ADDENDUM NO. 2
TO THE
BIDDING DOCUMENTS
FOR
VERNON HILLS WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE
FOR
LAKE COUNTY PUBLIC WORKS

LAKE COUNTY CONTRACT NO. 19062

DATE: May 6, 2019

BID CLOSING DATE & TIME: 11:00 AM local time, May 15, 2019

TO ALL BIDDERS BIDDING ON THE ABOVE PROJECT:

All Bidders submitting a Bid on the above Contract shall carefully read this Addendum and give it consideration in the preparation of their Bid.

I. The following are revisions to the Specifications:

A. Delete SECTION 01575 – ENVIRONMENT PROTECTION in its entirety and replace with SECTION 01575 – ENVIRONMENT PROTECTION attached to this Addendum.

B. Add SECTION 02920 – LAWN attached to this Addendum as a new section to the Specifications.

C. The following revisions shall be made to SECTION 04220-CONCRETE UNIT MASONRY:

1. Page 04220-4, subparagraph 3.02.D.6. Replace entire sentence with:

"6. Where block is laid against cast-in-place or precast concrete, provide corrugated wall ties at 16 inches on center in both directions."

D. The following revisions shall be made to SECTION 15280 – VALVES:

1. Page 15280-5, add the following Articles immediately after Article 2.07:

"2.08 GLOBE VALVES

A. Type V600: Bronze Globe Valve for Copper Piping Systems

1. Manufacturers:

a. Apollo.
b. Or Equal.

2. ½-inch to 3-inch for water service on copper piping systems.
3. Certified to NSF 61 for Drinking Water and NSF 372 lead free.
4. Comply with MSS-SP-80 and MSS SP-139.
5. Bronze body and bonnet.
6. Iron hand wheel.
7. Screw-in bonnet.
8. Back seat protection

2.09 CHECK VALVES

A. Type V200, Swing Check Valve for Copper Piping Systems

1. Manufacturers:

a. Apollo.
b. Or Equal.

2. ½-inch to 3-inch for water service on copper piping systems.
3. Certified to NSF 61 for Drinking Water and NSF 372 lead free.
4. Comply with MSS-SP-80 and MSS SP-139.
5. Bronze body and cap.
6. Bronze hanger.
7. Stainless steel pin.
8. Lead free brass seat."

II. The following are revisions to the Drawings:

A. Sheet 42 (Drawing GLR-R-1): add the following sentence to the end of Plan Note 1:

"Retain control conduits in their entirety for reuse."

B. Sheet 46 (Drawing GLR-EN-1): Replace entire sheet with Sheet 46 attached to this Addendum.

C. Sheet 47 (Drawing GLR-EL-1): Replace entire sheet with Sheet 47 attached to this Addendum.

D. Sheet 56 (Drawing CWR-R-1): Replace entire sheet with Sheet 56 attached to this Addendum.

E. Sheet 58 (Drawing CWR-SMH-1): Replace entire sheet with Sheet 58 attached to this Addendum.

F. Sheet 60 (Drawing CWR-EN-1): Replace entire sheet with Sheet 60 attached to this Addendum.

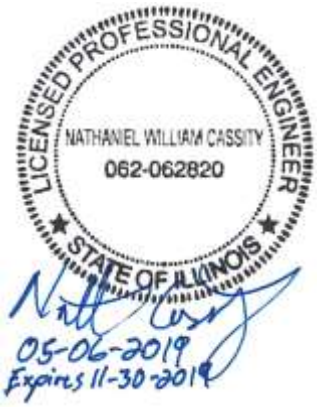
G. Sheet 66 (Drawing 999-PH-1): Replace entire sheet with Sheet 66 attached to this Addendum.

H. Sheet 67 (Drawing 999-H-2): Replace entire sheet with Sheet 67 attached to this Addendum.

III. Any revisions to any of the Contract Documents made by this Addendum shall be considered as the same revision to any and all related areas of the Contract Documents not specifically called out in this Addendum.

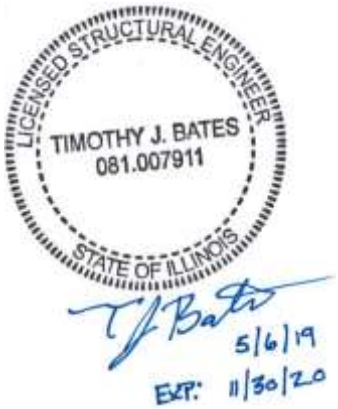
IV. The Bidder shall acknowledge receipt of this Addendum by filling out and including the Addendum Acknowledgement form, located in the Bid Specifications, as an attachment to the Bid.

DONOHUE & ASSOCIATES, INC.



Nathan Cassity, P.E

Michael Stohl, P.E



Timothy J. Bates, S.E.

END OF ADDENDUM #2

SECTION 01575
ENVIRONMENT PROTECTION

PART 1 - GENERAL

1.01 SUMMARY

A. General requirements pertaining to abatement and control of environmental pollution arising from activities of Contractor and Subcontractors in performance of the Work of the Contract.

B. Contractor, in executing Work, shall maintain work areas free from environmental pollution that would be in violation of federal, state or local regulations.

1.02 SUBMITTALS

A. Contractor shall prepare and submit an erosion control plan submittal for review by the Engineer, Owner, and the Village of Vernon Hills prior to the pre-construction conference.

1. Requirements for construction site erosion control measures and inspection shall be in accordance with the Village of Vernon Hills Site Management and Erosion Control Guidelines, excepting Item 1, which shall be modified to read as follows:

An erosion control site plan showing proposed erosion control measures must be submitted for approval by the Village of Vernon Hills, prior to the pre-construction conference. A designated person will be responsible for all soil erosion/sediment control. Before the issuance of the notice to proceed, the Village's Responsible Person Form is to be returned to the Village.

PART 2 – PRODUCTS

(NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

A. The land resources within boundaries of the Project, but outside the limits of permanent Work performed under this Contract shall be preserved in their present condition or be restored to a condition after completion of construction that will appear to be natural and not detract from the appearance of the Project.

B. Insofar as possible, confine activities to pertinent areas defined on the Drawings or elsewhere in the Contract Documents.

1. Return construction areas to their preconstruction elevations except where surface elevations are otherwise noted to be changed.
2. Maintain natural drainage patterns.
3. Conduct construction activities in such a manner that ponding of stagnant water conducive to mosquito breeding habitat will not occur at any time.

C. Land resources:

1. Do not remove, cut, deface, injure, or destroy trees or other vegetation outside the Work area limits.
2. Do not remove, cut, deface, injure, or destroy trees or other vegetation inside the Work area limits, designated to be preserved, except as permitted by Engineer.
3. Land resources damaged by Contractor shall be promptly replaced or repaired to the approval of Engineer at Contractor's expense.

3.02 PROTECTION OF STORM SEWERS

A. Prevent construction materials, concrete, earth or other debris from entering existing storm sewers or sewer construction.

3.03 PROTECTION OF WATERWAYS

B. Observe rules and regulations of State of Illinois and agencies of U.S. government prohibiting pollution of lakes, streams, rivers or wetlands by dumping of refuse, rubbish, dredge material or debris. Heavily chlorinated water from flushing of water mains and wells shall not be permitted to discharge into the waters of the State of Illinois. Heavily chlorinated water shall be neutralized as per AWWA C651 prior to discharge into surface waters such as lakes, streams, rivers or wetlands or to the groundwater.

C. Disposal of materials into waters of state must conform to requirements of Illinois EPA, Illinois Department of Natural Resources, and the U.S. Army Corps of Engineers.

1. Permits not specifically identified herein shall be obtained by CONTRACTOR at CONTRACTOR'S expense.

D. Provide holding ponds or approved method to divert flows, including storm flows and flows created by construction activity, to prevent excessive silting of waterways and flooding of Site.

E. Comply with procedures outlined in:

1. U.S. EPA manuals entitled "Guidelines for Erosion and Sedimentation Control Planning and Implementation", Manual EPA-72-015 and "Processes, Procedures, and Methods to Control Pollution Resulting from All Construction Activity", Manual EPA-43019-73-007.

2. Illinois EPA's Standard Specifications for Soil Erosion Control as contained in IEPA/WPC 87-012 or later edition. In order to prevent eroded soils from escaping soil stockpiles, Contractor shall erect silt fences around all stockpiled excavated materials. Silt fences shall be "Perimeter Erosion Barrier" as defined by Article 280.04(b) of IDOT's Standard Specifications.

3. Lake County Watershed Development Ordinance

4. Village of Vernon Hills Site Management and Erosion Control Guidelines

F. Maintain erosion control measures during Project. Remove erosion control measures upon establishment of permanent, surface stabilization.

3.04 STORMWATER DISCHARGE

A. Since the Project will result in disturbance of less than 1 acre of land, no Stormwater NPDES permit is needed for the Project.

3.05 DISPOSAL OF EXCESS EXCAVATED AND OTHER WASTE MATERIALS

A. Excess excavated material not required or suitable for backfill and other waste material shall be disposed of in accordance with federal, state, and local regulations.

B. In accordance with the Illinois Environmental Protection Act, 415 ILCS 5/22.51, Contractor shall obtain all certifications required by federal, state, and local regulation and by owner/operator of off-site disposal sites certifying that the excess excavated and other waste materials are uncontaminated. Certifications shall be made by a licensed professional engineer in accordance with federal, state, and local regulations. Contractor shall conduct tests and analyses in order to certify that excess excavated material and other waste materials are uncontaminated.

C. Provide watertight conveyance of liquid, semi-liquid or saturated materials which tend to bleed during transport. Liquid loss from transported materials is not permitted, whether being delivered to construction site or hauled away for disposal.

