



REQUEST FOR PROPOSALS

River East Park Improvements – Phase III: Restroom Facility Charter Township of Garfield, Grand Traverse County

Proposals Due:

9:00 AM Wednesday, July 8, 2026

Address Proposals to (Signed and Sealed: Mailed and/or Delivered):

Sealed Bids will be received by the Charter Township of Garfield at the Township Offices located at 3848 Veterans Drive, Traverse City, MI 49684, until 9:00 AM local time on July 8, 2026. Envelopes shall be clearly marked “*River East Park – Restroom Facility*” and at such time will be publicly opened and read aloud.

Attention: Mr. Chris Barsheff, Township Manager
Charter Township of Garfield
3848 Veterans Drive, Traverse City, MI 49684

Address Proposals Questions to:

Engineer: Jennifer Graham, P.E.
Gourdie-Fraser, Inc.
1820 Oak Hollow Drive
Traverse City, MI 49686
Phone: 231-946-5874
Facsimile: 231-946-3703
Email: jennifer@gfa.tc

Scope of Services:

We have been asked by our client, the Charter Township of Garfield, to solicit this request to qualified contractors and request a proposal to construct a restroom facility at River East Park in Grand Traverse County. The park is located near the intersection of Hammond Road and Keystone Road at 2143 N Keystone Road. The Contractor shall construct a 700 square foot public outdoor restroom facility. The facility will include two ADA accessible restrooms and 1 mechanical/storage room. Work shall include all electrical, heating, insulation, and plumbing necessary to provide a fully operational year-round restroom facility.

Requirements - General:

- Work must comply with all applicable laws, regulations and specifications as identified in this RFP and on the plans.
- Contractor is responsible to obtain all local regulatory permits (including fees) including Garfield Township Building Permit and Grand Traverse County Plumbing, Mechanical and Electrical Permits
- Project shall be substantially complete by December 31, 2025 (ready for its' intended use) and final completion within 30 days thereafter.
 - This project is a priority for the Township and there is a preference to have work completed as soon as feasible. In addition to qualifications and bid price submission, the Township will take into consideration actual timeline for completion and contractor availability as part of their bid evaluation process to aid with their selection process.
- All work shall be coordinated with Township and their Engineer (GFA).



- Prospective bidders are strongly encouraged to conduct a site visit prior to bidding.
- Contractor shall demonstrate similar past work experience and provide three (3) references along with bid submittal. References to include scope of work completed, date and contact person.

Terms of Agreement:

General:

- To hold bid open for 30 consecutive calendar days from the bid due date
- To enter into and execute a contract with the Charter Township of Garfield.
- One (1) year warranty, from date of substantial completion against material defect and/or workmanship.

Insurance:

- Contractor will have Worker's Compensation Insurance in limits required by state law and Comprehensive General Liability Insurance coverage in force for all of its operations under this contract.

Bonds:

- The Contractor shall include in the proposal price the cost to provide the following:
 - Performance and Payment Bonds in the amount of 100% of the project
 - Maintenance and Guarantee Bond in the amount of 50% of the proposal amount, guarantying for a period of one (1) year from final acceptance of the project work
 - Letter of Surety, licensed to do business in the State of Michigan, stating ability to obtain a Performance Bond, and Labor and Material Bond for 100% of the project amount.

Shop Drawing Submittals:

- Provide one (1) pdf of material specification sheets and warranty information to Engineer. Do not proceed until written approval is received.
 - This shall include all finishes, style and color selections to be coordinated and approved by Owner.
- Coordinate all work with the Engineer.

Services / materials to be Provided:

Contractor shall provide all equipment and materials as necessary to complete the work outlined below and as identified in the attached drawings and specifications. They shall include, but are not limited to, the following not stated previously:

- Mobilization, demobilization, equipment, labor and materials to perform work
- Building, Plumbing, Mechanical and Electrical Permits including fees and inspections.
- Onsite power supply is available (120V only) as coordinated with the Owner. Contractor to provide temporary power supply if additional is required
- Onsite water supply is onsite and available for testing as coordinated with Owner
- Restoration and site cleanup (including site grading, seeding, and mulch) of any disturbed areas
- Final clean-up of the site upon completion
- Facility is a public park that is open and accessible 24/7. Contractor shall be responsible for all materials and to secure work zone to prevent accident, damage or theft.



Township Services / materials to be Provided:

- Material Testing and Inspection – 24 hour advance notice shall be provided
- Survey Staking – 48 hour advance notice shall be provided
- Onsite water supply is onsite and available for testing as coordinated with Owner

Contractors Proposal Form:

Bidders are instructed to submit bids for this project on a lump sum basis and are tax inclusive. Proposal shall also include past projects / references and schedule identifying timeline and completion date.

All work shall be performed in compliance with specifications and drawings and terms identified in the RFP and applicable laws.

TOTAL BID	\$
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Bidders Signature

Printed Name:

Business Name:

Address:

MI Contractor License No.:

Telephone:

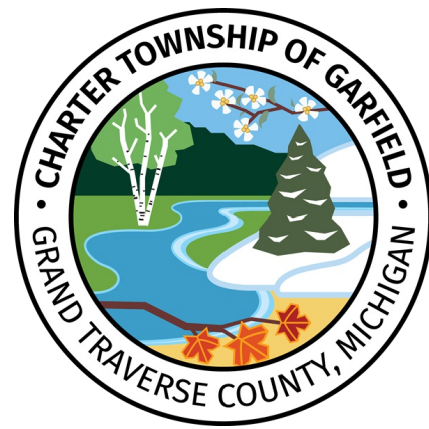
Email:

The Township reserves the right to reject any or all bids in whole or in part, if it is determined that the best interest of the Township will be served by doing so. In determining an award, qualifications and availability of the bidder, conformity with the scope of services to be supplied, cost, quality, delivery terms and past performance on Township contracts will be considered.

PLANS PREPARED FOR: CHARTER TOWNSHIP OF GARFIELD RIVER EAST RECREATION AREA IMPROVEMENTS PHASE III: RESTROOM FACILITY

CLIENT / AGENCY

CHARTER TOWNSHIP OF GARFIELD
3848 VETERANS DRIVE
TRAVERSE CITY, MI 49684
231-941-1620
PARK ADDRESS: 2145 NORTH KEYSTONE

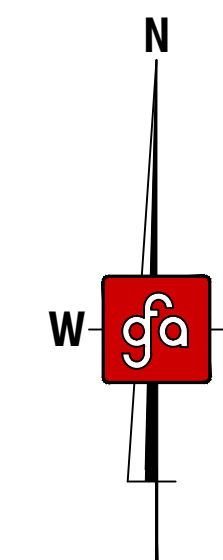
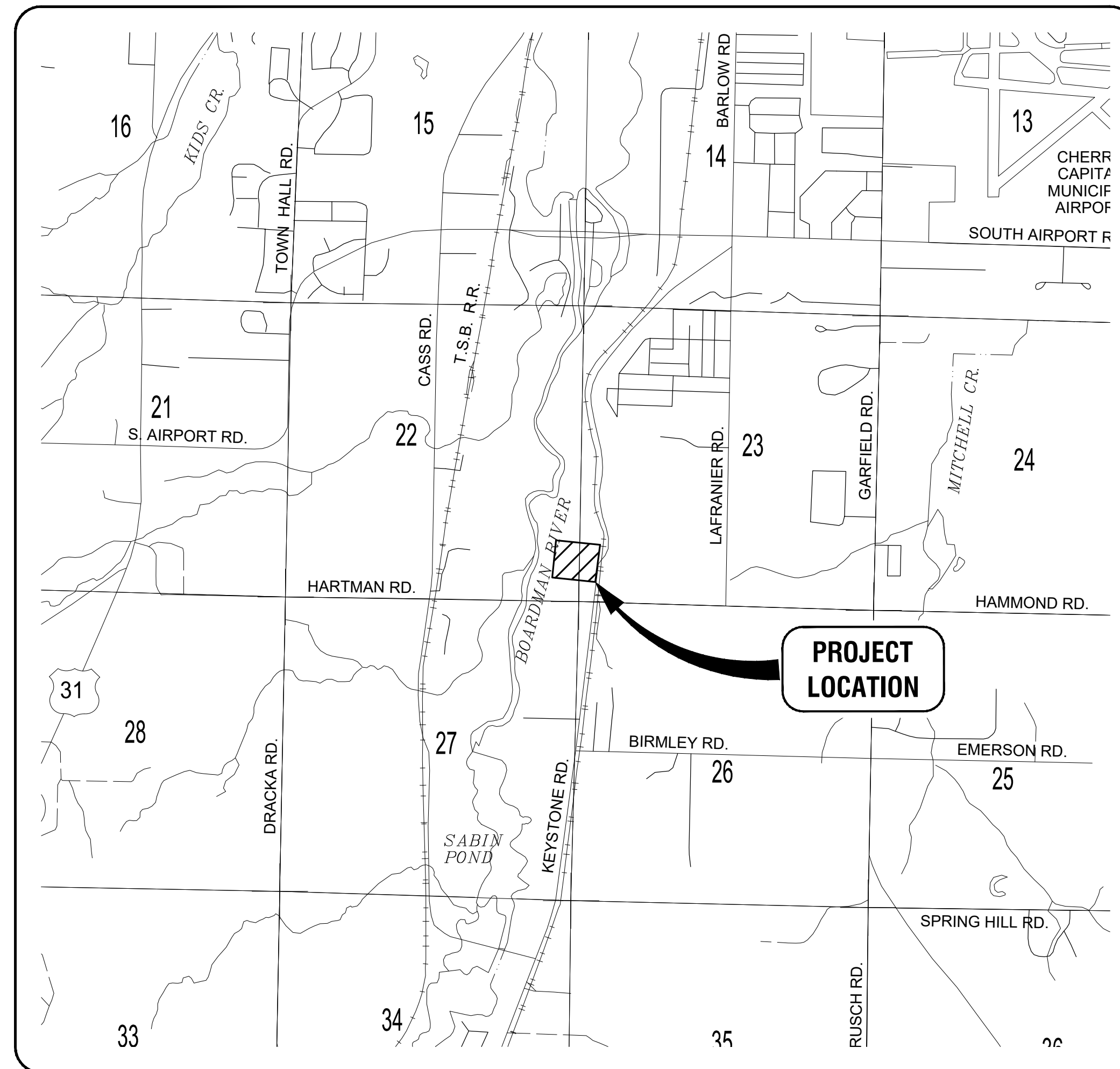


ENGINEER

ENGINEERING
SURVEYING
TESTING & OPERATIONS
1820 Oak Hollow Drive
Traverse City, MI 49686



☎ 231.946.5874 (p)
🏠 <http://gfa.tc>



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LOCATION MAP

GARFIELD TOWNSHIP, GRAND TRAVERSE COUNTY, MICHIGAN
NOT TO SCALE

PUBLIC AGENCIES AND UTILITIES

PUBLIC AGENCIES

CHARTER TOWNSHIP OF GARFIELD Telephone: 231.941.1620	GRAND TRAVERSE COUNTY DRAIN COMMISSION Telephone: 231.922.4807
GRAND TRAVERSE COUNTY D.P.W. Telephone: 231.922.4896	MICHIGAN DEPARTMENT OF TRANSPORTATION (M.D.O.T.) Telephone: 231.941.1986
GRAND TRAVERSE COUNTY ROAD COMMISSION Telephone: 231.922.4848	EGLE Telephone: 231.775.3960
GRAND TRAVERSE COUNTY ENVIRONMENTAL HEALTH Telephone: 231.995.6051	

UTILITY AGENCIES

CHERRYLAND ELECTRIC COOPERATIVE Telephone: 231.943.8377	CHARTER COMMUNICATIONS Telephone: 231.929.7012
CONSUMERS ENERGY Telephone: 231.929.6242	AT&T MICHIGAN Telephone: 231.941.2707
TRAVERSE CITY LIGHT & POWER Telephone: 231.922.4942	
DTE ENERGY Telephone: 231.592.3244	

EMERGENCY SERVICES

EMERGENCY CALLS 911	FIRE DEPARTMENTS EMERGENCY SERVICE: 911
EMERGENCY AMBULANCE SERVICE 911	City of Traverse City: Telephone: 231.941.2340 Grand Traverse County: Telephone: 231.941.2238
POLICE AGENCIES EMERGENCY SERVICE: 911	MISS DIG Telephone: 1.800.482.7171
City of Traverse City: Telephone: 231.941.2300 Grand Traverse County Sheriff: Telephone: 231.941.2225 Michigan State Police: Telephone: 231.946.4646	



CHARTER TOWNSHIP OF GARFIELD:
RIVER EAST PARK IMPROVEMENTS - PHASE III: RESTROOM FACILITY

These documents are prepared in accordance with the contractual terms and conditions for this project.

GENERAL NOTES

- ALL ELEVATIONS ARE BASED ON NAVD88 DATUM.
- SPECIAL CARE SHALL BE TAKEN IN EXCAVATING IN THE PROXIMITY OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL SECURE ASSISTANCE FROM THE APPROPRIATE UTILITY COMPANY IN LOCATING ITS LINES. THE CONTRACTOR SHALL ALSO: PROVIDE SUPPORT FOR ANY UTILITY WITHIN THE EXCAVATION, PROVIDE PROPER PROTECTION UNDER ANY UNDERMINED UTILITY STRUCTURE AND, IF NECESSARY, INSTALL TEMPORARY SHEETING OR USE A TRENCH BOX TO MINIMIZE THE EXCAVATION. THE CONTRACTOR SHALL PROTECT AND SAVE HARMLESS FROM DAMAGE ALL UTILITIES, WHETHER PRIVATELY OR PUBLICLY OWNED, ABOVE OR BELOW GROUND SURFACE, WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.
- THE LOCATION OF EXISTING PUBLIC UTILITIES AND UNDERGROUND STRUCTURES SUCH AS PIPE LINES, ELECTRIC CONDUITS, SEWERS AND WATER LINES, OF RECORD ARE SHOWN ON THE PLANS. THE INFORMATION SHOWN IS BELIEVED TO BE REASONABLY CORRECT AND COMPLETE. HOWEVER, NEITHER THE CORRECTNESS NOR THE COMPLETENESS OF SUCH INFORMATION IS GUARANTEED. PRIOR TO THE START OF ANY OPERATIONS IN THE VICINITY OF ANY UTILITIES, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AND MISS DIG AND REQUEST THAT THEY STAKE OUT THE LOCATIONS OF THE UTILITIES IN QUESTION. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ANY UTILITIES WITH THE UTILITY PROVIDER. COST OF REPAIR FOR ANY DAMAGED UTILITY LINES THAT IS PROPERLY STAKED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS GOVERNING THE FURNISHING AND USE OF SAFEGUARDS, SAFETY DEVICES AND PROTECTION EQUIPMENT. THE CONTRACTOR SHALL TAKE ANY NECESSARY PRECAUTIONS TO PROTECT THE LIFE AND HEALTH OF EMPLOYEES AND THE PUBLIC IN THE PERFORMANCE OF THE WORK.
- ALL CONSTRUCTION MATERIALS AND PROCEDURES MUST CONFORM WITH CURRENT STANDARDS, SPECIFICATIONS, AND DETAILS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS PRIOR TO THE START OF CONSTRUCTION OF THE SANITARY SEWER. CONTRACTOR SHALL ISSUE A WORK SCHEDULE TO THE ENGINEER PRIOR TO THE START OF SANITARY SEWER CONSTRUCTION.
- NO CONNECTION RECEIVING STORM WATER OR GROUND WATER SHALL BE MADE TO SANITARY SEWERS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE MANHOLE AND VALVE RIMS TO THE FINISH GRADE ELEVATIONS. THE ELEVATIONS SHOWN ARE BASED UPON PLAN GRADES AND ARE SUBJECT TO CHANGE.
- CONTRACTOR SHALL SUBMIT A SCHEDULE AND SEQUENCE FOR APPROVAL PRIOR TO PERFORMING WORK.
- ALL WORK TO BE COORDINATED WITH TOWNSHIP AND ENGINEER. ALL SYSTEM OPERATIONS, INCLUDING VALVE TURNING, TO BE PERFORMED BY TOWNSHIP.
- A PHYSICAL GAP SHALL BE MAINTAINED BETWEEN THE PROPOSED SEWER/WATER AND EXISTING SEWER/WATER UNTIL TESTING AND APPROVAL TO CONNECT IS PROVIDED.
- CONTRACTOR MUST MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET FROM ALL WATER MAIN WHEN INSTALLING THE SANITARY SEWER, AS MEASURED FROM OUTSIDE TO OUTSIDE.
- CONTRACTOR MUST MAINTAIN A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES AT ALL WATER MAIN AND SERVICE LINE CROSSINGS WHEN INSTALLING THE SANITARY SEWER, AS MEASURED FROM OUTSIDE TO OUTSIDE.
- CONTRACTOR SHALL MAINTAIN A MINIMUM FOUR (4) FEET OF COVER OVER GRAVITY SANITARY SEWER AND SIX (6) FEET OF COVER OVER WATER SERVICE LEAD.
- FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THIS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE PART OF THE "MISS DIG" ALERT SYSTEM.
- CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING ANY WORK.
- CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT TO ANY MAILBOXES DISTURBED DURING CONSTRUCTION AND SHALL NOT INTERFERE WITH MAIL SERVICE. ALL DISTURBED MAILBOXES SHALL BE PLACED IN ORIGINAL LOCATION AND AT AN ELEVATION DETERMINED BY THE POSTAL SERVICE.
- LOCAL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
- CONTRACTOR SHALL RESTORE ALL LAWSNS, LANDSCAPE PLANTINGS, SIDEWALKS, COMMERCIAL SIGNS, ETC., AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT FOR UTILITY POLES AS NECESSARY. CONTRACTOR SHALL CONSULT WITH THE UTILITY COMPANY PRIOR TO ANY DISTURBANCE OF UTILITY POLE OR ANCHORING SYSTEM.
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING SANITARY SEWER AND WATER MAIN LOCATION AND DEPTH PRIOR TO MAKING ANY CONNECTIONS.
- ALL WORK TO BE COORDINATED WITH THE TOWNSHIP AND ENGINEER.
- LOCATION OF THE SEWER LEADS AND WATER LEADS ARE SHOWN FOR BIDDING PURPOSES. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING AND LOCATING PRIOR TO CONNECTING.
- INFRASTRUCTURE TO BE INSTALLED, TESTED AND APPROVED PRIOR TO PLACING ONLINE.
- CONTRACTOR IS RESPONSIBLE TO OBTAIN WATER FOR FLUSHING, TESTING, AND PROPERLY DISPOSE.

SOIL EROSION AND STORM WATER CONTROL NOTES

- THE CONTRACTOR IS ADVISED THAT ALL SOIL EROSION MEASURES AND STORM WATER FACILITIES SHALL BE CONSTRUCTED AT THE EARLIEST FEASIBLE SCHEDULE. NO OTHER CONSTRUCTION ACTIVITIES SHALL PROCEED WHICH DO NOT PHYSICALLY DRAIN TO THESE FACILITIES UNLESS ADDITIONAL TEMPORARY FACILITIES ARE INSTALLED. PRIOR TO ACCEPTANCE OF THE PROJECT AS COMPLETE, ALL PERMANENT STORM WATER FACILITIES USED DURING CONSTRUCTION SHALL BE RESTORED TO OPERATE IN THEIR DESIGNED CONDITION AT NO ADDITIONAL COST TO THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY SOIL EROSION CONTROL MEASURES PER P.A. 451 AS AMENDED. WITH THE USE OF SILT FENCE AND OTHER TEMPORARY MEASURES THE CONTRACTOR SHALL PROTECT THE ADJACENT AREA FROM ACCELERATED EROSION AND SEDIMENTATION FLOWS RESULTING FROM CONSTRUCTION. THE CONTRACTOR SHALL INSTALL ADDITIONAL TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES, IF DIRECTED BY THE ENGINEER OR SOIL EROSION CONTROL OFFICER, AT NO ADDITIONAL COST TO THE PROJECT.
- INSTALLATION AND MAINTENANCE OF TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- SHOULD ADDITIONAL SOIL EROSION CONTROL MEASURES BE DETERMINED TO BE NECESSARY BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE OWNER'S ENGINEER THEY SHALL BE IN PLACE NO LATER THAN 24 HOURS FROM THE TIME OF NOTIFICATION TO THE GENERAL CONTRACTOR FOR THE PROJECT. IF NOT PLACED IN 24 HOURS OR LESS ALL ON SITE CONSTRUCTION WILL BE HALTED UNTIL SUCH MEASURES ARE INSTALLED AND APPROVED BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE OWNER'S ENGINEER.
- ALL DISTURBED NON-HARD SURFACE AREAS UNLESS IDENTIFIED OTHERWISE ON THE PLANS SHALL BE STABILIZED WITH TOPSOIL, SEED, FERTILIZED AND MULCHED. DISTURBED AREAS SHALL BE TOP SOILED TO A DEPTH NOT LESS THAN FOUR (4) INCHES. REFER TO PLANS & SPECS FOR DETAILS.
- CONTRACTOR SHALL STABILIZE DISTURBED EARTH IMMEDIATELY UPON ESTABLISHMENT OF FINAL GRADE AND SHALL BE SOLELY RESPONSIBLE FOR ESTABLISHMENT OF A HEALTHY STAND OF GRASS PRIOR TO THE ONSET OF COLD WEATHER. CONTRACTOR SHALL REPAIR WASHOUTS/EROSION AS PART OF 1 YEAR WARRANTY @ NO ADDITION COST.
- ALL UTILITIES UNDER OR WITHIN 1:1 INFLUENCE OF A STRUCTURE SHALL BE BACKFILLED WITH MDOT CL-II GRANULAR MATERIAL AND COMPACTED TO A MIN. 95% MAX. DENSITY (STD. PROCTOR).
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF EXCESS MATERIAL & PROPERLY DISPOSED OFFSITE AT NO ADDITIONAL COST.
- ALL SEDIMENT OR ERODED ONTO PUBLIC OR PRIVATE ROAD SHALL BE CLEANED/SWEPT DAILY.

