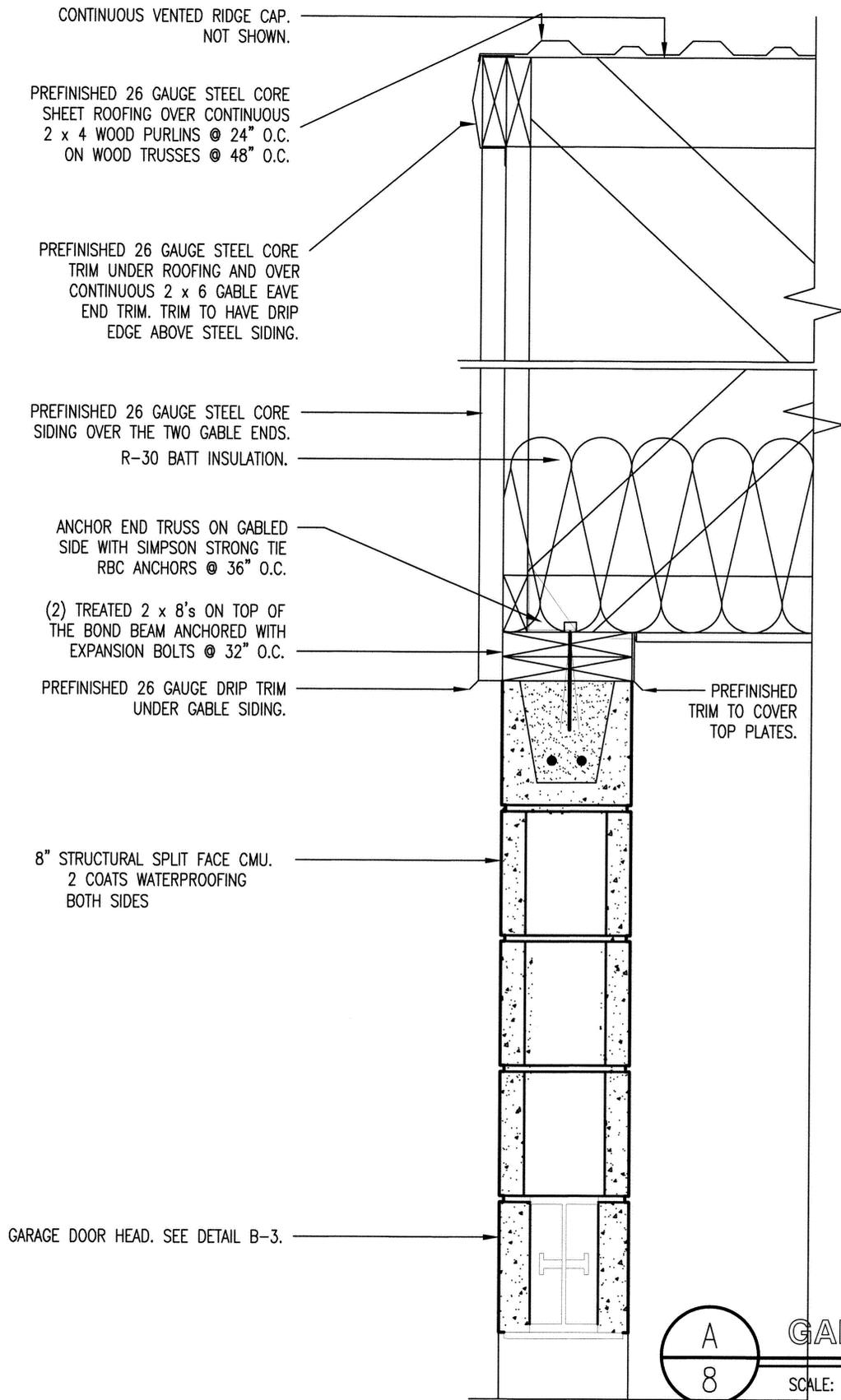
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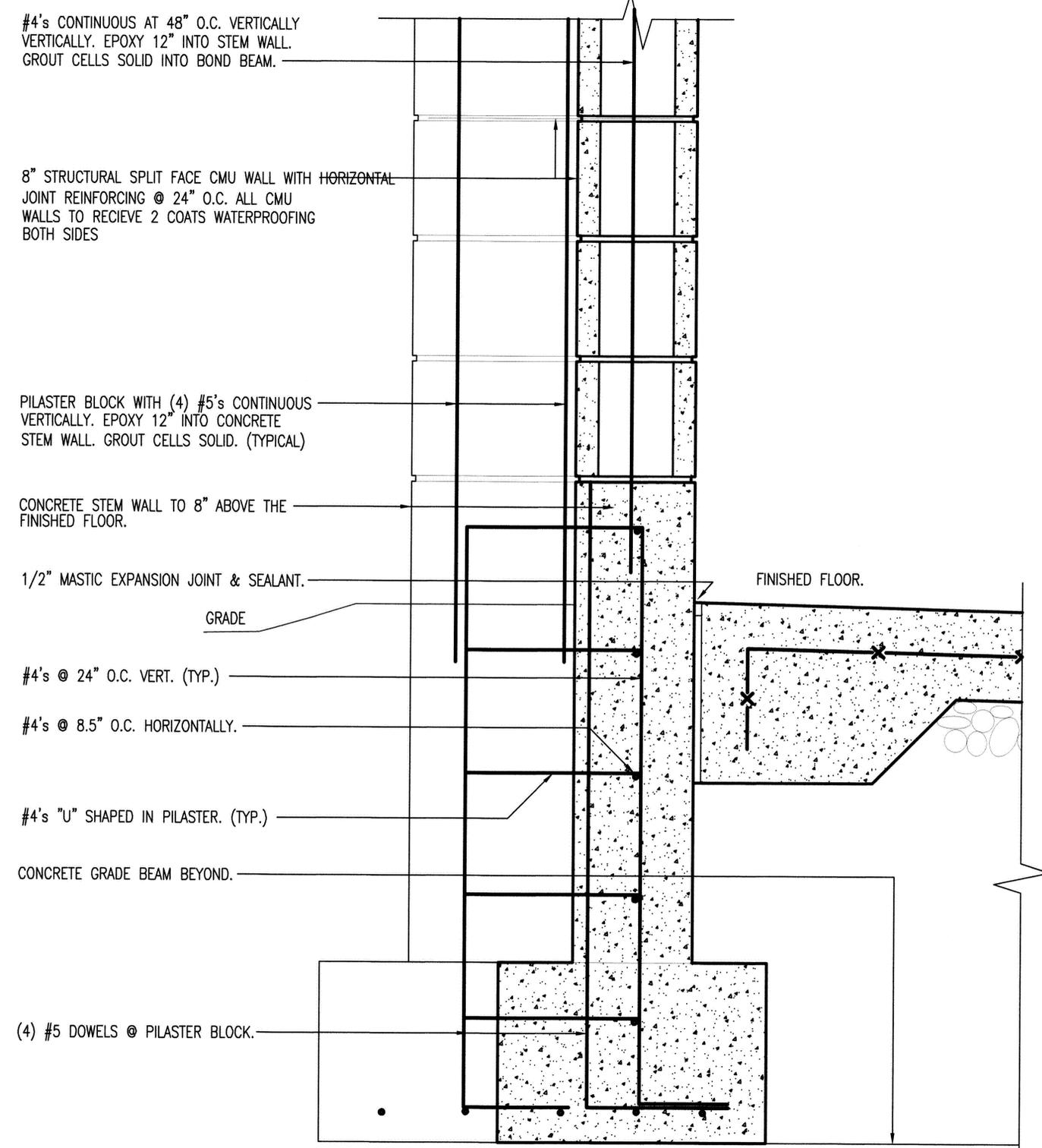
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DATE: 04.28.2015

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**A**  
8  
GABLE DETAIL  
SCALE: 3/8" = 1'-0"



**B**  
8  
WALL SECTION  
SCALE: 3/8" = 1'-0"

18"

