

Wisconsin Department of Transportation

July 7, 2016

Division of Transportation Systems Development

Bureau of Project Development
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NOTICE TO ALL CONTRACTORS:

Proposal #03: 1070-00-72, WISC 2016 246
La Crosse – Tomah Road
(Sparta Safety & Weight
Facility #54)
IH 90
Monroe County

1070-00-73, WISC 2016 247
La Crosse – Tomah Road
(West Salem Safety & Weight
Facility #53)
IH 90
La Crosse County

Letting of July 12, 2016

This is Addendum No. 03, which provides for the following:

Special Provisions

Revised Special Provisions	
Article No.	Description
4	Prosecution and Progress
41	SWEF Building, General Construction, Item SPV.0105.101
42	SWEF Building, Plumbing, Item SPV.0105.102
43	SWEF Building, Heating and Ventilating, Item SPV.0105.103
44	SWEF Building, Electrical, Item SPV.0105.104

Schedule of Items

Revised Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
205.0100	Excavation Common	CY	158,408	2,334	160,742
625.0500	Salvaged Topsoil	SY	58,000	7,900	65,900
628.1504	Silt Fence	LF	12,250	950	13,200
628.1520	Silt Fence Maintenance	LF	6,150	460	6,610
629.0210	Fertilizer Type B	CWT	55	5	60
630.0120	Seeding Mixture No. 20	LB	2,280	100	2,380
630.0130	Seeding Mixture No. 30	LB	440	830	1,270

Added Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
311.0110	Breaker Run	Ton	0	13,750	13,750

Plan Sheets

Revised Plan Sheets	
Plan Sheet	Plan Sheet Title (brief description of changes to sheet)
24	Revised Construction Detail (Earthen Berming Detail)
59-61	Revised Erosion Control Plan (updated erosion mat limits with revised earthen berming)
107	Revised Building Architectural Plan (updated G101 Life Safety Plan)
113	Revised Building Architectural Plan (updated A102 Main Level Floor Plan)
117, 119	Revised Building Architectural Plan (updated A106 & A202 Floor Slab Plan)
123	Revised Building Architectural Plan (updated A206 Enlarged Toilet Plans)
131	Revised Building Architectural Plan (updated A405 Wall Sections)
148	Revised Building Architectural Plan (updated A508 Shower Details)
151	Revised Building Architectural Plan (updated A701 Door Schedule)
156	Revised Building Architectural Plan (updated A706 Door Details)
170	Revised Building Architectural Plan (updated F101 Fire Protection Plan)
175-177	Revised Building Architectural Plan (updated S101, S102, & S103 Foundation Plan)
178	Revised Building Architectural Plan (updated S104 Pit Plan & Tunnel Foundation Plan)
179	Revised Building Architectural Plan (updated S105 Low Roof Framing Plan – North)
231	Revised Building Architectural Plan (updated H100 Geothermal Well Plan)
232	Revised Building Architectural Plan (updated H100B Underfloor Piping Plan)
233-234	Revised Building Architectural Plan (updated H101A & H101B HVAC Piping Plan)
235-236	Revised Building Architectural Plan (updated H102A & H102B HVAC Ductwork)
237	Revised Building Architectural Plan (updated H202 Enlarged Mechanical Room)
238, 240	Revised Building Architectural Plan (updated H400 & H402 HVAC Piping Schematic)
241	Revised Building Architectural Plan (updated H403 HVAC Piping Schematic & Detail)
242, 244	Revised Building Architectural Plan (updated H404 & H406 HVAC Sections)
245-246	Revised Building Architectural Plan (updated H500 & H501 HVAC Schedules)
247	Revised Building Architectural Plan (updated E100 Electrical Site Plan & Symbols)
248	Revised Building Architectural Plan (updated E200 Electrical Lighting Plan)
249	Revised Building Architectural Plan (updated E300 Electrical Power Plan)
251	Revised Building Architectural Plan (updated E302 Electrical Low Voltage Plans)
252	Revised Building Architectural Plan (updated E400 Electric Riser Diagram & Details)
256	Revised Building Architectural Plan (updated E404 Electric Details)
258	Revised Building Architectural Plan (updated E406 Enlarged Mechanical Room Plans)
260-263	Revised Building Architectural Plan (updated E501, E502, E503, & E504 Electric Schedules)
279-281	Revised Fencing Plan (updated slope intercepts with revised earthen berming)
308	Revised Earthwork MQ table (updated with revised earthen berming)
309	Revised MQ Table (updated to include Breaker Run)
314	Revised Erosion Control MQ table (updated with revised earthen berming)
315	Revised Finishing Items MQ table (updated with revised earthen berming)
327-328	Revised Plan and Profile Sheets (updated with slope intercepts with revised earthen berming)
461-465	Revised Earthwork Data Sheets (updated with revised earthen berming)
470-477	Revised Ramp Cross Sections (updated with revised earthen berming)
514, 524	Revised Parking Lot Cross Sections (updated with revised earthen berming)

Other

Replace Prop 03 Federal Building Wage Rates Monroe County dated 06/24/2016 with Prop 03 Federal Building Wage Rates Monroe County dated 07/01/2016.

Replace Prop 03 Federal Building Wage Rates La Crosse County dated 06/24/2016 with Prop 03 Federal Building Wage Rates La Crosse County dated 7/01/2016.

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

Mike Coleman

Proposal Development Specialist
Proposal Management Section

ADDENDUM NO. 03
1070-00-72 & 1070-00-73
July 7, 2016

Special Provisions

4. Prosecution and Progress

*Replace the entire subsection titled Sparta SWEF Mainline WIM under section titled **E Schedule of Operations** with the following:*

Sparta SWEF Mainline WIM

Complete construction operations at the Sparta SWEF mainline weigh-in-motion (WIM) location along IH 90 utilizing temporary lane closures during off-peak traffic periods except for one continuous four (4) day lane closure. The date for the lane closure must be approved by the engineer.

41. SWEF Building, General Construction, Item SPV.0105.101

*Replace the entire **SECTION 10 73 00 – PROTECTIVE COVERS** with the following:*

SECTION 10 73 00 – PROTECTIVE COVERS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division Section sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following.
 - 1. Manually operated, horizontal protective canvas over exterior stair.

1.3 SUBMITTALS

- A. Product Data
- B. Shop Drawings: Show layouts and details to illustrate assembly and operation. Include the following:
 - 1. Plans, sections, and details.
 - 2. Drainage details
 - 3. Anchorage details
 - 4. Frame details
 - 5. Accessories for locking.
- C. Samples for Initial Selection: For finishes of cover and accessories.
- D. Maintenance and Operation Data: For protective cover to include in maintenance manuals.

1.4 COORDINATION

- A. Coordinate layout and installation of protective cover with adjacent construction, including wall framing, stair construction, railings, and light fixtures.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 - 1. Custom Cover Design, Baraboo Tent & Awning, Baraboo, WI
 - 2. Gallager Tent and Awning, Madison, WI
 - 3. Northrup Awning Company, Janesville, WI
 - 4. La Crosse Tent & Awning, La Crosse, WI

2.2 HORIZONTAL PROTECTIVE COVER:

- A. Manually Operated Cover , General: Provide manufacturer's standard mounting accessories, and other components necessary for a complete installation.
- B. Cover: Provide industrial strength, flame retardant vinyl, minimum 17-oz weight.
 - 1. Available products
 - a. Ferrari 502, by Astron Company
 - b. BFT by John Boyle Company
- C. Support Framing: Provide manufacturer's welded aluminum tube frame with steel supports, designed to withstand structural loads anticipated for this application. Support framing design and structural engineering is the responsibility of the fabricator.
- D. Surface-Mounted Tracks and Accessories: Units designed and fabricated for surface mounting on masonry and concrete wall substrates, fabricated from clear anodized aluminum extrusions. Tracks and mounting accessories shall permit manual removal of 15 foot long section of the cover to access the scale tunnel. The remaining portion of the cover may be fixed. When access is not needed, cover shall be secured to prevent the build-up of snow, ice, and water at the stair. Provide a jamb-mounted locking device at the end of the cover to secure it and limit unauthorized access.

PART 3 – EXECUTION

3.1 INSTALLATION

- 1. General: Install protective cover at locations indicated to comply with manufacturer's written instructions.

END OF SECTION 10 73 00

42. SWEF Building, Plumbing, Item SPV.0105.102

Delete entire section titled **DIVISION 21 – FIRE SUPPRESSION**

Delete entire section titled **SECTION 21 05 00 – COMMON WORK RESULTS FOR FIRE SUPPRESSION**

Delete entire section titled **SECTION 21 05 29 – HANGERS & SUPPORTS FOR FIRE SUPPRESSION PIPING & EQUIPMENT**

Delete entire section titled **SECTION 21 13 16 – DRY PIPE SPINKLER SYSTEM**

43. SWEF Building, Heating and Ventilating, Item SPV.0105.103

Add **SECTION 23 09 93 – SEQUENCE OF OPERATION FOR HVAC CONTROLS:**

SECTION 23 09 93 - SEQUENCE OF OPERATION FOR HVAC CONTROLS

PART 1 - GENERAL

SCOPE

This section includes control sequences for HVAC equipment as well as equipment furnished by others that may need monitoring or control.

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

Section 23 05 93 - Testing, Adjusting, and Balancing for HVAC – Coordination

Division 23 - HVAC - Equipment provided to be controlled or monitored

Division 26 - Electrical - Equipment provided to be controlled or monitored

Division 28 - Electronic Safety and Security

DESCRIPTION OF WORK

Control sequences are hereby defined as the manner and method by which automatic controls function. Requirements for each type of operation are specified in this section.

Operation equipment, devices and system components required for automatic control systems are specified in other Division 23 control sections of these specifications.

SUBMITTALS

Refer to Division 1, General Conditions.

The contractor providing the DDC equipment shall provide a complete narrative of the sequence of operations for equipment that is controlled through the DDC system. The narrative of the sequence of operation shall not be a verbatim copy of the sequences contained herein, but shall reflect the actual operation as applied by the contractor.

OPERATION AND MAINTENANCE DATA

All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

CONTROL SEQUENCES

Ground Water Loop Temperature Control

- A. The groundwater loop temperature shall be maintained between 40 degrees and 75 degrees as measured within Buffer Tank (BT-1). Provide and install an immersion temperature sensor in this tank.
- B. If the temperature within the tank falls below 40 degrees, or rises above 75 degrees, the Ground Water Pumps (GP-1 thru GP-2) shall be started and operated continuously until the temperature returns to setpoint.
- C. On a call for heat or cooling, one pump shall be started and allow to operate continuously. On a continued call for heat or cooling, additional pumps shall be sequenced on and off at 1 degree intervals.
- D. The pumps shall be sequenced in a rotating manner with rotation intervals to not be greater than once per week.
- E. The pumps will operate at constant speed. The variable speed pumps will be used to set design water volume only.
- F. This Contractor shall provide and install RIB-style relays to control operation of these pumps.
- G. Monitor the status of these pumps with differential pressure sensors or current sensors and report all alarms to the Energy Management System.
- H. If the temperature falls more than 4 degrees below setpoint in Buffer Tank (BT-1), the gas boiler shall be energized. Prior to energizing the boiler:
 - 1) A 2-position control valve at the manifolds near the Buffer Tank shall be opened and position proven.
 - 2) Once position is proven, boiler pump (BP-1) shall be started.
 - 3) Once the pump is started and flow proven, the boiler shall be started and allowed to operate under its internal controls. Set the outlet temperature to 130 degrees.
 - 4) Boiler operation shall be controlled by the Energy Management System. Once the tank temperature returns to within 2 degrees of setpoint, the boiler shall be turned off, followed by stopping the pump and then closing the control valve.
 - 5) This Contractor shall provide the control valve. Select valve for a maximum of 2 PSI pressure loss.
 - 6) If the boiler is started, an alarm shall be sent to the Energy Management System.
- I. If the tank temperature falls more than 5 degrees below setpoint, or 5 degrees above setpoint, an alarm shall be sent to the Energy Management System.
- J. The buffer tank water temperature shall be displayed at the Energy Management System and a graphic shall be included to show a daily graph of the tank temperature. Display the tank temperature variation at daily, monthly, and yearly intervals.

Radiant Water Temperature Control

- A. The radiant heating water shall be maintained between 90 degrees and 110 degrees as measured within Boiler Buffer Tank (BBT-1). Provide and install an immersion temperature sensor in this tank.
- B. The water temperature setpoint shall be reset in proportion to outside air temperature, as follows:

<u>Outside Air Temperature</u>	<u>Tank Water Temperature</u>
-20 degrees F	110 degrees F
40 degrees F	90 degrees F
- C. The entire system shall be disabled if the outside air temperature rises above 50 degrees F.
- D. On a call for heat, circulating pumps P-1 and P-2 shall be started. These pumps will operate simultaneously at a constant speed.
- E. This Contractor shall provide and install RIB-style relays to control operation of these pumps.
- F. Monitor the status of these pumps with differential pressure sensors or current sensors and report all alarms to the Energy Management System.

- G. Once water flow is proven, Heat Pump (WP-1) shall be staged on in proportion to the deviation from setpoint. Verify exact number of control stages with the heat pump manufacturer. Maintain a 2 degree differential between stages of operation.
 - 1) This Contractor shall install and wire all flow switches and safety switches provided by the manufacturer of the heat pump.
- H. If the temperature falls more than 4 degrees below setpoint in Boiler Buffer Tank (BBT-1), the gas boiler shall be energized. Prior to energizing the boiler:
 - 1) A 2-position control valve at the manifolds near the Boiler Buffer Tank shall be opened and position proven.
 - 2) Once position is proven, boiler pump (BP-1) shall be started.
 - 3) Once the pump is started and flow proven, the boiler shall be started and allowed to operate under its internal controls. Set the outlet temperature to 130 degrees.
 - 4) Boiler operation shall be controlled by the Energy Management System. Once the tank temperature returns to within 2 degrees of setpoint, the boiler shall be turned off, followed by stopping the pump and then closing the control valve.
 - 5) This Contractor shall provide the control valve. Select valve for a maximum of 2 PSI pressure loss.
- I. If the boiler is started, an alarm shall be sent to the Energy Management System.
- J. The boiler buffer tank water temperature shall be displayed at the Energy Management System.

Radiant Hot Water Heat Control

- A. Each radiant zone will be provided with a separate variable speed pump and a room temperature sensor. Sensors shall be connected to the Energy Management System to provide a modulating output to the pumps. Room temperature sensors shall include an occupant-accessible temperature setpoint adjustment, limited by software programming.
 - 1) All radiant zone temperature sensors in public spaces, or within the Inspection Bay, shall be fitted with clear plastic vandal guards with keyed locks.
- B. On a call for space heat at the room temperature sensor, the zone pump shall be started and the pump speed shall be modulated in proportion to the deviation from temperature setpoint. Pump shall be at full speed if the room falls more than 3 degrees from setpoint.
- C. Pumps shall not be allowed to operate if the outside air temperature rises above 50 degrees.
- D. Temperature sensors shall be single temperature without any night setback cycle.
- E. This Contractor shall provide and install RIB-style relays to control operation of these pumps, as well as a modulating signal to the pumps. An "on-off" control will not be required if the modulating signal provides for position pump shut-off.

Unitary Water-to-Air Heat Pumps

- A. This Contractor shall provide a room temperature sensor for each unitary heat pump. The sensor shall be connected to the Energy Management System.
 - 1) All unitary heat pump temperature sensors in public spaces shall be fitted with clear plastic vandal guards with keyed locks.
- B. An occupancy schedule shall be provided for all unitary heat pumps. The Owner shall supply an occupancy schedule for initial programming, including holidays. Adjustment of the occupancy schedule shall be access to the occupants of the building via the Energy Management System.
- C. During occupied periods, the unitary heat pump fans shall operate continuously. During un-occupied periods, the fans shall remain off unless there is a call for heat or cooling.
- D. On a call for heat or cooling the heat pump compressor, and reversing valve (in heating mode) shall be energized and allowed to operate until the call for heat or cooling is satisfied.
 - 1) When the outside air temperature is below 50 degrees F, the heating capacity in the unitary heat pumps shall be retarded by 2 degrees to allow the in-floor radiant heat to supply the primary heating source.

- 2) Each heat pump is paired with a water circulating pump. On a call for heat or cooling, this pump shall be started and flow shall be proven before the heat pump compressor is allowed to operation. This Contractor shall provide a flow switch or a pressure switch to prove flow.
 - 3) This Contractor shall provide and install RIB-style relays to control operation of these pumps.
 - 4) Monitor the status of these pumps with differential pressure sensors or current sensors and report all alarms to the Energy Management System.
- E. Room temperature sensors shall include an occupant-accessible temperature setpoint adjustment, limited by software programming.

Energy Recovery Units

- A. The energy recovery units shall be allowed to operate during occupied periods only, and shall operate continuously whenever their representative unitary heat pump is in the occupied mode.
- B. Each energy recovery unit will be equipped with a motorized damper on the intake and exhaust ductwork. When the system is switched from un-occupied to occupied, these dampers shall be driven open and their position proven before the energy recovery unit fans are allowed to start.
- C. This Contractor shall provide a power source, as necessary, and shall install all control wiring between the dampers and the energy recovery units.

Exhaust Fans EF-1 thru EF-4, EF-5 and EF-6, and Make-up Air Unit MU-1

- A. Under normal conditions, exhaust fans EF-1 through EF-4 shall be manually indexed on by the occupants for odor or temperature control. A motorized damper shall be installed at each of these fans and shall be driven open when the fan is energized. The Electrical Contractor will provide manual control switches and will wire the motorized dampers. This Contractor shall verify the wiring and the control dampers operate as required.
- B. Exhaust fans EF-5 and EF-6 shall operate based on the following:
 - 1) These fans shall operate continuously if the Inspection Bay is in an "occupied" mode, as programmed by the Owner's schedule.
 - 2) These fans shall operate continuously if the main lighting is energized in the Inspection Bay. This Contractor shall provide and install relays, as necessary, to energize these fans if the lighting is on. Coordinate with the electrical contractor.
 - 3) These fans shall operate continuously if carbon monoxide or nitrogen dioxide is detected in the Inspection Bay above acceptable levels.
- C. This Contractor shall provide, install, and wire a CO/NO₂ detector "system" with multiple point source detectors. Detectors shall be located in each of the depressed inspection pits, and at opposite sides of the Inspection Bay. All sensors shall be low voltage and shall annunciate at the main control panel. This Contractor is responsible for all low and line voltage wiring.
 - 1) If carbon monoxide is detected above a pre-set level, all (6) exhaust fans shall be automatically started, and all associated motorized control dampers shall be opened.
 - 2) If nitrogen dioxide is detected above a pre-set level, all (6) exhaust fans shall be automatically started, and all associated motorized control dampers shall be opened.
 - 3) Verify all setpoints with the Engineer and the Owner.
 - 4) An alarm shall be sent to the Energy Management System if high concentrations of either gas are detected.
- D. Each motorized damper at all six (6) exhaust fans shall be equipped with an end switch. If any damper is driven open, the make-up air unit (MU-1) shall be energized and allowed to operate.

- 1) This Contractor shall extend dedicated wiring from each motorized damper to the make-up air unit control panel.
- 2) When the make-up air unit is energized, the outside air damper shall first be driven open and position proven.
- 3) The make-up air unit will be supplied with a remote control panel. This Contractor shall install this panel adjacent to gas monitor panel and shall provide and install all wiring per the manufacturer's directions. The remote control panel will include a manual summer-winter switch, a remote discharge air temperature control, and a number of status indicator lamps.
- 4) Once the make-up air unit is energized, and the outside air damper is proven open, the unit shall operate under its own internal controls to supply a fixed discharge air temperature and to maintain a fixed air pressure in the Inspection Bay as referenced to the Office Spaces.
 - a.) This Contractor shall install the air pressure sensor taps per the manufacturer's directions.
 - b.) The make-up air unit includes a mixing box and will mix return air and outside air to maintain a slightly negative pressure as referenced to the Office Spaces.

Gas Infrared Heaters (IR-1 through IR-4)

- A. The gas infrared heater may be supplied with "stand alone", low voltage, 2-stage room thermostats compatible with the infrared heating units.
- B. Install the thermostats where shown on the drawings and make all low voltage wiring connections per the manufacturer's directions.
- C. Note that IR-1 and IR-2 share a common room thermostat and must operate simultaneously. This contractor shall provide and install isolation relays, if necessary, to allow a single room thermostat to control both infrared units.
- D. All infrared unit thermostats shall be heavy duty style. No guards will be required, as the intent is to allow the occupants to manually energize the heaters on an "as needed" basis.

Alarms

Provide all alarmed points with adjustable time delays to prevent nuisance tripping under normal operation and on equipment start-up. For all commanded outputs that have status feedback, provide an alarm that will indicate the commanded output is not in its commanded state. Provide alarms on all points as indicated on point charts. For existing campus automations systems, add/delete what is called on the point charts for after consultation with user Agency to provide consistent alarming throughout the automation system.

Equipment Start/Stop Failure States

All start/stop points for equipment shall utilize normally open contacts unless called out specifically in the individual control sequences.

Lead/Lag Sequencing

For sequences that call for lead/lag of equipment connected to building automation systems, the lead device shall be able to be chosen through a selectable day of the week and time of day through the building automation system. Coordinate with the user Agency for scheduling switchover and frequency. Unless otherwise directed, switchover shall occur at 10AM Tuesday and shall rotate the lead device on a weekly cycle rotating through all devices sequentially. For standalone lead/lag sequence controllers (non-DDC), the lead device shall be selected by a switch on the panel face.

Current Switch Setup

When current switches are used for proving fan or pump status, they shall be set up so that they will detect belt or coupling loss by the reduction in current draw on loss of coupled load. The current switch set up shall be redone by the 23 09 14 contractor after the balancer is complete.

Damper Interlocks for Fans

For fan systems with magnetic starters and shutoff dampers specified with end switches, the damper interlock shall be hardwired in such a way that the damper shall open if the fan starter hand / off / auto switch is in the hand or in the auto position and being called to start. After the damper end switch has proven the damper open, a hardwire interlock from the end switch to the starter holding coil for the fan shall cause the fan to start. For fan systems that are ducted in parallel, see specific sequence for fan system on interlock requirements.

Fan Interlocking

Provide interlocks between supply and return or exhaust fan systems as scheduled on the plans or called out in individual control sequences. If DDC controlled, interlocks shall be done through DDC start/stop points unless otherwise specified in individual control sequences. If not DDC controlled, interlocks shall be accomplished via hardwire interlocks between fan starters or VFD's.

Thermostats and Sensors:

All devices and equipment including terminal units, specified to be controlled in a control sequence by a thermostat or sensor, shall be provided with a thermostat or sensor, whether or not the device is indicated on the plans. Consult the HVAC design engineer for the thermostat or sensor location.

END OF SECTION 23 09 93

43. SWEF Building, Heating and Ventilating, Item SPV.0105.103

*Replace the entire section titled **SECTION 23 11 00 – FACILITY FUEL PIPING** with the following:*

SECTION 23 11 00 - FACILITY FUEL PIPING

PART 1 - GENERAL

SCOPE

This section contains specifications for fuel pipe and fuel pipe fittings for this project.

RELATED WORK

Section 23 05 23 - General-Duty Valves for HVAC Piping

Section 23 05 15 - Piping Specialties

Section 23 05 29 - Hangers and Supports for HVAC Piping and Equipment

REFERENCE

Applicable provisions of Division 1 govern work under this section.

REFERENCE STANDARDS

ANSI B16.3 Malleable Iron Threaded Fittings

ASTM A53 Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless

ASTM A234 Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures

NFPA 54-2009 Edition, National Fuel Gas Code

SHOP DRAWINGS

Refer to division 1, General Conditions, Submittals.

Contractor shall submit schedule indicating the ASTM specification number of the pipe being proposed along with its type and grade and sufficient information to indicate the type and rating of fittings for each service.

DELIVERY, STORAGE, AND HANDLING

Promptly inspect shipments to insure that the material is undamaged and complies with specifications.

Cover pipe to eliminate rust and corrosion while allowing sufficient ventilation to avoid condensation. Do not store materials directly on grade. Protect pipe, tube, and fitting ends so they are not damaged. Where end caps are provided or specified, take precautions so the caps remain in place.

Offsite storage agreements will not relieve the contractor from using proper storage techniques.

Storage and protection methods must allow inspection to verify products.

DESIGN CRITERIA

Use only new material, free of defects, rust and scale, and meeting the latest revision of ASTM specifications as listed in this specification.

Construct all piping for the highest pressures and temperatures in the respective system in accordance with ANSI B31, but not less than 125 psig unless specifically indicated otherwise.

Non-metallic piping will be acceptable only for the services indicated. It will not be acceptable in occupied spaces and ventilation plenum spaces, including plenum ceilings.

Where weld fittings or mechanical grooved fittings are used, use only long radius elbows having a centerline radius of 1.5 pipe diameters.

Where ASTM A53 grade A pipe is specified, ASTM A53 grade B pipe may be substituted at Contractor's option. Where the grade or type is not specified, Contractor may choose from those commercially available.

WELDER QUALIFICATIONS

Before any metallic welding is performed, Contractor to submit his Standard Welding Procedure Specification together with the Procedure Qualification Record as required by Section IX of the ASME Boiler and Pressure Vessel Code and/or the National Certified Pipe Welding Bureau.

Before any polyethylene fusion welding is performed, Contractor to submit certification that the welders to be used on this project have successfully demonstrated proper welding procedures in accordance with the Code of Federal Regulations, Title 49, Part 192, Section 192.285.

The A/E reserves the right to test the work of any welder employed on the project, at the Contractor's expense. If the work of the welder is found to be unsatisfactory, the welder shall be prevented from doing further welding on the project.

NATURAL GAS SERVICE

All charges for the gas service as shown on the plans, including the connection from the main in the street or other location to the gas meter, shall be paid by this Contractor, including setting of gas meter(s) and all work performed by the gas company.

PART 2 - PRODUCTS

NATURAL GAS

2" and Smaller: ASTM A53, type E or S, standard weight (schedule 40) black steel pipe with ASTM A197/ANSI B16.3 class 150 black malleable iron threaded fittings or ASTM A234 grade WPB/ANSI B16.9 standard weight, seamless, carbon steel weld fittings.

VENTS AND RELIEF VALVES

Use pipe and pipe fittings as specified for the system to which the relief valve or vent is connected.

UNIONS AND FLANGES

2" and Smaller: ASTM A197/ANSI B16.3 malleable iron unions with brass seats. Use black malleable iron on black steel piping and galvanized malleable iron on galvanized steel piping. Use unions of a pressure class equal to or higher than that specified for the fittings of the respective piping service but not less than 250 psi.

PART 3 - EXECUTION

PREPARATION

Remove all foreign material from interior and exterior of pipe and fittings.

ERECTION

Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute piping as required to clear such interferences. In all cases, consult drawings for exact location of pipe spaces, ceiling heights, door and window openings, or other architectural details before installing piping.

Provide anchors, expansion joints, swing joints and/or expansion loops so that piping may expand and contract without damage to itself, equipment, or building.

Mitered ells, notched tees, and orange peel reducers are not acceptable. On threaded piping, bushings are not acceptable.

"Weldolets" and "Threadolets" may be used for branch takeoffs up to one-half (1/2) the diameter of the main.

Do not route piping through transformer vaults or above transformers, panelboards, or switchboards, including the required service space for this equipment, unless the piping is serving this equipment

Install all valves, and piping specialties, including items furnished by others, as specified and/or detailed. Make connections to all equipment installed by others where that equipment requires the piping services indicated in this section.

WELDED PIPE JOINTS

Make all welded joints by fusion welding in accordance with ASME Codes, ANSI B31, and State Codes where applicable.

Electrodes shall be Lincoln, or approved equal, with coating and diameter as recommended by the manufacturer for the type and thickness of work being done.

THREADED PIPE JOINTS

Use a Teflon based thread lubricant or Teflon tape when making joints; no hard setting pipe thread cement or caulking will be allowed.

NATURAL GAS

Pitch horizontal piping down 1" in 60 feet in the direction of flow. Install a 4" minimum depth dirt leg at the bottom of each vertical run and at each appliance. When installing mains and branches, cap gas tight each tee or pipe end which will not be immediately extended. All branch connections to the main shall be from the top or side of the main.

Do not install gas pipe in a ventilation air plenum.

If an above ground vent terminates in an area subject to snow accumulation, terminate the line at least five feet above grade.

Install a shut off valve at each appliance. Provide a valved connection at the main for equipment and appliances furnished by others.

Piping through a roof shall be run through an approved roof penetration with flashing and counter flashing.

Each gas pressure reducing valve vent and relief valve vent shall be run separately to a point outside of the building, terminated with a screened vent cap, and located according to gas utility regulations.

Clean all welded piping before all regulators and control valves. Test by placing target cloth over piping and blow with compressed air. Clean piping until target cloth is clean and free of debris.

VENTS AND RELIEF VALVES

Install vent and relief valve discharge lines as indicated on the drawings, as detailed, and as specified for each specific valve or piping specialty item. In no event is a termination to occur less than six feet above a roof line.

UNIONS AND FLANGES

Install a union or flange, as required, at each automatic control valve and at each piping specialty or piece of equipment which may require removal for maintenance, repair, or replacement. Where a valve is located at a piece of equipment, locate the flange or union connection on the equipment side of the valve. Concealed unions or flanges are not acceptable.

PIPING SYSTEM LEAK TESTS

Verify that the piping system being tested is fully connected to all components and that all equipment is properly installed, wired, and ready for operation. If required for the additional pressure load under test, provide temporary restraints at expansion joints or isolate them during the test. Verify that hangers can withstand any additional weight load that may be imposed by the test.

Provide all piping, fittings, blind flanges, and equipment to perform the testing.

Conduct pressure test with test medium of air or water unless specifically indicated. Minimum test time is indicated in the table below; additional time may be necessary to conduct an examination for leakage. Each test must be witnessed by the Division's representative. If leaks are found, repair the area with new materials and repeat the test; caulking will not be acceptable.

Do not insulate pipe until it has been successfully tested.

For hydrostatic tests, use clean water and remove all air from the piping being tested by means of air vents or loosening of flanges/unions. Measure and record test pressure at the high point in the system.

For air tests, gradually increase the pressure to not more than one half of the test pressure; then increase the pressure in steps of approximately one-tenth of the test pressure until the required test pressure is reached. Examine all joints and connections with a soap bubble solution or equivalent method. The piping system exclusive of possible localized instances at pump or valve packing shall

show no evidence of leaking. After testing is complete, slowly release the pressure in a safe manner.

Measure natural gas system test pressure with a water manometer or an equivalent device calibrated in increments not greater than 0.1 inch water column. System will not be approved until it can be demonstrated that there is no measurable loss of test pressure during the test period.

Conduct fuel oil system test so as not to impose a pressure of more than 10 psig on the tank. Instead of a pressure test, suction lines may be tested under a vacuum of not less than 20 inches of mercury maintained for at least one hour.

<u>System</u>	<u>Pressure</u>	<u>Medium</u>	<u>Duration</u>
Natural gas	100 psig	Air	24 hr

END OF SECTION 23 11 00

43. SWEF Building, Heating and Ventilating, Item SPV.0105.103

Replace the entire section titled SECTION 23 57 33 – VERTICAL GROUND LOOP HEAT EXCHANGER, PIPE, AND ACCESSORIES with the following:

SECTION 23 57 33 VERTICAL GROUND LOOP HEAT EXCHANGER, PIPE AND ACCESSORIES

PART 1 - GENERAL

SCOPE

RELATED WORK

Section 23 05 23 - General-Duty Valves for HVAC Piping
Section 23 05 15 - Piping Specialties
Section 23 05 29 - Hangers and Supports for HVAC Piping and Equipment
Section 23 07 00 - HVAC Insulation
Section 23 25 00 - HVAC Water Treatment.

REFERENCE

Applicable provisions of Division 1 govern work under this section.

REFERENCE STANDARDS

ASTM D1693 Standard Test for Environmental Stress Cracking of Ethylene Plastics.
ASTM D2239-03 Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter
ASTM D2683-04 Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled PE Pipe and Tubing
ASTM D3350 Standard Specification for Polyethylene Plastic Pipe and Fittings Materials.
ASTM D 3261-03 Standard Specification for Butt Heat Fusion PE Plastic Fittings for PE Pipe and Tubing
International Ground Source Heat Pump Association (IGSHPA)

SHOP DRAWINGS

Refer to division 1, General Conditions, Submittals.

Submit manufacturer's catalog sheets, specifications, and installation instructions for each item specified.

QUALITY ASSURANCE

Geothermal System Installer's Qualifications Data:

Name of each person who will be performing the geothermal work and their employer's name, business address and telephone.

Names and addresses of 3 similar projects that each person has worked on.

Copy of installer's personal experience demonstrating the use of thermal fusion techniques for polyethylene piping.

The persons performing geothermal work shall be personally trained in polyethylene pipe fusion techniques by IGSHPA or piping manufacturer, personally experienced in geothermal work and shall have been regularly employed by a Company performing geothermal work for a minimum of 2 years.

Geothermal System Supervisor's Qualifications Data:

Name of person overseeing the geothermal work and their name, business address and telephone number.

Names and addresses of 3 similar projects that the supervisor has overseen during the past 5 years.

Copy of installer's personal experience demonstrating the use of thermal fusion techniques for polyethylene piping.

The supervisor overseeing the geothermal work shall be personally trained in polyethylene pipe fusing techniques by IGSHPA or piping manufacturing, personally experienced in geothermal work, and shall have been regularly employed by a Company performing geothermal work for a minimum of 2 years.

Geothermal System Contractor's Qualifications Data:

Names and addresses of 3 geothermal projects that the contractor has completed during the past 5 years.

The contractor shall have completed geothermal work on at least 3 projects with vertical boreholes within the last 5 years.

IGSHPA Installation Manuals: Maintain one copy on site for review. CSA C448-02: Maintain one copy on site for review.

REGULATORY REQUIREMENTS

Perform field testing of piping systems in complete accordance with the local utilities and other agencies having jurisdiction and as specified.

PRODUCT CONDITION

Protection: During test work, protect adjacent buildings, equipment, vehicles, etc., against damage from testing activities.

SEQUENCING AND SCHEDULING

Transmit written notification of proposed date and time of tests to the engineer at least 2 (two) days in advance of such tests.

Perform cleaning and testing work in the presence of Owner's Representative.

WARRANTY

Manufacturer's Warranty: Minimum 50 years warranty for polyethylene piping.

Special Warranty: 25 years for butt fusion welds in polyethylene piping against leakage.

WATER, SILT AND SOIL CONTAINMENT AND REMOVAL

The Contractor shall submit a detailed proposal outlining his proposed methodology for containing, removing and runoffs created by the well drilling and piping installation.

Dewater each borehole during drilling utilizing an interceptor and water sump tank arrangement. Remove water from site in a manner in accordance with all authorities having jurisdiction.

PART 2 - PRODUCTS

HIGH DENSITY POLYETHYLENE (P.E.) PIPE AND FITTINGS

Pipe and fittings shall be manufactured based on polymers made with ethylene as the sole monomer, which meet the requirements of PE Type III for water distribution.

PE Type III pipe shall have a 23.2 kPa design stress at 23°C which is listed by the plastics pipe institute (PPI).

The piping shall be PE3408 (high density polyethylene) with minimum cell classification 345434C per ASTM D 3350. Resistance to environmental stress cracking is critical to long life expectancy. Therefore, as a more stringent requirement, the piping shall experience zero failures (Fo) after 5,000 hours under condition "C" (100% reagent @ 100°C) when tested in accordance with ASTM D1693. A 50 year limited warranty (in writing) must be issued by the pipe manufacturer. U-type fittings shall be shop fabricated under quality controlled conditions of the same material designation and shall be ASTM D-3261 certified.

Pipe shall conform to ASTM D3035 and ASTM D3261 for butt fusion fittings. U-bend joints shall be butt heat fused or socket welded.

Pipe must be designed and fabricated by manufacturer specifically for geothermal heat pump applications.

The complete assembly of piping within the borehole must be continuous without any joints except at the bottom U-BEND located where only a thermally fused joint or socket welded joint will be acceptable.

All piping shall be sealed at the factory and contain a compressed air charge. The presence of the air charge must be witnessed at the site prior to hydrostatic testing. Piping without an air charge will not be accepted.

ANTI-FREEZE

Provide a 25% by volume solution of polypropylene glycol charge and water for all the entire ground source heat pump closed loop piping.

The performance characteristics shall be as follows:

Viscosity shall be no moiré than 5.00 centipoise at -1.1°C with blend for -9.4°C freeze protection.

Specific heat shall be 1.05 at 21°C with blend for -9.4°C freeze protection.

Specific gravity shall be 0.982 at 10°C with blend for -9.4°C freeze.

Pressure drop and Reynolds Number for a 11.3 l/m flow in NPS ¾ SDR-11 PE pipe of a -1.1°C mixture for a -9.4°C freeze protected blend shall be no more than 0.86 m of HD per 30.0 m of pipe and no less than Re = 2028 respectively.

The fluid shall mix easily and readily with water and shall not damage or corrode common tools.

The fluid shall have a good or excellent material compatibility with iron, copper, red and yellow brass, polyethylene, PVC, Viton, Buna "n" neoprene and nylon and shall include an

oxygen scavenger blend to reduce any corrosion capability. The fluid shall not have a low surface tension to prevent leakage.

The fluid shall have a NFPA 704 Health rating of 0 (least risk).

The Contractor shall provide a certified test report from a recognized lab stating glycol concentration.

The product shall be available in plastic 19 liter pails, plastic 208 liter drums, or bulk tanker.

BOREHOLE GROUT

Provide grout for each of the boreholes as indicated on the drawings.

Grout to be a single composite bentonite grout consisting of 25% solids and polymer free mixed with water as follows: 68L water per 22.7 kg bentonite grout.

PART 3 - EXECUTION

GEOHERMAL BOREHOLE PIPING INSTALLATION

The contractor shall obtain all necessary permits associated with the described work.

The borehole drilling contractor shall be experienced in deep bore hole drilling and shall have a minimum of 10 years drilling experience within the geographic vicinity of the project or shall subcontract to an approved drilling contractor with equivalent experience.

The vertical holes shall be drilled no closer than 8.0 m apart and shall be held open by a "mud" casing so that the piping can be inserted. The piping shall be tested in accordance with other sections of this specification prior to insertion. Loops must be installed from or by a mechanical device so that the pipe is not rolled out on the ground before installation. Install polyethylene piping in accordance with details on drawings.

The piping shall be capped and protected for future connection.

Approved borehole seals should be tightened to manufacturer's specifications.

The entire piping system shall be pressure tested in accordance with other sections of this specification before any backfilling of trench is permitted.

The Owner's Representative shall be notified 24 hours prior to the test and shall, at his discretion, witness the test.

The contractor shall maintain an accurate record of all borehole locations and at the completion of the work, deliver to the owner a set of "as-built" site plans.

GROUTING BOREHOLE

Bore holes in vertical heat exchangers shall be tremi-grouted. Grouting of vertical heat exchangers shall be done in accordance with jurisdictional requirements of IGSHPA standards. Grouting shall immediately follow the completion of drilling and installation of each borehole piping. A large capacity grout mixer/separate holding tank are required and a minimum of 25mm diameter polyethylene tubing shall be used as the tremi-grout pipe. The tremi-grout pipe shall be attached to the u-bend heat exchanger before it is lowered into the ground.

Grouting procedures to be as follows:

Monitor the grouting operation to ensure grout is being adequately mixed in correct proportions and that the viscosity is adequate for pumping down the borehole.

The grout contractor should have spare grout pipes, hoses, fittings, readily available on site.

A screw-type pump or a piston pump shall be used to pump grouts down the boreholes.

A 75 to 100 mm inside diameter suction line and a 25 to 50 mm discharge line shall be used.

Bentonite based grout shall be used mixed with water in proportions recommended by manufacturer. For Volclay Grout II (25% solids) utilize a mixture of 68 L per 22.7 kg of grout. Cement based grout will not be used.

PIPING SYSTEMS TEST

The contractor shall provide all necessary equipment and shall perform all work required in connection with all piping system tests.

At the water working pressure of the pipe installed, all water piping systems shall be tested. Each section tested shall be slowly filled with water. Care shall be taken to expel all air from pipes. If necessary, the pressure, as measured at the point of lowest elevation, shall be applied for not less than ½ hour. When the test pressure has fallen over 5%, the point of leakage shall be found, repaired and tested repeated. This procedure shall be followed until the piping systems have been proved absolutely tight. The use of any chemicals, any "Stop-Leak" compounds, any mastic or any other temporary means shall not be used for repairing leaks during or subsequent to these tests.

Polyethylene pipe testing:

Prior to insertion of the vertical pipe, the contractor shall assembly the "U Bend" and piping, cap both ends, and air pressure test the piping to a pressure of 125 PSI.. The test must be maintained for 8 hours minimum without the pressure falling more than 3 PSI.

Loops shall pass the test at the following milestones:

- Before insertion into hole.
- After insertion into hole.

Contractor is responsible to provide evidence of and certification of pressure testing, and acceptance of all work performed by signature of the Owner's Representative.

3.4 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.

3.5 FIELD QUALITY CONTROL

- A. Piping Tests: Fill piping 24 hours before testing and apply test pressure to stabilize piping. Use potable water only.
- B. Hydrostatic Tests: Test at not less than 1-1/2 times the pipe working-pressure rating allowing for static pressure of borehole depth.
 - 1. Increase pressure in 50-psig increments and inspect each joint between increments. Hold at test pressure for 30 minutes. Slowly increase to next test pressure increment and hold for 30 minutes. After testing at maximum test pressure, reduce pressure to 30 psig. Hold for 90 minutes, and measure pressure at 30-minute intervals. Repair leaks and retest until no leaks exist.
- C. Prepare reports of testing activity and submit to Engineer.

END OF SECTION 23 21 13

Replace the entire section titled **SECTION 23 83 34 – IN-FLOOR HOT WATER RADIANT SYSTEMS AND EQUIPMENT** with the following:

SECTION 23 83 34 IN-FLOOR HOT WATER RADIANT SYSTEMS AND EQUIPMENT

PART 1 - GENERAL

SCOPE

RELATED WORK

Section 23 05 15 - Piping Specialties

Section 23 05 29 - Hangers and Supports for HVAC Piping and Equipment

REFERENCE

Applicable provisions of Division 1 govern work under this section.

REFERENCE STANDARDS

ASTM F876 Standard Specification for Crosslinked Polyethylene Tubing (PEX)

ASTM B75 Seamless Copper Tube

SHOP DRAWINGS

Refer to division 1, General Conditions, Submittals.

Provide manufacturer's literature for tubing, manifolds, valves, and all accessories provided for the project.

Provide a "job-specific" parts list of all parts proposed for this project.

1.03 RECORD DRAWINGS

Provide as-built drawings show precisely document location and spacing of all tubing concealed from future view.

PART 2 - PRODUCTS

2.1 PLASTIC PIPE AND FITTINGS

- A. PEX-a (Engle-method Crosslinked Polyethylene) Piping: ASTM 876 with oxygen-diffusion barrier that meets DIN 4726.
- B. Basis-of-Design Product: Subject to compliance with requirements, provide Uponor Wirsbo hePEX or a comparable product.
- C. PEX-a Fittings, Elbows and Tees (½ inch through 2 inch nominal pipe size): ASTM F1960 cold-expansion fitting manufactured from the following material types:
 1. UNS No. C69300 Lead-free (LF) Brass
 2. 20% glass-filled polysulfone as specified in ASTM D6394
 3. Unreinforced polysulfone (group 01, class 1, grade 2) as specified in ASTM D6394
 4. Polyphenylsulfone (group 03, class 1, grade 2) as specified in ASTM D6394
 5. Blend of polyphenylsulfone (55-80%) and unreinforced polysulfone (rem.) as specified in ASTM D6394

6. Reinforcing cold-expansion rings shall be manufactured from the same source as PEX-a piping manufacturer and marked "F1960".
- D. PEX-a Fittings (2½ inch through 4 inch nominal pipe size): SDR9 compression type fitting consisting of a double O-ring insert with a compression sleeve tightened around the pipe and insert.

2.2 TRANSITION FITTINGS

- A. Plastic-to-Metal Transition Fittings:
1. Manufacturers: Provide fittings from the same manufacturer of the piping.
 2. Threaded Brass to PEX-a Transition: one-piece brass fitting with male or female threaded adapter and F1960 cold-expansion end, with PEX-a reinforcing cold-expansion ring.
 3. Brass Sweat to PEX-a Transition: one-piece brass fitting with sweat adapter and F1960 cold-expansion end, with PEX-a reinforcing cold-expansion ring.

2.3 TRANSITION UNIONS

- A. Plastic-to-Metal Transition Unions:
1. Manufacturers: Provide fittings from the same manufacturer of the piping.
 2. Threaded Brass to PEX-a Union: one-piece brass fitting with male or female threaded adapter and F1960 cold-expansion end, with PEX-a reinforcing cold-expansion ring.
 3. Brass Sweat to PEX-a Union: one-piece brass fitting with sweat adapter and F1960 cold-expansion end, with PEX-a reinforcing cold-expansion ring.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS

- A. Hot-water heating piping, aboveground (2 inch and below) shall be the following:
1. PEX-a piping, with F1960 cold-expansion fittings.
- B. Hot-water heating piping installed below ground and within slabs shall be any of the following:
1. 2 inch and below – Sleeved PEX-a piping with engineered polymer (EP) polyphenylsulfone F1960 cold-expansion fittings. Use the fewest possible joints and install per manufacturer's recommendations.
 2. 1 inch through 2 inch – Pre-insulated PEX-a piping with multi-layer, closed-closed cell PEX-foam insulation and a corrugated HDPE jacket with engineered polymer (EP) polyphenylsulfone F1960 cold-expansion fittings. Use the fewest possible joints and install per manufacturer's recommendations.
- C. Condenser-water piping, aboveground (2½ inch through 4 inch) shall be the following:
1. PEX-a piping, with compression fittings.
- D. Condenser-water piping installed below ground and within slabs shall be any of the following:
1. 2 inch and below – Sleeved PEX-a piping with engineered polymer (EP) polyphenylsulfone F1960 cold-expansion fittings. Use the fewest possible joints and install per manufacturer's recommendations.
 2. 1 inch through 2 inch – Pre-insulated PEX-a piping with multi-layer, closed-closed cell PEX-foam insulation and a corrugated HDPE jacket with

engineered polymer (EP) polyphenylsulfone F1960 cold-expansion fittings. Use the fewest possible joints and install per manufacturer's recommendations.

3.2 PIPING INSTALLATIONS

- A. Install PEX-a tubing according to manufacturer's recommendations.

3.3 HANGERS AND SUPPORTS

- A. PEX-a Piping Hanger Spacing: Install hangers for PEX-a piping with the following maximum spacing:
 - 1. 1 inch and below: Maximum span, 32 inches.
 - 2. 1¼ inch and above: Maximum span, 48 inches.
- B. PEX-a Piping Hanger Spacing with PEX-a Support Channel: Install hangers for PEX-a piping with horizontal support channel in accordance with local jurisdiction and manufacturer's recommendations, with the following maximum spacing:
 - 1. Maximum span, 8 feet.
- C. PEX-a Riser Supports: Install CTS riser clamps at the base of each floor and at the top of every other floor. Install mid-story guides between each floor.

3.4 PIPE JOINT CONSTRUCTION

- A. PEX-a Connections: Install per manufacturer's recommendations. Use manufacturer-recommended cold-expansion tool for F1960 connections.

3.5 CHEMICAL TREATMENT

(Refer to Specification Section 23 25 00.)

3.6 FIELD QUALITY CONTROL

- A. Do not expose PEX piping to direct sunlight for more than 30 days. If construction delays are encountered, provide cover to portions of piping exposed to direct sunlight.

3.7 TESTING

- A. All in-floor PEX tubing shall be tested at the manufacturer's rated pressure or 100 PSI. 100 PSI shall be used unless the system components are rated at less, at which case the lesser pressure may be used. Pressure test may be done pneumatically. Hold test pressure for a minimum period of 4 hours with no pressure loss.
- B. All PEX tubing embedded in concrete or installed under a cast in place concrete floor shall be pressure tested prior to placement of any concrete. This pressure test shall be witnessed and approved by the Owner representative prior to any placement of concrete.
- C. During concrete pouring, or any activity that will prevent future access to embedded piping, a minimum of 50 PSI air pressure shall be maintained on the affected piping. This pressure shall be monitored during concrete activities at minimum intervals of 30 minutes.

3.8.1 WARRANTY

- A. PEX-a manufacturer system warranty shall cover tubing for a duration of 30 years from the date of installation.

END OF SECTION 23 21 13

44. SWEF Building, Electrical, Item SPV.0105.104

Replace the entire section titled SECTION 26 32 00 – PACKAGED GENERATOR ASSEMBLIES with the following:

SECTION 26 32 00 - PACKAGED GENERATOR ASSEMBLIES

PART 1 - GENERAL

1.01 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this section.
B. Section 26 36 00 - Transfer Switches.

1.02 REFERENCES

- A. NFPA110 – Emergency and Standby Power Systems.
B. ANSI/NEMA MG 1 - Motors and Generators.

1.03 PERMITS

- A. The Contractor shall be responsible for obtaining all necessary permits for the complete installation of the generator fuel system and related equipment. The contractor shall arrange to have a certified tank installer supervise and certify the fuel system installation.

1.04 SUBMITTALS

- A. Submit shop drawings showing plan and elevation views with overall and interconnection point dimensions, fuel consumption rate curves at various loads, ventilation and combustion air requirements, and electrical ratings and diagrams including schematic and interconnection diagrams.
B. Submit manufacturer's installation instructions.

1.05 OPERATION AND MAINTENANCE DATA

- A. The O&M manuals shall contain at least the following:
- Instructions for operating equipment.
 - Identification of operating limits which may result in hazardous or unsafe conditions.
 - Document ratings of equipment and each major component.
 - Routine preventive maintenance and lubrication schedule.
 - List of special tools, maintenance materials, and replacement parts.
 - Technical data sheets.
 - Wiring diagrams.

1.06 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in packaged engine generator systems with minimum ten years documented experience.
- B. Supplier: Authorized distributor of engine generator manufacturer with service facilities within 100 miles of project site.

1.07 EXTRA MATERIAL

- A. Provide two additional sets of each fuel, oil, and air filter elements required for the engine generator system and one additional set of all required belts.

PART 2-PRODUCTS

2.01 SYSTEM RATINGS

- A. Generator Set Rating: 100 kW, 125 kVA, .8pf, 120/208, VAC, Three-phase, 4wire, 12 wire re-connectable, 60 Hz at 1,800 rpm. Standby power rated.
- B. Motor starting KVA shall be kVA based on a sustained RMS voltage drop of no more than 10% of no load voltage with the specified kVA load at near zero power factor applied to the engine-generator set.
- C. The generator set manufacturer shall verify the engine as capable of driving the generator with all accessories in place and operating at the nameplate rating after de-rating for the range of temperature expected in service and the altitude of the installation.
- D. The engine-generator set shall be capable of picking up 100% of nameplate kW, less applicable de-rating factors, in one step with the engine-generator set at operating temperature.
- E. Voltage regulation shall be $\pm 1.0\%$ of rated voltage for any constant load between no load and rated load. Random voltage variation with any steady state load from no load to full load shall not exceed $\pm 1.0\%$ of rated voltage.
- F. Frequency regulation shall be $\pm 0.5\%$ from steady state no load to steady state rated load.
- G. Harmonic distortion shall not exceed 5% total harmonic distortion at full linear load and no single harmonic shall exceed 3% of rated voltage.
- H. Telephone Influence Factor: TIF shall be less than 50.

2.02 ENGINE AND ENGINE EQUIPMENT

- A. Engine Type: Water-cooled, turbo-charged, four cycle, internal combustion engine.
- B. Fuel Type: Natural gas and LP. Please coordinate thoroughly with Generator manufacturer to include all accessories to accommodate DUAL-FUEL source.
- C. Engine Speed: 1,800 rpm.
- D. Governor: Isochronous electronic type to maintain engine speed within 0.5 percent, steady state, and 1 percent, no load to full load, with recovery to steady state within 2 seconds following sudden load changes.
- E. Safety Devices: Engine shutdown on high water temperature, low oil pressure, overspeed, and engine overcrank. Limits as selected by manufacturer.
- F. Include remote starting control circuit, with RUN-OFF-AUTO selector switch on engine generator control panel.
- G. Engine Accessories: Include intake air filter, fuel filter, fuel priming pump, automatic electric fuel shutoff, fuel/water separator, gear-driven water pump, positive displacement mechanical full pressure lubrication oil pump, full flow lubrication oil filters with replaceable elements, dipstick oil level indicator, and oil drain valve with hose extension. Include engine mounted battery charging alternator with solid state voltage regulator. Include fuel pressure gauge, water temperature gauge, and lube oil pressure gauge on engine-generator control panel.

- H. Engine Jacket Heater: Thermal circulation type water heater with integral thermostatic control, sized to maintain engine jacket water at 90 degrees F (32 degrees C). Heater voltage shall be as shown on the drawings.
- I. Mounting: Provide unit with suitable spring-type vibration isolators and mount on structural steel base.
- J. Cooling System: Unit mounted radiator using glycol coolant, with blower type fan, coolant pump and thermostat temperature control sized to maintain safe engine temperature in ambient temperature of 110 degrees F (43 degrees C). Radiator shall be provided with a duct adapter flange permitting the attachment of air discharge duct directing the discharge of radiator air through the wall. The equipment supplier shall provide 50% ethylene glycol antifreeze solution to fill engine cooling system.
- K. Exhaust System:
 - 1. Provide critical grade silencer, with muffler companion flanges and flexible stainless steel exhaust fitting, suitable for horizontal orientation, sized in accordance with engine manufacturer's instructions. Contractor shall mount muffler so its weight is not supported by the engine.
 - 2. Flexible exhaust connections shall be provided as required for connection between engine exhaust manifold and exhaust line, in compliance with applicable codes and regulations.
 - 3. Provide an exhaust condensation trap with manual drain valve to trap and drain off exhaust condensation and to prevent condensation from entering the engine. Provide drain line to drip pan.
 - 4. Provide a suitable rain cap at the stack outlet. Provide all necessary flanges and special fittings for proper installation.
 - 5. Contractor shall mount and install all exhaust components as shown on drawings and as required to comply with applicable codes and regulations. All components shall be properly sized to assure proper operation without excessive back pressure when installed as shown on the drawings. Make provisions as required for pipe expansion and contraction.
- L. Fuel System:
 - 1. Provide LP gas tank, UL listed; State of Wisconsin approved; fuel gauge; low fuel . The fuel tank shall be pressure tested for a minimum of 2 hours to ensure its integrity.
 - 2. Provide flexible supply and return line fittings and all connections for connecting fuel system to the engine in compliance with applicable codes and regulations. All fuel piping shall be pressure tested for minimum 2 hours.
- M. Batteries: Heavy duty, starting type, lead-acid storage batteries. Provide a DC volt system with number of batteries and battery capacity as sized by the manufacturer adequate for (4) 30 second cranking periods (total of 2 minutes) along with all additional loads being run on the DC system.

