

UTILITY NOTES:  
 VISUAL INDICATIONS OF UTILITIES ARE AS SHOWN.  
 UNDERGROUND LOCATIONS SHOWN, AS FURNISHED BY THEIR LESSORS, ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD AT THE TIME OF CONSTRUCTION. FOR ACTUAL FIELD LOCATIONS OF UNDERGROUND UTILITIES CALL 811.

**DEMOLITION NOTES:**

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL (IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES) ALL CURBS, PARKING, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
3. DAMAGE TO ALL EXISTING CONDITIONS TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE.
4. CONTRACTOR MUST COORDINATE WITH OWNER PRIOR TO ANY CONSTRUCTION TO ESTABLISH CUSTOMER ACCESS AND TRAFFIC FLOW DURING ALL PHASES.
5. REFER TO THE BUILDING PLANS FOR SITE LIGHTING ELECTRICAL MODIFICATIONS (IF ANY) TO THE EXISTING SYSTEM.

**DEMOLITION KEY NOTES:**

(A) ALL UTILITIES SERVING STRUCTURES IMMEDIATELY SURROUNDING THE DEMOLITION BOUNDARY SHALL REMAIN IN SERVICE THROUGHOUT THE PROJECT. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT ANY DAMAGE TO SUCH UTILITIES. TYPICAL LOCATION.

(B) REMOVE EXISTING TREE (TYPICAL).

(C) THE CONTRACTOR SHALL REMOVE EXISTING DRIVE ENTRANCE & EXISTING ASPHALT PARKING LOT. REMOVE EXISTING ASPHALT, CONCRETE, AND THE SUB-BASE GRAVEL TO THE NATURAL SOIL ELEVATION.

(D) THE CONTRACTOR SHALL REMOVE ALL PRE-EXISTING STRUCTURES, FOUNDATIONS, FOOTINGS, PIERS, WATER WELLS, SEPTIC TANKS, LATERAL LINES, BURIED DEBRIS, MISCELLANEOUS CONCRETE, ETC. WHICH MAY BE ENCOUNTERED DURING DEMOLITION ACTIVITIES. THE CONTRACTOR SHALL DISPOSE OF THESE MATERIALS IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES.  
 SHADED AREAS INDICATE MAIN STRUCTURES AND OUTBUILDINGS TO BE DEMOLISHED. IN ADDITION TO SHADED DEMOLITION AREAS, ALL MISCELLANEOUS CONCRETE, STONE STRUCTURES, OUTBUILDINGS, PRIVATE SIDEWALKS, HAND RAILINGS, RETAINING WALLS, SIGNS, PATIOS, FOUNDATION WALLS AND FOOTINGS ASSOCIATED WITH THE STRUCTURES SHALL BE REMOVED UNLESS OTHERWISE NOTED ON THE PLANS. TYPICAL LOCATION.  
 THE CONTRACTOR SHALL BE REQUIRED TO BACKFILL ALL EXCAVATIONS/DEPRESSIONS CREATED BY THE REMOVAL OF STRUCTURES, FOUNDATIONS, FOOTINGS, PAVING, SEPTIC TANKS, WELLS, PIPES, TREE ROOTS, DEBRIS AND UTILITY STRUCTURES, ETC. ALL EXCAVATIONS SHALL BE BACKFILLED TO EXISTING GROUND ELEVATIONS ON ALL SIDES OF THE EXCAVATION.

(E) THE CONTRACTOR SHALL REMOVE CONCRETE STOP BLOCKS.

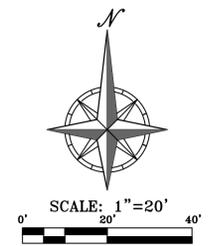
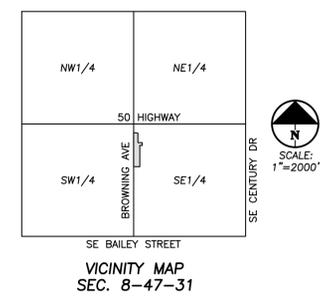
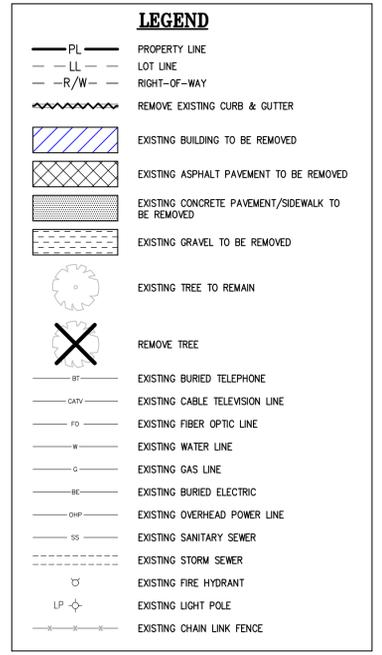
(F) REMOVE EXISTING 4" ASPHALT CURB.