MSD P 1953901  
BASE MAP 23P2

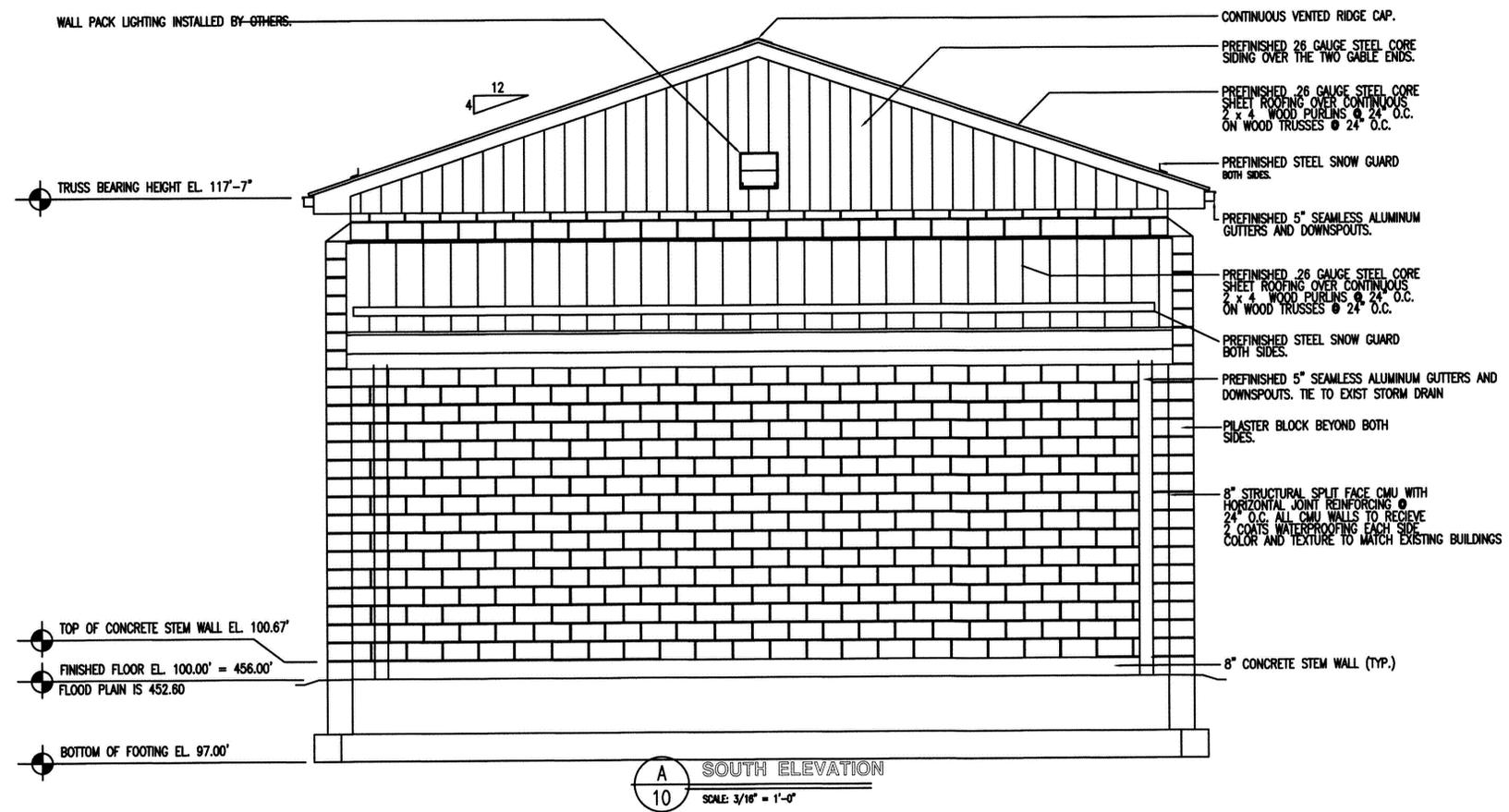


DETAILS

MISSOURI DEPARTMENT  
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DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

DESIGN BY: TOM HALL  
DRAWN BY: TOM HALL  
DATE: 08.28.2015



# SOUTH ELEVATION

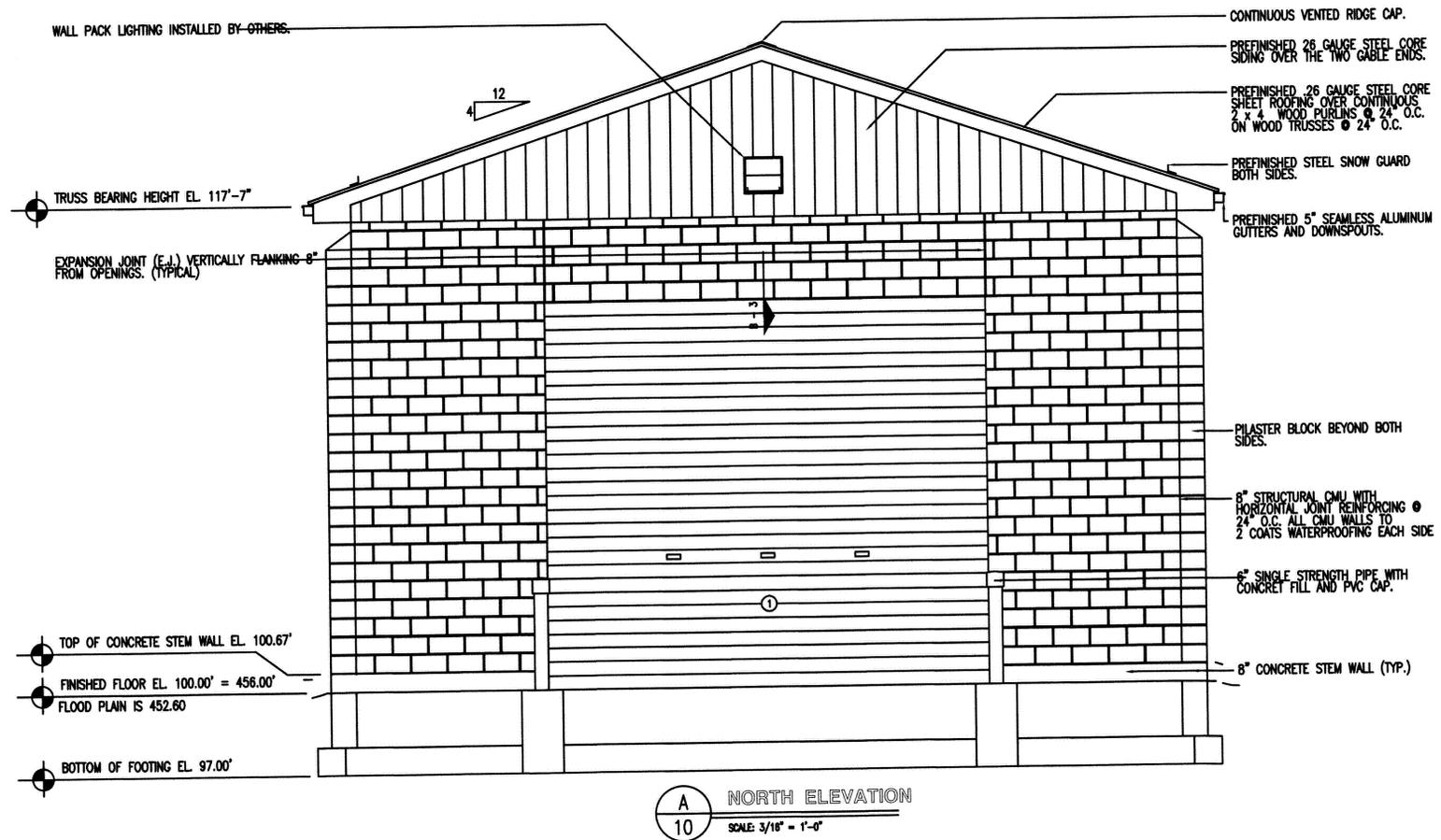
MISSOURI DEPARTMENT  
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FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

MSD P 1953901  
BASE MAP 23P2

DESIGN BY: TOM HALL
DRAWN BY: TOM HALL
DATE: 06.26.2015
9 of 21





WALL PACK LIGHTING INSTALLED BY OTHERS.

CONTINUOUS VENTED RIDGE CAP.

PREFINISHED 26 GAUGE STEEL CORE SIDING OVER THE TWO GABLE ENDS.

PREFINISHED 26 GAUGE STEEL CORE SHEET ROOFING OVER CONTINUOUS 2 x 4 WOOD PURLINS @ 24" O.C. ON WOOD TRUSSES @ 24" O.C.

PREFINISHED STEEL SNOW GUARD BOTH SIDES.

PREFINISHED 5" SEAMLESS ALUMINUM GUTTERS AND DOWNSPOUTS.

TRUSS BEARING HEIGHT EL. 117'-7"

EXPANSION JOINT (E.J.) VERTICALLY FLANKING 8" FROM OPENINGS. (TYPICAL)

PILASTER BLOCK BEYOND BOTH SIDES.

8" STRUCTURAL CMU WITH HORIZONTAL JOINT REINFORCING @ 24" O.C. ALL CMU WALLS TO 2 COATS WATERPROOFING EACH SIDE.

6" SINGLE STRENGTH PIPE WITH CONCRETE FILL AND PVC CAP.

TOP OF CONCRETE STEM WALL EL. 100.67'

FINISHED FLOOR EL. 100.00' = 456.00'

FLOOD PLAIN IS 452.60

8" CONCRETE STEM WALL (TYP.)