2.03 GENERATOR

- A. Insulation: ANSI/NEMA MG 1, Class H.
- B. The generator shall be single bearing, self aligning 4-pole, brushless, synchronous type, revolving field with amortisseur windings, and with direct driven centrifugal blower for proper cooling and minimum noise. No brushes will be allowed. Generator shall be directly connected to engine fly wheel housing and driven through a flexible coupling to ensure permanent alignment. Generator design shall prevent potentially damaging shaft currents.
- C. The generator shall be Single-phase, broad-range, re-connectable and shall have 12 leads brought out to allow connection by user to obtain any of the available voltages for the unit.

- D. The regulator design shall include torque-matching characteristics to allow the engine to use its fullest power producing capacity (without exceeding it or over compensating) at speeds lower than rated, to optimize motor starting capability and provide the fastest possible recovery from transient speed dips. Regulators which use a fixed volts per hertz characteristic are not acceptable.
- E. Provide an exciter field automatic circuit breaker, mounted on the control panel, of the manual reset only type (cannot be used as a manual disconnect) for protection of exciter field and regulator.
- F. The generator, exciter, and voltage regulator shall be designed and manufactured by the engine generator set manufacturer. The exciter shall be 3-phase, full wave, rectified with heavy duty silicone diodes mounted on the common rotor shaft and sized for maximum motor starting loads. Systems utilizing 3-wire, solid state control elements rotating in the rotor, will not be acceptable. The generator design shall be of the self-protecting type as demonstrated by the prototype short circuit test.
- G. Provide a mainline molded case circuit breaker 500 amp, on generator output with integral thermal and instantaneous magnetic trip in each pole; number and rating as indicated. Include battery-voltage operated shunt trip, connection to open circuit breaker on engine failure. Mount unit in enclosure to meet ANSI/NEMA 250, Type 1 requirements. Consult manufacturer for circuit breaker size.

2.04 ACCESSORIES

Provide the following accessories with the engine generator set.

- A. Enclosure: Weather protective housing with the following features:
 - 1. Galvanized steel body
 - 2. Lifting points on base frame
 - 3. Stainless steel flush fitting latches and hinges
 - 4. Zinc plated or stainless steel fasteners
 - 5. Sheet steel components pre-treated with zinc phosphate prior to polyester powder coating
 - 6. Lockable wide door on each side installed to allow 180 degree opening rotation
 - 7. Radiator fill access door with lockable cover
 - 8. Lube oil and coolant drains piped to the exterior of the enclosure skid base
 - 9. Battery can only be reached through lockable doors
 - 10. Sound attenuation housing to limit noise level not to exceed 70dB at 7 meters
- B. Battery Heater: Thermostatically controlled battery blanket heater, 120VAC.
- C. Battery Tray: Plastic coated metal tray treated for electrolyte resistance, constructed to contain spillage of electrolyte.
- D. Battery Charger: A 10-ampere voltage regulated battery charger shall be provided for the engine-generator set. Charger shall be equipped with float, taper and equalize charge settings. Charger shall include overload protection, voltage surge suppressor, DC voltmeter and fused AC input. Operational monitors shall provide visual output along with individual form C contacts rated at 4 amps, 120 VAC, 30 VDC for remote indication of:
 - 1. Loss of AC power-red light (no relay contact).
 - 2. Low battery voltage-red light.
 - 3. High battery voltage-red light (no relay contact).
 - 4. Charger fail-red light.
- E. Engine-Generator Digital Control Panel: Top of control panel shall not be more than six (6) feet above finished floor (this may require remote mounting). NFPA - 110 and NFPA - 99, Type 1 generator mounted control panel enclosure with engine and generator controls and indicators. Include the following features:
 - 1. Power source with circuit protection: 12or 24 VDC.
 - 2. Operating temperature range: -40degree C to +70 degree C.

3. Humidity range: 5% to 95% non-condensing.
 4. Remote annunciator panel.
 5. Alarm horn.
 6. Indicators: not on auto, program, systems, warning.
 7. Alphanumeric digital display.
 8. Keypad with multi-function soft membrane environmentally sealed cover.
 9. Frequency Meter.
 10. True RMS AC Voltage.
 11. AC Output Amperage.
 12. Front mounted output voltage adjustment, locking screw driver type, to adjust voltage $\pm 5\%$ from rated value.
 13. Push-to-test indicator lamps, one each for low oil pressure, high water temperature, overspeed, and overcrank.
 14. Push-to-test indicator lamps, one each for high engine temperature and low engine oil pressure pre-alarm and one run light.
 15. A flashing red light to indicate the generator set is not in automatic start mode.
 16. Engine run/off/auto selector switch.
 17. Emergency stop "mushroom" switch.
 18. Engine running time meter.
 19. Oil pressure gauge.
 20. Water temperature gauge.
 21. Battery voltmeter.
 22. Auxiliary Relay: 3PDT, operates when engine runs, with contact terminals prewired to terminal strip.
 23. Remote Alarm Contacts: Pre-wire form C contacts to terminal strip for remote alarm functions required by ANSI/NFPA 110.
 24. Indicator lamps to include: overcrank, low oil pressure, high engine temperature, overspeed, not-in-auto, system ready, low battery volts, battery charger fault, low fuel, pre-alarm high engine temp, pre-alarm low oil pressure, low water temp, auxiliary alarm, auxiliary pre-alarm.
- F. The NEMA 1 enclosed control panel shall be mounted on the generator set with vibration isolators. The control shall include surge suppression for protection of solid state components. A front control panel illumination lamp with On/Off switch shall be provided. The engine-generator set starting batteries shall power the monitor.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that required utilities are available in proper location and ready for use.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Generator set shall be anchored to the floor or concrete pad.
- C. Contractor shall provide all required fuel during testing and a full tank of fuel at the time of Substantial Completion of the project.

3.03 FIELD QUALITY CONTROL

- A. Provide full load testing utilizing a portable test bank for four hours continuous, minimum. During the first two hours, step increase the load from 0% to 100% in at least six equal steps. At the end of two hours, continue running test at 100% load. Record the following in 20 minute intervals throughout the four hour test: kilowatts,

amperes, voltage, coolant temperature, room temperature, generator frequency (Hz), oil pressure, fuel consumption.

- B. After the generator has cooled down from the four hour test, shut it down and then simulate a power failure including operation of the transfer switch, automatic cycle, and automatic shutdown and return to normal.

3.04 DEMONSTRATION

- A. Simulate power outage by interrupting normal source, and demonstrate that system operates to provide emergency power.

END OF SECTION 26 32 00

Add section titled **SECTION 26 36 00 – TRANSFER SWITCHES:**

SECTION 26 36 00 - TRANSFER SWITCHES

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section includes two (2) transfer switches (less than 600V) for standby generator systems.

1.02 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this section.
- B. Section 26 32 00 - Packaged Generator Assemblies.

1.03 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in automatic transfer equipment with five years documented experience.

1.04 SUBMITTALS

- A. Submit product data showing overall dimensions, electrical connections, electrical ratings, all specified accessories, interlock methods, and environmental requirements.
- B. Submit manufacturer's installation instructions.

1.05 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.
- B. In addition to the general content specified under GENERAL REQUIREMENTS supply the following additional documentation:
- C. Instructions for operating equipment under test and emergency conditions.

PART 2 - PRODUCTS

2.01 AUTOMATIC TRANSFER SWITCH

- A. Description: NEMA ICS 2; automatic transfer switch. In applications where the switch serves as the service entrance disconnect, the switch shall be rated as suitable for use as a service disconnecting means.
- B. Configuration: The transfer switches shall be electrically operated and mechanically held. The electrical operation shall be by a solenoid mechanism operating from the same source to which the load is being transferred.
- C. The switch shall be rated for continuous duty and be mechanically interlocked to be in either the normal or the emergency position.
- D. The switch shall be controlled by electronic solid state components with printed circuit control boards, and industrial grade plug in control relays.
- E. The switch shall be designed and built so that it can be manually operated under no-load conditions from behind a barrier partition or with the door closed. The enclosure shall allow for inspection of the internal operation of the switch through a full sequence of the transfer cycle with the door open and the switch de-energized.

2.02 RATINGS

- A. Ratings:

ATS-#1:	400 amp., 120/208VAC, 3-Phase, 4-Wire.
ATS-#2:	60 amp., 120/208VAC, 3-Phase, 4-Wire for 'Life-Safety' branch.

2.03 AUTOMATIC SEQUENCE OF OPERATION

- A. Initiate Time Delay to Start Alternate Source Engine Generator: Upon initiation by normal source monitor.
- B. Time Delay to Start Alternate Source Engine Generator: 0 to 10 seconds, adjustable.
- C. Initiate Transfer Load to Alternate Source: Upon initiation by normal source monitor and permission by alternate source monitor.
- D. Time Delay Before Transfer to Alternate Power Source: 0 to 60 seconds, adjustable.
- E. Initiate Re-transfer Load to Normal Source: Upon permission by normal source monitor.
- F. Time Delay Before Transfer to Normal Power: 0 to 30 minutes adjustable.
- G. Time Delay Before Engine Shut Down: 0 to 30 minutes, adjustable, unloaded operation.
- H. Operating transfer time of the switch in either direction shall not be greater than 1/6 of a second.
- I. Engine Exerciser: Digital control, - start engine every 7 to 30 days adjustable; run for 0 to 120 minutes adjustable, before shutting down. Bypass exerciser control if normal source fails during exercising period.]

2.04 ACCESSORIES

- A. Manual Operator: Provide manual operator to allow switch to be operated under no-load conditions from behind a barriered partition or with the door closed.
- B. Indicating Lights: LED type. Mount in cover of enclosure to indicate NORMAL SOURCE AVAILABLE, ALTERNATE SOURCE AVAILABLE, SWITCH POSITION.
- C. Test Switch: Mount in cover of enclosure to simulate failure of normal source by interrupting the power signal to the normal source monitor.
- D. Return to Normal Switch: Mount in cover of enclosure to initiate manual transfer from alternate to normal source.
- E. Transfer Switch Auxiliary Contacts: Minimum 2 normally open; 2 normally closed.
- F. Normal Source Monitor: Monitor each line of normal source voltage; adjustable set points; initiate transfer when voltage drops below 85 percent.

- G. Alternate Source Monitor: Monitor alternate source voltage and frequency; adjustable set points; inhibit transfer when voltage is below 85 percent or frequency varies more than 3 Hertz from rated nominal voltage.
- H. The switch shall contain an in-phase monitor or adjustable time delay transition to inhibit closing of the switch into high levels of motor residual voltage.
- I. A factory installed equipment ground bar shall be provided in each switch enclosure.
- J. Four-pole transfer switches shall contain an overlapping neutral contact or a fully rated switched neutral pole.
- K. Three-pole transfer switches shall contain a factory installed fully rated solid neutral lug assembly.
- L. Provide digital metering on all transfer switches 200A and larger. Metering shall provide, at a minimum, measurement of voltage, current and kW demand for each phase on the load side of the switch.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Starting contacts for all transfer switches shall be wired in parallel to the generator starting circuit so that any transfer switch that senses a loss of normal power will start the generator. This control wiring is not shown on the plans but is required to be provided by the electrical contractor.

3.02 FIELD ADJUSTMENTS

- A. The contractor shall field adjust all timing and voltage settings of the transfer switch as necessary for proper operation of the switch, related loads and sources.

END OF SECTION 26 36 00

*Replace the entire section titled **SECTION 26 43 13 – SURGE PROTECTIVE DEVICES FOR LOW-VOLTAGE ELECTRICAL POWER CIRCUITS** with the following:*

SECTION 26 43 13 - SURGE PROTECTIVE DEVICES FOR LOW-VOLTAGE ELECTRICAL POWER CIRCUITS

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section includes Surge Protective Devices (SPD) as indicated on the project drawings and electrical diagrams.

1.02 RELATED WORK

- A. Applicable provisions of Division 1 govern work under this Section.

1.03 REFERENCE STANDARDS

- UL 1449, Third Edition – Standard For Safety For Surge Protective Devices.
- ANSI/IEEE C62.41.1 Guide on the Surge Environment in Low-Voltage AC Power Circuits.

- ANSI/IEEE C62.41.2 Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.
- ANSI/IEEE C62.45 Recommended Practice on Surge Testing for Equipment Connected to Low Voltage AC Power Circuits.
- IEEE C62.62 Standard Test Specification for Surge Protective Devices For Low-Voltage AC Power Circuits.
- NFPA 70, NEC Article 285

1.04 QUALITY ASSURANCE

- A. The manufacturer shall have been in the Surge Protective Device industry for a minimum of 5 years.

1.05 WARRANTY

- A. The manufacturer shall provide a minimum 5 year warranty from the date of shipment of the SPD.

1.06 SUBMITTALS

- A. Include all SPD data necessary to show device is in compliance with all product specifications. Include product data sheets showing the device performance, dimensions, weight, connections, and mounting requirements, along with installation instructions.

1.07 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

PART 2 - PRODUCTS

2.01 SURGE PROTECTIVE DEVICES

- A. The SPD shall be Listed in accordance with UL 1449, Third Edition. The product and ratings shall be included in the database of the UL.com web site.
- B. The surge protective device (SPD) shall be designated a location Type 1 or Type 2 device intended for installation on the load side of the service equipment overcurrent device, including SPDs located at the branch panel.
- C. The SPD shall be connected in parallel with the facility's electrical system.
- D. The SPD shall be made up of metal oxide varistors (MOV's), or a combination of MOV's with selenium cells or silicon avalanche diodes, ensuring that all of the performance requirements are met. Gas tubes shall not be used.
- E. The entire SPD shall be enclosed in a metal or ABS enclosure, NEMA rated for the location. SPDs at main service equipment shall be mounted outside the Main Distribution Panelboard (MDP) (not integral to, or installed within the panelboard).
- F. The SPD shall have a maximum continuous operating voltage (MCOV) rating not less than 115% of nominal voltage of the system it is protecting.
- G. Protection Modes:
 1. The SPD shall have line to neutral (L-N), line to ground (L-G), line to line (L-L) and neutral to ground (N-G) protection modes for grounded wye configured systems. For a delta configured system, the device shall have line to line (L-L) and line to ground (L-G) protection modes.
- H. Voltage Protection Rating (VPR):
 1. The UL 1449 Voltage Protection Rating (VPR) for the device shall not exceed the following:

2. 120/208 volt applications: 900V L-N, L-G, N-G; 1200V L-L
- I. Nominal Discharge Current (In):
 1. The SPD shall have a UL 1449 Nominal Discharge Current Rating (In) of not less than 20kA.
- J. Short Circuit Current Rating (SCCR):
 1. The SPD shall have a UL 1449 Short Circuit Current Rating (SCCR) of not less than 230kA.
- K. Surge Current Rating:
 1. The single-pulse (8 X 20 microsecond waveform as specified in ANSI/IEEE Standard C62.41) surge current capacity shall not be less than the following:
 - a. 100 kA per mode for service entrance, switchboard, and main distribution panel locations
 - b. 50 kA per mode for branch panelboard (2nd tier) locations
- L. Electrical Noise Filtering:
 1. The SPD shall contain a high performance EMI/RFI noise rejection filter.
- M. Each SPD shall include externally-mounted LED visual status indicators that indicate the on-line status of the unit, for each phase.
- N. Each SPD shall be provided with audible diagnostic monitoring by way of audible alarm with on/off silence function.
- O. Each SPD shall be provided with one set of NO/NC dry contacts for alarm conditions.

PART 3 - EXECUTION

INSTALLATION

- A. Install SPD units in accordance with manufacturer's written instructions, applicable requirements of NEC and NEMA standards, and recognized industry practices.
- B. The SPD units shall be installed at the locations shown on the drawings, or as indicated in the one-line diagram. They shall be parallel-connected to, and located adjacent to the switchboard or panelboard being protected. Locate as close as practical to the bus, keeping lead length as short as possible (less than 3 feet preferred).
- C. SPDs shall be connected through a multi-pole circuit breaker or fused disconnect switch, not into main lugs. Circuit breaker or fused disconnect switch shall be 60A for main service device, 30A for branch panelboard device or as recommended by the manufacturer.
- D. Use schedule 40 PVC conduit or metallic conduit between the SPD and the switchboard or panelboard as recommended by the manufacturer. Avoid sharp bends, excess length, and splices in the wires. Where possible, use a close-nipped connection with wires going directly to a circuit breaker within the switchboard or panelboard.
- E. Setup and test per the manufacturer's recommendations.

END OF SECTION 26 43 13

Schedule of Items

Attached, dated July 12, 2016, are the revised Schedule of Items Pages 2, 8, 9, and 23.

Plan Sheets

The following 8½ x 11-inch sheets are attached and made part of the plans for this proposal:

Revised: 24, 59, 60, 61, 107, 113, 117, 119, 123, 131, 148, 151, 156, 170, 179, 231, 232, 233, 234, 235, 236, 237, 238, 240, 241, 242, 244, 245, 246, 247, 248, 249, 251, 252, 256, 258, 260, 261, 262, 263, 279, 280, 281, 308, 314, 315, 327, 328, 461, 462, 463, 464, 465, 470, 471, 472, 473, 474, 475, 476, 477, 514, and 524.

END OF ADDENDUM

General Decision Number: WI160011 07/01/2016 WI11

Superseded General Decision Number: WI20150011

State: Wisconsin

Construction Type: Building

Counties: Adams, Ashland, Barron, Bayfield, Buffalo, Burnett, Clark, Columbia, Crawford, Dodge, Door, Dunn, Florence, Fond Du Lac, Forest, Grant, Green, Green Lake, Iowa, Iron, Jackson, Jefferson, Juneau, Kewaunee, Lafayette, Langlade, Lincoln, Manitowoc, Marinette, Marquette, Menominee, Monroe, Oconto, Oneida, Pepin, Polk, Portage, Price, Richland, Rusk, Sauk, Sawyer, Shawano, Taylor, Trempealeau, Vernon, Vilas, Walworth, Washburn, Waupaca, Waushara and Wood Counties in Wisconsin.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	01/29/2016
2	03/04/2016
3	03/11/2016
4	04/01/2016
5	05/20/2016
6	06/17/2016
7	06/24/2016
8	07/01/2016

ASBE0019-002 11/30/2015

COLUMBIA, CRAWFORD, DODGE, GRANT, GREEN, IOWA, JEFFERSON, JUNEAU, LAFAYETTE, MARQUETTE, MONROE, RICHLAND, SAULK, VERNON, AND WALWORTH COUNTIES

Rates Fringes

Asbestos Workers/Insulator
(Includes the application of
all insulating materials,

protective coverings,
 coatings, and finishes to all
 types of mechanical systems).....\$ 33.83 28.25

 * ASBE0034-005 06/01/2016

BARRON, BUFFALO, DUNN, AND POLK COUNTIES

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials; protective coatings, coverings, and finishes to all types of mechanical systems. Does not include asbestos removal).....	\$ 35.11	29.89

 ASBE0049-003 06/01/2015

ASHLAND, BAYFIELD, BURNETT, IRON, PEPIN, SAWYER, AND WASHBURN
 COUNTIES

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials; protective coverings, coatings, and finishes to all types of mechanical systems).....	\$ 27.82	24.15

 ASBE0127-002 05/29/2016

ADAMS, CLARK, DOOR, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE,
 JACKSON, KEWAUNEE, LINCOLN, MANITOWOC, MARINETTE, MENOMINEE,
 OCONTO, ONEIDA, PORTAGE, PRICE, RUSK, SHAWANO, TAYLOR,
 TREMPPEALEAU, VILAS, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
Heat and Frost Insulator (Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems; and the application of firestopping material in walls, floors, ceilings).....	\$ 30.79	21.43

 ASBE0205-005 06/01/1998

ADAMS, CLARK, DOOR, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE,
 JACKSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARINETTE,
 MENOMINEE, OCONTO, ONEIDA, PORTAGE, PRICE, RUSK, SHAWANO,
 TAYLOR, TREMPPEALEAU, VILAS, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
Asbestos Removal worker/hazardous material handler (Includes preparation, wetting, stripping, removal, scrapping vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not).....	\$ 16.56	3.10

ASBE0205-008 06/01/1999

COLUMBIA, CRAWFORD, DODGE, GRANT, GREEN, IOWA, JEFFERSON,
JUNEAU, LAFAYETTE, MARQUETTE, MONROE, RICHLAND, SAULK, VERNON,
AND WALWORTH COUNTIES

	Rates	Fringes
Asbestos Removal worker/hazardous material handler (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not)...	\$ 16.55	3.45

ASBE0205-012 05/01/1998

ASHLAND, BAYFIELD, BURNETT, IRON, PEPIN, SAWYER, AND WASHBURN
COUNTIES

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not)...	\$ 19.72	3.69

ASBE0205-013 05/01/1998

BARRON, BUFFALO, AND POLK COUNTIES

	Rates	Fringes
Asbestos Removal worker/hazardous material		

handler (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not)...\$ 19.72 3.69

BOIL0107-001 01/01/2015

	Rates	Fringes
BOILERMAKER		
Boilermaker.....	\$ 33.35	28.60
Small Boiler Repair (under 25,000 lbs/hr).....	\$ 26.91	16.00

BRWI0001-003 06/01/2015

CRAWFORD, JUNEAU, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
Bricklayer & Tile Setter.....	\$ 31.22	16.69

BRWI0002-003 06/01/2015

ASHLAND, BURNETT, IRON, WASHBURN

	Rates	Fringes
BRICKLAYER		
Bricklayer, Tile Setter.....	\$ 36.10	16.13
Cement Mason/Concrete Finisher.....	\$ 34.30	16.13

BRWI0002-004 06/01/2015

BAYFIELD COUNTY

	Rates	Fringes
BRICKLAYER		
Bricklayer & Tile Setter....	\$ 36.10	16.13

BRWI0003-001 06/01/2015

DOOR, KEWAUNEE, FLORENCE, FOND DU LAC, GREEN LAKE, MANITOWOC, MARINETTE, MARQUETTE, OCONTO, SHAWANO, WAUPACA, AND WAUSHARA COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason, Tile Setter.....	\$ 31.59	16.39

BRWI0004-003 06/01/2013

WALWORTH COUNTY

	Rates	Fringes
BRICKLAYER.....	\$ 35.11	18.58
CEMENT MASON/CONCRETE FINISHER...	\$ 32.36	18.58
TILE SETTER.....	\$ 28.21	18.58

BRWI0006-001 06/01/2013

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MENOMINEE, ONEIDA,
PORTAGE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement		
Mason, Tile Setter.....	\$ 32.14	16.56

BRWI0006-004 06/01/2013

PRICE COUNTY

	Rates	Fringes
Bricklayer & Tile Setter.....	\$ 32.14	16.56

BRWI0007-003 06/01/2015

GREEN AND LAFAYETTE COUNTIES

	Rates	Fringes
Bricklayer & Tile Setter.....	\$ 32.90	17.01

BRWI0013-003 06/01/2015

GRANT, IOWA, AND RICHLAND COUNTIES

	Rates	Fringes
Bricklayer.....	\$ 32.86	17.22
Tile Layer.....	\$ 29.71	16.20

BRWI0019-004 06/01/2015

BARRON, BURNETT (Southern half), DUNN, PEPIN, POLK, RUSK, AND
WASHBURN (Southern half) COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason,		
Tile Layer.....	\$ 31.36	16.51

BRWI0019-005 06/01/2015

SAWYER COUNTY

	Rates	Fringes
Bricklayer & Tile Setter.....	\$ 31.36	16.51

BRWI0021-001 06/01/2015		

DODGE AND JEFFERSON COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason,		
Tile Layer.....	\$ 33.58	16.65

BRWI0034-001 06/01/2015		

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason,		
Tile Layer.....	\$ 32.86	17.22

CARP0087-003 05/01/2009		

BURNETT (West of highway 48) AND POLK(West of Highways 35, 48 & 65) COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall		
Hanging, Acoustical work).....	\$ 31.79	16.10

CARP0252-005 07/02/2012		

ADAMS, BARRON, BAYFIELD (Eastern 2/3), BUFALO, BURNETT (East of Hwy 48), CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DUNN, FLORENCE (Except area bordering Michigan), FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, KEWAUNEE, LAFAYETTE, MANITOWOC, MARINETTE (Except N.E. corner), MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, POLK (East of Hwy 35, 48, 65), PORTAGE, PRICE, RICHLAND, RUSK, SAUK, SAWYER, SHAWANO, TAYLOR, TREMPLEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall		
Hanging, Acoustical work).....	\$ 30.48	15.80
MILLWRIGHT.....	\$ 32.11	15.80

CARP0252-009 07/02/2012		

ASHLAND COUNTY

	Rates	Fringes
CABINET INSTALLER (Including Drywall Hanging & Acoustical Work).....	\$ 30.48	05.80
MILLWRIGHT.....	\$ 32.11	15.80

 CARP0361-006 07/11/2011

BAYFIELD COUNTY (West of Hwy 63)

	Rates	Fringes
Carpenters: (Including Drywall Hanging, Acoustical work).....	\$ 27.20	14.75

 CARP1348-006 05/03/2015

BAYFIELD COUNTY (Western 1/3)

	Rates	Fringes
MILLWRIGHT.....	\$ 32.57	14.73

 ELEC0014-001 06/01/2015

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (Except Colby, Fremont, Lynn, Maryville, Sherman, Sherwood, Unity), CRAWFORD, DUNN, GRANT, IRON, JACKSON, MONROE, PEPIN, POLK, PRICE, RICHLAND, RUSK, SAWYER, TAYLOR, TREMPPEALEAU, VERNON, AND WASHBURN COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 31.21	18.92

 ELEC0014-005 06/01/2014

	Rates	Fringes
Teledata System Installer Installer/Technician.....	\$ 22.50	12.72

Low voltage construction, installation, maintenance and removal of teledata facilities (voice, data, and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area networks), LAN (local area networks), and ISDN (integrated systems digital network).

 ELEC0158-007 06/01/2015

DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE (Wausaukee and area South thereof), OCONTO, MENOMINEE (East of a line 6 miles West of the West boundary of Oconto County), SHAWANO (Except Area North of Townships of Aniwa and

Hutchins) COUNTIES

	Rates	Fringes
Electricians:.....	\$ 29.84	29.50% + 9.37

 ELEC0159-001 06/01/2015

COLUMBIA, DODGE (West of Hwy 26 except Chester and Emmet Twps), GREEN LAKE COUNTY (Except Townships of Berlin, Seneca & St. Marie), IOWA, MARQUETTE COUNTY (Except Townships of Neshkoka, Crystal Lake, Newton, and Springfield), AND SAUK COUNTIES

	Rates	Fringes
Electricians:.....	\$ 35.75	19.87

 ELEC0219-006 06/01/2015

FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern, Florence and Homestead) AND MARINETTE COUNTY (Township of Niagara)

	Rates	Fringes
ELECTRICIAN		
Electrical contracts over \$180,000.....	\$ 31.16	18.34
Electrical contracts under \$180,000.....	\$ 28.96	18.26

 ELEC0388-004 06/01/2013

ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, MARINETTE (Beecher, Dunbar, Goodman & Pembine), MENOMINEE (Area West of a line 6 miles West of the West boundary of Oconto County), ONEIDA, PORTAGE, SHAWANO (Aniwa and Hutchins), VILAS AND WOOD COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 28.96	24.85% + 9.70

 ELEC0494-010 06/01/2015

DODGE COUNTY (Area East of Hwy 26 including all of Chester Township, but excluding Emmet Township), FOND DU LAC (except Waupun), AND MANITOWOC (Schleswig) COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 29.95	20.95

 ELEC0494-014 06/01/2015

DODGE (Area East of Hwy 26 including Chester Twp but excluding Emmet Twp), FOND DU LAC (Except Waupun), AND MANITOWOC (Schleswig) COUNTIES

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 16.47	14.84
Technician.....	\$ 26.00	17.70

Installation, testing, maintenance, operation and servicing of all sound, intercom, telephone interconnect, closed circuit TV systems, radio systems, background music systems, language laboratories, electronic carillon, antenna distribution systems, clock and program systems and low-voltage systems such as visual nurse call, audio/visual nurse call systems, doctors entrance register systems. Includes all wire and cable carrying audio, visual, data, light and radio frequency signals. Includes the installation of conduit, wiremold, or raceways in existing structures that have been occupied for six months or more where required for the protection of the wire or cable, but does not mean a complete conduit or raceway system. work covered does not include the installation of conduit, wiremold or any raceways in any new construction, or the installation of power supply outlets by means of which external electric power is supplied to any of the foregoing equipment or products

 ELEC0577-001 06/01/2015

GREEN LAKE (N. Part including Twps of Berlin, St Marie, and Seneca), MARQUETTE (N. part including Twps of Crystal Lake, Neshkoro, Newton, and Springfield), WAUPACA, AND WAUSHARA COUNTIES,

	Rates	Fringes
ELECTRICIAN.....	\$ 29.60	26.5%+9.15

 ELEC0890-005 06/01/2015

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, AND WALWORTH COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 31.90	24.95% + \$10.46

 ENGI0139-004 06/01/2016

	Rates	Fringes
OPERATOR: Power Equipment		
(1) Cranes, Tower Cranes		

with or w/o attachments over 100 tons; Cranes, tower Cranes with boom, leads and or jib length 176 ft or longer.....\$ 38.72	20.60
(2) Cranes, Tower Cranes with or w/o attachments 100 tons or less; Cranes, Tower Cranes with boom, leads, and or jib lengths 175 ft or less.....\$ 37.47	20.60
(3) Travelling Crane (bridge type).....\$ 36.27	20.60
(4) Hydraulic Crane, 10 tons or less.....\$ 35.74	20.60
(6) Forklift.....\$ 33.04	20.60

HAZARDOUS WASTE PREMIUMS:

EPA Level "A" Protection: \$3.00 per hour
 EPA Level "B" Protection: \$2.00 per hour
 EPA Level "C" Protection: \$1.00 per hour

 IRON0008-012 06/01/2014

CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE,
 OCONTO, OUTAGAMI, SHAWANO AND WALWORTH (Northeastern part)
 COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 29.27	23.96

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor
 Day, Thanksgiving Day & Christmas Day.

 IRON0383-004 06/01/2015

ADAMS, COLUMBIA, CRAWFORD, DODGE, FLORENCE, FOREST, GRANT,
 GREENE (Except S.E. tip), GREEN LAKE, IOWA, JEFFERSON, JUNEAU,
 LAFAYETTE, LANGLADE, MARATHON, MARQUETTE, MENOMINEE, MONROE,
 PORTAGE, RICHLAND, SAUK, VERNON, WAUPACA, WAUSHARA, AND WOOD
 COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 32.85	21.84

 IRON0498-007 06/01/2008

GREEN (S.E. 1/3) AND WALWORTH (Except N.E. part) COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 34.34	25.72

 IRON0512-009 05/01/2015

BARRON, BUFFALO, CLARK, DUNN, JACKSON, PEPIN, POLK, RUSK,
TAYLOR AND TREMPLEAU COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 35.50	23.45

IRON0512-023 05/01/2015

ASHLAND, BAYFIELD, BURNETT, IRON, LINCOLN, ONEIDA, PRICE,
SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 31.04	23.45

LABO0140-003 06/01/2016

BUFFALO, CRAWFORD, GRANT, JACKSON, JUNEAU, MONROE, RICHLAND,
TREMPLEAU (Southern part), AND VERNON COUNTIES

	Rates	Fringes
Laborer, General.....	\$ 26.06	16.55
Laborer: Asbestos/hazardous material remover (Preparation, Removal and Encapsulation of Hazardous Materials from Non-Mechanical Systems).....	\$ 25.02	16.55

NOTE: Mason Tender \$.25 over general laborer scale; Pipelayer
\$1.00 over general laborer scale

LABO0268-001 06/01/2016

AREA 1: BARRON, CLARK (West 1/3), DUNN, PEPIN, POLK, RUSK
TAYLOR (West 1/3)

AREA 2: CLARK (East 2/3), LANGLADE, LINCOLN, ONEIDA, PRICE,
TAYLOR (East 2/3), VILAS, WOOD

AREA 3: BURNETT, IRON, SAWYER, WASHBURN

	Rates	Fringes
Laborer, General		
Area 1.....	\$ 26.06	16.55
Area 2.....	\$ 25.31	16.55
Area 3.....	\$ 24.46	16.55
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous		

materials from Non-mechanical
Systems)

Area 1.....	\$ 25.12	16.55
Area 2.....	\$ 24.57	16.55
Area 3.....	\$ 25.77	16.55

NOTE: Mason Tender \$.25 over general laborer. Burnett, Iron,
Sawyer & Washburn \$.70 over general laborer.

LABO0330-001 06/01/2016

DODGE, DOOR, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE,
KEWAUNEE, MANITOWOC, MARINETTE, MARQUETTE, MENOMINEE, OCONTO,
PORTAGE, SHAWANO, WAUPACA, WAUSHARA

	Rates	Fringes
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems).....	\$ 24.47	15.55
Laborers, General.....	\$ 25.31	16.55

NOTE: Mason Tender \$.25 over general laborer.

LABO0464-005 06/01/2016

ADAMS, COLUMBIA, GREEN, JEFFERSON, LAFAYETTE, SAUK, AND
WALWORTH COUNTIES

	Rates	Fringes
Laborer, General		
Adams County.....	\$ 25.31	16.55
Remaining Area.....	\$ 26.06	16.55
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous Materials from Non-mechanical Systems)		
Adams County.....	\$ 24.47	15.55
Remaining Area.....	\$ 24.47	15.55

LABO0464-008 06/01/2015

	Rates	Fringes
Landscape Laborer.....	\$ 14.33	13.90

LABO1091-001 06/01/2016

BAYFIELD (West of County Trunk A including the Iron River
National Fish Hatchery and Great Lakes Transmission Co.,
Station 6) COUNTY

	Rates	Fringes
Laborer, General.....	\$ 23.16	16.55
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems).....	\$ 22.91	15.55

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LAB01091-002 06/01/2016

ASHLAND & BAYFIELD (East of County Trunk A exclusive of the
Iron River National Fish Hatchery and Great Lakes Transmission
Co., Station 6) COUNTIES

	Rates	Fringes
Laborer, General.....	\$ 21.71	16.55
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems).....	\$ 22.91	15.55

PLAS0599-003 07/01/2012

PEPIN COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 27.80	18.10
PLASTERER.....	\$ 31.56	18.18

PLAS0599-007 06/01/2013

BUFFALO, CRAWFORD, JACKSON, JUNEAU, MONROE, POLK, RICHLAND,
TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 25.85	18.10
PLASTERER.....	\$ 29.67	17.03

PLAS0599-011 06/01/2014

GRANT, GREEN, IOWA, AND LAFAYETTE COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 33.15	16.78
PLASTERER.....	\$ 33.15	16.78

PLAS0633-046 05/01/2012

BAYFIELD, PRICE, AND SAWYER COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...\$	29.69	16.30
PLASTERER.....\$	30.32	17.05

PLUM0011-009 05/02/2016

ASHLAND BAYFIELD, BURNETT, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work).....\$	39.07	18.73

PLUM0075-006 06/01/2015

DODGE (Watertown), GREEN, JEFFERSON, AND LAFAYETTE COUNTIES

	Rates	Fringes
PLUMBER (Including HVAC work)....\$	39.87	20.12

PLUM0075-008 06/01/2015

COLUMBIA, IOWA, MARQUETTE, RICHLAND, AND SAUK COUNTIES

	Rates	Fringes
PLUMBER (Including HVAC work)....\$	38.82	20.12

PLUM0118-003 06/01/2016

WALWORTH COUNTY

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work).....\$	40.95	19.95

PLUM0400-002 05/30/2016

ADAMS, CALUMET, DODGE (Except Watertown), DOOR, FOND DU LAC, GREEN LAKE, KEWAUNEE, MANITOWOC, MARINETTE (Except Niagara), MENOMINEE, OCONTO, OUTAGAMIE, SHAWANO, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work)		
(1) Small buildings (except industrial and power plants) where plumbing or heating is \$50,000 or less.....\$	32.15	17.57

(2) All other work.....\$ 34.39 17.65

 PLUM0434-004 05/29/2016

BARRON, BUFFALO, CLARK, CRAWFORD, DUNN, FLORENCE, FOREST,
 GRANT, JACKSON, JUNEAU, LANGLADE, LINCOLN, MONROE, ONEIDA,
 PEPIN, PIERCE, POLK, PORTAGE, PRICE, RUSK, TAYLOR, TREMPPEALEAU,
 VERNON, VILAS, AND WOOD COUNTIES

Rates Fringes

PLUMBER/PIPEFITTER (Including
 HVAC work).....\$ 38.20 16.72

 PLUM0601-006 06/01/2016

DODGE (Watertown), GREEN, JEFFERSON, AND LAFAYETTE COUNTIES

Rates Fringes

PIPEFITTER (Including HVAC
 work).....\$ 43.26 22.96

 PLUM0601-008 06/01/2015

COLUMBIA, IOWA, MARQUETTE, RICHLAND, AND SAUK COUNTIES

Rates Fringes

PIPEFITTER (Including HVAC
 work).....\$ 45.55 18.44

 SHEE0010-031 05/01/2008

ASHLAND, BAYFIELD AND IRON COUNTIES

Rates Fringes

SHEET METAL WORKER.....\$ 27.53 14.61

 SHEE0018-003 06/01/2011

FOND DU LAC AND MANITOWOC COUNTIES

Rates Fringes

Sheet Metal Worker (Including
 HVAC work).....\$ 31.88 17.40

 SHEE0018-004 06/01/2015

ADAMS, DOOR, FLORENCE, FOREST, GREEN LAKE, KEWAUNEE, MARINETTE,
 MARQUETTE, MENOMINEE, OCONTO, SHAWANO, WAUPACA, AND WAUSHARA
 COUNTIES

Rates Fringes

Sheet Metal Worker (Including

HVAC work).....\$ 30.82 21.85

 SHEE0018-014 06/01/2011

DODGE AND JEFFERSON COUNTIES

Rates Fringes

Sheet Metal Worker (Including
 HVAC work).....\$ 37.20 17.01

 SHEE0018-015 09/01/2010

WALWORTH COUNTY

Rates Fringes

SHEET METAL WORKER (Including
 HVAC work).....\$ 31.85 22.50

 SHEE0018-017 06/01/2011

GREEN COUNTY

Rates Fringes

Sheet Metal Worker (Including
 HVAC work).....\$ 32.75 20.36

 SHEE0018-018 06/01/2015

LANGLADE, LINCOLN, ONEIDA, PORTAGE, AND WOOD COUNTIES

Rates Fringes

Sheet Metal Worker (Including
 HVAC work)
 Contracts \$120,000 or less..\$ 20.57 11.60
 Contracts over \$120,000.....\$ 28.36 24.59

 SHEE0018-022 06/01/2015

BARRON, BUFFALO, BURNETT, CLARK, DUNN, JACKSON, PEPIN, POLK,
 PRICE, RUSK, SAWYER, TAYLOR, TREMPLEAU, AND WASHBURN COUNTIES

Rates Fringes

Sheet Metal Worker (Including
 HVAC work).....\$ 28.63 23.79

 SHEE0018-023 06/01/2015

COLUMBIA AND SAUK COUNTIES

Rates Fringes

Sheet Metal Worker (Including
 HVAC work).....\$ 35.55 24.61

SHEE0018-024 06/01/2015

CRAWFORD, GRANT, JUNEAU, MONROE, RICHLAND, AND VERNON COUNTIES

	Rates	Fringes
SHEET METAL WORKER (Including HVAC work).....	\$ 28.75	21.62

TEAM0346-003 05/01/2013

ASHLAND, BAYFIELD, BURNETT, SAWYER & WASHINGTON COUNTIES

	Rates	Fringes
TRUCK DRIVER 2 Axle Trucks.....	\$ 27.42	14.986

* TEAM0662-002 06/05/2016

ADAMS, BARRON, BUFFALO, CLARK , DOOR, DUNN, JACKSON, JUNEAU, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MENOMINEE, OCONTO, ONEIDA, PEPIN, POLK, PORTAGE, PRICE, RUSK, SHAWANO, TAYLOR, TEMPEALEAU, WAUPACA & WOOD COUNTIES

	Rates	Fringes
TRUCK DRIVER 2 Axle Trucks.....	\$ 28.26	16.77

SUWI2002-001 01/23/2002

	Rates	Fringes
Fence Installers.....	\$ 15.00	2.37
GLAZIER.....	\$ 20.21	1.86
Painters:		
Brush & Roller (Excluding Drywall Finishing).....	\$ 14.64	2.55
Spray.....	\$ 13.72	2.25
Power Equipment Operator		
Backhoe.....	\$ 17.454	7.61
Excavator.....	\$ 17.37	7.45
Front End Loader.....	\$ 23.36	4.61
ROOFER.....	\$ 15.52	3.21
TRUCK DRIVER (3-Axle).....	\$ 15.28	4.78

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage

payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: WI160003 07/01/2016 WI3

Superseded General Decision Number: WI20150003

State: Wisconsin

Construction Type: Building

County: La Crosse County in Wisconsin.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	01/29/2016
2	03/04/2016
3	06/17/2016
4	06/24/2016
5	07/01/2016

ASBE0205-001 06/01/2001

	Rates	Fringes
Asbestos Removal worker/hazardous material handler Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not.....	\$ 17.90	4.45

BOIL0107-001 01/01/2015

	Rates	Fringes
BOILERMAKER Boilermaker.....	\$ 33.35	28.60

Small Boiler Repair (under
25,000 lbs/hr).....\$ 26.91 16.00

BRWI0001-004 06/01/2015

	Rates	Fringes
Bricklayer & Tile Setter.....	\$ 31.22	16.69

CARP0252-001 07/02/2012

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical work, Excluding Batt Insulation) CARPENTER & SOFT FLOOR LAYER.....	\$ 30.48	15.80
MILLWRIGHT.....	\$ 32.11	15.80
PILEDRIVERMAN.....	\$ 30.98	15.80

ELEC0014-004 06/01/2015

	Rates	Fringes
ELECTRICIAN.....	\$ 31.21	18.92

ELEC0014-005 06/01/2014

	Rates	Fringes
Teledata System Installer Installer/Technician.....	\$ 22.50	12.72

Low voltage construction, installation, maintenance and removal of teledata facilities (voice, data, and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area networks), LAN (local area networks), and ISDN (integrated systems digital network).

ELEV0132-001 01/01/2015

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 46.83	28.385

FOOTNOTE:

PAID VACATION: Employer contributes 8% of basic hourly rate as vacation pay for employees with more than 5 years or more of service, and 6% for less than 5 years of service.
PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ENGI0139-002 06/01/2016

	Rates	Fringes
OPERATOR: Power Equipment		
Group 1.....	\$ 38.72	20.60
Group 2.....	\$ 37.47	20.60
Group 3.....	\$ 36.27	20.60
Group 4.....	\$ 35.74	20.60
Group 5.....	\$ 33.67	20.60
Group 6.....	\$ 33.04	20.60

HAZARDOUS WASTE PREMIUMS:

EPA Level "A" Protection: \$3.00 per hour

EPA Level "B" Protection: \$2.00 per hour

EPA Level "C" Protection: \$1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of over 100 tons; Cranes, Tower Cranes, and Derricks with boom, leads and/or jib lengths 176 ft or longer.

GROUP 2: Backhoes (Excavators) weighing 130,000 lbs & over; Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; Cranes, Tower Cranes, and Derricks with boom, leads, and/or jib lengths 175 ft or less; Caisson Rigs; Pile Driver

GROUP 3: Backhoes (Excavators) weighing under 130,000 lbs; Travelling Crane (bridge type); Milling Machine; Concrete Paver over 27 E; Concrete Spreader and Distributor; Concrete Laser Screed; Concrete Grinder and Planing Machine; Slipform Curb and Gutter Machine; Boring Machine (Directional); Dredge Operator; Skid Rigs; Over 46 meter Concrete Pump.

GROUP 4: Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 10 tons or less; Tractor, Bulldozer, or End Loader (over 40 hp); Motor Patrol; Scraper Operator; Bituminous Plant and Paver Operator; Screed-Milling Machine; Roller over 5 tons; Concrete Pumps 46 meter & under; Grout Pumps; Rotec Type Machine; Hydro Blaster, 10,000 psi and over; Rotary Drill Operator; Percussion Drilling Machine; Air Track Drill with or without integral hammer; Blaster; Boring Machine (vertical or horizontal); Side Boom; Trencher, wheel type or chain type having 8 inch or larger bucket; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Straddle Carrier; Material Hoists; Stack Hoist; Man Hoists; Mechanic and Welder; Off Road Material Haulers

GROUP 5: Tractor, Bulldozer, or Endloader (under 40 hp); Tampers -Compactors, riding type; Stump Chipper, large; Roller, Rubber Tire; Backfiller; Trencher, chain type (bucket under 8 inch); Concrete Auto Breaker, large; Concrete Finishing Machine (road type); Concrete Batch Hopper; Concrete Conveyor Systems; Concrete Mixers, 14S or over; Pumps, Screw Type and Gypsum); Hydrohammers, small; Brooms and Sweepers; Lift Slab Machine; Roller under 5 tons; Industrial Locomotives; Fireman (Pile Drivers and

Derricks); Pumps (well points); Hoists, automatic; A-Frames and Winch Trucks; Hoists (tuggers); Boats (Tug, Safety, Work Barges and Launches); Assistant Engineer

GROUP 6: Shouldering Machine Operator; Farm or Industrial Tractor mounted equipment; Post Hole Digger; Auger (vertical and horizontal); Skid Steer Loader with or without attachments; Robotic Tool Carrier with or without attachments; Power Pack Vibratory/Ultra Sound Driver and Extractor; Fireman (Asphalt Plants); Screed Operator; Stone Crushers and Screening Plants; Air, Electric, Hydraulic Jacks (Slip Form); Prestress Machines; Air Compressor, 400 CFM or over; Refrigeration Plant/Freeze Machine; Boiler Operators (temporary heat); Forklifts; Welding Machines; Generators; Pumps over 3"; Compressors, under 400 CFM; Heaters, Mechanical; Combination small equipment operator; Winches, small electric; Oiler; Greaser; Rotary Drill Tender; Conveyor; Elevator Operator

IRON0383-002 06/01/2015

	Rates	Fringes
IRONWORKER.....	\$ 32.85	21.84

LABO0140-001 06/01/2016

	Rates	Fringes
Laborer, General.....	\$ 26.06	16.55
Laborer: Asbestos/hazardous material remover (Preparation, Removal and Encapsulation of Hazardous Materials from Non-Mechanical Systems).....	\$ 25.02	16.55

NOTE: Mason Tender \$.25 over general laborer scale; Pipelayer \$1.00 over general laborer scale

PAIN0259-005 05/01/2015

	Rates	Fringes
PAINTER.....	\$ 22.03	12.45

PLAS0599-006 07/01/2012

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 25.85	18.10
PLASTERER.....	\$ 31.56	18.18

PLUM0434-001 05/29/2016

	Rates	Fringes
PLUMBER/PIPEFITTER (Including		

HVAC work).....	\$ 38.20	16.72

SFWI0669-002 01/01/2016		
	Rates	Fringes
SPRINKLER FITTER.....	\$ 38.28	19.36

SHEE0018-008 06/01/2015		
	Rates	Fringes
SHEET METAL WORKER (Including HVAC Duct Work and Technicians).....	\$ 28.75	21.62

* TEAM0662-003 06/05/2016		
	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles.....	\$ 28.26	16.77
3 or more Axles.....	\$ 28.26	16.77

SUWI2002-004 01/23/2002		
	Rates	Fringes
Asbestos Worker/Heat and Frost Insulator.....	\$ 25.36	8.37
Laborers:		
Concrete Workers.....	\$ 16.34	3.59
Landscape.....	\$ 8.73	4.90
ROOFER.....	\$ 18.01	3.28
Tile & Marble Finisher.....	\$ 13.89	8.33

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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 Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

 The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular

rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

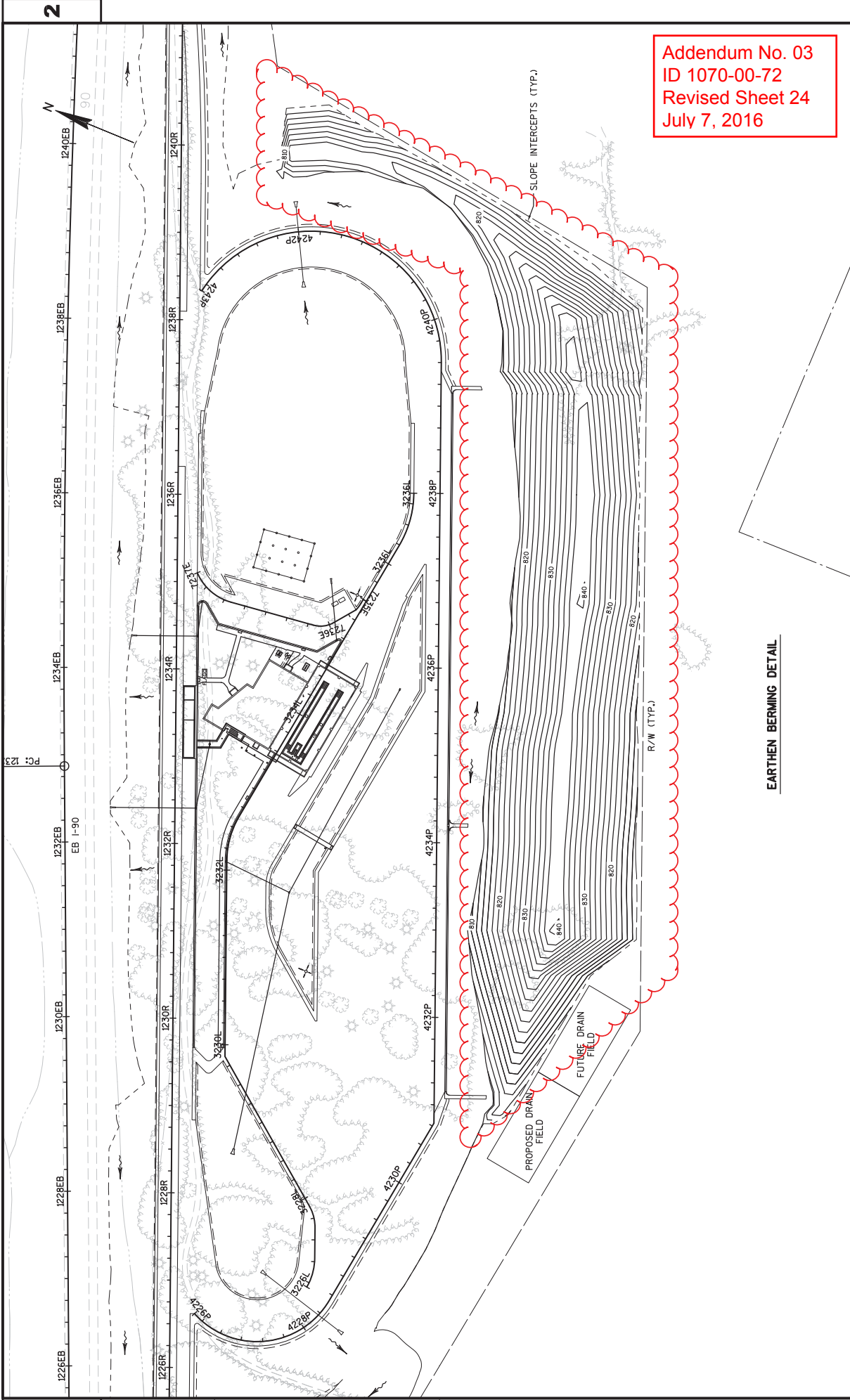
The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

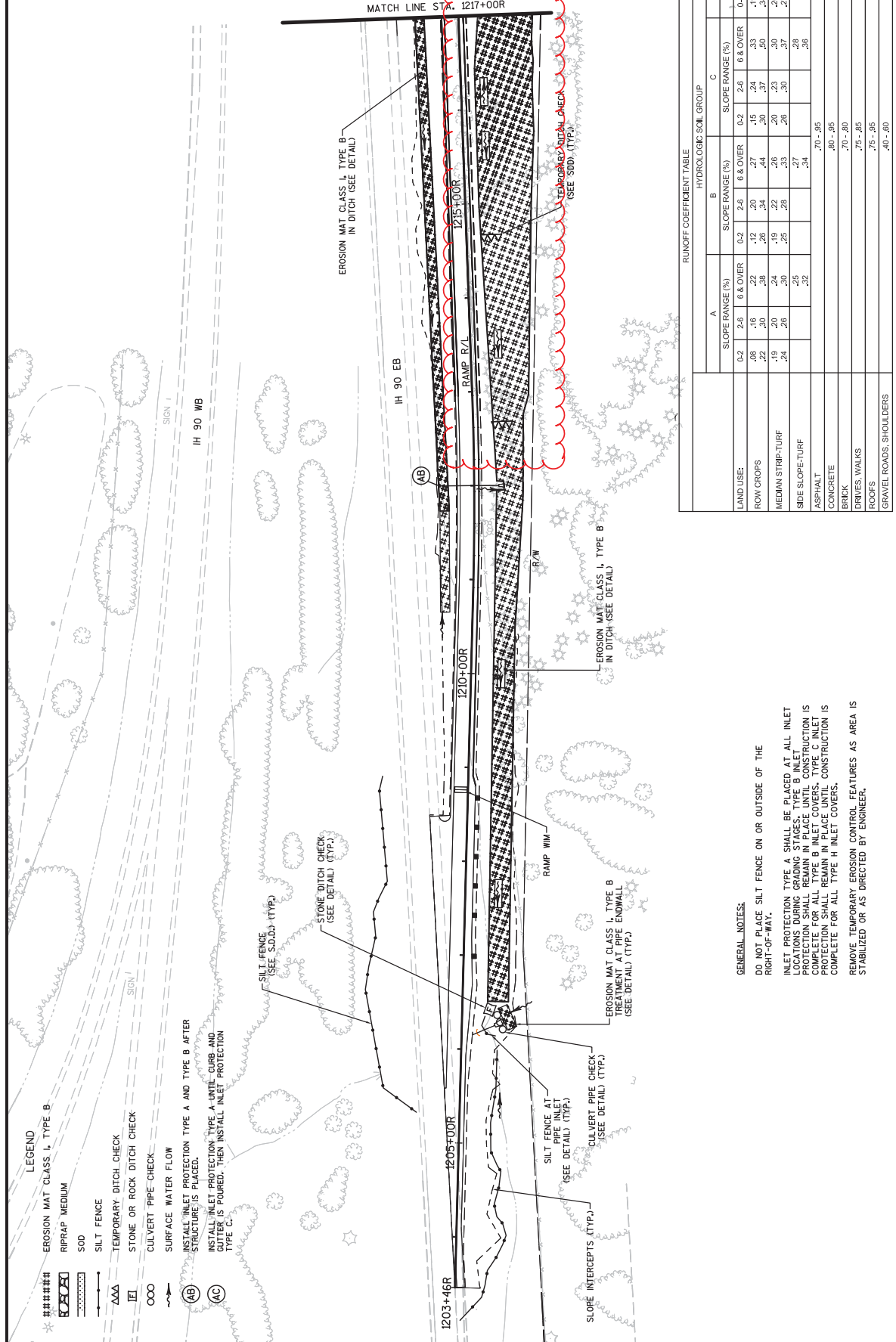
END OF GENERAL DECISION



Addendum No. 03
 ID 1070-00-72
 Revised Sheet 24
 July 7, 2016

EARTHEN BERMING DETAIL

Addendum No. 03
ID 1070-00-72
Revised Sheet 59
July 7, 2016



RUNOFF COEFFICIENT TABLE

LAND USE:	HYDROLOGIC SOIL GROUP							
	A		B		C		D	
	SLOPE RANGE (%)		SLOPE RANGE (%)		SLOPE RANGE (%)		SLOPE RANGE (%)	
0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24
MEDIAN STRIP-TURF	.22	.30	.38	.26	.34	.44	.30	.37
SIDE SLOPE-TURF	.19	.20	.24	.19	.22	.26	.20	.23
ASPHALT	.24	.26	.30	.25	.28	.33	.26	.30
CONCRETE		.25		.27		.27		.28
BRICK				.24		.24		.26
DRIVES, WALKS						.70		.85
ROOFS						.70		.80
GRAVEL ROADS, SHOULDERS						.75		.85
						.40		.60

GENERAL NOTES:
 DO NOT PLACE SILT FENCE ON OR OUTSIDE OF THE RIGHT-OF-WAY.
 INLET PROTECTION TYPE A SHALL BE PLACED AT ALL INLET LOCATIONS DURING GRADING STAGES. TYPE B INLET PROTECTION SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE FOR ALL TYPE H INLET COVERS.
 REMOVE TEMPORARY EROSION CONTROL FEATURES AS AREA IS STABILIZED OR AS DIRECTED BY ENGINEER.