3.06 PROTECTION OF AIR QUALITY

A. Minimize air pollution by requiring use of properly operating combustion emission control devices on construction vehicles and equipment and encourage shutdown of motorized equipment not in use

B. Do not burn trash on Site.

C. If temporary heating devices are necessary for protection of Work, they shall not cause air pollution.

3.07 USE OF CHEMICALS

A. Chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall be approved by U.S. EPA or U.S. Department of Agriculture or any other applicable regulatory agency.

B. Use and disposal of chemicals and residues shall comply with manufacture’s instructions.

3.08 NOISE CONTROL

A. Conduct operations to cause least annoyance to residents in vicinity of Work, and comply with applicable local ordinances.

B. Equip construction equipment and other apparatus with mechanical devices necessary to minimize noise.

C. Equip compressors with silencers on intake lines.

D. Equip gasoline or oil-powered equipment with silencers or mufflers on exhaust lines.

E. Line storage bins and hoppers with material that will deaden sounds.

F. Route vehicles carrying rock, concrete, or other material over such streets as will cause least annoyance to public and do not operate on public streets between hours of 6:00pm and 7:00am, nor on Saturdays, Sundays or legal holidays, unless approved by Owner.

3.09 DUST CONTROL

A. Take special care in providing and maintaining temporary roads, Owner's existing roads, and public roads used during construction operations in clean, dust free condition.

B. Comply with local regulations for dust control. If Contractor's dust control measures are considered inadequate by Engineer, Engineer may require Contractor to take additional dust control measures.

3.10 FUELS AND LUBRICANTS

A. Comply with local, state, and federal regulations concerning transportation and storage of fuels and lubricants.

B. Fuel storage area location shall be approved by Owner prior to installation.

C. Report spills or leaks from fueling equipment or construction equipment to Owner and cleanup as required.

D. Owner may require Contractor to remove damaged or leaking equipment from Site.

END OF SECTION

SECTION 02920
LAWN

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Preparing ground surface.
2. Seed and sod.
3. Fertilizer.
4. Maintenance.

B. Except for paved, riprapped, or built-up areas, all areas of site which are disturbed shall be seeded or sodded.

1.02 REFERENCES

A. ASTM: American Society for Testing and Materials

1.03 SUBMITTALS

A. General:

1. Submit Product Data in sufficient detail to confirm compliance with requirements of this Section. Submit Product Data and Shop Drawings in one complete submittal package. Partial submittals are unacceptable.
2. Mix analysis and names of seed mixes.

B. Submit in accordance with Section 01330.

1.04 QUALITY ASSURANCE

A. Meet or exceed specifications of Federal, State, and local laws requiring inspection for plant disease and insect control.

B. Seed shall conform to U.S. Department of Agriculture Rules and Regulations under Federal Seed Act and requirements of state seed laws.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Provide seed mixture in sealed containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

B. Deliver fertilizer to site in waterproof bags showing weight, chemical analysis, and name of manufacturer.

C. Deliver sod in rolls on pallets. Protect exposed roots from dehydration. Do not deliver more sod than can be laid within 24 hours.

1.06 WARRANTY

A. Warranty lawn areas for period of 1 year after acceptance of seeding to be alive and in satisfactory growth at end of warranty period.

1. For purpose of establishing acceptable standard, scattered bare spots, none larger than 1 square foot, will be allowed up to a maximum of 3% of lawn area.

PART 2 – PRODUCTS

2.01 SEED

A. Comply with Subsections 250.07 and 1081.04 of IDOTSPECS.

B. Proportion mixture of grass seeds, by weight, in accordance with Table 1, Subsection 250.07 of IDOTSPECS, and as follows:

1. Application on areas with slopes 4:1 or less.

a. Class 1 Lawn Mixture.

C. Pure, Live Seed: Comply with Subsection 1081.04 (c)(6) of IDOTSPECS.

D. Noxious weed content shall not exceed limits specified in Subsection 1081.04 (c)(3) of IDOTSPECS.

2.02 SOD

A. Fresh cut, nursery grown, 70% Kentucky Bluegrass, strongly rooted, and free of weeds.

B. Root zone shall be fertile, natural mineral soil. Peat sod is not acceptable.

C. 18 inches wide by 6 feet long standard sections not less than 1-1/2 inch thick, strong enough to support its own weight without tearing when suspended from one end.

D. Minimum 18 months of age.

E. Mow at least twice with final mowing not more than 7 days before cutting and lifting. Mow height not to exceed 3 inches.

2.03 FERTILIZER

A. Commercial balanced, uniform in composition, free flowing, conforming to state and federal laws.

B. Contain percentage by weight as follows, or as modified by topsoil test recommendations.

1. Prior to seeding or sodding: 6-24-24.
2. After seeding or sodding: 18-5-9.

C. 50% of elements shall be derived from organic sources.

2.03 ACCESSORIES

A. Mulch: Dry oat or wheat straw or wood cellulose fiber free of weeds and foreign matter detrimental to plant life. Hay or chopped corn stacks are not acceptable.

B. Water: Furnished by Owner from existing on-site source. Provide pumps, tankage, hose, piping, and attachments as required to bring water to point of use.

C. Erosion Control Blanket:

1. Short term duration, light duty, organic Erosion Control Revegetative Mat
2. Non-organic photodegradable or biodegradable netting allowed.
3. Manufacturers:

a. Curlex I, by American Excelsior
b. S75, DS75, or DS150, by North American Green
c. Excel SR-1, by Western Excelsior
d. ECS1, by East Coast Erosion Blankets
e. Or Equal

PART 3 – EXECUTION

3.01 SURFACE CONDITIONS

A. Examine areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of Work. Do not proceed until unsatisfactory conditions are corrected.

B. Fill settled areas where excavations or trenches were backfilled and holes made by demolition, tree removal, and site preparation.

3.02 PLANTING SEASONS

A. Spring Planting Season: From time soil can be satisfactorily worked until following dates.

1. Seed: June 15th
2. Sod: June 15th

B. Fall Planting Season:

1. Seed: August 1st to October 21st
2. Sod: August 1st to October 21st

C. Dormant Seeding: October 21st to November 15th (Soil at 1"<50 degrees Fahrenheit), seed with cover crop of winterwheat at 20 pounds per acre.

D. Perform planting of seed or placement of sod only when weather conditions and soil conditions are acceptable.

E. Planting season limits may be changed when approved by Engineer.

3.03 PREPARATION

A. Finish grading will be performed under Section 02315 and 02316.

B. Do not plant seed or place sod until trees, shrubs, and other landscaping completed.

C. Scarify existing topsoil where grade is not being raised, or where topsoil is over compacted, to depth of 2 inches.

D. Grade, rake, and roll with roller weighing not more than 100 pounds per foot or less than 25 pounds per foot.

E. Maximum variation from correct elevation is 1/2 inch 10 feet.

3.04 FERTILIZING

A. Before seeding apply 6-24-24 fertilizer at uniform rate of 20 pounds/1000 square feet; make 2 passes at right angles. Incorporate fertilizer into soil to depth of at least 2 inches by discing, harrowing, or other approved method.

B. After completion of required interim mowings, apply 18-5-9 fertilizer at rate of 15 pounds per 1000 square feet; make 2 passes at right angles.

C. Lightly water to aid dissipation of fertilizer.

3.05 SEEDING

A. Apply seed at a total rate of not less than 5 pounds/1000 square feet; make 2 passes at right angles.

B. Seeding method shall establish smooth, uniform turf.

C. Cover seed with 1/8 inches of soil by light racking.

D. Do not seed following rain, if soil has been compacted by rain, or if ground is too dry.

E. Do not seed when wind velocity exceeds 6 miles per hour.

F. Do not seed areas in excess of that which can be mulched on same day.

G. Immediately after seeding, apply mulch.

H. Place mulch loose to allow some sunlight to penetrate and air to circulate, but thick enough to shade ground, conserve soil moisture, and prevent erosion.

I. Apply water with fine spray immediately after area has been mulched or application of erosion control blanket. Leave area thoroughly soaked at close of each working day.

3.06 LAYING SOD

A. Lay sod by hand in straight lines.

B. Stagger lateral joints.

C. Do not stretch or pull to distort length as cut.

D. Butt joints and edges tightly to prevent voids which would cause drying of sod roots and weed growth.

E. Bury exposed edges of sod flush with adjacent soil.

F. On slopes greater than 3H to 1V, lay sod parallel to slope contours and secure with wood stakes; begin laying of sod at toe of slope.

G. As sodding is completed in an area, roll area with roller weighing 75 to 150 pounds per feet.

H. Water sod immediately after installation to prevent excessive drying during progress of Work. Leave area thoroughly soaked at close of each working day.

3.07 PROTECTION

A. Protect turf areas by erecting temporary fences, barriers, signs, and similar protection as necessary to prevent trampling until acceptance by Owner.

B. Replace, repair, restake, or replant damaged seeding or sod.

C. Protect slopes and embankments against erosion until Work is accepted. Repair eroded areas by refilling, resodding, reseeding, and remulching as required.

3.08 FIELD QUALITY CONTROL

A. Acceptance:

1. Notify Engineer when lawn areas are ready for final inspection.
2. Substantial completion will be granted upon conformance with following;

    a. Turf reasonable free from weeds, diseases or other visible imperfections.
    b. Turf displays uniform color, quality and coverage.
    c. Minimum 3 mowings performed.
    d. Fertilizer application performed after mowing.

3. After substantial completion, Owner will be responsible for maintenance.

3.10 MAINTENANCE

A. Maintenance shall begin immediately following installation of each portion of lawn. Continue until substantial completion.

B. Maintain lawns by watering, mowing, and repairing or replanting as may be necessary to produce uniform stand of grass until Work accepted.