CONSTRUCTION SCHEDULE

- ALL WORK TO BE PERFORMED INCLUDING FACILITY ACCESS AND EQUIPMENT STORAGE SHALL BE COORDINATED WITH TOWNSHIP.
- CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE TO THE OWNER FOR APPROVAL PRIOR TO BEGINNING WORK.
- THE CONTRACTOR SHALL PROPERLY SECURE THE SITE DAILY WITHIN THE VICINITY OF THE PROPOSED WORK TO ENSURE SAFETY OF THE PUBLIC AND ACCESS IS PROHIBITED.
- ALL WORK SHALL BE PERFORMED WITH THE CONFINES OF PROPERTY OWNED BY THE TOWNSHIP.
- ALL LOCATIONS FOR STORAGE/MOBILIZATION/STAGING SHALL BE COORDINATED W/TOWNSHIP PRIOR TO BEGINNING WORK.
- CONTRACTOR RESPONSIBLE TO OBTAIN LOCAL PERMITS INCLUDING BUILDING, PLUMBING, MECHANICAL, AND ELECTRICAL INCLUDING INSPECTIONS AND FEES.

SURVEY NOTES

- THIS IS NOT INTENDED OR REPRESENTED TO BE A LAND SURVEY. NO PROPERTY CORNERS WERE SET AS PART OF THIS TOPOGRAPHIC SURVEY.
- NO CHECK OF TITLE RELATIVE TO OWNERSHIP, GAPS, OVERLAPS, OR OCCUPATION HAS BEEN PERFORMED AS PART OF THIS TOPOGRAPHIC SURVEY.
- THE SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP TITLE EVIDENCE OR ANY FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.

GENERAL STRUCTURAL NOTES

DESIGN:

STRUCTURAL DESIGN OF THIS BUILDING IS IN ACCORDANCE WITH THE MICHIGAN BUILDING CODE, 2021.

THE STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS, SPECIFICATIONS, AND NOTES, THE STRICTEST PROVISION SHALL GOVERN.

THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING AND CONCRETE SLAB.

SEISMIC DESIGN STANDARDS ARE TO BE USED FOR APPLICABLE STRUCTURES.

DESIGN LOADS:

- DEAD LOAD
ROOF = 17 PSF
- SNOW LOAD (ASCE 7-10)
GROUND SNOW, P_g = 60 PSF
EXPOSURE FACTOR, C_e = 1.0 TERRAIN 'C', PARTIALLY EXPOSED
THERMAL FACTOR, C_t = 1.1
IMPORTANCE FACTOR, I = 1.0, CATEGORY I
FLAT AND SLOPED ROOF SNOW LOAD, P_f = P_s = 46.2 PSF
- WIND LOAD (ASCE 7-10)
METHOD 1 - ENVELOPE PROCEDURE
EXPOSURE 'C'
TOPO FACTOR, K_zt = 1.0
IMPORTANCE FACTOR, I = 0.80, CATEGORY I
- EARTHQUAKE LOAD
S_s = 0.074g < 0.15g
S_i = 0.036g < 0.04g
THEREFORE ASSIGN SEISMIC DESIGN CATEGORY 'A'

FOUNDATIONS:

ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL, HAVING AN ASSUMED MINIMUM ALLOWABLE BEARING CAPACITY OF 1,500 P.S.F. AT 3'-6" BELOW GRADE. THE ASSUMED SOIL BEARING CAPACITY MUST BE CONFIRMED BY OWNER'S TESTING AGENCY, PRIOR TO CONCRETE PLACEMENT. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IN THE EVENT THAT THE SOILS ENCOUNTERED DO NOT PROVIDE THE ASSUMED BEARING CAPACITY.

PLACE BACKFILL EQUALLY ON BOTH SIDES OF FOUNDATION WALLS.

CONTRACTOR TO VERIFY AND/OR COORDINATE LOCATIONS OF ALL UNDERGROUND UTILITIES/PIPES AND PROVIDE SLEEVES AS REQUIRED.

FOOTINGS SHALL BE CENTERED UNDER COLUMNS AND WALLS.

NO FOOTINGS OR SLABS SHALL BE PLACED ON OR AGAINST SUB-GRADE CONTAINING FREE WATER OR ICE.

CONTRACTOR TO FURNISH ALL REQUIRED DE-WATERING EQUIPMENT TO MAINTAIN DRY EXCAVATION.

CONCRETE AND REINFORCING:

ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE 'AMERICAN CONCRETE INSTITUTE BUILDING CODE' (ACI 318) AND WITH 'SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS' (ACI 301), LATEST EDITIONS.

ALL NORMAL WEIGHT CONCRETE (145 P.C.F.) SHALL OBTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.

CONCRETE TO BE VIBRATED THOROUGHLY TO REMOVE ALL AIR POCKETS, WORK MIXTURE INTO CORNERS, AROUND REINFORCEMENT AND INSERTS, AND TO PREVENT FORMATION OF VOIDS. TAPPING OF FORMS SHALL NOT BE PERMITTED.

ALL SLAB-ON-GRADE TO RECEIVE A 'TROWEL FINISH' PER ACI-301.

CALCIUM CHLORIDE AND/OR ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED.

ALL CONCRETE SUBJECT TO EXTERIOR EXPOSURE SHALL BE AIR ENTRAINED 4% TO 6%.

TEST CYLINDERS SHALL BE MADE AND TESTED AS OUTLINED IN THE ACI-301 SPECIFICATION.

COLD WEATHER CONCRETING SHALL BE DONE IN ACCORDANCE WITH ACI-306, HOT WEATHER CONCRETING SHALL BE DONE IN ACCORDANCE WITH ACI-305, LATEST EDITIONS.

REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM PROVIDE DOWELS FROM WALL FOOTINGS INTO CONCRETE WALLS AND MASONRY. DOWELS SHALL MATCH SIZE AND SPACING OF VERTICAL REINFORCING IN MASONRY WALLS.

SPECIFICATION A-615, GRADE 60. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH THE ACI DETAILING MANUAL, SP86, LATEST EDITION.

REINFORCING SHALL BE LOCATED AND SECURELY HELD IN POSITION PRIOR TO PLACING ANY CONCRETE

REINFORCING STEEL SHALL NOT BE CUT, BENT, OR STRAIGHTENED IN THE FIELD.

WELDING OF REINFORCING BARS WILL NOT BE ALLOWED.

PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT THE PROPER POSITION.

ALL HORIZONTAL REINFORCEMENT SHOWN ON THE DRAWINGS SHALL BE CONTINUOUS OR SPLICE BARS SHALL BE PROVIDED.

MINIMUM LAP REINFORCING BARS SHALL BE IN ACCORDANCE WITH ACI-318.

GENERAL CONTRACTOR SHALL COORDINATE ALL OPENINGS, SLEEVES, ANCHORS, HANGERS, INSERTS, SLAB DEPRESSIONS AND OTHER ITEMS RELATED TO THE CONCRETE WORK, AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR PROPER LOCATION BEFORE PLACING CONCRETE.

NO ALUMINUM OF ANY TYPE SHALL BE ALLOWED IN THE CONCRETE WORK UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION.

NO ELECTRICAL CONDUIT SHALL BE EMBEDDED IN SLABS. PLACE TOP OF CONDUIT AT BOTTOM OF 4" SLAB SAND BASE.

GROUT SHALL BE NON-SHRINK AND NON-METALLIC AND SHALL FOLLOW MANUFACTURERS RECOMMENDATIONS.

CONTROL JOINTS: SAW CUT JOINTS AS SHOWN ON THE DRAWINGS.

MISCELLANEOUS:

ALL EXISTING DIMENSIONS AND CONDITIONS MUST BE FIELD VERIFIED BY CONTRACTOR PRIOR TO BEGINNING WORK.

DO NOT SCALE DRAWINGS, USE DIMENSIONS.

THE CONTRACTOR TO BE RESPONSIBLE FOR MEANS, METHODS, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.

THE STRUCTURE IS DESIGNED TO ACT AS A UNIT AND IS NOT STRUCTURALLY STABLE UNTIL COMPLETE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TEMPORARY BRACING REQUIRED TO INSURE STABILITY UNTIL THE STRUCTURE IS COMPLETED.

WORK CONSTRUCTED PER THE DRAWINGS TO BE INSPECTED BY OWNER'S ENGINEER TO CONDUCT TESTING TO ENSURE COMPLIANCE WITH THE REQUIREMENTS SHOWN ON THE DRAWINGS.

NO OPENING TO BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE OWNERS REPRESENTATIVE.

THE CONTRACTOR TO INFORM OWNERS REPRESENTATIVE IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY FOR SUCH DEVIATION BY THE OWNERS REPRESENTATIVE APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, ETC. UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE OWNERS REPRESENTATIVE OF SUCH DEVIATION AT THE TIME OF SUBMISSION AND THE OWNERS REPRESENTATIVE HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.

ALL FINISH AND COLORS TO BE SELECTED BY OWNER.

MASONRY:

ALL CONCRETE MASONRY UNITS IN WALLS SHALL BE MEDIUM OR NORMAL WEIGHT CONFORMING TO ASTM C-90, GRADE N. (f_m = 2000 PSI FOR ALL WALLS)

MORTAR FOR USE IN CONCRETE MASONRY WALLS SHALL CONFORM TO ASTM C-270, TYPE S.

GROUT SHALL HAVE A MINIMUM STRENGTH OF 2000 PSI AT 28 DAYS AND CONFORMING TO ASTM C-476.

PROVIDE DOWELS FROM ALL FOOTINGS OR CONCRETE WALLS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT SHOWN IN CONCRETE MASONRY WALLS.

ALL VERTICAL LAPS SHALL BE 48 BAR DIAMETER (12" MIN.) GOVERNED BY DIAMETER OF LARGER BAR. WHEREVER POSSIBLE, SPLICES SHALL BE STAGGERED.

ALL VERTICAL REINFORCING SHALL BE CONTINUOUS FOR FULL HEIGHT OF WALL AND DOWELED INTO FOOTING OR SLAB ON GRADE BELOW, AND EXTEND INTO OR THROUGH BOND BEAMS ABOVE (LAP SPLICES MEETING ALL INDICATED REQUIREMENTS ARE ACCEPTABLE).

ALL CELLS CONTAINING REINFORCING SHALL BE FILLED WITH GROUT.

ALL WINDOW AND DOOR OPENINGS SHALL HAVE A MINIMUM '2-CORES' GROUTED FULL HEIGHT EACH SIDE WITH (2) #5 BAR IN EACH CORE. ALSO PROVIDE ADDITIONAL VERTICAL BARS AT CORNERS, ANCHORED INTERSECTIONS AND AT END OF WALL PANELS.

ALL REINFORCING SHALL HAVE A MINIMUM COVERAGE OF ONE BAR DIAMETER OF GROUT. CENTERED BARS SHALL BE SECURELY PLACED IN THE CENTER OF THE CELL. EACH FACE BAR SHALL BE PLACED 1" CLEAR OF THE FACE SHELL.

PROVIDE HORIZONTAL LADDER TYPE REINFORCEMENT SPACED AT 16" O.C. VERTICAL, CONFORMING TO ASTM A-82 MINIMUM 9 GAUGE UNLESS NOTED OTHERWISE ON THE PLANS. REINFORCING SHALL BE CONTINUOUS AROUND ALL CORNERS AND INTERSECTIONS.

DISCONTINUE ALL HORIZONTAL JOINT REINFORCEMENT AT VERTICAL CONTROL JOINTS. BOND BEAM REINFORCEMENT SHALL BE CONTINUOUS AT CONTROL JOINT WITH CAULKED JOINTS.

PROVIDE CONTINUOUS BOND BEAM AT JOIST, BEAM, PLANK, AND DECK BEARING ELEVATIONS OR AT TOP OF WALL (AS INDICATED ON THE PLANS) WITH (2) #5 REBAR, U.N.O.

PROVIDE LINTELS TO ALL OPENINGS IN MASONRY WALLS GREATER THAN 8". MASONRY CONTRACTOR SHALL COORDINATE WALL OPENINGS REQUIRED FOR MECHANICAL AND ELECTRICAL SERVICE WITH RESPECTIVE CONTRACTORS. PROVIDE ADDITIONAL REINFORCEMENT AT OPENINGS OR SLEEVES. DO NOT CUT REINFORCEMENT.

ALL WALL SHALL BE ADEQUATELY BRACED UNTIL SECURELY TIED TO STRUCTURE FRAMES AND DIAPHRAGMS.

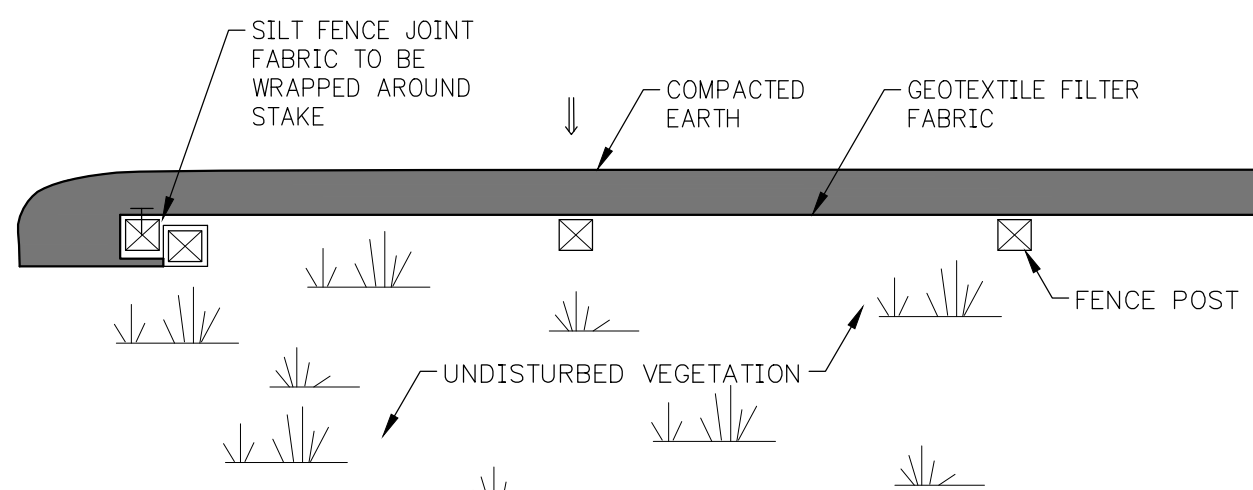
MASONRY WALL CONTROL JOINTS SHALL BE SPACED AT 20'-0" O.C. MAX. UNLESS OTHERWISE NOTED, REFER TO ARCHITECTURAL. DO NOT LOCATE CONTROL JOINTS ADJACENT TO OPENINGS WITH MASONRY LINTELS. OR TO OPENINGS WITH STEEL LINTELS FOR OPENINGS LESS THAN 6'-0". FOR OPENINGS WITH STEEL LINTELS OVER 6'-0" WIDE PROVIDE CONTROL JOINTS AT BOTH SIDES OF OPENING WITH SLIP BEARING PLATES.

NO WORK SHALL BE DONE SUBJECT TO FREEZING CONDITIONS.

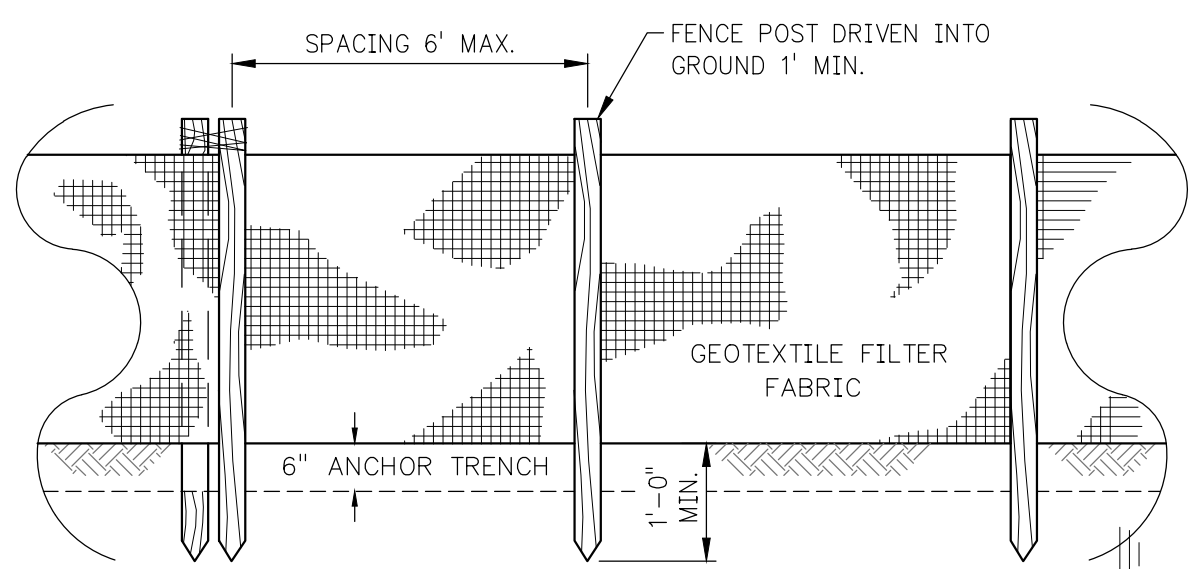
GROUTING OF MASONRY WALL SHALL CONFORM TO RECOMMEND PROCEDURE FOR "LOW LIFT GROUTING" OR "HIGH LIFT GROUTING" AS OUTLINED IN THE NCMA-TEK NOTE #23 - GROUTING FOR CONCRETE MASONRY WALLS AND ACI 530/ASCE 5 SPECIFICATION FOR MASONRY STRUCTURE. GROUT LIFTS SHALL NOT EXCEED 5 FEET WITHOUT MECHANICALLY CONSOLIDATED VIBRATED GROUT POURS.

LIFTS OF GROUT SHALL KEYED 4 INCHES INTO PREVIOUS COURSE OF MASONRY BELOW.

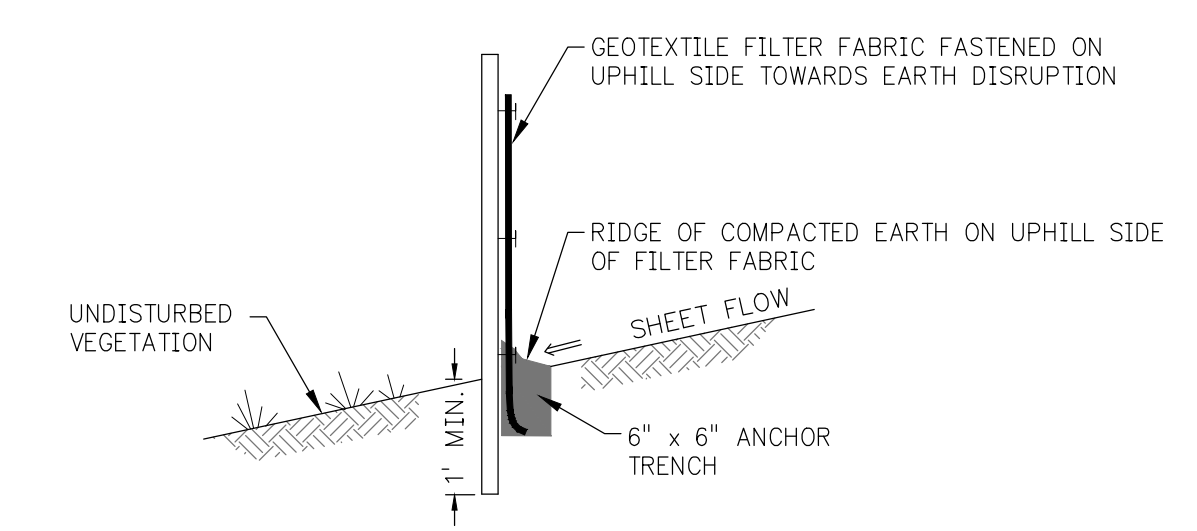
ALL NON-LOAD BEARING MASONRY WALLS SHALL BE LATERALLY SUPPORTED AT THE TOP OF WALL UNLESS NOTED OTHERWISE, REFER TO TYPICALLY DETAILS.