TOTAL PROJECT AREA = 34.0 ACRES
 TOTAL DISTURBED AREA = 25.8 ACRES

PROJECT NO:1070-00-72
 HWY: IH 90
 COUNTY: MONROE

EROSION CONTROL PLAN (SPARTA SWEF #54)

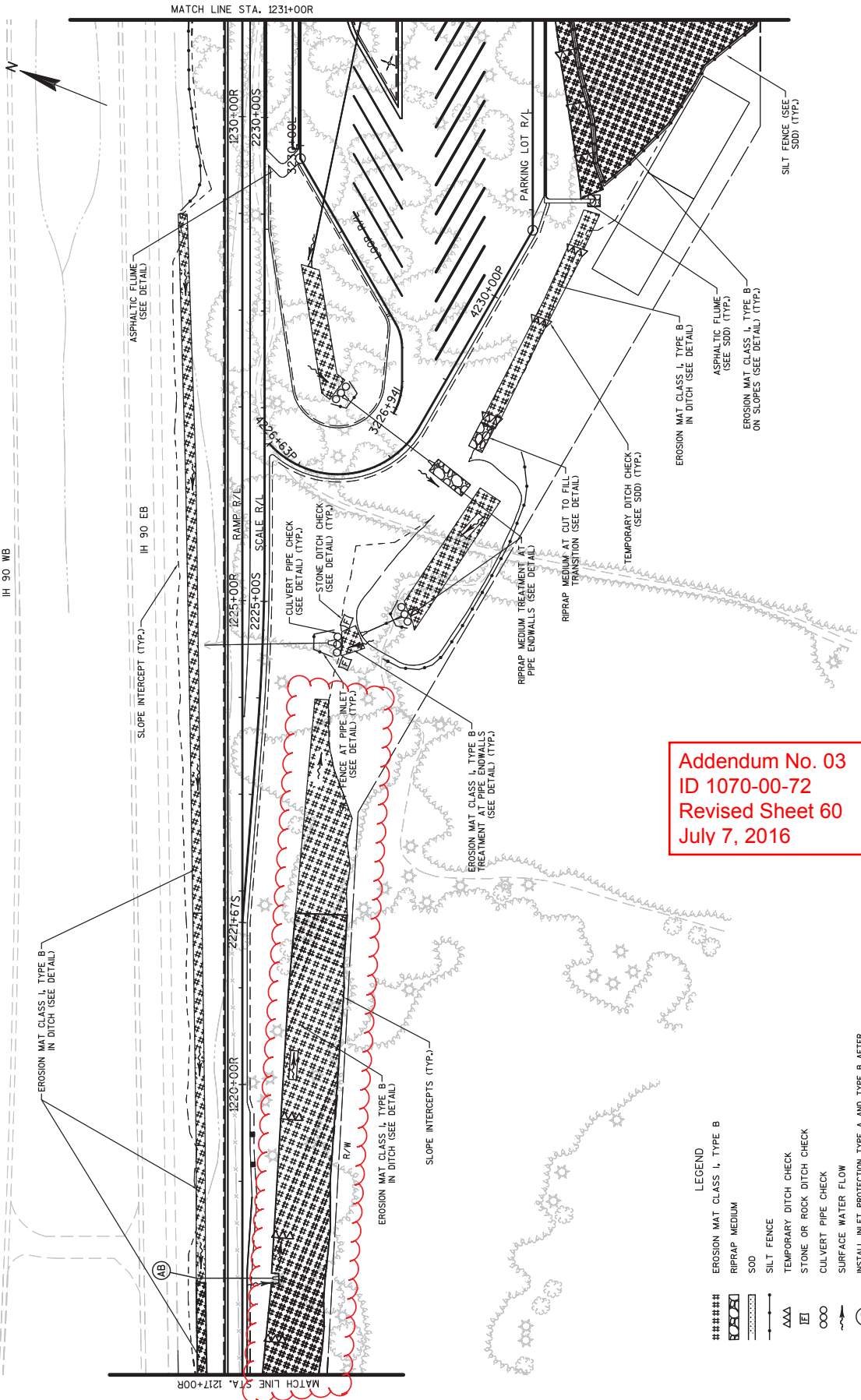
PLOT BY: RL ENGINEERING
 PLOT DATE: 6/21/2016

PLOT NAME: ----- PLOT SCALE: 1:100.XREF

SHEET 59

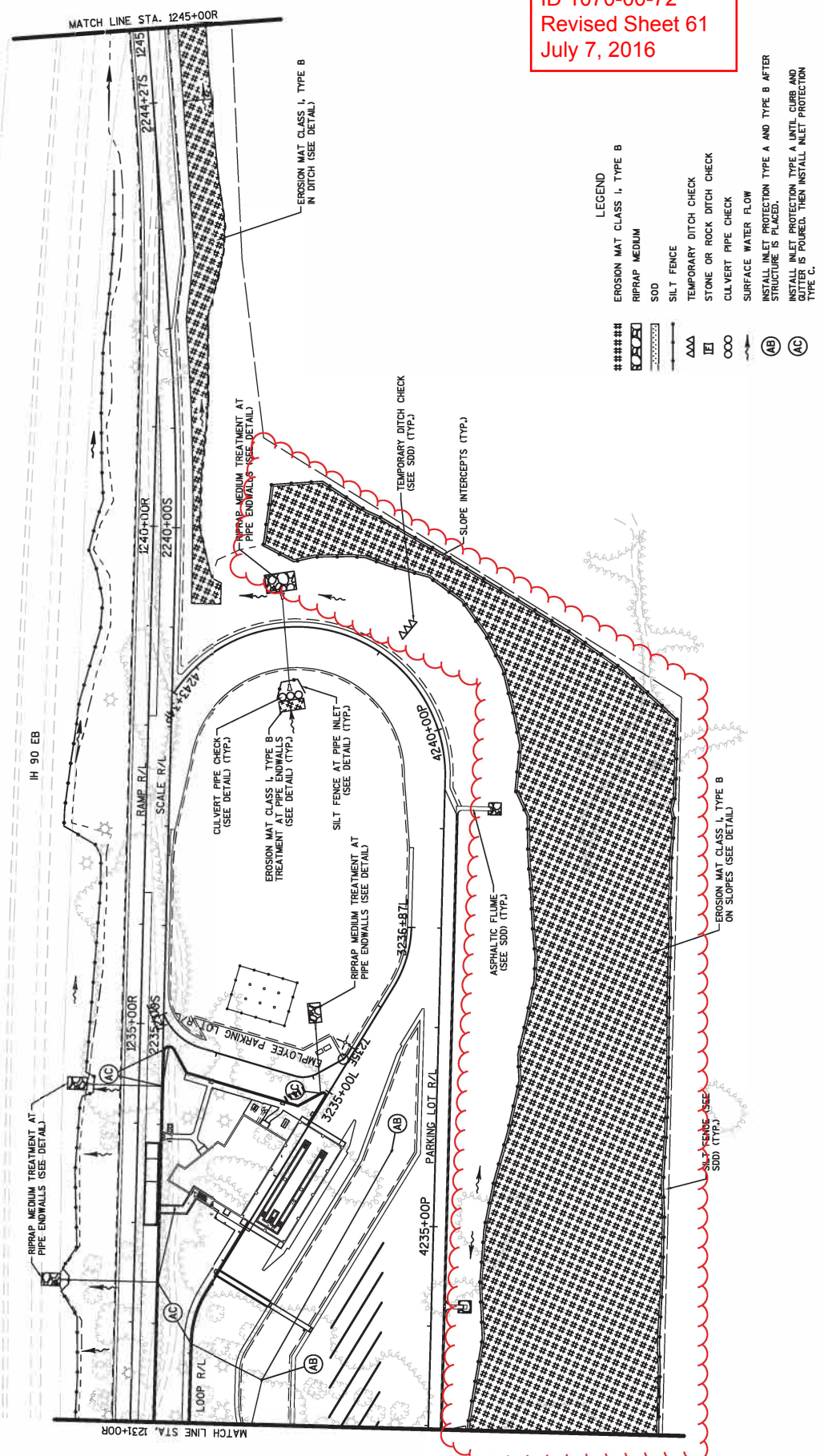
E

WISDOT/CADD SHEET 42



Addendum No. 03
 ID 1070-00-72
 Revised Sheet 60
 July 7, 2016

- LEGEND
- ##### EROSION MAT CLASS I, TYPE B
 - RIPRAP MEDIUM
 - SOD
 - SILT FENCE
 - TEMPORARY DITCH CHECK
 - STONE OR ROCK DITCH CHECK
 - CULVERT PIPE CHECK
 - SURFACE WATER FLOW
 - INSTALL INLET PROTECTION TYPE A AND TYPE B AFTER STRUCTURE IS PLACED.
 - INSTALL INLET PROTECTION TYPE A UNTIL CURB AND GUTTER IS FOUDED, THEN INSTALL INLET PROTECTION TYPE C.



Addendum No. 03
 ID 1070-00-72
 Revised Sheet 61
 July 7, 2016

- LEGEND
- ##### EROSION MAT CLASS I, TYPE B
 - ERIPRAP MEDIUM
 - SOD
 - SILT FENCE
 - TEMPORARY DITCH CHECK
 - STONE OR ROCK DITCH CHECK
 - CULVERT PIPE CHECK
 - SURFACE WATER FLOW
 - INSTALL INLET PROTECTION TYPE A AND TYPE B AFTER STRUCTURE IS PLACED.
 - INSTALL INLET PROTECTION TYPE A UNTIL CURB AND STRUCTURE IS POURED, THEN INSTALL INLET PROTECTION TYPE C.

IH 90 WB

IH 90 EB

BUILDING AREA TABULATION:

OPERATIONS
 UPPER: 5,664 SQ.FT.
 LOWER: 160 SQ.FT.
INSPECTION
 UPPER: 5,928 SQ.FT.
 LOWER: 94 SQ.FT.
TOTAL: 11,846 SQ.FT.

BUILDING CODE INFORMATION

Building Occupancy:
 Classification: Operations-Business, Group B
 Inspections-Storage, Group S-2
Building Area: 11,846 sq. ft. (5,664 sq. ft. (17,500 allowable))
 Operations Lower Level = 160 sq. ft.
 Inspections = 5,928 sq. ft. (17,500 allowable)
 Inspections Lower Level = 94 sq. ft.
Total building area = 11,846 sq. ft.

SYMBOLS & ABBREVIATIONS

2-HR RATED FIRE BARRIER MALL
 FIRE EXTINGUISHER CABINET
 MALL MOUNTED FIRE EXTINGUISHER
 F.E.C.
 F.E.

Number of Stories: One

Type of Construction:

Operations: Type 2B, Non Combustible; Non-Sprinklered
 Inspection: Type 2B, Non Combustible; Non-Sprinklered
Sprinkler Requirements: Per 903.2 Not required.

Per 903.2.8 Group S1 - An automatic sprinkler system shall be provided for fire areas greater than 12,000 sq. ft. The Inspections building will have a automatic sprinkler system due to potentially long fire department response time.

Fire Alarm: Per 907.2.2 Group B - Manual fire alarm boxes are not required in a Group B occupancy having an occupant load less than 500 persons

Area Modifications: N. A.

Building Separations: No separation is required per IBC 706.3.8

Fire Partitions:

One-hour separation at storage rooms greater than 100 s. f.

Rated Area

Per Table 1004.1.1
 Space
 Business @ 100 sq. ft. 5,664 sq. ft./100 sq. ft. = 57 persons
 Inspection @ 300 sq. ft. 5,928 sq. ft./300 sq. ft. = 20 persons

Occupant Load:

Space
 Business @ 100 sq. ft. 5,664 sq. ft./100 sq. ft. = 57 persons
 Inspection @ 300 sq. ft. 5,928 sq. ft./300 sq. ft. = 20 persons

Exit Requirements:

IBC 1015.2.1 Two exits required where more than 50 person occupant load and less than 500 persons (locate a min. of 1/2 diagonal distance)
 Table 1016.1 - ~~Have distance 200 ft. Non-sprinklered~~

1014.3 Common path: Common path of travel shall not exceed 75 ft.
 1017.3 Dead ends: Dead end corridors shall not exceed 20 ft.
 1014.2.4 Isle Width: Min. width of isles shall not be less than 36"
 77 Occupant x 0.20 = 15.4 inches required

ADA Accessibility:

The project will provide access to all areas of the facility. All spaces in the project will comply with ADA requirements.

Sanitary Fixtures:

Per Table 2902.1

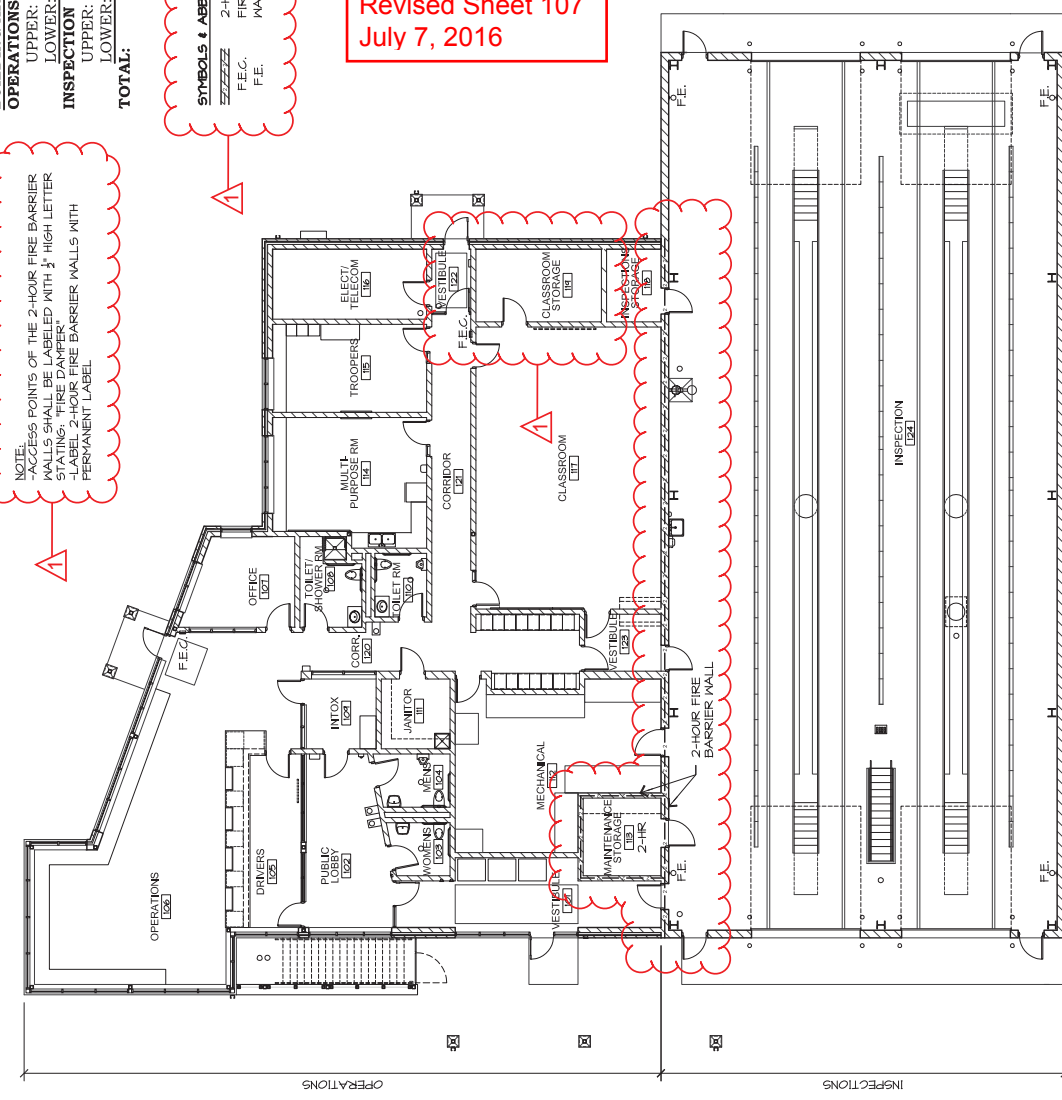
Area	U	WC (M)	WC(F)	Lav	Showers	D.F.	Other
Operations	1.14	1.14	1.43	---	---	.57	1 service sink
Inspection	.10	.10	.20	---	---	.04	
Required	1.24	1.24	1.63	---	---	.61	1 service sink
Provided	3	3	3	1	3	1	1 service sink

Fire Extinguishers: 906.1 per NFPA 10 - see floor plans for designated locations.



1 LIFE SAFETY PLAN
 1/16"=1'-0"

NOTE:
 -ACCESS POINTS OF THE 2-HOUR FIRE BARRIER WALLS SHALL BE LABELED WITH 3" HIGH LETTER LABELS
 -LABEL 2-HOUR FIRE BARRIER WALLS WITH PERMANENT LABEL



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Revised Sheet 107
July 7, 2016

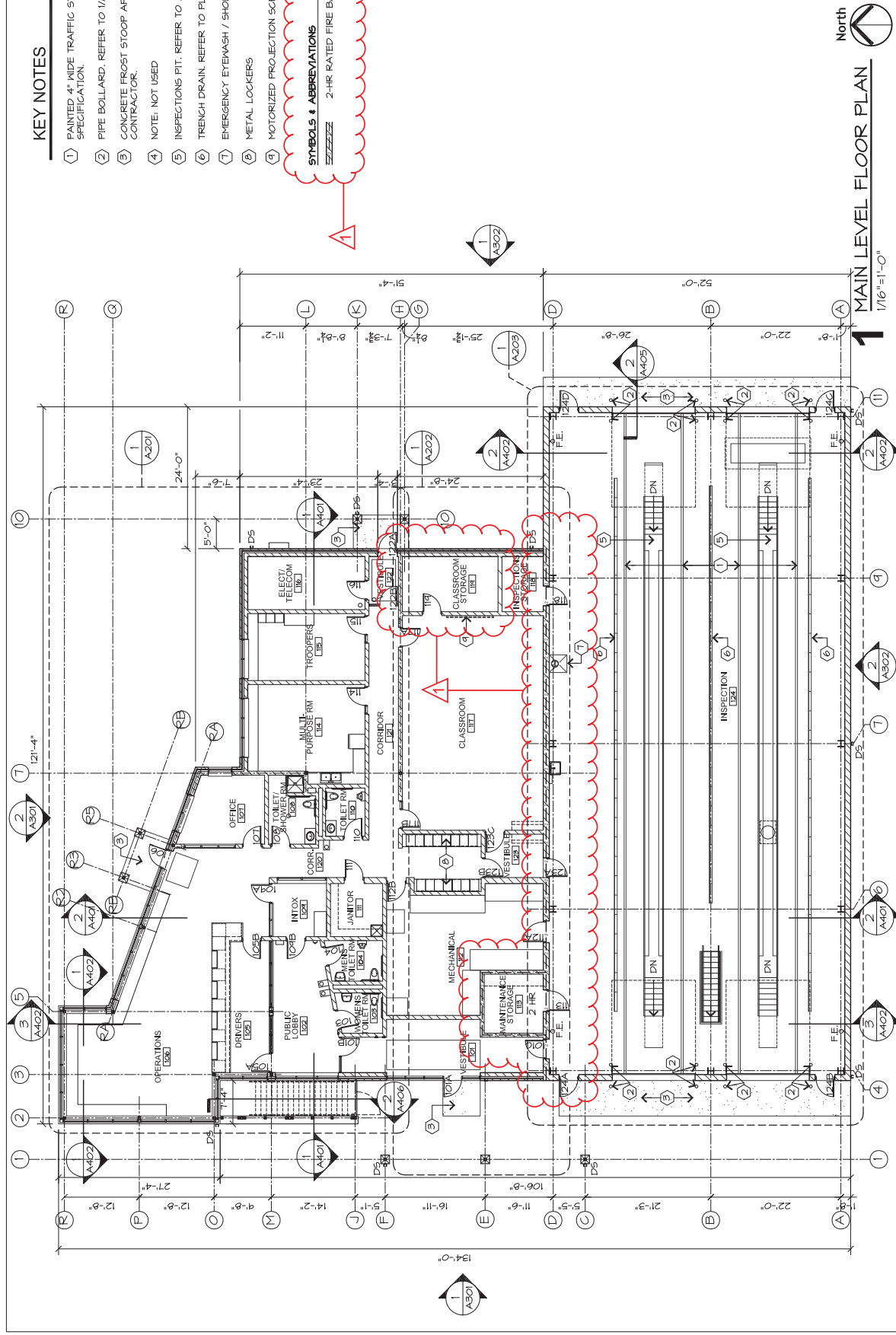
KEY NOTES

- ① PAINTED 4" WIDE TRAFFIC STRIPE. REFER TO SPECIFICATION.
- ② PIPE BOLLARD. REFER TO I/A001.
- ③ CONCRETE FROST STOOP APRON BY GENERAL BUILDING CONTRACTOR.
- ④ NOTE: NOT USED
- ⑤ INSPECTIONS PIT. REFER TO A101.
- ⑥ TRENCH DRAIN. REFER TO PLUMBING PLANS.
- ⑦ EMERGENCY EYEWASH / SHOWER.
- ⑧ METAL LOCKERS
- ⑨ MOTORIZED PROJECTION SCREEN.

SYMBOLS & ABBREVIATIONS

===== 2-HR RATED FIRE BARRIER WALL

Addendum No. 03
ID 1070-00-72
Revised Sheet 113
July 7, 2016



1 MAIN LEVEL FLOOR PLAN
1/16"=1'-0"

MAIN LEVEL FLOOR PLAN

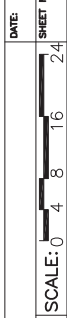
COUNTY: MONROE

PLANS PREPARED BY: VANTAGE ARCHITECTS, INC. LA CROSSE, WI
STATE PROJECT NUMBER: 1070-00-72 HWY: IH 90

SPARTA SWEF NO. 54

SHEET NO: A102

113

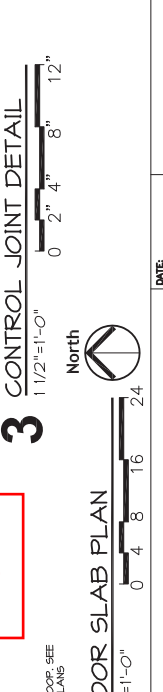
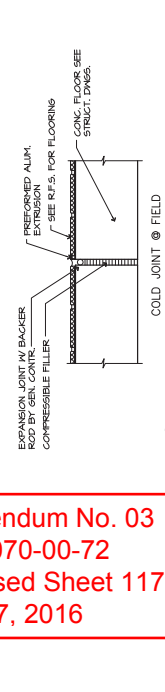
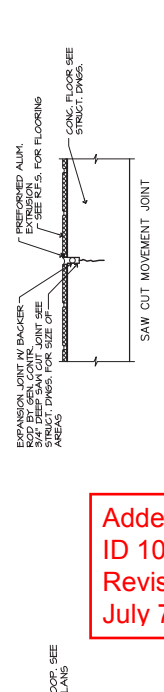
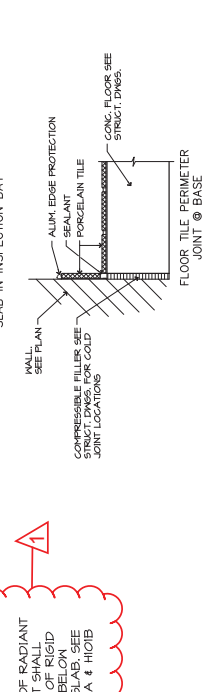
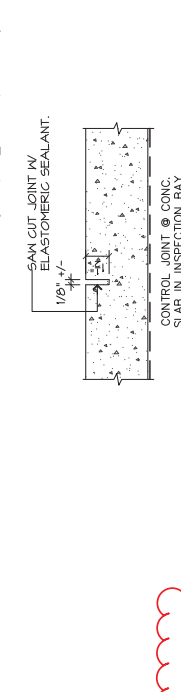
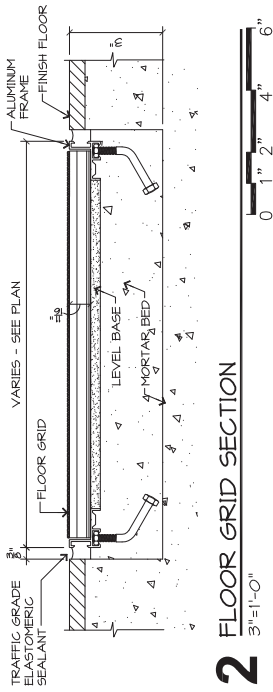


DATE:

SYMBOLS LEGEND

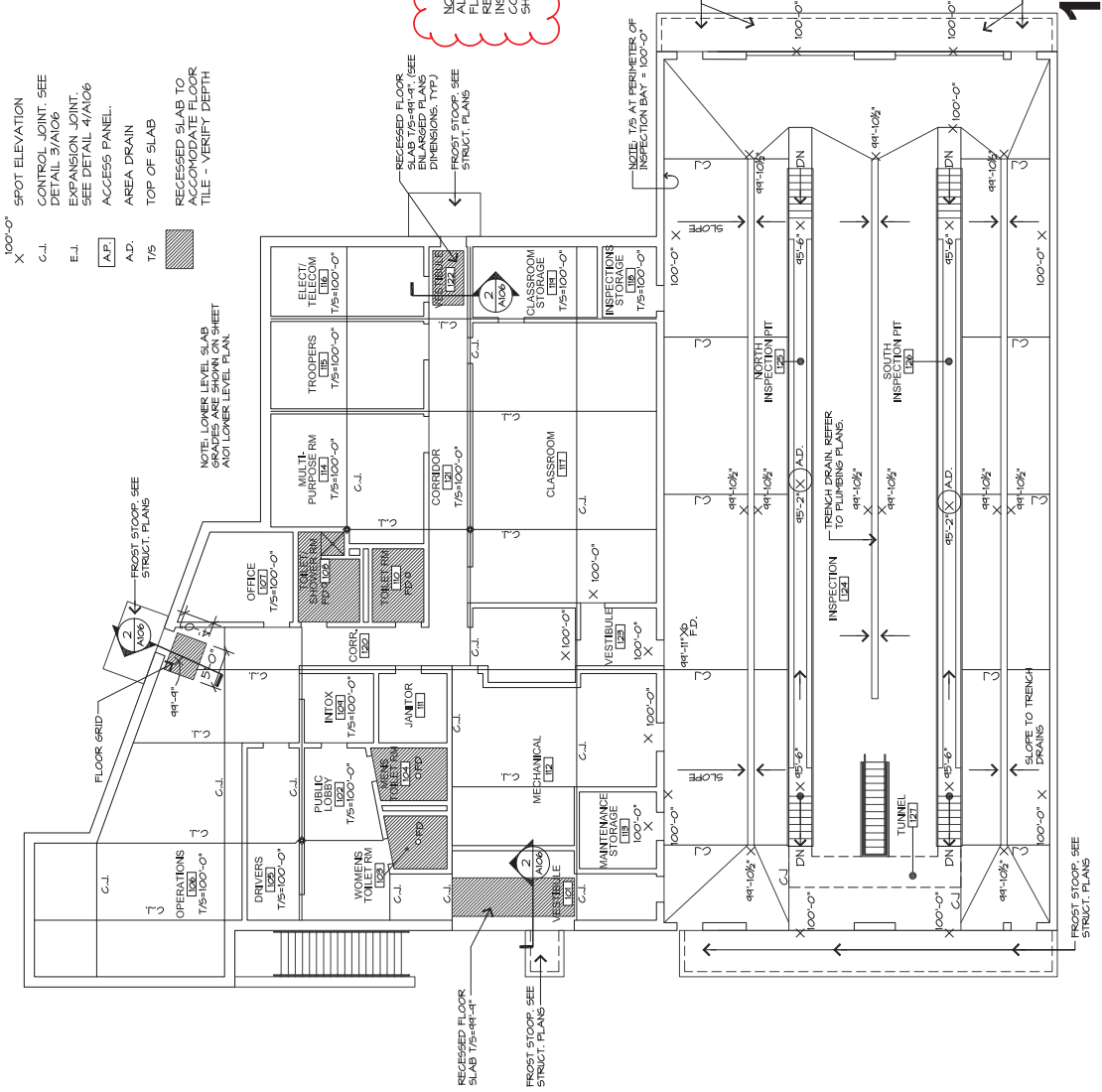
- 100'-0" X SPOT ELEVATION
- C-J CONTROL JOINT. SEE DETAIL 3/A106
- E-L EXPANSION JOINT. SEE DETAIL 4/A106
- A-P ACCESS PANEL
- A-D AREA DRAIN
- T/S TOP OF SLAB
- RECESSED SLAB TO ACCOMMODATE FLOOR TILE - VERIFY DEPTH

NOTE: LOWER LEVEL SLAB GRADIES ARE SHOWN ON SHEET A101 LOWER LEVEL PLAN.



NOTE:
ALL AREA OF RADIANT HEATING SYSTEM TO BE RECESSED IN INSULATION BELOW CONCRETE SLAB. SEE SHEETS H101A & H101B

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ID 1070-00-72
Revised Sheet 117
July 7, 2016



1 FLOOR SLAB PLAN

SCALE: SEE PLAN

COUNTY: MONROE

SPARTA SWEF NO. 54

FLOOR SLAB PLAN

DATE:

PLANS PREPARED BY: VANTAGE ARCHITECTS, INC. LA CROSSE, WI

STATE PROJECT NUMBER: 1070-00-72

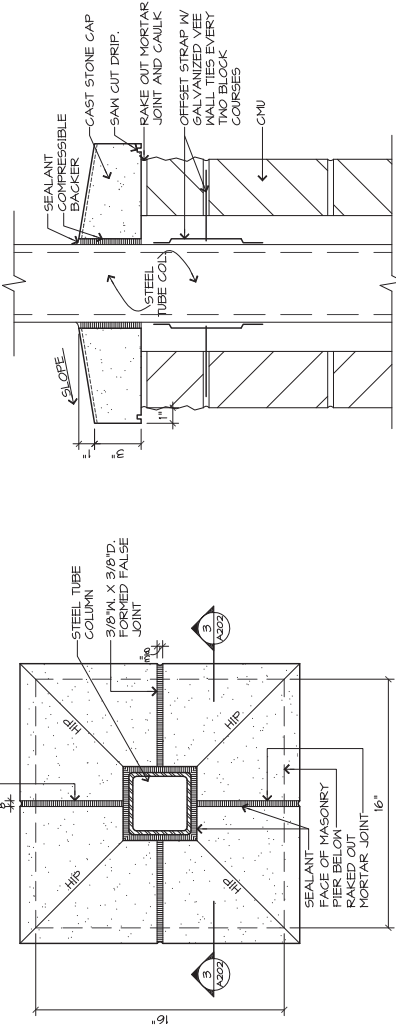
HWY: IH 90

SHEET NO: A106

117

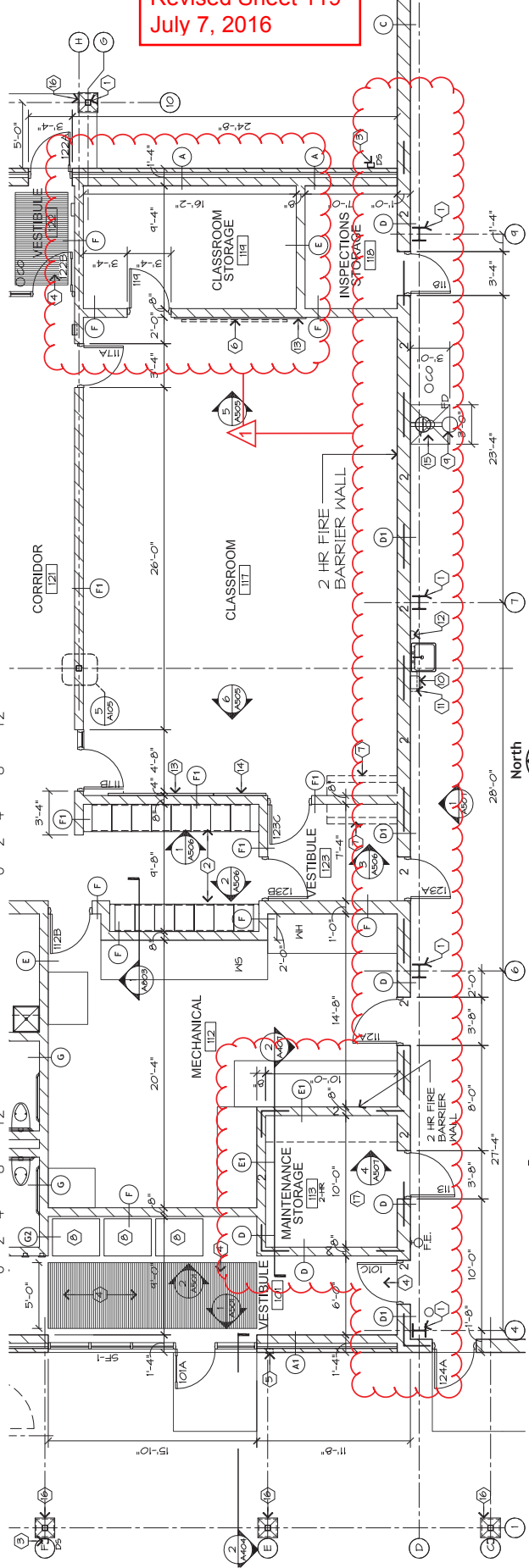
ENLARGED PLAN KEY NOTES

- ① STEEL COLUMN, SEE STRUCTURAL PLANS.
- ② SINGLE TIER METAL LOCKERS OVER FILE CABINETS, REFER TO SPEC. SECTION 10 51 13.
- ③ PREFIN. OPEN FACE METAL DOWNSPOUT.
- ④ RECESS ENTRANCE FLOOR GRID, SEE DETAIL 2/A106.
- ⑤ SEMI-REGRESSED KNOX BOX, VERIFY LOCATION WITH LOCAL FIRE DEPARTMENT.
- ⑥ MOTORIZED PROJECTION SCREEN.
- ⑦ WALL MOUNTED SHELF AND COAT HOOK, SEE SPEC. SECTION 06 40 00.
- ⑧ VENDING MACHINES (BY OTHERS).
- ⑨ EMERGENCY EYE WASH & SHOWER, REFER TO PLUMBING PLANS.
- ⑩ WALL MOUNTED SHELVING, REFER TO SPEC.
- ⑪ PAPER TONEL DISPENSER.
- ⑫ SOAP DISPENSER.
- ⑬ MARKER BOARD, SEE SPEC. SECTION 10 51 10.
- ⑭ VINYL FACED TACKBOARD PER SPEC. SECTION 10 11 00.
- ⑮ SLOPE FLOOR SLAB TO FLOOR DRAIN 1/4" PER FT.
- ⑯ CAST STONE COLUMN CAP, SEE DETAILS 243/A202.
- ⑰ ALL PENETRATIONS THROUGH RATED CONSTRUCTION SHALL BE SEALED PER CODE.



2 ENLARGED PLAN OF CAST STONE CAP 1 1/2"=1'-0" 12" 8" 4" 2" 0"

3 SECTION THRU CAST STONE CAP 1 1/2"=1'-0" 12" 8" 4" 2" 0"



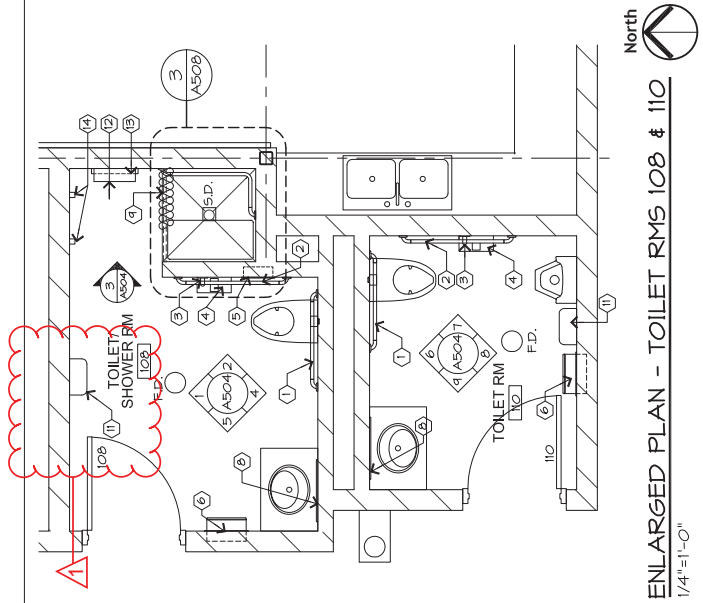
1 ENLARGED PLAN @ MIDSECTION 1/8"=1'-0" 12" 8" 4" 2" 0"

Addendum No. 03
ID 1070-00-72
Revised Sheet 119
July 7, 2016

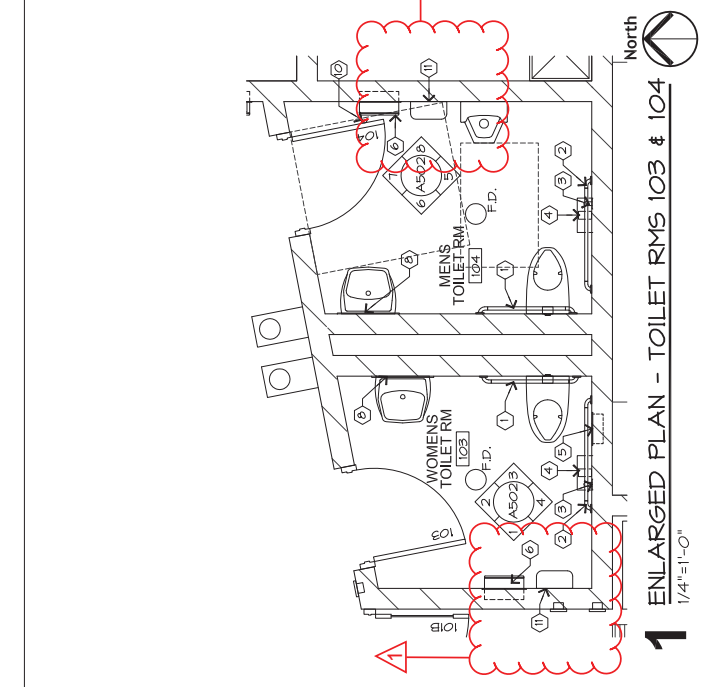
PLANS PREPARED BY: VANTAGE ARCHITECTS, INC. LA CROSSE, WI	COUNTY: MONROE	SCALE: ENLARGED FLOOR PLAN
STATE PROJECT NUMBER: 1070-00-72	HWY: IH 90	SPARTA SWEF NO. 54
		SHEET NO: A202
		DATE: 119

ENLARGED TOILET PLAN KEY NOTES

- 1 36" LONG GRAB BAR 36" A.F.F. TO TOP.
- 2 42" LONG GRAB BAR 36" A.F.F. TO TOP.
- 3 18" LONG VERTICAL GRAB BAR 40" A.F.F. TO BOTTOM.
- 4 TOILET TISSUE PAPER DISPENSER 30" A.F.F. TO TOP EDGE. 12" TO 4. IN FRONT OF TOILET FIXTURE.
- 5 RECESSED SANITARY WIPER DISPOSAL. TOP EDGE TO BE 3" BELOW GRAB BAR.
- 6 RECESSED PAPER TOWEL & WASTE DISPENSER 48" A.F.F. TO TOP OF CONTROL.
- 7 NOT USED
- 8 24" W. X 36" H. STAINLESS STEEL FRAMED MIRROR 40" A.F.F. TO REFLECTIVE SURFACE.
- 9 SHOWER CURTAIN ROD.
- 10 FLOOR MOUNTED DOOR STOP.
- 11 ELECTRIC HAND DRYER
- 12 STAINLESS STEEL SHELF, 16" W. X 5" D.
- 13 STAINLESS STEEL TOWEL BAR
- 14 STAINLESS STEEL ROBE HOOKS



2 ENLARGED PLAN - TOILET RMs 108 & 110
1/4"=1'-0"



1 ENLARGED PLAN - TOILET RMs 103 & 104
1/4"=1'-0"

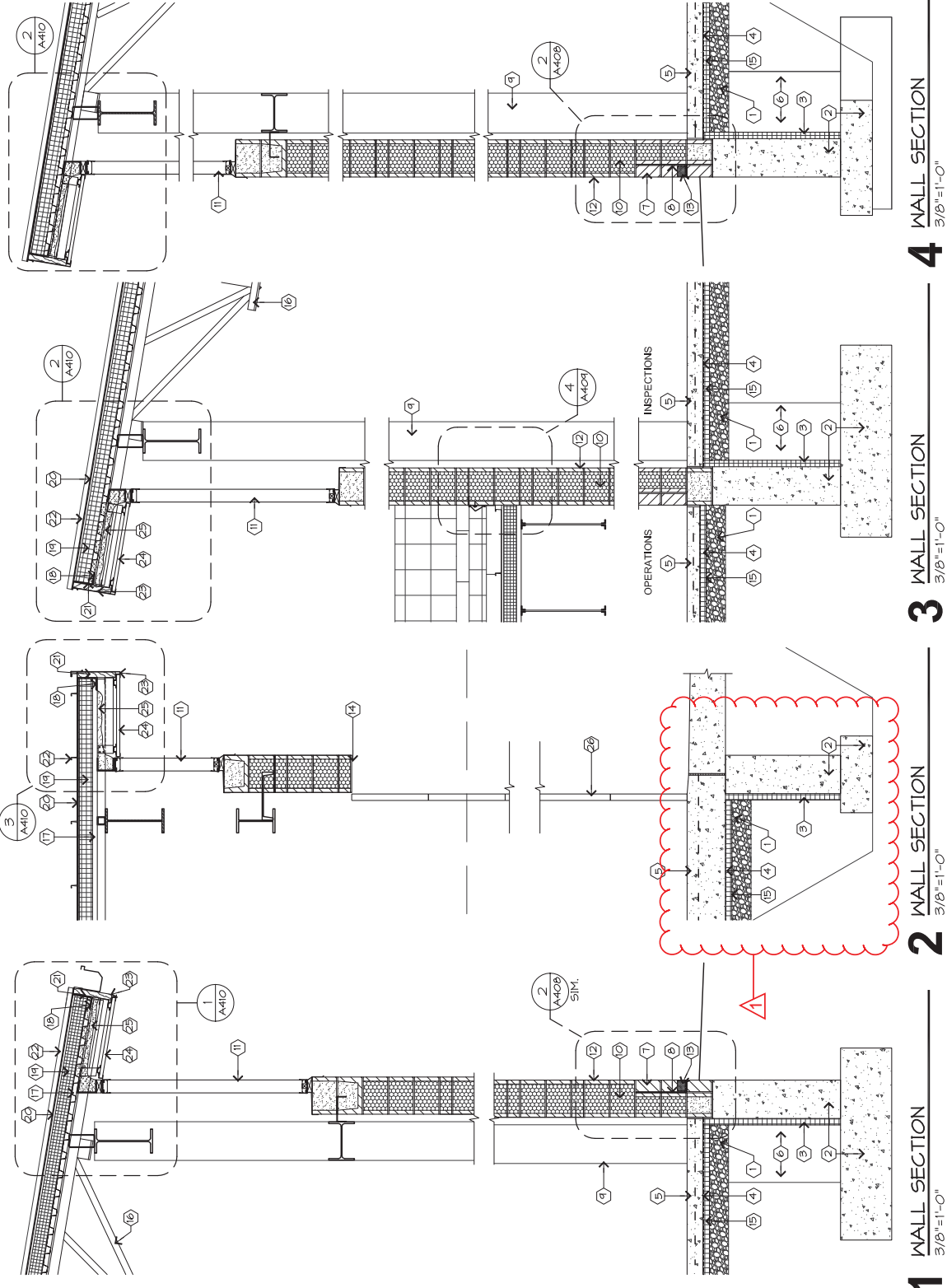
Addendum No. 03
ID 1070-00-72
Revised Sheet 123
July 7, 2016

PLANS PREPARED BY: VANTAGE ARCHITECTS, INC. LA CROSSE, WI	ENLARGED TOILET PLANS	DATE:	SHEET NO.:
STATE PROJECT NUMBER: 1070-00-72	SPARTA SWEF NO. 54	SCALE: 0 1 2 4 6	A206
COUNTY: MONROE			123
Hwy: IH 90			

SECTION KEY NOTES

- 1) 6" COMPACT AGGREGATE BASE
- 2) REFER TO STRUCTURAL PLANS FOR CAST-IN-PLACE CONCRETE FOUNDATION & FOOTING
- 3) 2" THICK RIGID PERIMETER INSULATION
- 4) 15 MIL VAPOR BARRIER
- 5) CONCRETE SLAB-ON-GRADE. SEE STRUCTURAL PLANS FOR THICKNESS & REINFORCING.
- 6) COMPACTED BACKFILL
- 7) 4"x4" CMU STARTER COURSES.
- 8) THRU-WALL FLASHING OVER STAINLESS STEEL DRIP EDGE.
- 9) WIDE FLANGE STEEL COLUMN. REFER TO STRUCTURAL PLANS.
- 10) CORE FILLED FOAM INSULATION. SEE SPEC.
- 11) TRANSLUCENT WALL PANEL. SEE SPECIFICATION.
- 12) CMU - REFER TO STRUCTURAL PLANS FOR REINFORCING. SEE PLANS, WALL TYPES, & EXTERIOR ELEVATIONS.
- 13) KEEP VENTS IN HEAD JOINTS 32" O.C.
- 14) GALV. STEEL LINTEL. PAINT EXPOSED.
- 15) 2" RIGID INSULATION BELOW SLAB
- 16) STEEL BAR JOISTS. REFER TO STRUCTURAL PLANS.
- 17) STEEL ROOF DECKING. REFER TO STRUCT. PLANS.
- 18) PERIMETER STEEL ANGLE. REFER TO STRUCT. PLANS.
- 19) NAIL-BASE INSULATION SYSTEM
- 20) ICE & WATERSHIELD ROOF UNDERLAYMENT
- 21) 1/2" x 1/2" x 1/8" SUB-FASCIA ATTACHED TO PERIMETER ANGLE.
- 22) STANDING SEAM METAL ROOFING
- 23) PREFIN. METAL FASCIA PANEL
- 24) PREFIN. METAL SOFFIT PANEL
- 25) CLOSED-CELL SPRAY-FOAM INSULATION.
- 26) INSULATED OVERHEAD SECTIONAL DOOR.