(G) EXISTING FENCE TO REMAIN.

(H) EXISTING GATE TO REMAIN.

(I) EXISTING STRIPING TO BE REMOVED.

(J) REMOVE & RELOCATE EXISTING POWER SERVICE (SEE UTILITY PLAN).



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 1370 N. Winchester  
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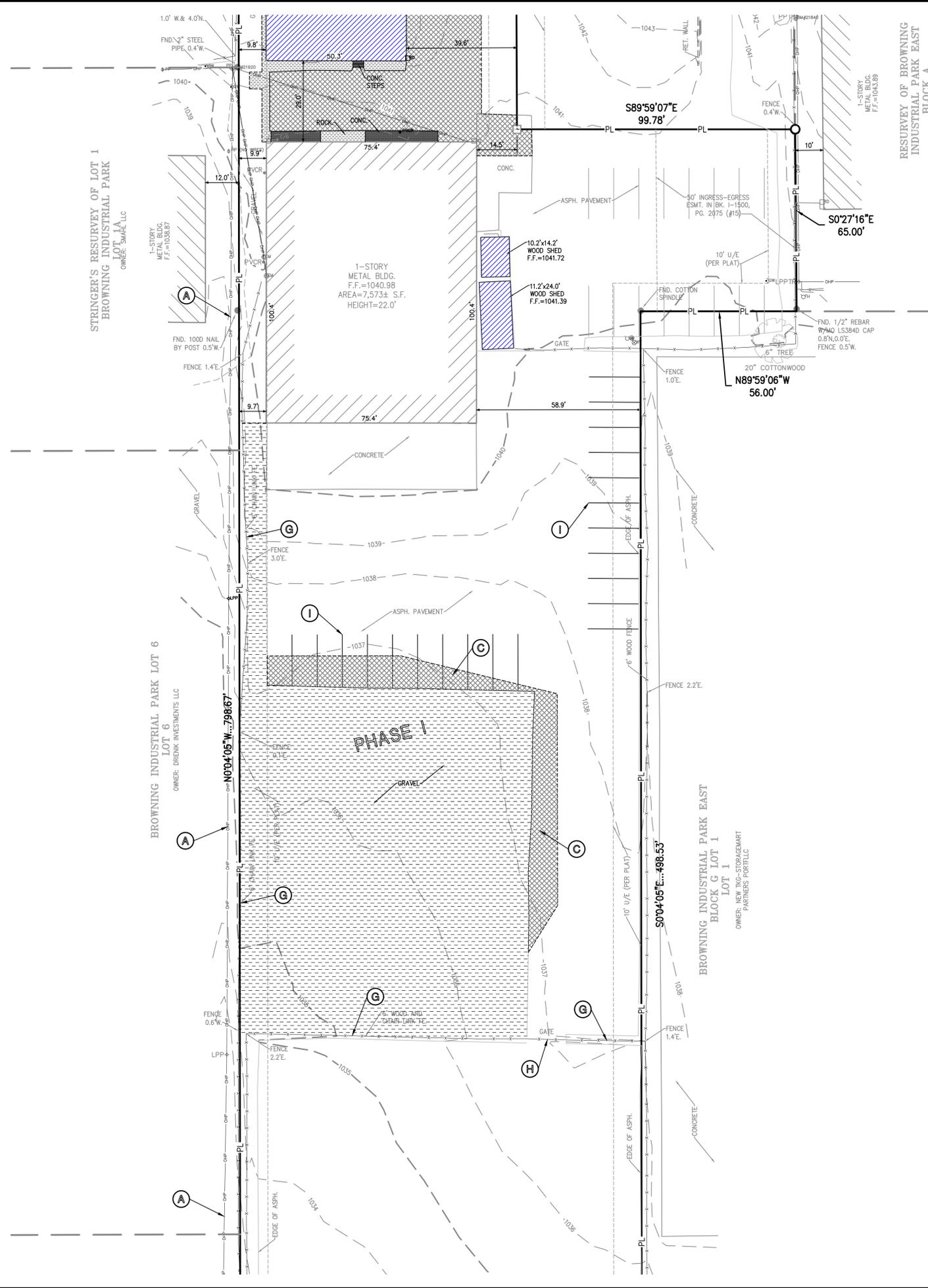
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**DEMOLITION PLAN**  
 CRASH CHAMPIONS  
 451 S.E. OLDHAM PARKWAY  
 LEE'S SUMMIT, JACKSON COUNTY, MO