PLAN VIEW



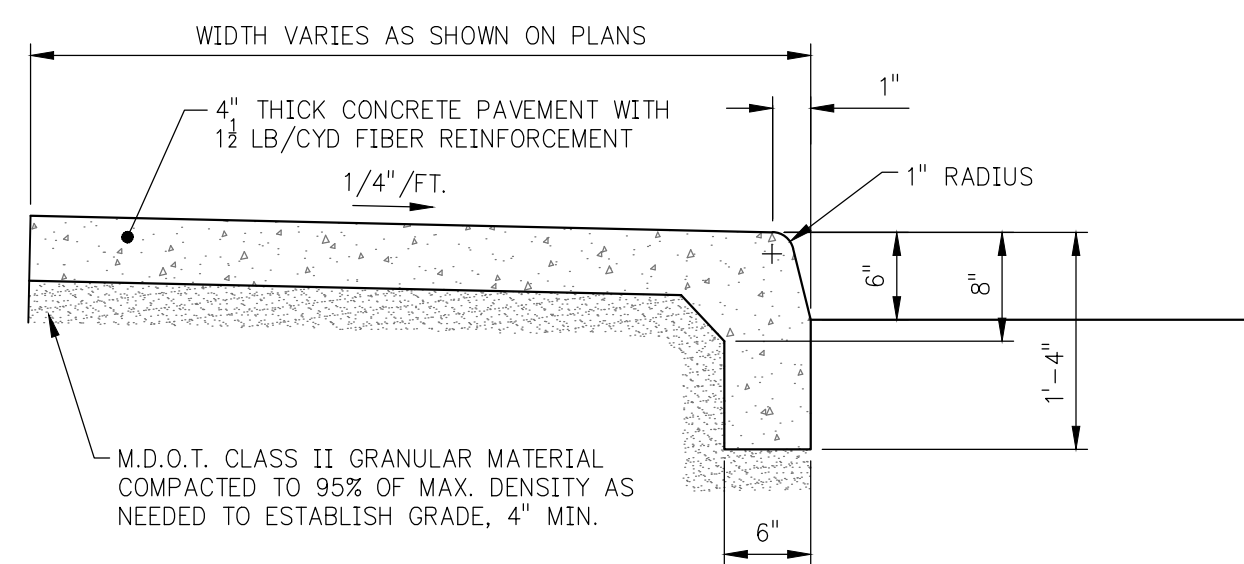
FRONT ELEVATION



SECTION VIEW

SILT FENCE DETAIL

NOT TO SCALE

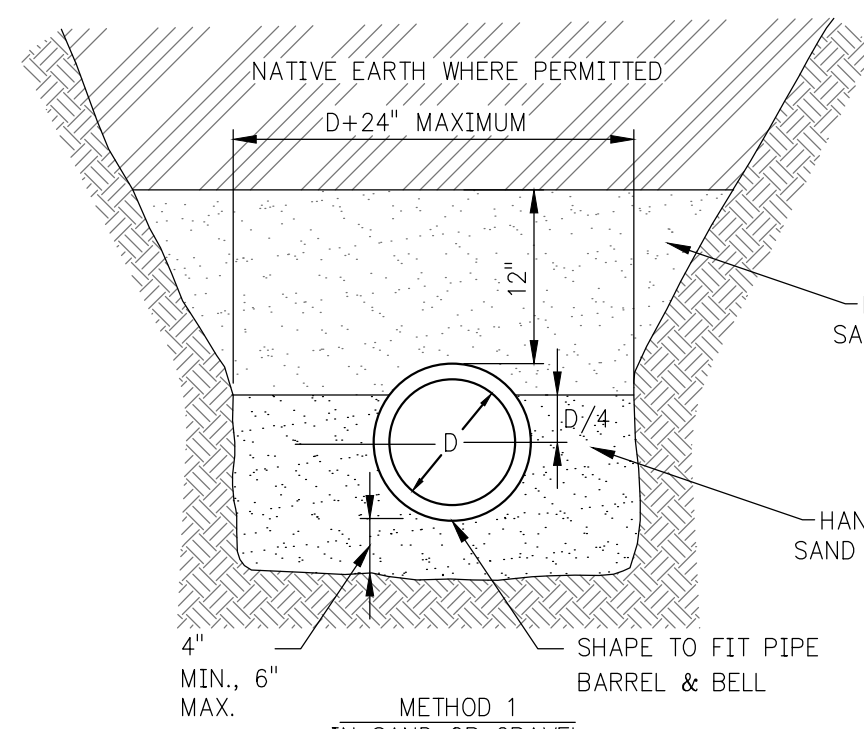


CURB FACED WALK DETAIL

NOT TO SCALE

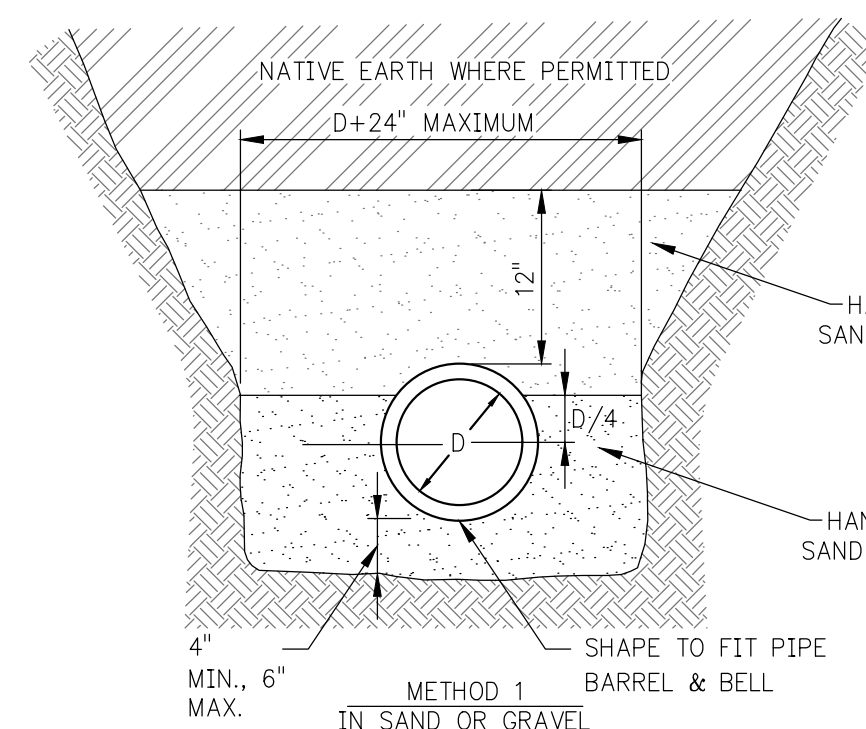
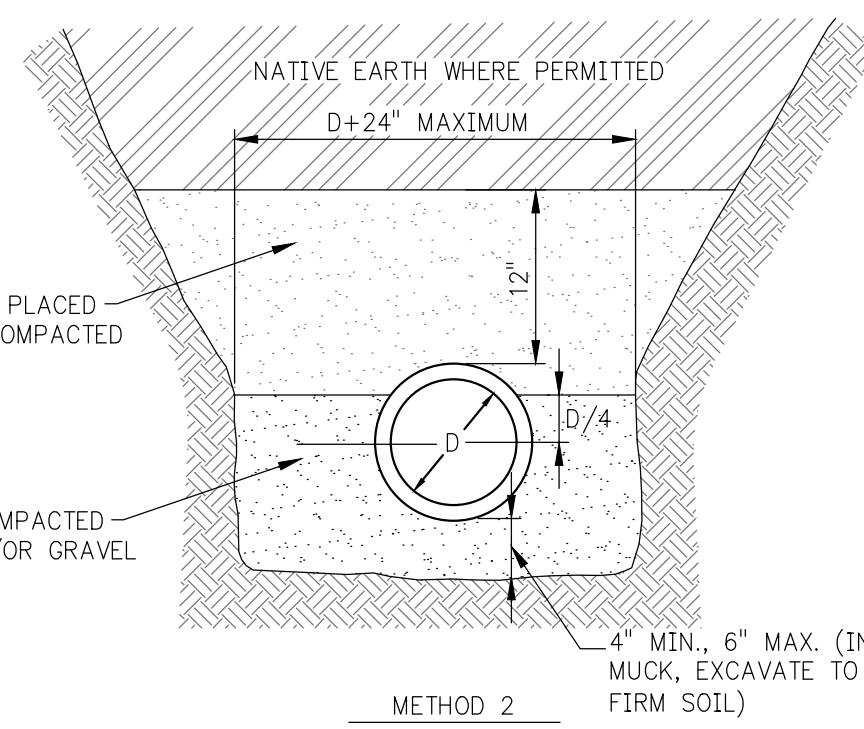
NOTE:
ALL BACKFILL MATERIAL SHALL CONFORM TO AWWA C600 OR C605 AS APPROPRIATE.

NOTE:
WATERMAIN TRENCHES NEED TO PROVIDE A MINIMUM WIDTH OF PIPE DIAMETER PLUS 16 INCHES FOR 8 INCH TO 18 INCH DIAMETER PLASTIC/FLEXIBLE PIPE MATERIALS. FOR 18 INCH AND LARGER PIPE DIAMETERS, THE MINIMUM TRENCH WIDTH IS 1.25 TIMES THE PIPE DIAMETER PLUS 12 INCHES FOR PLASTIC/FLEXIBLE PIPE MATERIALS.



PIPE BEDDING DETAIL

(CLASS A) NO SCALE

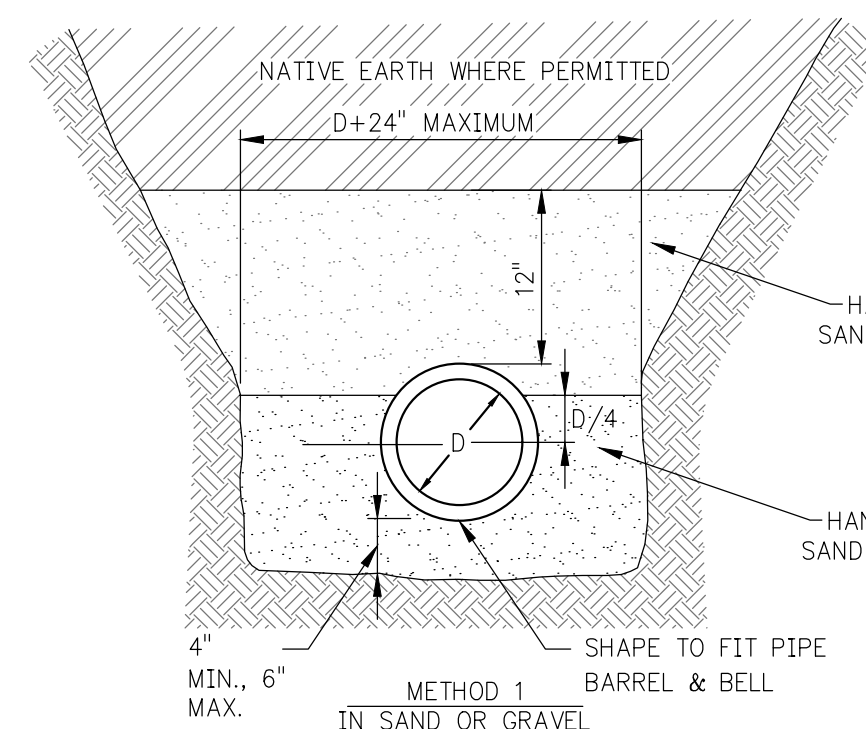


PIPE BEDDING DETAIL

(CLASS B) NO SCALE

NOTE:
ALL BACKFILL MATERIAL SHALL CONFORM TO AWWA C600 OR C605 AS APPROPRIATE.

NOTE:
WATERMAIN TRENCHES NEED TO PROVIDE A MINIMUM WIDTH OF PIPE DIAMETER PLUS 16 INCHES FOR 8 INCH TO 18 INCH DIAMETER PLASTIC/FLEXIBLE PIPE MATERIALS. FOR 18 INCH AND LARGER PIPE DIAMETERS, THE MINIMUM TRENCH WIDTH IS 1.25 TIMES THE PIPE DIAMETER PLUS 12 INCHES FOR PLASTIC/FLEXIBLE PIPE MATERIALS.



PIPE BEDDING DETAIL

(CLASS B) NO SCALE

DATE PLOTTED: 2023/09/20 10:00:00 AM PROJECT: RIVER EAST PARK IMPROV. - PHASE III: RESTROOM FACILITY SHEET: 23073

231-946-8874 (p) <http://gfa.io>

ENGINEERING SURVEYING TESTING & OPERATIONS

1620 Oak Hollow Drive
Traverse City, MI 49686

REV#	DATE	BY	CHK	APP	FOR	REVISIONS
0	08/17/2023	CPK				

CHARTER TOWNSHIP OF GARFIELD

RIVER EAST PARK IMPROV. - PHASE III: RESTROOM FACILITY

GENERAL NOTES AND SITE DETAILS

SECTION 23, T.27 N., R.11 W.

GARFIELD TOWNSHIP, GRAND TRAVERSE COUNTY, MICHIGAN

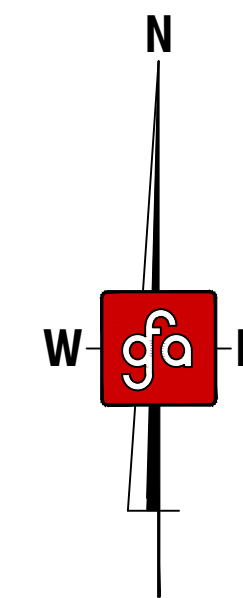
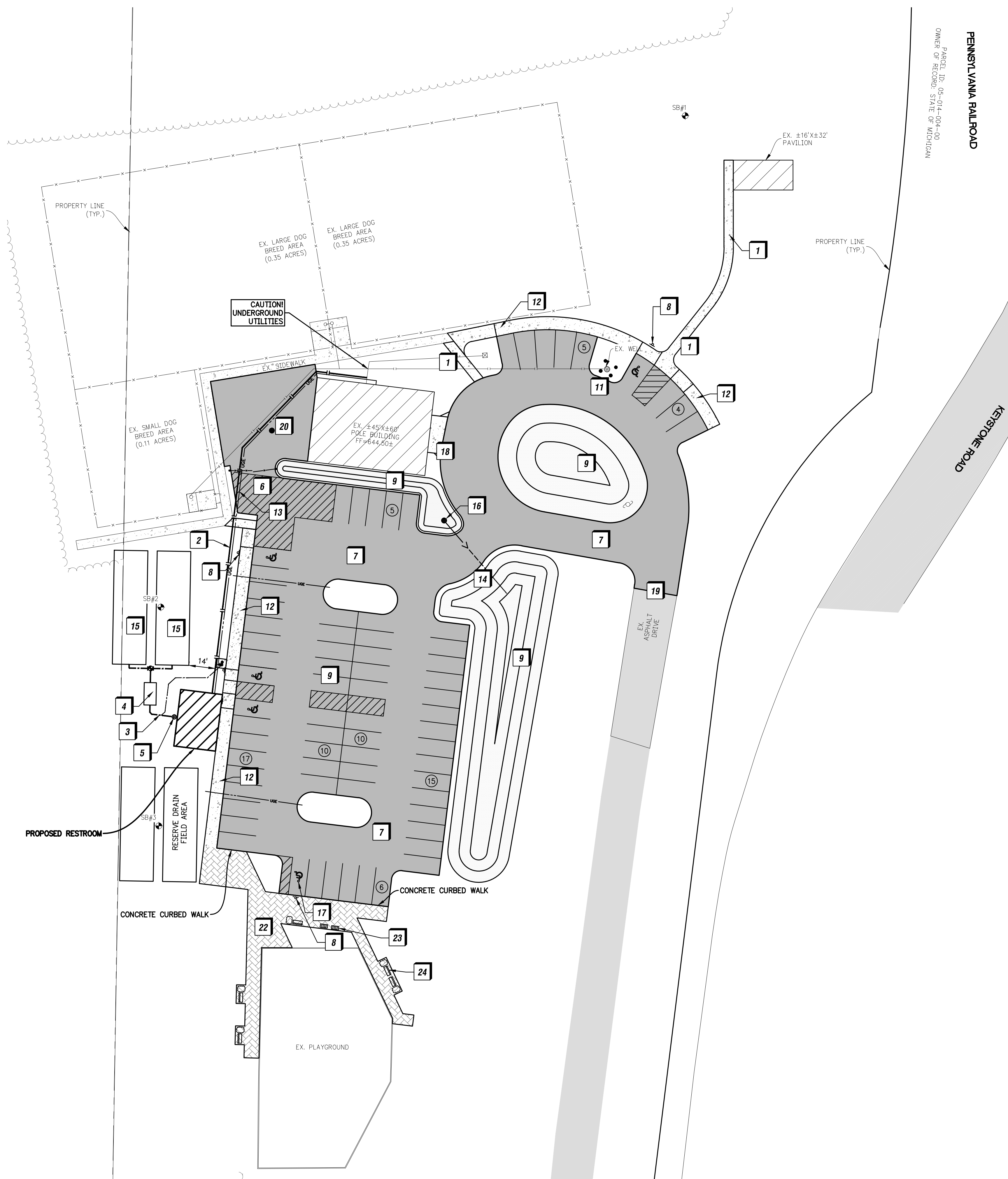
PLOTTED BY: JENNIFER GRAHAM P.E. OR: C. BALLANCE DATE: 09/20/23	DESIGNED BY: M. MASURIE DATE: 09/20/23
---	---

23073

C1.2

These documents are prepared in accordance with the contractual terms and conditions for this project.

T:\PROJECTS\2023\23073\23073_23073_RIVER EAST PARK IMPROVEMENTS - PHASE III: RESTROOM SITE PLAN.dwg



Site Data

PROPERTY OWNER: CHARTER TWP OF GARFIELD, 3848 VETERANS DR, TRAVERSE CITY, MI 49685
 PARCEL ADDRESS: 2143/2145 N KEYSTONE RD, TRAVERSE CITY, MI 49686
 PROPERTY TAX NO: 05-023-033-00, 05-022-026-00
 SEC., TOWN, RANGE: 23, T27N, R11W
 PARCEL SIZE: 16.40 ac

Benchmark

SET CONTROL POINT NEAR NORTH WEST CORNER OF CLEARING
 ELEVATION = 643.89 (NAVD88)

Site Infrastructure
 (EXISTING OR TO BE INSTALLED BY OTHERS)

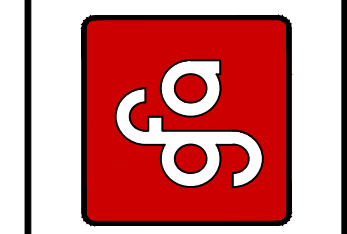
- 1 STANDARD CONCRETE WALK, 5' WIDE
- 2 1" HDPE DR9 WATER SERVICE LEAD
- 3 6" PVC SANITARY SEWER LEAD
- 4 2,000 GAL. DOUBLE COMPARTMENT SEPTIC TANK
- 5 CLEANOUT ASSEMBLY
- 6 (2) 12" WIDE SWING GATES
- 7 PAVING
- 8 BARRIER FREE PARKING SIGN
- 9 INFILTRATION BASIN
- 10 DRINKING FOUNTAIN
- 11 REINSTALL BOLLARD
- 12 CONCRETE CURBED WALK, 7" WIDE
- 13 UNDERGROUND ELECTRIC SERVICE (3)#1 THHN AND (1)#8 GND IN 2" PVC CONDUIT. CONTRACTOR SHALL CONNECT INTO EXISTING POLE BARN PANEL & INSTALL 100AMP 2 POLE BREAKER TO SERVICE FUTURE RESTROOM.
- 14 12" N-12 STORM SEWER, MINIMUM 1.5' BURY AT POSITIVE SLOPE AND DAYLIGHT INTO INFILTRATION BASIN
- 15 PROPOSED DRAIN FIELD
- 16 2' CATCH BASIN
- 17 HANDICAP PAVEMENT SYMBOL
- 18 CONCRETE APRON
- 19 BUTT JOINT
- 20 DRY WELL
- 21 3/8" COPPER WATER FOUNTAIN SUPPLY LINE
- 22 STAMPED CONCRETE
- 23 BIKE RACK
- 24 BENCH
- 25 1.5" PVC DRAIN LINE FOR WATER FOUNTAIN

General Construction Notes

1. DEVELOPMENT OF THIS SITE SHALL BE IN ACCORDANCE WITH STATE, COUNTY AND TOWNSHIP REQUIREMENTS. LIGHTING TO COMPLY WITH TOWNSHIP ORDINANCE.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOCAL COUNTY & TOWNSHIP PERMITS AND INSPECTION FEES INCLUDING BUILDING, PLUMBING, MECHANICAL, AND ELECTRICAL.
3. PRIOR TO CONSTRUCTION, STAKING TO BE PROVIDED BY OWNER.
4. BUILDING SLAB THICKNESS AND LOCATION SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY WITH STRUCTURAL DRAWINGS.
5. ALL DISTURBED NON-HARD SURFACE AREAS SHALL BE RESTORED WITH NEW SCREENED TOPSOIL, SEED AND MULCH. TOPSOIL SHALL BE AT A DEPTH NOT LESS THAN 4 INCHES. STOCKPILED EXISTING SALVAGED TOPSOIL MAY BE USED IF SCREENED <1".
6. CONTRACTOR SHALL COORDINATE WITH OWNER ON FINAL AMENITIES AND INSTALLATION LOCATIONS. APPROVED EQUALS DUE TO MATERIAL SHORTAGES OR LEAD TIMES SHALL BE CONSIDERED IF APPROVED BY THE OWNER.
7. SIGNS, DRINKING FOUNTAIN, WASTE RECEPTACLES, BIKE RACK, AND SEATING TO BE PROVIDED BY THE TOWNSHIP.
8. EXPANSION JOINTS TO BE UTILIZED AS NECESSARY. ALL CONSTRUCTION TO BE COMPLIANT WITH ADA BARRIER-FREE REQUIREMENTS.
9. CONTRACTOR TO CONNECT TO EXISTING ELECTRICAL SERVICE, WATER, AND SEWER SERVICE THAT WAS INSTALLED APPROXIMATELY 5' OUTSIDE BUILDING AND INTO BUILDING.
10. REFER TO RESPECTIVE SHEETS FOR STRUCTURAL, ELECTRICAL, PLUMBING, AND MECHANICAL.
11. CONTRACTOR TO BE RESPONSIBLE FOR COORDINATING WITH ELECTRICAL AND PLUMBING CONTRACTOR FOR ALL WORK/RESTROOM TERMINATIONS AND CONNECTIONS.