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ID 1070-00-72
Revised Sheet 131
July 7, 2016



1 WALL SECTION
3/8"=1'-0"

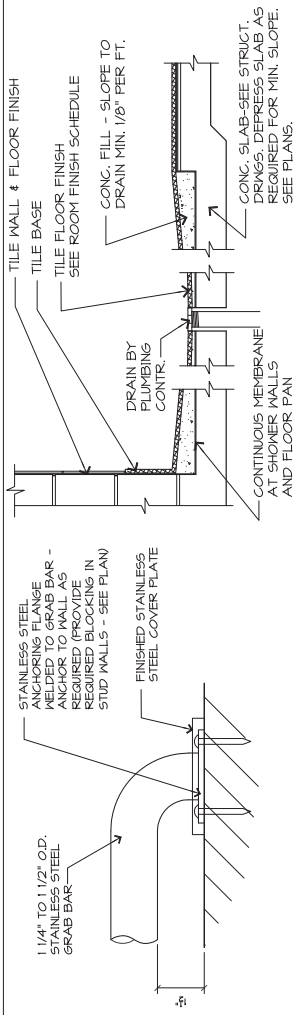
2 WALL SECTION
3/8"=1'-0"

3 WALL SECTION
3/8"=1'-0"

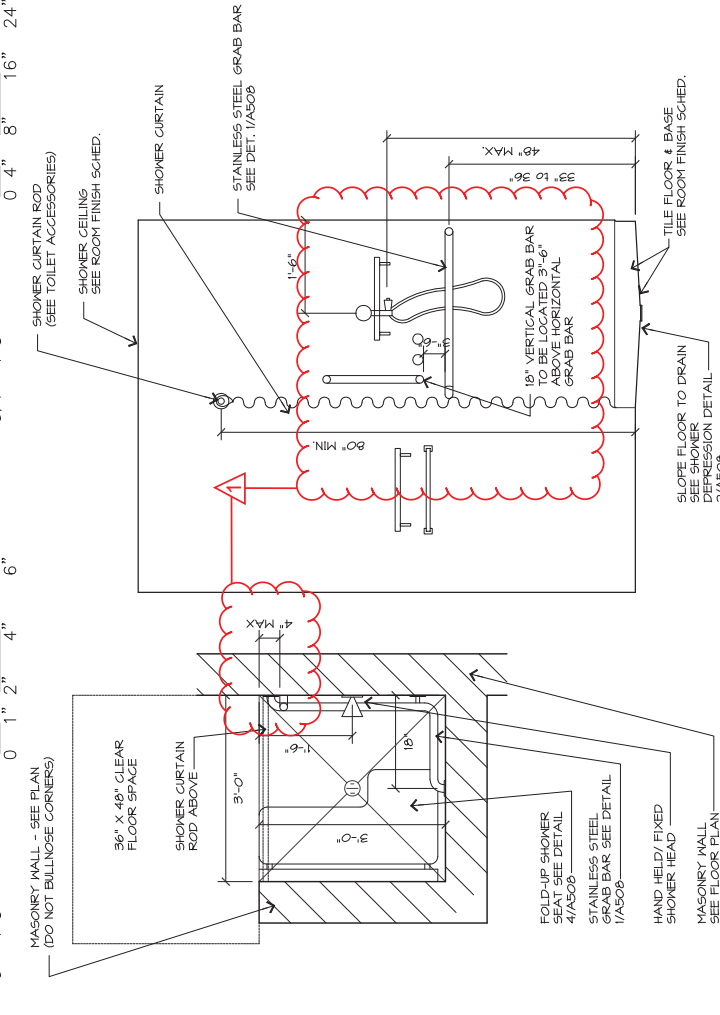
4 WALL SECTION
3/8"=1'-0"

PLANS PREPARED BY: VANTAGE ARCHITECTS, INC. LA CROSSE, WI	COUNTY: MONROE	SCALE: 0' 8" 16" 32" 48"	DATE:
STATE PROJECT NUMBER: 1070-00-72	HWY: IH 90	SHEET NO: A405	131
WALL SECTIONS		WALL SECTIONS	
SPARTA SWEF NO. 54		SPARTA SWEF NO. 54	

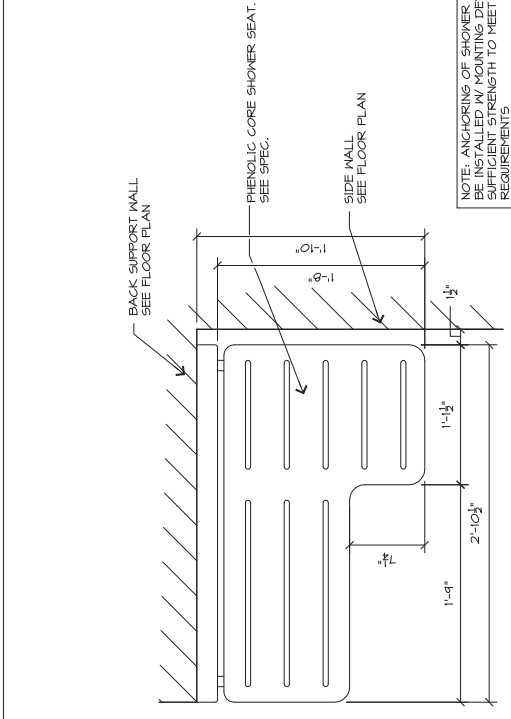
Addendum No. 03
ID 1070-00-72
Revised Sheet 148
July 7, 2016



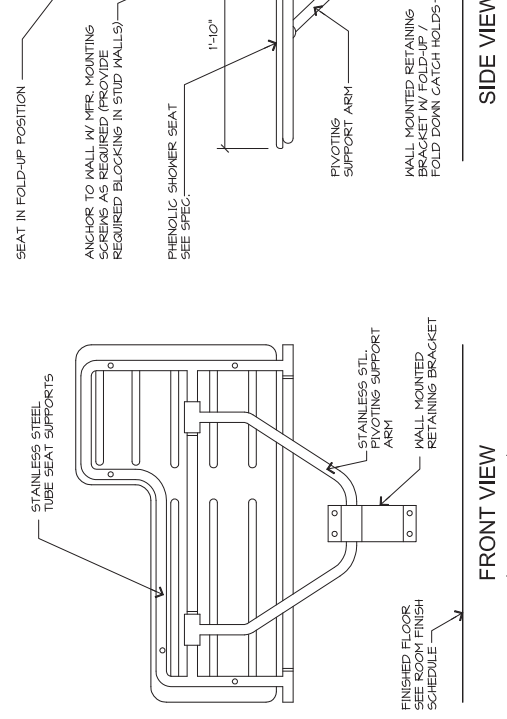
1 GRAB BAR DETAIL
 3" = 1'-0"
 0 1" 2" 4" 6"



2 SHOWER DEPRESSION DETAIL
 3/4" = 1'-0"
 0 4" 8" 16" 24"



3 ACCESSIBLE SHOWER DETAILS
 1/2" = 1'-0"
 0 3" 6" 1 1.5



4 FOLDABLE SHOWER SEAT DETAIL
 1" = 1'-0"
 0 6" 1 2 3

3 ACCESSIBLE SHOWER DETAILS
 1/2" = 1'-0"

4 FOLDABLE SHOWER SEAT DETAIL
 1" = 1'-0"

PLANS PREPARED BY: VANTAGE ARCHITECTS, INC. LA CROSSE, WI
 STATE PROJECT NUMBER: 1070-00-72 HWY: IH 90 COUNTY: MONROE SPARTA SWEF NO. 54 SCALE: SHOWER DETAILS

DATE: SHEET NO: A508 148

GLAZING SCHEDULE

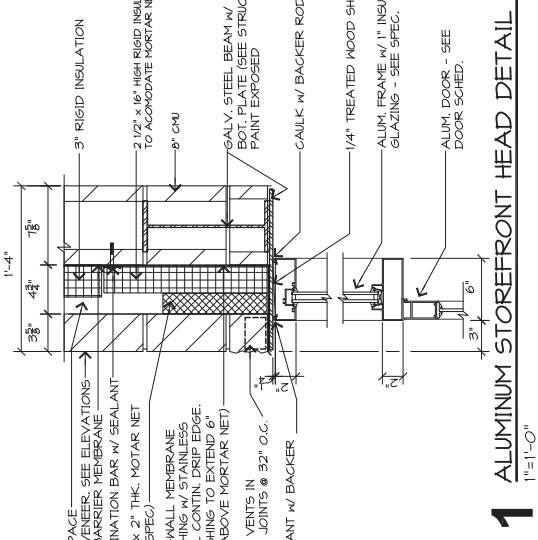
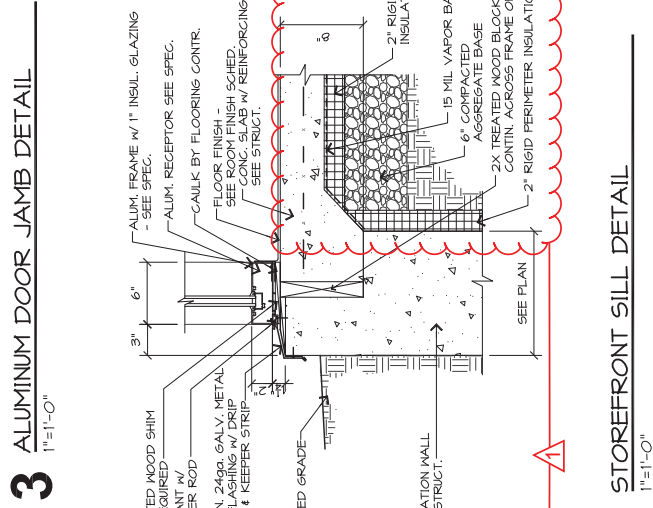
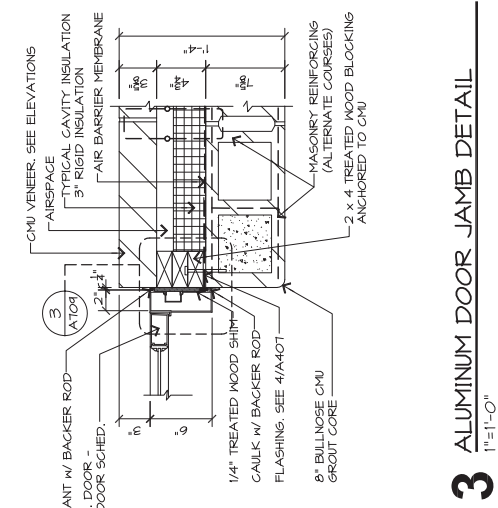
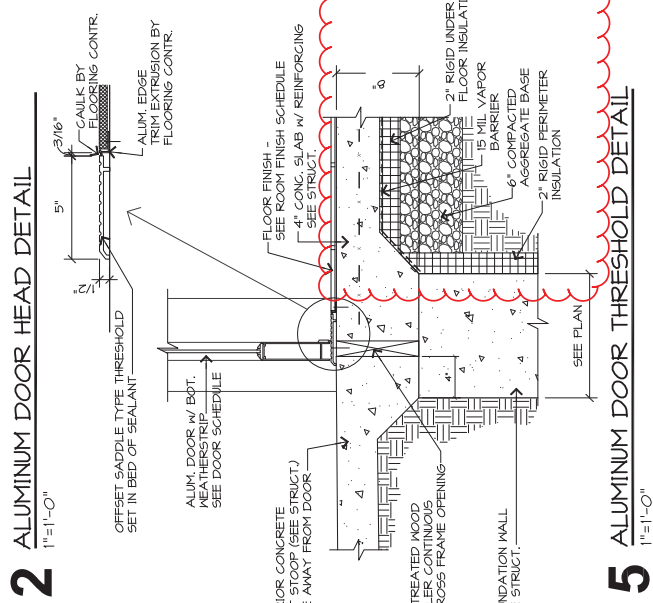
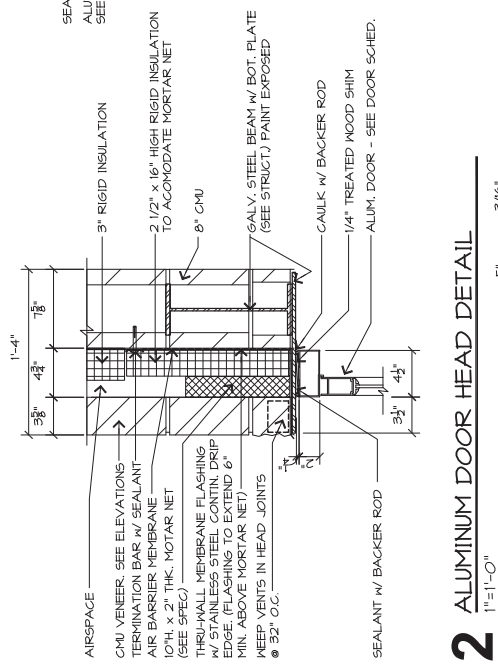
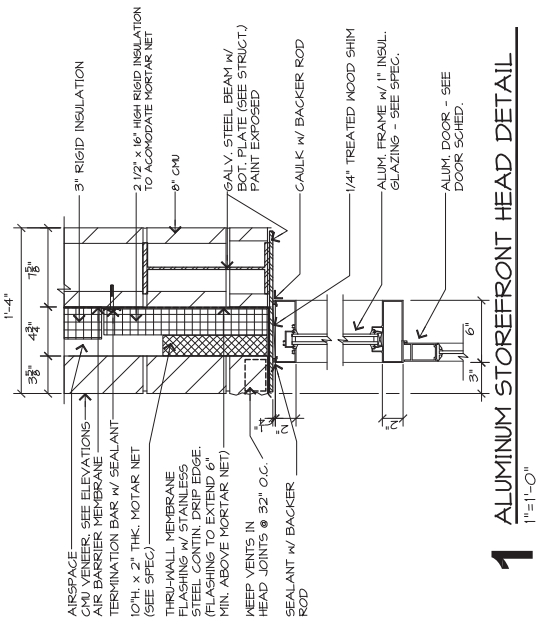
- GL-1 TEMPERED GLASS
 - INTERIOR GLAZING AT NON-RATED DOORS, SIDELITES AND BORROWED LITES
 - 1/4" THICK, TEMPERED, CLEAR, UNLESS NOTED OTHERWISE
 - GL-2 FIRE-RATED GLASS
 - GLAZING LOCATED IN DOORS AND SIDELITES
 - SEE SPEC FOR GLASS TYPE
 - GL-3 INSULATED GLASS UNITS
 - GLAZING LOCATED IN EXTERIOR DOORS AND SIDELITES
 - SEALED INSULATED GLASS UNITS CONSISTING OF:
 - 1" TINTED TEMPERED GLASS, EXTERIOR PANE
 - 2" AIR SPACE
 - 3/4" CLEAR TEMPERED GLASS, INTERIOR PANE W/ LOW-E COATING
- REMARKS:
- REFER TO SPECIFICATION.

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DOOR SCHEDULE

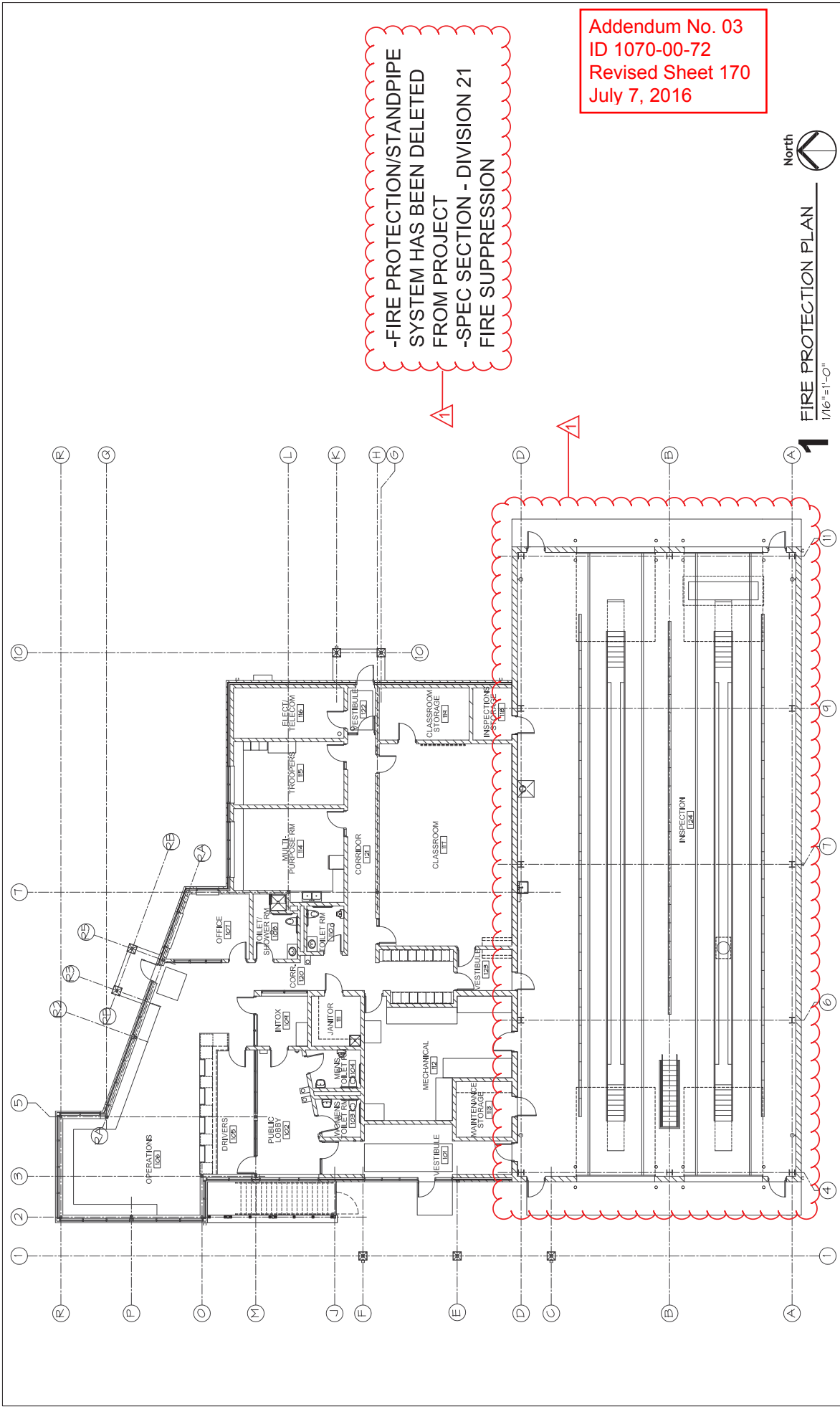
DOOR NO.	DOOR SIZE	DOOR TYPE	DOOR ELEVATION	FRAME TYPE	FRAME ELEVATION	HEAD DETAIL	JAMB DETAIL	SILL DETAIL	LABEL	HARDWARE	DOOR GRILLE/ UNDERCUT	NOTES
001A	3'-0" x 7'-2"	HM	D-6	HM	F-3	--	--	--		20		
101A	3'-0" x 7'-2"	ALUM	D-1	ALUM	SF-1	1/A706	4/A706	5&6/A706		1		
101B	3'-0" x 7'-2"	ALUM	D-1	ALUM	F-2	3/A709 SIM	2&6/A707			3		
101C	3'-0" x 7'-2"	HM	D-9	HM	F-3	2/A708	7/A708	-/A-	1 1/2 HR	4		
103	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			5		
104	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			5		
105A	3'-0" x 7'-2"	WOOD	D-4	HM	F-5	3/A709	7&9/A708	2/A709		11		
105B	3'-0" x 3'-4"	WOOD	D-5	HM	F-6	7/A708	7/A708			12		
106	3'-0" x 7'-2"	ALUM	D-2	ALUM	SF-10	3/A706	1/A706	5/A706		13		
107	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			8		
108	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			5		
109A	3'-0" x 7'-2"	WOOD	D-3	HM	F-7	1/A709 SIM	6&7/A708	2/A709		17		
109B	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			17		
110	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			5		
111	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			6		
112A	4'-0" x 7'-2"	HM	D-6	HM	F-3	2/A708	7/A708		1 1/2 HR	16		
112B	4'-0" x 7'-2"	WOOD	D-6	HM	F-3	2/A708	7/A708			21		
113	4'-0" x 7'-2"	HM	D-6	HM	F-3	2/A708	7/A708		1 1/2 HR	15		
114	3'-0" x 7'-2"	WOOD	D-3	HM	F-4	2/A708	7&9/A708	5/A709		7		
115	3'-0" x 7'-2"	WOOD	D-3	HM	F-4	2/A708	7&9/A708	5/A709		7		
116	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			6		
117A	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			7		
117B	3'-0" x 7'-2"	WOOD	D-3	HM	F-4	2/A708	7&9/A708	5/A709		7		
118	3'-0" x 7'-2"	HM	D-6	HM	F-3	2/A708	7/A708		1 1/2 HR	15		
119	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	7/A708			18		
122A	3'-0" x 7'-2"	ALUM	D-2	ALUM	F-1	2/A706	3/A706	5/A706		2		
122B	3'-0" x 7'-2"	ALUM	D-1	ALUM	F-2A	3/A707	2&6/A707			3		
123A	3'-0" x 7'-2"	HM	D-9	HM	F-3	2/A708	6&7/A708		1 1/2 HR	14		
123B	3'-0" x 7'-2"	WOOD	D-4A	HM	F-3	2/A708	3&7/A708			19		
123C	3'-0" x 7'-2"	WOOD	D-3	HM	F-3	2/A708	3&7/A708			7		
124A	3'-0" x 7'-2"	HM	D8	HM	F-3	1/A708	4/A708	8/A708		9		
124B	3'-0" x 7'-2"	HM	D8	HM	F-3	1/A708	4/A708	8/A708		10		
124C	3'-0" x 7'-2"	HM	D8	HM	F-3	1/A708	4/A708	8/A708		10		
124D	3'-0" x 7'-2"	HM	D8	HM	F-3	1/A708	4/A708	8/A708		9		
124E	14'-0" x 16'-0"	METAL	D10	-	1/A710	1/A710	1/A710	1/A710		9		
124F	14'-0" x 16'-0"	METAL	D10	-	1/A710	1/A710	1/A710	1/A710		9		
124G	14'-0" x 16'-0"	METAL	D10	-	1/A710	1/A710	1/A710	1/A710		9		
124H	14'-0" x 16'-0"	METAL	D10	-	1/A710	1/A710	1/A710	1/A710		9		

ABBREVIATIONS
ALUM ALUMINUM
HM HOLLOW METAL



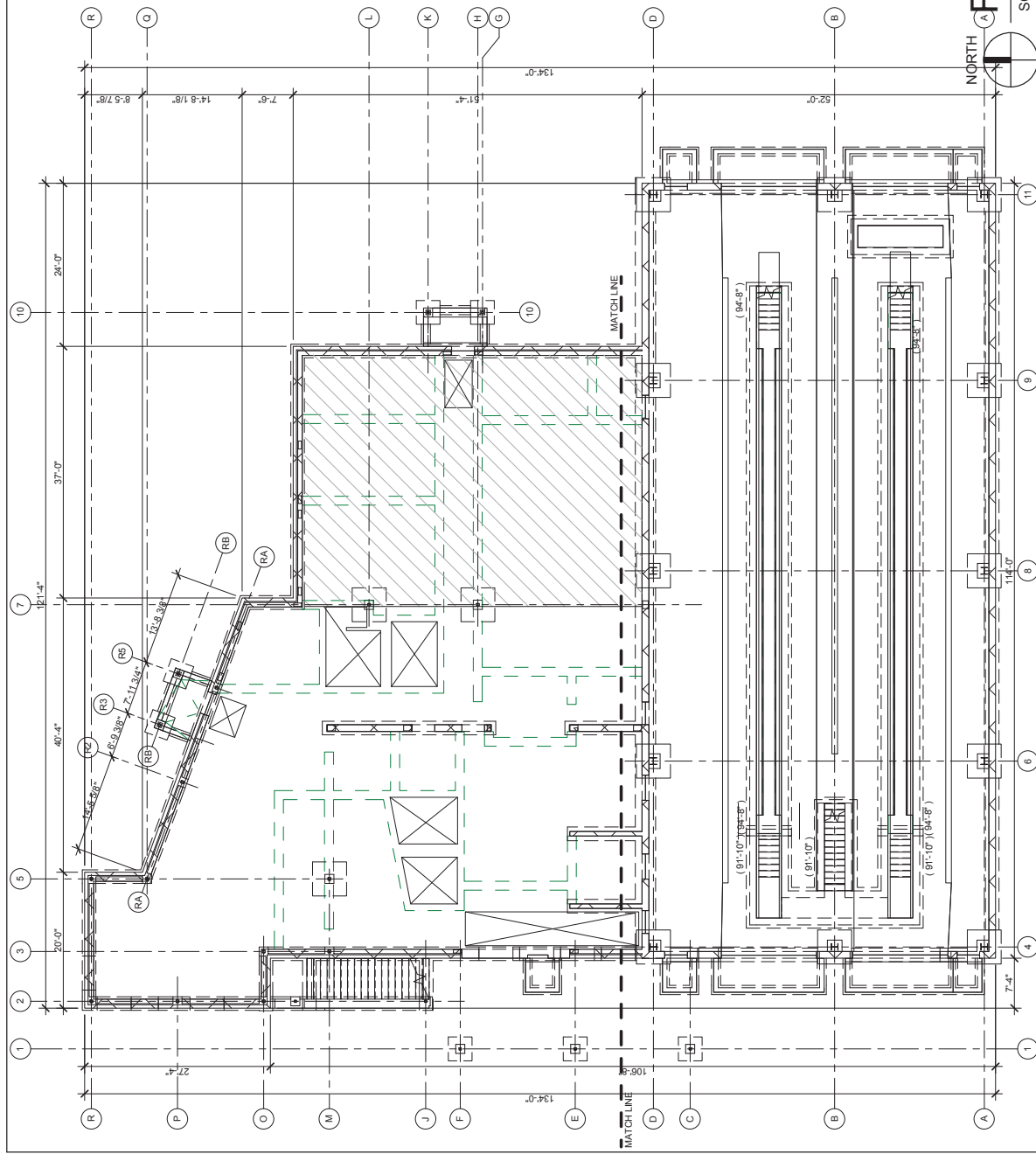
Addendum No. 03
ID 1070-00-72
Revised Sheet 156
July 7, 2016

PLANS PREPARED BY: VANTAGE ARCHITECTS, INC. LA CROSSE, WI	DOOR DETAILS	DATE:
STATE PROJECT NUMBER: 1070-00-72	SPARTA SWEF NO. 54	SHEET NO. 156
HWY: IH 90	COUNTY: MONROE	SCALE: 0" 3" 6" 1" 1.5"
		SHEET NO. A706



Addendum No. 03
 ID 1070-00-72
 Revised Sheet 170
 July 7, 2016

PLANS PREPARED BY: VANTAGE ARCHITECTS, INC. LA CROSSE, WI	DATE:	
STATE PROJECT NUMBER: 1070-00-72	SCALE: 0 4 8 16 24	SHEET NO. 170
COUNTY: MONROE	F101	
SPARTA SWEF NO. 54		



COLUMN SCHEDULE

MARK	SIZE	BASE PLATE	ANCHOR BOLTS
C-01	HSS44X114	PL3/4X1000-10"	(4) 3/4"
C-01A	HSS44X114	PL3/4X700-10"	(4) 3/4"
C-02	HSS56X65 1/2	PL3/4X900-11"	(4) 3/4"
C-03	WT24X65	PL11/2X14X1-9"	(4) 1"

- PROVIDE 1/4" SETTING PLATE SAME SIZE AS BASE PLATE.
- ANCHOR BOLT EMBEDMENT: 12" x (BOLT DIAMETER).
- PROVIDE PLATE WASHER P1/8X3/8X3-3" w/ NUT, TOP & BOT.
- TACK WELD NUTS TO BOLT.

PIER SCHEDULE

MARK	SIZE	VERT REINF	TIES
P-01	8"X16" MAS	(4) #5	#3 @ 16" OC
P-02	16"X16" CONC	(4) #6	#3 @ 12" OC
P-03	24"X26" CONC	(8) #6	(2) #3 @ 12" OC
P-04	12"X16" MAS	(4) #5	#3 @ 16" OC
P-05	12"X8" MAS	(2) #5	-----

- PROVIDE DOWELS INTO FOOTINGS SAME SIZE AND QUANTITY AS PIER VERTICALS.

FOOTING SCHEDULE

MARK	SIZE	REINFORCING EACH WAY
F-01	3'-6"X3'-6"X12"	(4) #5
F-02	5'-0"X5'-0"X13"	(5) #5
F-03	5'-0"X5'-0"X16"	(6) #5

- SOIL CAPACITY = 5000 PSF (REPORT).

Addendum No. 03
ID 1070-00-72
Revised Sheet 175
July 7, 2016

- CONCRETE FOUNDATION NOTES:**
1. FINISHED FLOOR - EL. 100'-0" (unless noted otherwise)
 2. TOP OF FOOTINGS (unless noted otherwise)
INTERIOR - EL. 96'-0" (unless noted otherwise)
EXTERIOR - EL. 96'-0" (unless noted otherwise)
 3. (x-x') INDICATES TOP OF FOOTING ELEVATIONS.
 4. (x-x') INDICATES TOP OF PIER ELEVATIONS.
 5. WALL FOOTINGS (IF NO REINF (unless otherwise noted)
EXTERIOR - 2-0"X10" NO REINF (unless otherwise noted)
INTERIOR - 2-0"X10" NO REINF (unless otherwise noted)
 6. CONCRETE FOUNDATION WALL REINFORCING (unless noted otherwise)
FOOTING TOP AND BOTTOM
 7. STAIR SLABS (UP TO 5'-0" SPAN)
(8) #5 @ 12" OC EACH WAY
 8. SEE ARCH PLANS FOR LOCATION OF NON-BEARING WALLS
 9. EXTERIOR MASONRY WALL REINF (UNLESS NOTED OTHERWISE)
9 (UNLESS NOTED OTHERWISE)
9 (UNLESS NOTED OTHERWISE)

FOUNDATION PLAN - OVERALL

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

COLUMN SCHEDULE

MARK	SIZE	BASE PLATE	ANCHOR BOLTS
C-01	HSS4x4x1/4	PL3/4x10x6"-10"	(4) 3/4"
C-01A	HSS4x4x1/4	PL3/4x7x6"-10"	(4) 3/4"
C-02	HSS3x3x5/16	PL3/4x9x6"-11"	(4) 3/4"
C-03	WT265	PL11/2x14x11/2"	(4) 1"

* PROVIDE 1/4" SETTING PLATE SAME SIZE AS BASE PLATE.
 * ANCHOR BOLT EMBEDMENT: 12 X (BOLT DIAMETER).
 * ALL ANCHOR BOLTS TO BE 1/2" DIA. @ 3" W/ NUT TOP & BOT.
 * TACK WELDED NUTS TO BOLT.

PIER SCHEDULE

MARK	SIZE	VERT REINF	TIES
P-01	8"X16" MAS	(4) #5	#3 @ 16" OC
P-02	16"X16" CONC	(4) #6	#3 @ 12" OC
P-03	24"X26" CONC	(8) #6	(2) #3 @ 12" OC
P-04	12"X16" MAS	(4) #5	#3 @ 16" OC
P-05	12"X8" MAS	(2) #5

* PROVIDE DOWELS INTO FOOTINGS SAME SIZE AND QUANTITY AS PIER VERTICALS.

FOOTING SCHEDULE

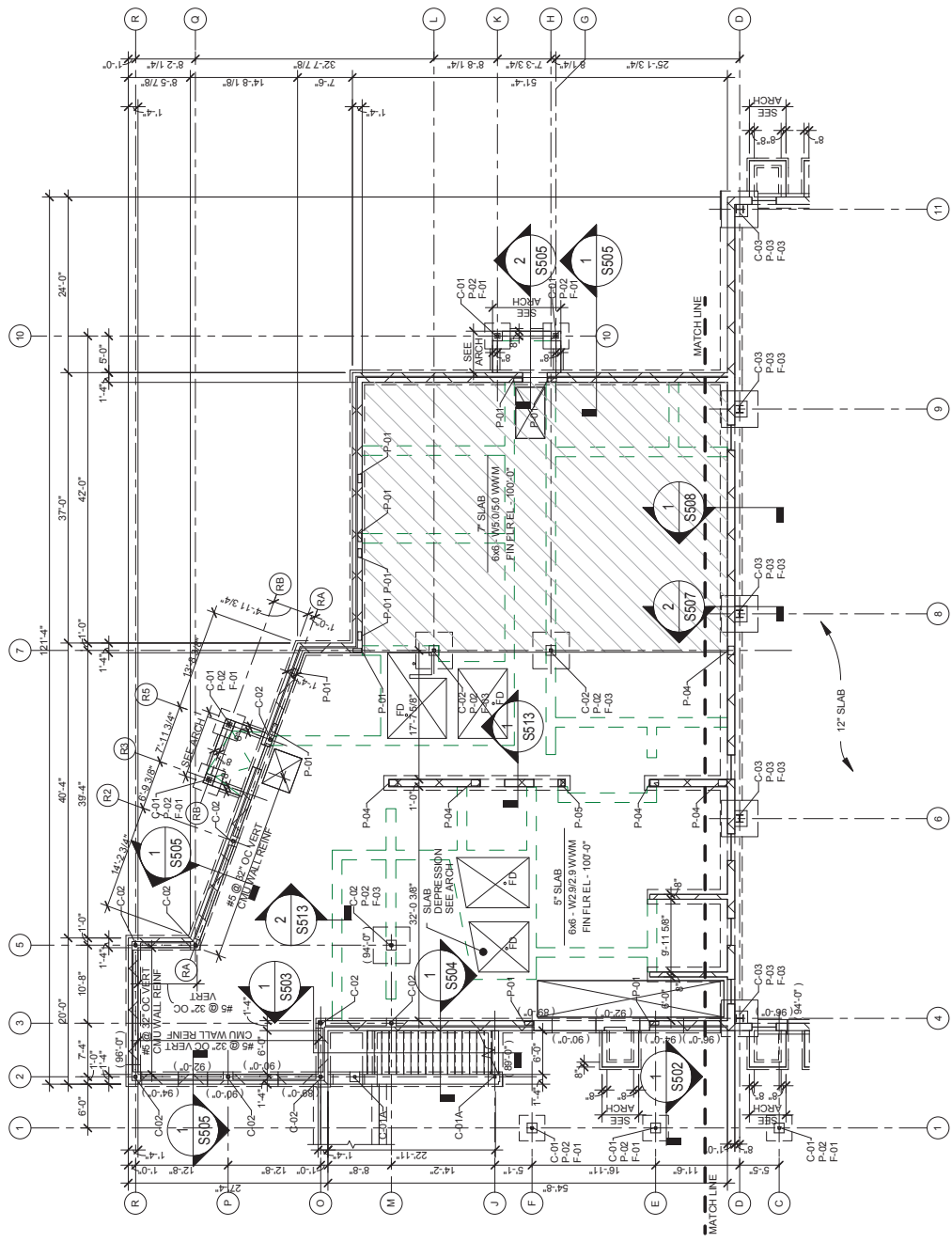
MARK	SIZE	REINFORCING EACH WAY
F-01	3'-6"X2'-6"X16"	(4) #5
F-02	5'-0"X5'-0"X13"	(8) #5
F-03	5'-0"X5'-0"X16"	(8) #5

* SOIL CAPACITY = 5000 PSF (REPORT).

CONCRETE FOUNDATION NOTES:

1. FINISHED FLOOR - EL 100'-0" (unless noted otherwise)
2. TOP OF FOOTINGS INTERIOR - EL 98'-0" (unless noted otherwise) EXTERIOR - EL 97'-0" (unless noted otherwise)
3. (XX'-X") INDICATES TOP OF FOOTING ELEVATIONS.
4. (XX'-X") INDICATES TOP OF PIER ELEVATIONS.
5. WALL FOOTINGS (UNLESS NOTED OTHERWISE) INTERIOR - EL 98'-0" EXTERIOR - 2'-0"X10" NO REINF (UNLESS OTHERWISE NOTED)
6. CONCRETE FOUNDATION WALL REINFORCING (UNLESS NOTED OTHERWISE)
7. STOP SLABS (UNLESS NOTED OTHERWISE) (UP TO 5'-0" SPAN)
8. SEE ARCH PLANS FOR LOCATION OF NON-BEARING WALLS
9. EXTERIOR MASONRY WALL REINF (UNLESS NOTED OTHERWISE) (2" DIA. @ 16" @ 48" OC)

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ID 1070-00-72
Revised Sheet 176
July 7, 2016



FOUNDATION PLAN - NORTH

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

FOUNDATION PLAN -- NORTH

SPARTA SWEF NO. 54

COUNTY: MONROE

HWY: IH 90

PLANS PREPARED BY: AMBROSE ENGINEERING, INC. CEDARBURG, WI (AE# 012-307)

STATE PROJECT NUMBER: 1070-00-72

SCALE: S102

SHEET NO: 176

COLUMN SCHEDULE

MARK	SIZE	BASE PLATE	ANCHOR BOLTS
C-01	HSS4x4x1/4	PL3/4x10x6-10"	(4) 3/4"
C-01A	HSS4x4x1/4	PL3/4x7x6-10"	(4) 3/4"
C-02	HSS3x3x5/16	PL3/4x9x6-11"	(4) 3/4"
C-03	WT2x8	PL11/2x14x11-9"	(4) 1"

- PROVIDE 1/4" SETTING PLATE SAME SIZE AS BASE PLATE.
- ANCHOR BOLT EMBEDMENT: 12x (BOLT DIAMETER).
- TACK WELDED NUTS TO BOLT.

PIER SCHEDULE

MARK	SIZE	VERT REINF	TIES
P-01	8"x18" MAS	(4) #5	#3 @ 16" OC
P-02	18"x18" CONG	(4) #6	#3 @ 12" OC
P-03	24"x24" CONG	(8) #6	(2) #3 @ 12" OC
P-04	12"x16" MAS	(4) #5	#3 @ 16" OC
P-05	12"x8" MAS	(2) #5

- PROVIDE DETAILS INTO FOOTING SAME SIZE AND QUANTITY AS PIER VERTICALS.

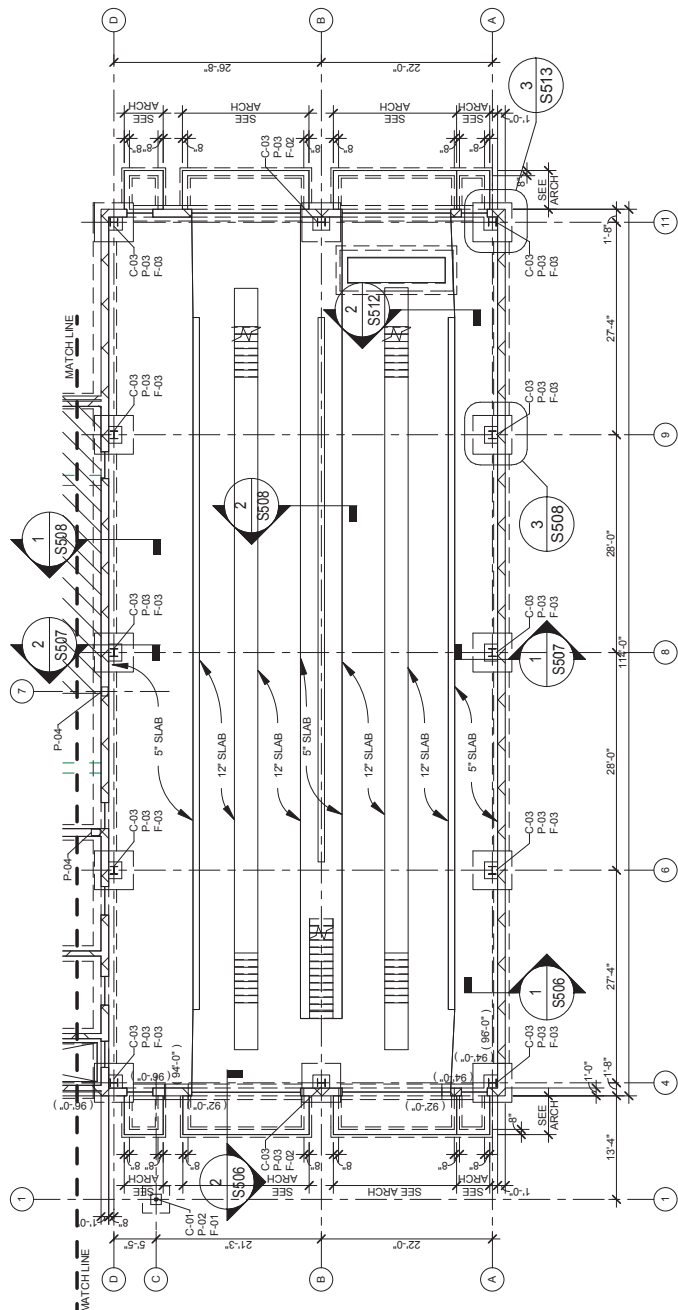
FOOTING SCHEDULE

MARK	SIZE	REINFORCING EACH WAY
F-01	3'-6" x 2'-0" x 1'-0"	(4) #5
F-02	5'-0" x 5'-0" x 1'-0"	(8) #5
F-03	5'-0" x 5'-0" x 1'-0"	(8) #5

• SOIL CAPACITY = 5000 PSF (REPORT).

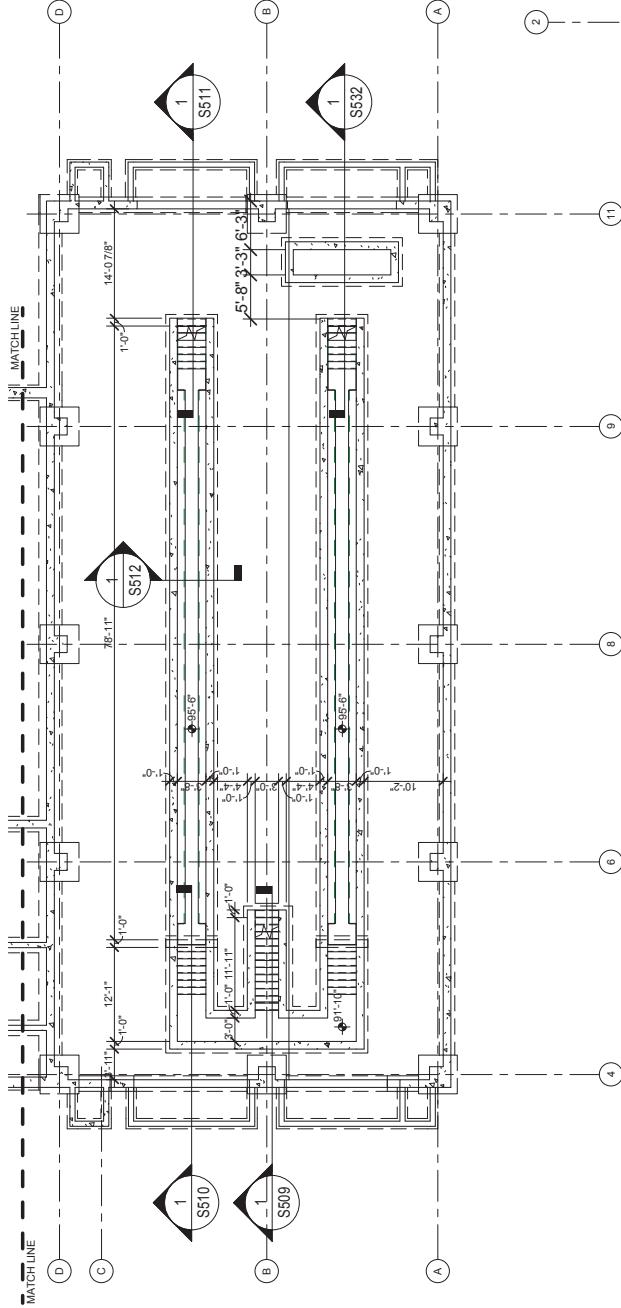
- CONCRETE FOUNDATION NOTES:**
1. FINISHED FLOOR - EL. 100'-0" (unless noted otherwise)
 2. TOP OF FOOTINGS (unless noted otherwise)
 INTERIOR - EL. 98'-0"
 EXTERIOR - EL. 96'-0"
 (unless noted otherwise)
 3. (x"x"x") INDICATES TOP OF PIER ELEVATIONS.
 4. (x"x"x") INDICATES TOP OF FOOTING ELEVATIONS.
 5. WALL FOOTINGS
 INTERIOR: 2'-0"x10" NO REINF (unless otherwise noted)
 EXTERIOR: 2'-0"x10" NO REINF (unless otherwise noted)
 STOOPS: 1'-4"x8" NO REINF (unless otherwise noted)
 6. CONCRETE FOUNDATION WALL REINFORCING
 (2) #5 CONT TOP AND BOTTOM (unless noted otherwise)
 7. STOOP SLABS
 2" SLAB W/ #3 @ 12" OC EACH WAY (UP TO 5'-0" SPAN)
 8. SEE ARCH PLANS FOR LOCATION OF NON-BEARING WALLS
 9. EXTERIOR MASONRY WALL REINF
 12" CMU #5 @ 48" OC

Addendum No. 03
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Revised Sheet 177
July 7, 2016



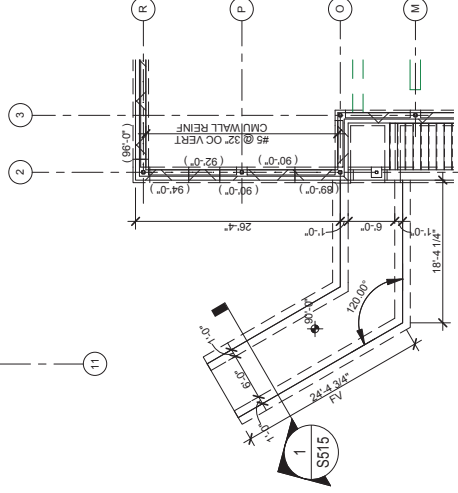
FOUNDATION PLAN - SOUTH
 SCALE: 1/16" = 1'-0"

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ID 1070-00-72
Revised Sheet 178
July 7, 2016



PIT PLAN

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



TUNNEL FOUNDATION PLAN

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

- CONCRETE FOUNDATION NOTES:**
1. FINISHED FLOOR - EL. 100'-0" (unless noted otherwise)
 2. TOP OF FOOTINGS
 INTERIOR - EL. 98'-0" (unless noted otherwise)
 EXTERIOR - EL. 97'-0" (unless noted otherwise)
 3. (x'-x") INDICATES TOP OF FOOTING ELEVATIONS.
 4. (x'-x") INDICATES TOP OF PIER ELEVATIONS.
 5. WALL FOOTINGS
 INTERIOR - 2'-0"x1'-0" NO REIN (unless otherwise noted)
 EXTERIOR - 2'-0"x1'-0" NO REIN (unless otherwise noted)
 STOOPS - 1'-4"x8" NO REIN (unless otherwise noted)
 6. CONCRETE FOUNDATION WALL REINFORCING
 (2) #6 CONT TOP AND BOTTOM (unless noted otherwise)
 7. STOOP SLABS
 5" SLAB W/ #6 @ 12" OC EACH WAY (UP TO 5'-0" SPAN)

8. SEE ARCH PLANS FOR LOCATION OF NON-BEARING WALLS
9. EXTERIOR MASONRY WALL REIN
 8" CMU; #6 @ 32" OC
 12" CMU; #6 @ 48" OC

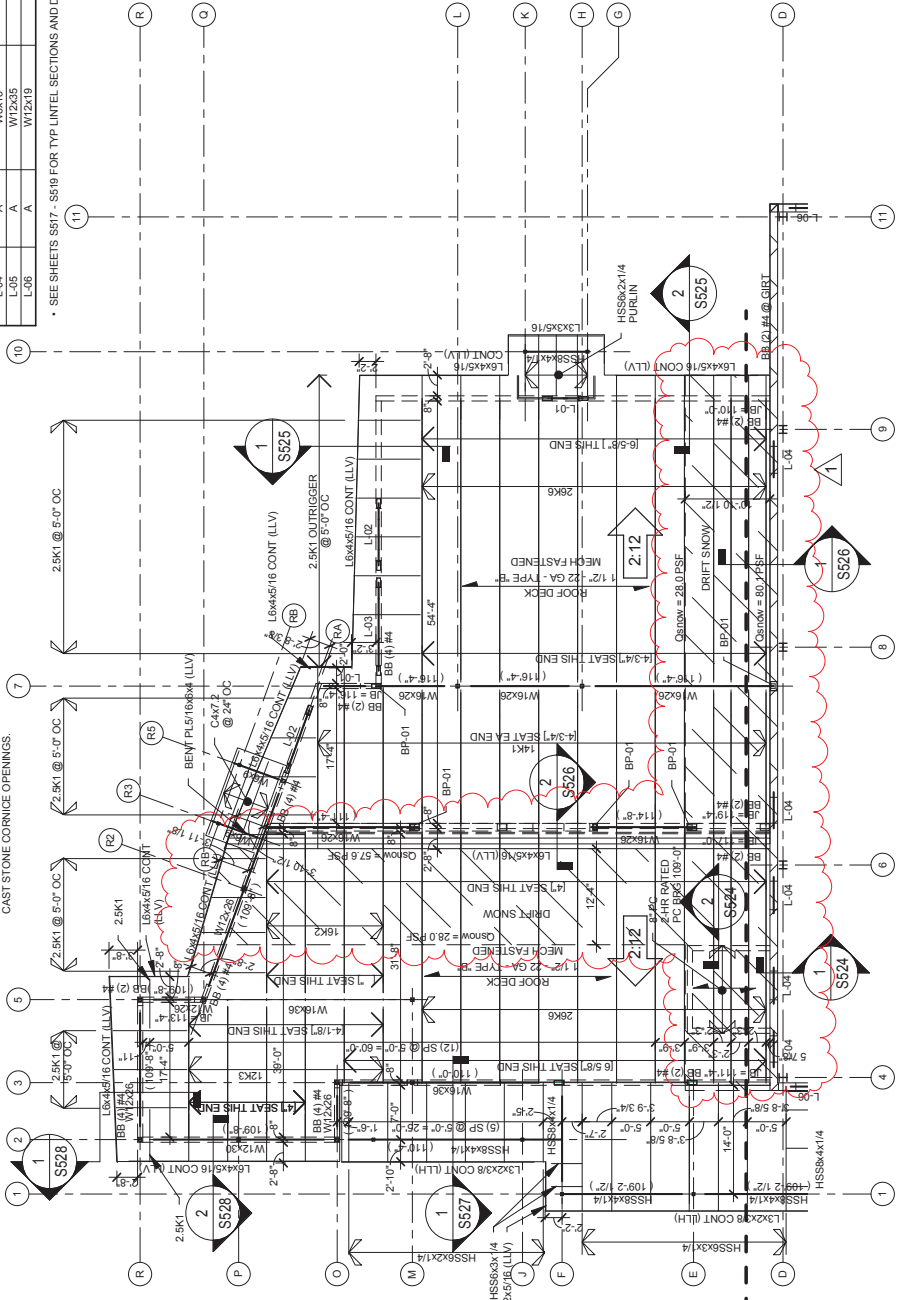
MARK	TYPE	SPAN	SIZE	ANCHORS
V-01	UP TO 4'-0"	L4x3-1/2x1/4	L50-12x5/16	
V-02	4'-11.0" TO 7'-0"			

* PROVIDE LOOSE ANGLE LINTELS AT ALL BRICK VENEER OR CAST STONE CORNICE OPENINGS.

MARK	TYPE	SIZE	PL / REINF	GUSSET / L
L-01	B	W12x14	PL E57814	1/4" @ 3/2" OC
L-02	B	W12x14	PL E57814	1/4" @ 3/2" OC
L-03	B	W12x14	PL E57814	1/4" @ 3/2" OC
L-04	A	W8x18	PL I14x11	
L-05	A	W12x15	PL I14x11	
L-06	A	W12x15	PL I14x11	

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July 7, 2016

- LOW ROOF FRAMING NOTES:
1. 1 1/2" ROOF DECK 22 GA - TYPE B, MECH FASTENED (unless noted otherwise) SEE 2552Z FOR FASTENING PATTERN
 2. DECK LAYOUT MUST BE 3-SPAN MINIMUM
 3. (xxx-x") INDICATES TOP OF STEEL ELEVATIONS
 4. JB xxx-x" INDICATES JOIST BEARING ELEVATIONS
 5. K" INDICATES JOIST SEAT HEIGHT 4" SEATS FOR K-SERIES JOISTS (unless noted otherwise)
 6. JOISTS AS DESIGNATED ARE DESIGNED FOR DRIFT SNOW
 7. PROVIDE BRACING PER SJI AND OSHA REQUIREMENTS AT ALL JOISTS
 8. PROVIDE DIAGONAL BRIDGING AT FIRST TWO JOIST SPACES EA END
 9. PROVIDE 5x1/4x0-7" PL W/ (2) 3/8"x0-4" ANCHOR EACH K-SERIES JOIST END BEARING ON BOND BEAM
 10. ROOF OPENINGS - VERIFY ALL SIZES AND LOCATIONS WITH MECHANICAL DRAWINGS
 11. PROVIDE L4x4x1/4 FRAME AT ALL ROOF OPENINGS BETWEEN JOISTS SPACED GREATER THAN 5'-6" OC SEE 1/552Z
 12. BEARING PLATES:
BP-1 PL 1/2x7x0-7" W (2) 1/2"x0-6" ANCH



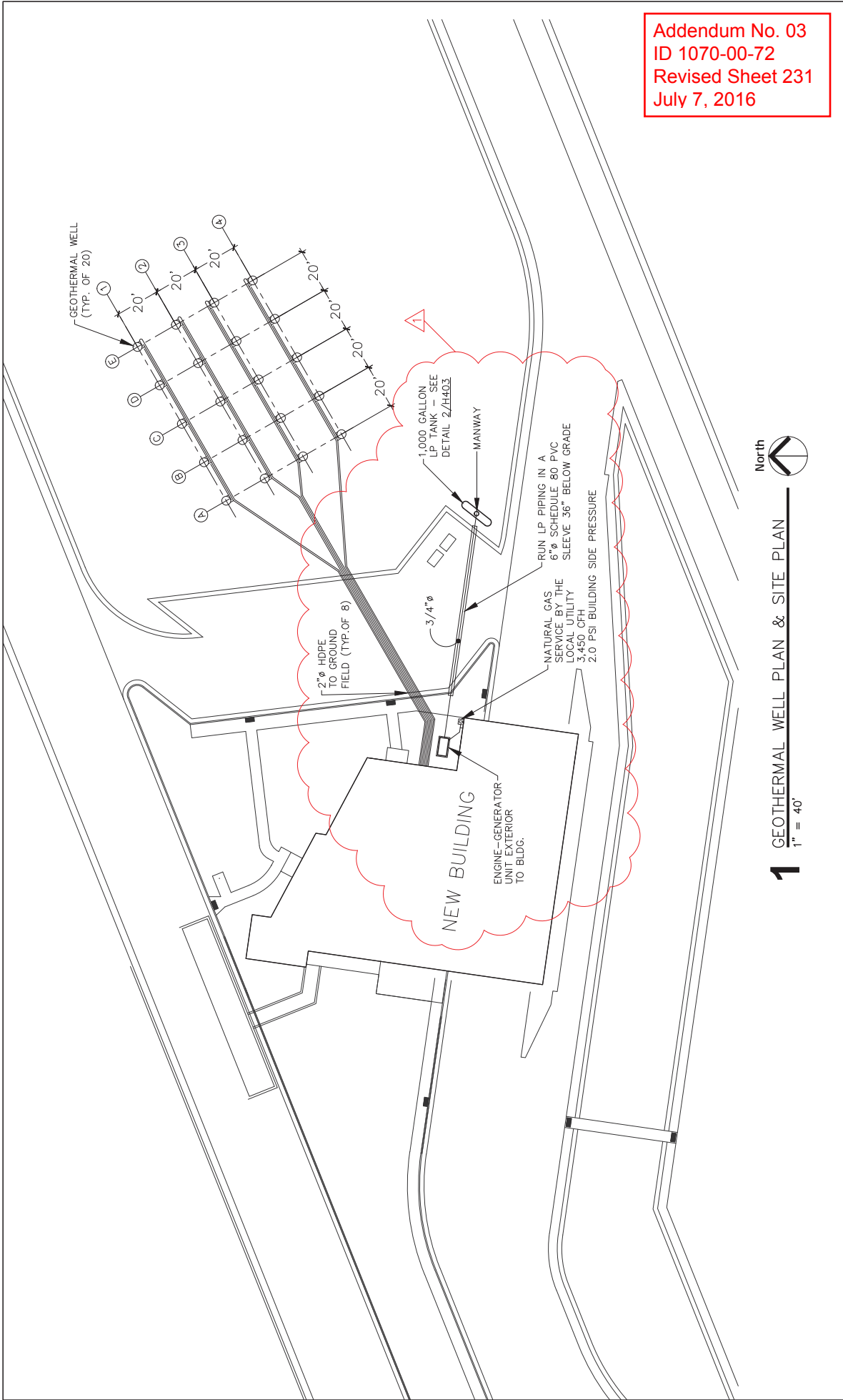
MARK	SPAN	WALL WIDTH	NON-RATED WALL	
			TYPE	SIZE PLATE/REINF
NL-1	UP TO 2'-0"	6"	C	6" x 8"
		8"		8" x 8"
		12"		12" x 8"
NL-2	2'-1" TO 4'-0"	6"	C	6" x 8"
		8"		8" x 8"
		12"		12" x 8"
NL-3	4'-1" TO 8'-0"	6"	D	6" x 16"
		8"		(2) #4 T&B
		12"		(2) #4 T&B
NL-4	8'-1" TO 10'-0"	6"	A	W 8x10
		8"		PL 1/4x7
		12"		PL 1/4x11
NL-5	10'-1" TO 12'-0"	6"	A	W 8x15
		8"		PL 1/4x7
		12"		PL 1/4x11

* PROVIDE LINTELS AS NOTED ABOVE AT ALL NON-BEARING MASONRY WALL OPENINGS, INCLUDES DUCT OPENINGS.