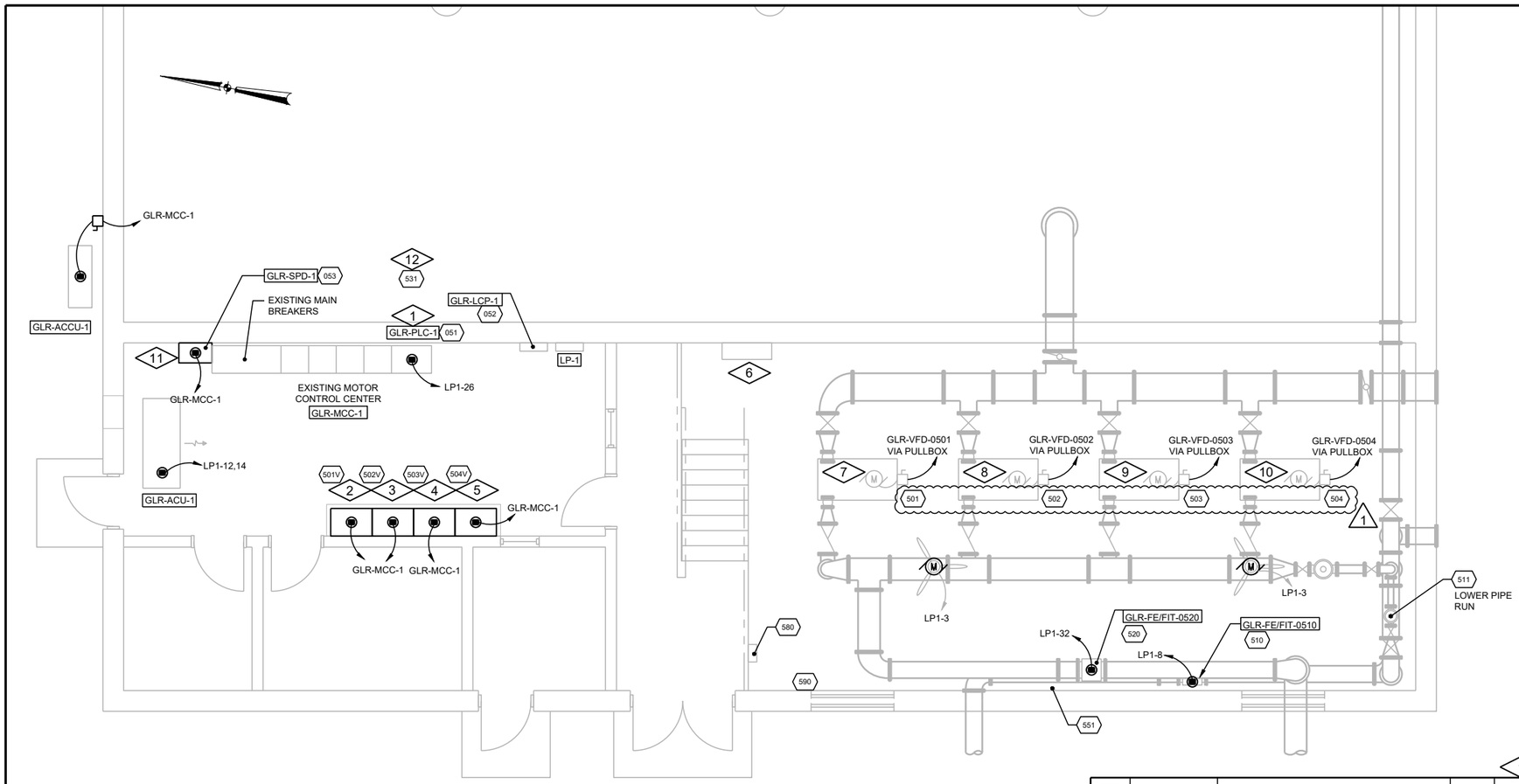
C. Perform first mowing when average height of grass reaches 3 inches. Perform interim mowings, 2 minimum, as needed to maintain grass height at 2 to 2-1/2 inches. Do not remove more than 1/3 of leaf blade by mowing.

D. After completion of required interim mowings, apply 18-5-9 fertilizer as specified herein.

E. Control weed growth; apply herbicide in accordance with manufacturer’s instructions.

F. Top dress or resod excessive cracks appearing upon soil shrinkage.

END OF SECTION



FLOOR PLAN

0 1' 4'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY DIMENSIONS, ELEVATIONS, AND LOCATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. PLASTIC EQUIPMENT MARKERS SHALL BE PROVIDED FOR ALL PUMPS, CONTROL VALVES, AND OTHER DEVICES NEW OR EXISTING. SEE SPECIFICATION SECTION 15190.
3. CONTRACTOR SHALL RUN WIRE IN EXISTING CONDUITS WHERE NOTED. WHERE NOT NOTED, CONTRACTOR HAS OPTION TO REUSE EXISTING CONDUIT OR PROVIDE NEW.

PLAN NOTES:

1. COORDINATE INSTALL LOCATION OF PANEL FIELD WIRING TERMINALS WITH EXISTING PANEL TO ALLOW REUSE OF FIELD WIRING FOR EXISTING DEVICES WHERE POSSIBLE.
2. GLR-VFD-0501
3. GLR-VFD-0502
4. GLR-VFD-0503
5. GLR-VFD-0504
6. EXISTING PULLBOX TO BE UTILIZED FOR NEWLY PROVIDED BOOSTER PUMP MOTOR CONDUCTORS. REUSE EXISTING POWER AND SIGNAL CONDUITS FROM PULLBOX TO PUMPS.
7. BOOSTER PUMP NO. 1 GLR-P-0501
8. BOOSTER PUMP NO. 2 GLR-P-0502
9. BOOSTER PUMP NO. 3 GLR-P-0503
10. BOOSTER PUMP NO. 4 GLR-P-0504
11. RELOCATE CONDUIT AS REQUIRED TO ACCOMMODATE INSTALLATION OF NEWLY PROVIDED SURGE PROTECTIVE DEVICE.
12. FIELD VERIFY TRANSDUCER LOCATION - TRANSDUCER SHALL BE SUSPENDED FROM WITHIN 20" OF ROOF HATCH OPENING FOR EASE OF REMOVAL.

ID	TAG NAME	DESCRIPTION	DETAIL	WIRING (1)	DESTINATION	ID	COMMENTS
051	GLR-PLC-1	GREGGS LANDING RESERVOIR PLC PANEL	-	-	-	-	EXISTING ENCLOSURE
052	GLR-LCP-1	FIRE ALARM PANEL	-	(2) #14	GLR-PLC-1	051	EXISTING EQUIPMENT AND WIRE
053	GLR-SPD-1	SURGE PROTECTIVE DEVICE	MFR.	(2) #14	GLR-PLC-1	051	
501	GLR-P-0501	BOOSTER PUMP NO. 1	-	(*) #14	GLR-PLC-1	051	* PROVIDE QUANTITY MATCHING THAT REMOVED. USE EXISTING CONTROL CONDUITS AND PULLBOX. NEW CONDUCTORS SHALL PASS THROUGH MCC WITHOUT SPLICE AND TERMINATE DIRECTLY IN CONTROL PANEL.
502	GLR-P-0502	BOOSTER PUMP NO. 2	-	(*) #14	GLR-PLC-1	051	
503	GLR-P-0503	BOOSTER PUMP NO. 3	-	(*) #14	GLR-PLC-1	051	
504	GLR-P-0504	BOOSTER PUMP NO. 4	-	(*) #14	GLR-PLC-1	051	
501V	GLR-VFD-0501	BOOSTER PUMP NO. 1 VARIABLE FREQUENCY DRIVE	MFR.	(2) TSP (8) #14	GLR-PLC-1	051	
502V	GLR-VFD-0502	BOOSTER PUMP NO. 2 VARIABLE FREQUENCY DRIVE	MFR.	(2) TSP (8) #14	GLR-PLC-1	051	
503V	GLR-VFD-0503	BOOSTER PUMP NO. 3 VARIABLE FREQUENCY DRIVE	MFR.	(2) TSP (8) #14	GLR-PLC-1	051	
504V	GLR-VFD-0504	BOOSTER PUMP NO. 4 VARIABLE FREQUENCY DRIVE	MFR.	(2) TSP (8) #14	GLR-PLC-1	051	
510	GLR-FE/FIT-0510	RESERVOIR SUPPLY FLOWMETER	N380	(1) TSP	GLR-PLC-1	051	
511	GLR-FV-0511	FILL VALVE	MFR.	(6) #14	GLR-PLC-1	051	EXISTING EQUIPMENT AND WIRE
520	GLR-FE/FIT-0520	RESERVOIR DISCHARGE FLOWMETER	N380	(1) TSP	GLR-PLC-1	051	
531	GLR-LE-0531	RESERVOIR SUBMERSIBLE LEVEL ELEMENT	-	(1) TSP	GLR-PLC-1	051	EXISTING EQUIPMENT AND WIRE
551	GLR-PT-0551	SUPPLY SYSTEM PRESSURE TRANSMITTER	-	(1) TSP	GLR-PLC-1	051	EXISTING EQUIPMENT AND WIRE
580	GLR-AIT-0580	CHLORINE ANALYZER	-	(3) TSP (2) #14 (3) #12	GLR-PLC-1	051	TO BE INSTALLED BY OWNER PRIOR TO CONSTRUCTION, VERIFY FIELD LOCATION. 120Vac POWER FROM PLC PANEL
590	GLR-LSH-0590	STRUCTURE FLOOD SWITCH	N275	(2) #14	GLR-PLC-1	051	

Revision Number	Revision Description	Drawn By	Checked By	Date
1	ADDENDUM NO. 2	JTG	NWC	05/03/2019

Designed By	JRR/JTG
Drawn By	JRR/JTG
Checked By	MBS/RJN
Approved By	NWC
Filename	GLR-ENP-1.DWG
Project No.	13288
Project Date	03/20/2019