BOTTOM OF FOOTING EL. 97.00'

**A**  
**10** NORTH ELEVATION  
SCALE 3/16" = 1'-0"

MSD P 1953901  
BASE MAP 23P2



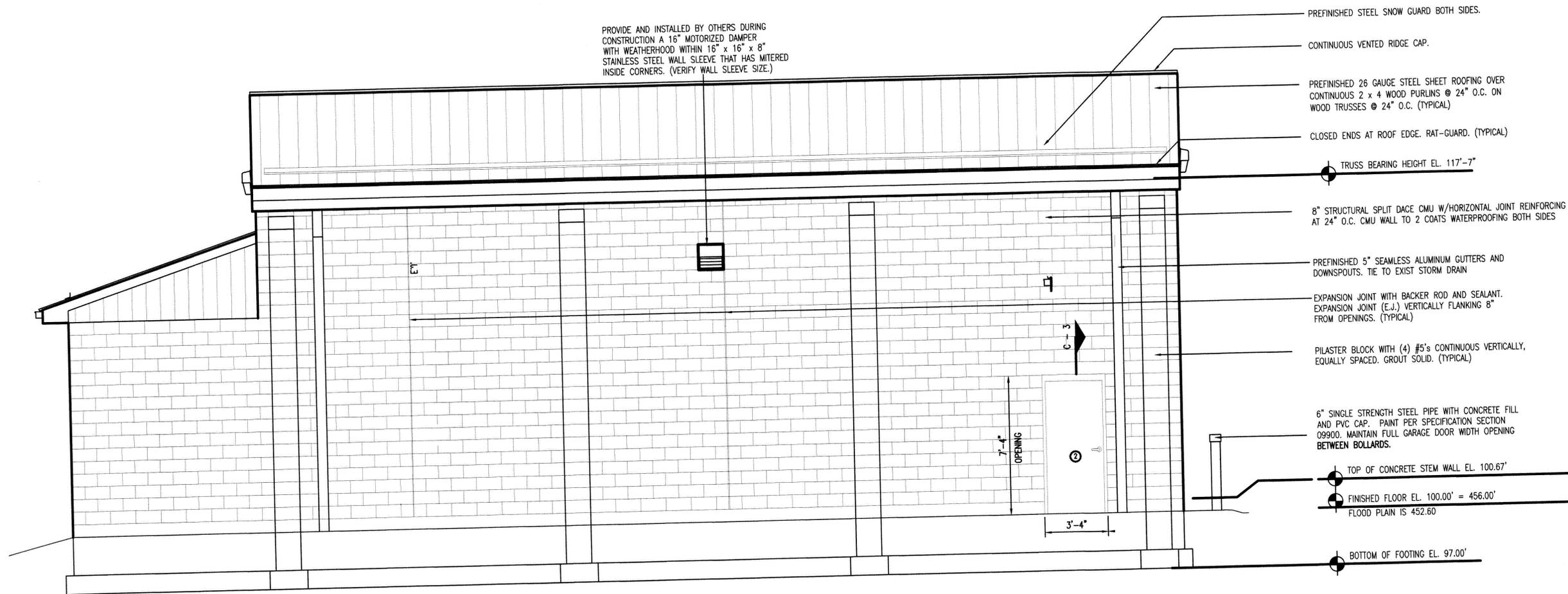
# NORTH ELEVATION

MISSOURI DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

DESIGN BY: TOM HALL  
DRAWN BY: TOM HALL  
DATE: 06.26.2015

PROVIDE AND INSTALLED BY OTHERS DURING CONSTRUCTION A 16" MOTORIZED DAMPER WITH WEATHERHOOD WITHIN 16" x 16" x 8" STAINLESS STEEL WALL SLEEVE THAT HAS MITERED INSIDE CORNERS. (VERIFY WALL SLEEVE SIZE.)



- PREFINISHED STEEL SNOW GUARD BOTH SIDES.
- CONTINUOUS VENTED RIDGE CAP.
- PREFINISHED 26 GAUGE STEEL SHEET ROOFING OVER CONTINUOUS 2 x 4 WOOD PURLINS @ 24" O.C. ON WOOD TRUSSES @ 24" O.C. (TYPICAL)
- CLOSED ENDS AT ROOF EDGE. RAT-GUARD. (TYPICAL)
- TRUSS BEARING HEIGHT EL. 117'-7"
- 8" STRUCTURAL SPLIT DAGE CMU W/HORIZONTAL JOINT REINFORCING AT 24" O.C. CMU WALL TO 2 COATS WATERPROOFING BOTH SIDES
- PREFINISHED 5" SEAMLESS ALUMINUM GUTTERS AND DOWNSPOUTS. TIE TO EXIST STORM DRAIN
- EXPANSION JOINT WITH BACKER ROD AND SEALANT. EXPANSION JOINT (E.J.) VERTICALLY FLANKING 8" FROM OPENINGS. (TYPICAL)
- PILASTER BLOCK WITH (4) #5's CONTINUOUS VERTICALLY, EQUALLY SPACED. GROUT SOLID. (TYPICAL)
- 6" SINGLE STRENGTH STEEL PIPE WITH CONCRETE FILL AND PVC CAP. PAINT PER SPECIFICATION SECTION 09900. MAINTAIN FULL GARAGE DOOR WIDTH OPENING BETWEEN BOLLARDS.
- TOP OF CONCRETE STEM WALL EL. 100.67'
- FINISHED FLOOR EL. 100.00' = 456.00'  
FLOOD PLAIN IS 452.60
- BOTTOM OF FOOTING EL. 97.00'

**A**  
10 EAST ELEVATION  
SCALE: 3/16" = 1'-0"

MSD P 1953901  
BASE MAP 23P2



EAST ELEVATION

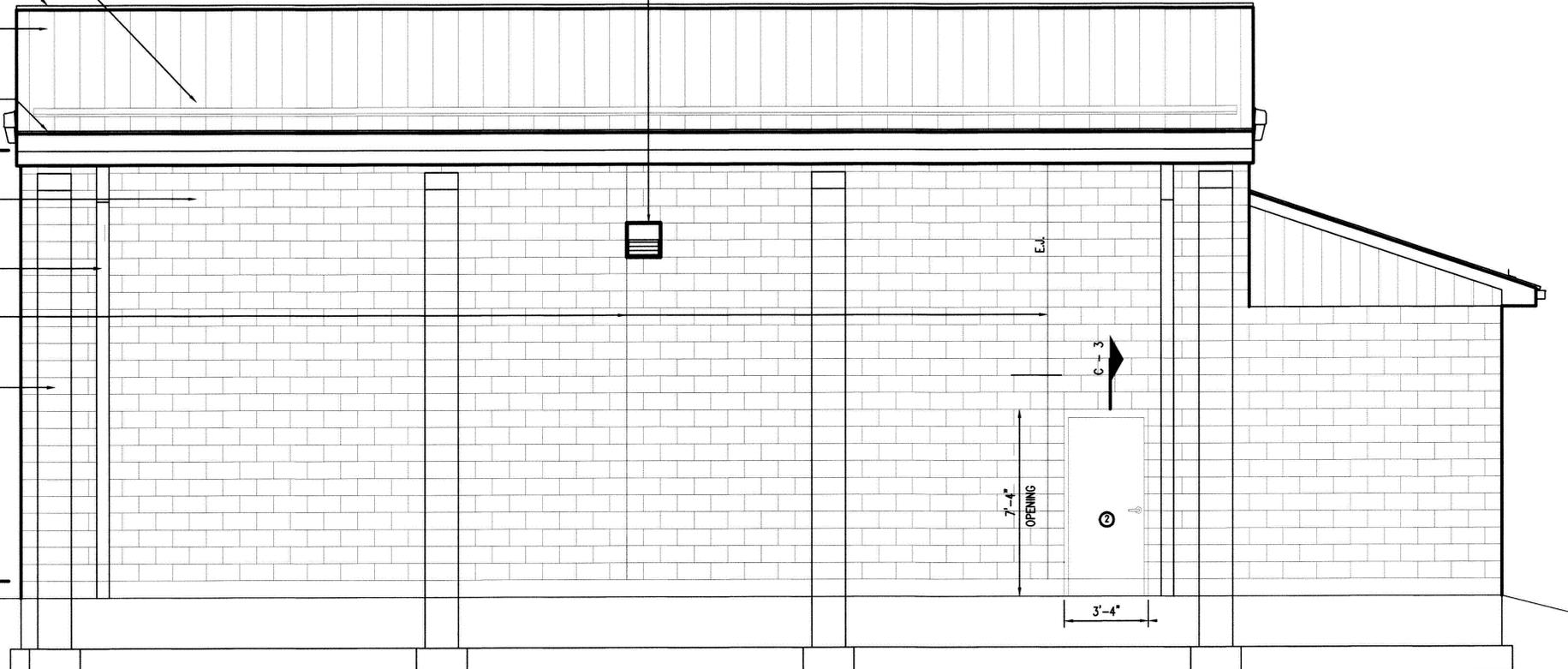
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DRAWN BY: TOM HALL  
DATE: 08.28.2015

- PREFINISHED STEEL SNOW GUARD BOTH SIDES.
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- PREFINISHED 26 GAUGE STEEL SHEET ROOFING OVER CONTINUOUS 2 x 4 WOOD PURLINS @ 24" O.C. ON WOOD TRUSSES @ 24" O.C. (TYPICAL)
- CLOSED ENDS AT ROOF EDGE. RAT-GUARD. (TYPICAL)
- TRUSS BEARING HEIGHT EL. 117'-7"
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- TOP OF CONCRETE STEM WALL EL. 100.67'
- FINISHED FLOOR EL. 100.00' = 456.GRADE  
FLOOD PLAIN IS 452.60
- BOTTOM OF FOOTING EL. 97.00'

PROVIDE AND INSTALLED BY OTHERS DURING CONSTRUCTION A 16" MOTORIZED DAMPER WITH WEATHERHOOD WITHIN 16" x 16" x 8" STAINLESS STEEL WALL SLEEVE THAT HAS MITERED INSIDE CORNERS. (VERIFY WALL SLEEVE SIZE.)