CHARTER TOWNSHIP OF GARFIELD
RIVER EAST PARK IMPROVEMENTS - PHASE III: RESTROOM
SITE PLAN
 SECTION 23 T.27 N., R.11 W.
 GARFIELD TOWNSHIP, GRAND TRAVERSE COUNTY, MICHIGAN

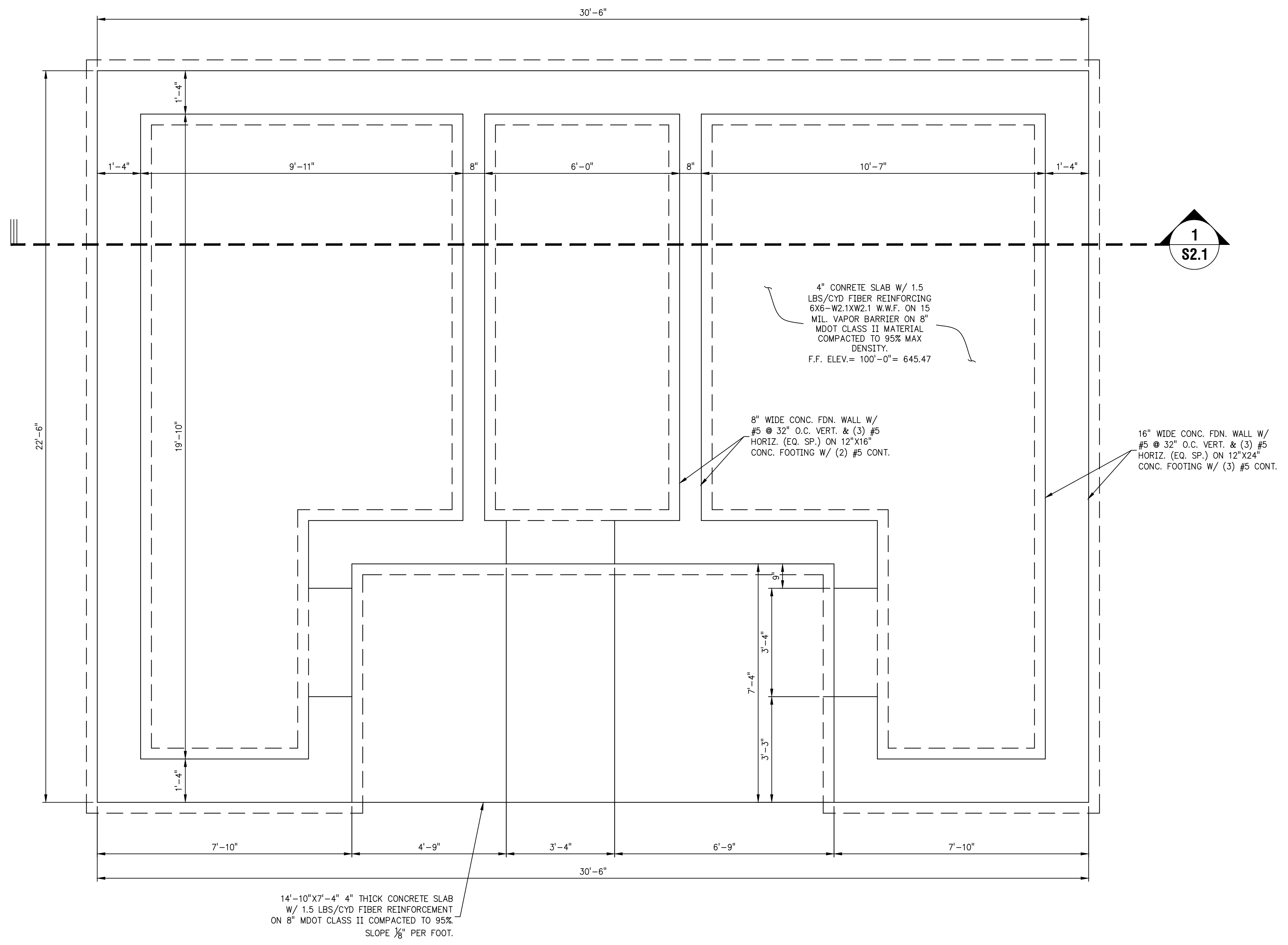
ENGINEERING SURVEYING TESTING & OPERATIONS
 1620 Oak Hollow Drive
 Traverse City, MI 49686



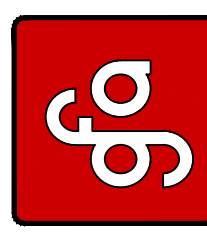
231.946.5874 (p)
<http://gfa.tc>

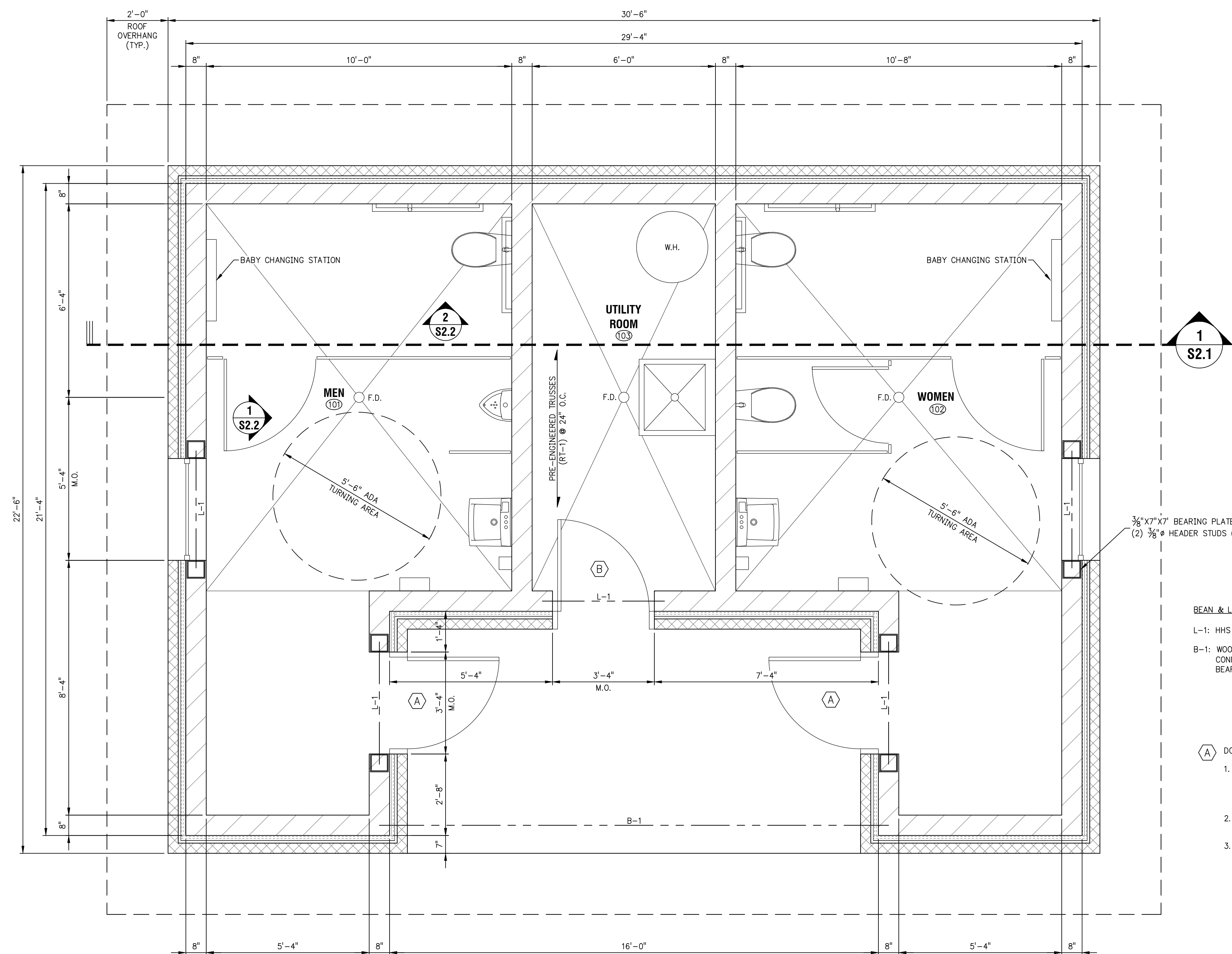
PREPARED BY: JENNIFER GRAHAM, PE
 DATE: RRS
 JOB NO: **23073**
C2.1

These documents are prepared in accordance with the contractual terms and conditions for this project.



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

																																													
ENGINEERING SURVEYING TESTING & OPERATIONS 1620 Oak Hollow Drive Traverse City, MI 49686 231.946.5874 (p) http://gfa.tc																																													
PROJECT: 2023 JUNE 20/23 - AMHERST LEONARD 2023 7.5' SW DRAINAGE	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV#</th> <th>DATE</th> <th>BY</th> <th>FOR</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>06/17/2023</td> <td>CPM</td> <td>FOR BIDS</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV#	DATE	BY	FOR	0	06/17/2023	CPM	FOR BIDS																																				
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CHARTER TOWNSHIP OF GARFIELD RIVER EAST PARK IMPROV. - PHASE III: RESTROOM FACILITY FOUNDATION PLAN SECTION 23, T.27 N., R.11 W. GARFIELD TOWNSHIP, GRAND TRAVERSE COUNTY, MICHIGAN																																													
These documents are prepared in accordance with the contractual terms and conditions for this project.																																													
P.S. JENNIFER GRAHAM P.E. D.R. C. BALLANCE M. MASUQUE 23073 S1.1																																													



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

BEAM & LINTEL SCHEDULE
 L-1: HHS 8X4X3/8 & L3X2.5X3/8 & PL 3/8X15.25
 B-1: WOOD BEAM (THREE 2X10) WITH JACK TRUSS CONNECTORS (SIMPSON STRONG-TIE #TJC57), 8" BEARING BOTH ENDS

- A DOOR SPECIFICATIONS:**
- FLUTED ALUMINUM, FLUSH INSULATED, 36"X86" SPECIAL-LITE OR EQUAL FRAME 2"X4 1/2" THERMALLY BROKEN ALUMINUM, COLOR SELECTED BY OWNER.
 - INCLUDE BARRIER FREE THRESHOLD AND WEATHER STRIPPING INCLUDING SWEEP.
 - HARDWARE:
 - ALL HARDWARE TO MEET ANSI A-117 AND MICHIGAN BUILDING CODE WITH APPROVED LEVER STYLE OPERATORS FOR BARRIER FREE ACCESSIBLE DESIGN. FINISH TO BE SATIN STAINLESS STEEL US320 OR EQUAL.
 - INCLUDE 1 1/2" PAIR WEIGHT HINGES AND ANTI-FRICTION .
 - PUSH PLATE/PULL BAR, CLOSER, AND 10" HIGH KICK PLATE BOTH SIDES.
- B DOOR SPECIFICATIONS:**
- FLUTED ALUMINUM, FLUSH INSULATED, 36"X86" SPECIAL-LITE OR EQUAL FRAME 2"X4 1/2" THERMALLY BROKEN ALUMINUM, COLOR SELECTED BY OWNER.
 - INCLUDE BARRIER FREE THRESHOLD AND WEATHER STRIPPING INCLUDING SWEEP.
 - HARDWARE:
 - ALL HARDWARE TO MEET ANSI A-117 AND MICHIGAN BUILDING CODE WITH APPROVED LEVER STYLE OPERATORS FOR BARRIER FREE ACCESSIBLE DESIGN. FINISH TO BE SATIN STAINLESS STEEL US320 OR EQUAL.
 - INCLUDE 1 1/2" PAIR WEIGHT HINGES AND ANTI-FRICTION .
 - ENTRY SET, CLOSER, AND KICK PLATE.

BUILDING CODE:

- THIS PROJECT SHALL BE DESIGNED AND CONSTRUCTED IN CONFORMANCE WITH THE FOLLOWING BUILDING CODES:
- 2021 MICHIGAN BUILDING CODE
 - 2021 MICHIGAN MECHANICAL CODE
 - 2021 MICHIGAN PLUMBING CODE
 - 2023 NATIONAL ELECTRICAL CODE
 - ICC/ANSI A117.1 2017 CODE FOR BARRIER FREE DESIGN

BUILDING CODE SUMMARY:

USE & OCCUPANCY CLASSIFICATIONS:
 • U – UTILITY

GROSS BUILDING AREA= 577 SQ. FT.

TYPE OF CONSTRUCTION: TYPE III-A

OCCUPANCY LOAD SUMMARY: 6 OCCUPANTS

NOTES:

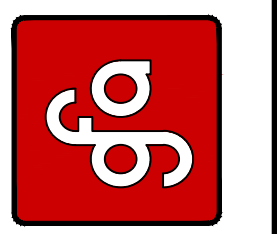
- CONCRETE PADS FINISH GRADE TO MATCH INTERIOR SLAB GRADE.
- SEE RESPECTIVE PLUMBING SHEETS FOR FLOOR DRAIN LOCATIONS AND DETAILS.

ABBREVIATIONS AND FINISH SELECTION NOTES:

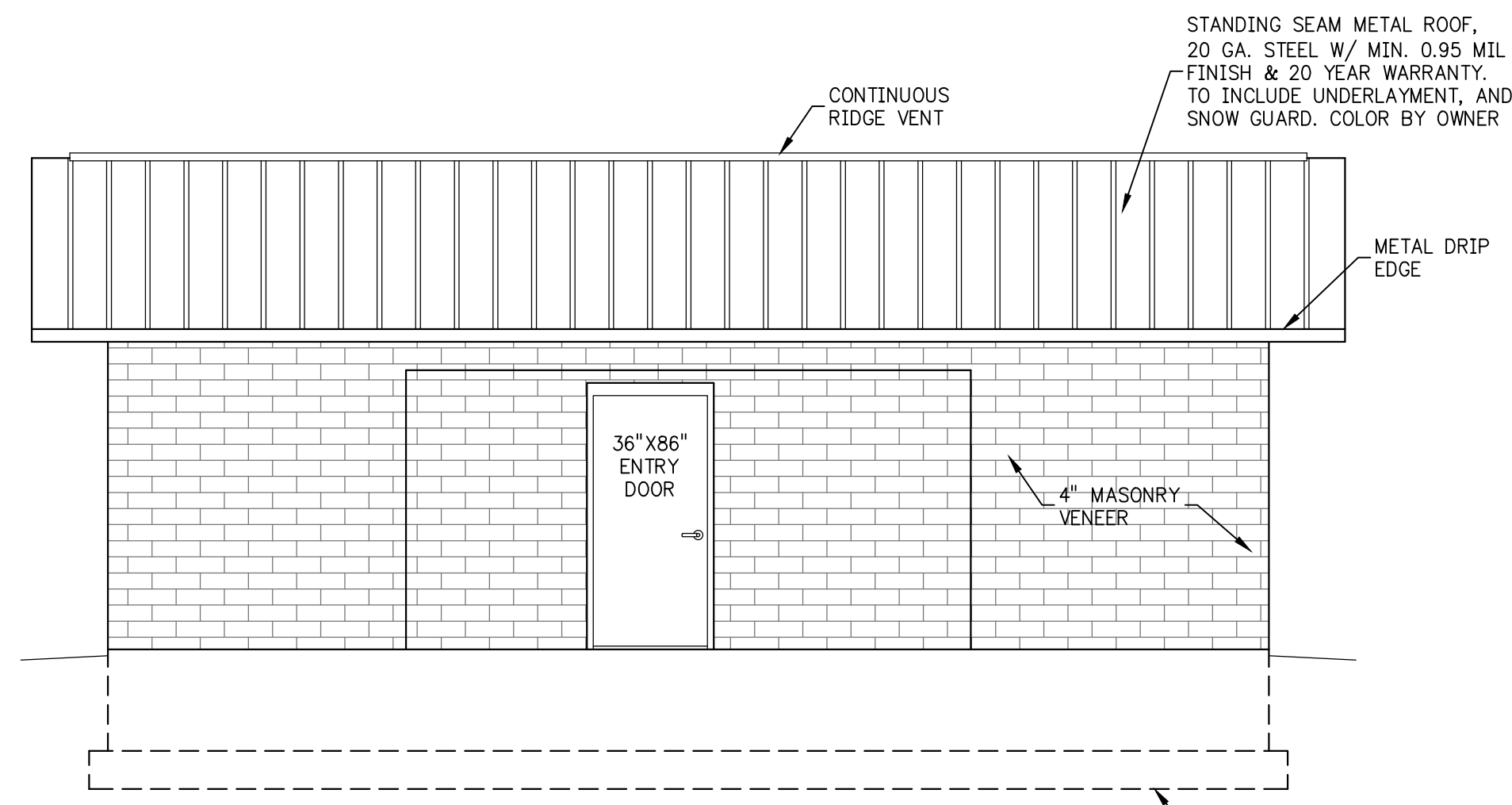
- WALL BASE TRIMS:
 • V.B.= 4" VINYL BASE
- FLOOR COVERINGS:
 • CONC.= CONCRETE FLOOR
- WALL COVERING AND FINISHES:
 • CMU-1= CONCRETE MASONRY – UNFINISHED
 • CMU-2= CONCRETE MASONRY WITH BLOCK FILLER AND 2 COATS ACRYLIC SEMI GLOSS LATEX PAINT
- CEILING MATERIAL:
 • PNT-GB= PAINTED GYPSUM BOARD