LOW ROOF FRAMING - NORTH

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

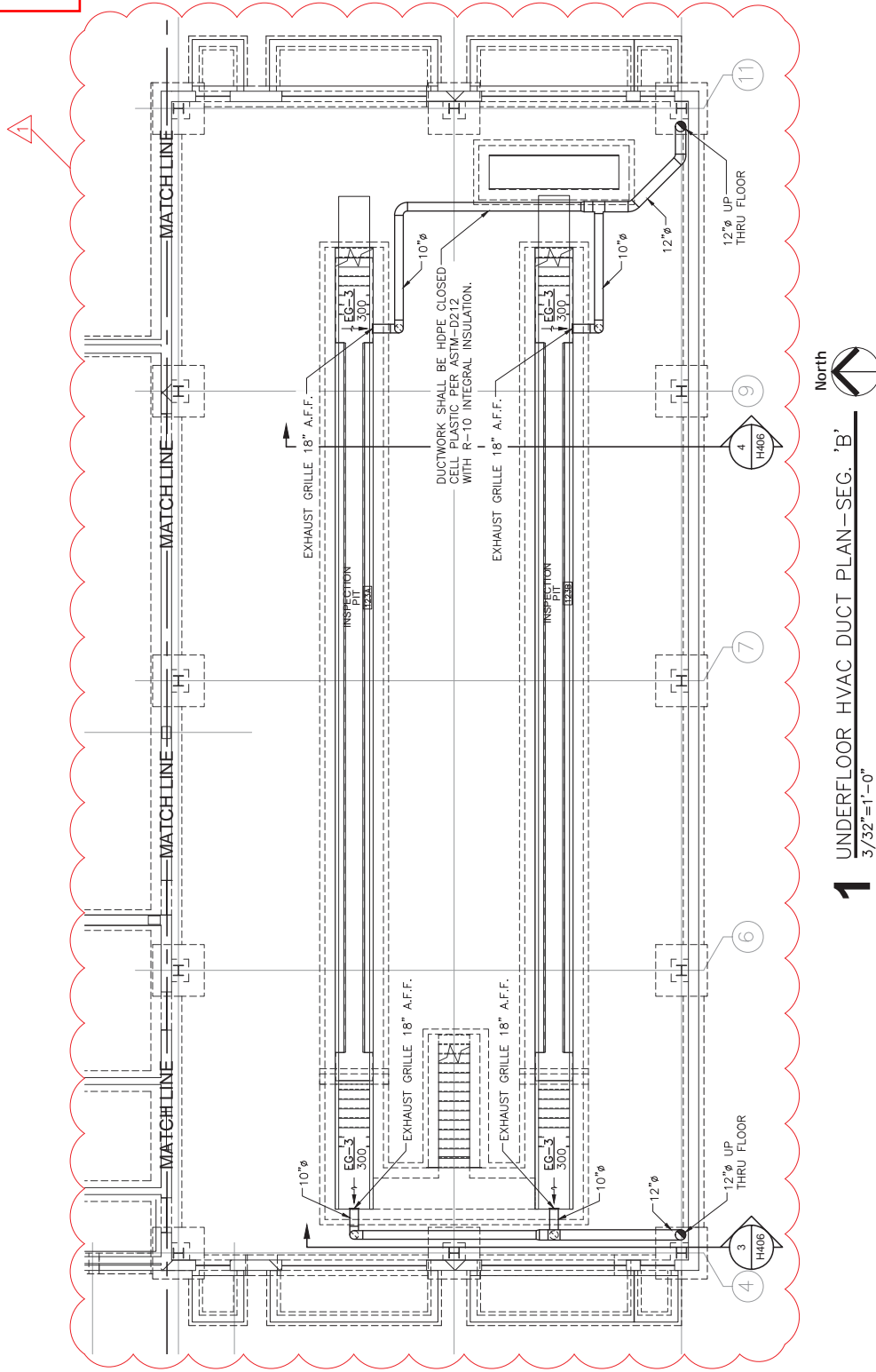
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 231
 July 7, 2016



1 GEOTHERMAL WELL PLAN & SITE PLAN
 1" = 40'

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	DATE: 06/03/16	REVISION: Δ
STATE PROJECT NUMBER: 1070-00-72	SHEET NO: H100	231
COUNTY: MONROE	SCALE: AS NOTED	
GEOTHERMAL WELL PLAN		
SPARTA SWEF NO. 54		

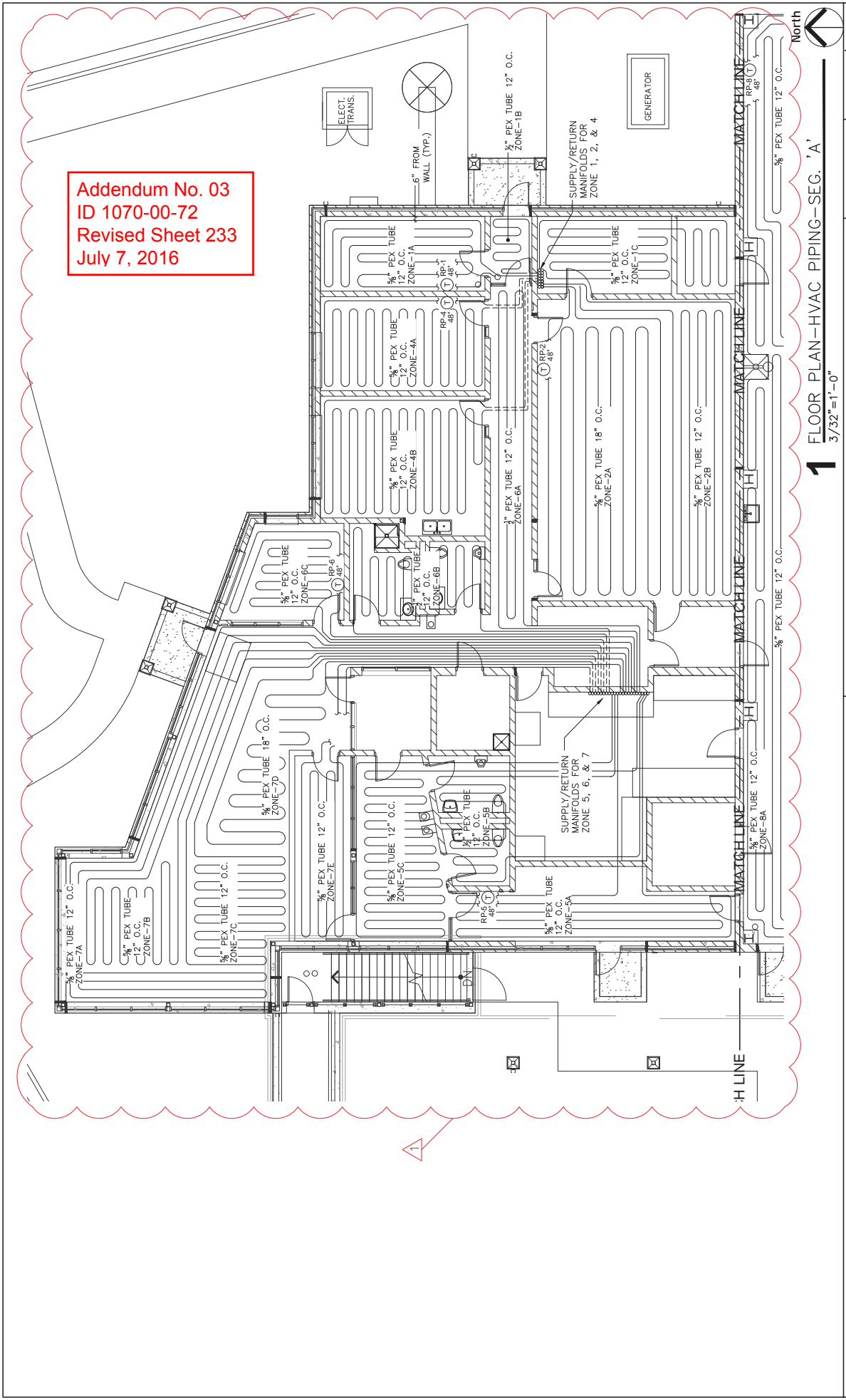
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 232
 July 7, 2016



1 UNDERFLOOR HVAC DUCT PLAN—SEG. 'B'
 3/32"=1'-0"

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	DATE: 06/03/16	REVISION Δ
STATE PROJECT NUMBER: 1070-00-72	COUNTY: MONROE	SHEET NO: H100B
HWY: IH 90	SPARTA SWEF NO. 54	SCALE: AS NOTED
		232

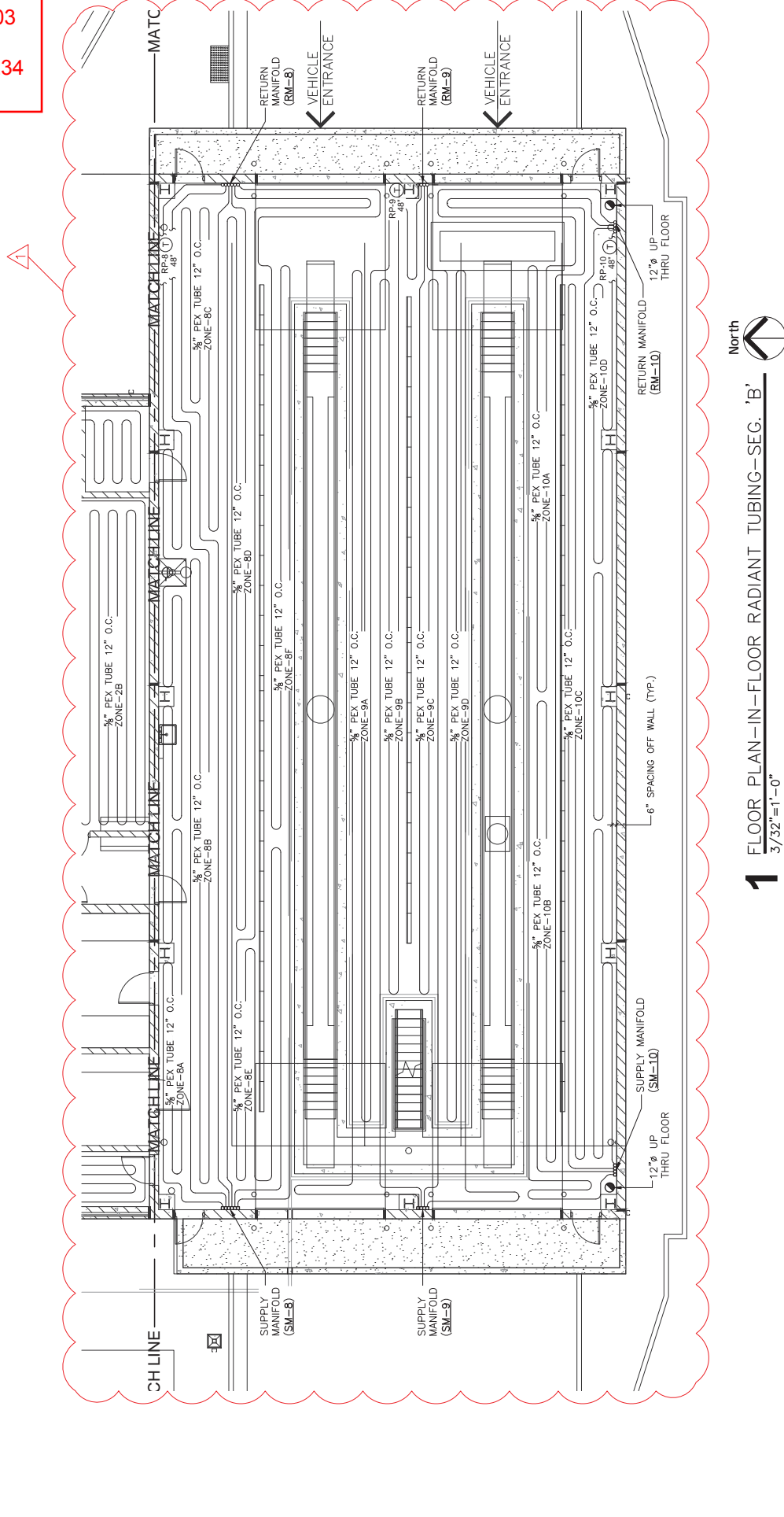
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 233
 July 7, 2016



1 FLOOR PLAN—HVAC PIPING—SEG. 'A'
 3/32"=1'-0"

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	DATE: 06/03/16	REVISION: Δ
STATE PROJECT NUMBER: 1070-00-72	Hwy: IH 90	SHEET NO: H101A
COUNTY: MONROE	SCALE: AS NOTED	233
HVAC PIPING PLAN		
SPARTA SWEF NO. 54		

Addendum No. 03
 ID 1070-00-72
 Revised Sheet 234
 July 7, 2016

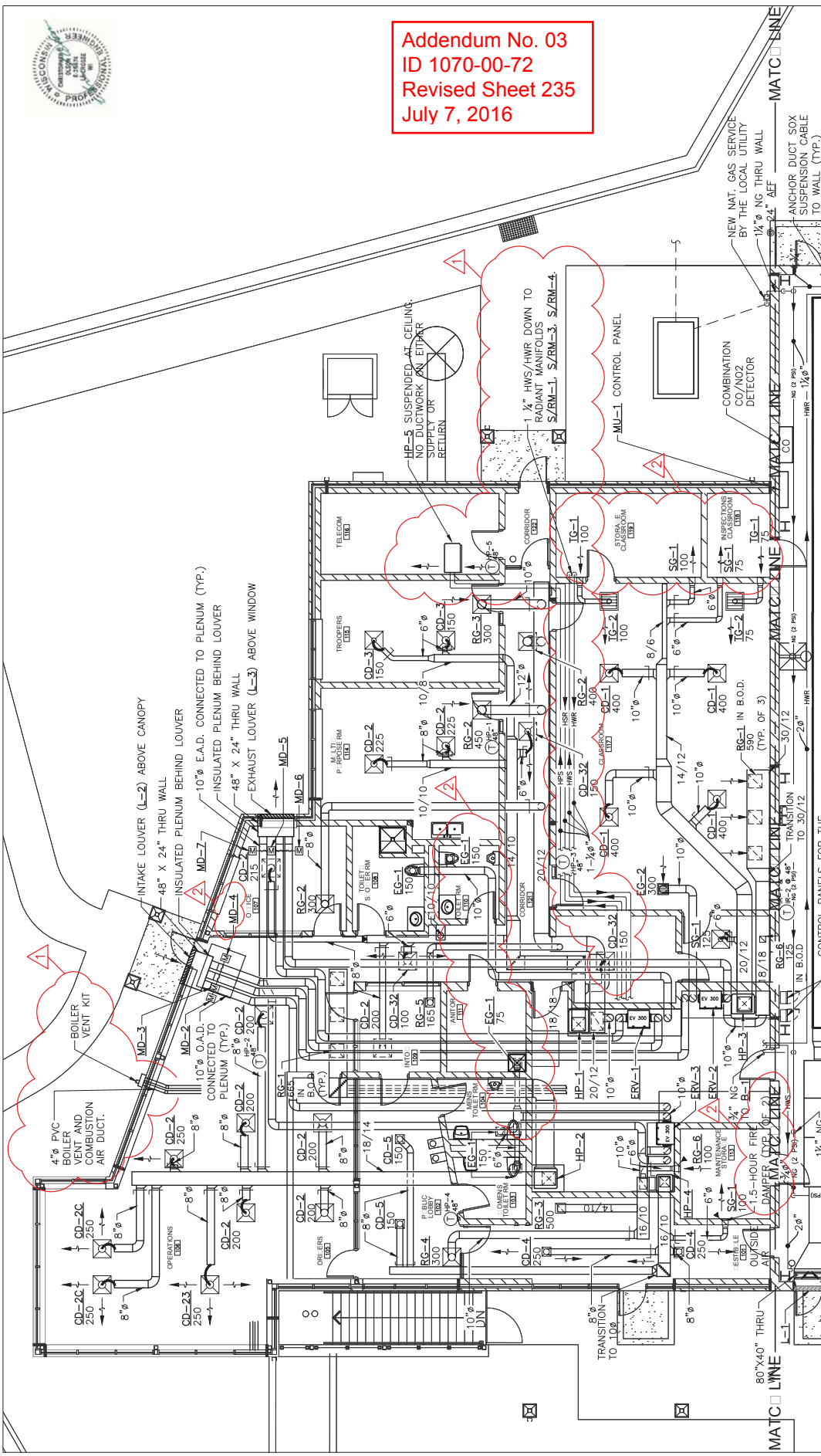


1 FLOOR PLAN-IN-FLOOR RADIANT TUBING--SEG. 'B'
 3/32"=1'-0"

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	COUNTY: MONROE	SCALE: AS NOTED	DATE: 06/03/16	REVISION: Δ
STATE PROJECT NUMBER: 1070-00-72	HWY: IH 90	SPARTA SWEF NO. 54	SHEET NO: H101B	234



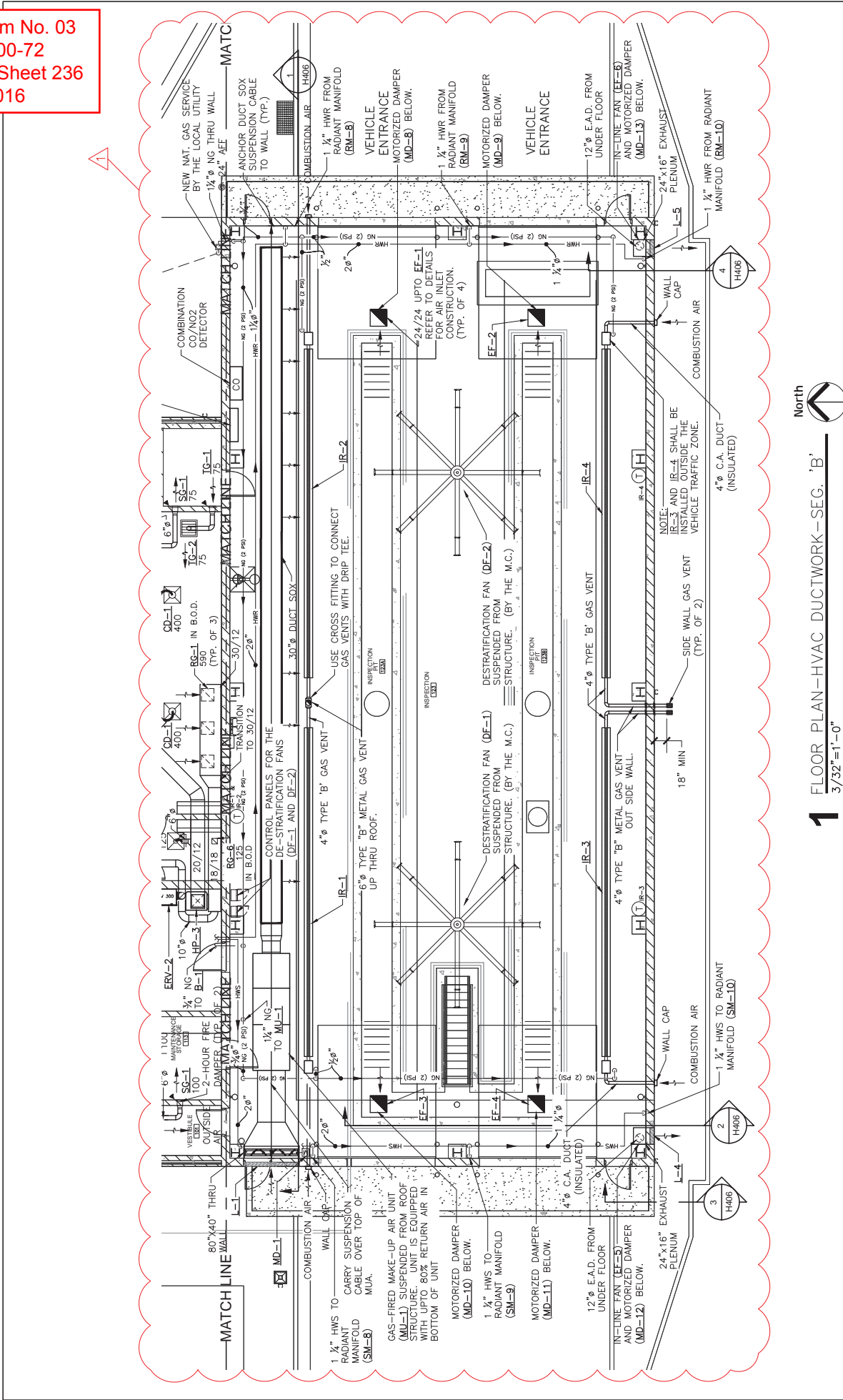
Addendum No. 03
 ID 1070-00-72
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 July 7, 2016



1 FLOOR PLAN-HVAC DUCTWORK-SEG. 'A'
 3/32"=1'-0"

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	DATE: 06/24/16	REVISION:
STATE PROJECT NUMBER: 1070-00-72	HWY: IH 90	SHEET NO: <input type="checkbox"/> 10 <input checked="" type="checkbox"/> A <input type="checkbox"/> B
COUNTY: MONROE	SCALE: AS NOTED	235

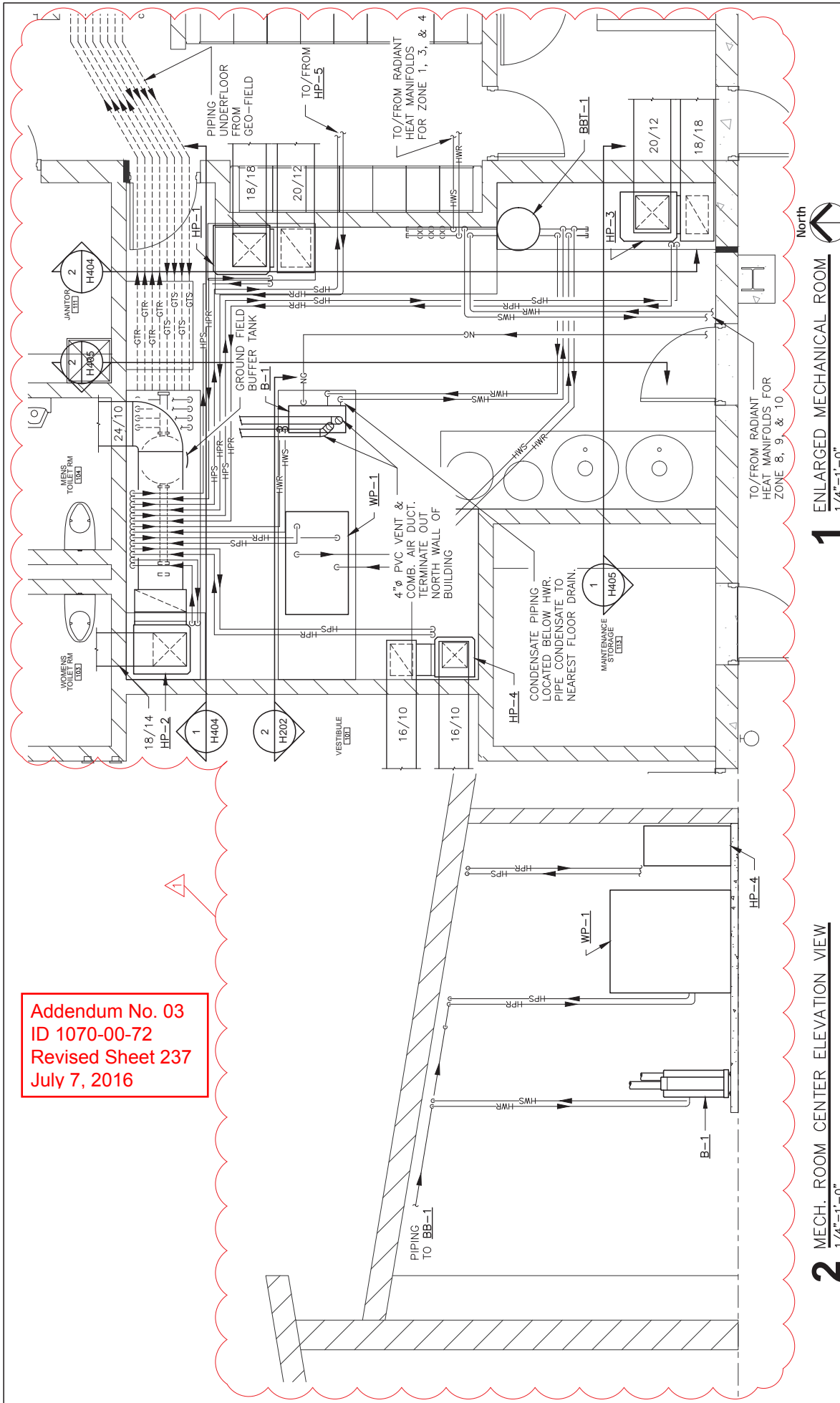
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 236
 July 7, 2016



1 FLOOR PLAN-HVAC DUCTWORK-SEG. 'B'
 3/32"=1'-0"

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	COUNTY: MONROE	SCALE: AS NOTED	DATE: 06/03/16
STATE PROJECT NUMBER: 1070-00-72	SPARTA SWEF NO. 54	REVISION Δ	SHEET NO: H102B
			236

Addendum No. 03
 ID 1070-00-72
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 July 7, 2016



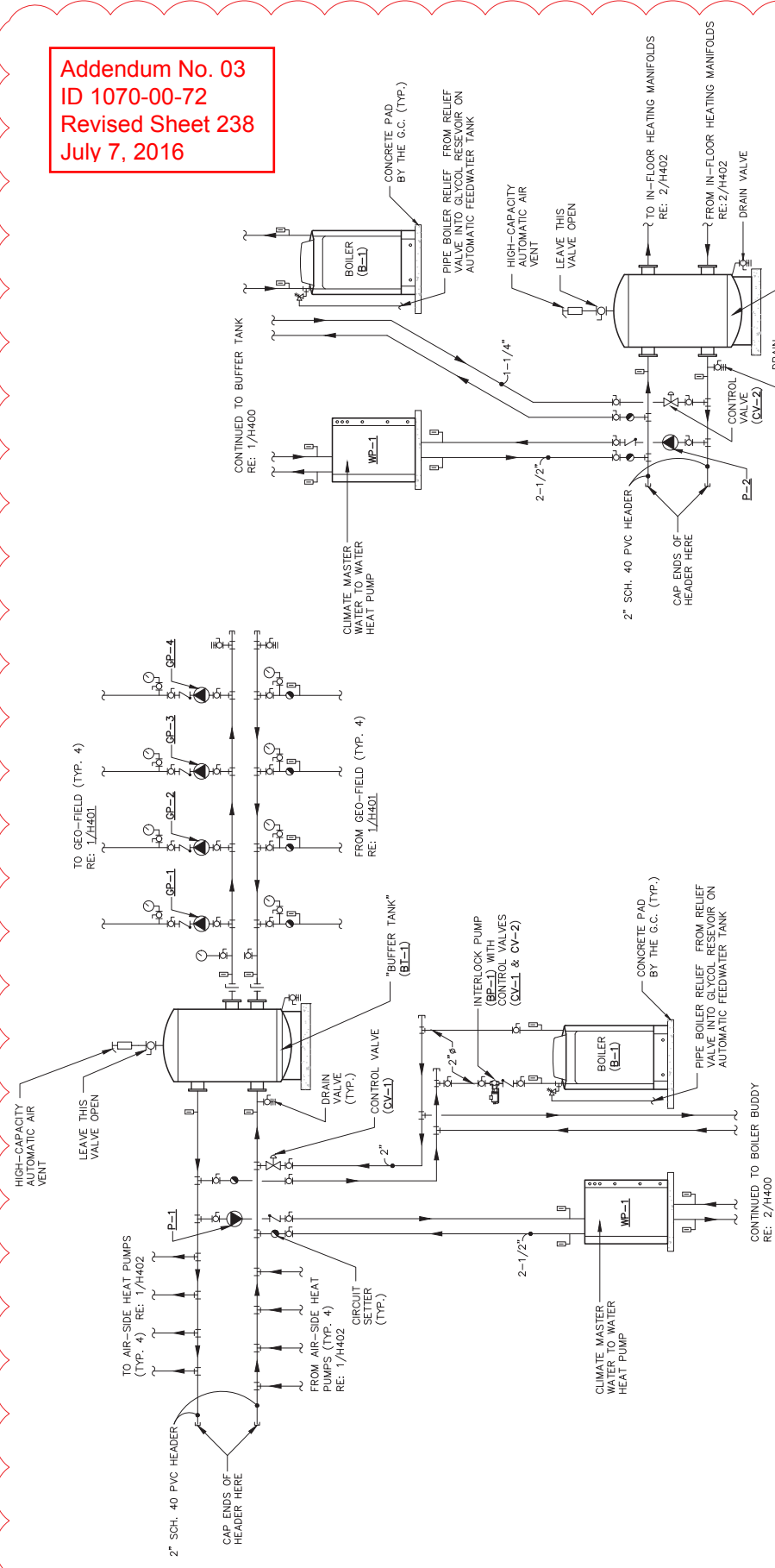
1 ENLARGED MECHANICAL ROOM
 1/4"=1'-0"

2 MECH. ROOM CENTER ELEVATION VIEW
 1/4"=1'-0"

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI		DATE: 06/03/16 REVISION Δ	
STATE PROJECT NUMBER: 1070-00-72		SHEET NO: H202	
COUNTY: MONROE		SCALE: AS NOTED	
SPARTA SWEF NO. 54		237	

Addendum No. 03
 ID 1070-00-72
 Revised Sheet 238
 July 7, 2016

1

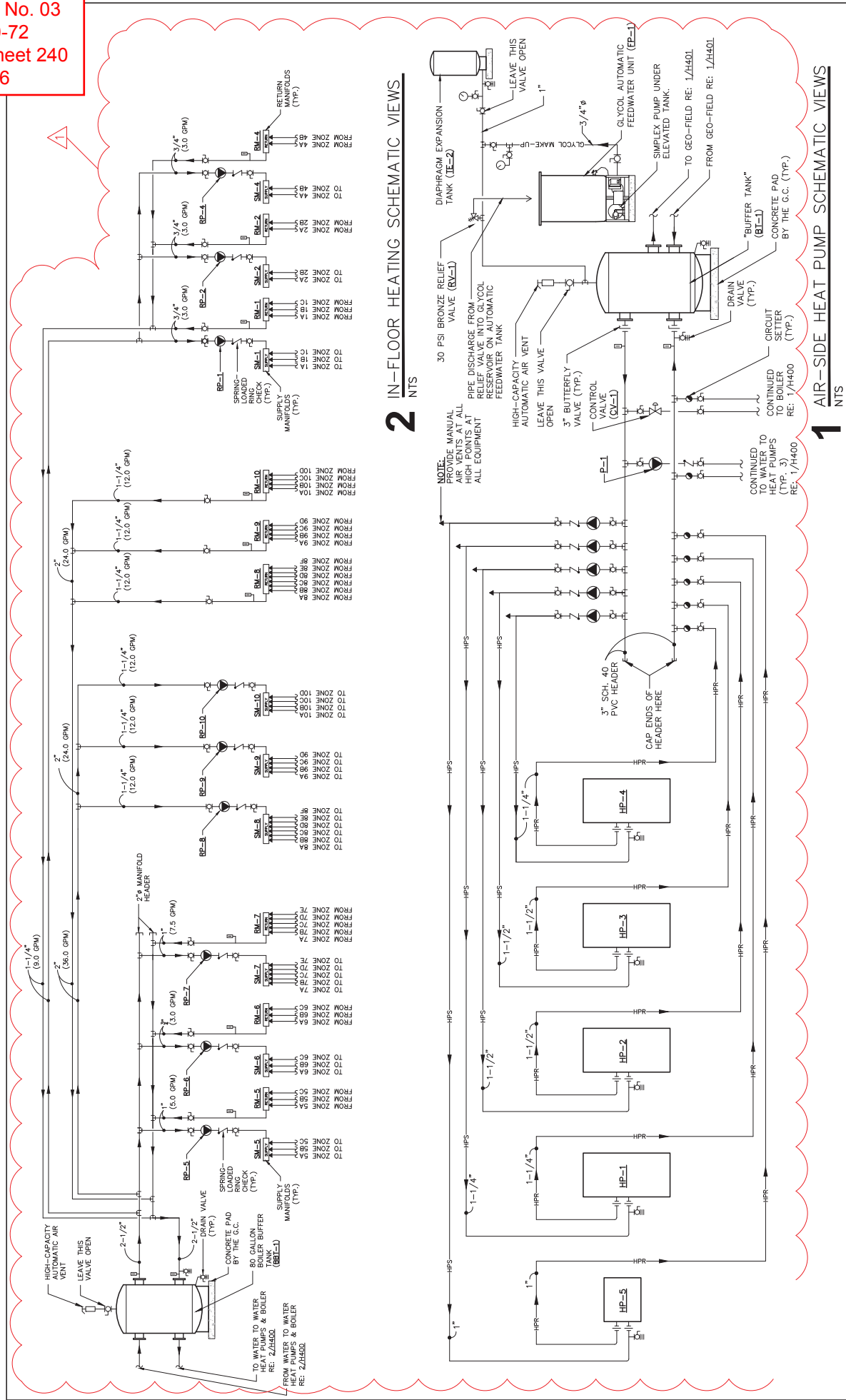


1 HVAC PIPING SCHEMATIC VIEWS
 NTS

2 HVAC PIPING SCHEMATIC VIEWS
 NTS

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	COUNTY: MONROE	DATE: 06/03/16	REVISION: Δ
STATE PROJECT NUMBER: 1070-00-72	HWY: IH 90	SCALE: AS NOTED	SHEET NO: 238
		H400	

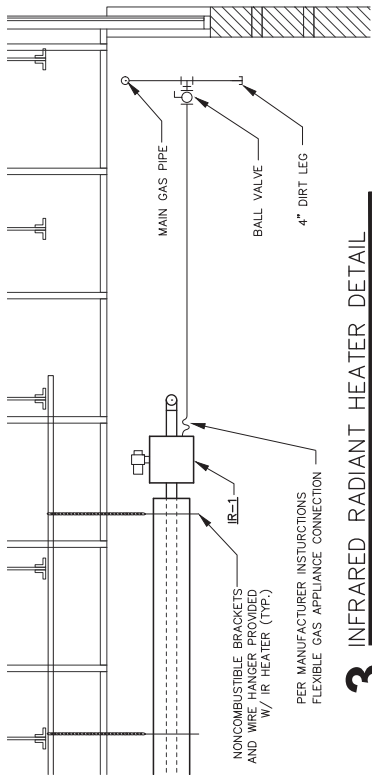
Addendum No. 03
 ID 1070-00-72
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 July 7, 2016



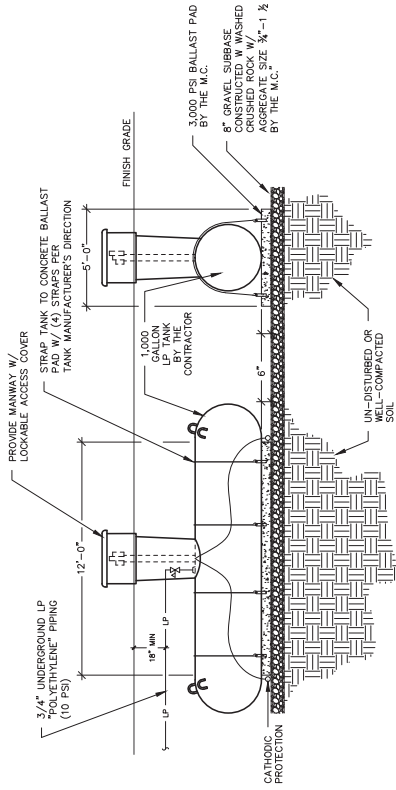
2 IN-FLOOR HEATING SCHEMATIC VIEWS

1 AIR-SIDE HEAT PUMP SCHEMATIC VIEWS

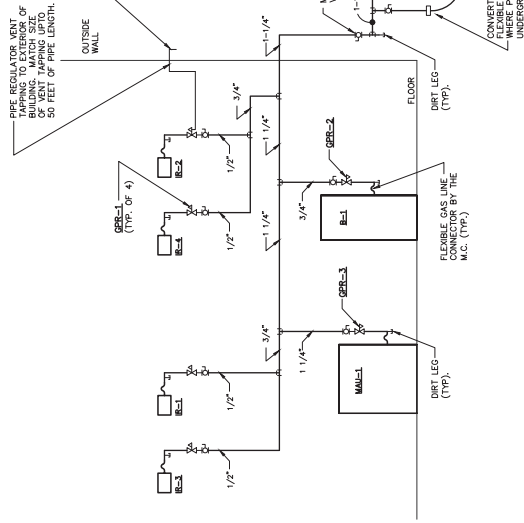
PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	DATE: 06/03/16	REVISION: A
STATE PROJECT NUMBER: 1070-00-72	Hwy: IH 90	COUNTY: MONROE
HVAC PIPING SCHEMATIC VIEWS		SCALE: AS NOTED
SPARTA SWEF NO. 54		SHEET NO: H402
		240



3 INFRARED RADIANT HEATER DETAIL
NTS



2 LP TANK INSTALLATION DETAIL VIEW
NTS

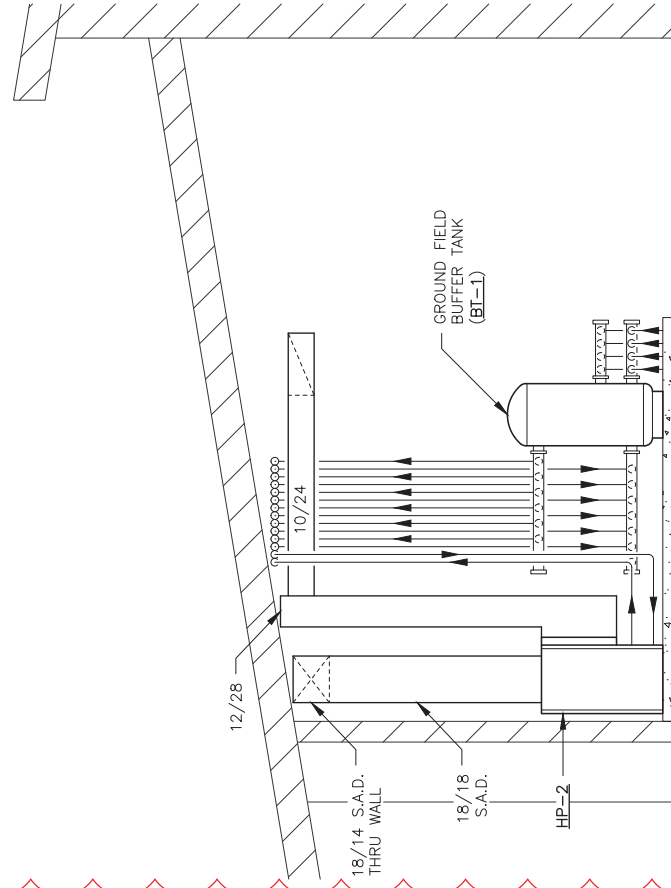


1 GAS PIPING SCHEMATIC VIEW
NTS

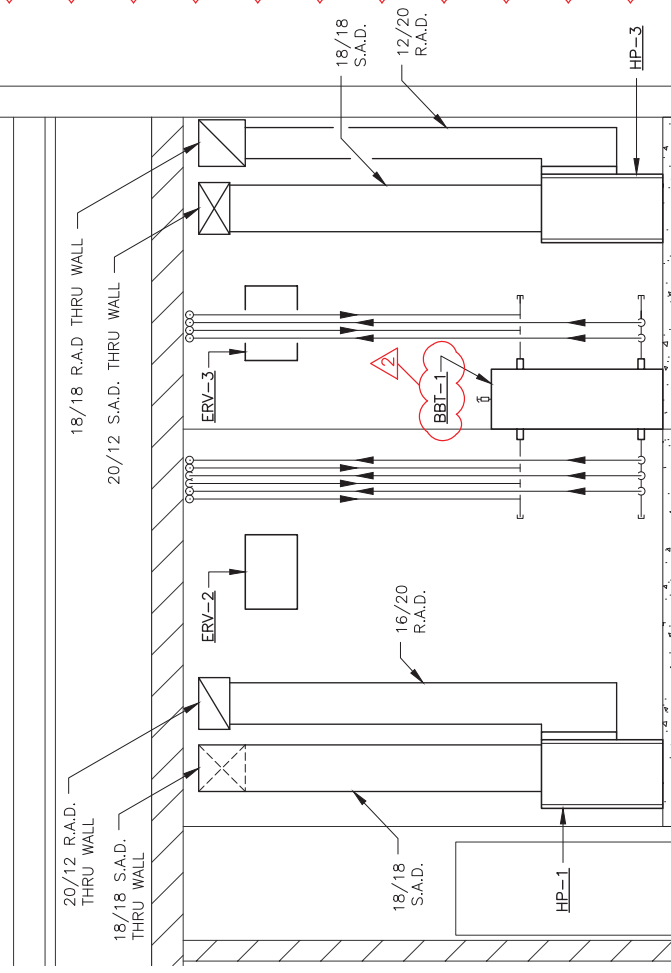
Addendum No. 03
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Revised Sheet 241
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Addendum No. 03
 ID 1070-00-72
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 July 7, 2016



1 MECH. ROOM NORTH ELEVATION VIEW
 3/32"=1'-0"



2 MECH. ROOM EAST ELEVATION VIEW
 3/32"=1'-0"

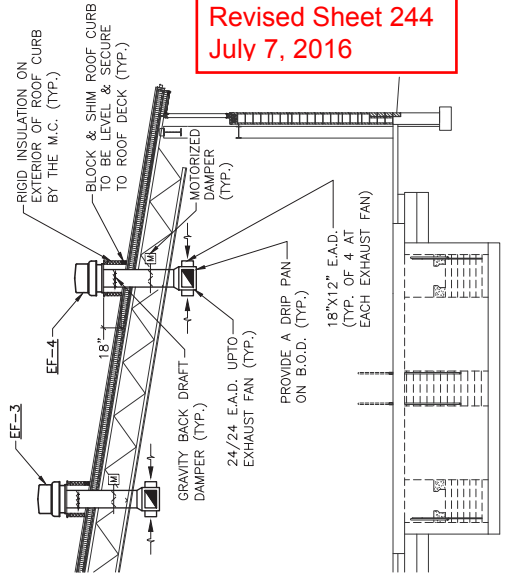
PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI
 STATE PROJECT NUMBER: 1070-00-72 HWY: IH 90 COUNTY: MONROE

AC SECTIONS
 SPARTA SHEET NO. 54

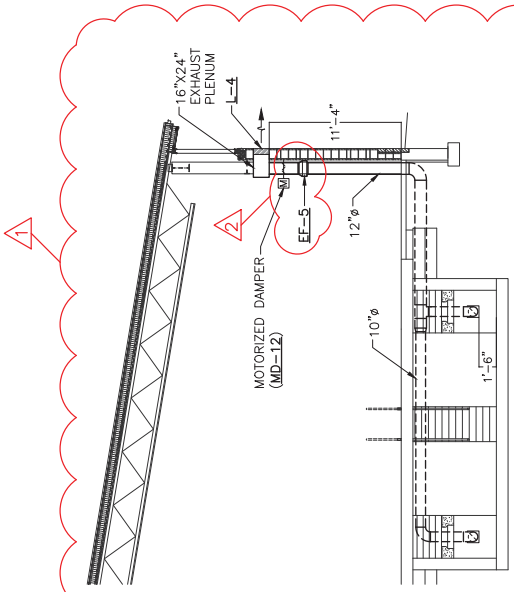
SCALE: AS NOTED

DATE: 06/24/16 REVISION Δ
 SHEET NO: 0 242

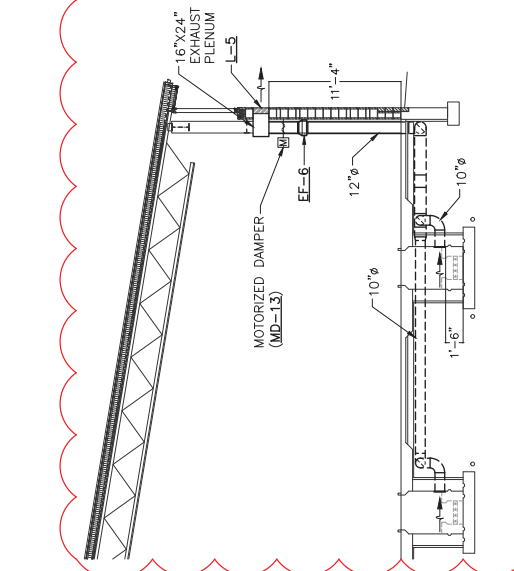
Addendum No. 03
 ID 1070-00-72
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 July 7, 2016



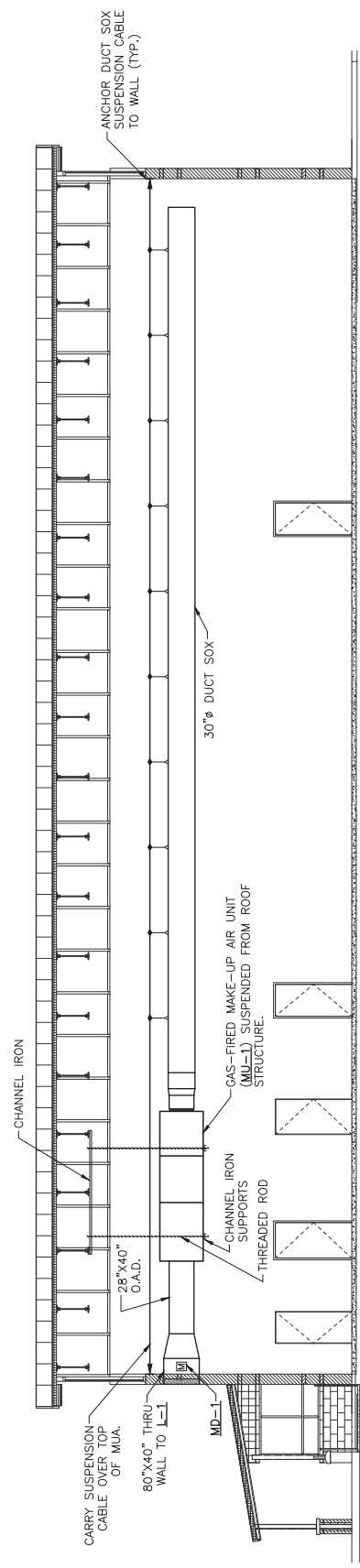
2 SECTION AT EF-3 AND EF-4
 3/32" = 1'-0"



3 SECTION AT L-4
 3/32" = 1'-0"



4 SECTION AT L-5
 3/32" = 1'-0"



1 SECTION AT MU-1
 3/32" = 1'-0"



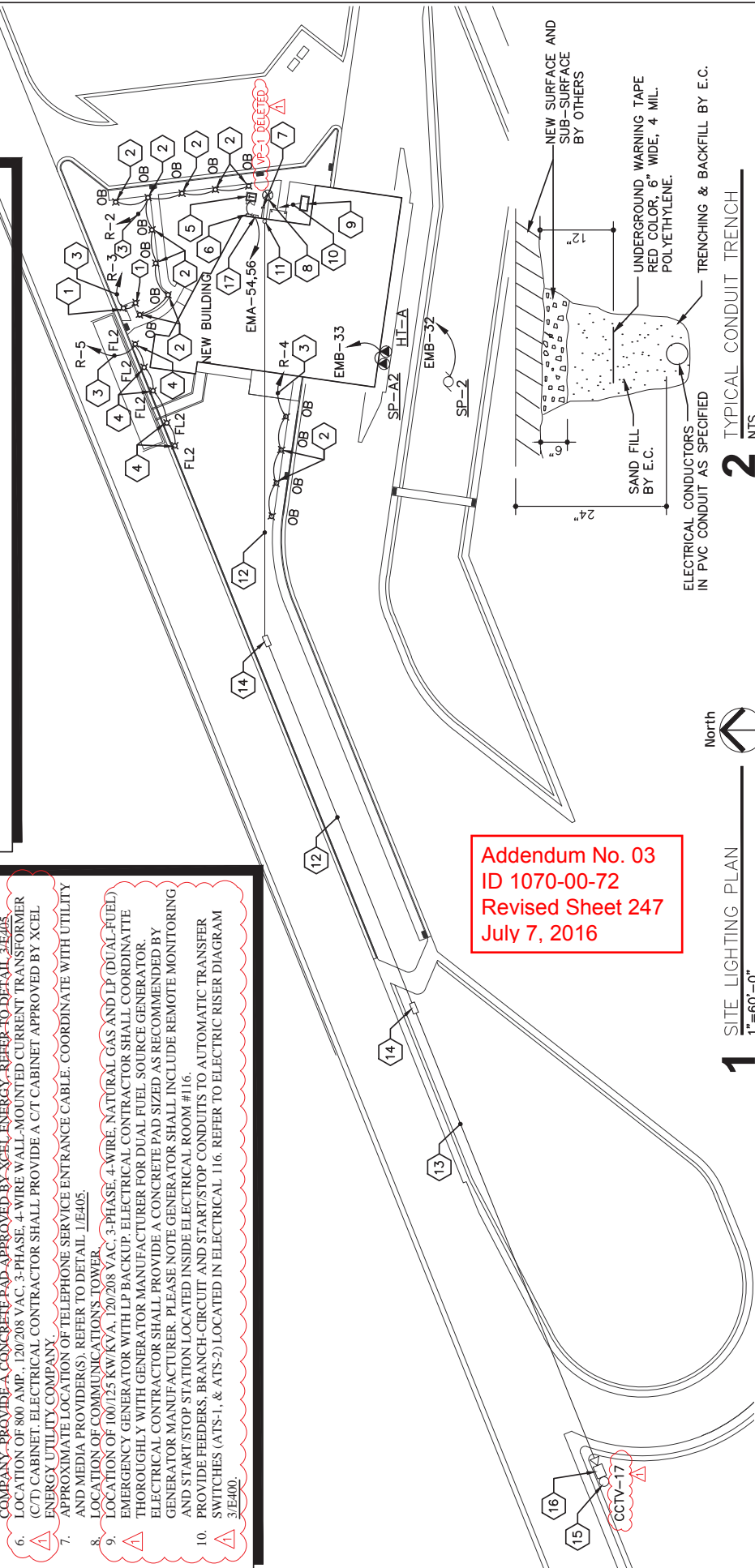
PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	COUNTY: MONROE	DATE: 06/24/16	REVISION:
STATE PROJECT NUMBER: 1070-00-72	HWY: IH 90	SHEET NO: <input type="checkbox"/> 0 <input type="checkbox"/>	244
AC SECTIONS		SCALE: AS NOTED	

KEYED SITE PLAN NOTES 1/E100:

1. MAKE FINAL CONNECTION TO FLAG-POLE LIGHT FIXTURE MOUNTED AT APPROXIMATELY 12'-0" ABOVE GRADE. PLEASE NOTE LIGHTING FIXTURE INCLUDED WITH FLAG POLE BY OTHERS. COORDINATE WITH FLAG POLE INSTALLER. CONNECT LIGHT FIXTURES TO LIGHTING CONTROL PANEL LOCATED IN ELECTRICAL ROOM #116. REFER TO DETAIL 3/E200.
2. REFER TO BOLLARD BASE DETAIL 2/E400.
3. TO RELAY IN LIGHTING CONTROL PANEL 'LCP' LOCATED IN ELECTRICAL ROOM 116. REFER TO 3/E200.
4. REFER TO TYPE 'FL2' MOUNTING DETAIL 2/E405.
5. LOCATION OF PAD-MOUNTED TRANSFORMER. COORDINATE WITH XCEL ENERGY UTILITY COMPANY - PROVIDE A CONCRETE PAD APPROVED BY XCEL ENERGY. REFER TO DETAIL 2/E405.
6. LOCATION OF 800 AMP, 120/208 VAC, 3-PHASE, 4 WIRE WALL-MOUNTED CURRENT TRANSFORMER (C/T) CABINET. ELECTRICAL CONTRACTOR SHALL PROVIDE A C/T CABINET APPROVED BY XCEL ENERGY UTILITY COMPANY.
7. APPROXIMATE LOCATION OF TELEPHONE SERVICE ENTRANCE CABLE. COORDINATE WITH UTILITY AND MEDIA PROVIDER(S). REFER TO DETAIL 1/E405.
8. LOCATION OF COMMUNICATIONS TOWER.
9. LOCATION OF 100/125 KW/KVA, 120/208 VAC, 3-PHASE, 4-WIRE, NATURAL GAS AND LP (DUAL-FUEL) EMERGENCY GENERATOR WITH LP BACKUP. ELECTRICAL CONTRACTOR SHALL COORDINATE THOROUGHLY WITH GENERATOR MANUFACTURER FOR DUAL-FUEL SOURCE GENERATOR. ELECTRICAL CONTRACTOR SHALL PROVIDE A CONCRETE PAD SIZED AS RECOMMENDED BY GENERATOR MANUFACTURER. PLEASE NOTE GENERATOR SHALL INCLUDE REMOTE MONITORING AND START/STOP STATION LOCATED INSIDE ELECTRICAL ROOM #116.
10. PROVIDE FEEDERS, BRANCH-CIRCUIT AND START/STOP CONDUITS TO AUTOMATIC TRANSFER SWITCHES (ATS-1, & ATS-2) LOCATED IN ELECTRICAL 116. REFER TO ELECTRIC RISER DIAGRAM 3/E400.

11. STUB-UP A 2" PVC CONDUIT BELOW WALL-MOUNTED EQUIPMENT RACK LOCATED IN ELECTRICAL/TELECOMM ROOM #116 FOR EXTERIOR CAMERA CABLING TO HIGH MAST LIGHT POLE. REFER TO DETAIL 1/E404.
12. PROVIDE A 2" SCHEDULE 40 PVC CONDUIT FOR EXTERIOR CAMERA CABLING LOCATED AT HIGH-RISE LIGHT POLE.
13. PROVIDE A 1" SCHEDULE 40 PVC CONDUIT FOR EXTERIOR CAMERA CABLING LOCATED AT HIGH-RISE LIGHT POLE.
14. PROVIDE A 13"(WIDE) X 24" (LONG) X 18" (DEEP) 'QUAZITE' WEATHERPROOF ENCLOSURE WITH 4" MOUNTING HOLES. LABEL TOP COVER 'LOW-VOLTAGE'. MODEL #PG118BB18 OR EQUAL.
15. APPROXIMATE LOCATION OF 'HIGH RISE' LIGHT POLE.
16. PROVIDE AND INSTALL AN EXTERIOR CAMERA AT APPROXIMATELY 15'-0" ABOVE GRADE.