A  
9
**WEST ELEVATION**  
 SCALE: 3/16" = 1'-0"



# WEST ELEVATION

**MISSOURI DEPARTMENT  
OF TRANSPORTATION**  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

**CONCRETE BLOCK WASH BAY, BALLWIN MO**  
 2309 BARRETT STATION RD  
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MSD P 1953901  
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DESIGN BY: TOM HALL  
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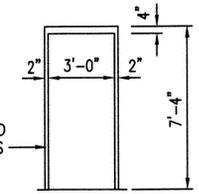
DOOR SCHEDULE							
NO.	SIZE	SWING	DR. TYPE	FRM. TYPE	DETAIL	FRM. DEPTH	HWDR. GRP.
1	16'-0" x 14'-0" x 2"	---	B	---	---	---	---
2	3'-0" x 7'-0" x 1-3/4"	LHR	A	I	C-3	5-3/4"	1
3	3'-0" x 7'-0" x 1-3/4"	RHR	A	I	C-3	5-3/4"	1
4	3'-0" x 7'-0" x 1-3/4"	LHR	A	I	C-3	5-3/4"	1



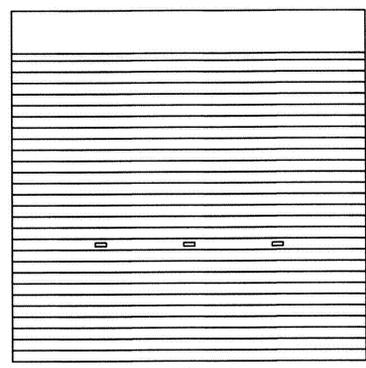
EXTERIOR INSULATED STAINLESS STEEL DOOR. INCLUDE REINFORCEMENT FOR DOOR CLOSER AND TOP FILLER CHANNEL.

(A)



16 GA. WELDED H.M. STAINLESS STEEL FRAME.

(I)



COILING DOOR HOOD, MOTORIZED OPERATOR WITH A CHAIN HOIST. (PROVIDE CAR MODIFICATION KIT) PROVIDE GALVANIZED TRACK AND BIRD BRUSH.

16'-0" x 14'-0" x 2" PREFINISHED INSULATED COILING GARAGE DOOR WITH (3) VIEW WINDOWS WHITE BAKED ON POLYESTER TOP COAT PAINT BOTH SIDES. (TYPICAL)

(B)

HVAC SCHEDULE						
SYM.	UNIT	MANUFACTURER	BTU OUTPUT	FUEL	VOLTAGE	REMARKS
(A)	INFRARED TUBE HEATER	SUNSTAR SPS/U 150-L5 OR EQUAL	150,000	NATURAL GAS	115	HEAVY DUTY CAST IRON BURNER. DIRECT SPARK IGNITION. STANDARD OUTSIDE COMBUSTION AIR INTAKE. SIDEWALL VENTING.
(B)	16" DIA. CORROSION RESISTANT SHUTTER FAN	DAYTON 1BLJ1 OSHA GUARD OR EQUAL	2,005 CFM	ELECTRIC	115	FIBERGLASS SHUTTER & BLADES. 2.1 AMPS. PROVIDE 16" x 16" x 9-1/4" STAINLESS STEEL WALL SLEEVE THAT HAS MITERED INSIDE CORNERS. (VERIFY WALL SLEEVE SIZE)
(C)	MOTORIZED DAMPER WITH WEATHERHOOD	DAYTON MODEL 4CS60 OR EQUAL 60 HERTZ	---	ELECTRIC	115	16" CENTER-PIVOTING, MOTORIZED, GALV. STEEL DAMPER. WIRE TO OPEN WHEN THE EXHAUST FAN IS TURNED ON. HOOD EQUAL TO NATIONAL FAN CO. Ph: 1-877-389-3131 16" GALVANIZED WEATHER HOOD. MODEL# NFC-GH-XF16. PROVIDE 16" x 16" x 9-1/4" STAINLESS STEEL WALL SLEEVE THAT HAS MITERED INSIDE CORNERS. (VERIFY WALL SLEEVE SIZE)
(T)	WATERPROOF THERMOSTAT	AS REQUIRED.	---	---	---	AS RECOMMENDED BY THE INFRARED TUBE HEATER MANUFACTURER.
(E)	INFRARED TUBE HEATER	SUNSTAR SPS/U 380-L65 OR EQUAL	50,000	NATURAL GAS	115	HEAVY DUTY CAST IRON BURNER. DIRECT SPARK IGNITION. STANDARD OUTSIDE COMBUSTION AIR INTAKE. SIDEWALL VENTING.

# SCHEDULES

MISSOURI DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

MSD P 1953901  
BASE MAP 23P2

DESIGN BY: TOM HALL  
DRAWN BY: TOM HALL  
DATE: 08.28.2015



**GENERAL NOTES:**

1. CONCRETE WORK SHALL BE EXECUTED IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (A.C.I.) MANUAL OF CONCRETE PRACTICE.
2. FOUNDATION DESIGN IS BASED UPON AN ASSUMED SOIL BEARING CAPACITY OF 2,000 PSF. IF WET OR UNUSUAL SOIL CONDITIONS ARE ENCOUNTERED, NOTIFY THE DESIGNER AND CONSTRUCTION INSPECTOR BEFORE PROCEEDING WITH THE WORK.
3. IF CONDITIONS REQUIRING ROCK EXCAVATION ARE ENCOUNTERED, NOTIFY THE DESIGNER AND FIELD INSPECTOR BEFORE PROCEEDING WITH THE WORK.
4. ALL CONCRETE SHALL BE TYPE I CEMENT WITH A COMPRESSIVE STRENGTH OF 4,000 PSI @ 28 DAYS WITH 4" SLUMP.
5. CONCRETE EXPOSED TO THE EXTERIOR SHALL RECEIVE AIR ENTRAINMENT OF 6% ± 2%.
6. FOUNDATION WALLS AND FOOTINGS SHALL BEAR A MINIMUM OF 12" INTO UNDISTURBED SOIL AND 36" MINIMUM BELOW FINISH GRADE.
7. DEFORMED STEEL REINFORCING BARS SHALL BE #5 AND LARGER, ASTM A615 GRADE 60.
8. PROVIDE CORNER REINFORCING BARS WITH 12" MINIMUM LAP EQUAL IN SIZE AND GRADE TO CONNECTING BARS.
9. INTERIOR AND EXTERIOR CONCRETE FLATWORK SHALL HAVE A LIGHT BROOM FINISH.
10. COORDINATE WORK OF OTHER TRADES REQUIRED TO BE INSTALLED IN, UNDER, OR THROUGH CONCRETE PRIOR TO PLACEMENT OF CONCRETE. INSTALL ALL ANCHORAGES AND SLEEVES REQUIRED FOR THE INSTALLATION OF WORK BY OTHER TRADES.
11. SAWED CONTROL JOINTS SHALL BE CLEANED FREE OF ALL DEBRIS AND FILLED WITH DOW CORNING 888 SILICONE JOINT SEALANT OR AN APPROVED EQUAL. SAWCUT WITHIN 24 HOURS.
12. SEE SPECIFICATION SECTION 03300 CONCRETE FOR ADDITIONAL INFORMATION.

**PLUMBING NOTES:**

1. PLUMBING SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE IBC PLUMBING CODE.
2. PLUMBING SHALL BE LOCATED AND PLACED UNDER THE SLAB PRIOR TO POURING OF CONCRETE. PIPING SHALL BE RUN IN SAND FILLED TRENCH UNDER THE BASE ROCK AND SLEEVED WITH PVC WHENEVER RUN THROUGH CONCRETE.
3. PROVIDE PLUMBING EQUIPMENT AND ACCESSORIES REQUIRED FOR COMPLETE AND OPERATIONAL PLUMBING SYSTEMS AS REQUIRED BY MANUFACTURER'S INSTRUCTIONS AND DIRECTIONS FOR SYSTEMS SPECIFIED.
4. 1" YARD HYDRANT: EQUAL TO WOODFORD MODEL Y2 FREEZELESS, BACKFLOW PROTECTED, AUTOMATIC DRAINING YARD HYDRANT. PROVIDE 36" BURY LENGTH.
5. 2" YARD HYDRANT: EQUAL TO #71 NATIONAL TYPE "A" COMPRESSION HYDRANT. ANTI-FREEZING AUTOMATIC DRAIN. ALL BRONZE WITH 2" VALVE OPENING & 10" WHEEL TOP. 36" BURY LENGTH.