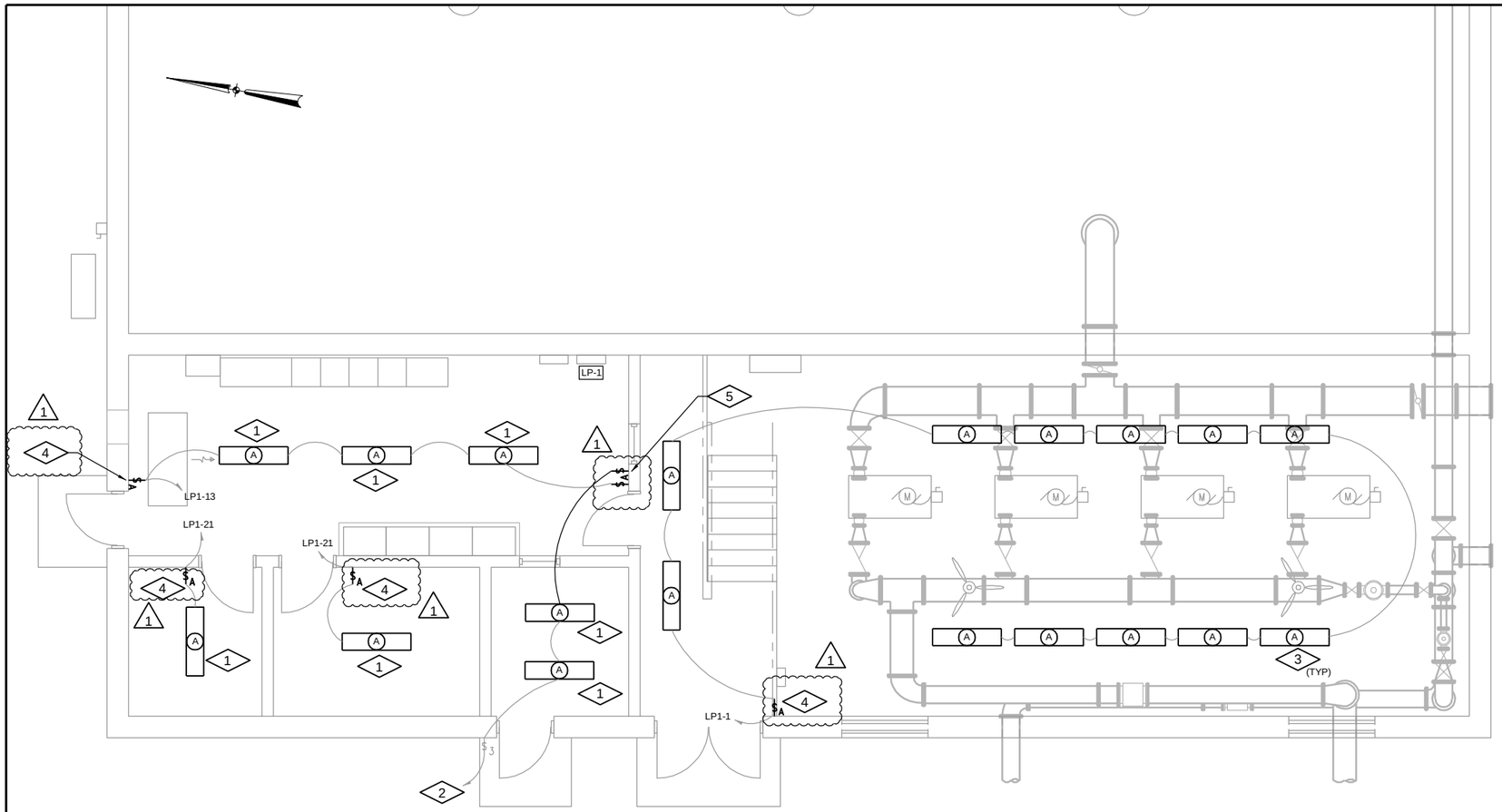
LAKE COUNTY PUBLIC WORKS
WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE
VERNON HILLS, IL

GREGGS LANDING RESERVOIR
PLAN

DONOHUE

Sheet No. 46

Drawing No. GLR-EN-1



FLOOR PLAN

0 1' 4'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY DIMENSIONS, ELEVATIONS, AND LOCATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.

PLAN NOTES:

1. CONTRACTOR TO REPLACE EXISTING CEILING MOUNTED LIGHTING.
2. CIRCUIT UNKNOWN; CONTRACTOR TO FIELD VERIFY CIRCUIT AND RE-LABEL PANEL DIRECTORY ACCORDINGLY.
3. CONTRACTOR TO REPLACE EXISTING SUPPORTED LIGHTING FIXTURES; RE-USE EXISTING SUPPORTING AS REQUIRED.
4. REPLACE EXISTING LIGHT SWITCH WITH MOTION SENSOR LIGHT SWITCH; REPLACE LIGHTING SWITCH FACEPLATE AS REQUIRED. SEE DRAWING 999-E-3 FOR ADDITIONAL MOTION SENSOR DETAILS.
5. EXISTING RELOCATED SWITCH.

Revision Number	Revision Description	Drawn By	Checked By	Date
1	ADDENDUM NO. 2	JRR	NWC	05/03/2019

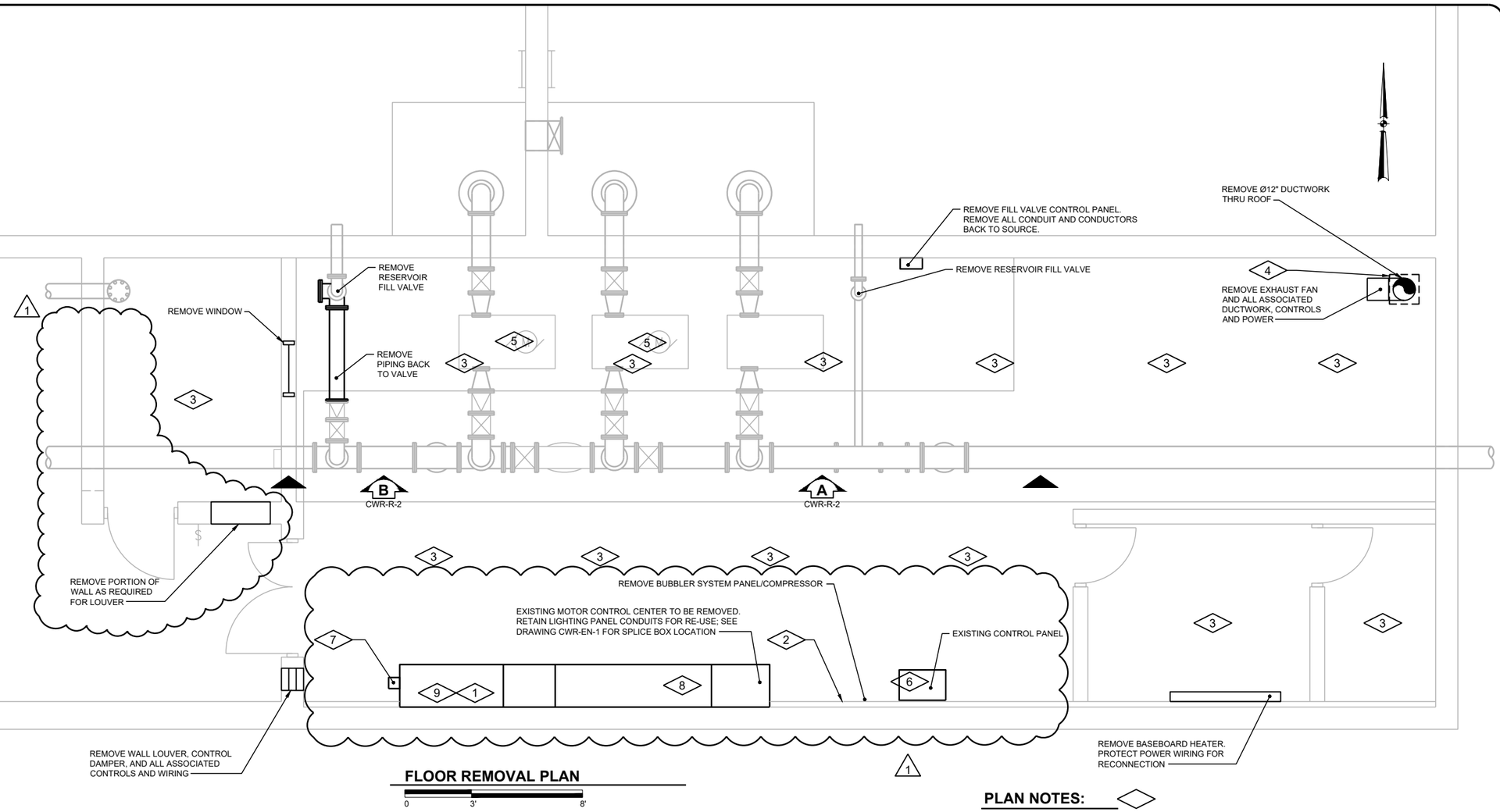
Designed By	JRR/JTG
Drawn By	JRR/JTG
Checked By	MBS/RJN
Approved By	NWC
Filename	GLR-ENP-1.DWG
Project No.	13288
Project Date	03/20/2019

LAKE COUNTY PUBLIC WORKS
WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE
VERNON HILLS, IL
GREGGS LANDING RESERVOIR
PLAN

DONOHUE

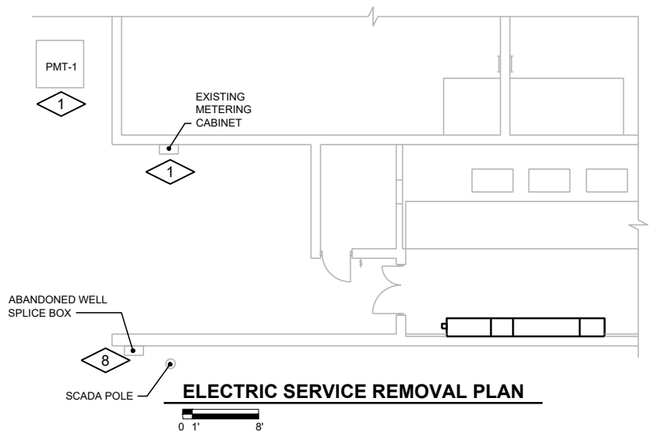
Sheet No. 47

Drawing No. GLR-EL-1



FLOOR REMOVAL PLAN

0 3' 8'