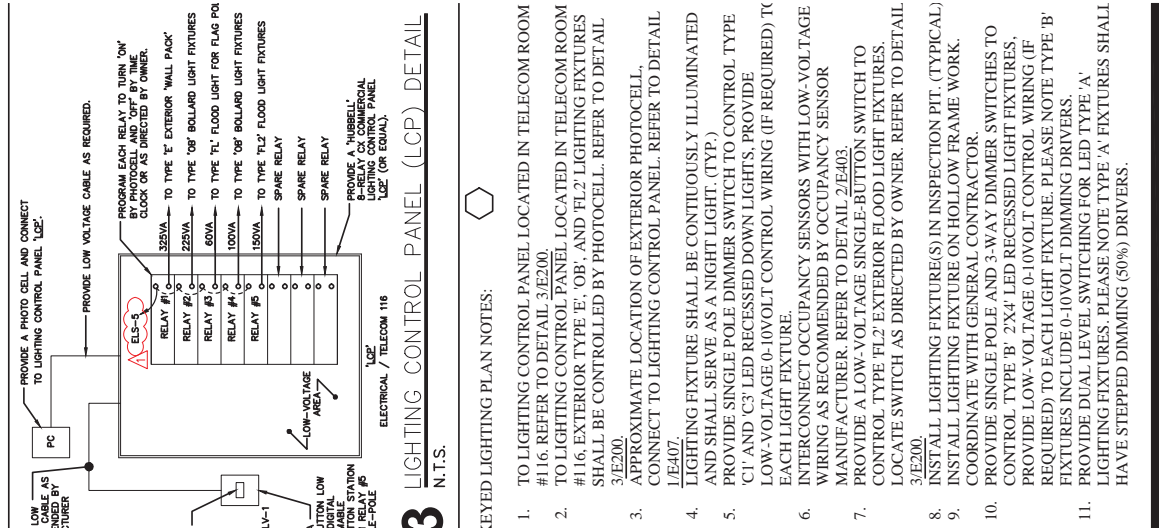
ADDENDUM NO. 03
ID 1070-00-72
Revised Sheet 247
July 7, 2016



2 TYPICAL CONDUIT TRENCH
 NTS

1 SITE LIGHTING PLAN
 1"=60'-0"

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA. CROSSE, WI	DATE: 06-03-2016	REVISION:
STATE PROJECT NUMBER: 1070-00-72	SCALE: AS NOTED	SHEET NO: E100
Hwy: IH 90	COUNTY: MONROE	247

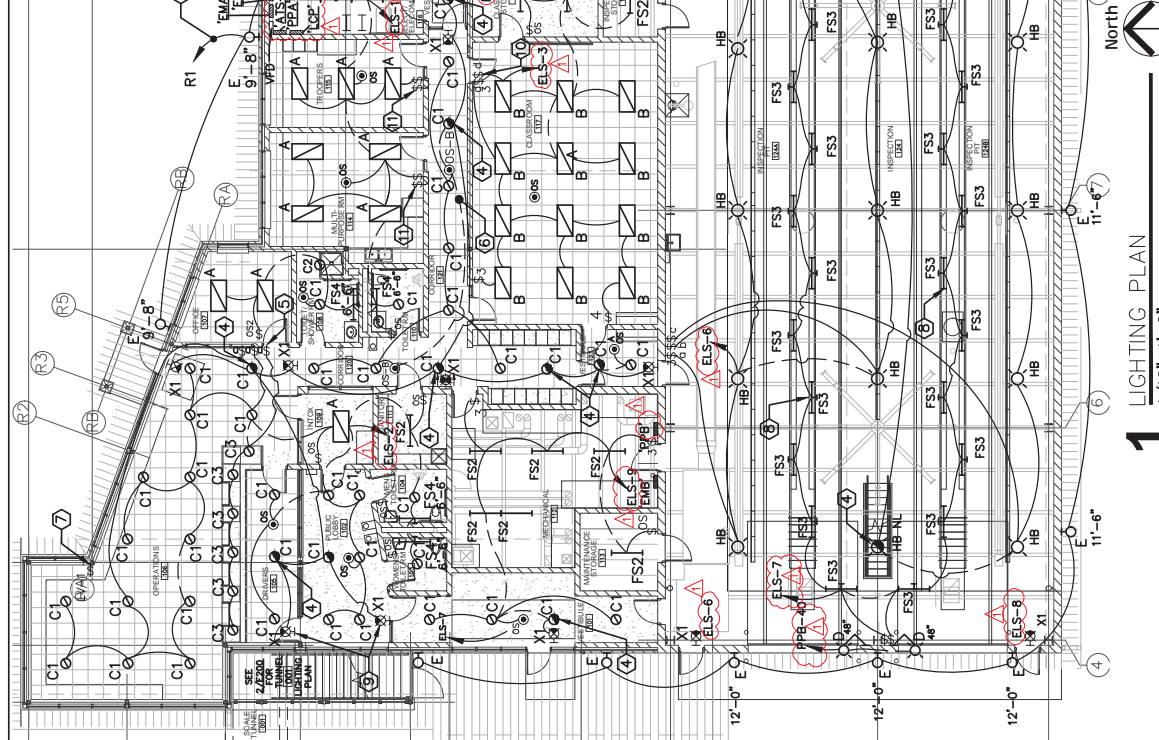


3 LIGHTING CONTROL PANEL (LCP) DETAIL

N.T.S.

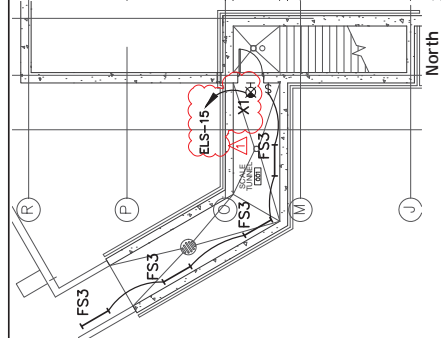
KEYED LIGHTING PLAN NOTES:

1. TO LIGHTING CONTROL PANEL LOCATED IN TELECOM ROOM #116. REFER TO DETAIL 3/E200.
2. TO LIGHTING CONTROL PANEL LOCATED IN TELECOM ROOM #116. EXTERIOR TYPE 'E', 'OB', AND 'FL2' LIGHTING FIXTURES SHALL BE CONTROLLED BY PHOTOCELL. REFER TO DETAIL 3/E200.
3. APPROXIMATE LOCATION OF EXTERIOR PHOTOCELL. CONNECT TO LIGHTING CONTROL PANEL. REFER TO DETAIL 1/E407.
4. LIGHTING FIXTURE SHALL BE CONTINUOUSLY ILLUMINATED AND SHALL SERVE AS A NIGHT LIGHT. (TYP.) PROVIDE SINGLE POLE DIMMER SWITCH TO CONTROL TYPE 'C1' AND 'C3' LED RECESSED DOWN LIGHTS. PROVIDE LOW-VOLTAGE 0-10VOLT CONTROL WIRING (IF REQUIRED) TO EACH LIGHT FIXTURE.
5. INTERCONNECT OCCUPANCY SENSORS WITH LOW-VOLTAGE WIRING AS RECOMMENDED BY OCCUPANCY SENSOR MANUFACTURER. REFER TO DETAIL 2/E403.
6. PROVIDE A LOW-VOLTAGE SINGLE-BUTTON SWITCH TO CONTROL TYPE 'FL2' EXTERIOR FLOOD LIGHT FIXTURES. LOCATE SWITCH AS DIRECTED BY OWNER. REFER TO DETAIL 3/E200.
7. INSTALL LIGHTING FIXTURE(S) IN INSPECTION PIT. (TYPICAL)
8. INSTALL LIGHTING FIXTURE ON HOLLOW FRAME WORK. COORDINATE WITH GENERAL CONTRACTOR.
9. PROVIDE SINGLE POLE AND 3-WAY DIMMER SWITCHES TO CONTROL TYPE 'B' 2'X4' LED RECESSED LIGHT FIXTURES. PROVIDE LOW-VOLTAGE 0-10VOLT CONTROL WIRING (IF REQUIRED) TO EACH LIGHT FIXTURE. PLEASE NOTE TYPE 'B' FIXTURES INCLUDE 0-10VOLT DIMMING DRIVERS.
10. PROVIDE DUAL LEVEL SWITCHING FOR LED TYPE 'A' LIGHTING FIXTURES. PLEASE NOTE TYPE 'A' FIXTURES SHALL HAVE STEPPED DIMMING (50%) DRIVERS.



1 LIGHTING PLAN

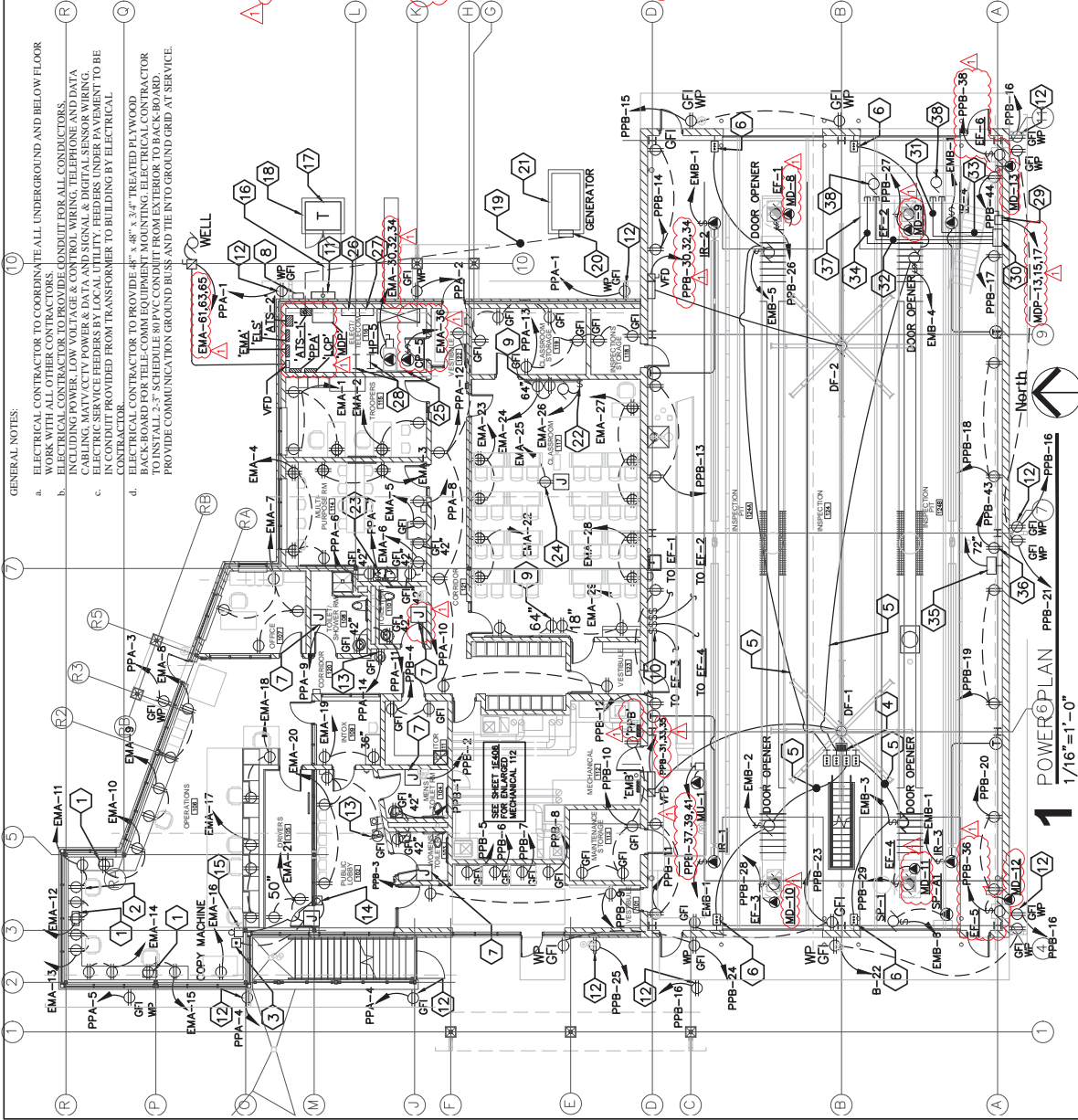
1/16"=1'-0"



2 TUNNEL PLAN

1/16"=1'-0"

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- KEYED POWER PLAN NOTES:**
1. LOCATION OF WEIGH-IN-MOTION INSPECTION CCTV WINDOW.
 2. MOUNT RECEPTACLE FOR PUSH BUTTON OPERATORS FOR OVERHEAD DOORS LOCATED ON THIS COLUMN. FOUR PUSH BUTTON SHALL UNLATCH DOOR WHEN ENERGIZED. FIELD VERIFY EXACT LOCATION WITH OWNER.
 3. CONNECTION TO PUSH BUTTON DOOR OPERATORS FOR OVERHEAD DOORS LOCATED ON THIS COLUMN. FOUR (4) DOORS TOTAL.
 4. PROVIDE LOW-VOLTAGE WIRING BETWEEN OVERHEAD DOOR PUSH BUTTON OPERATOR AND OVERHEAD DOOR MOTOR CONTROLLER AS RECOMMENDED BY OVERHEAD DOOR MANUFACTURER. ROUTE WIRING BELOW CONCRETE SLAB IN SCHEDULE 40 PVC CONDUIT TO AN EXTERIOR WALL AND RISE ABOVE CONCRETE FLOOR TO THE CEILING AND CONVERT TO 2\"/>
 - 10. PROVIDE A DUPLEX RECEPTACLE FOR WALL-MOUNTED MONITOR FOR A SYSTEM.
 - 11. PROVIDE A SINGLE POLE MOTOR RATED MANUAL SWITCH TO CONTROL EXHAUST FAN. PROVIDE A STAINLESS STEEL COVER PLATE WITH APPROXIMATELY 4\"/>
 - 12. PROVIDE A CONDUIT FOR TELECOM EQUIPMENT MOUNTING ELECTRICAL CONTRACTOR TO INSTALL 2\"/>
 - 13. PROVIDE AND INSTALL A HEAT TAPE CONTROL PANEL AS SPECIFIED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DRAWINGS AND DETAILS FOR ESTIMATING LENGTHS. REFER TO DETAIL 2/E641.
 - 14. PROVIDE ADIPEX RECEPTACLE FOR ELECTRIC WATER COOLER. COORDINATE WITH PLUMBING CONTRACTOR.
 - 15. PROVIDE AND INSTALL PUSH BUTTON FOR DOOR BELL LOCATED IN OPERATIONS ROOM FOR ACTUATION WITH OWNER. PROVIDE THE FOLLOWING PUSHBUTTON: NUTONE APPROX. BLACK COLOR, DOOR CHIME, NUTONE LAI W/WHITE COLOR, TRANSFORMER: NUTONE C905 (FOR SINGLE CHIME), OR APPROVED EQUAL.
 - 16. NEW UNDERGROUND SECONDARY ELECTRIC SERVICE. REFER TO ELECTRIC RISER DIAGRAM 3/E40.
 - 17. MAKE FINAL CONNECTION TO PUSH BUTTON DOOR OPERATOR FOR OVERHEAD DOOR LOCATION ON THIS COLUMN. PROVIDE A JUNCTION BOX 4\"/>
 - 18. PROVIDE AND INSTALL HEAT TAPE CONTROL PANEL AS SPECIFIED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DRAWINGS AND DETAILS FOR ESTIMATING LENGTHS. REFER TO DETAIL 2/E641.
 - 19. PROVIDE ADIPEX RECEPTACLE FOR WALL-MOUNTED MONITOR FOR A SYSTEM.
 - 20. PROVIDE A SINGLE POLE MOTOR RATED MANUAL SWITCH TO CONTROL EXHAUST FAN. PROVIDE A STAINLESS STEEL COVER PLATE WITH APPROXIMATELY 4\"/>
 - 21. PROVIDE A CONDUIT FOR TELECOM EQUIPMENT MOUNTING ELECTRICAL CONTRACTOR TO INSTALL 2\"/>
 - 22. PROVIDE AND INSTALL A HEAT TAPE CONTROL PANEL AS SPECIFIED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DRAWINGS AND DETAILS FOR ESTIMATING LENGTHS. REFER TO DETAIL 2/E641.
 - 23. PROVIDE ADIPEX RECEPTACLE FOR ELECTRIC WATER COOLER. COORDINATE WITH PLUMBING CONTRACTOR.
 - 24. PROVIDE AND INSTALL PUSH BUTTON FOR DOOR BELL LOCATED IN OPERATIONS ROOM FOR ACTUATION WITH OWNER. PROVIDE THE FOLLOWING PUSHBUTTON: NUTONE APPROX. BLACK COLOR, DOOR CHIME, NUTONE LAI W/WHITE COLOR, TRANSFORMER: NUTONE C905 (FOR SINGLE CHIME), OR APPROVED EQUAL.
 - 25. NEW UNDERGROUND SECONDARY ELECTRIC SERVICE. REFER TO ELECTRIC RISER DIAGRAM 3/E40.
 - 26. MAKE FINAL CONNECTION TO PUSH BUTTON DOOR OPERATOR FOR OVERHEAD DOOR LOCATION ON THIS COLUMN. PROVIDE A JUNCTION BOX 4\"/>
 - 27. PROVIDE AND INSTALL HEAT TAPE CONTROL PANEL AS SPECIFIED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DRAWINGS AND DETAILS FOR ESTIMATING LENGTHS. REFER TO DETAIL 2/E641.
 - 28. PROVIDE ADIPEX RECEPTACLE FOR WALL-MOUNTED MONITOR FOR A SYSTEM.
 - 29. PROVIDE A SINGLE POLE MOTOR RATED MANUAL SWITCH TO CONTROL EXHAUST FAN. PROVIDE A STAINLESS STEEL COVER PLATE WITH APPROXIMATELY 4\"/>
 - 30. PROVIDE A CONDUIT FOR TELECOM EQUIPMENT MOUNTING ELECTRICAL CONTRACTOR TO INSTALL 2\"/>
 - 31. PROVIDE AND INSTALL A HEAT TAPE CONTROL PANEL AS SPECIFIED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DRAWINGS AND DETAILS FOR ESTIMATING LENGTHS. REFER TO DETAIL 2/E641.
 - 32. PROVIDE ADIPEX RECEPTACLE FOR ELECTRIC WATER COOLER. COORDINATE WITH PLUMBING CONTRACTOR.
 - 33. PROVIDE AND INSTALL PUSH BUTTON FOR DOOR BELL LOCATED IN OPERATIONS ROOM FOR ACTUATION WITH OWNER. PROVIDE THE FOLLOWING PUSHBUTTON: NUTONE APPROX. BLACK COLOR, DOOR CHIME, NUTONE LAI W/WHITE COLOR, TRANSFORMER: NUTONE C905 (FOR SINGLE CHIME), OR APPROVED EQUAL.
 - 34. NEW UNDERGROUND SECONDARY ELECTRIC SERVICE. REFER TO ELECTRIC RISER DIAGRAM 3/E40.
 - 35. MAKE FINAL CONNECTION TO PUSH BUTTON DOOR OPERATOR FOR OVERHEAD DOOR LOCATION ON THIS COLUMN. PROVIDE A JUNCTION BOX 4\"/>
 - 36. PROVIDE AND INSTALL HEAT TAPE CONTROL PANEL AS SPECIFIED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DRAWINGS AND DETAILS FOR ESTIMATING LENGTHS. REFER TO DETAIL 2/E641.
 - 37. PROVIDE ADIPEX RECEPTACLE FOR WALL-MOUNTED MONITOR FOR A SYSTEM.
 - 38. PROVIDE A SINGLE POLE MOTOR RATED MANUAL SWITCH TO CONTROL EXHAUST FAN. PROVIDE A STAINLESS STEEL COVER PLATE WITH APPROXIMATELY 4\"/>
 - 39. PROVIDE A CONDUIT FOR TELECOM EQUIPMENT MOUNTING ELECTRICAL CONTRACTOR TO INSTALL 2\"/>
 - 40. PROVIDE AND INSTALL A HEAT TAPE CONTROL PANEL AS SPECIFIED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DRAWINGS AND DETAILS FOR ESTIMATING LENGTHS. REFER TO DETAIL 2/E641.

41. ELECTRICAL CONTRACTOR TO COORDINATE ALL UNDERGROUND AND BELOW FLOOR WORK WITH ALL OTHER CONTRACTORS. PROVIDE CONDUIT FOR ALL CONDUITORS.
42. INCLUDING POWER, LOW VOLTAGE CONTROL WIRING, TELEPHONE, AND DATA CABLING. MOUNT LOW VOLTAGE CONTROL WIRING, TELEPHONE, AND DATA CABLING SERVICE FEEDERS BY LOCAL UTILITY. FEEDERS UNDER PAVEMENT TO BE IN CONDUIT PROVIDED FROM TRANSFORMER TO BUILDING BY ELECTRICAL CONTRACTOR.
43. CONTRACTOR TO PROVIDE 4\"/>
- 44. CONTRACTOR TO PROVIDE 4\"/>
- 45. BACK-BRAND FOR TELECOM EQUIPMENT MOUNTING ELECTRICAL CONTRACTOR TO INSTALL 2\"/>
- 46. PROVIDE 2\"/>
- 47. PROVIDE COMMUNICATION GROUND BUS AND INTO GROUND GRID AT SERVICE.
- 48. PROVIDE COMMUNICATION GROUND BUS AND INTO GROUND GRID AT SERVICE.
- 49. PROVIDE COMMUNICATION GROUND BUS AND INTO GROUND GRID AT SERVICE.
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- 97. PROVIDE COMMUNICATION GROUND BUS AND INTO GROUND GRID AT SERVICE.
- 98. PROVIDE COMMUNICATION GROUND BUS AND INTO GROUND GRID AT SERVICE.
- 99. PROVIDE COMMUNICATION GROUND BUS AND INTO GROUND GRID AT SERVICE.
- 100. PROVIDE COMMUNICATION GROUND BUS AND INTO GROUND GRID AT SERVICE.

GENERAL NOTES:

- ELECTRICAL CONTRACTOR TO COORDINATE ALL UNDERGROUND AND BELOW FLOOR WORK WITH ALL OTHER CONTRACTORS. PROVIDE CONDUIT FOR ALL CONDUITORS.
- INCLUDING POWER, LOW VOLTAGE CONTROL WIRING, TELEPHONE, AND DATA CABLING. MOUNT LOW VOLTAGE CONTROL WIRING, TELEPHONE, AND DATA CABLING SERVICE FEEDERS BY LOCAL UTILITY. FEEDERS UNDER PAVEMENT TO BE IN CONDUIT PROVIDED FROM TRANSFORMER TO BUILDING BY ELECTRICAL CONTRACTOR.
- CONTRACTOR TO PROVIDE 4\"/>
- CONTRACTOR TO PROVIDE 4\"/>
- BACK-BRAND FOR TELECOM EQUIPMENT MOUNTING ELECTRICAL CONTRACTOR TO INSTALL 2\"/>
- PROVIDE 2\"/>
- PROVIDE COMMUNICATION GROUND BUS AND INTO GROUND GRID AT SERVICE.

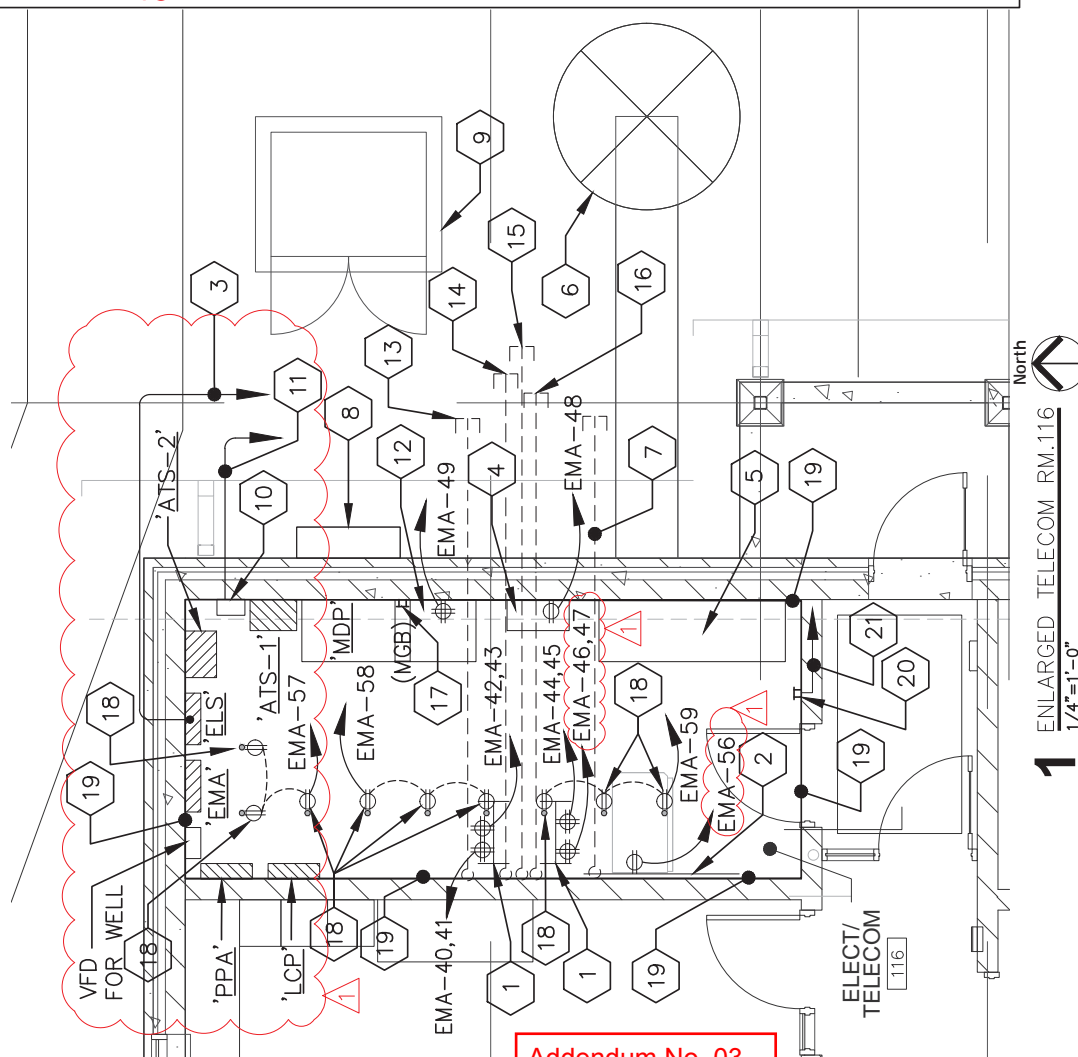
ELECTRICAL POWER PLAN
 SCALE: AS NOTED
 SPARTA SWEF NO. 54
 COUNTY: MONROE
 HWY: IH 90
 PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI
 STATE PROJECT NUMBER: 1070-00-72
 1 POWER PLAN
 1/16" = 1'-0"

DATE: 06-03-2016	REVISION: A
SHEET NO: E300	249

Addendum No. 03
 ID 1070-00-72
 Revised Sheet 249
 July 7, 2016

KEYED TELECOM ROOM 116 NOTES 1/E302:

1. PROVIDE TWO (2) EQUIPMENT RACKS FOR DATA, WEIGH-IN-MOTION AND PREPASS ELECTRICAL EQUIPMENT. REFER TO DETAIL 1/E401.
2. ELECTRICAL CONTRACTOR TO PROVIDE 48" HIGH, FIRE PROOF PLYWOOD BACKBOARD FOR LOW VOLTAGE EQUIPMENT REQUIRED FOR TELEPHONE, DATA, RF AND SECURITY PROVIDED AND INSTALLED BY OTHERS. REFER TO DETAIL 1/E405.
3. PROVIDE A #4 SCHEDULE 40 PVC CONDUIT BETWEEN PANELBOARD 'ELS' AND EMERGENCY GENERATOR FOR BATTERY CHARGER, RECEPTACLE, HEATER, ETC. WITH BRANCH CIRCUITS ELS-1, 13, & 14.
4. WEATHER MONITOR SYSTEM. ROUTE RG-6 CABLE FROM SATELLITE DISH TO CONVERTER BOX LOCATED IN TELECOM ROOM 116. THEN EXTEND RG-6 CABLE TO MONITOR IN DRIVERS ROOM 105.
5. OPEN SPACE FOR SPECIALIZED RADIO TOWER EQUIPMENT INSTALLATION BY OTHERS.
6. RADIO / SATELLITE TOWER BY OTHERS.
7. PROVIDE TWO (3") PVC CONDUITS FOR TELEPHONE/MEDIA/FIBRE-OPTIC SERVICE CABLES. REFER TO DETAIL 1/E405.
8. LOCATION OF WALL-MOUNTED CURRENT TRANSFORMER (C/T) CABINET.
9. LOCATION OF XCEL ENERGY PAD-MOUNTED TRANSFORMER. REFER TO ELECTRIC RISER DIAGRAM 3/E400.
10. PROVIDE AND INSTALL A REMOTE MONITOR WITH START/STOP STATION FOR EMERGENCY GENERATOR SYSTEM.
11. PROVIDE A LOW-VOLTAGE CABLE AS RECOMMENDED BY EMERGENCY GENERATOR MANUFACTURER BETWEEN REMOTE ANNUNCIATOR STATION AND EMERGENCY GENERATOR.
12. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL A WALL-MOUNTED EQUIPMENT RACK FOR CCTV AND PUBLIC ADDRESS SYSTEM RACK-MOUNTED EQUIPMENT.
13. STUB OUT AN EMPTY 2" SCHEDULE 40 PVC CONDUIT FOR POWER WIRING TO 'WEIGH-IN-MOTION' SYSTEM.
14. 'WEIGH-IN-MOTION' SYSTEM.
15. STUB OUT AN EMPTY 2" SCHEDULE 40 PVC CONDUIT FOR FIBER-OPTIC WIRING TO 'WEIGH-IN-MOTION' SYSTEM.
16. STUB OUT AN EMPTY 2" SCHEDULE 40 PVC CONDUIT FOR PREPASS WIRING SYSTEM. RAMP 'WEIGH-IN-MOTION' SYSTEM.
17. LOCATION OF 'MAIN GROUNDING BAR' (MGB). REFER TO DETAILS 1/E402 AND 2/E402.
18. ELECTRICAL CONTRACTOR SHALL PROVIDE A 20 AMP., 120V AC DUPLEX RECEPTACLE PENDANT CORD DROP. FIELD VERIFY EXACT LOCATION ON-SITE WITH OWNER. PROVIDE THE FOLLOWING:
4"x4"x2-1/8" SURFACE JUNCTION BOX MOUNTED AT STRUCTURAL CEILING, SO CORD RELIEF STRAIN CONNECTOR INSTALLED AT JUNCTION BOX. #12/3 SO CORD (LENGTH AS REQUIRED), KELLEMS WIRE GRIP ON END OF SO CORD BY DUPLEX RECEPTACLE. 'YELLOW' HEAVY DUTY JUNCTION BOX WITH 20AMP., 120V AC DUPLEX RECEPTACLE WITH STRAIN RELIEF CONNECTOR. PENDANT CORD DROP SHALL BE INSTALLED APPROXIMATELY 10'-0" A.F.F.
19. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL A 'HALO' GROUNDING SYSTEM IN ELECT/TELECOM ROOM 116. INSTALL A #2 BARE COPPER GROUND CONDUCTOR SECURELY FASTENED TO PERIMETER OF ROOM AT APPROXIMATELY 10'-0" A.F.F.
20. PROVIDE A COPPER GROUND BAR APPROXIMATELY 4" HIGH X 18" LONG FOR 'HALO' GROUND SYSTEM.
21. PROVIDE A #4/0 COPPER CONDUCTOR AND CONNECT TO GROUND RING LOCATED ON EXTERIOR OF BUILDING. COORDINATE WITH LIGHTNING PROTECTION CONTRACTOR.



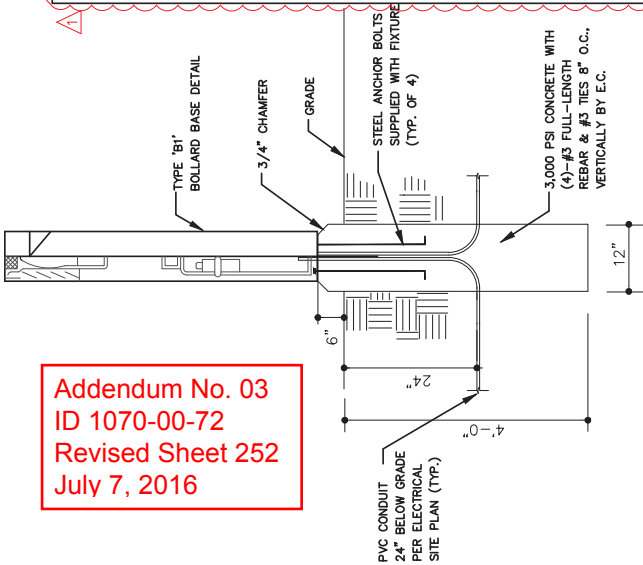
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 251
 July 7, 2016

1 ENLARGED TELECOM RM.116
1/4" = 1'-0"

FEEDER SCHEDULE			
SYMBOL	AMPS	CONDUCTOR SIZE	NUMBER OF CONDUCTORS
A	30	10	4
B	60	6	4
C	100	3	4
D	225	4/0	4
E	250	250	4
F	400	500	4
G	800	500	4

CONDUIT SIZE	GROUND SIZE	REMARKS
3/4"	10	'SPD'
1"	10	PANELBOARD 'ELS'
2"	8	PANELBOARD 'PPA'
2-1/2"	4	PANELBOARD 'PPB'
2-1/2"	4	PANELBOARD 'EMB'
4"	3	PANELBOARD 'EMA'
4"	3	2 - PARALLEL RUNS

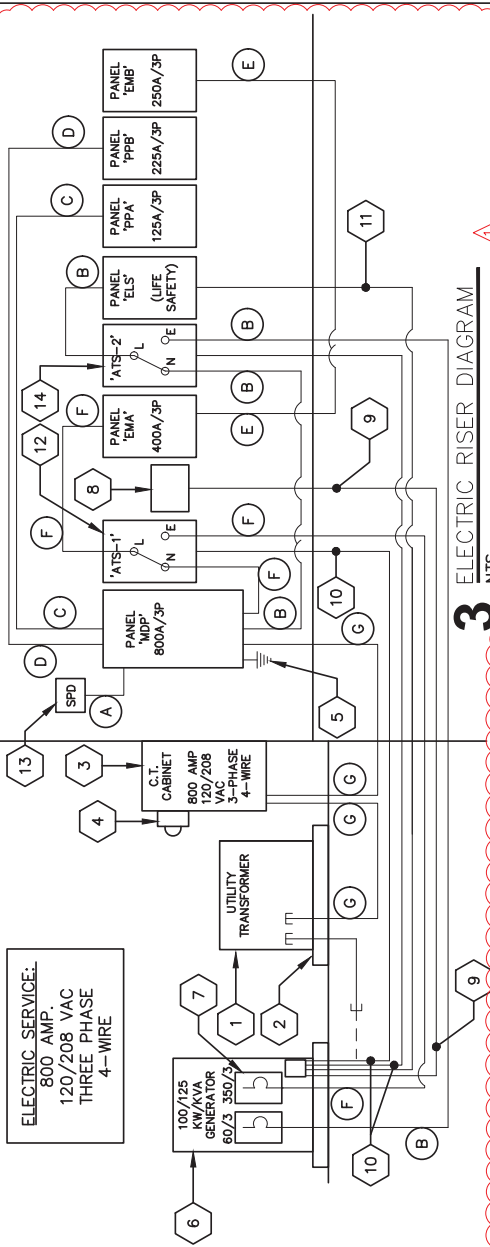
1 FEEDER SCHEDULE



Addendum No. 03
ID 1070-00-72
Revised Sheet 252
July 7, 2016

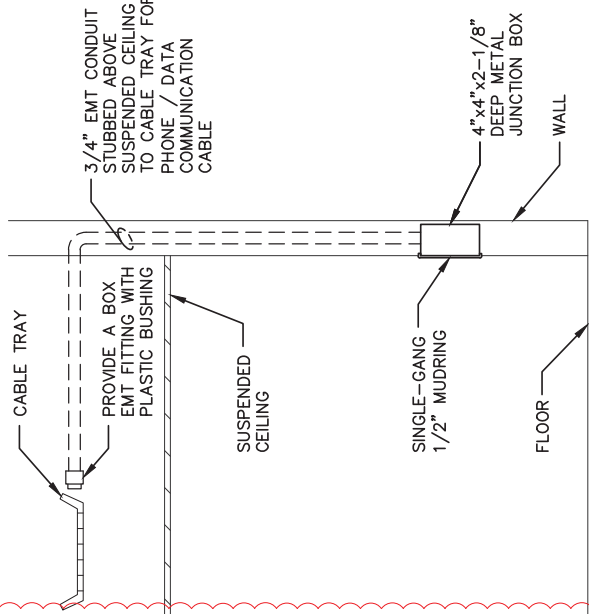
2 TYPE 'OB' BOLLARD BASE

ELECTRIC SERVICE:
800 AMP,
120/208 VAC
THREE PHASE
4-WIRE



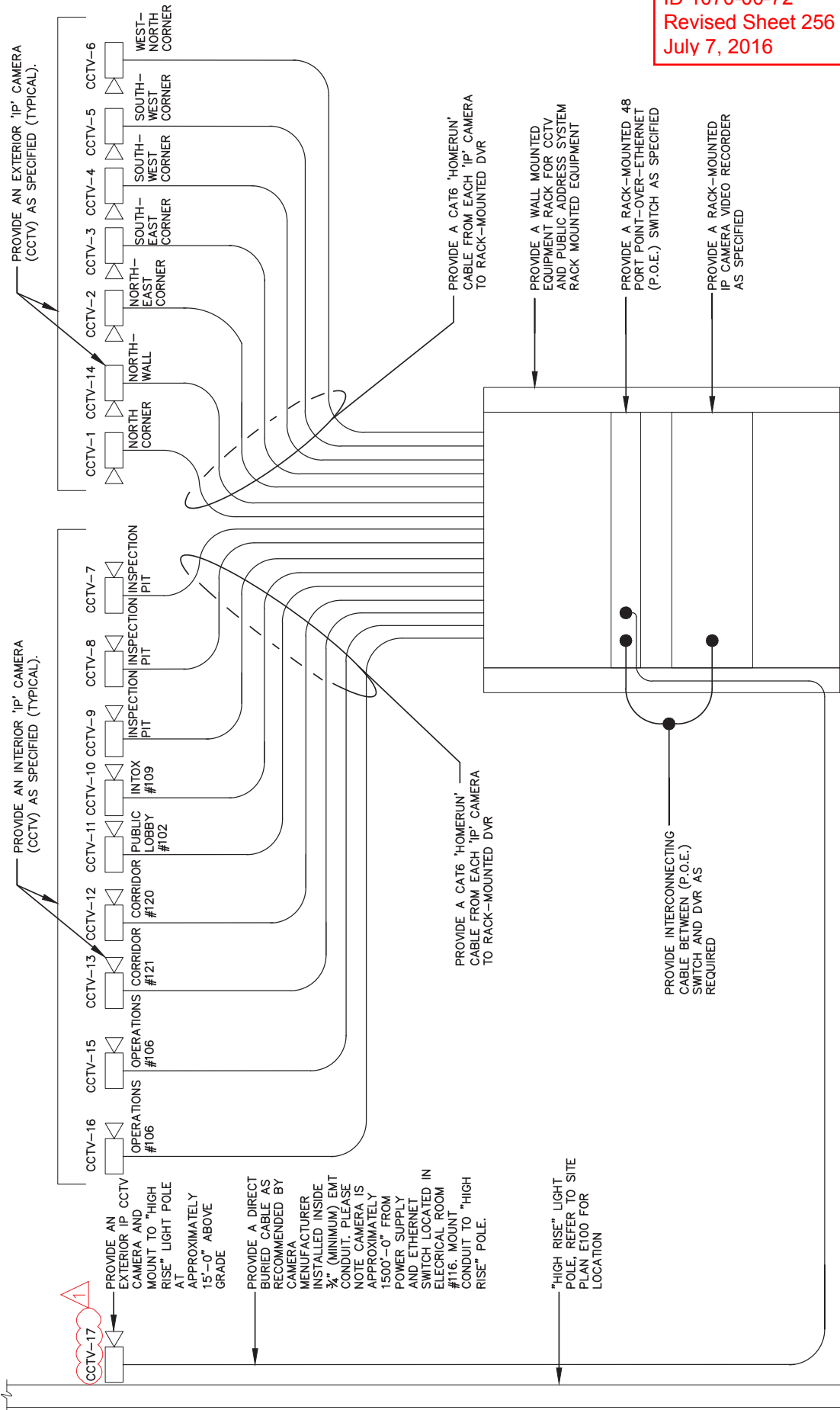
3 ELECTRIC RISER DIAGRAM

- KEYED ELECTRIC RISER DIAGRAM NOTES, 3/E400:**
- UTILITY PAD-MOUNTED TRANSFORMER INSTALLED BY XCEL UTILITY COMPANY. PROVIDE A CONCRETE PAD FOR PAD-MOUNTED TRANSFORMER. REFER TO DETAIL 3/E405.
 - PROVIDE A WALL-MOUNTED 800 AMP, 120/208VAC, THREE-PHASE, 4-WIRE CURRENT TRANSFORMER (C/T) CABINET APPROVED BY XCEL UTILITY COMPANY.
 - INSTALL METER SOCKET PROVIDED BY XCEL UTILITY COMPANY. COORDINATE WITH METER DEPARTMENT.
 - PROVIDE GROUNDING AND BONDING PER NEC CODE RULES. REFER TO DETAIL 1/E402.
 - PROVIDE A 100/125 KW/KVA 120/208 VAC, THREE-PHASE, 4-WIRE EMERGENCY GENERATOR. PLEASE NOTE GENERATOR SHALL BE EQUIPPED FOR NATURAL GAS AND LP DUAL FUEL SOURCE. PLEASE COORDINATE THOROUGHLY WITH GENERATOR MANUFACTURER TO PROVIDE ALL ACCESSORIES REQUIRED FOR THIS DUAL FUEL SOURCE.
 - PROVIDE LUGS RATED FOR 500KCMIL (MINIMUM) ON MAIN CIRCUIT BREAKER. PLEASE COORDINATE WITH GENERATOR MANUFACTURER PRIOR TO ORDERING GENERATOR.
 - PROVIDE A REMOTE EMERGENCY GENERATOR ANNUNCIATOR AND START/STOP STATION. LOCATE AS DIRECTED BY OWNER.
 - PROVIDE A LOW-VOLTAGE CABLE AS RECOMMENDED BY GENERATOR MANUFACTURER BETWEEN REMOTE ANNUNCIATOR PANEL AND GENERATOR CONTROL PANEL.
 - PROVIDE 2-#14 XHHW AND 1-#14 XHHW (GRD) IN 3/4" SCHEDULE 40 PVC CONDUIT FOR START/STOP CONTROL WIRES.
 - PROVIDE A 3/4" SCHEDULE 40 PVC CONDUIT WITH 6-#12 XHHW AND 1-#12 XHHW (GRD) FOR THE FOLLOWING BRANCH-CIRCUITS:
ELS-12 (BATTERY CHARGER), ELS-13 (BLOCK HEATER), ELS-14 (RECEPTACLE), ETC.
 - PROVIDE A 400 AMP, 120/208 VAC, THREE-PHASE, 4-WIRE AUTOMATIC TRANSFER SWITCH (ATS-1).
 - PROVIDE A SURGE PROTECTIVE DEVICE (SPD).
 - PROVIDE A 60 AMP, 120/208VAC, THREE-PHASE, 4-WIRE AUTOMATIC TRANSFER SWITCH (ATS-2) FOR 'LIFE-SAFETY' BRANCH.



4 TELECOM JUNCTION BOX DETAIL

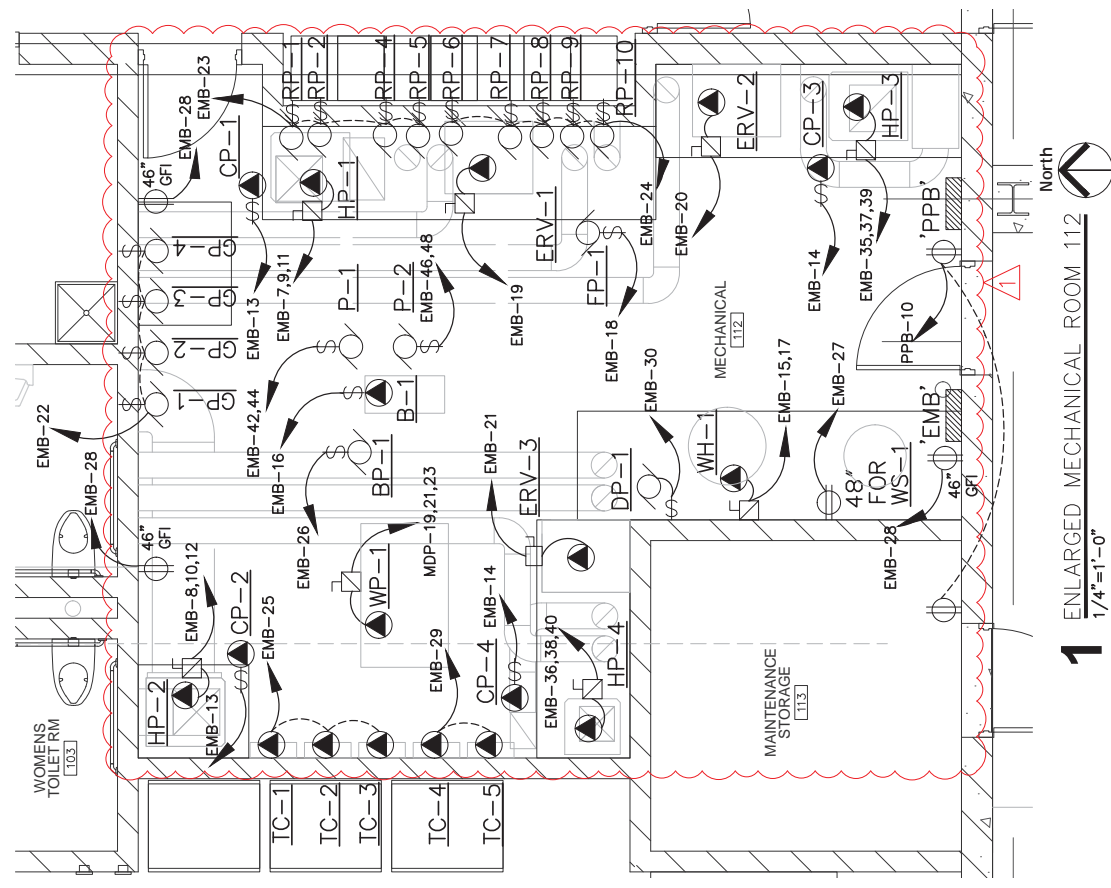
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 July 7, 2016



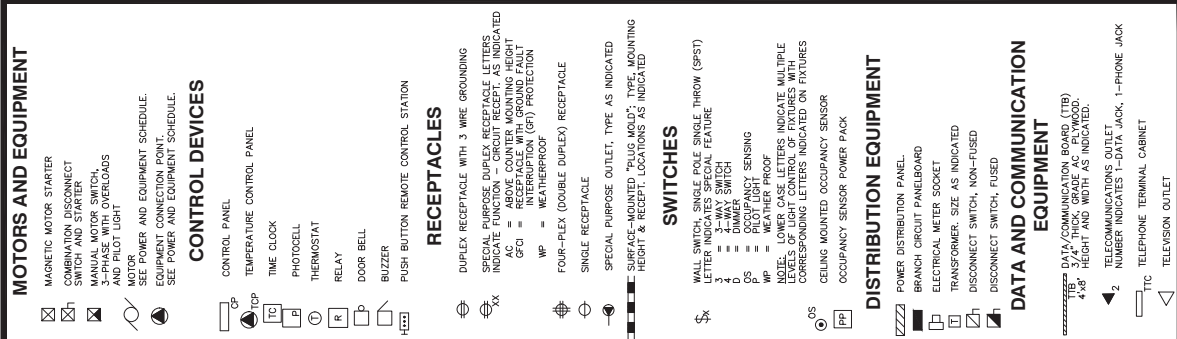
1 CLOSED CIRCUIT TELEVISION (CCTV) WIRING DETAIL
 NTS

PLANS PREPARED BY: GALILEO CONSULTING GROUP, LA CROSSE, WI	DATE: 06-03-2016	REVISION:
STATE PROJECT NUMBER: 1070-00-72	SHEET NO: E404	256
COUNTY: MONROE	SCALE: AS NOTED	
ELECTRICAL DETAILS		
SPARTA SWEF NO. 54		

Addendum No. 03
 ID 1070-00-72
 Revised Sheet 258
 July 7, 2016



1 ENLARGED MECHANICAL ROOM 112
 1/4"=1'-0"



LIGHTING
 A RECESSED FLUORESCENT FIXTURE
 B SURFACE FLUORESCENT FIXTURE
 C WALL BRACKET LIGHTING FIXTURE
 D PENDANT-MOUNTED LIGHTING FIXTURE
 E RECESS-WASH OR SPOTLIGHTING FIXTURE
 F TRACK LIGHTING FIXTURE
 G LIGHTING FIXTURE WITH NUMBER OF FIXTURES INDICATED
 H LIGHTING FIXTURE WITH DIRECTION AS INDICATED BY ARROW
 I WALL MOUNTED FIXTURE-SEE FIXTURE SCHEDULE
 J POLE MOUNTED LIGHT FIXTURE
 K FLUORESCENT STRIP FIXTURE
 L TRACK LIGHTING FIXTURE WITH NUMBER OF FIXTURES INDICATED
 M LIGHTING FIXTURES ON EMERGENCY POWER SOURCE
 N LIGHTING FIXTURES TO BE ON AT ALL TIMES
 O EMERGENCY LIGHTING UNIT WITH SELF-CONTAINED BATTERY
 P EXIT LIGHT FIXTURE
 Q DIRECTIONAL ARROWS AS INDICATED
 R WIRE GUARD PROTECTED

RACEWAY
 NEUTRAL CONDUCTOR (TYP.)
 POWER CONDUCTOR (TYP.)
 CONDUCTOR CARRYING SWITCHED BRANCH CIRCUIT WITHOUT SWITCHED CONDUCTORS
 LOW VOLTAGE CIRCUIT
 GROUND OR NEUTRAL CONNECTION
 JUNCTION BOX
 HOME RUN TO PANEL '1', CIRCUIT #2
 PANEL LCP-1, R1
 HOME RUN DIRECTLY TO PANEL '1', CIRCUIT #2
 CONDUIT ROUTED ABOVE GROUND OR FLOOR SLAB
 CONDUIT ROUTED BELOW GROUND OR FLOOR SLAB
 SIZE AND TYPE AS INDICATED
 NOTE: ALL BRANCH CIRCUITS TO CARRY SEPARATE MATERIAL
 GROUNDING CONDUCTOR REGARDLESS OF CONDUIT MATERIAL

MISCELLANEOUS
 EQUIPMENT CONNECTION POINT
 SEE MOTOR & EQUIPMENT SCHEDULE

MOTORS AND EQUIPMENT
 MAGNETIC MOTOR STARTER
 COMBINATION DISCONNECT SWITCH
 3-PHASE WITH OVERLOADS AND PILOT LIGHT
 MOTOR
 SEE POWER AND EQUIPMENT SCHEDULE
 SEE POWER AND EQUIPMENT SCHEDULE

CONTROL DEVICES
 CONTROL PANEL
 TEMPERATURE CONTROL PANEL
 TIME CLOCK
 PHOTOCELL
 THERMOSTAT
 RELAY
 DOOR BELL
 BUZZER
 PUSH BUTTON REMOTE CONTROL STATION

RECEPTACLES
 DUPLEX RECEPTACLE WITH 3 WIRE GROUNDING
 SPECIAL PURPOSE DUPLEX RECEPTACLE AS INDICATED
 INDICATE FUNCTION OR CIRCUIT AS INDICATED
 WP = WEATHERPROOF
 INTERRUPTION (GFI) PROTECTION
 FOUR-FLEX (DOUBLE DUPLEX) RECEPTACLE
 SINGLE RECEPTACLE
 SPECIAL PURPOSE OUTLET, TYPE AS INDICATED
 SURFACE-MOUNTED "PLUG MOLD", TYPE, MOUNTING HEIGHT & RECEPT. LOCATIONS AS INDICATED

SWITCHES
 WALL SWITCH, SINGLE POLE SINGLE THROW (SPST)
 LETTER INDICATES SPECIAL FEATURE
 1 = 1-WAY SWITCH
 2 = 2-WAY SWITCH
 3 = 3-WAY SWITCH
 4 = 4-WAY SWITCH
 OS = OCCUPANCY SENSING
 P = PILOT LIGHT
 NOTE: LOWER CASE LETTERS INDICATE MULTIPLE LEVELS OF LIGHT CONTROL OF FIXTURES WITH CORRESPONDING LETTERS INDICATED ON FIXTURES
 CEILING MOUNTED OCCUPANCY SENSOR
 OCCUPANCY SENSOR POWER PACK

DISTRIBUTION EQUIPMENT
 POWER DISTRIBUTION PANEL
 BRANCH CIRCUIT PANELBOARD
 ELECTRICAL METER SOCKET
 TRANSFORMER, SIZE AS INDICATED
 DISCONNECT SWITCH, NON-FUSED
 DISCONNECT SWITCH, FUSED

DATA AND COMMUNICATION EQUIPMENT
 DATA/COMMUNICATION BOARD (T/B)
 3/4" THICK GRADE AC PLYWOOD
 4'x8' HEIGHT AND WIDTH AS INDICATED
 TELECOMMUNICATIONS OUTLET
 NUMBER INDICATES 1-DATA JACK, 1-PHONE JACK
 TELEPHONE TERMINAL CABINET
 TELEVISION OUTLET