**GRADING NOTES:**

FILLING AND BACKFILLING: PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE THE SPECIFIED MOISTURE CONTENT. COMPACT EACH LAYER TO REQUIRED PERCENTAGE OF MAXIMUM DENSITY FOR THE AREA.

WASTE EARTH MATERIAL: STORED ON SITE. LOCATION AS DIRECTED BY OWNER.

EXCAVATION: CONTRACTOR TO SLOPE GRADE AWAY FROM NEW TRUCK WASH AS REQUIRED WITH 6" TYPE 5 ROCK BASE INCLUDING ALL AREAS DISTURBED DURING CONSTRUCTION.

STAKING: STRUCTURE LOCATION STAKED AND LEVELED BY MODOT AT THE MAINTENANCE SITE.

MSD P 1953901  
BASE MAP 23P2



GENERAL NOTES

MISSOURI DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

DESIGN BY: TOM HALL

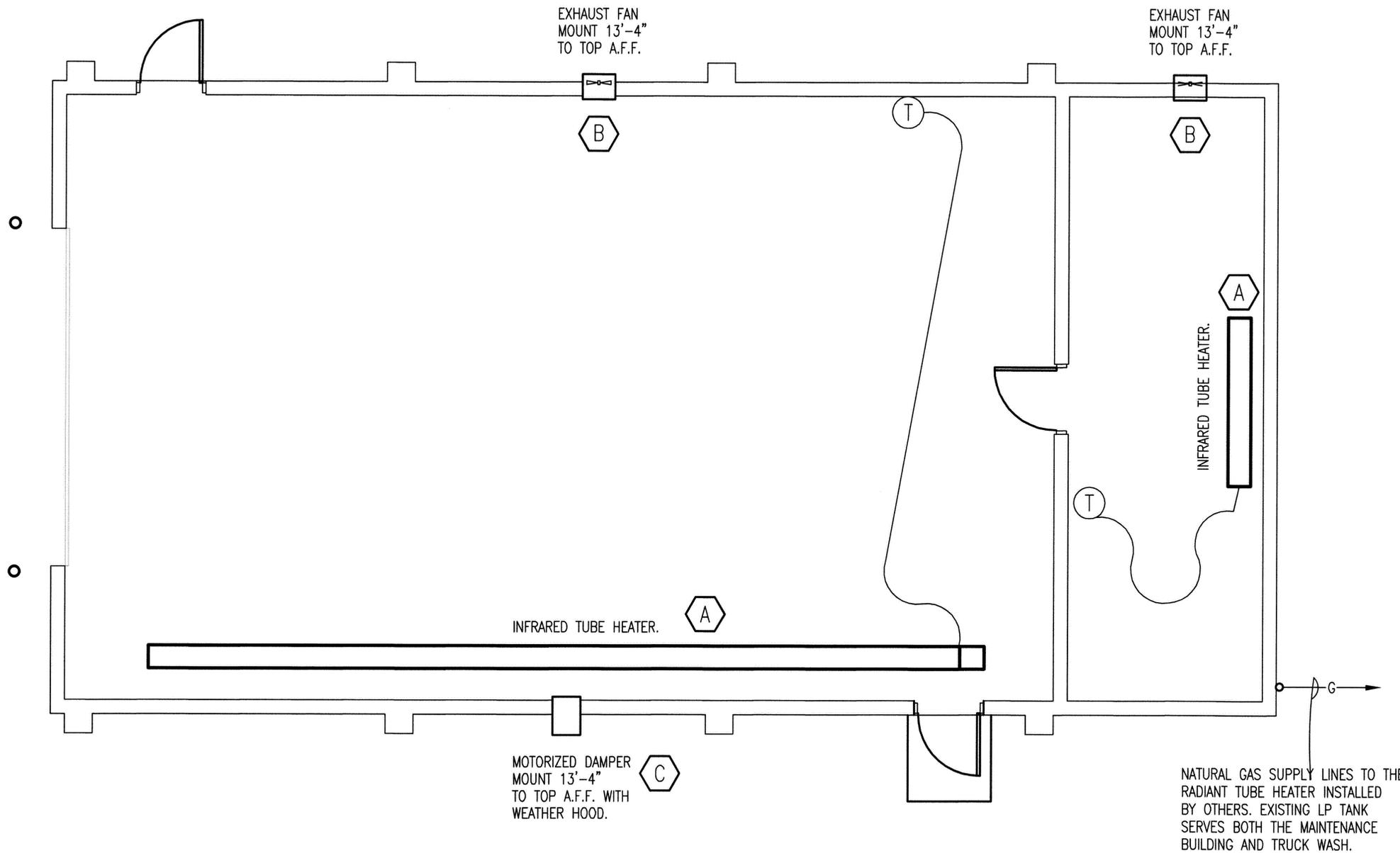
DRAWN BY: TOM HALL

DATE: 08.28.2015

SEE HVAC SCHEDULE SHEET 11.

MECHANICAL NOTES

1. DRAWINGS AND DIAGRAMS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
2. MECHANICAL WORK SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE IBC MECHANICAL CODE.
3. PROVIDE EQUIPMENT AND APPURTENANCES NOT NECESSARILY SHOWN OR SPECIFIED BUT NEEDED FOR COMPLETE AND PROPER INSTALLATION.
4. ALL EQUIPMENT AND MATERIALS, IN PARTICULAR VALVES, FILTERS, MOTORS, AND CONTROLS SHALL BE ARRANGED TO PROVIDE PROPER CLEARANCE FOR SERVICE, MAINTENANCE, AND INSPECTION.
5. MECHANICAL SUBCONTRACTOR SHALL FULLY COORDINATE ALL WORK WITH PLUMBING AND ELECTRICAL WORKERS PRIOR TO COMMENCING OF THE MECHANICAL INSTALLATION.
6. PROVIDE BLOCKING TO HVAC DEVICES AS REQUIRED FOR A SECURE APPLICATION.
7. CONTRACTOR WORK WILL BEGIN FROM EXISTING PROPANE TANK WITH GAS LINE TO INFRARED TUBE HEATER. SIZE AS REQUIRED FOR A FUNCTIONAL SYSTEM.



BY OTHERS  
**A**  
**13**  
**MECHANICAL PLAN**  
 SCALE: 1/8" = 1'-0"