ELECTRIC SERVICE REMOVAL PLAN

0 1' 8'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. FULL TONE COMPONENTS TO BE REMOVED.
3. SAWCUT AND REMOVE CONCRETE TO THE LIMITS NOTED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE REINFORCEMENT AND EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR TO MATCH ADJACENT FINISHED SURFACE.
4. REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS FOR MATERIALS AND EQUIPMENT BEING REMOVED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE TO MATCH ADJACENT FINISHED SURFACE.
5. WHERE EQUIPMENT IS INDICATED TO BE REMOVED, REMOVE ALL ASSOCIATED POWER AND CONTROL WIRING AND CONDUIT BACK TO SOURCE. WHERE CONDUIT SYSTEM CONTAINS CIRCUITS TO OTHER EQUIPMENT THAT REMAINS, RETAIN THESE CIRCUITS AND RELOCATE EXISTING CONDUIT AND EXTEND EXISTING CIRCUITS AS REQUIRED FOR THE INSTALLATION OF NEW EQUIPMENT.
6. REMOVE ALL SUPPORTS ASSOCIATED WITH REMOVED PIPING, DUCTWORK, CONDUIT, AND EQUIPMENT. REMOVE RODS AND FASTENERS FROM CEILINGS, FLOORS, AND WALLS WITH ARE. WHERE SURFACE HAS BEEN MARRED, CHIPPED, SPAWLED, ETC. AS A RESULT OF REMOVAL, PATCH AND PAINT TO MATCH ADJACENT FINISHED SURFACE.
7. REMOVE EXISTING CONCRETE PADS OF ANY EQUIPMENT BEING REMOVED. REMOVE CONCRETE REINFORCEMENT A MINIMUM OF 1" BEYOND FINISHED SURFACE AT ANY LOCATION WHERE NEW CONCRETE PAD WILL NOT COVER ROUGH SURFACE OF REMOVED PAD. PATCH BACK TO FINISHED SURFACE WITH PATCHING MORTAR.
8. WHERE OPENINGS ARE LEFT IN WALLS, SLABS, OR CEILINGS DUE TO REMOVED PIPING, EQUIPMENT, OR OTHER WORK, PATCH OPENING TO MATCH ADJACENT SURFACES UNLESS NOTED OTHERWISE. THE PERIMETER OF OPENINGS IN CONCRETE WALLS AND SLABS EXPOSED TO EARTH, WEATHER, OR WATER SHALL BE LINED WITH A GASKET TYPE WATERSTOP PRIOR TO PATCHING OF THE WALL. OPENINGS IN PRECAST CONCRETE ROOF MEMBERS ARE TO BE PATCHED WITH CONCRETE AND DOWELED TO THE EXISTING ROOF MEMBERS UNLESS NOTED OTHERWISE. ROOFING SYSTEM SHALL BE PATCHED TO PREVENT ANY LEAKING AT THE OPENING.
9. PLAN NOTE DEPICTION FOR LIGHT FIXTURES IS ESTIMATE FOR EXISTING LIGHT FIXTURE LOCATIONS. CONTRACTOR TO FIELD VERIFY FOR EXACT FIXTURE COUNT SUCH THAT ALL INTERIOR LIGHT FIXTURES ARE REMOVED.
10. SEE SECTION 01110 FOR PROJECT CONSTRAINTS.

PLAN NOTES:

1. CONTRACTOR SHALL DISCONNECT AND REMOVE SERVICE CONDUCTORS BACK TO EXISTING COMED TRANSFORMER; PROTECT CONDUIT FOR RE-USE.
2. REMOVE RUBBER WALL BASE AS REQUIRED FOR NEW EQUIPMENT INSTALLATION. (1)
3. DISCONNECT AND REMOVE LIGHTING FIXTURES; PROTECT CONDUIT AND CONDUCTORS FOR RE-USE.
4. REMOVE CONCRETE CEILING (ABOVE) AS REQUIRED FOR NEW DUCTWORK.
5. DISCONNECT AND REMOVE CONDUCTORS BACK TO SOURCE; CUT AND CAP CONDUITS AT GRADE ONCE CONDUCTORS HAVE BEEN REMOVED.
6. REMOVE EXISTING CONTROL PANEL. SALVAGE RADIOS AND NETWORK SWITCH. DISCONNECT RADIO ANTENNA CABLES AND PROTECT FOR CONNECTION TO NEW PLC PANEL. REMOVE ANTENNA CONDUITS BACK AS REQUIRED FOR INSTALLATION AND RECONNECTION TO NEW PLC PANEL, AND COIL THE EXCESS CABLE. (1)
7. REMOVE OUTSIDE LIGHTING CONTROLLER AND RELOCATE; COORDINATE NEW LOCATION OF CONTROLLER WITH OWNER.
8. REMOVE CONDUCTORS FROM EXISTING WELL VFD TO SPLICBOX; CAP CONDUITS AT EXISTING VFD.
9. EXTEND ALL CONDUIT FROM EXISTING LIGHTING PANEL TO NEWLY PROVIDED SPLICE BOX FOR FUTURE USE, FOR LOADS THAT ARE NOT BEING RE-POWERED.
10. CONTRACTOR SHALL DISCONNECT AND REMOVE CONDUIT AND CONDUCTORS TO EXISTING PLC PANEL AS REQUIRED TO TERMINATE IN NEWLY PROVIDED PLC PANEL.

Revision Number	Revision Description	Drawn By	Checked By	Date
1	ADDENDUM NO. 2	KAG/CAH	TJB	05/03/2019

Designed By	SMW/CAH/JRR
Drawn By	SMW/CAH/JRR
Checked By	JVP/JLW/MBS
Approved By	NWC
Filename	CWR-RP-1.DWG
Project No.	13288
Project Date	03/20/2019

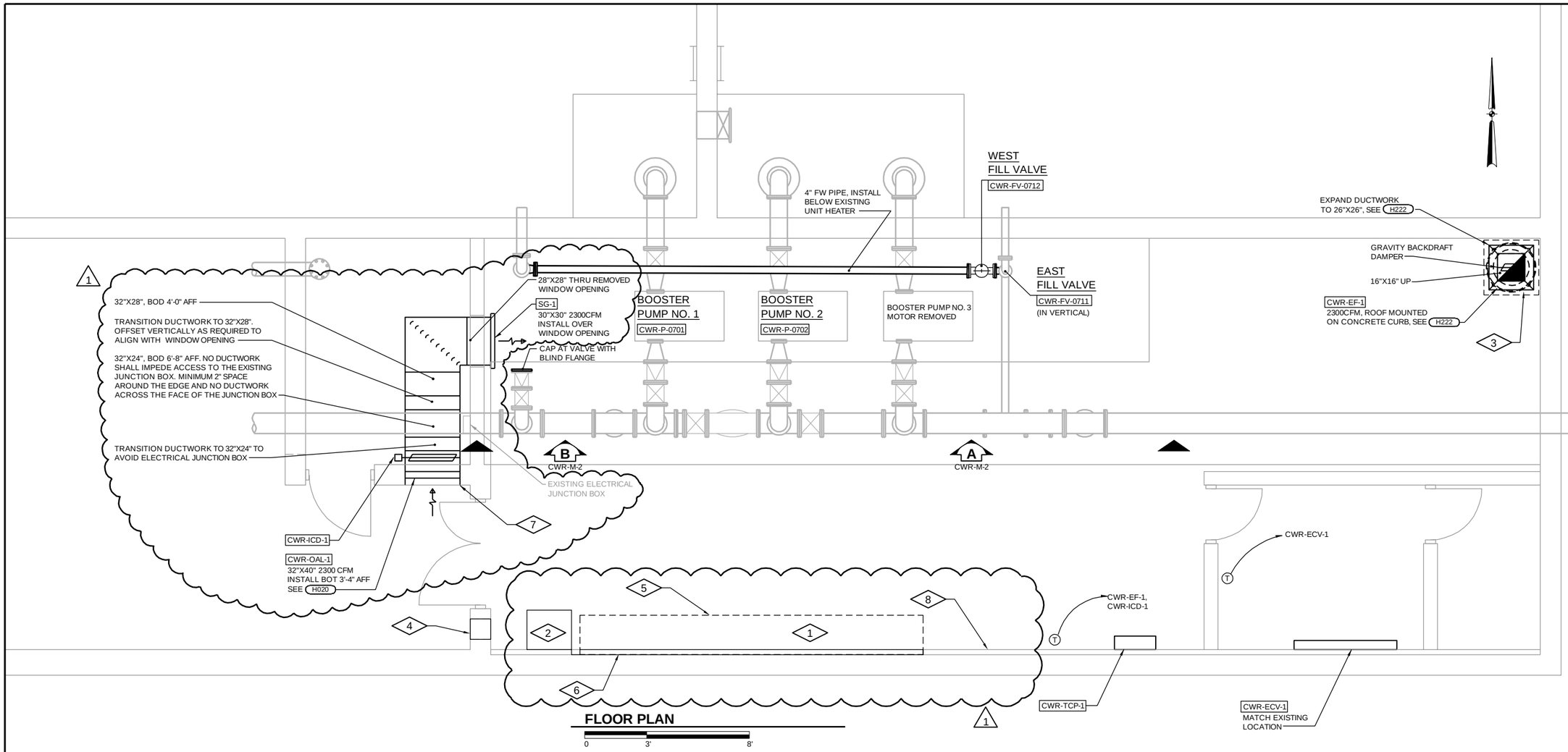
LAKE COUNTY PUBLIC WORKS
WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE
VERNON HILLS, IL

CORPORATE WOODS RESERVOIR
REMOVAL PLAN

DONOHUE

Sheet No. 56

Drawing No. CWR-R-1



GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY DIMENSIONS, ELEVATIONS, AND LOCATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. PLASTIC EQUIPMENT MARKERS SHALL BE PROVIDED FOR ALL PUMPS, CONTROL VALVES, AND OTHER DEVICES NEW OR EXISTING. SEE SPECIFICATION SECTION 15190.