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 ID 1070-00-72
 Revised Sheet 261
 July 7, 2016

Panel- 'EMA', 400 A., 120/208V AC, 3-Phase, 4- Wire, M.BRK. (45KAIC)

Space No.	Serves	CB Size/Type	Load (kVA)	CB Size/Type	Load (kVA)	Serves	Space No.
1	TROOPERS RECEPTACLES	20/1	0.72	20/1	0.54	TROOPERS RECEPTACLES	2
3	MULTIPURPOSE RECPTS	20/1	0.72	20/1	0.90	MULTIPURPOSE RECPTS	4
5	REFRIGERATOR	20/1	0.80	20/1	1.50	KITCHEN RECEPTACLES	6
7	OFFICE RECEPTACLES	20/1	0.72	20/1	0.36	OPERATIONS RECEPTACLES	8
9	OPERATION RECEPTACLES	20/1	0.36	20/1	0.36	OPERATIONS RECEPTACLES	10
11	OPERATION RECEPTACLES	20/1	0.36	20/1	0.36	OPERATIONS RECEPTACLES	12
13	OPERATION RECEPTACLES	20/1	0.36	20/1	0.36	OPERATIONS RECEPTACLES	14
15	OPERATION RECEPTACLES	20/1	0.36	20/1	0.75	OPERATIONS COPY MACH.	16
17	OPERATION RECEPTACLES	20/1	0.54	20/1	0.36	OPERATIONS RECEPTACLES	18
19	INTOX RECEPTACLES	20/1	0.36	20/1	0.72	PUBLIC LOBBY	20
21	DRIVERS RECEPTACLES	20/1	0.36	20/1	0.72	CLASSROOM RECEPTACLES	22
23	CLASSROOM RECEPTACLES	20/1	0.72	20/1	0.36	CLASSROOM RECEPTACLES	24
25	OVERHEAD PROJECTOR	20/1	0.50	20/1	0.50	ELECTRIC SCREEN	26
27	CLASSROOM RECEPTACLES	20/1	1.08	20/1	0.72	CLASSROOM RECEPTACLES	28
29	CLASSROOM RECEPTACLES	20/1	0.72	20/1	2.30	MOTOR (HP-5)	30
31	SPARE	20/1	0.00	20/1	2.30	"	32
33	SPARE	20/1	0.00	20/1	2.30	"	34
35	SPARE	20/1	0.00	20/1	0.50	MOTOR (CP-5)	36
37	SPARE	20/1	0.00	20/1	0.00	SPARE	38
39	SPARE	20/1	0.00	20/1	0.50	IT RACK EQUIPMENT	40
41	IT RACK EQUIPMENT	20/1	0.50	20/1	0.50	IT RACK EQUIPMENT	42
43	IT RACK EQUIPMENT	20/1	0.50	20/1	0.50	IT RACK EQUIPMENT	44
45	IT RACK EQUIPMENT	20/1	0.50	20/1	0.50	IT RACK EQUIPMENT	46
47	IT RACK EQUIPMENT	20/1	0.50	20/1	0.50	WEATHER MONITOR EQPMT	48
49	RECEPTACLE - RM#116	20/1	0.36	250/3	24.50	SUBPANEL EMB'	50
51	SPARE	20/1	0.00	250/3	24.50	SUBPANEL EMB'	52
53	SPARE	20/1	0.00	250/3	24.50	SUBPANEL EMB'	54
55	SPARE	20/1	0.00	0.18	20/1	RECEPTACLE-RM#116	56
57	RECEPTACLE - RM#116	20/1	0.54	20/1	0.54	RECEPTACLE-RM#116	58
59	RECEPTACLE - RM#116	20/1	0.54	20/1	0.54		60
61	MOTOR (WELL)	30/3	2.10	30/3	2.10		62
63	"	30/3	2.10	30/3	2.10		64
65	"	30/3	2.10	30/3	2.10		66
67							68
69							70

LIGHTING (kVA):	0
RECEPTACLES (kVA):	17
MOTOREQUIPMENT (kVA):	13.7
SUBPANEL EMB'	73.5
TOTAL (kVA):	105

NOTE: 1 PROVIDE A MAIN BREAKER
 2 84 CKT. SURFACE MOUNT

TOTAL AMP. :
(DIVERSITY FACTOR) X 1.25 = 291.7
364.6

Panel- 'EMB', 250 A., 120/208VAC, 3-Phase, 4- Wire, M.L.L.0 (22KAIC)

Space No.	Serves	CB Size/Type	Load (kVA)	CB Size/Type	Load (kVA)	Serves	Space No.
1	MOTOR (IR-1, IR-2, IR-3, IR-4)	20/1	0.48	20/1	1.50	OVERHEAD DOOR	2
3	OVERHEAD DOOR	20/1	1.50	20/1	1.50	OVERHEAD DOOR	4
5	OVERHEAD DOOR	20/1	1.50	20/1	0.90	MOTOR (SP-1, SPA-1)	6
7	MOTOR (HP-1)	35/3	3.10	3.40	3.40	MOTOR (HP-2)	8
9	"	35/3	3.10	3.40	3.40	"	10
11	"	35/3	3.10	3.40	3.40	"	12
13	MOTOR (CP-1, CP-2)	20/1	0.75	20/1	0.75	MOTOR (CP-3, CP-4)	14
15	MOTOR (WH-1)	30/2	2.25	2.25	1.20	MOTOR (B-1)	16
17	"	30/2	2.25	0.50	0.50	MOTOR (FP-1)	18
19	MOTOR (ERV-1)	20/1	0.40	0.40	0.40	MOTOR (ERV-2)	20
21	MOTOR (ERV-3)	20/1	0.40	0.40	0.40	MOTOR (GP-1, GP-2, GP-3, GP-4)	22
23	MOTOR (RP-1 THRU RP-5)	20/1	0.50	0.50	0.50	MOTOR (RP-6 THRU RP-10)	24
25	MOTOR (TC-1 THRU TC-3)	20/1	0.60	1.20	20/1	MOTOR (BP-1)	26
27	RECEPTACLE (WS-1)	20/1	0.30	0.54	20/1	RECEPTACLES	28
29	MOTOR (TC-4, TC-5)	20/1	0.00	0.60	20/1	MOTOR (DP-1)	30
31	SPARE	20/1	0.00	2.00	20/1	MOTOR (SP-2)	32
33	MOTOR (HTA, SPA-2)	20/1	0.30	0.00	20/1	SPARE	34
35	MOTOR (HP-3)	35/3	3.40	2.10	30/3	MOTOR (HP-4)	36
37	"	35/3	3.40	2.10	30/3	"	38
39	"	35/3	3.40	2.10	30/3	"	40
41	SPARE	20/1	0.00	1.00	20/2	MOTOR (P-1)	42
43	SPARE	20/1	0.00	1.00	20/2	"	44
45	SPARE	20/1	0.00	1.00	20/2	MOTOR (P-2)	46
47	SPARE	20/1	0.00	1.00	20/2	"	48
49	SPARE	20/1	0.00				50
51							52

LIGHTING (kVA):	0
RECEPTACLES (kVA):	0.9
MOTOREQUIPMENT (kVA):	71.3
TOTAL (kVA):	72.2

NOTE: 1 SURFACE MOUNT- 72 SPACE

TOTAL AMP. :
(DIVERSITY FACTOR) X 1.25 = 200.6
250.7

ELECTRICAL SCHEDULES

Addendum No. 03
 ID 1070-00-72
 Revised Sheet 262
 July 7, 2016

Panel- 'PPA', 125 A., 120/208VAC, 3-Phase, 4- Wire, M.L.O. (22KAIC)

Space No.	Serves	C/B Size/Type	Load (KVA)	Load (KVA)	C/B Size/Type	Serves	Space No.
1	HEAT TAPE	20/1	1.80	0.18	20/1	EXTERIOR RECEPTACLE	2
3	EXTERIOR RECEPTACLE	20/1	0.18	1.80	20/1	HEAT TAPE	4
5	EXTERIOR RECEPTACLE	20/1	0.18	1.00	20/1	KITCHEN RECEPTACLE	6
7	GARBAGE DISPOSAL	20/1	1.00	1.00	20/1	KITCHEN RECEPTACLE	8
9	HAND DRYER	20/1	1.50	1.50	20/1	HAND DRYER	10
11	TOILET RECEPTACLES	20/1	0.36	0.72	20/1	CORRIDOR RECEPTACLE	12
13	RECEPTACLES	20/1	1.30	0.18	20/1	RECEPTACLE - WTR. COOLER	14
15	SPARE	20/1	0.00	0.00	20/1	SPARE	16
17	SPARE	20/1	0.00	0.00	20/1	SPARE	18
19	SPARE	20/1	0.00	0.00	20/1	SPARE	20
21	SPARE	20/1	0.00	0.00	20/1	SPARE	22
23	SPARE	20/1	0.00	0.00	20/1	SPARE	24
25							26
27							28
29							30
31							32
33							34
35							36
37							38
39							40
41							42
LIGHTING (KVA): RECEPTACLES (KVA): MOTOR/EQUIPMENT (KVA): TOTAL (KVA):							NOTE: 1 SURFACE MOUNT 2 42-SPACE TOTAL AMP : (DIVERSITY FACTOR) X 1.25 =
							31.2
							39

Panel- 'PPB', 225 A., 120/208VAC, 3-Phase, 4- Wire, M.L.O (22KAIC)

Space No.	Serves	C/B Size/Type	Load (KVA)	Load (KVA)	C/B Size/Type	Serves	Space No.
1	TOILET RECEPTACLES	20/1	0.36	1.50	20/1	HAND DRYER	2
3	HAND DRYER	20/1	1.50	0.36	20/1	JANITOR RECEPTACLE	4
5	VENDING RECEPTACLE	20/1	1.00	1.00	20/1	VENDING RECEPTACLE	6
7	VENDING RECEPTACLE	20/1	1.00	1.00	20/1	VENDING RECEPTACLE	8
9	CORRIDOR RECEPTACLE	20/1	0.36	0.72	20/1	MECHANICAL RM RECEPTACLES	10
11	INSPECTION RECEPTACLE	20/1	0.36	0.36	20/1	INSPECTION RECEPTACLES	12
13	INSPECTION RECEPTACLE	20/1	0.36	0.36	20/1	INSPECTION RECEPTACLES	14
15	EXTERIOR RECEPTACLES	20/1	0.36	1.00	20/1	HEAT TAPE	16
17	INSPECTION RECEPTACLE	20/1	0.36	0.36	20/1	INSPECTION RECEPTACLES	18
19	INSPECTION RECEPTACLE	20/1	0.36	0.36	20/1	INSPECTION RECEPTACLES	20
21	EXTERIOR RECEPTACLES	20/1	0.36	0.36	20/1	EXTERIOR RECEPTACLES	22
23	INSPECTION RECEPTACLE	20/1	0.36	0.36	20/1	EXTERIOR RECEPTACLES	24
25	HEAT TAPE	20/1	1.00	0.90	20/1	EXHAUST FAN (EF-1)	26
27	EXHASUT FAN (EF-2)	20/1	0.90	0.90	20/1	EXHAUST FAN (EF-3)	28
29	EXHAUST FAN (EF-4)	20/1	0.90	0.80	15/3	MOTOR (DF-2)	30
31	MOTOR (DF-1)	15/3	0.80	0.80	15/3	MOTOR (DF-2)	32
33	*	15/3	0.80	0.80	15/3	MOTOR (DF-2)	34
35	*	15/3	0.80	1.00	20/1	MOTOR (EF-5)	36
37	MOTOR (MU-1)	40/3	3.90	1.00	20/1	MOTOR (EF-6)	38
39	*	40/3	3.90	0.20	20/1	DOCK LIGHTING	40
41	*	40/3	3.90	0.00	20/1	SPARE	42
43	RECEPTACLE	20/1	0.18	0.18	20/1	RECEPTACLE	44
LIGHTING (KVA): RECEPTACLES (KVA): MOTOR/EQUIPMENT (KVA): TOTAL (KVA):							NOTE: 1 SURFACE MOUNT 2 54 CIRCUIT (MINIMUM) 3 10-20/1 SPARE BREAKERS TOTAL AMP : (DIVERSITY FACTOR) X 1.25 =
							107.8
							134.7

ELECTRICAL SCHEDULES



QTY. (3) #18/2 CABLE PLUS INTO CONDUIT (EBS-11) FROM STATION TO DOOR ACCESS JUNCTION BOX. 2 CONDUCTORS-SPARE

QTY. (1) #18/2 CABLE (PASSES THROUGH THE DOOR STATION WITH NO CONNECTION TO THE DOOR STATION)

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QTY. (3) #18/2 CABLE PLUS INTO CONDUIT (EBS-11) FROM STATION TO DOOR ACCESS JUNCTION BOX. 2 CONDUCTORS-SPARE

QTY. (1) #18/2 CABLE (PASSES THROUGH THE DOOR STATION WITH NO CONNECTION TO THE DOOR STATION)

SYMBOL	DESCRIPTION	PART NUMBER
J-D	DOOR ACCESS SYSTEM JUNCTION BOX 6" x 6"	BY ELECTRICAL CONTRACTOR
DEI-M	APPHONE POWER SUPPLY	PS1820UL
DEI-D	APPHONE SUB MASTER STATION	3P-1HD
DEI-J	APPHONE SUB MASTER STATION	3P-1HD
DEI	ELECTRIC LOCK	NOT INSTALLED BY OTHERS
J-D	JUNCTION BOX	NOT INSTALLED BY ELECTRICAL CONTRACTORS

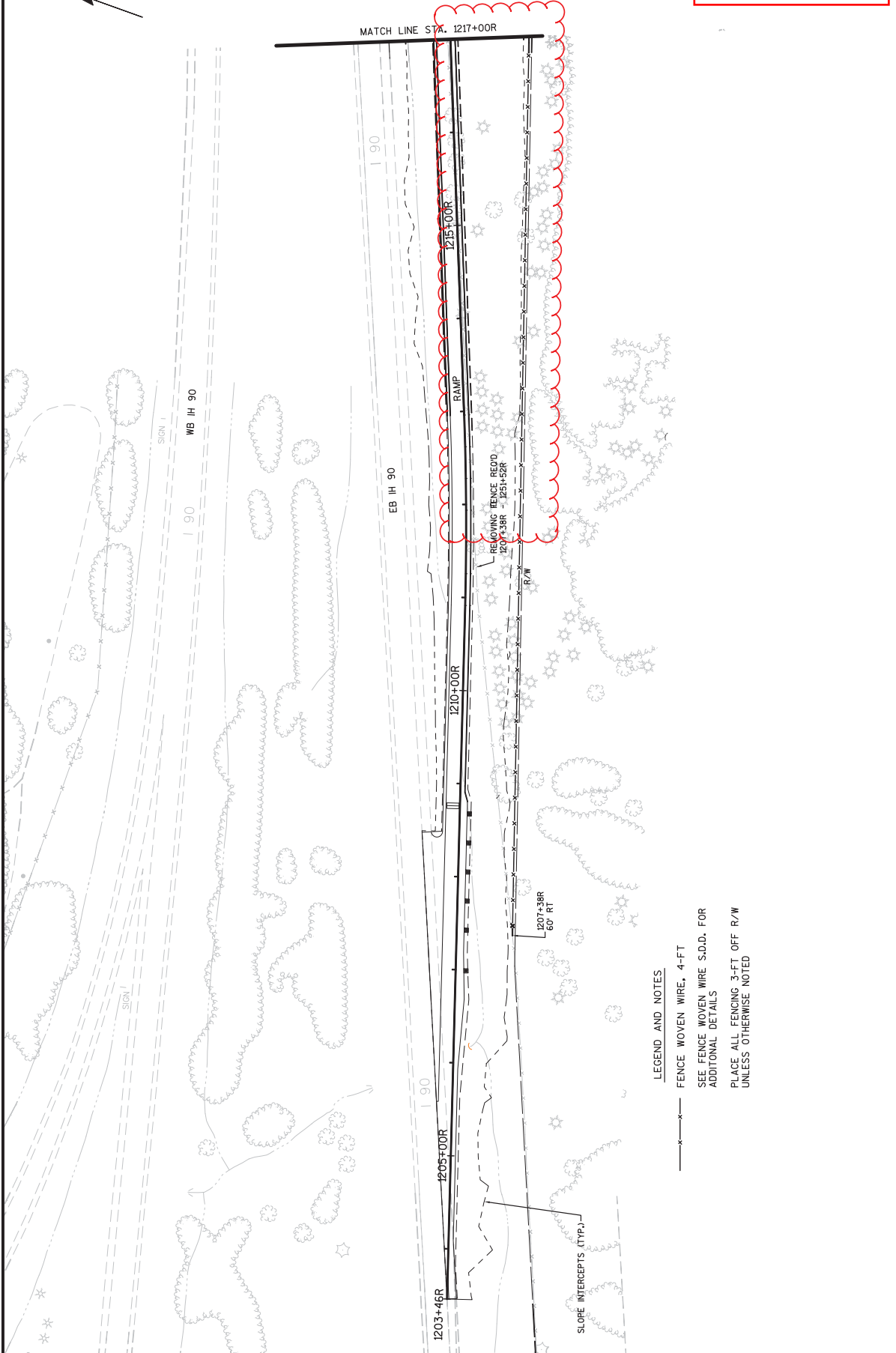
1 DOOR ENTRY INTERCOM RISER DIAGRAM 1209F-DOOR ENTRY INT DTL N.T.S.

Panel-'ELS', 125 A., 120/208 VAC, 3-Phase, 4-Wire, M.BK. (45KAIC)

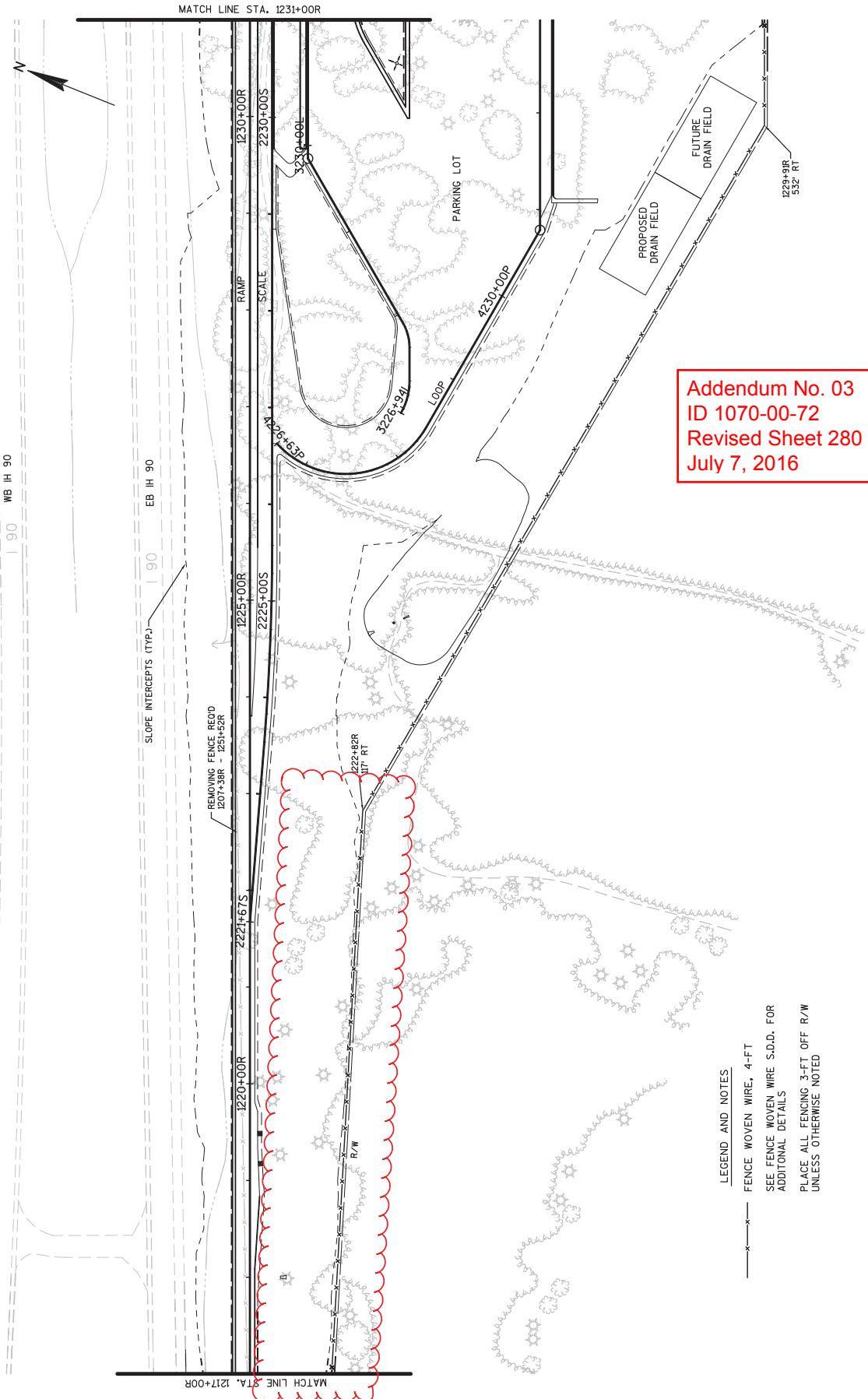
Space No.	Serves	C/B Size/Type	Load (KVA)	C/B Size/Type	Serves	Space No.
1	LIGHTING	20/1	1.23	20/1	LIGHTING	2
3	LIGHTING	20/1	1.00	20/1	LIGHTING	4
5	LIGHTING	20/1	0.90	20/1	LIGHTING	6
7	LIGHTING	20/1	1.40	20/1	LIGHTING	8
9	LIGHTING	20/1	0.75	20/1	CCTV and Paging	10
11	SECURITY INTERCOM	20/1	0.30	20/1	EMERG. GEN. BATT. CHRG.	12
13	EMERG. GEN. HEATER	20/1	1.50	20/1	EMERG. GEN. RECEPT.	14
15	LIGHTING	20/1	1.00	20/1	SPARE	16
17	SPARE	20/1	0.00	20/1	SPARE	18
19	SPARE	20/1	0.00	20/1	SPARE	20
21	SPARE	20/1	0.00	20/1	SPARE	22
23	SPARE	20/1	0.00	20/1	SPARE	24
	LIGHTING (KVA):	9.23			NOTE: 1 SURFACE MOUNT - 24 SPACE	
	RECEPTACLES (KVA):	0.18				
	MOTOR/EQUIPMENT (KVA):	2.8				
	TOTAL (KVA):	12.21				33.9
						(DIVERSITY FACTOR) X 1.25 = 42.4
					TOTAL AMP. :	

Panel-'MDP', 800 A., 120/208 VAC, 3-Phase, 4-Wire, M.BRK. (45KAIC)

Space No.	Serves	C/B Size/Type	Load (KVA)	C/B Size/Type	Serves	Space No.
1	PANELBOARD 'EMA' (ATS1)	400/3	35.00	100/3	PANELBOARD 'PPA'	2
3	PANELBOARD 'EMA' (ATS1)	400/3	35.00	100/3	PANELBOARD 'PPA'	4
5	PANELBOARD 'EMA' (ATS1)	400/3	35.00	100/3	PANELBOARD 'PPA'	6
7	PANELBOARD 'PPB'	225/3	13.00	30/3	SURGE PROTECTIVE DEVICE	8
9	PANELBOARD 'PPB'	225/3	13.00	30/3	SURGE PROTECTIVE DEVICE	10
11	PANELBOARD 'PPB'	225/3	13.00	30/3	SURGE PROTECTIVE DEVICE	12
13	BRAKE TEST EQPMT	80/3	7.70	60/3	PANELBOARD 'ELS' (ATS2)	14
15	BRAKE TEST EQPMT	80/3	7.70	60/3	PANELBOARD 'ELS' (ATS2)	16
17	BRAKE TEST EQPMT	80/3	7.70	60/3	PANELBOARD 'ELS' (ATS2)	18
19	MOTOR (WP-1)	175/3	13.60			
21	MOTOR (WP-1)	175/3	13.60			
23	MOTOR (WP-1)	175/3	13.60			
	PANELBOARD 'ELS' (ATS-2)	12.3				
	PANELBOARD 'EMA'	105			NOTE: 1 SURFACE MOUNT DIST. PANELBD	
	PANELBOARD 'PPA'	12			2 PROVIDE 13.5" SPARE BREAKER	
	PANELBOARD 'PPB'	39			SPACE FOR FUTURE. (MINIMUM)	
	MOTORS (WP-1) & BRAKE	64			TOTAL AMP. :	645
	TOTAL (KVA):	232.2			(DIVERSITY FACTOR) X 1.25 =	806



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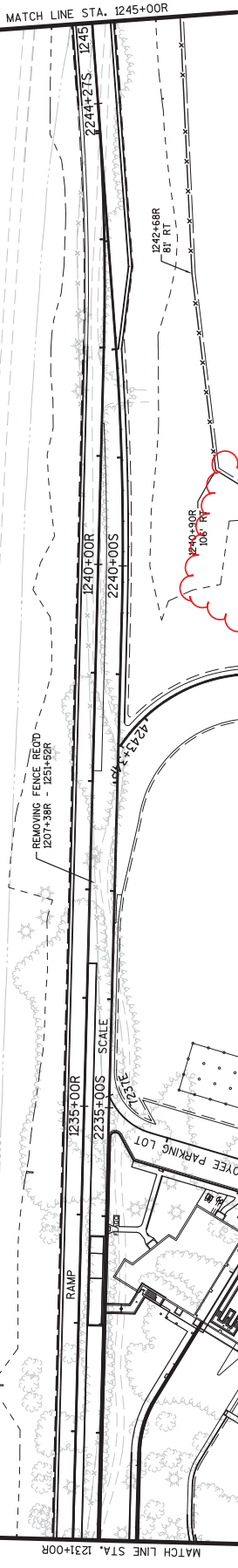
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LEGEND AND NOTES
 — x — x — FENCE WOVEN WIRE, 4-FT
 SEE FENCE WOVEN WIRE S.D.D. FOR
 ADDITIONAL DETAILS
 PLACE ALL FENCING 3-FT OFF R/W
 UNLESS OTHERWISE NOTED



WB IH 90 | 90

EB IH 90



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LEGEND AND NOTES
FENCE WOVEN WIRE, 4-FT
SEE FENCE WOVEN WIRE S.D.D. FOR
ADDITIONAL DETAILS
PLACE ALL FENCING 3-FT OFF R/W
UNLESS OTHERWISE NOTED

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EARTHWORK

CATEGORY	DIVISION	LOCATION	STATION - STATION	2054100 Excavation Common (1)		Salvaged/ Unusable Pavement Material (4)	2054200 Excavation Rock (CY)	Reduced EBS In Fill Factor (6)	Unexpanded Fill	Expanded Fill Factor (7)	Mass Ordinate +/- (8)	Waste (9)	
				Cut (CY)	Excavation (CY)								
0010	1	RAMP	1203+46R - 1266+19R	52,454	2,023	0	346	2,096	36,552	40,929	11,525	11,525	
		PARKING LOT	4226+63P - 4243+34P	62,023	3,101	0	0	2,481	79,220	92,087	-30,003	0	
		LOOP	3227+64L - 3236+25L	19,656	983	0	34	786	720	-121	-121	19,776	19,776
		EMPLOYEE PARKING LOT	7253+90E - 7237+68E	14,072	704	0	90	563	0	-763	-763	14,855	14,855
		POND	0+09PD - 2+31PD	400	20	0	0	16	998	1,179	-778	0	
	Sub-total 1	1070-00-72		148,605	7,430	0	470	5,944	117,480	133,291	15,314	15,314	
	2	STH 16	827+63 - 830+83	839	42	0	0	34	0	-40	879	879	
	Sub-total 2	1070-00-72		839	42	0	0	34	0	-40	879	879	
		1070-00-72 Totals		149,444	7,472	0	470	5,978	117,480	133,251	16,193	16,193	
	3	WEST SALEM SWEET REMOVAL	513+34 - 521+70	1,489	74	0	0	60	0	-71	1,560	1,560	
	Sub-total 3	1070-00-73		1,489	74	0	0	60	0	-71	1,560	1,560	
	4	WEST SALEM SWEET REMOVAL	537+66 - 544+05	2,154	108	0	0	86	0	-103	2,258	2,258	
	Sub-total 4	1070-00-72		2,154	108	0	0	86	0	-103	2,258	2,258	
		1070-00-73 Totals		3,643	182	0	0	146	0	-175	3,818	3,818	
		Grand Totals		152,087	7,654	0	470	6,123	117,480	133,076	20,011	20,011	
		Total Excavation Common		160,742									

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns
- 2) Salvaged/Unusable Pavement Material is included in Cut
- 3) EBS Excavation to be backfilled with Breaker Run
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusable Pavement Material
- 6) Reduced EBS In Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS In Fill Reduction factor = 0.8
- 7) Expanded Fill Factor = 1.20
- 8) The Mass Ordinate +/- or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
- 9) Provided waste volumes are calculated using the Average End Area method

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ASPHALTIC ITEMS

CATEGORY	PROJECT	LOCATION	STATION - STATION	(TON)
0010	1070-00-72	RAMP	1203+46 R - 1266+19 R	4,721
		PARKING LOT	4226+63 P - 4243+34 P	5,582
		LOOP	3226+64 L - 3236+87 L	1,769
		EMPLOYEE PARKING LOT	7235+50 E - 7237+69 E	1,267
		STH 16	827+62 - 830+62	83
				13,422
		PROJECT 1070-00-72 TOTAL		
	1070-00-73	WEST SALEM SWEEP	512+00 EB - 552+00 EB	328
		PROJECT 1070-00-73 TOTAL		328
		COMBINED PROJECT TOTAL		13,750

CATEGORY	PROJECT	LOCATION	STATION - STATION	TACK COAT GAL	ASPHALTIC SURFACE PATCHING TON	ASPHALTIC FLUME SY	ASPHALTIC SHOULDER RUMBLE STRIP LF	HMA PAVEMENT TYPE	TYPE	TON
0010	1070-00-72	RAMP	1203+46 R - 1221+67 R	50	---	---	---	---	---	264
			1221+67 R - 1244+25 R	40	---	---	---	---	---	193
			1244+25 R - 1266+19 R	40	---	---	---	---	---	222
		PARKING LOT	4226+63 P - 4243+34 P	20	---	51	---	---	---	102
		LOOP	3226+64 L - 3236+87 L	30	---	49	---	---	---	80
		EMPLOYEE PARKING LOT	7235+50 E - 7237+69 E	55	---	---	---	---	---	145
		IH 90 EB	1195+00 EB - 1273+50 EB	---	10	---	5300	---	---	---
		PROJECT 1070-00-72 TOTAL		235	10	100	5300	---	---	1005
	1070-00-73	WEST SALEM SWEEP	512+00 EB - 552+00 EB	75	---	---	1310	---	---	245
		PROJECT 1070-00-73 TOTAL		75	---	---	1310	---	---	245
		COMBINED PROJECT TOTAL		310	10	100	6610	---	---	1250

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CATEGORY	PROJECT	LOCATION	STATION - STATION	RIPRAP MEDIUM (CY)	SILT FENCE (LF)	SILT FENCE MAINTENANCE (LF)	EROSION MAT CLASS 1 TYPE B (SQ)	TEMPORARY DITCH CHECKS (LF)	CULVERT PIPE CHECKS (EACH)	GEOTEXTILE FABRIC		STONE OR ROCK DITCH CHECKS (CY)	TRACKING PADS (EACH)
										TYPE R (SY)	TYPE SAS (SY)		
0010	1070-00-72												
		RAMP	1203+46 R - 1221+67 R	--	721	361	8448	100	10	--	100	5	1
		RAMP	1221+67 R - 1244+25 R	40	1621	811	2411	81	10	200	10	10	--
		RAMP	1244+25 R - 1268+19 R	--	908	454	1339	--	5	--	200	10	2
		PARKING LOT	4226+83 P - 4243+34 P	115	3137	1588	18330	140	7	200	--	--	--
		STH 16	827+00 - 831+00	--	713	357	--	--	--	--	--	--	--
		UNDISTRIBUTED	UNDISTRIBUTED	45	1775	900	7671	80	8	130	8	10	--
		PROJECT 1070-00-72 TOTAL		200	8875	4450	38200	300	40	380	630	35	3
		WEST SALEM	513+00 EB - 543+00 EB	--	3460	1721	827	--	8	--	--	--	--
		UNDISTRIBUTED	UNDISTRIBUTED	--	805	439	223	--	2	--	--	--	--
		PROJECT 1070-00-73 TOTAL		--	4325	2160	1050	--	10	--	--	--	--
		COMBINED PROJECT TOTAL		200	13200	6610	39250	300	50	390	630	35	3

PLANT DATA CHART

CATEGORY	PROJECT	SYMBOL	COMMON NAME	SCIENTIFIC NAME	TYPE	AVERAGE MATURE HEIGHT	SIZE WHEN PLANTED	ROOT ZONE	MINIMUM POT DIA.	MINIMUM HOLE DIA.	FERTILIZER UNITS REQUIRED	RODENT PROTECTION REQUIRED	MULCH RING DIA.	TOTAL RING DIA.	
															HEIGHT
0010	1070-00-72	WAC	CRANBERRY, WENTWORTH-AMERICAN	Viburnum tillicium 'Wentworth'	3	6'	24" HT	CG	10"	6.5"	34"	6.5"	2	NO	46"
		GS	SPIREA GOLDMOUND	Spiraea x bumalda 'Goldmound'	1	4'	18" HT	CG	9"	6"	33"	6"	2	NO	45"
		CPB	BARBERRY, CRIMSON PYGMY	Berberis thunbergii var. atropurpurea 'Crimson Pygmy'	1	2'	18" HT	CG	9"	6"	33"	6"	2	NO	45"
		GP	POTENTILLA, GOLDFINGER	Potentilla fruticosa 'Goldfinger'	1	3'	18" HT	CG	9"	6"	33"	6"	2	NO	45"
		TAY	YEW, TAUTON ANGIOJAP	Taxus x media 'Tautoniif'	1	2'	18" HT	CG	9"	6"	33"	6"	2	NO	45"
		BJ	JUNIPER, BROADMOOR	Juniperus sabina 'Broadmoor'	1	2'	18" HT	CG	9"	6"	33"	6"	2	NO	45"

KEY:
CG - CONTAINER GROWN
HT - HEIGHT

FINISHING ITEMS

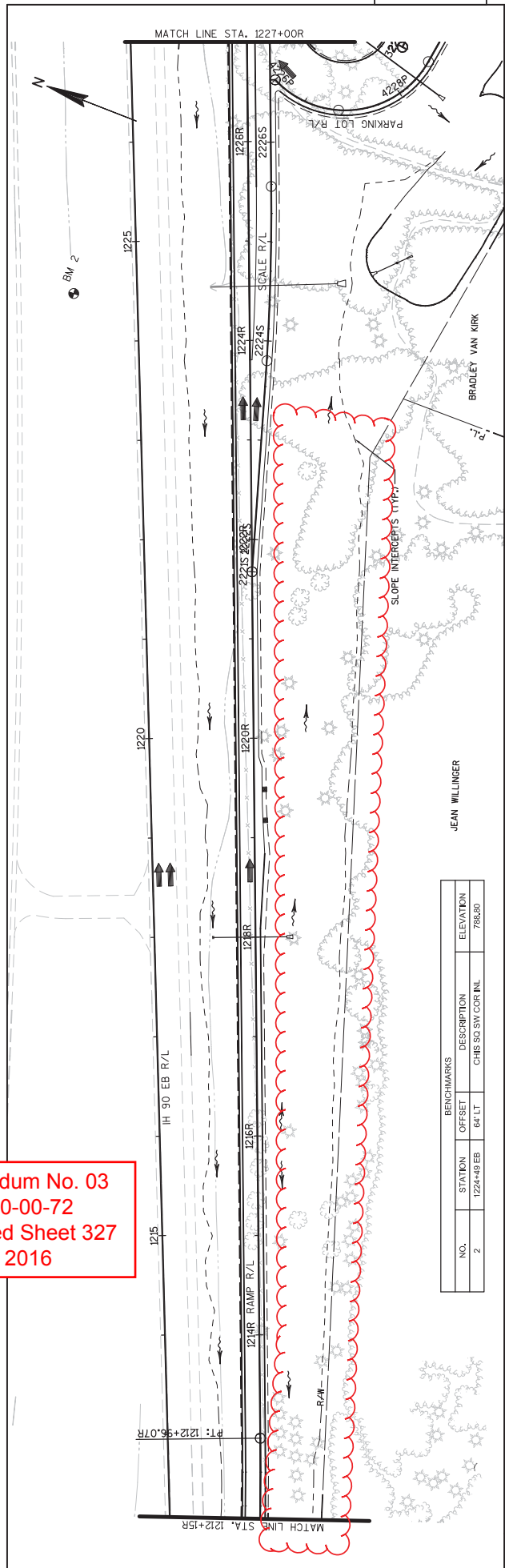
CATEGORY	PROJECT	LOCATION	STATION - STATION	SALVAGED TOPSOIL (SY)	TOPSOIL (SY)	MULCHING (SY)	FERTILIZER TYPE (CVT)	SEEDING MIXTURE			SCD LAWN (SY)	SCD WATER (MGAL)		
								NO. 20 (LB)	NO. 30 (LB)	NO. 40 (LB)				
0010	1070-00-72	RAMP	1203+46 R - 1221+67 R	14,147	--	5,702	9	382	255	--	348	--		
			1221+67 R - 1244+25 R	7,439	--	5,030	5	201	134	--	245	--		
			1244+25 R - 1266+19 R	4,150	--	2,812	3	112	75	--	163	--		
			4226+63 P - 4243+34 P	33,791	--	15,467	21	912	608	12	1,232	1,277	29	
			827+00 - 831+00	--	583	1	--	11	--	--	16	--	--	
			UNDISTRIBUTED	6,373	67	6	183	118	3	247	174	3		
			PROJECT 1070-00-72 TOTAL	65,900	650	32,600	44	1,800	1,200	15	2,250	1,450	32	
			1070-00-73	WEST SALEM SWEEP	512+00 EB - 529+00 EB	--	2,626	2	--	47	--	71	--	--
					529+00 EB - 537+00 EB	--	17,169	11	464	--	464	--	464	--
					537+00 EB - 552+00 EB	--	3,142	2	61	16	--	85	--	--
UNDISTRIBUTED	--	2,363			1	55	7	--	71	--	--			
PROJECT 1070-00-73 TOTAL	--	25,300	25,300	16	580	70	--	690	--	--				
COMBINED PROJECT TOTAL				65,900	25,950	57,900	60	2,380	1,270	15	2,940	1,450	32	

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LANDSCAPE PLANTING SURVEILLANCE & CARE CYCLES

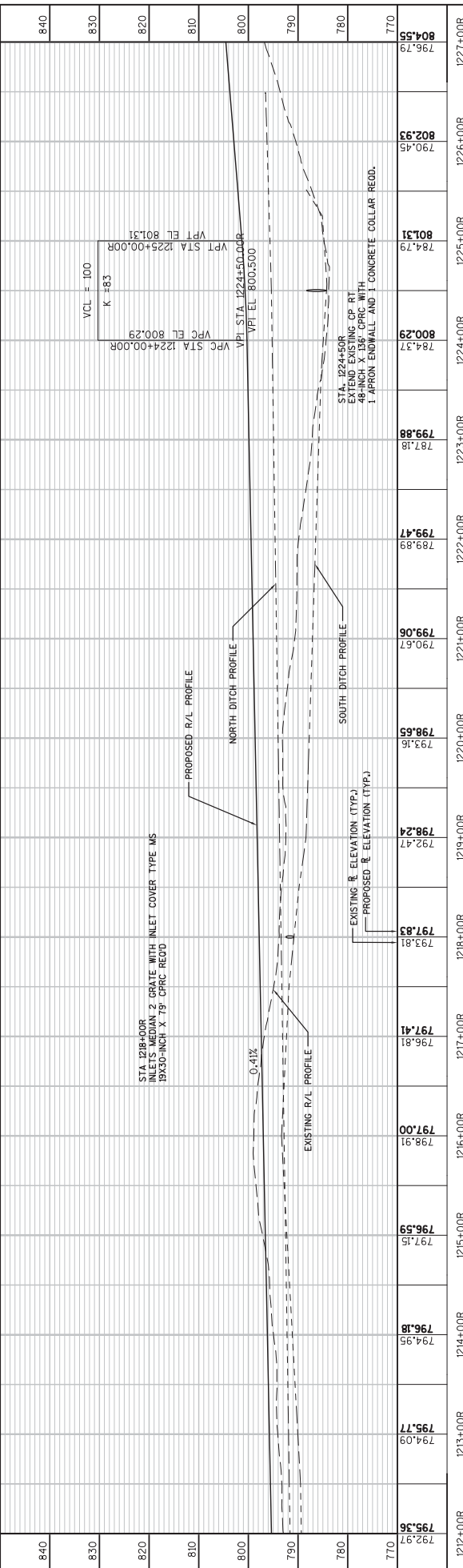
CATEGORY	PROJECT	LOCATION	NOTE	(EACH)
0010	1070-00-72	PROJECT SITE	1ST GROWING SEASON	8
		PROJECT SITE	2ND GROWING SEASON	8
		PROJECT 1070-00-72 TOTAL		16
* BASED ON A SITE VISIT ONCE EVERY TWO WEEKS BETWEEN MAY 15 AND SEPTEMBER 15 FOR TWO GROWING SEASONS (8 MONTHS AT 2 TIMES PER MONTH)				
COMBINED PROJECT TOTAL				16

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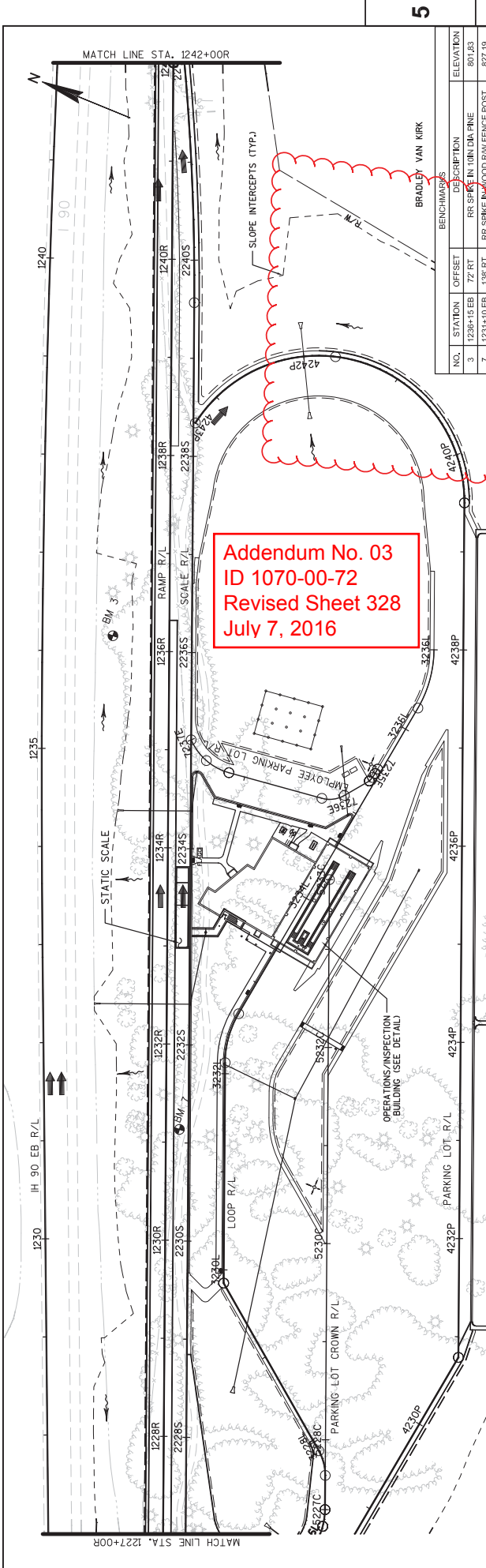


NO.	STATION	DESCRIPTION	ELEVATION
2	1224+48 EB	CHS 50 SW COR INL	788.80

JEAN WILLINGER



STATION	ELEVATION
1212+00R	792.97
1213+00R	795.36
1214+00R	794.09
1215+00R	795.77
1216+00R	794.95
1217+00R	796.18
1218+00R	797.00
1219+00R	798.81
1220+00R	797.41
1221+00R	797.83
1222+00R	792.47
1223+00R	798.24
1224+00R	793.16
1225+00R	798.65
1226+00R	790.67
1227+00R	799.06
1228+00R	799.47
1229+00R	789.89
1230+00R	799.88
1231+00R	784.37
1232+00R	800.29
1233+00R	784.79
1234+00R	801.31
1235+00R	790.45
1236+00R	802.93
1237+00R	796.79
1238+00R	804.55



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Station	Elevation	Profile Type
840	840	PROPOSED R/L PROFILE
830	830	PROPOSED R/L PROFILE
820	820	PROPOSED R/L PROFILE
810	810	PROPOSED R/L PROFILE
800	800	PROPOSED R/L PROFILE
790	790	PROPOSED R/L PROFILE
780	780	PROPOSED R/L PROFILE
770	770	PROPOSED R/L PROFILE
796.19	796.19	PROPOSED R/L PROFILE
804.55	804.55	PROPOSED R/L PROFILE
801.56	801.56	PROPOSED R/L PROFILE
806.17	806.17	PROPOSED R/L PROFILE
809.40	809.40	PROPOSED R/L PROFILE
810.99	810.99	PROPOSED R/L PROFILE
811.80	811.80	PROPOSED R/L PROFILE
812.00	812.00	PROPOSED R/L PROFILE
818.35	818.35	PROPOSED R/L PROFILE
823.18	823.18	PROPOSED R/L PROFILE
812.00	812.00	PROPOSED R/L PROFILE
818.34	818.34	PROPOSED R/L PROFILE
811.65	811.65	PROPOSED R/L PROFILE
814.07	814.07	PROPOSED R/L PROFILE
810.99	810.99	PROPOSED R/L PROFILE
810.92	810.92	PROPOSED R/L PROFILE
809.28	809.28	PROPOSED R/L PROFILE
805.60	805.60	PROPOSED R/L PROFILE
806.49	806.49	PROPOSED R/L PROFILE
802.65	802.65	PROPOSED R/L PROFILE
803.55	803.55	PROPOSED R/L PROFILE
798.00	798.00	PROPOSED R/L PROFILE
800.61	800.61	PROPOSED R/L PROFILE
793.31	793.31	PROPOSED R/L PROFILE
797.68	797.68	PROPOSED R/L PROFILE
789.60	789.60	PROPOSED R/L PROFILE
794.74	794.74	PROPOSED R/L PROFILE

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Notes:
 1 - Cut
 2 - Salvaged/Unusable Pavement Material
 3 - Salvaged/Unusable Pavement Material
 4 - Fill
 5 - Reduced Marsh Excavation that can be used in Fill
 6 - Reduced EBS Excavation that can be used in Fill
 7 - Mass Ordinates
 If Marsh and EBS to be backfilled with Cut or Borrow: [(Cut) - (Fill) - Expanded Rock] = Fill Factor(s)

STATION	Distance	Area				Incremental Volumes (Unadjusted)				Cumulative Vol (CY)				Mass Ordinates						
		Cut (SF)	Salvaged/Unusable Pavement Material (SF)	Fill (SF)	Marsh (SF)	EBS (SF)	Rock Exc (CY)	Marsh Exc (CY)	Fill (CY)	Note 3 (CY)	Expanded Rock (CY)	Backfill (CY)	Reduced Marsh In Fill (CY)		Reduced EBS In Fill (CY)					
1203+46																				
1203+50	4	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
1204+00		22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
1204+50		22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73
1205+00		23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
1205+50		22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109
1206+00		22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
1206+50		22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1207+00		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
1207+50		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58
1208+00		55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
1208+50		58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-111
1209+00		50	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-179
1209+50		33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-268
1210+00		30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-386
1210+50		36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-549
1211+00		41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-743
1211+50		66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-951
1212+00		37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,154
1212+50		119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,264
1213+00		92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,215
1213+50		94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-885
1214+00		113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-872
1214+50		159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-713
1215+00		218	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-432
1216+00		232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-248
1216+50		208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
1217+00		107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	353
1217+50		81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
1218+00		89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	753
1218+50		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,154
1219+00		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,318
1219+50		112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,179
1220+00		112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	855
1220+50		137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
1221+00		149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	188
1221+50		149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205
1222+00		169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-538
1222+50		92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,111
1223+00		11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215
1223+50		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225
1224+00		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,804
1224+50		7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2,600
1225+00		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3,475
1225+50		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4,565
1226+00		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-6,085
1226+50		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-8,255
1227+00		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-11,142
1227+50		193	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-14,985
1228+00		338	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-16,159
1228+50		217	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-18,282
1229+00		129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-28,242
1229+50		219	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-36,523
1230+00		563	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-37,777
SUBTOTALS		9,434	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-27,080

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STATION	Distance	DIVISION 1 (STA 4226+63P - STA 4243+34P); PARKING LOT												Mass Ordinate						
		Area				Incremental Volume (Unadjusted)				Cumulative Vol (CY)										
		Cut (SF)	Salvaged/Unusable Pavement Material (SF)	Fill (SF)	Marsh Exc (SF)	Rock Exc (SF)	EBS (SF)	Cut (CY)	Salvaged/Unusable Pavement Material (CY)	Fill (CY)	Marsh Exc (CY)	Rock Exc (CY)	EBS (CY)		Expanded Fill (1.2 Note 1)	Expanded Backfill (1.50 Note 4)	Reduced Marsh in Fill (0.60 Note 5)	Reduced EBS in Fill (0.80 Note 6)		
4226+63		80	0	241	0	0	0	0	0	0	0	98	607	0	0	0	4	-509		
4227+00	37	61	0	496	0	0	0	0	0	0	5	207	2,224	0	0	0	8	-2,017		
4227+50	50	47	0	965	0	0	0	0	0	0	5	303	4,247	0	0	0	12	-3,943		
4228+00	50	57	0	860	0	0	0	0	0	0	4	390	5,979	0	0	0	15	-5,599		
4228+50	50	36	0	702	0	0	0	0	0	0	2	422	7,414	0	0	0	17	-6,992		
4229+00	50	9	0	591	0	0	0	0	0	0	1	446	8,783	0	0	0	18	-8,337		
4229+50	50	17	0	642	0	0	0	0	0	0	1	473	10,303	0	0	0	19	-9,830		
4230+00	50	9	0	667	0	0	0	0	0	0	1	492	11,851	0	0	0	20	-11,360		
4231+00	50	12	0	848	0	0	0	0	0	0	1	511	13,534	0	0	0	21	-13,023		
4231+50	50	8	0	967	0	0	0	0	0	0	1	529	15,550	0	0	0	22	-15,021		
4232+00	50	6	0	1,289	0	0	0	0	0	0	1	545	18,068	0	0	0	22	-17,523		
4232+50	50	89	0	1,872	0	0	0	0	0	0	1	559	21,590	0	0	0	22	-21,031		
4233+00	50	89	0	3,507	0	0	0	0	0	0	5	655	27,329	0	0	0	26	-26,884		
4233+50	50	360	0	3,816	0	0	0	0	0	0	21	1,883	49,363	0	0	0	44	-48,910		
4234+00	50	507	0	2,605	0	0	0	0	0	0	46	2,807	48,122	0	0	0	76	-47,670		
4234+50	50	400	0	2,618	0	0	0	0	0	0	46	3,179	51,776	0	0	0	112	-51,315		
4235+00	50	494	0	2,511	0	0	0	0	0	0	46	4,664	56,846	0	0	0	149	-56,388		
4235+50	50	527	0	2,093	0	0	0	0	0	0	47	5,768	61,223	0	0	0	187	-60,762		
4236+00	50	665	0	1,894	0	0	0	0	0	0	55	6,944	68,228	0	0	0	231	-67,764		
4236+50	50	605	0	1,762	0	0	0	0	0	0	59	8,060	68,988	0	0	0	278	-68,516		
4237+00	50	600	0	1,679	0	0	0	0	0	0	56	9,242	72,405	0	0	0	322	-71,893		
4237+50	50	2,167	0	1,625	0	0	0	0	0	0	128	10,622	75,675	0	0	0	425	-75,218		
4238+00	50	2,360	0	1,499	0	0	0	0	0	0	210	12,405	82,916	0	0	0	593	-82,323		
4238+50	50	2,277	0	1,738	0	0	0	0	0	0	209	14,814	90,731	0	0	0	764	-90,167		
4239+00	50	2,235	0	1,820	0	0	0	0	0	0	204	17,205	97,180	0	0	0	931	-96,819		
4240+00	50	2,163	0	2,231	0	0	0	0	0	0	226	19,107	100,731	0	0	0	1,094	-100,637		
4240+50	50	3,070	0	1,160	0	0	0	0	0	0	268	21,357	116,340	0	0	0	1,275	-116,065		
4241+00	50	3,137	0	57	0	0	0	0	0	0	287	23,227	129,984	0	0	0	1,489	-129,495		
4241+50	50	2,839	0	144	0	0	0	0	0	0	277	26,004	136,988	0	0	0	1,719	-136,269		
4242+00	50	2,242	0	281	0	0	0	0	0	0	235	28,356	145,344	0	0	0	1,940	-144,404		
4242+50	50	1,910	0	0	0	0	0	0	0	0	192	30,276	155,620	0	0	0	2,129	-155,428		
4243+00	50	1,513	0	0	0	0	0	0	0	0	158	32,803	168,423	0	0	0	2,282	-168,146		
4243+34	34	1,328	0	0	0	0	0	0	0	0	90	34,131	182,554	0	0	0	2,409	-182,145		
		62,023												0	79,220	0	0	0	0	3,101