**MECHANICAL PLAN**

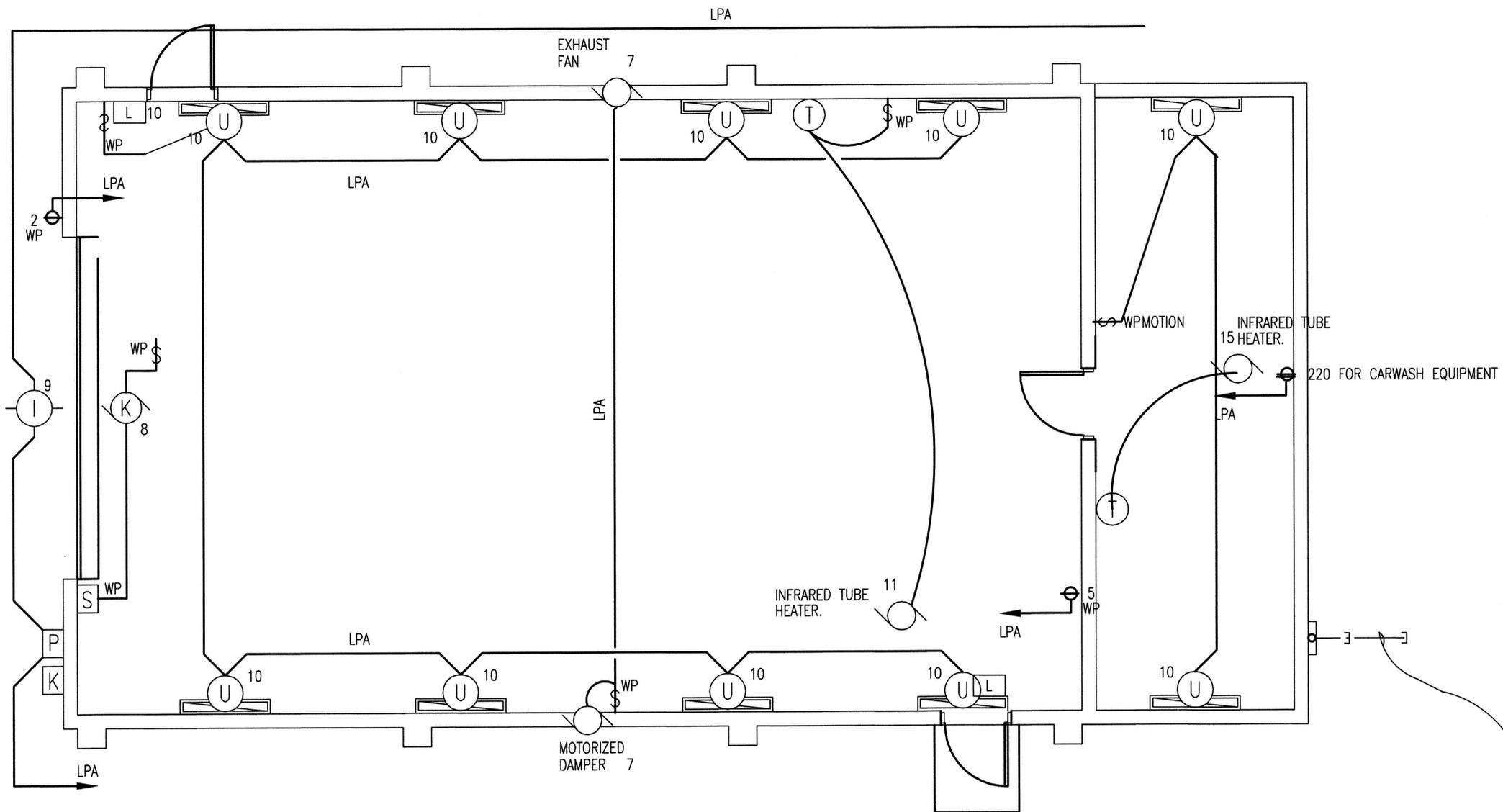
MISSOURI DEPARTMENT  
 OF TRANSPORTATION  
 DIVISION OF GENERAL SERVICES  
 FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
 2309 BARRETT STATION RD  
 BALLWIN, MO 63021

MSD P 1953901  
 BASE MAP 23P2

DESIGN BY: TOM HALL  
 DRAWN BY: TOM HALL  
 DATE: 08.28.2015

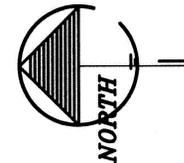




A  
14

BY OTHERS.  
**ELECTRICAL PLAN**

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



(4) 5/8" x 10'  
COPPER GROUND  
RODS ON  
8' CENTERS.

NEMA 3R-200A  
PANEL (LPA)

100A PANEL, CONDUCTORS, AND  
DISCONNECT BY OTHERS. ALL THE  
ELECTRICAL INSIDE NEW BUILDING  
BY OTHERS. COORDINATE DURING  
CONSTRUCTION.

MSD P 1953901  
BASE MAP 23P2



**ELECTRICAL PLAN**

MISSOURI DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

DESIGN BY: TOM HALL  
DRAWN BY: TOM HALL  
DATE: 08/28/2015

BY OTHERS.

SERVICE PANEL LPA									
VOLTS: 120/240, 1PH, 3-WIRE NEMA 3R, SQUARE D-MH35WP, GROUND-AS REQUIRED.									
CIR	SERVICE	VA	BKR	CIR	BKR	VA	SERVICE	CIR	
1	200A SERVICE DISCONNECT	--	100A2P	A	20A1P	1000	EXTERIOR - RECEPTACLE ●	2	
3				B	20A1P	1000	EXTERIOR - RECEPTACLE ●	4	
5	EXTERIOR - RECEPTACLE ●	1000	20A1P	A	20A1P	1000	EXTERIOR - RECEPTACLE ●	6	
7	EXHAUST FAN AND DAMPER	1221	20A1P	B	30A1P	2162	OHD OPENERS	8	
9	EXTERIOR LIGHTS	434	20A1P	A	20A1P	1246	BAY LIGHTING	10	
11	INFRARED TUBE HEATER	300	20A1P	B	20A1P	-	SPARE	12	
13	LIGHTS-101 TRUCK WASH	786	20A1P	A	20A1P	172	EXTERIOR LIGHTING	14	
15				B				16	
17				A				18	
19				B				20	
21				A				22	
23				B				24	
25				A				26	
27				B				28	
29				A				30	
31				B				32	
33				A				34	
35				B				36	
37				A				38	
39				B				40	
41				A				42	

● CIRCUIT BREAKER SHALL BE GFI RATED

ALL ELECTRICAL BY OTHERS UNLESS OTHERWISE NOTED. COORDINATE DURING CONSTRUCTION.

BY OTHERS.

ELECTRIC SCHEDULE						
MANUF.	MODEL	#	LAMP TYPES	W	MOUNT	REMARKS
WILLIAMS	96-4-L40/830-HIAFR-WET/2-DRV-UNV		LED	40	WALL	7-3/8"x48" MOISTURE RESISTANT, FIBERGLASS BOUSING, FROSTED IMPACT - RESISTANT LENS. POLYCARBONATE PLASTIC LATCHES
ARLAS	WLM43LED	1	LED	43	WALL	EXTERIOR, SURFACE MOUNT LIGHT FIXTURE, WITH ALUMINUM HOUSING, & GLARE FREE LENS
	OVERHEAD DOOR OPERATOR				WALL	115V, 1-PH, HOOD MOUNT TYPE COMMERCIAL IN CARWASH & TROLLEY TYPE IN MAINTENANCE. SEE SPECIFICATION SECTION 08720.
LITHONIA	SERIES LQM LQM-SW-3R-120/277 ELN				CLG	QUANTUM SERIES EXIT LIGHT WITH WHITE THERMOPLASTIC HOUSING & UNIVERSAL MOUNT. INSTALL ABOVE LIGHT FIXTURE "U" AT DOOR 2.
	OVERHEAD DOOR CONTROL WATERPROOF				WALL	THREE BUTTON OVERHEAD DOOR CONTROL AS SUPPLIED BY OVERHEAD DOOR MANUF. SEE SPECIFICATION SECTION 08720.
TORK	2001				WALL	120V PHOTO ELECTRIC CONTROL OF EXTERIOR LIGHTS.
	ELECTRONIC KEY PAD					

ELECTRICAL FIXTURES AND EQUIPMENT ARE SCHEDULED BY MANUFACTURER AND MODEL NUMBER FOR DESIGN INTENT ONLY, APPROVED EQUALS MAY BE SUBSTITUTED.

LEGEND

- ⚡ WP SINGLE POLE SWITCH, MOUNT 48" A.F.F. IN FS BOX WITH HUBBELL HBL 7420 COVER.
- ⦿ WP SINGLE RECEPTACLE MOUNTED IN FS BOX WITH HUBBELL HBL7423 COVER.

ELECTRICAL NOTES:

1. DRAWINGS AND DIAGRAMS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL DRAWINGS FOR THE DIMENSIONS.
2. ELECTRICAL WORK SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.)
3. PROVIDE ELECTRICAL EQUIPMENT AND ACCESSORIES REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM REQUIRED BY MANUFACTURER'S INSTRUCTIONS AND DIRECTIONS FOR SYSTEMS SPECIFIED.
4. SWITCHES AND RECEPTACLES SHALL BE EQUAL TO THE AMPERE SHOWN IN THE PANEL SCHEDULE. RECEPTACLES SHALL BE GROUND FAULT INTERRUPTION WHERE SHOWN OR AS REQUIRED BY CODE.
5. SEE HVAC SCHEDULE FOR EQUIPMENT SYMBOLS AND EQUIPMENT TO BE HARD WIRED.
6. CONTRACTOR SHALL PROVIDE SERVICE DISCONNECTS AS REQUIRED ON EXTERIOR OF NEW BUILDING.
7. PROVIDE BLOCKING FOR ELECTRICAL DEVICES AS REQUIRED FOR A SECURE APPLICATION.
8. SEE SPECIFICATION SECTION 16100 - ELECTRICAL FOR ADDITIONAL REQUIREMENTS.
9. COORDINATE WORK WITH OTHER TRADES PRIOR TO COMMENCING WITH ELECTRICAL WORK.
10. CONDUCTOR AND BREAKER SIZE MAY VARY PER MANUFACTURER SHOWN ON THE EQUIPMENT SPECIFIED. ELECTRICAL CONTRACTOR TO VERIFY SIZES WITH EXACT EQUIPMENT ORDERED PRIOR TO PURCHASING ELECTRICAL SUPPLIES.
11. ALL EXPOSED CONDUIT, BOXES, CONNECTORS, ETC. IN THE WASH BAY TO BE IN SCHEDULE 40 PVC. CONTRACTOR TO VERIFY THE DIAMETERS OD CONDUIT AS REQUIRED.
12. GROUP CIRCUITS IN CONDUIT WHERE FEASIBLE AS REQUIRED.
13. PROVIDE CONDUIT, CONDUCTORS, BOXES, CONNECTORS, ETC. FROM EXISTING EXTERIOR POWER SOURCE (VERIFY) AS REQUIRED FOR A FUNCTIONAL SYSTEM.