PLAN NOTES:

1. CONTRACTOR SHALL PROTECT CONDUIT AND CONDUCTORS FOR EXISTING EQUIPMENT TO REMAIN AND EXTEND CIRCUITS ACCORDINGLY; SEE DRAWING CWR-ED-1 FOR EXISTING EQUIPMENT TO REMAIN.
2. PROVIDE CONCRETE EQUIPMENT PAD, SEE S341
3. INSTALL DUCTWORK INSULATION IN ACCORDANCE WITH SPECIFICATION 15083.
4. PATCH WALL OPENING. MATCH EXISTING ADJACENT SURFACES. INSIDE FACE OF WALL SHALL BE GLAZED CMU TO MATCH EXISTING.
5. PATCH RESILIENT TILE FLOOR AS REQUIRED WHERE EXISTING EQUIPMENT WAS REMOVED.
6. PATCH WALL AS REQUIRED WHERE EXISTING EQUIPMENT WAS REMOVED WITH 3"± GLAZED CMU TO MATCH ADJACENT SURFACES.
7. PROVIDE 6" x 2" x 5/16" LLV THICK BENT PLATE OVER NEW OPENING TO HOLD UP INTERIOR GLAZED CMU FASCIA. FIELD VERIFY SHORT LEG DIMENSION WITH EXISTING GLAZED CMU THICKNESS PRIOR TO FABRICATION. SHORT LEG SHALL BE 1/2" LESS THAN CMU THICKNESS. ATTACH BENT PLATE WITH 3/4" DIA CONCRETE ANCHORS @ 2'-0" OC. PROVIDE 6" BEARING AT EACH END.
8. PROVIDE NEW RUBBER WALL BASE TO MATCH EXISTING. INSTALL IN BETWEEN EQUIPMENT ALONG WALL ON SOUTH WALL.

Revision Number	Revision Description	Drawn By	Checked By	Date
1	ADDENDUM NO. 2	KAG/CAH	TJB	05/03/2019

Designed By	KAG/SMW/CAH
Drawn By	KAG/SMW/CAH
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Project No.	13288
Project Date	03/20/2019

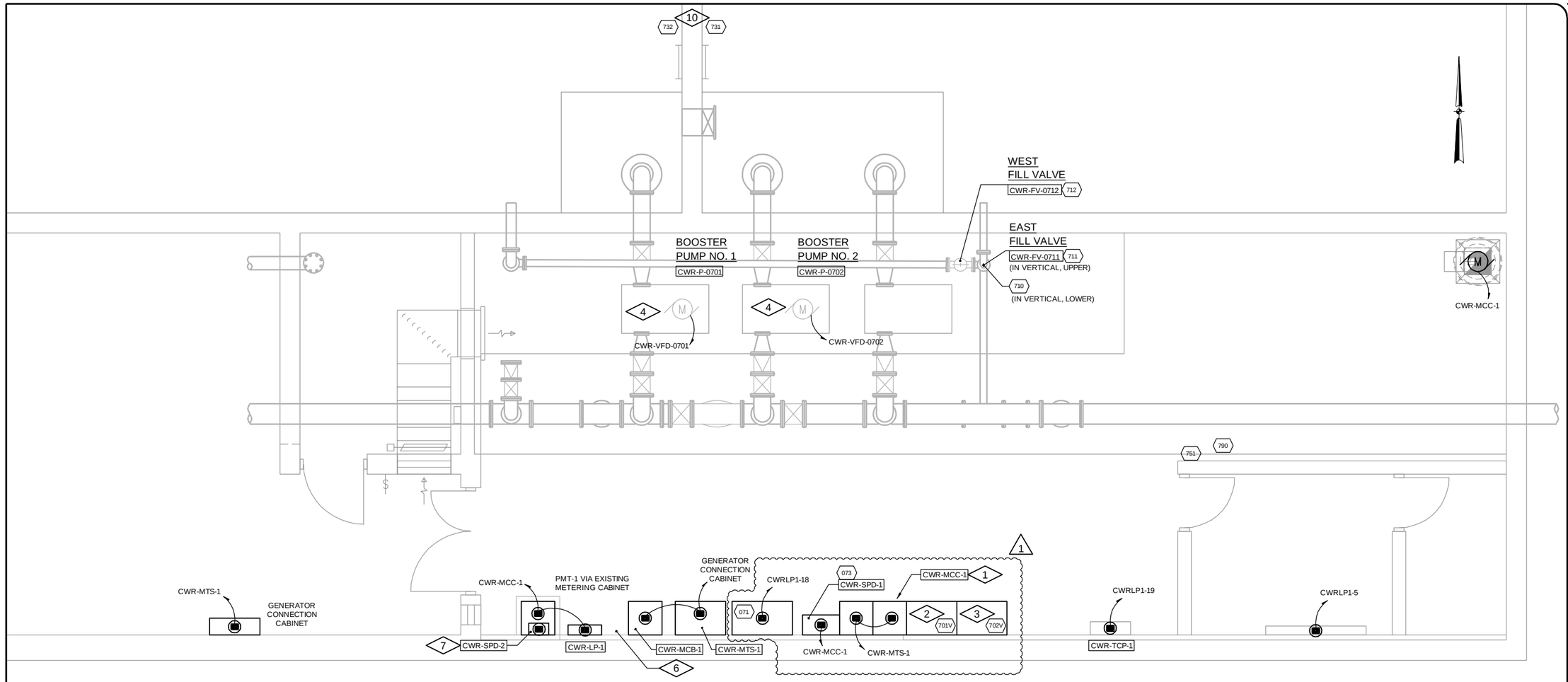
LAKE COUNTY PUBLIC WORKS
WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE
VERNON HILLS, IL

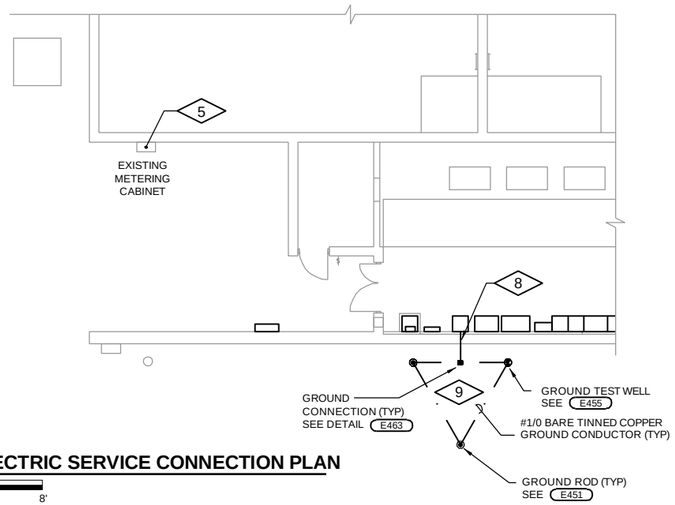
CORPORATE WOODS RESERVOIR
PLAN

DONOHUE

Sheet No. 58

Drawing No. CWR-SMH-1





ELECTRIC SERVICE CONNECTION PLAN

0 1' 8'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY DIMENSIONS, ELEVATIONS, AND LOCATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. PLASTIC EQUIPMENT MARKERS SHALL BE PROVIDED FOR ALL PUMPS, CONTROL VALVES, AND OTHER DEVICES NEW OR EXISTING. SEE SPECIFICATION SECTION 15190.
3. CONTRACTOR SHALL RUN WIRE IN EXISTING CONDUITS WHERE NOTED. WHERE NOT NOTED, CONTRACTOR HAS OPTION TO REUSE EXISTING CONDUIT OR PROVIDE NEW.

PLAN NOTES:

1. CONTRACTOR SHALL PROTECT CONDUIT AND CONDUCTORS FOR EXISTING EQUIPMENT TO BE RE-FED; SEE DRAWING CWR-ED-1 FOR EXISTING EQUIPMENT TO REMAIN.
2. CWR-VFD-0701
3. CWR-VFD-0702
4. CONDUIT AND CONDUCTORS SHALL BE ROUTED OVERHEAD FROM MOTOR TO VARIABLE FREQUENCY DRIVE.
5. EXISTING METERING CABINET LOCATION.
6. PROVIDE SPLICEBOX TO EXTEND EXISTING LIGHTING PANEL AND HEATER POWER CIRCUITS.
7. MOUNT SURGE PROTECTIVE DEVICE ABOVE TRANSFORMER.
8. CONDUIT SHALL PENETRATE RETAINING WALL; SEE E011 DETAIL. CONTRACTOR SHALL USE DETAIL THAT INCORPORATES LINK SEAL FOR INSTALLATION. PROVIDE 1" GRS CONDUIT FROM EQUIPMENT TO EDGE OF STRUCTURE. PROVIDE DUCT SEAL IN CONDUIT AFTER GROUND CONDUCTOR HAS BEEN PROVIDED TO PREVENT MEANS OF ENTRY VIA CONDUIT.
9. COORDINATE LOCATION AND INSTALLATION OF GROUND TRIAD WITH SITE PIPING AND ELECTRICAL DUCT BANKS; ADJUST GROUND TRIAD AS REQUIRED.
10. TRANSDUCER SHALL BE SUSPENDED FROM WITHIN 20" OF ROOF HATCH OPENING FOR EASE OF REMOVAL.