ROOM FINISH SCHEDULE

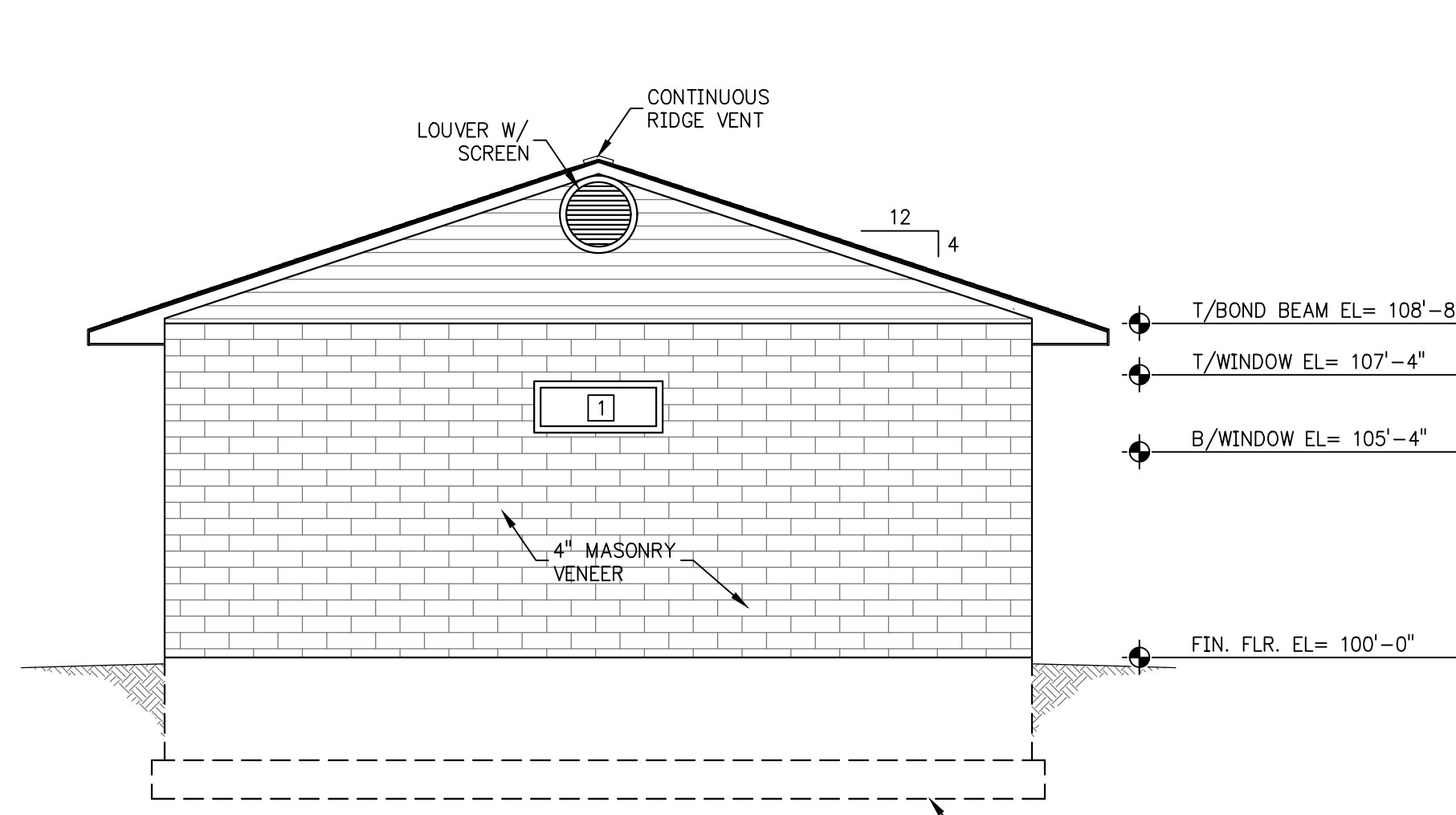
#	ROOM NAME	FLOOR	BASE	WALLS	CEILING/HEIGHT	REMARKS
101	MEN	CONC.	V.B.	CMU-2	PNT-GB	COLOR SELECTION BY OWNER
102	WOMEN	CONC.	V.B.	CMU-2	PNT-GB	COLOR SECTION BY OWNER
103	UTILITY ROOM	CONC.	NONE	CMU-1	PNT-GB	



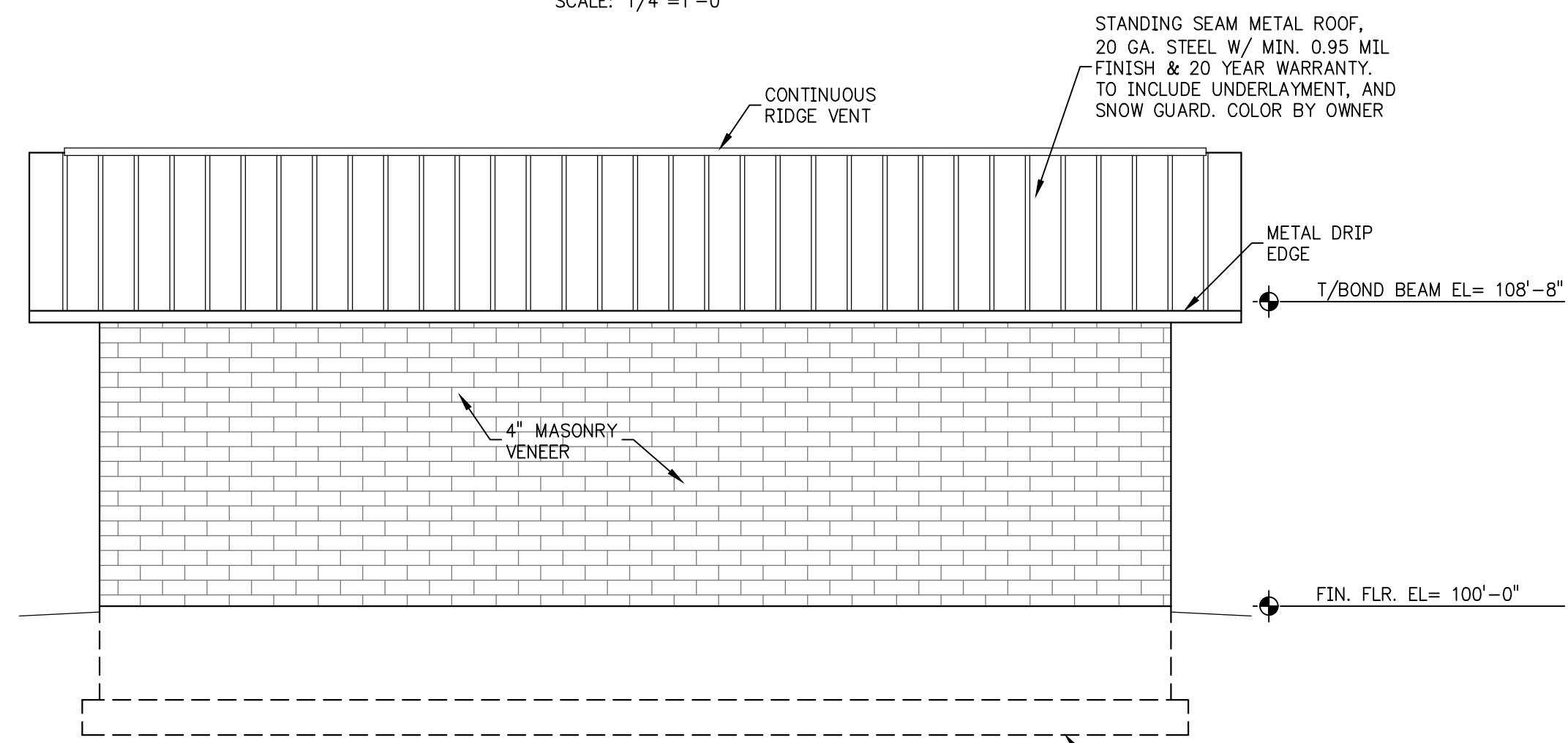
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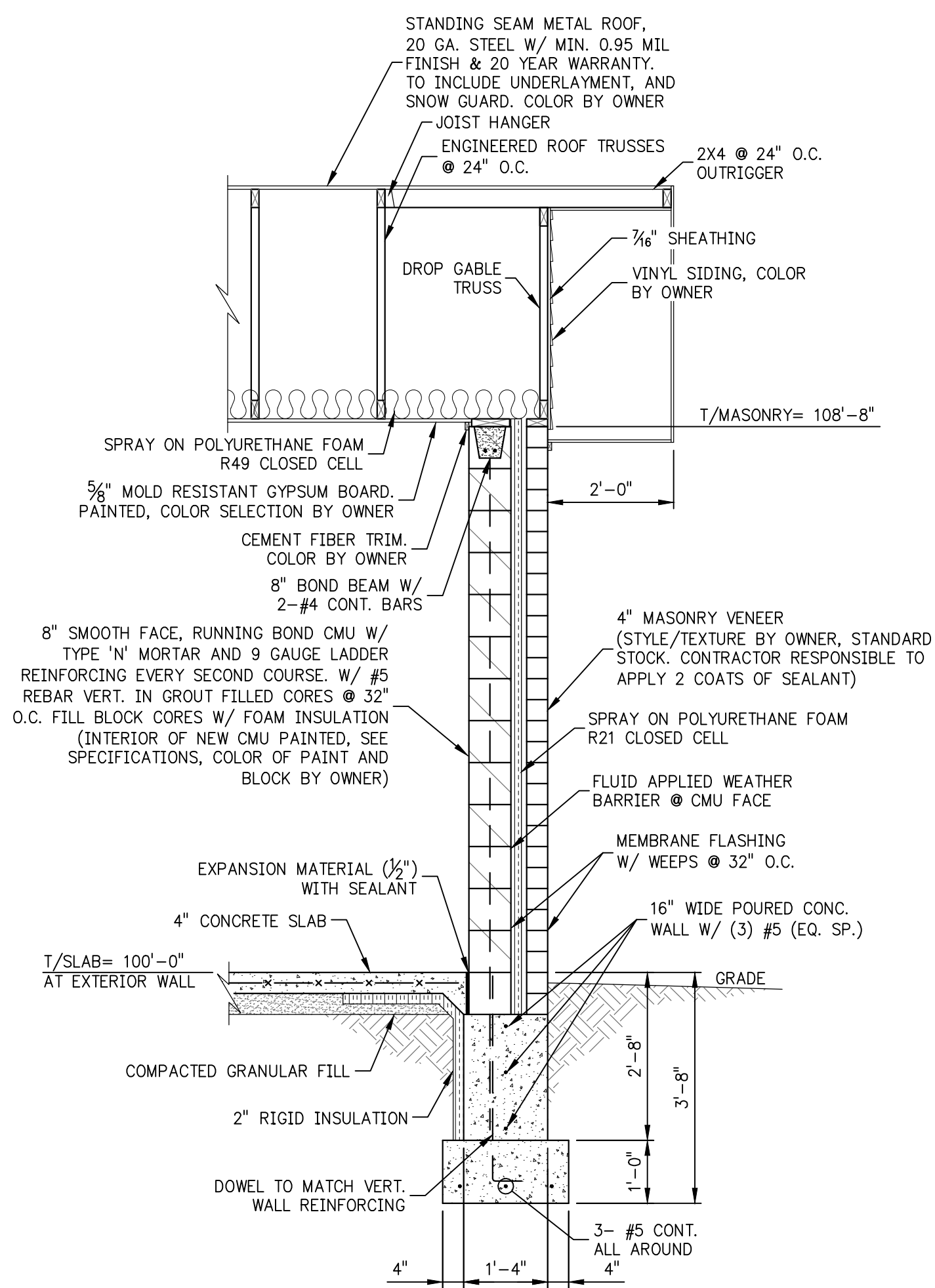
EAST ELEVATION
SCALE: 1/4"=1'-0"



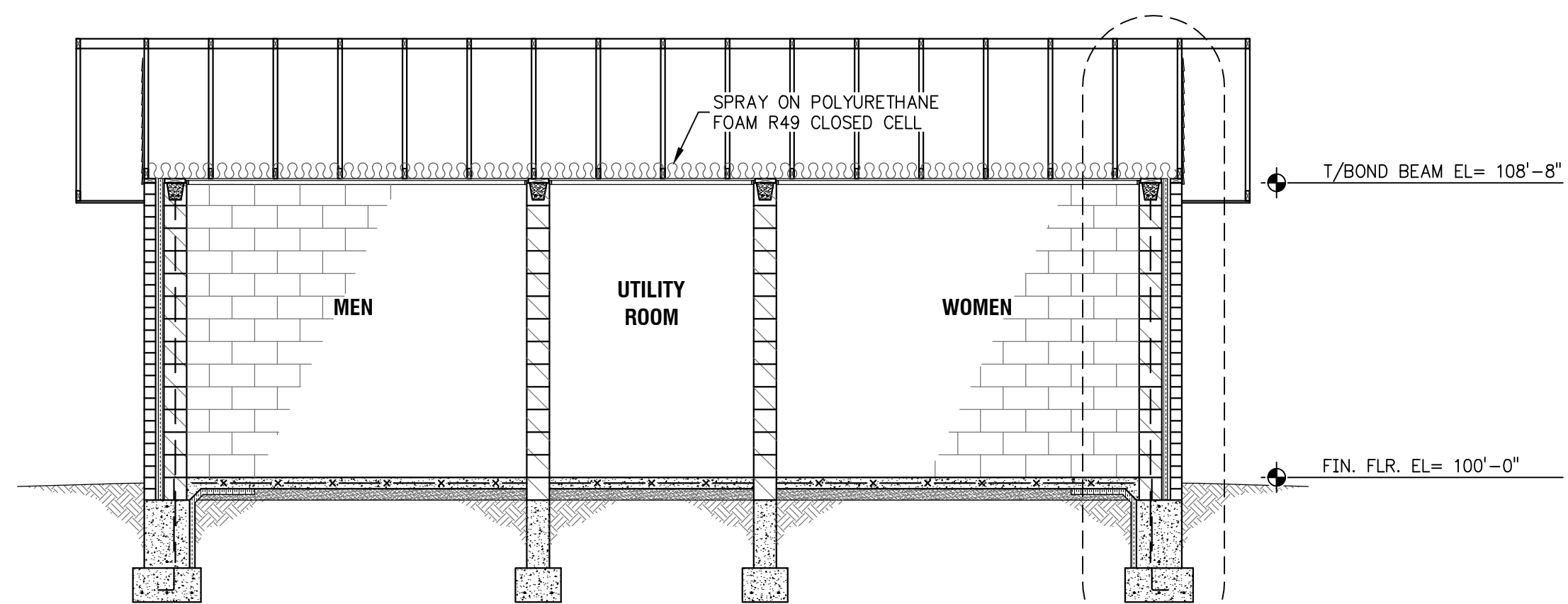
NORTH/SOUTH ELEVATION
SCALE: 1/4"=1'-0"



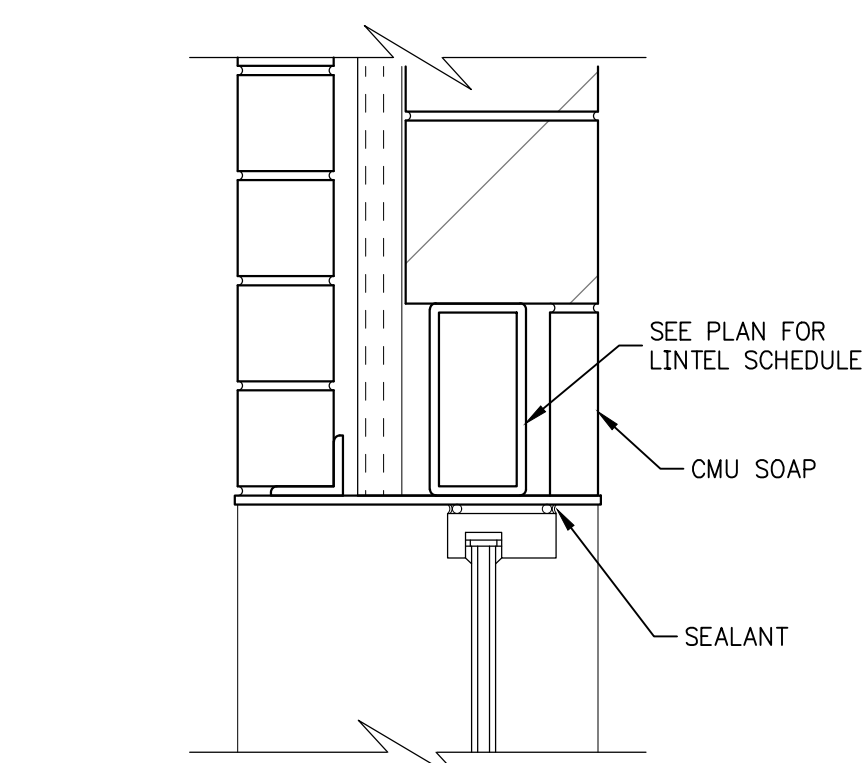
WEST ELEVATION
SCALE: 1/4"=1'-0"



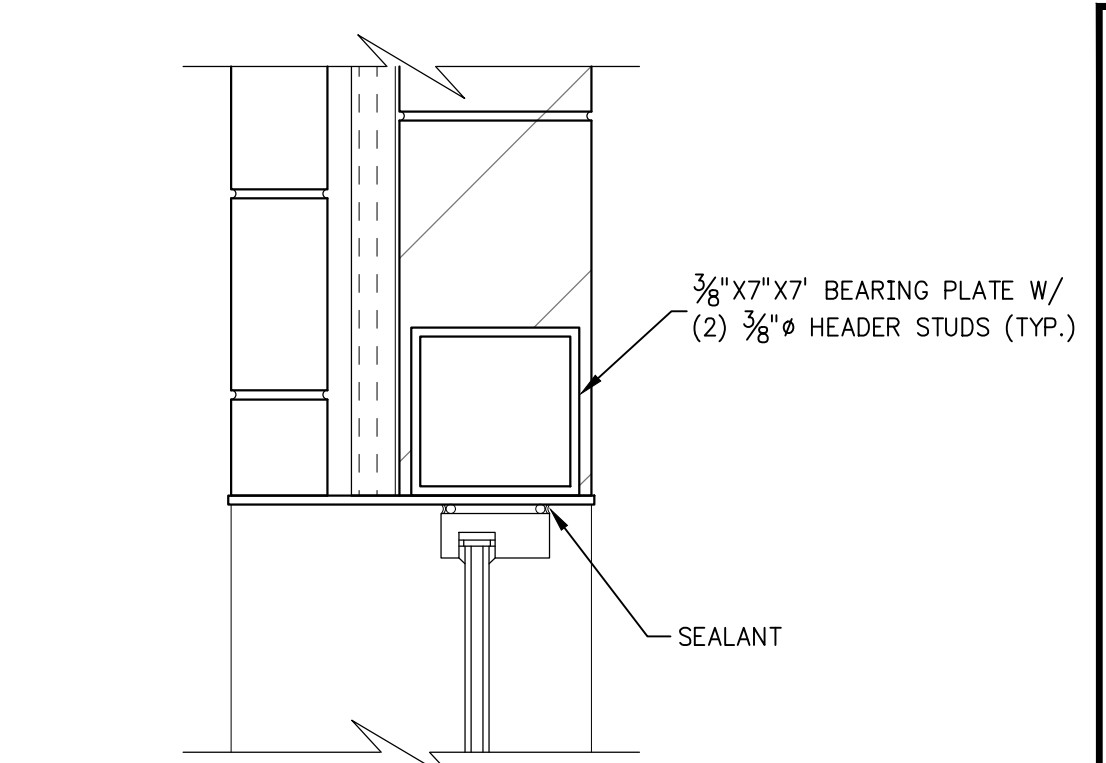
A SECTION
4.5 SCALE: 1/2"=1'-0"



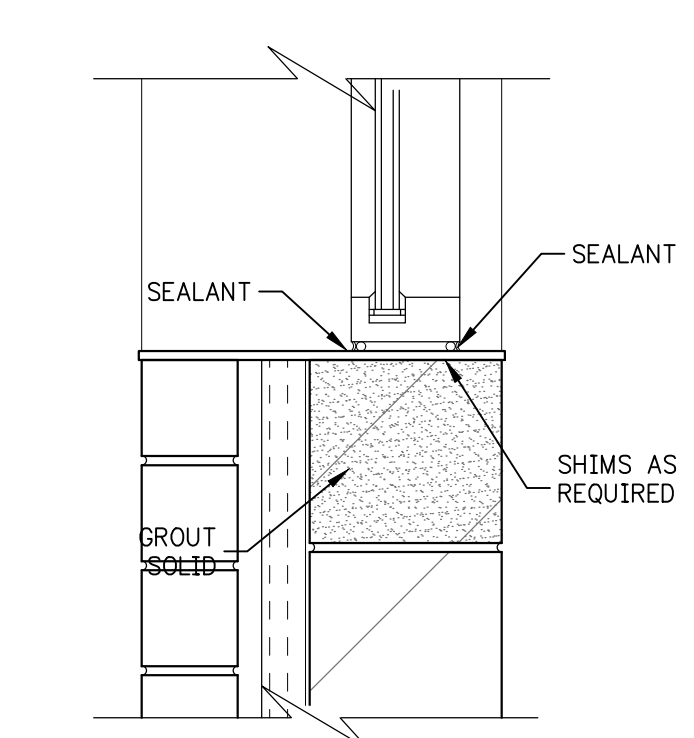
1 BUILDING SECTION
S2.1 SCALE: 1/4"=1'-0"



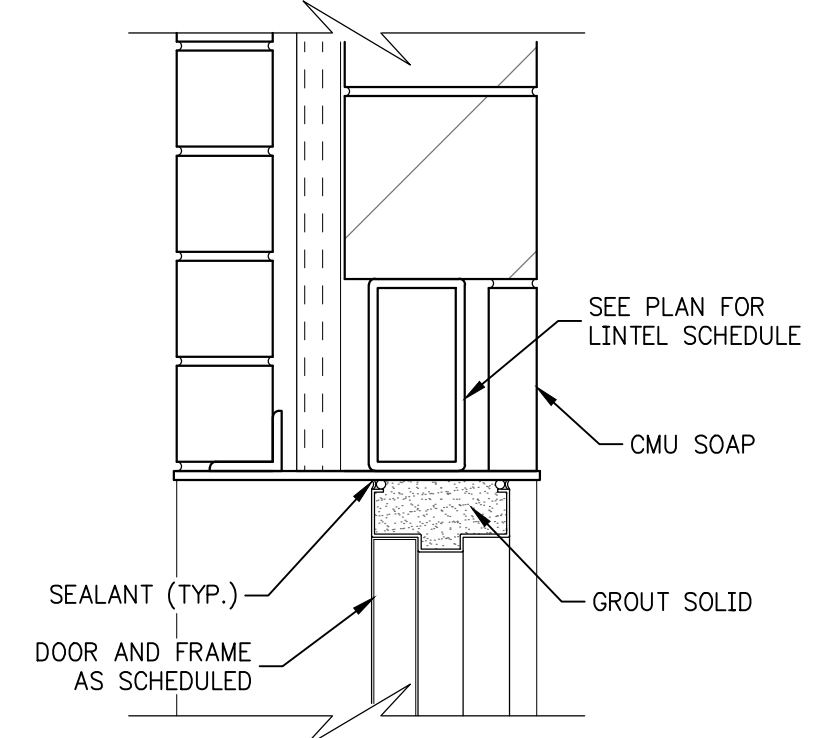
B WINDOW HEAD DETAIL
S2.1 SCALE: 1 1/2"=1'-0"