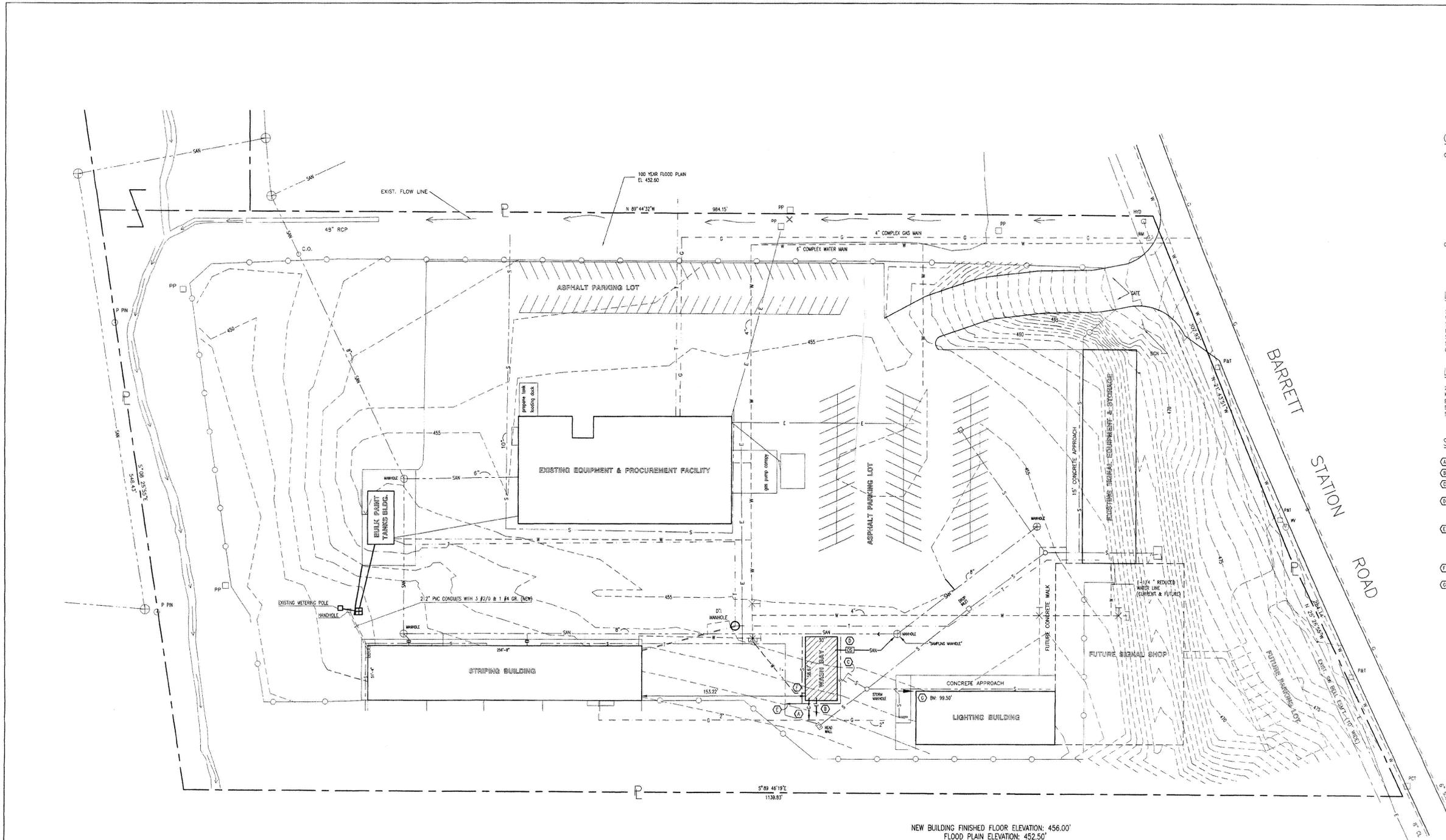
ELECTRICAL PANEL

MISSOURI DEPARTMENT OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

MSD P 1953901  
BASE MAP 23P2

DESIGN BY: TOM HALL  
DRAWN BY: TOM HALL  
DATE: 08.28.2015



**GRADING NOTES**

CONTRACTOR WILL BE RESPONSIBLE FOR:

- EXCAVATION OF THE SUB GRADE
- ENCASING OF FOOTINGS
- ALL BACK FILL MATERIAL INSIDE AND OUTSIDE NEW BUILDING
- CRUSHED ROCK BASE UNDER BUILDING & APPROACH SLAB
- BACK FILL ALONG APPROACH SLAB A MINIMUM OF 3" BELOW TOP OF SLAB AND SIDEWALK
- ALL BACK FILL & SOIL GRADING MATERIAL A MINIMUM OF 15' OUTWARDS FROM BUILDING AND APPROACH SLAB PERMETER
- TOP SOIL SEEDING AND STRIPING OF ALL GRASS AREAS OR WATER WAYS. LIVE MATERIALS IN ALL AREAS DISTURBED DURING CONSTRUCTION
- FINISHED GRADE TO DRAIN AWAY FROM BUILDING

CONTRACTOR WILL BE RESPONSIBLE FOR:

- LEVELING FOOTPRINT OF BUILDING UP TO 10' BELOW TOP OF FINISHED FLOOR
- STAKING THE FOUR CORNERS OF THE BUILDING FOOTPRINT

**LEGEND (EXISTING)**

2" GAS	---	G
WATER	---	W
TELE/DATA	---	T
ELECTRIC 3 PHASE	---	E
STORM SEWER	---	S
SANITARY SEWER	---	SA
CHAIN LINK FENCE	---	CL

**LEGEND (NEW)**

2" GAS	---	G
WATER	---	W
ELECTRIC	---	E
STORM SEWER	---	S
SANITARY SEWER	---	SA

- SITE NOTES**
- NATURAL GAS LINE AND MECHANICAL BY WOOD.
  - ALL ELECTRICAL BY WOOD.
  - EXISTING STORM DRAIN TO BE REMOVED & CAPPED BY WOOD BEFORE CONSTRUCTION OF NEW BUILDING WHERE SHOWN.
  - PLUMBING CONTRACTOR TO STUB OUT NEW SANITARY SEWER TO 10'-0" AND CAP BELOW GRADE. WOOD TO INSTALL THE OIL SEPARATOR (OS) AND SANITARY CONNECTION TO THE EXISTING SANITARY MANHOLE.
  - CONTRACTOR TO INSTALL 6" SCHEDULE 40 PIPING THAT CONNECTS TO NEW DOWNSPOUTS ON EAST AND WEST SIDE OF THE NEW BUILDING. MAKE CONNECTIONS AS REQUIRED TO EXISTING STORM LOCATED TO THE WEST OF NEW BUILDING FOR A FUNCTIONAL SYSTEM. WOOD TO INSTALL A "Y" IN EXISTING STORM LINE AND MARK LOCATION.
  - WOOD TO INSTALL A NEW 2" COPPER SERVICE INTO BUILDING COORDINATE DURING CONSTRUCTION.
  - BENCHMARK: 99.50', LOCATED AT BUILDING CORNER WHICH IS 6' LOWER THAN THE NEW CONCRETE BLOCK WASH BAY FINISHED FLOOR.

**STORMWATER MANAGEMENT NOTE:**  
LAND AREA DISTURBED = 29 ACRES

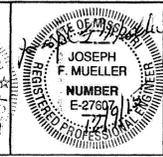
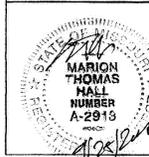
ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUS ADDED ON THIS PLAN P 1953901.