FLOOR PLAN

0 3' 8'

ID	TAG NAME	DESCRIPTION	DETAIL	WIRING	DESTINATION	ID	COMMENTS
071	CWR-PLC-1	CORPORATE WOODS RESERVOIR PLC PANEL	N180	-	-	-	
073	CWR-SPD-1	SURGE PROTECTIVE DEVICE	MFR.	(2) #14	CWR-PLC-1	071	
701V	CWR-VFD-0701	BOOSTER PUMP NO. 1 VARIABLE FREQUENCY DRIVE	MFR.	(2) TSP (8) #14	CWR-PLC-1	071	
702V	CWR-VFD-0702	BOOSTER PUMP NO. 2 VARIABLE FREQUENCY DRIVE	MFR.	(2) TSP (8) #14	CWR-PLC-1	071	
710	CWR-FE/FIT-0710	RESERVOIR FILL FLOWMETER	N380	(1) TSP	CWR-PLC-1	071	
711	CWR-FV-0711	EAST FILL VALVE	MFR.	(4) #14	CWR-PLC-1	071	
712	CWR-FV-0712	WEST FILL VALVE	MFR.	(4) #14	CWR-PLC-1	071	
731	CWR-LE-0731	EAST RESERVOIR SUBMERSIBLE LEVEL ELEMENT	N262	(1) TSP	CWR-PLC-1	071	VIA VFC TO BREATHER/JUNCTION BOX
732	CWR-LE-0732	WEST RESERVOIR SUBMERSIBLE LEVEL ELEMENT	N262	(1) TSP	CWR-PLC-1	071	VIA VFC TO BREATHER/JUNCTION BOX
751	CWR-PIT-0751	SUPPLY SYSTEM PRESSURE TRANSMITTER	N551	(1) TSP	CWR-PLC-1	071	
790	CWR-LSH-0790	PIPE CHASE FLOOD SWITCH	N275	(2) #14	CWR-PLC-1	071	

Revision Number	Revision Description	Drawn By	Checked By	Date
1	ADDENDUM NO. 2	JRR	NWC	05/03/2019

Designed By	JRR/JTG
Drawn By	JRR/JTG
Checked By	MBS/RJN
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LAKE COUNTY PUBLIC WORKS
WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE
VERNON HILLS, IL

CORPORATE WOODS RESERVOIR
PLAN

DONOHUE

Sheet No. 60

Drawing No. CWR-EN-1

ELECTRIC CONVECTOR SCHEDULE

SECTION 15765

TAG NO.	MANUFACTURER	MODEL NUMBER	KW	VOLT/Ø	AMP	MOUNT. HEIGHT (FT)	REMARKS
CWR-ECV-1	CADET	4F1000-8	1	120/1	8.3	0	1,2

1. = WALL MOUNTED UNIT.
2. = POWDER COAT PAINT SYSTEM FINISH

FAN SCHEDULE

SECTION 15830

TAG NO.	MANUFACTURER	MODEL NUMBER	TYPE	SERVICE	AIR FLOW DATA				FAN RPM	DRIVE	SONES	ELECTRICAL DATA				REMARKS
					CFM	ESP (IN. W.C.)	TSP (IN. W.C.)	BHP				HP/WATTS	VOLTS	PHASE	RPM	
HCR-EF-1	GREENHECK	SP-B90	BATHROOM FAN	EXHAUST	75	0.20	0.20	-	700	DIRECT	2	20W	120	1	-	8,9
HCR-SF-1	GREENHECK	LSF-12	ROOF PENTHOUSE	SUPPLY	2500	0.40	0.40	0.48	1550	BELT	14	3/4	460	3	1725	1,3,6,7
CWR-EF-1	GREENHECK	GB-161	ROOF CENTRI	EXHAUST	2300	0.40	0.50	0.46	1022	BELT	13	3/4	460	3	1725	1,2,3,4,5

TSP INCLUDES ACCESSORIES SUCH AS FILTERS AND GRAVITY BACKDRAFT DAMPERS THAT ARE FURNISHED WITH THE FAN.
1. = ALUMINUM CONSTRUCTION.
2. = STAINLESS STEEL FAN SHAFT AND FASTENERS.
3. = NEMA 3R INTEGRAL DISCONNECT.
4. = ALUMINUM BIRDSCREEN.
5. = GRAVITY OPERATED DAMPER.
6. = 2-INCH ALUMINUM FILTERS
7. = 12-INCH PREFABRICATED GALVANIZED ROOF CURB.
8. = HOODED WALL CAP.
9. = WALL SWITCH.

CEILING FAN SCHEDULE

SECTION 15803

TAG NO.	MANUFACTURER	MODEL NUMBER	W	VOLT/Ø	AMP	MOUNT. HEIGHT (FT)	REMARKS
GLR-CF-1	EMERSON	HF948W	72	120/1			-
GLR-CF-2	EMERSON	HF948W	72	120/1			-

FLOOR MOUNTED AIR HANDLING UNIT SCHEDULE

SECTION 15752

TAG NO.	MANUF.	MODEL	CFM	ESP (IN WC)	MIN OA (CFM)	HP	VOLTAGE	FLA (AMP)	COOLING DATA				FILTER TYPE	REMARKS
									TGC (MBH)	NET SHC (MBH)	EAT(°F) (DB/WB)	LAT(°F) (DB/WB)		
HCR-ACU-1	TRANE	ODYSSEY-TWE1204*B*	3500	0.5	0	2	460/3	3.3	122	92.2	80/67	56.4/52	1" TA	1,2

TGC = TOTAL GROSS CAPACITY
SHC = SENSIBLE HEAT CAPACITY.
1. = SUPPLY FAN MOTOR SPEED MODULATION CONTROL PACKAGE.
2. = SUB BASE AND VIBRATION ISOLATORS.

CEILING SUSPENDED DUCT FREE SPLIT SYSTEM SCHEDULE

SECTION 15752

TAG NO.	MANUF.	MODEL	CFM	HP	VOLTS	PHASE	FLA (AMP)	COOLING DATA				REMARKS
								TOT CAP (MBH)	SEN CAP (MBH)	EAT(°F) (DB/WB)	LAT(°F) (DB/WB)	
GLR-ACU-1	CARRIER	40MKCB54F-3	1470	-	208	1	1.9	48	35	80/67	-	1

1. = WALL MOUNTED WIRED REMOTE CONTROLLER.

AIR COOLED CONDENSER SCHEDULE

SECTION 15752

TAG NO.	MANUF	MODEL	NOMINAL CAPACITY (TONS)	TOTAL CAPACITY* (MBH)	REFRIGERANT	CIRCUITS	STAGES PER CIRCUIT	AMB. TEMP (°F)	SST (°F)	VOLT/ PHASE	MCA (AMPS)	REMARKS
HCR-ACCU-1	TRANE	ODYSSEY-TWA1204*D*	10	120	410	2	1	95	---	460/3	20.3	1,2,3,4,5

* = CAPACITY AT SCHEDULED SST AND AMBIENT TEMPERATURE.
1. = MATCHED WITH COOLING COIL FROM HCR-ACU-1.
2. = DUAL COMPRESSORS.
3. = ETL LABELED.
4. = EPOXY COATED CONDENSER COILS.
5. = MINIMUM 2 STAGE COOLING.

SPLIT SYSTEM AIR COOLED CONDENSER SCHEDULE

SECTION 15752

TAG NO.	MANUF	MODEL	NOMINAL CAP (TONS)	TOTAL CAP* (MBH)	REQ SEN CAP (MBH)	REFRIGERANT	STAGES	AMB. TEMP (°F)	SST (°F)	VOLT/ PHASE	MCA (AMPS)	REMARKS
GLR-ACCU-1	CARRIER	25AHA448	4	48	35	R-410A	1	95	---	480/3	8.6	1,2,3,4,5,6,7

* = CAPACITY AT SCHEDULED SST AND AMBIENT TEMPERATURE
1. = MATCHED WITH COOLING COIL FROM CEILING SUSPENDED DUCT FREE SPLIT SYSTEM SCHEDULE.
2. = WALL MOUNTING KIT.
3. = WINTER START CONTROL.
4. = LOW AMBIENT KIT.
5. = CRANK CASE HEATER.
6. = WIND BAFFLES.
7. = LOW AMBIENT CONTROLS (-20F).

MOTOR OPERATED DAMPER SCHEDULE

SECTION 15905

TAG NO.	TYPE	FUNCTION	BLADES	CFM	WIDTH (IN.)	HEIGHT (IN.)	FAIL POS.	ENCLOSURE NEMA	ELECTRICAL	SERVICE	MOUNTING	REMARKS
CWR-ICD-1	INSULATED	OPEN/CLOSE	PARALLEL	2600	28	14	CLOSE	2	CC	SUPPLY	DUCT	1,2
HCR-ICD-1	INSULATED	OPEN/CLOSE	PARALLEL	2500	22	18	CLOSE	2	CC	SUPPLY	DUCT	1,2

CC = CONTRACTORS CHOICE.
1. = COORDINATE SIZE WITH FAN DUCT SIZE.
2. = FULL OPEN LIMIT SWITCH.

1

GRAVITY VENTILATOR SCHEDULE

SECTION 15830

TAG NO.	MANUFACTURER	MODEL NUMBER	SERVICE	CFM	THROAT AREA (FT^2)	MAX. THROAT VELOCITY (FPM)	MAX. APD (IN. W.C.)	REMARKS
HCR-RH-1	GREENHECK	GRSR-30	RELIEF	2500	5.03	500	0.05	1,2,3

1. = ROOF CURB ADAPTER. CONTRACTOR SHALL VERIFY SIZE.
2. = ALUMINUM BIRD SCREEN.
3. = ALUMINUM HOOD.