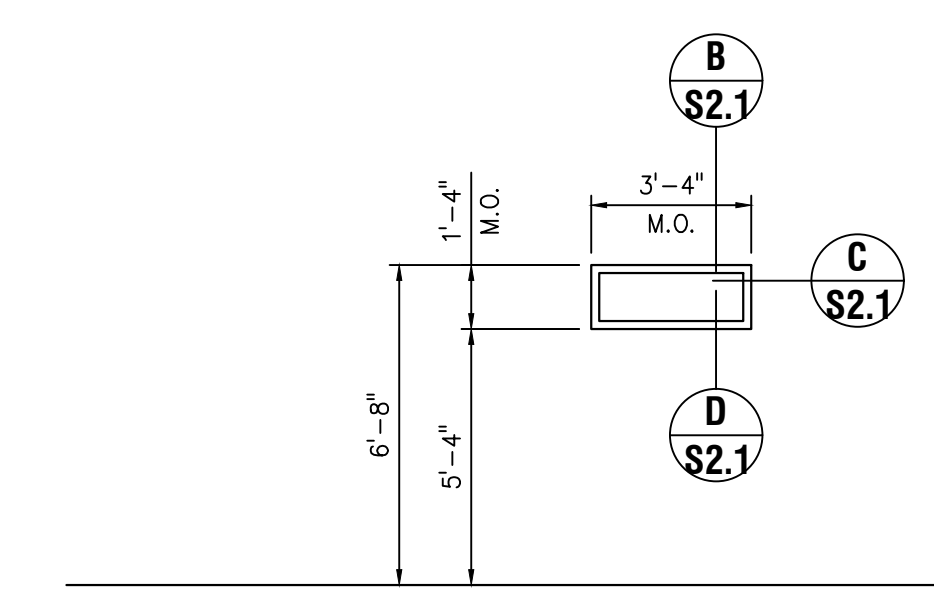
C WINDOW HEAD DETAIL
S2.1 SCALE: 1 1/2"=1'-0"



D WINDOW SILL DETAIL
S2.1 SCALE: 1 1/2"=1'-0"



E DOOR HEAD DETAIL
S2.1 SCALE: 1 1/2"=1'-0"



1 WINDOW TYPE
SCALE: 1/4"=1'-0"

- WINDOW SPECIFICATIONS:
1. ALUMINUM FRAMED
 2. GLAZING: INSULATING GLASS 1"
 3. OUTBOARD: 1/4" CLEAR (LOW E)
 4. INBOARD: 1/4" (ACID ETCHED)

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231.946.5874 (p) <http://gfa.io>

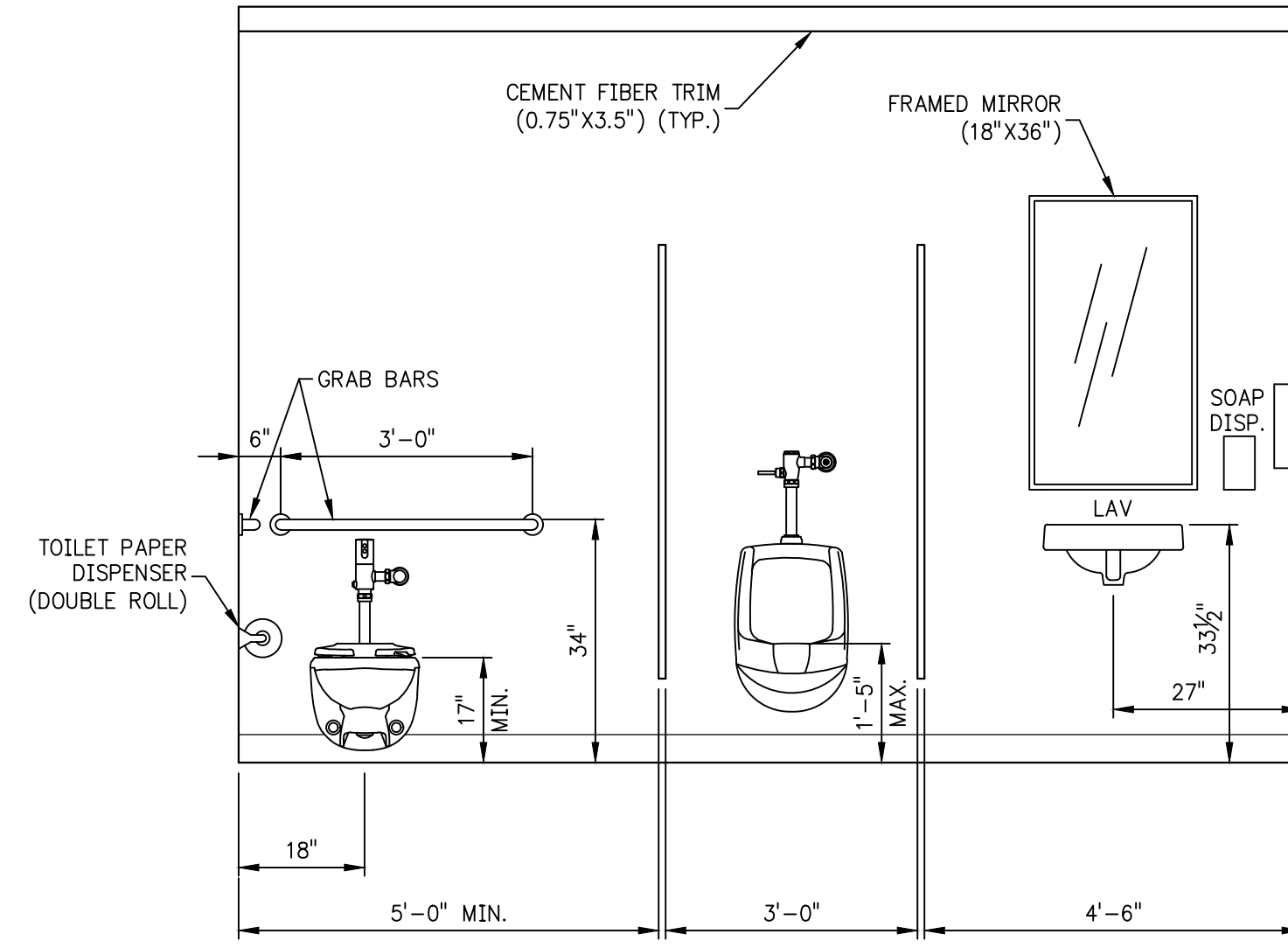
ENGINEERING SURVEYING TESTING & OPERATIONS
1820 Oak Hollow Drive
Traverse City, MI 49686

REV#	DATE	BY	CHK	FOR
0	08/12/2023	JGB		FOR ISS

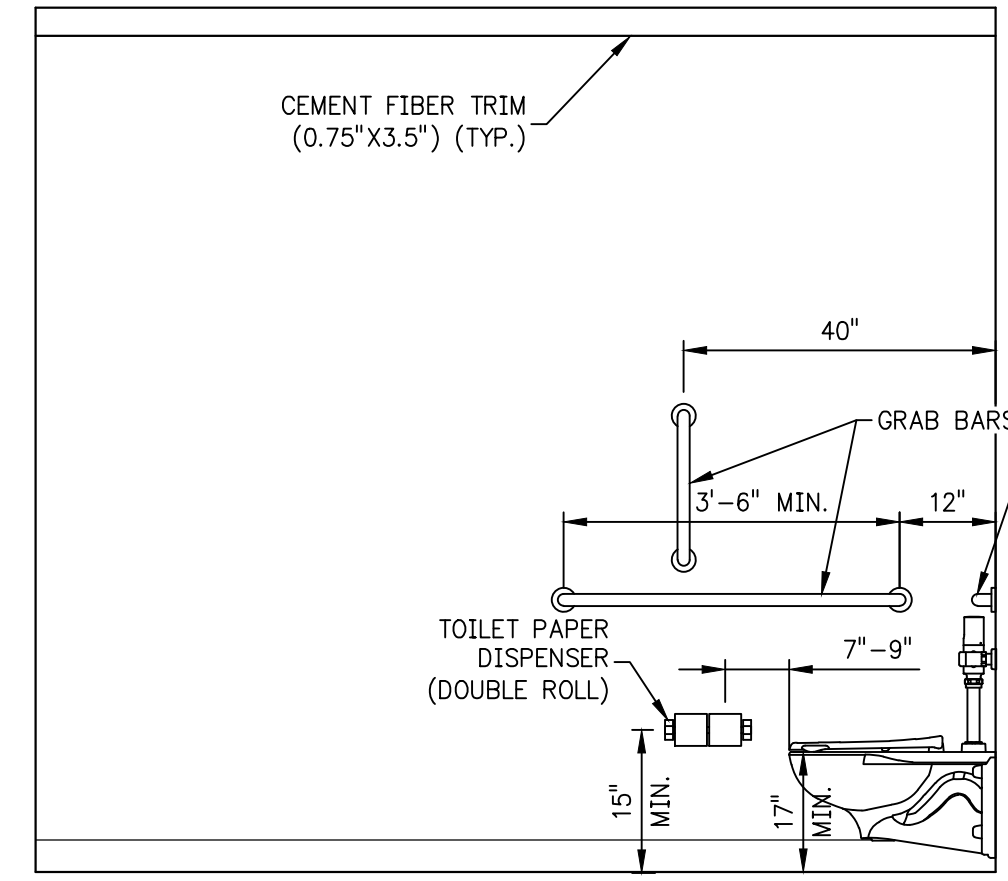
**CHARTER TOWNSHIP OF GARFIELD
RIVER EAST PARK IMPROV. - PHASE III: RESTROOM FACILITY
SECTIONS, ELEVATIONS, AND DETAILS
SECTION 23, T.27 N., R.11 W.
GARFIELD TOWNSHIP, GRAND TRAVERSE COUNTY, MICHIGAN**

These documents are prepared in accordance with the contractual terms and conditions for this project.

PLOT: JENNIFER GRAHAM, P.E.	DRAWN: M. MAGUIRE
BY: C. BALLANCE	CHK: M. MAGUIRE
23073	
S2.1	



1
S2.2 INTERIOR BATHROOM ELEVATION
SCALE: 1/2"=1'-0"



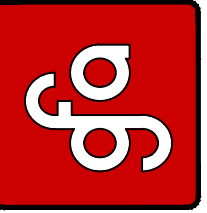
2
S2.2 INTERIOR BATHROOM ELEVATION
SCALE: 1/2"=1'-0"

BARRIER FREE NOTES:

THIS FACILITY IS REQUIRED TO ACCOMMODATE USAGE BY THE PHYSICALLY HANDICAPPED AND SHALL COMPLY WITH ALL PERTINENT CRITERIA OF CHAPTER 11 OF THE 2021 MICHIGAN BUILDING CODE AND THE BARRIER FREE DESIGN STANDARDS AS CONDENSED IN ICC/ANSI A117.1.

THE FOLLOWING IS A PARTIAL RECAP OF THE SPECIFIC AREAS THAT SHALL REQUIRE ATTENTION IN THIS INSTALLATION.

1. THE WATER CLOSET SEATS SHALL BE 17" TO 19" ABOVE THE FINISHED FLOOR WITH THE FLUSH CONTROL LEVER NO HIGHER THAN 44" ABOVE THE FLOOR. THE CENTERLINE OF THE WATER CLOSET SHALL BE LOCATED 16" TO 18" FROM THE ADJACENT WALL.
2. HANDRAILS (GRAB BARS) SHALL BE AS INDICATED ON THE DRAWINGS AND SHALL BE 1-1/4" TO 2" O.D. AND 1-1/2" CLEAR FROM THE WALL. GRAB BARS SHALL BE CAPABLE OF WITHSTANDING VERTICAL AND HORIZONTAL FORCES OF #250 WITH A DEFLECTION OF LESS THAN 1/2".
3. LAVATORIES SHALL HAVE A BOTTOM FRONT EDGE NO LESS THAN 27" ABOVE THE FINISHED FLOOR AND A TOP SURFACE NO GREATER THAN 34" ABOVE THE FINISHED FLOOR. CONTROLS SHALL BE LEVER OR PUSH BUTTON TYPE, WITH AN OUTLET WATER TEMPERATURE NOT TO EXCEED 120 DEGREES F. BOTTOM OF MIRROR SHALL BE NO GREATER THAN 40" ABOVE THE FINISHED FLOOR WITH A MINIMUM HEIGHT AT THE TOP EDGE OF 72". ALL EXPOSED PIPING BELOW LAVATORIES TO BE WRAPPED.
4. ACCESSORIES, SUCH AS SIGNAGE, FIRE EXTINGUISHERS, TOWEL AND CUP DISPENSERS, SHELVES, COAT HOOKS, ETC., TO BE PROVIDED/INSTALLED BY OWNER. ITEMS IDENTIFIED IN THIS PLAN SET TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
5. DOOR CLOSERS SHALL HAVE A SWEEP PERIOD PER SECTION 404.2.7 OF THE ANSI A-117 STANDARDS, WITH A MAX. OPENING FORCE OF 5 LB. FOR INTERIOR DOORS. EXTERIOR DOOR MINIMUM OPERATIONAL FORCE SHALL BE AS REQUIRED BY THE BUILDING INSPECTOR.
6. MAXIMUM THRESHOLD HEIGHTS SHALL BE 1/2". BEVEL AT EACH SIDE WITH A MAX. SLOPE OF 1 VERT. AND 2 HORIZ.
7. HANDLES, LOCKS, LATCHES, PULLS, ETC. SHALL BE LEVER TYPE, ALLOWING OPERATION WITH ONE HAND, WITHOUT TIGHT GRASPING, TWISTING, ETC. TO OPERATE, AND SHALL NOT HAVE THUMBTURN-TYPE LOCKS ON THE LEVEL.
8. DRINKING FOUNTAIN SHALL BE ADA APPROVED TYPE, WITH HIGH AND LOW FOUNTAINS.

 gfa ENGINEERING SURVEYING TESTING & OPERATIONS 1620 Oak Hollow Drive Traverse City, MI 49686 231.946.5874 (p) http://gfa.tc	CHARTER TOWNSHIP OF GARFIELD RIVER EAST PARK IMPROV. - PHASE III: RESTROOM FACILITY INTERIOR ELEVATIONS SECTION 23, T.27 N., R.11 W. GARFIELD TOWNSHIP, GRAND TRAVERSE COUNTY, MICHIGAN																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV#</th> <th>DATE</th> <th>BY</th> <th>FOR</th> <th>DESC.</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>06/12/2023</td> <td>CPB</td> <td>FOR BBS</td> <td></td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV#	DATE	BY	FOR	DESC.	0	06/12/2023	CPB	FOR BBS																						P.S. JENNIFER GRAHAM P.E. DR. C. BALLANCE CR. M. MASUIRE 23073 S2.2
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PLUMBING SPECIFICATIONS

BASIC MECHANICAL REQUIREMENTS:

ALL WORK TO BE DONE AND MATERIALS FURNISHED COMPLYING WITH APPLICABLE LAWS AND REGULATIONS, INCLUDING THE STATE OF MICHIGAN MECHANICAL, PLUMBING AND FIRE SAFETY CODES. OBTAIN AND PAY FOR REQUIRED PERMITS AND FEES.

ALL MATERIALS USED SHALL BE NEW AND UNDAMAGED.

ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH CURRENT CONSTRUCTION INDUSTRY STANDARDS AND WORKMANSHIP.

MARK ALL NEW PIPING RUNS, IDENTIFYING TYPE AND DIRECTION OF FLOW.

FURNISH SHOP DRAWINGS TO ARCH/ENGINEER FOR APPROVAL PRIOR TO PLACING DELIVERY ORDERS. PROVIDE SHOP DRAWINGS OF ALL MANUFACTURED EQUIPMENT AND MATERIALS EXCEPT PIPE, PIPE FITTINGS AND GALVANIZED DUCTWORK.

FURNISH ACCESS DOORS (RATED OR NON-RATED AS REQUIRED) WHERE VALVES OR EQUIPMENT ARE CONCEALED BEHIND A NON-ACCESSIBLE CEILING OR WALL. FURNISH ACCESS DOORS TO GENERAL CONTRACTOR FOR INSTALLATION.

FURNISH STEEL PIPE SLEEVES WHERE PIPES PENETRATE RATED WALLS. PROVIDE FIRESTOPPING MATERIALS AND SYSTEM TO MAINTAIN THE REQUIRED RATING OF THE WALL PENETRATED. PROVIDE SHOP DRAWINGS SHOWING LISTING AND RATING OF FIRESTOPPING MATERIALS.

AT SUBSTANTIAL COMPLETION OF CONSTRUCTION FURNISH AS BUILT PLANS TO ARCH/ENGINEER FOR APPROVAL BEFORE THEY ARE TURNED OVER TO OWNER.

CONTRACTOR SHALL ARRANGE TO MEET AND INSTRUCT THE OWNER IN THE USE AND MAINTENANCE OF SYSTEMS AND EQUIPMENT. THIS INSTRUCTION SHALL BE FOR A MINIMUM OF (4) HOURS. AN ADDITIONAL (2) HOURS IF INSTRUCTION FOR THE OWNER WILL BE GIVEN IN THE OPERATION OF THE TEMPERATURE CONTROLS.

ALL MANUFACTURED EQUIPMENT, ACCESSORIES AND MATERIALS SHALL BE USED AS INTENDED BY THE MANUFACTURER IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS.

CONTRACTOR SHALL PROVIDE IN ADDITION TO ANY OTHER WARRANTIES SPECIFIED, A ONE YEAR FULL LABOR AND MATERIAL WARRANTY ON ALL WORKMANSHIP, MATERIAL AND EQUIPMENT FURNISHED FOR THIS PROJECT.

THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL OPENINGS AND REQUIRED LINTELS NEEDED FOR THE GENERAL CONTRACTOR, FOR THE INSTALLATION OF MECHANICAL EQUIPMENT.

SAWCUTS, LINTELS, HEADERS, AND STRUCTURAL MODIFICATIONS TO THE BUILDING STRUCTURE NEEDED FOR THE INSTALLATION OF MECHANICAL EQUIPMENT SHALL BE APPROVED BY THE GENERAL CONTRACTOR, BE INSTALLATION.

IN GENERAL, OPENINGS AND REQUIRED LINTELS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR PROVIDING DETAILS AND TEMPLATES OF ALL OPENINGS NECESSARY FOR MECHANICAL EQUIPMENT INSTALLATION INCLUDING: HOUSING, ACCESS DOORS, INSPECTION DOORS, AND PASSAGEWAYS FOR MECHANICAL EQUIPMENT. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR SEALING CRACK AND FINISHING ROUGH EDGES LEFT FOLLOWING MECHANICAL INSTALLATION.

THE USE OF THE MECHANICAL EQUIPMENT DURING CONSTRUCTION IS PROHIBITED, UNLESS APPROVED BY WRITTEN DOCUMENTATION BY THE OWNER.

APPROVAL EQUALS, MECHANICAL EQUIPMENT MANUFACTURED BY A COMPANY OTHER THAN THAT WHICH WAS SPECIFIED IN THE SCHEDULE MAY BE SUBSTITUTED BY APPROVED SHOP DRAWINGS CONTINGENT UPON MEETING THE DESIGN, APPEARANCE, AND FUNCTIONAL STANDARDS ESTABLISHED BY THE ORIGINALLY SPECIFIED ITEM(S). THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS, CLEARANCES, ASSEMBLY, FIT, ETC. OF THE APPROVED EQUAL(S), AND THEIR AFFECT ON OTHER EQUIPMENT FIT AND OPERATION. THE MECHANICAL CONTRACTOR IS LIABLE FOR ANY ADDED COSTS TO HIMSELF OR OTHERS CAUSED BY THE APPROVED EQUALS.

HEAT TRACE AND INSULATE ALL HOT AND COLD WATER PIPES IN CORES OF EXTERIOR WALLS.

VALVES:

GATE VALVES OR BALL VALVES SHALL BE CLASS 125 FOR WATER AND 200 FOR C.A. WITH ENDS AND MATERIALS TO MATCH PIPING SYSTEMS.