NEW BUILDING FINISHED FLOOR ELEVATION: 456.00'  
FLOOD PLAIN ELEVATION: 452.50'

**A SITE PLAN**  
SCALE: 1" = 50'-0"



BASE MAP 23P2  
MSP P 1953901

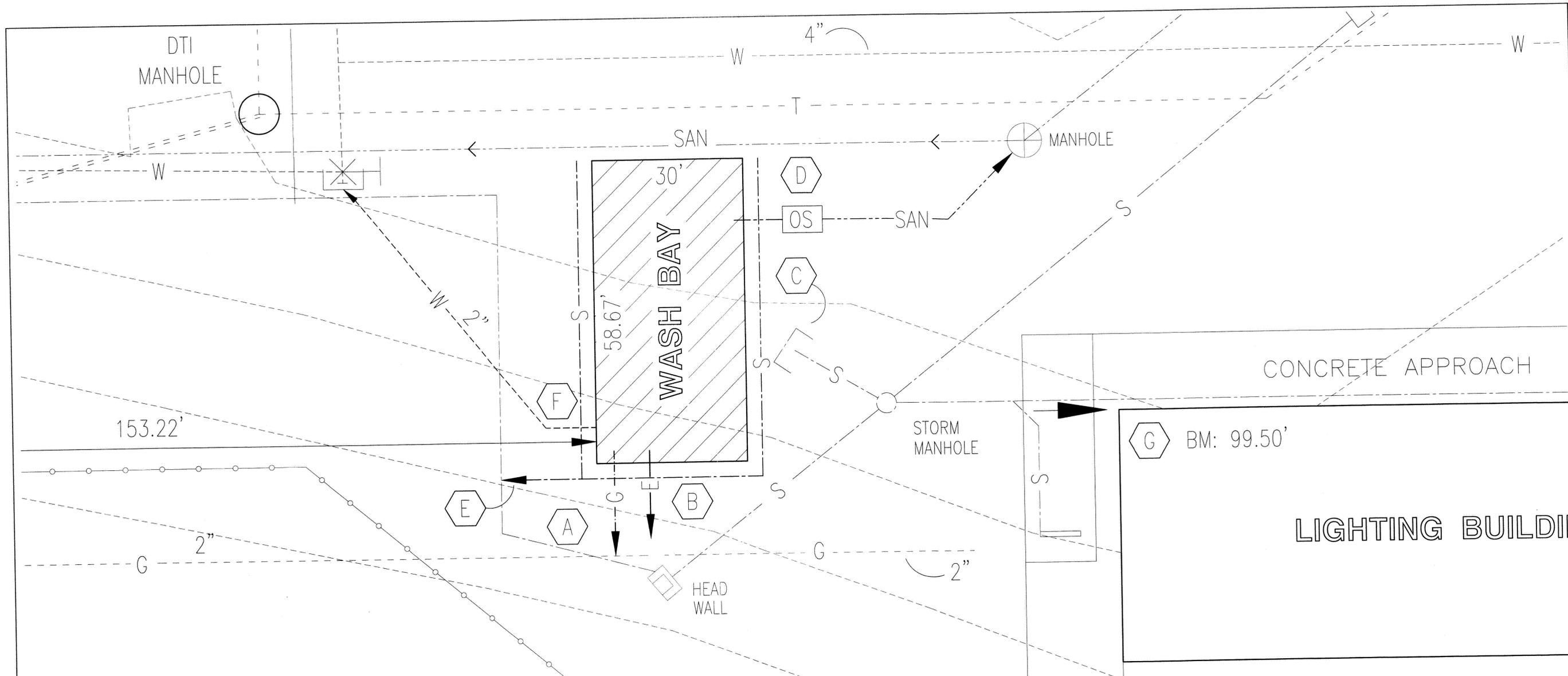


# SITE PLAN

**MISSOURI DEPARTMENT OF TRANSPORTATION**  
DIVISION OF GENERAL SERVICES  
BUILDINGS AND GROUNDS

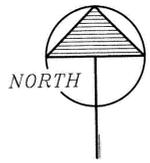
CONCRETE BLOCK WASH BAY, BALLWIN, MO  
2309 BARRETT STATION ROAD  
BALLWIN, MO 63021

DESIGN BY: TOV HALL  
DRAWN BY: LARRY CARRER  
DATE: 12-2-15  
Sheet 18 of 20



SEE SHEET 18 FOR SITE NOTES.

**A**  
19  
**PLOT PLAN**  
SCALE: 1" = 10'-0"



NEW BUILDING FINISHED FLOOR ELEVATION: 456.00'  
FLOOD PLAIN ELEVATION: 452.5'

S° 89' 46" 19" E

1139.83'

MSD P 1953901  
BASE MAP 23P2

FOR CIVIL  
ENGINEERING  
ONLY

FOR ARCHITECTURE  
ONLY

**PLOT PLAN**

MISSOURI DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
BUILDINGS AND GROUNDS

CONCRETE BLOCK WASH BAY, BALLWIN, MO  
2309 BARRETT STATION ROAD  
BALLWIN, MO 63021

DESIGN BY: TOM HALL  
DRAWN BY: LARRY CARVER  
DATE: 8-14-15  
Sheet 19 of 25



# LOCATION MAP

MSD P 1953901  
BASE MAP 23P2



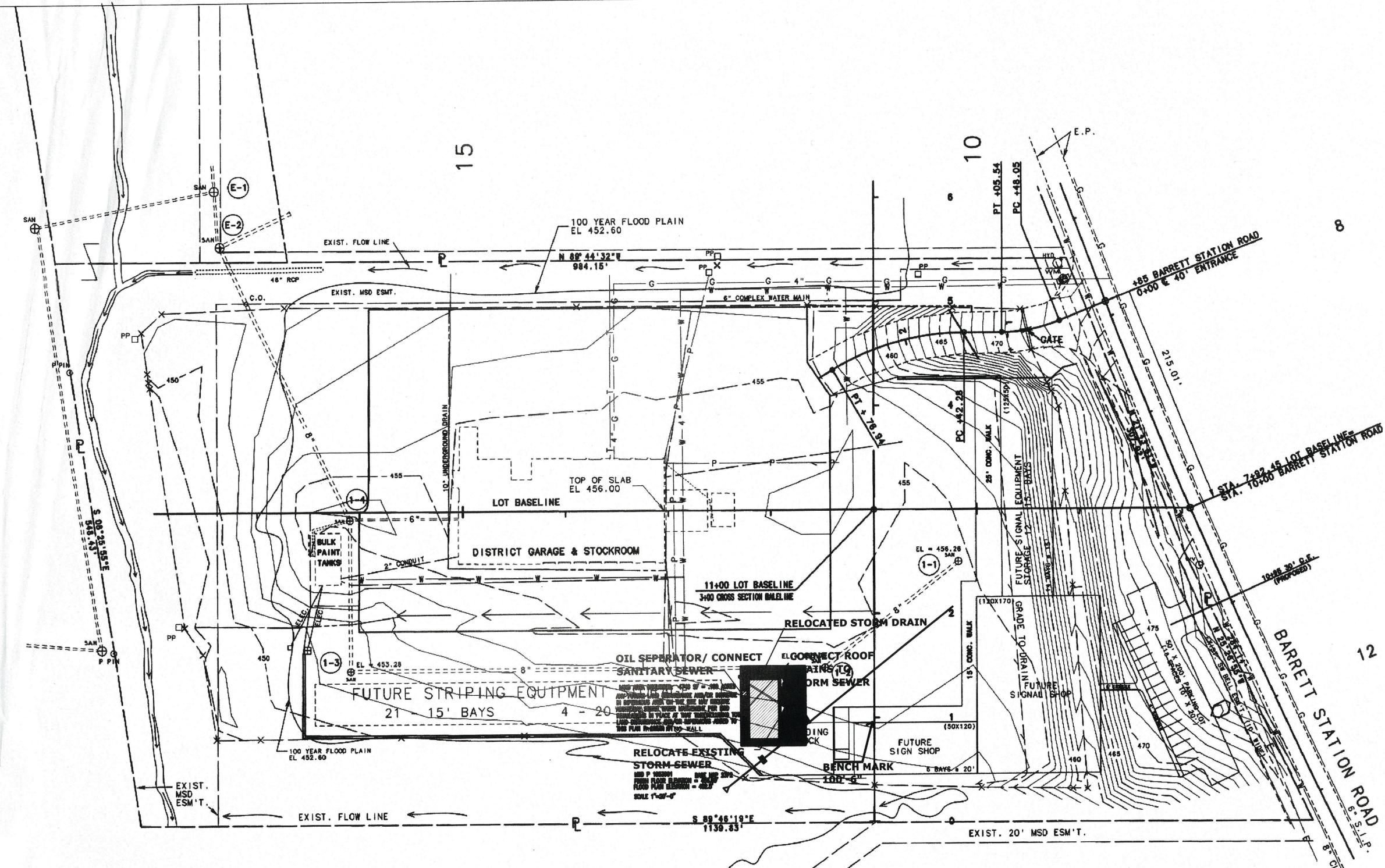
LOCATION MAP

NO SCALE MSD P 1953901  
BASE MAP 23P2

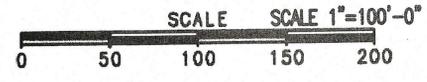
MISSOURI DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

DESIGN BY: TOM HULL  
DRAWN BY: TOM HULL  
DATE: 06.26.2015



BARRETT STATION MAINTENANCE SITE  
2309 BARRETT STATION RD. 63021



TOPO MAP

MISSOURI DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF GENERAL SERVICES  
FACILITIES MANAGEMENT

CONCRETE BLOCK WASH BAY, BALLWIN MO  
2309 BARRETT STATION RD  
BALLWIN, MO 63021

DESIGN BY: TOM HALL  
DRAWN BY: TOM HALL  
DATE: 08.26.2015  
21 of 21