STATION	Distance	DIVISION 1 (STA 3227+64L - STA 3236+25L); LOOP												Mass Ordinate				
		Area				Incremental Volume (Unadjusted)				Cumulative Vol (CY)								
		Cut (SF)	Salvaged/Unusable Pavement Material (SF)	Fill (SF)	Marsh Exc (SF)	Rock Exc (SF)	EBS (SF)	Cut (CY)	Salvaged/Unusable Pavement Material (CY)	Fill (CY)	Marsh Exc (CY)	Rock Exc (CY)	EBS (CY)		Expanded Fill (1.2 Note 1)	Expanded Backfill (1.50 Note 4)	Reduced Marsh in Fill (0.60 Note 5)	Reduced EBS in Fill (0.80 Note 6)
3227+64		43	0	114	0	0	0	0	0	0	0	73	175	0	0	0	3	-102
3228+00	36	66	0	107	0	0	0	0	0	0	9	250	399	0	0	0	10	-150
3228+50	50	124	0	103	0	0	0	0	0	0	16	572	611	0	0	0	23	-39
3229+00	50	223	0	102	0	0	0	0	0	0	24	1,048	723	0	0	0	42	324
3229+50	50	290	0	20	0	0	0	0	0	0	29	1,634	749	0	0	0	65	885
3230+00	50	343	0	28	0	0	0	0	0	0	42	2,469	742	0	0	0	99	1,726
3230+50	50	559	0	2	0	0	0	0	0	0	62	3,717	685	0	0	0	149	3,032
3231+00	50	789	0	0	0	0	0	0	0	0	82	5,363	606	0	0	0	215	4,757
3231+50	50	989	0	0	0	0	0	0	0	0	96	7,274	514	0	0	0	291	6,759
3232+00	50	1,075	0	0	0	0	0	0	0	0	92	9,119	426	0	0	0	365	8,693
3232+50	50	918	0	0	0	0	0	0	0	0	76	10,629	353	0	0	0	425	10,276
3233+00	50	713	0	0	0	0	0	0	0	0	71	12,053	285	0	0	0	482	11,768
3233+50	50	826	0	0	0	0	0	0	0	0	77	13,594	211	0	0	0	544	13,400
3234+00	50	838	0	0	0	0	0	0	0	0	17	15,068	140	0	0	0	603	14,869
3234+50	50	754	0	0	0	0	0	0	0	0	65	16,378	77	0	0	0	655	16,341
3235+00	50	660	0	0	0	0	0	0	0	0	54	17,458	25	0	0	0	698	17,473
3235+50	50	507	0	0	0	0	0	0	0	0	74	18,943	-46	0	0	0	758	19,030
3236+00	50	1,098	0	0	0	0	0	0	0	0	36	19,656	-80	0	0	0	786	19,776
3236+25	25	441	0	0	0	0	0	0	0	0	36	20,227	-80	0	0	0	786	20,441
		19,656												0	720	0	34	983

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DIVISION 1 (STA 7235+50E - STA 7237+69E): EMPLOYEE PARKING LOT

STATION	Distance	Area				Incremental Volume (Unadjusted)						Cumulative Vol (CY)				Mass Ordinate Note 7		
		Cut (SF)	Salvaged/Unusable Pavement Material (SF)	Fill (SF)	Marsh Exc (SF)	Rock Exc (SF)	EBS (SF)	Cut Note 1 (CY)	Salvaged/Unusable Pavement Material Note 2 (CY)	Fill Note 3 (CY)	Marsh Exc (CY)	Rock Exc (CY)	EBS (CY)	Expanded Fill 1.2 (CY)	Expanded Backfill 1.50 (CY)		Reduced Marsh in Fill 0.60 (CY)	Reduced EBS in Fill 0.80 (CY)
7235+50	19	695	0	0	0	11	0	0	0	0	0	0	0	-675	0	0	563	14,855
7236+00	50	1,542	0	0	0	0	0	0	0	0	0	0	0	-114	0	0	95	2,498
7236+50	50	2,907	0	0	0	0	4,027	0	0	0	201	0	0	-308	0	0	256	6,719
7237+00	50	1,733	0	0	0	46	4,204	0	0	42	210	0	0	-510	0	0	425	11,175
7237+50	50	1,247	0	0	0	1	2,789	0	0	0	138	0	0	-642	0	0	535	14,119
7237+69	19	695	0	0	0	11	696	0	0	0	4	35	0	-675	0	0	563	14,855
							14,072	0	0	0	80	704						

DIVISION 1 (STA 0+09PD - STA 2+31PD): POND

STATION	Distance	Area				Incremental Volume (Unadjusted)						Cumulative Vol (CY)				Mass Ordinate Note 7		
		Cut (SF)	Salvaged/Unusable Pavement Material (SF)	Fill (SF)	Marsh Exc (SF)	Rock Exc (SF)	EBS (SF)	Cut Note 1 (CY)	Salvaged/Unusable Pavement Material Note 2 (CY)	Fill Note 3 (CY)	Marsh Exc (CY)	Rock Exc (CY)	EBS (CY)	Expanded Fill 1.2 (CY)	Expanded Backfill 1.50 (CY)		Reduced Marsh in Fill 0.60 (CY)	Reduced EBS in Fill 0.80 (CY)
0+09	16	0	0	0	0	0	0	0	0	0	0	0	0	119	0	0	0	-119
0+25	25	0	0	329	0	0	0	0	0	99	0	0	0	424	0	0	0	-424
0+75	25	1	0	221	0	0	0	0	0	255	0	0	0	657	0	0	0	-657
1+00	25	7	0	196	0	0	0	0	0	194	0	0	0	857	0	0	0	-857
1+25	25	27	0	164	0	0	0	0	0	168	0	0	1	868	0	0	1	-868
1+50	25	40	0	122	0	0	0	0	0	132	0	0	1	1,000	0	0	2	-1,000
1+75	25	108	0	25	0	0	0	0	0	45	0	0	2	1,122	0	0	2	-1,122
2+00	25	192	0	4	0	0	0	0	0	14	0	0	4	1,172	0	0	5	-1,172
2+25	25	75	0	0	0	0	0	0	0	0	0	0	7	1,183	0	0	11	-1,183
2+31	6	10	0	0	0	0	0	0	0	2	0	0	6	1,179	0	0	16	-1,179
							400	0	0	998	0	0	20					

DIVISION 2 (STA 827+63 - STA 830+83): STH 16

STATION	Distance	Area				Incremental Volume (Unadjusted)						Cumulative Vol (CY)				Mass Ordinate Note 7		
		Cut (SF)	Salvaged/Unusable Pavement Material (SF)	Fill (SF)	Marsh Exc (SF)	Rock Exc (SF)	EBS (SF)	Cut Note 1 (CY)	Salvaged/Unusable Pavement Material Note 2 (CY)	Fill Note 3 (CY)	Marsh Exc (CY)	Rock Exc (CY)	EBS (CY)	Expanded Fill 1.2 (CY)	Expanded Backfill 1.50 (CY)		Reduced Marsh in Fill 0.60 (CY)	Reduced EBS in Fill 0.80 (CY)
827+63	38	71	0	0	0	0	0	0	0	0	0	0	5	98	0	0	4	103
828+00	50	71	0	0	0	0	0	0	0	0	0	0	7	229	-11	0	9	240
828+50	50	71	0	0	0	0	0	0	0	0	0	0	7	360	-17	0	14	378
829+00	50	71	0	0	0	0	0	0	0	0	0	0	7	492	-24	0	20	515
829+50	50	71	0	0	0	0	0	0	0	0	0	0	7	623	-30	0	25	652
830+00	50	71	0	0	0	0	0	0	0	0	0	0	7	754	-36	0	30	790
830+50	50	71	0	0	0	0	0	0	0	0	0	0	4	839	-40	0	34	879
830+83	33	71	0	0	0	0	0	0	0	0	0	0	42	839	0	0	0	879

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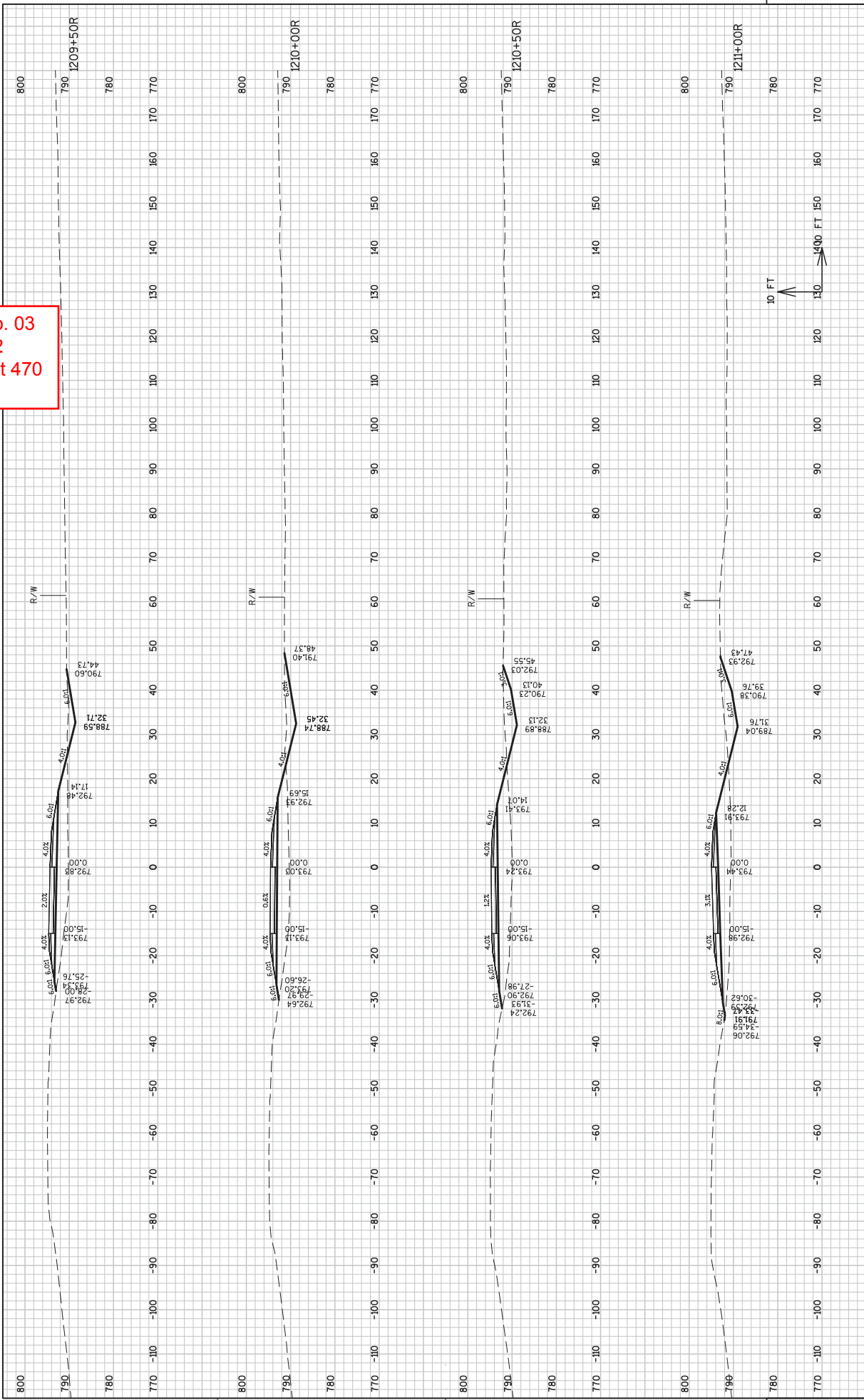
DIVISION 3 (STA 513+34 - STA 521+70): WEST SALEM SWEF REMOVAL

STATION	Area				Incremental Volume (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate Note 7			
	Cut (SF)	Salvaged/Unusable Pavement Material (SF)	Fill (SF)	Marsh Exc (SF)	Rock Exc (SF)	EBS (SF)	Cut (CY)	Salvaged/Unusable Pavement Material (CY)	Fill (CY)	Marsh Exc (CY)	Rock Exc (CY)	EBS (CY)		Expanded Fill 1.2 (CY)	Expanded Backfill 1.50 (CY)	Reduced Marsh in Fill 0.60 (CY)
513+34																
513+50	29	0	0	0	0	0	17	0	0	0	1	-1	0	0	0	1
514+00	50	24	0	0	0	0	48	0	0	0	2	-3	0	0	0	3
514+50	50	29	0	0	0	0	49	0	0	0	2	-5	0	0	0	5
515+00	50	31	0	0	0	0	55	0	0	0	3	-8	0	0	0	7
515+50	50	29	0	0	0	0	55	0	0	0	3	-11	0	0	0	9
516+00	50	32	0	0	0	0	57	0	0	0	3	-13	0	0	0	11
516+50	50	37	0	0	0	0	64	0	0	0	3	-17	0	0	0	14
517+00	50	38	0	0	0	0	69	0	0	0	3	-20	0	0	0	17
517+50	50	46	0	0	0	0	78	0	0	0	4	-24	0	0	0	20
518+00	50	53	0	0	0	0	91	0	0	0	5	-28	0	0	0	23
518+50	50	69	0	0	0	0	113	0	0	0	6	-33	0	0	0	28
519+00	50	44	0	0	0	0	105	0	0	0	5	-38	0	0	0	32
519+50	50	49	0	0	0	0	86	0	0	0	4	-43	0	0	0	35
520+00	50	55	0	0	0	0	96	0	0	0	5	-47	0	0	0	39
520+50	50	57	0	0	0	0	104	0	0	0	5	-52	0	0	0	44
521+00	50	86	0	0	0	0	133	0	0	0	7	-59	0	0	0	49
521+50	50	110	0	0	0	0	162	0	0	0	9	-67	0	0	0	56
521+70	20	123	0	0	0	0	87	0	0	0	4	-71	0	0	0	60
							1,489	0	0	0	0	-74	0	0	0	0

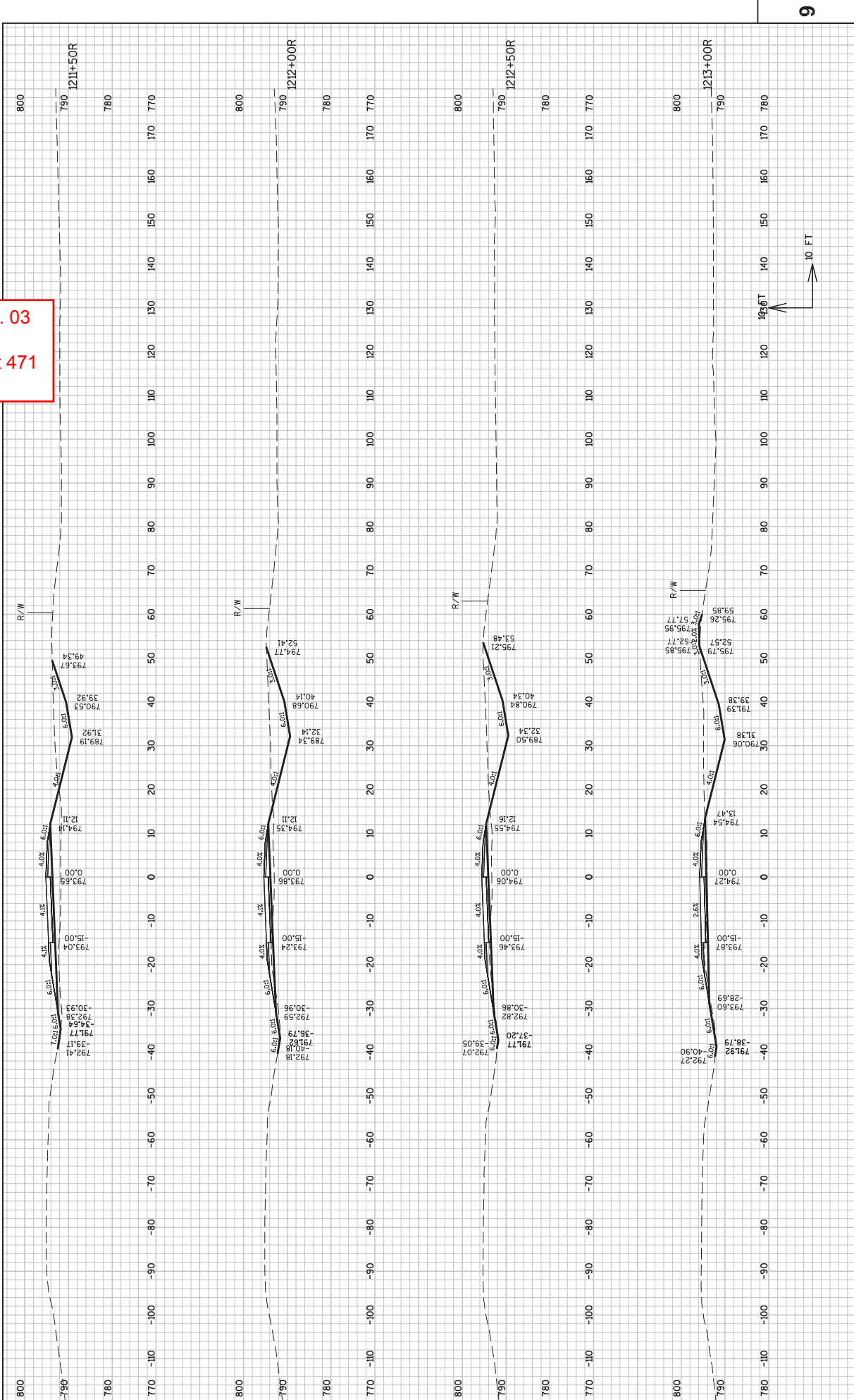
DIVISION 4 (STA 537+86 - STA 544+05): WEST SALEM SWEF REMOVAL

STATION	Area				Incremental Volume (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate Note 7			
	Cut (SF)	Salvaged/Unusable Pavement Material (SF)	Fill (SF)	Marsh Exc (SF)	Rock Exc (SF)	EBS (SF)	Cut (CY)	Salvaged/Unusable Pavement Material (CY)	Fill (CY)	Marsh Exc (CY)	Rock Exc (CY)	EBS (CY)		Expanded Fill 1.2 (CY)	Expanded Backfill 1.50 (CY)	Reduced Marsh in Fill 0.60 (CY)
537+86	133	0	0	0	0	0	67	0	0	0	3	-3	0	0	0	3
538+00	14	127	0	0	0	0	206	0	0	0	10	-13	0	0	0	11
538+50	50	96	0	0	0	0	167	0	0	0	8	-21	0	0	0	18
539+00	50	85	0	0	0	0	157	0	0	0	8	-29	0	0	0	24
539+50	50	91	0	0	0	0	163	0	0	0	8	-37	0	0	0	30
540+00	50	105	0	0	0	0	182	0	0	0	9	-45	0	0	0	38
541+00	50	84	0	0	0	0	175	0	0	0	9	-54	0	0	0	45
541+50	50	98	0	0	0	0	169	0	0	0	9	-62	0	0	0	51
542+00	50	98	0	0	0	0	169	0	0	0	9	-70	0	0	0	59
542+50	50	91	0	0	0	0	175	0	0	0	9	-79	0	0	0	66
543+00	50	88	0	0	0	0	166	0	0	0	8	-87	0	0	0	72
543+50	50	102	0	0	0	0	176	0	0	0	9	-95	0	0	0	79
544+00	50	67	0	0	0	0	156	0	0	0	8	-103	0	0	0	86
544+05	5	65	0	0	0	0	12	0	0	0	1	-103	0	0	0	86
							2,154	0	0	0	0	-108	0	0	0	0

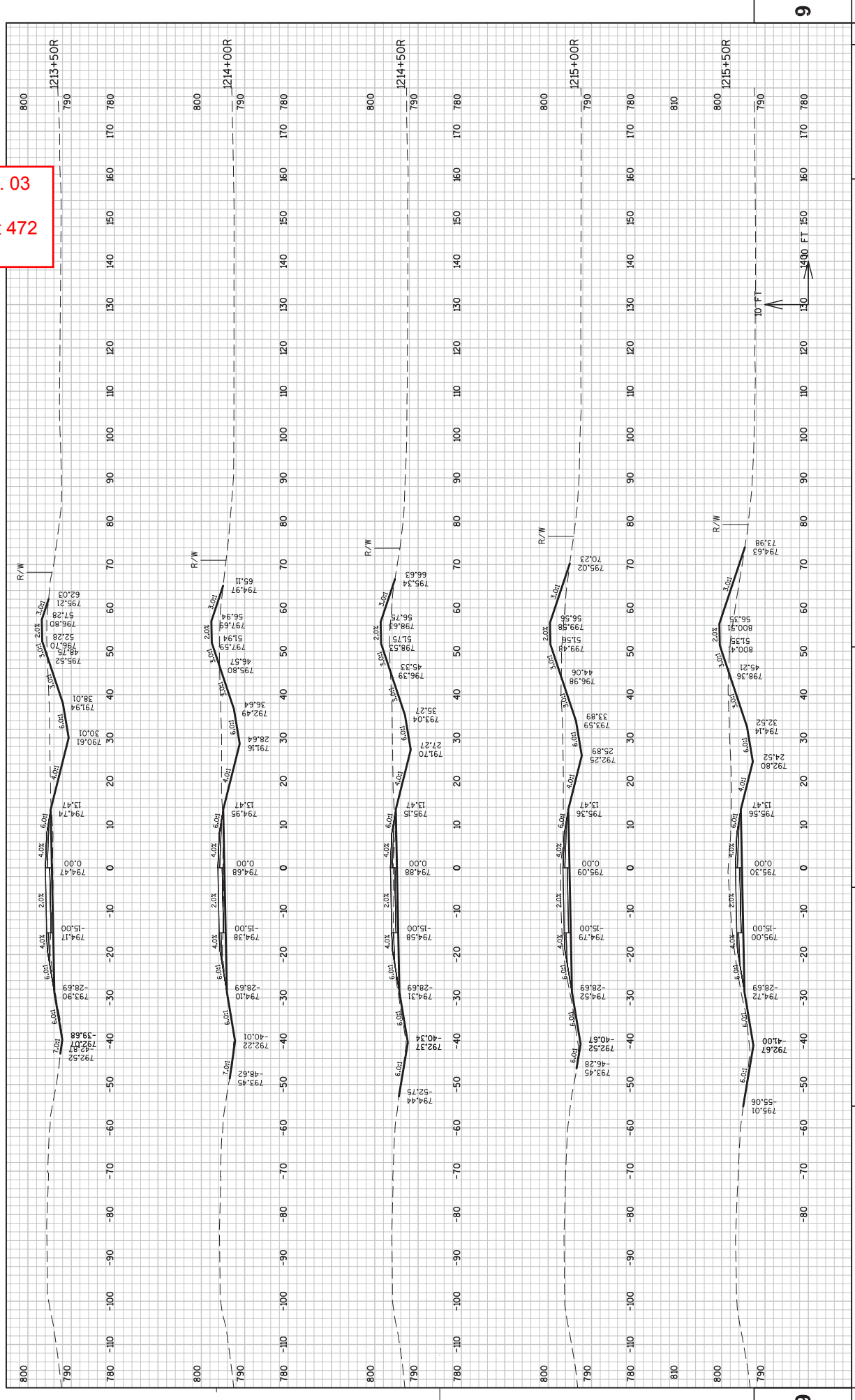
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 470
 July 7, 2016



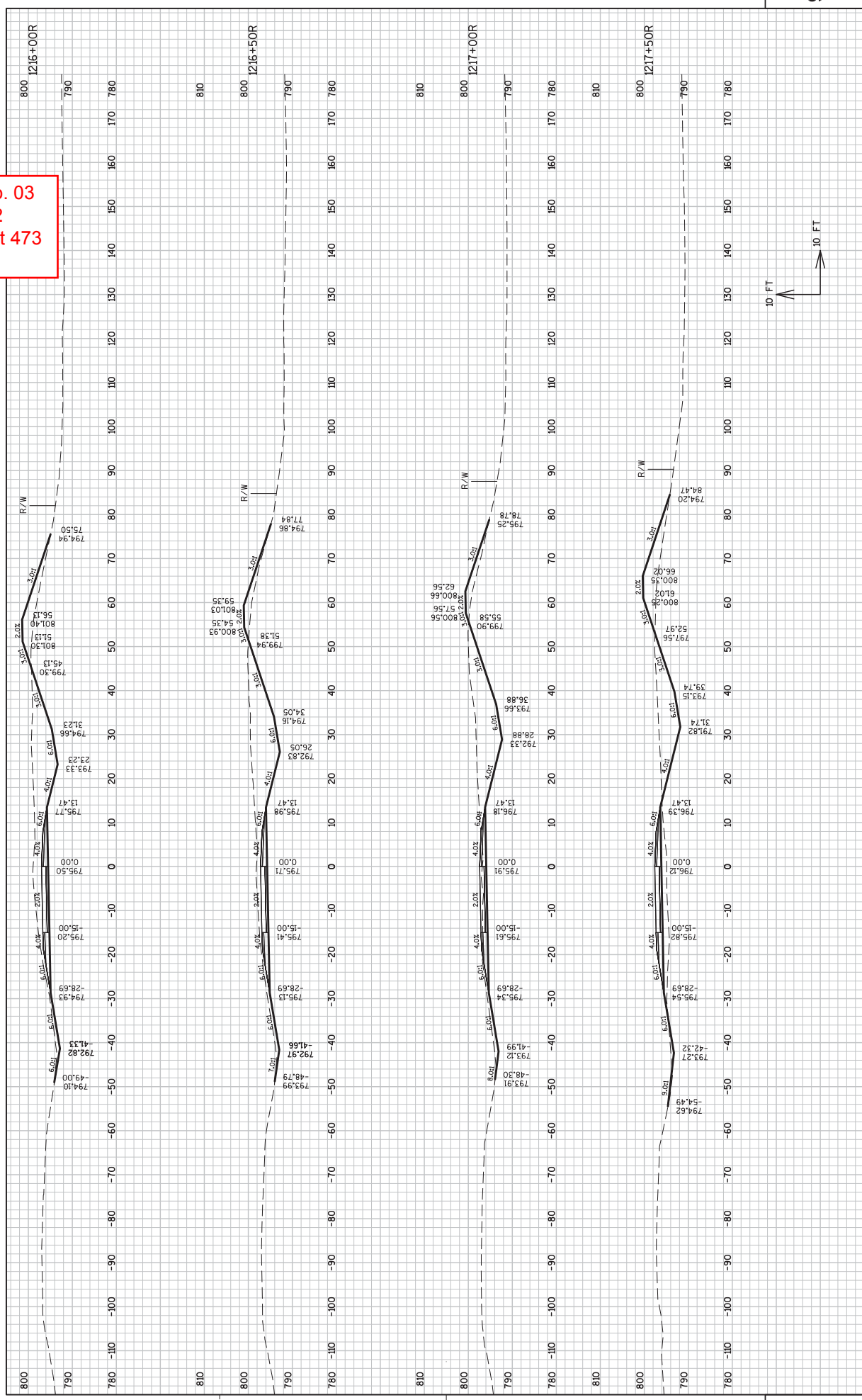
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 471
 July 7, 2016



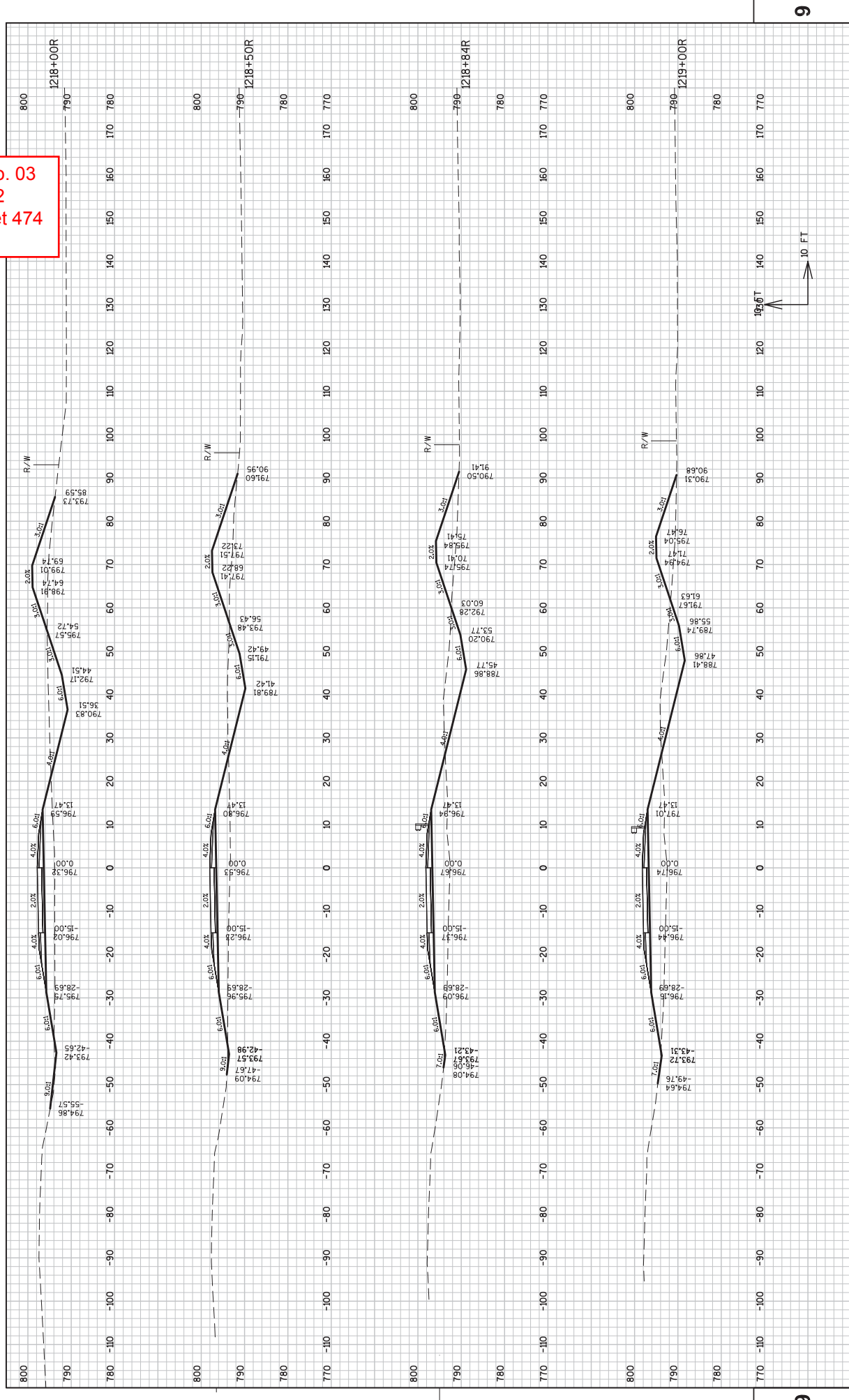
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 472
 July 7, 2016



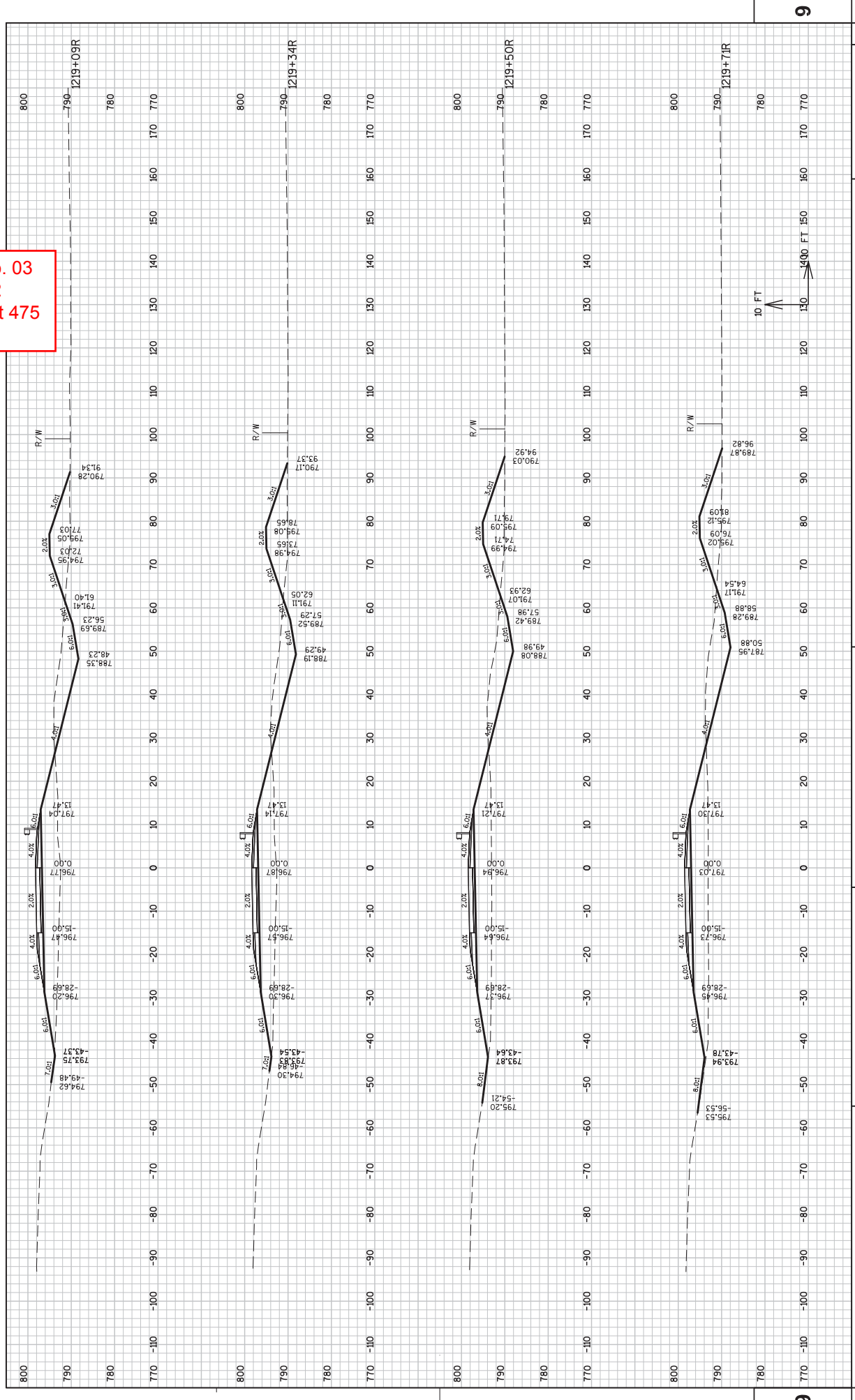
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 473
 July 7, 2016



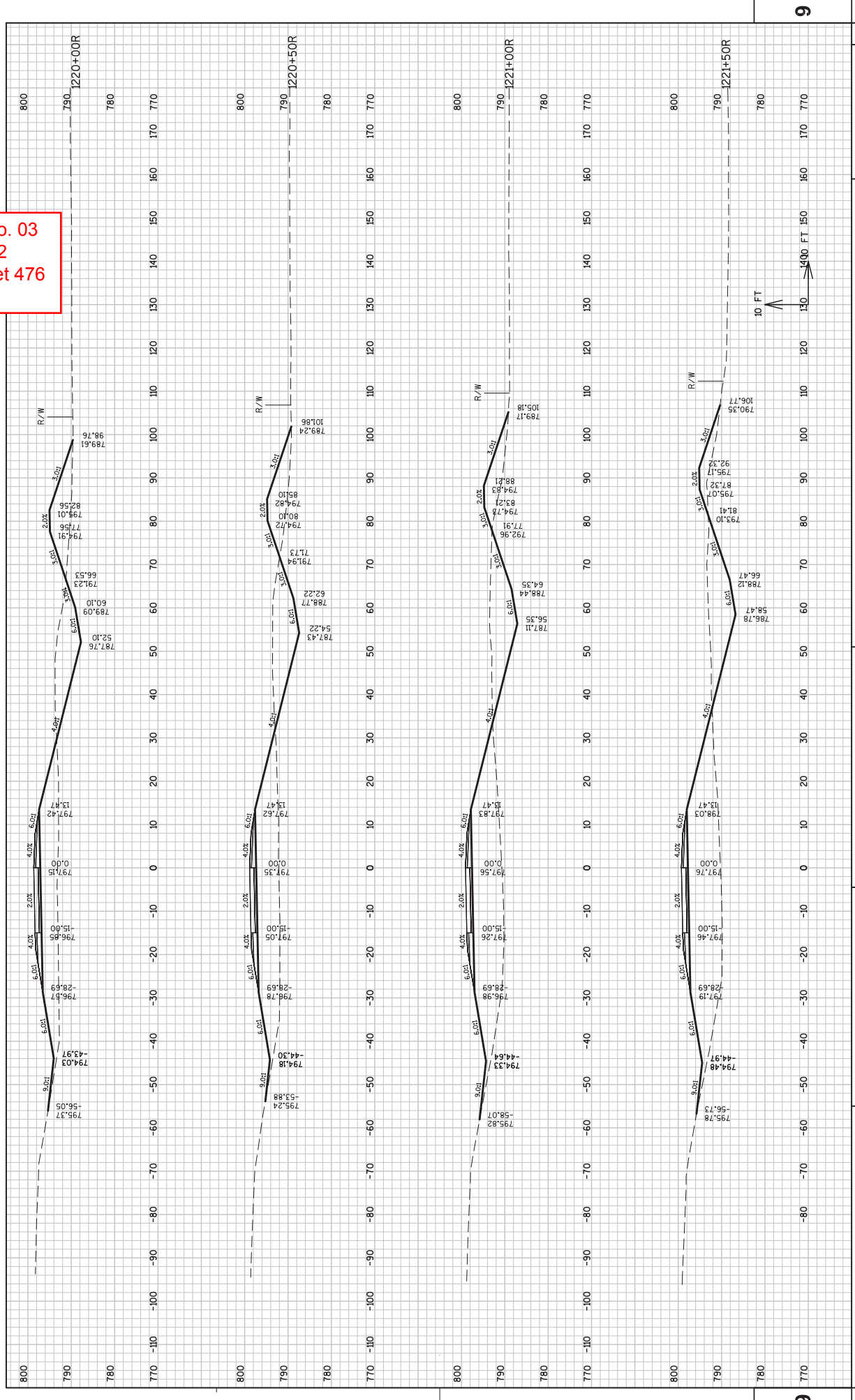
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 474
 July 7, 2016

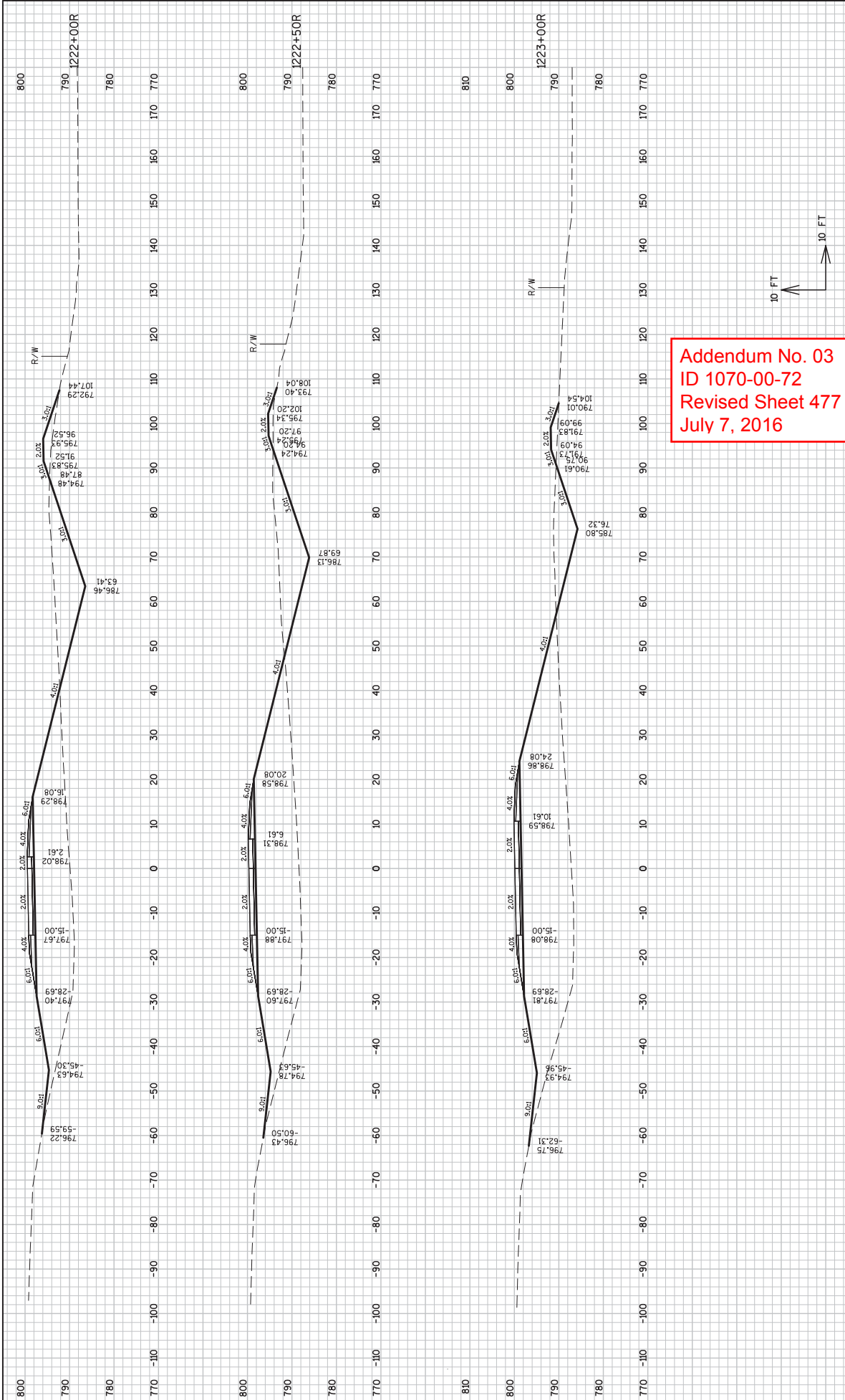


Addendum No. 03
 ID 1070-00-72
 Revised Sheet 475
 July 7, 2016



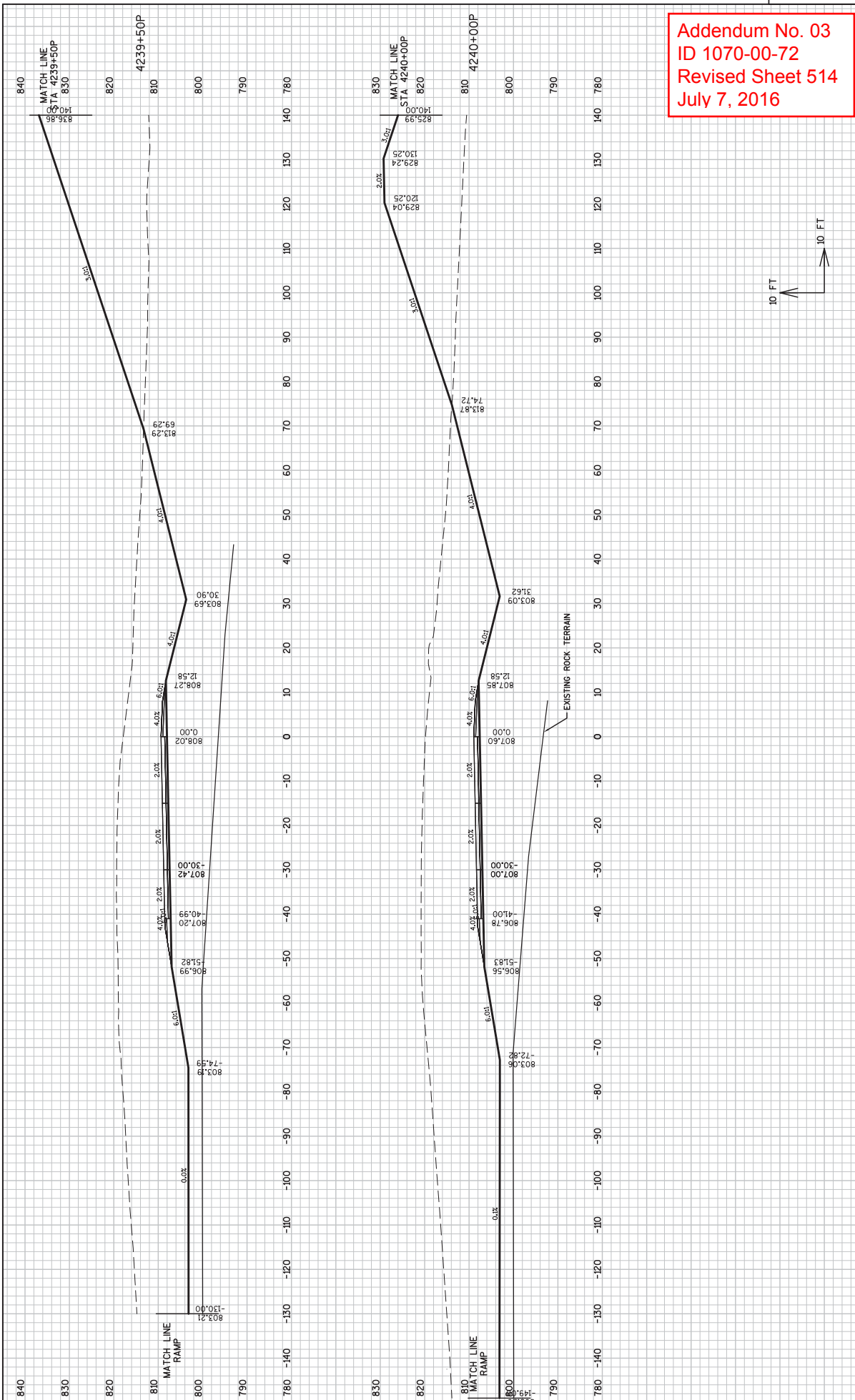
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 476
 July 7, 2016



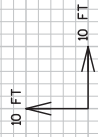


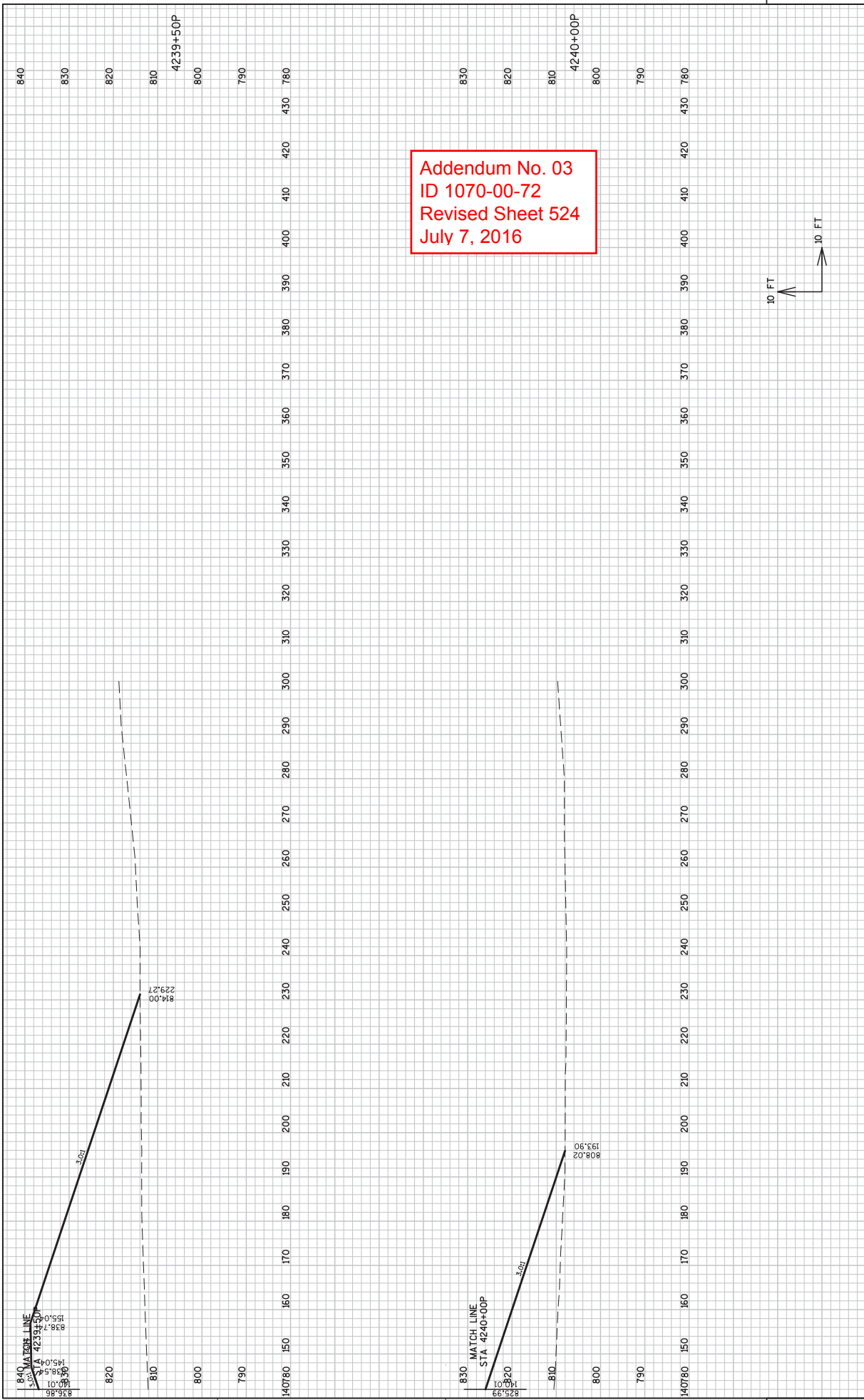
Addendum No. 03
 ID 1070-00-72
 Revised Sheet 477
 July 7, 2016





Addendum No. 03
 ID 1070-00-72
 Revised Sheet 514
 July 7, 2016





Addendum No. 03
 ID 1070-00-72
 Revised Sheet 524
 July 7, 2016



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PROJECT NO: 1070-00-72	COUNTY: MONROE	SHEET 524 E
HWY: IH 90	CROSS SECTIONS: PARKING LOT R/L	PLOT SCALE: *****
PLOT DATE: 6/21/2016		PLOT NAME: *****
FILE NAME: G:\MIDOTCO\WDC02014\CVIL_3D\SHEETPLAN\GROSS_SECTIONS\090201.XS.PARKING LOT2.DWG		

SCHEDULE OF ITEMS

REVISED:

CONTRACT:
20160712003

PROJECT(S):
1070-00-72
1070-00-73

FEDERAL ID(S):
WISC 2016246
WISC 2016247

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0110	204.0235 Removing Buildings (parcel) 001. West Salem SWEF	LUMP	LUMP			.
0120	204.0240 Site Clearance (parcel) 001. West Salem SWEF	LUMP	LUMP			.
0130	204.0245 Removing Storm Sewer (size) 018. 18-Inch	LF	127.000	.		.
0140	204.0245 Removing Storm Sewer (size) 030. 30-Inch	LF	266.000	.		.
0150	204.0265 Abandoning Wells	EACH	1.000	.		.
0160	205.0100 Excavation Common	CY	160,742.000	.		.
0170	205.0200 Excavation Rock	CY	470.000	.		.
0180	213.0100 Finishing Roadway (project) 001. 1070-00-72	EACH	1.000	.		.
0190	213.0100 Finishing Roadway (project) 002. 1070-00-73	EACH	1.000	.		.
0200	214.0100 Obliterating Old Road	STA	17.000	.		.
0210	305.0110 Base Aggregate Dense 3/4-Inch	TON	2,500.000	.		.

SCHEDULE OF ITEMS

REVISED:

CONTRACT:
20160712003PROJECT(S):
1070-00-72
1070-00-73FEDERAL ID(S):
WISC 2016246
WISC 2016247

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0720	623.0200 Dust Control Surface Treatment	56,400.000 SY	.		.	
0730	624.0100 Water	1,200.000 MGAL	.		.	
0740	625.0100 Topsoil	25,950.000 SY	.		.	
0750	625.0500 Salvaged Topsoil	65,900.000 SY	.		.	
0760	627.0200 Mulching	57,900.000 SY	.		.	
0770	628.1504 Silt Fence	13,200.000 LF	.		.	
0780	628.1520 Silt Fence Maintenance	6,610.000 LF	.		.	
0790	628.1905 Mobilizations Erosion Control	16.000 EACH	.		.	
0800	628.1910 Mobilizations Emergency Erosion Control	8.000 EACH	.		.	
0810	628.2004 Erosion Mat Class I Type B	30,300.000 SY	.		.	
0820	628.6510 Soil Stabilizer Type B	8.000 ACRE	.		.	

SCHEDULE OF ITEMS

REVISED:

CONTRACT:
20160712003PROJECT(S):
1070-00-72
1070-00-73FEDERAL ID(S):
WISC 2016246
WISC 2016247

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0830	628.7005 Inlet Protection Type A	10.000 EACH	.		.	
0840	628.7010 Inlet Protection Type B	5.000 EACH	.		.	
0850	628.7015 Inlet Protection Type C	5.000 EACH	.		.	
0860	628.7504 Temporary Ditch Checks	300.000 LF	.		.	
0870	628.7515.S Stone or Rock Ditch Checks	35.000 CY	.		.	
0880	628.7555 Culvert Pipe Checks	50.000 EACH	.		.	
0890	628.7560 Tracking Pads	3.000 EACH	.		.	
0900	629.0210 Fertilizer Type B	60.000 CWT	.		.	
0910	630.0120 Seeding Mixture No. 20	2,380.000 LB	.		.	
0920	630.0130 Seeding Mixture No. 30	1,270.000 LB	.		.	
0930	630.0140 Seeding Mixture No. 40	15.000 LB	.		.	

SCHEDULE OF ITEMS

REVISED:

CONTRACT:
20160712003

PROJECT(S):
1070-00-72
1070-00-73

FEDERAL ID(S):
WISC 2016246
WISC 2016247

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2240	SPV.0105 Special 401. Removing Weight Scale And Pit	LUMP	LUMP			.
2250	SPV.0105 Special 402. Removing Underground LP Tank	LUMP	LUMP			.
2260	SPV.0180 Special 001. Scale Approach Pavement Reinforcement	270.000 SY		.		.
2270	311.0110 Breaker Run	13,750.000 TON		.		.
	SECTION 0001 TOTAL					.
	TOTAL BID					.