BALL VALVES 2" AND SMALLER SHALL HAVE BRONZE BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE AND BALANCING STOPS, ENDS TO MATCH PIPING SYSTEM.

SUPPORTS & ANCHORS:

FURNISH PIPE AND DUCT HANGERS, WHERE REQUIRED, FIRMLY SUPPORTED FROM BUILDING STEEL, CONCRETE OR MASONRY STRUCTURE. SUPPORT PIPING SYSTEMS SECURELY WHILE ALLOWING FOR PIPE AND BUILDING EXPANSION AND CONTRACTION. PROVIDE COPPER PLATED HANGERS FOR COPPER PIPE. USE ADJUSTABLE CLEVIS HANGERS OR ADJUSTABLE STEEL BAND HANGERS. MAXIMUM SPACING SHALL BE 5' FOR 1/2" PIPING, 7' FOR 3/4" TO 1 1/4" PIPING, 9' FOR 1 1/2" TO 2" PIPING. FURNISH MECHANICAL EQUIPMENT SUPPORTS AS DETAILED OR AS REQUIRED TO SAFELY AND PERMANENTLY CARRY THE WEIGHT OF THE EQUIPMENT.

MECHANICAL INSULATION:

INSULATE ABOVE FLOOR WATER PIPING WITH FIBERGLASS PREFORMED PIPE INSULATION WITH FACTORY APPLIED PAPER BACKED ALUMINUM FOIL VAPOR BARRIER MATERIAL. INSULATE FITTINGS WITH SIMILAR MATERIAL AS PIPE AND COVER WITH PVC FITTING COVERS. ALL INSULATING MATERIALS TO HAVE FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPMENT RATING OF 50 OR LESS AS TESTED BY ANSI/ASTM E 84 (NFPA 233) METHOD. INSULATE ALL PIPING WITH 1/2" INSULATION.

WATER DISTRIBUTION SYSTEM:

WATER PIPING SHALL BE HDPE DR9

THOROUGHLY FLUSH AND CLEAN ALL NEW AND EXISTING WATER PIPING SYSTEMS. TEST ALL PIPING SYSTEMS AT 225 PSI FOR A MINIMUM OF 2 HOURS WITH NO PRESSURE DROP INDICATED PRIOR TO INSULATING.

STERILIZE ALL DOMESTIC WATER PIPING PER REQUIREMENTS OF LOCAL HEALTH DEPARTMENT.

DRAINAGE & VENT SYSTEM:

WITHIN BUILDING, SCHEDULE 40 PVC, DWN TYPE PIPE AND SOLVENT WELDED PIPE FITTINGS, SCHEDULE 30 PVC PIPE MAY BE USED FOR VENT PIPING WHERE PERMITTED BY CODE. HORIZONTAL PIPE SHALL BE SUPPORTED BY ADJUSTABLE RING HANGERS EQUAL TO ITT-GRINNEL FIG. 97. VERTICAL PIPING SHALL BE SUPPORTED AT EACH FLOOR OR ATTIC LEVEL BY RISER CLAMPS EQUAL TO ITT-GRINNEL FIG. 261.

OUTSIDE OF BUILDING PIPING MAY BE ONE OF THE FOLLOWING: PVC - MEETING ANSI/ASTM D3033, TYPE PSP OR D3034, TYPE PSM; ABS, MEETING ANSI/ASTM D2751.

PLUMBING FIXTURES:

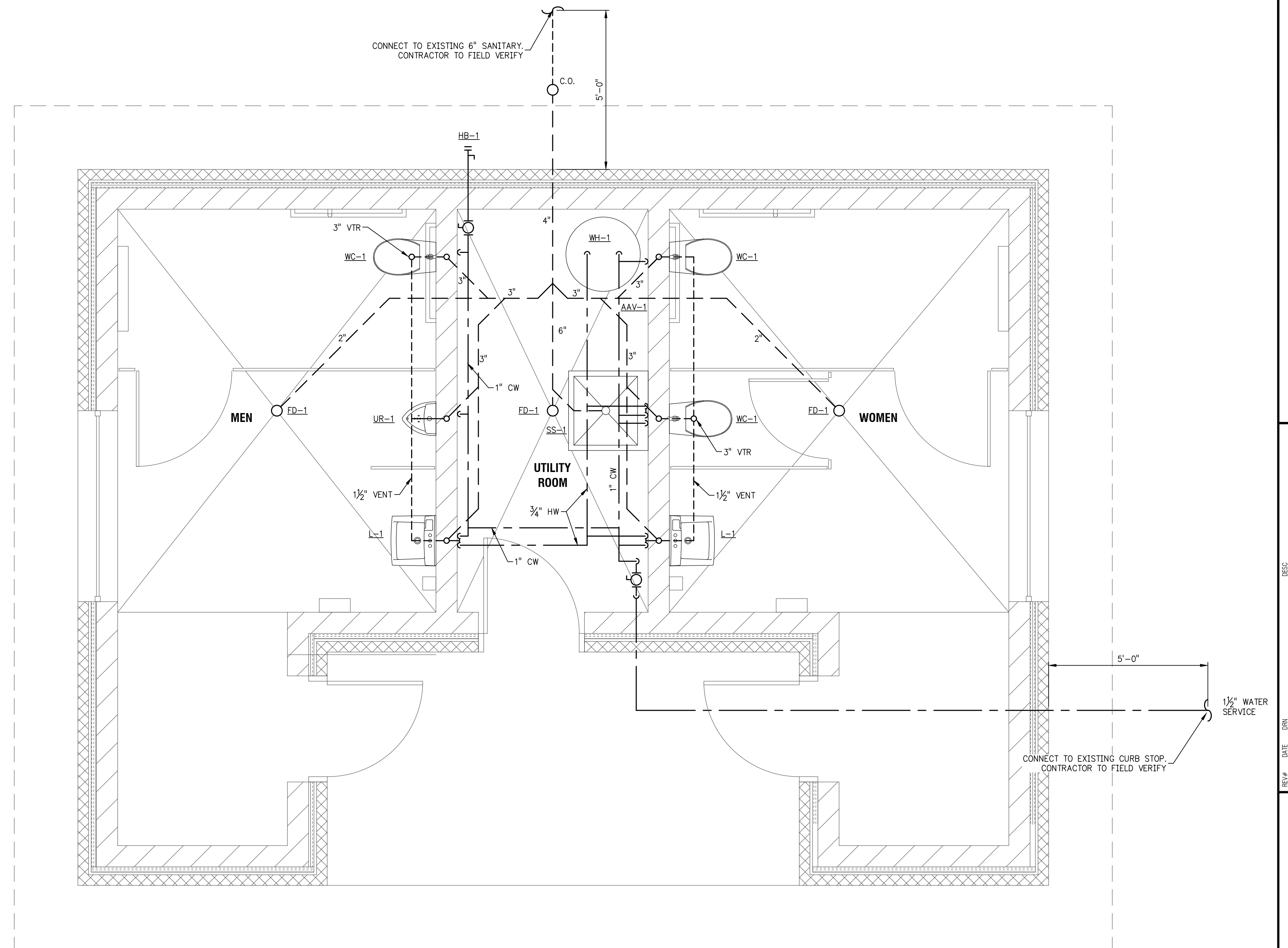
PROVIDE AIR CHAMBERS AT EACH FIXTURE CONNECTION. AIR CHAMBERS SHALL BE ONE SIZE LARGER THAN SUPPLY PIPE AND SHALL BE 12" LONG. WHERE REQUIRED BY PLUMBING CODE, FURNISH AND INSTALL MANUFACTURED WATER HAMMER ARRESTOR.

PLUMBING FIXTURES SHALL BE INSTALLED WHERE SHOWN ON THE ARCHITECTURAL DRAWINGS. INSTALL FIXTURES LEVEL AND PLUMB. FURNISH TRAPS WHERE REQUIRED. FIXTURES SHALL BE EASILY REMOVABLE FOR SERVICE AND CLEANING.

PROVIDE CHROME PLATED RIGID OR FLEXIBLE SUPPLIES TO FIXTURES WITH STOP VALVES. CHROME PLATED 17 GAUGE BRASS TRAPS WITH CHROME PLATED ESCUTCHEONS.

SEAL ALL FIXTURES TO WALL AND FLOOR USING SILICONE SEALANT. MATCH SEALANT COLOR TO FIXTURE COLOR.

FIXTURES DESIGNATED BARRIER FREE SHALL BE INSTALLED IN COMPLIANCE WITH AMERICAN'S WITH DISABILITIES ACT.

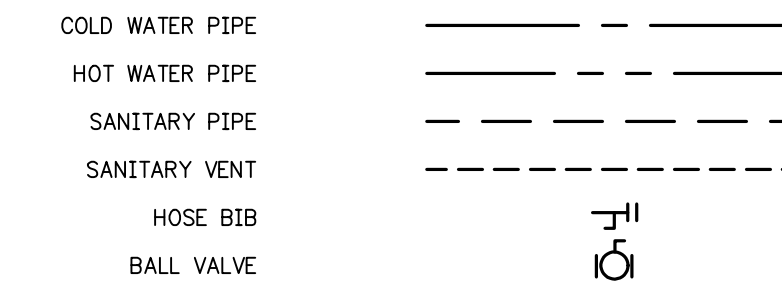


PLUMBING FLOOR PLAN

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

PLUMBING FIXTURE SCHEDULE							
TAG	FIXTURE	MFG	MODEL	CW	HW	SAN.	REMARKS
WC-1	WATER CLOSET - ADA	KOHLER	HIGHCLIFF ULTRA K96057	1"		3"	FLOOR MOUNTED WITH DUAL FLUSH MANUAL FLUSH VALVE W/ SLOAN WES 111, ADA SEAT HEIGHT, INSTALLED WITH 2" VENT
UR-1	URINAL - ADA	KOHLER	BARDON	3/4"		2"	WALL MOUNTED WITH MANUAL FLUSH VALVE
L-1	LAVATORY - ADA	CORIAN	8256	1/2"	1/2"	1 1/2"	CHICAGO 807-665PSHBCP FAUCET W/ CHICAGO EVR-13KIKABNF MIXING VALVE, INSTALLED WITH 1 1/4" VENT, WALL CARRIER, INSULATE SUPPLIES & TRAP PER ADA
SS-1	MOP SERVICE SINK	FAIT	MSB 2424	3/4"	3/4"	3"	AMERICAN STANDARD 8354.112 FAUCET, INSTALLED WITH 1 1/2" VENT, TRAP SEAL EQUAL TO SURE SEAL, W/ RUBBER DIAPHRAGM, ASCE 1072 LISTED
FD-1	FLOOR DRAIN	J.R. SMITH	2005-AHP06NB			2"	STAINLESS STEEL W/ BARRIER TRAP SEAL DEVICE, INSTALLED WITH 1 1/2" VENT, TRAP SEAL EQUAL TO SURE SEAL, W/ RUBBER DIAPHRAGM, ASCE 1072 LISTED
HB-1	HOSE BIB	J.R. SMITH	5673	3/4"			FREEZELESS AUTO DRAIN W/ BACKFLOW PREVENTER/ ANTISIPHON (30' A.F.F.)
WH-1	WATER HEATER	AD SMITH	DEL-20	3/4"	3/4"		240V-4.5KW, NON-SIMULTANEOUS, 20 GAL., 18 GPH @ 100°F RISE
AAV-1	AIR ADMITTANCE VALVE	OATEY SURE VENT				2"	MOUNT 18" ABOVE TRUSS BEARING

PLUMBING LEGEND



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PLUMBING FLOOR PLAN

SECTION 23, T.27 N., R.11 W.

GARFIELD TOWNSHIP, GRAND TRAVERSE COUNTY, MICHIGAN

PLUMBING LEGEND

These documents are prepared in accordance with the contractual terms and conditions for this project.

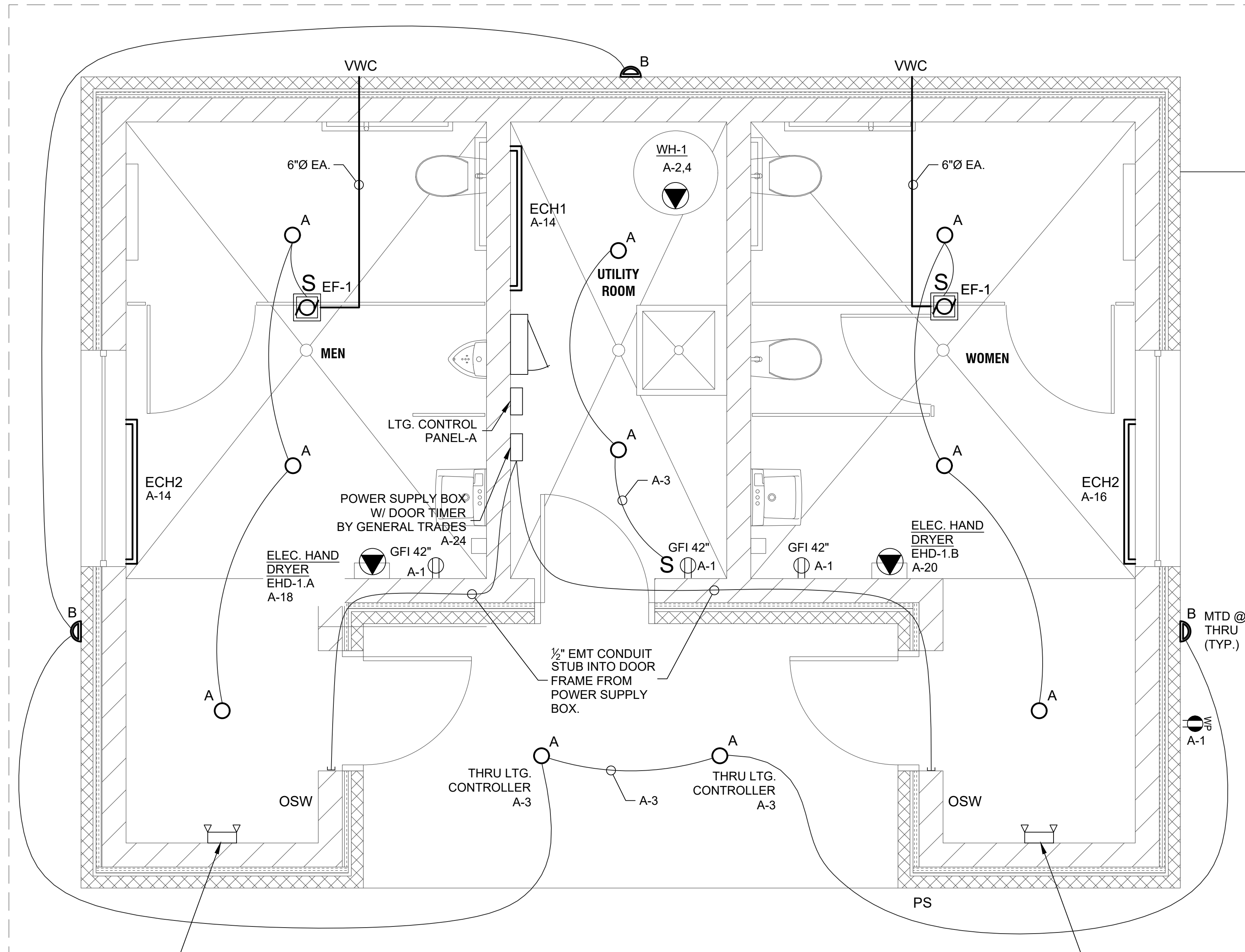
PM: JENNIFER GRAHAM, P.E.

DR: C. BALLANCE

DES: M. MASURE

23073

P1.1



UGE
 CONTRACTOR TO USE EXISTING 4" CONDUIT THAT INCLUDES PULL ROPE TO INSTALL WIRING.

MTD @ 8'-4" A.F.G TO CENTER THRU LIGHTING CONTROLLER (TYP.)

EMERGENCY LIGHTING, VANDAL RESISTANT, PROVIDE ADEQUATE ILLUMINATION TO MEET MICHIGAN BUILDING CODE

ELECTRICAL FLOOR PLAN
 SCALE: 1/2"=1'-0"

EMERGENCY LIGHTING, VANDAL RESISTANT, PROVIDE ADEQUATE ILLUMINATION TO MEET MICHIGAN BUILDING CODE

NOTES:

- CAUTION !!!!!!!**
 E.C. SHALL VERIFY ALL ROUGH-IN ELEVATIONS, LOCATIONS AND/OR HEIGHTS OF ALL LIGHT FIXTURES, RECEPTACLE OUTLETS, T.V., COMPUTER, CLOCK OUTLETS, ETC. WITH ENGINEER. FAILURE TO DO SO WILL REQUIRE E.C. TO RELOCATE RESPECTIVE ITEMS AT THE E.C.'S EXPENSE.
- CONDUIT AND WIRING FOR ALL BUILDING MOUNTED EXTERIOR WALL MOUNTED LIGHT FIXTURES SHALL BE RUN INSIDE THE BUILDING.
- ALL CONDUIT INSIDE THE BUILDING SHALL BE EMT AND RE ROUTED WITHIN THE BLOCK WALLS, EXCEPT IN THE UTILITY ROOM WHERE THEY CAN BE SURFACE MOUNTED, AND ALL CONDUITS SHALL HAVE APPROPRIATE FITTINGS, UNLESS OTHERWISE NOTED.
- ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC, UNLESS OTHERWISE NOTED.
- E.C. SHALL PROVIDE ALL POWER AND CONTROL WIRE REQUIREMENTS FOR THE GENERATOR TO BE INSTALLED.

PANEL #LP-A 100 AMPS M.C.B. 120/240V-1Ø-3W SQUARE D TYPE NO NEMA 1 SURFACE PANEL WITH TRIM KIT, GROUND BAR KIT, COPPER MAINS AND SOLID NEUTRAL.

CIR NO.	AMPS/POLES	DESCRIPTION	LOAD	LOAD	DESCRIPTION	AMPS/POLES	CIR NO.
1	20/1	RECEPTACLES	720				2
3	20/1	BUILDING & SITE LIGHTING		4500	WATER HEATER	40/2	4
5		SPARE			SPARE		6
7		SPARE			SPARE		8
9		SPARE			SPARE		10
11		SPARE			SPARE		12
13		SPARE		1685	COVE HEATERS	20/1	14
15		SPARE		1125	COVE HEATERS	20/1	16
17		SPARE		950	HAND DRYER - MEN	20/1	18
19		SPARE		950	HAND DRYER - WOMEN	20/1	20
21		SPARE			SITE LIGHT	20/1	22
23		SPARE			DOOR LOCKS	20/1	24

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ENGINEERING SURVEYING TESTING & OPERATIONS
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 Traverse City, MI 49686

REV#	DATE	DRN	FOR BIDS	DESC.
0	06/10/2010	CPB	FOR BIDS	

CHARTER TOWNSHIP OF GARFIELD
RIVER EAST PARK IMPROV. - PHASE III: RESTROOM FACILITY
ELECTRICAL FLOOR PLAN
 SECTION 23, T.27 N., R.11 W.
 GARFIELD TOWNSHIP, GRAND TRAVERSE COUNTY, MICHIGAN