AIR INLET AND OUTLET SCHEDULE

SECTION 15875

TAG NO.	MANUFACTURER	MODEL	SERVICE	MAX. APD (IN. W.C.)	MAX. NC	PATTERN	FINISH	MATERIAL	REMARKS
SG-1	CARNES	RASM	SUPPLY	0.10	30	DD	ANOD	ALUM	
SG-2	CARNES	RAEA	SUPPLY	0.05	30	EGG	ANOD	ALUM	

ANOD = ANODIZED FINISH.
DD = 3/4" BLADE DOUBLE DEFLECTION.
EGG = 1"X1"X1" EGGCRATE.

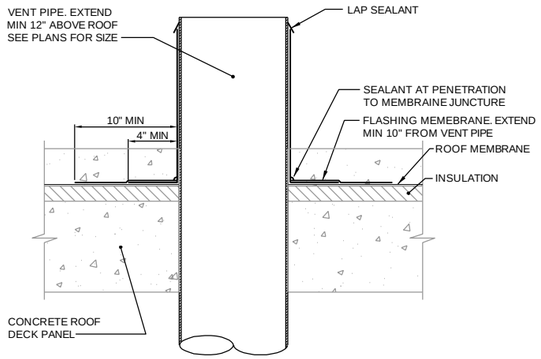
1

WALL LOUVER SCHEDULE

SECTION 15875

TAG NO.	MANUFACTURER	MODEL NUMBER	SERVICE	CFM	WIDTH (IN.)	HEIGHT (IN.)	DEPTH (IN.)	MAX. APD (IN. W.C.)	MAX. FREE AREA VEL. (FPM)	REMARKS
CWR-OAL-1	GREENHECK	ESD-403	INTAKE	2300	32	40	4	0.05	550	1,2,3

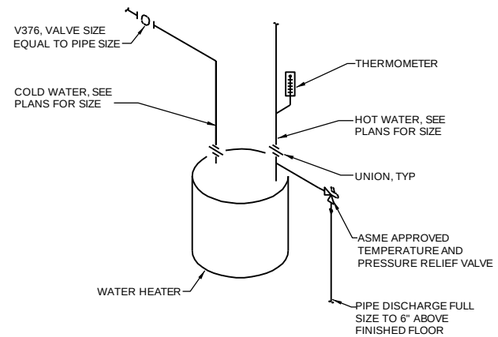
1. = ALUMINUM BIRDSCREEN.
2. = EXTENDED SILL.
3. = 70% KYNAR FINISH.



NOTE: PROVIDE WHEREVER NOTED AS VTR ON PLANS AND ISOMETRICS

VENT THRU ROOF DETAIL P210

NTS



WATER HEATER DETAIL P452

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date
01	ADDENDUM NO. 2	CAH	NWC	05/03/19

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Filename	999HD.DWG
Project No.	13288
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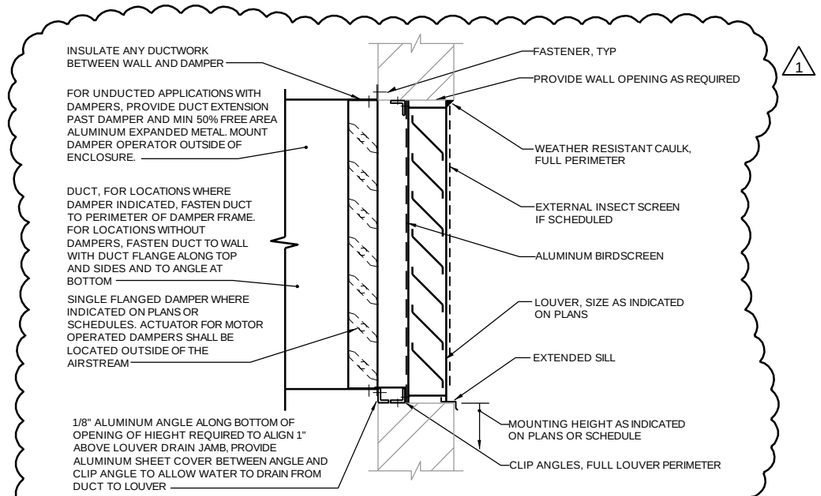
LAKE COUNTY PUBLIC WORKS
WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE
VERNON HILLS, IL

HVAC SCHEDULES
AND STANDARD DETAILS

DONOHUE

Sheet No. 66

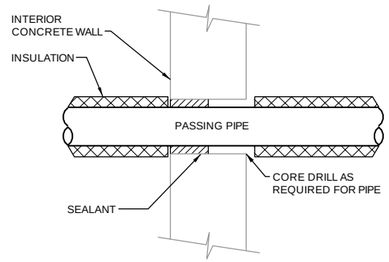
Drawing No. 999-PH-1



NOTE: ALL FASTENERS SHALL BE OF STAINLESS STEEL CONSTRUCTION

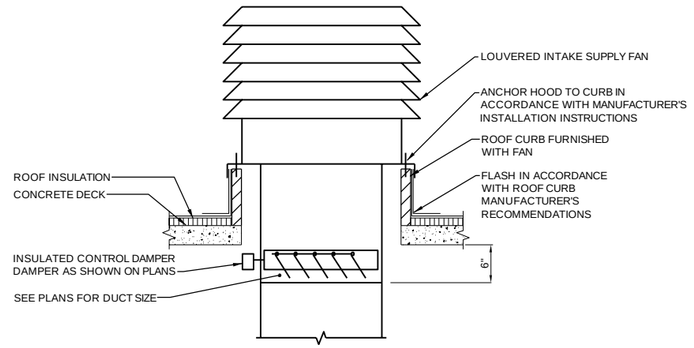
TYPICAL LOUVER DETAIL H020

NTS



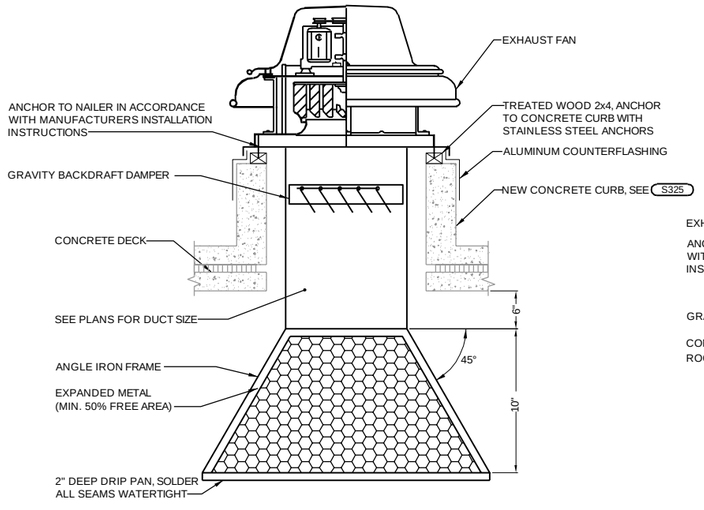
PIPE WALL PENETRATION DETAIL H024

NTS



SUPPLY FAN DETAIL H221

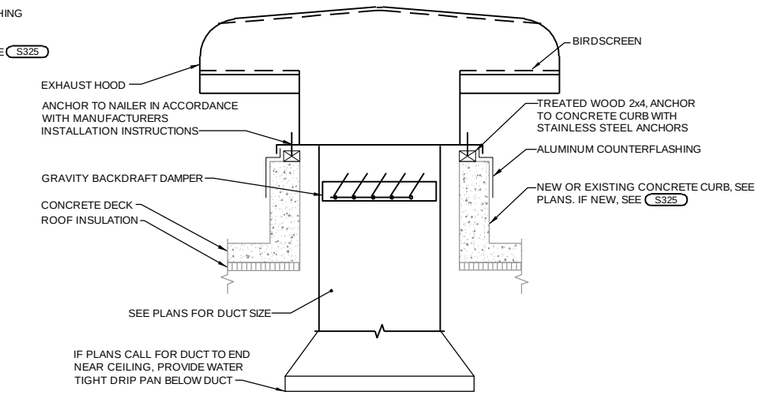
NTS



NOTE: INSTALL SUCH THAT BOTTOM OF DUCT IS MINIMUM 4" ABOVE HIGHEST POINT ON BRIDGE CRANE

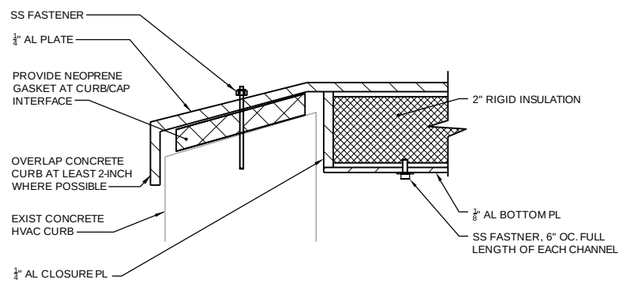
EXHAUST FAN ON A CONCRETE CURB DETAIL H222

NTS



INTAKE/RELIEF HOOD ON CONCRETE CURB DETAIL H231

NTS



NOTES:

1. FIELD VERIFY ALL EXISTING OPENINGS AND CURBS PRIOR TO FABRICATION.
2. SHOP WELD CLOSURE PLATES AND CHANNELS TO TOP COVER.
3. RIGID INSULATION SHALL HAVE A MINIMUM R-VALUE OF 5/INCH.

INSULATED CURB COVER H980

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date
01	ADDENDUM NO. 2	CAH	NWC	05/03/19

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Drawn By	CAH
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Project No.	13288
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LAKE COUNTY PUBLIC WORKS
WATER SYSTEM ELECTRICAL AND MECHANICAL UPGRADE
VERNON HILLS, IL

HVAC SCHEDULES AND STANDARD DETAILS

DONOHUE

Sheet No. 67

Drawing No. 999-H-2