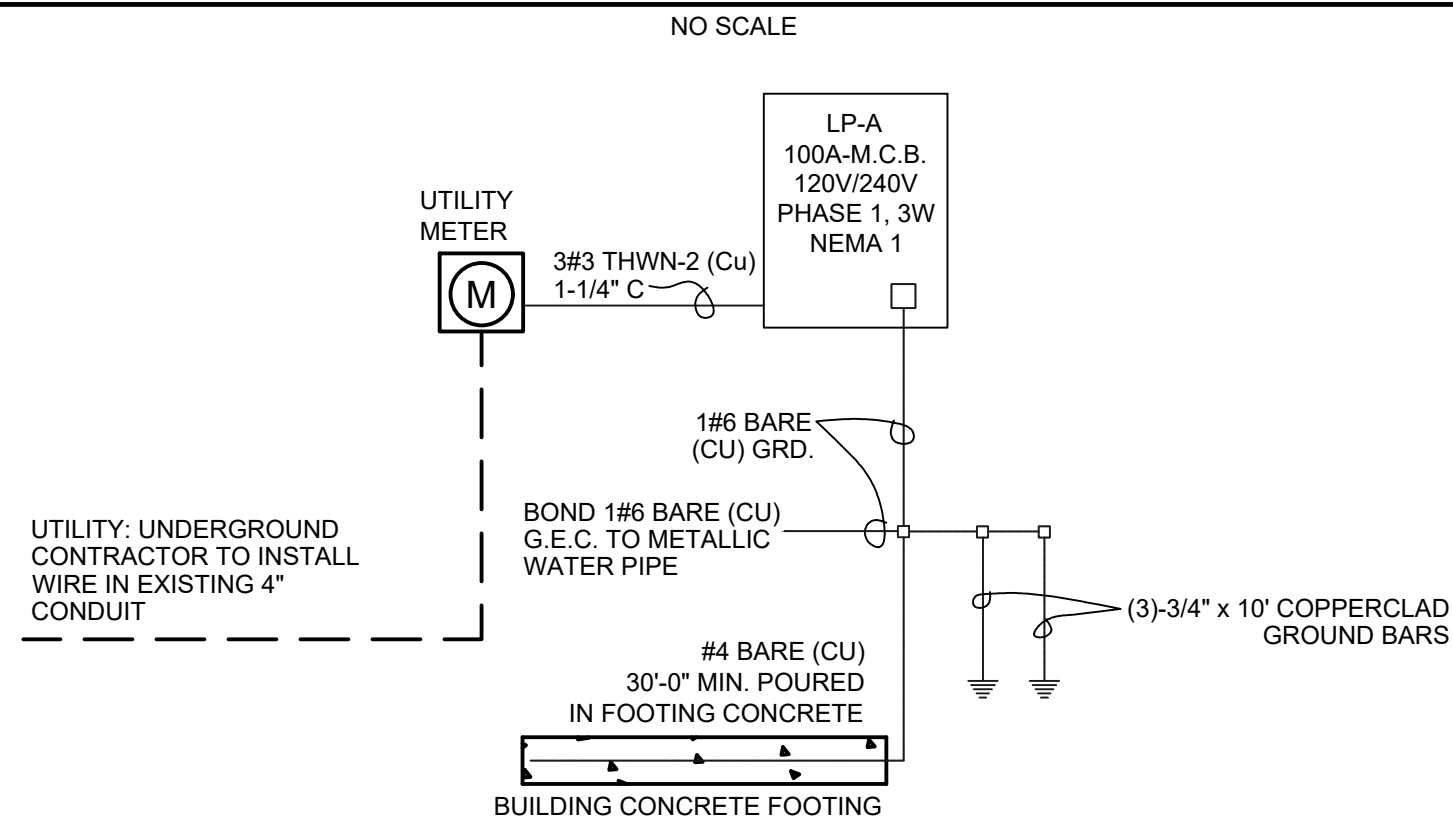
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PR: JENNIFER GRAHAM, P.E.
 DR: C. BALLANCE M. MASURE
 23073
 E1.1

MECHANICAL & ELECTRICAL LEGEND

- A** LED WAFFER DOWNLIGHT FIXTURE: LITHONIA WFB LED 30K MVOLT 90 CRI 3000K 1800 LUMENS WITH REMOTE DRIVER (10.1W, 0.09A 120V); OR APPROVED EQUAL.
- B** WALL MOUNTED EXTERIOR LIGHT FIXTURE
- LP-A** LIGHTING CONTROL PANEL
- ECH1** ELECTRIC COVE HEATER: KING ELECTRIC KCV1206-W, 560W, 4.7A, 120V WITH BUILT IN THERMOSTAT KVCT-1LLW OR APPROVED EQUAL, MOUNT CENTER @ 8'-4" AFF.
- ECH2** ELECTRIC COVE HEATER: KING ELECTRIC KCV1212-W, 1125W, 9.4A, 120V WITH BUILT IN THERMOSTAT KVCT-1LLW OR APPROVED EQUAL, MOUNT CENTER @ 8'-4" AFF.
- EF** EXHAUST FAN: GREENHECK SP-A200 (140CF, 120V, 16.4W) OR APPROVED EQUAL, OPERATED BY OCCUPANT SENSOR WITH 15 MINUTE SHUTOFF DELAY.
- EHD** ELECTRIC HAND DRYER: WORLD DRYER VERDEdri Q-973A2 (120 VAC, 15 AMP, 950 WATTS, DEDICATED CIRCUIT), OR APPROVED EQUAL.
- OSW** OCCUPANT SENSOR WALL: nLIGHT nWV 16 BBA, OR APPROVED EQUAL.
- PNL** ELECTRIC PANEL: 120/240 VAC, 1-PHASE, 30 SPACE, SURFACE MOUNT, 100A MAIN CIRCUIT BREAKER
- PS** PHOTOCONTROL SENSOR: DARK TO LIGHT DLL127 1.5, OR APPROVED EQUAL, MOUNT @ 16'-0" AFF.
- WH-1** ELECTRIC WATER HEATER: SEE PLUMBING SCHEDULE
- VWC** EXHAUST VENT WALL CAP WITH DAMPER & INSECT SCREEN: BROAN 641, OR APPROVED EQUAL, PAINT TO MATCH.
- Ⓜ** GROUND FAULT INTERRUPTER TAMPER RESISTANT RECEPTACLE, MOUNT HEIGHT IN INCHES, FLOOR TO CENTERLINE
- Ⓜ** GROUND FAULT INTERRUPTER TAMPER RESISTANT RECEPTACLE WITH WATERPROOF HOUSING, MOUNT HEIGHT IN INCHES, FLOOR TO CENTERLINE.

ELECTRICAL RISER DIAGRAM

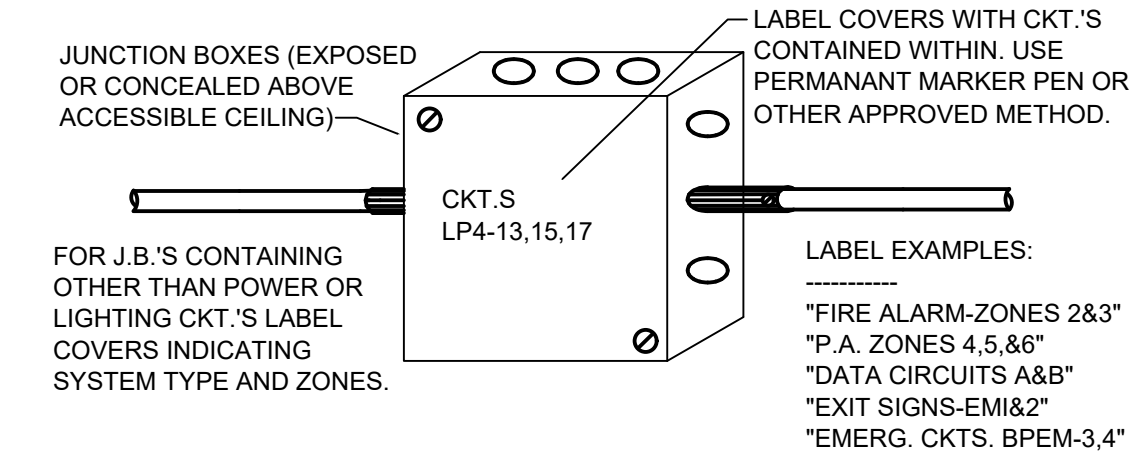
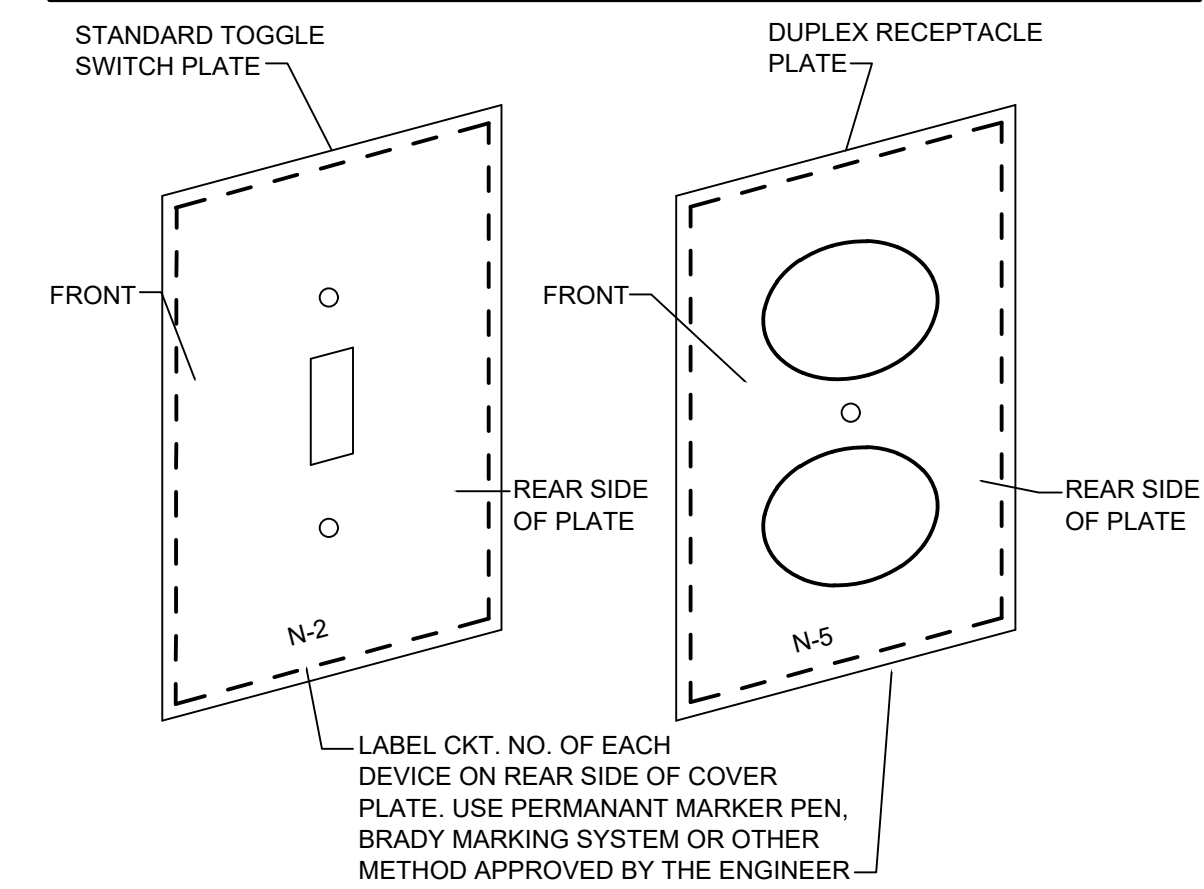


WIRE SIZE REQUIREMENTS

NOTE:
BASED ON A MAXIMUM OF 3.6-VOLT DROP (3%) ON 120V CIRCUITS. WIRES FOR RUNS OVER 100'-0" SHALL BE DETERMINED ON THIS A MAXIMUM OF A 3% DROP ALLOWED.

BRANCH CIRCUIT AMPS	LENGTH OF RUN - FROM PANEL TO FIRST CONNECTION - FEET									
	50'	60'	70'	80'	90'	100'	110'	120'	130'	
15	#12	#12	#12	#10	#10	#10	#10	#10	#8	
20	#12	#10	#10	#10	#10	#8	#8	#8	#8	
30	#10	#10	#8	#8	#8	#6	#6	#6	#6	

ELECTRICAL IDENTIFICATION



SECTION

ELECTRICAL SPECIFICATIONS

1. PRIOR TO SUBMITTING A PROPOSAL, BIDDER SHALL HAVE VISITED THE CONSTRUCTION SITE. HE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS PART.
2. ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ENFORCEABLE EDITION OF THE N.E.C., LOCAL AND STATE CODES, ORDINANCES, REGULATIONS, INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), AND ADA GUIDELINES WITH THE LOCAL CODE AUTHORITIES HAVING JURISDICTION.
3. ELECTRICAL CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF ELECTRICAL WORK, THE ELECTRICAL CONTRACTOR SHALL FURNISH THE OWNER WITH ALL CERTIFICATES OF FINAL INSPECTION AND APPROVALS.
4. THE CONTRACTOR SHALL EMPLOY QUALIFIED AND EXPERIENCED WORKMEN FOR THIS WORK.
5. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT ELECTRIC UTILITY COMPANIES SERVICE POINTS AND PRIMARY SERVICE CONDUIT, ROUTING, AND SIZE WITH UTILITY COMPANY SERVICE PLANNERS/ENGINEERS PRIOR TO BEGINNING WORK.
6. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER HIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER. SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AT NO EXPENSE TO THE OWNER.
7. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO (2) HOURS OF TRAINING AS NECESSARY TO THE OWNER ON THE LIGHTING CONTROLS, AND ALL OTHER ELECTRICAL EQUIPMENT AND/OR DEVICES.
8. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OPERATING AND MAINTENANCE INSTRUCTION MANUALS, CERTIFICATES OF INSPECTION, TEST REPORTS, SPARE PARTS, AND RECORD DRAWINGS (AS-BUILTS) TO THE OWNER PRIOR TO CLOSEOUT. FINAL PAYMENT WILL ONLY BE MADE AFTER THE FINAL PUNCH LIST COMPLETION AND RECEIPT OF THE ABOVE CLOSEOUT DOCUMENTATION.
9. ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER BUILDING TRADES. IF ANY DISCREPANCIES OCCUR, CONSULT WITH THE ENGINEER AND/OR OWNER BEFORE CONTINUING.
10. THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC. AS REQUIRED.
11. THE ELECTRICAL CONTRACTOR SHALL PERIODICALLY REMOVE FROM THE SITE ALL DEBRIS AND RUBBISH ACCUMULATING AS A RESULT OF THE ELECTRICAL INSTALLATION. UPON COMPLETION OF THE PROJECT, HE SHALL DISPOSE OF ALL DEBRIS AND RUBBISH AND SHALL LEAVE ALL AREAS CLEAN. THE INTERIORS OF ALL CABINETS, PULL BOXES, AND EQUIPMENT ENCLOSURES SHALL BE FREE OF ANY DEBRIS.
12. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND SHALL WORK WITH EXISTING SYSTEMS IN AN "AS FOUND" CONDITION.
13. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOW OBSERVATIONS FROM CASUAL FIELD INVESTIGATIONS AND EXISTING DRAWINGS. FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND MOUNTING LOCATIONS. NOTIFY ENGINEER IF ANY DISCREPANCIES ARE FOUND THAT AFFECT THE WORK TO BE PERFORMED, PRIOR TO PROCEEDING.
14. ELECTRICAL JOINTS WILL BE PERMITTED ONLY IN JUNCTION AND OUTLET BOXES. ALL JOINTS SHALL BE FIRMLY BONDED TOGETHER AND TAPED OR SHALL BE MADE WITH MECHANICAL CONNECTORS.
15. WITHIN THIRTY (30) DAYS AFTER THE ELECTRICAL CONTRACTOR HAS BEEN NOTIFIED TO PROCEED WITH THE WORK, HE SHALL SUBMIT TO THE ENGINEER EIGHT (8) COPIES OF EACH OF THE FOLLOWING DRAWINGS AND DATA SHEETS FOR REVIEW. ALL EQUIPMENT FOR WHICH SHOP DRAWINGS ARE BEING SUBMITTED SHALL NOT BE ORDERED UNTIL APPROVED DRAWINGS HAVE BEEN RETURNED. SUCH SUBMITTALS SHALL INCLUDE:
 - * ELECTRICAL DISTRIBUTION EQUIPMENT AND DISCONNECTS.
 - * LIGHT FIXTURES AND CONTROLS
 - * WIRING DEVICES
 - * ELECTRIC COVE HEATER
 - * EXHAUST FAN
16. ELECTRICAL MATERIALS SHALL BE NEW, AND BEAR THE "UL" LABEL OR LISTING.
17. BRANCH CIRCUIT WIRE SHALL BE COPPER, RATED 75°C, MINIMUM SIZE #12 AWG, AND BE TYPE "THHN", "THWN" OR "THWN-2" AND INSTALLED IN EMT, FOR INDOOR USE, AND SCHEDULE 40 PVC OR RMC FOR OUTDOOR USE, MINIMUM SIZE 1/2", UNLESS OTHERWISE NOTED OR REQUIRED BY CODE. ALL WIRE AND CABLE SHALL BE NEW AND SHALL BE DELIVERED TO PROJECT IN UNBROKEN AND UNDAMAGED CARTONS AND/OR REELS. COLOR CODED "BLACK-RED-BLUE" SHALL BE USED FOR ALL NEW BRANCH WIRING ON PHASES "A-B-C". FEEDERS AND SECONDARY SERVICE CONDUCTORS SHALL BE STRANDED COPPER WITH 600 VOLT INSULATION, RATED 90°C, TYPE "THHN", "THWN" OR "THWN-2" AND BE INSTALLED IN EMT OR PVC CONDUIT, MINIMUM SIZE 1/2" UNLESS OTHERWISE NOTED OR REQUIRED BY CODE.
18. UNDERGROUND CONDUIT TO BE SCHEDULE 40 PVC OR SCHEDULE 80 PVC WHERE SUBJECT TO PHYSICAL DAMAGE.
19. FUSES SHALL BE "UL" LISTED, DUAL-ELEMENT AS MANUFACTURED BY BUSSMAN CO., OR APPROVED EQUAL (200,000 AIC).
20. SWITCHES SHALL BE RATED 20A, 120/277V, COMMERCIAL SPECIFICATION GRADE, SINGLE, DOUBLE-POLE, THREE-WAY, ETC. AS INDICATED, AND EQUAL TO HUBBELL, GE, LEVITON, COOPER, ARROW-HART OR P&S.
21. RECEPTACLES SHALL BE RATED 20A, 125AMP, COMMERCIAL SPECIFICATION GRADE TYPE (NEMA 5-20R), EQUAL TO HUBBELL, GE, LEVITON, COOPER, ARROW-HART OR P&S.
22. PLATES FOR SWITCHES AND RECEPTACLES SHALL BE BRUSHED SMOOTH STAINLESS STEEL.
23. FLUORESCENT FIXTURE BALLAST VOLTAGE RATING SHALL BE AS NOTED, NON-POL. HIGH POWER FACTOR, ENERGY SAVING, CLASS P, "A" SOUND RATED, PROGRAM RAPID START MINIMUM 100,000 CYCLES.
24. LAMPS - ALL LAMPS SHALL BE CLASSIFIED "ENERGY SAVING". PROVIDE A MINIMUM OF 3% OR TWO (2), WHICHEVER IS GREATER, SPARE OF EACH TYPE OF LAMP TO THE OWNER AT PROJECT CLOSEOUT. LAMPS SHALL BE #100", 85+ CRI BY PHILIPS, SYLVANIA OR GENERAL ELECTRIC.
25. ALL LIGHT FIXTURES HAVE BEEN SELECTED BY THE OWNER, THE ARCHITECT, AND THE ENGINEER FOR THE BASIS OF DESIGN AND APPEARANCE.
26. PROJECT HAS BEEN DESIGNED TO COMPLY WITH AUTOMATIC LIGHTING SHUTOFF REQUIREMENTS OF ASHRAE 90.1-2019. ASHRAE LIGHTING DOCUMENTATION CAN BE PROVIDED BY THE ENGINEER UPON REQUEST.
27. DISCONNECT SWITCHES SHALL BE RATED 250V, OR 600V, FUSED OR NON-FUSED AS NOTED, HEAVY-DUTY, NEMA-1, FOR INDOOR USE, AND NEMA-3R FOR OUTDOOR USE BY SQUARE D OR SIMILAR.
28. SINGLE PHASE MOTOR STARTERS SHALL HAVE MANUAL TOGGLE SWITCH WITH THERMAL OVERLOADS AND PILOT LIGHT, SURFACE OR FLUSH MOUNTED AS NOTED BY SQUARE D CLASS 2510 OR SIMILAR.
29. PANELBOARDS SHALL BE RATED 120/240V, 1-PHASE, 3W, AS NOTED WITH FUSED-BOLT-ON TYPE BRANCH CIRCUIT BREAKERS RATED A MINIMUM OF 10,000 A.I.C. PANELBOARDS SHALL BE SIMILAR TO SQUARE D, TYPE NQ.
30. FIRE CALLING REQUIRED WHERE ANY PENETRATIONS ARE MADE THROUGH FIRE RATED WALLS, BY, E.C.
31. PROVIDE AN UPDATED, ACCURATE AND TYPED PANEL SCHEDULE FOR ALL NEW AND EXISTING ELECTRICAL PANELS THAT ARE AFFECTED BY THE WORK IN THIS PROJECT. DOCUMENT ALL CHANGES ON FINAL AS-BUILT DRAWINGS AS REQUIRED. VERIFY ALL EXISTING LOADS AND WIRING - NOTIFY THE ARCHITECT/ENGINEER IF EXISTING CONDITIONS ARE FOUND THAT VIOLATE INSTALLATION OR SAFETY CODES.
32. ALL NEW EQUIPMENT (DISCONNECTS, VARIABLE FREQUENCY DRIVES (VFD), ETC.) IDENTIFICATION SHALL BE APPROPRIATELY IDENTIFIED.

231.946.5874 (p)
http://gfaic



ENGINEERING SURVEYING TESTING & OPERATIONS
1820 Oak Hollow Drive
Traverse City, MI 49686

REV# DATE DRN FORBIDS

CHARTER TOWNSHIP OF GARFIELD
RIVER EAST PARK IMPROV. - PHASE III: RESTROOM FACILITY
ELECTRICAL SCHEDULES & DETAILS
SECTION 23, T.27 N., R.11 W.
GARFIELD TOWNSHIP, GRAND TRAVERSE COUNTY, MICHIGAN

PM: JENNIFER GRAHAM, P.E.
DR: C. BALLANCE M. MASSURE
23073
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These documents are prepared in accordance with the contractual terms and conditions for this project.