Project No.	Date	By	App.
210229	05-24-22	DR/MSH	JDC
CHECKED: DAF APPROVED: JDC			
DATE OF AUTHORIZATION			
LAND SURVEYING - LS-82			
ENGINEERING - E-361			
CERTIFICATE OF AUTHORIZATION			
LAND SURVEYING-20070128			
ENGINEERING-20030038			

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**C0.1**

V:\phelps\server\projects\210229\Draw\permit plans\0506.dwg Layout2 May 24, 2022 3:03pm Daniel Finn



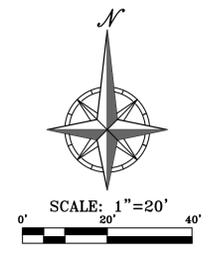
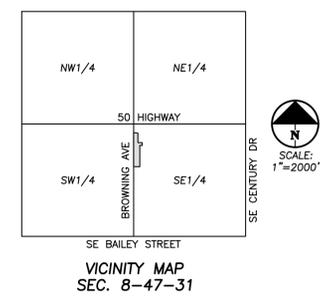
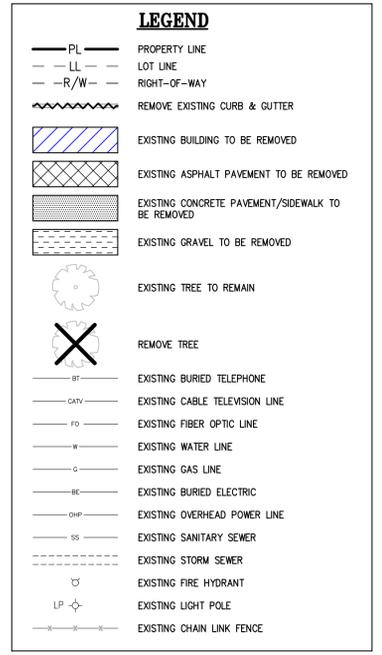
Know what's below.  
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VISUAL INDICATIONS OF UTILITIES ARE AS SHOWN. UNDERGROUND LOCATIONS SHOWN, AS FURNISHED BY THEIR LESSORS, ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD AT THE TIME OF CONSTRUCTION. FOR ACTUAL FIELD LOCATIONS OF UNDERGROUND UTILITIES CALL 811.

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  - (B) REMOVE EXISTING TREE (TYPICAL).
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**DEMOLITION PLAN**  
CRASH CHAMPIONS  
451 S.E. OLDHAM PARKWAY  
LEE'S SUMMIT, JACKSON COUNTY, MO

Project No.	210229	Date	By	App.
Checked	DAF			
Drawn	SNH			
Author	JDC			
Scale	AS SHOWN			
Sheet	0.2			
Revisions:				

**SHEET**  
**C0.2**



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SITE PLAN NOTES:

- 1. All construction materials and procedures on this project shall conform to the latest revision of the following governing requirements, incorporated herein by reference: A) City ordinances & U.S.H.A. Regulations. B) The City of Lee's Summit Technical Specifications and Municipal Code. C) All construction shall follow the City of Lee's Summit Design and Construction Manual as adopted by Ordinance 5813. Where discrepancies exist between these plans and the Design and Construction Manual, the Design and Construction Manual shall prevail. 2. The contractor shall have one (1) signed copy of the plans (approved by the City) and one (1) copy of the appropriate Design and Construction Standards and Specifications at the job site at all times. 3. The contractor will be responsible for securing all permits, bonds and insurance required by the contract documents, City of Lee's Summit, Missouri, and all other governing agencies (including local, county, state and federal authorities) having jurisdiction over the work proposed by these construction documents. The cost for all permits, bonds and insurance shall be the contractor's responsibility and shall be included in the bid for the work. 4. The contractor is responsible for coordination of his and his sub-contractor's work. The contractor shall assume all responsibility for protecting and maintaining his work during the construction period and between the various trades/sub-contractors constructing the work. 5. The demolition and removal (or relocation) of existing pavement, curbs, structures, utilities, and all other features necessary to construct the proposed improvements, shall be performed by the contractor. All waste material removed during construction shall be disposed off the project site. The contractor shall be responsible for all permits for hauling and disposing of waste material. The disposal of waste material shall be in accordance with all local, state and federal regulations. 6. Contractor shall be responsible for all relocations, including but not limited to, all utilities, storm drainage, sanitary sewer services, signs, traffic signals & poles, etc. as required. All work shall be in accordance with governing authorities specifications and shall be approved by such. All cost shall be included in base bid. 7. All existing utilities indicated on the drawings are according to the best information available to the Engineer; however, all utilities actually existing may not be shown. The contractor shall be responsible for contacting all utility companies for an exact field location of each utility prior to any construction. All underground utilities shall be protected at the contractor's expense. All utilities, shown and unshown, damaged through the negligence of the contractor shall be repaired or replaced by the contractor at his expense. 8. The contractor will be responsible for all damage to existing utilities, pavement, fences, structures and other features not designated for removal. The contractor shall repair all damages at his expense. 9. The contractor shall verify the flow lines of all existing storm or sanitary sewer connections and utility crossings prior to the start of construction. Notify the engineer of any discrepancies. 10. SAFETY NOTICE TO CONTRACTOR: In accordance with generally accepted construction practices, the contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. Any construction observation by the engineer of the contractor's performance is not intended to include review of the adequacy of the contractor's safety measures, in, on or near the construction site. 11. All site concrete (curbs, pavements, sidewalks, etc.) shall meet kansas city materials metro board (kcmmb) mix design specifications for 4,000 p.s.i. air entrained concrete. APWA detail references are provided for all geometrical and other design information. 12. Refer to the building plans for site lighting electrical requirements, including conduits, pole bases, pull boxes, etc.

SITE DIMENSION NOTES:

- 1. BUILDING TIES SHOWN ARE TO THE OUTSIDE FACE OF PROPOSED WALLS. THE SUBCONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR SPECIFIC DIMENSIONS AND LAYOUT INFORMATION FOR THE BUILDINGS. 2. ALL DIMENSIONS SHOWN FOR THE PARKING LOT AND CURBS ARE MEASURED FORM BACK OF CURB TO BACK OF CURB. 3. HANDICAP PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO ALL FEDERAL (AMERICANS WITH DISABILITIES ACT) AND STATE LAWS AND REGULATIONS. 4. STOP SIGNS SHALL BE PROVIDED AT ALL LOCATIONS AS SHOWN ON PLANS AND SHALL CONFORM TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES". SIGNS SHALL BE 18" X 12", 18 GAUGE STEEL AND SHALL BE ENGINEER GRADE REFLECTIVE. 5. TRAFFIC CONTROL AND PAVEMENT MARKINGS SHALL BE PAINTED WITH A WHITE SHERWIN WILLIAMS S-W TRAFFIC MARKING SERIES B-2912 OR APPROVED EQUAL. THE PAVEMENT MARKING SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. APPLY ON A CLEAN, DRY SURFACE AND AT A SURFACE TEMPERATURE OF NOT LESS THAN 70° AND THE AMBIENT AIR TEMPERATURE SHALL NOT BE LESS THAN 60° AND RISING. TWO COATS SHALL BE APPLIED.

LEGAL DESCRIPTION:

ALL OF BLOCK F, BROWNING INDUSTRIAL PARK EAST, BLOCK F, A SUBDIVISION IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, ACCORDING TO THE RECORDED PLAT THEREOF. AREA = 107,552± SQ.FT. / 2.469± ACRES

PRE-CONSTRUCTION MEETING NOTE:

THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTION TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH A FIELD ENGINEERING INSPECTOR PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 959-1200.

OIL-GAS WELLS:

ACCORDING TO THE MISSOURI DEPARTMENT OF NATURAL RESOURCES STATE OIL & GAS COUNCIL WELLS, LOCATED AT www.dnr.mo.gov/geology/geosrv/olandgas.htm, THERE ARE NO OIL OR GAS WELLS ON THE PROPERTY SHOWN HEREON.

BUILDING & LOT DATA

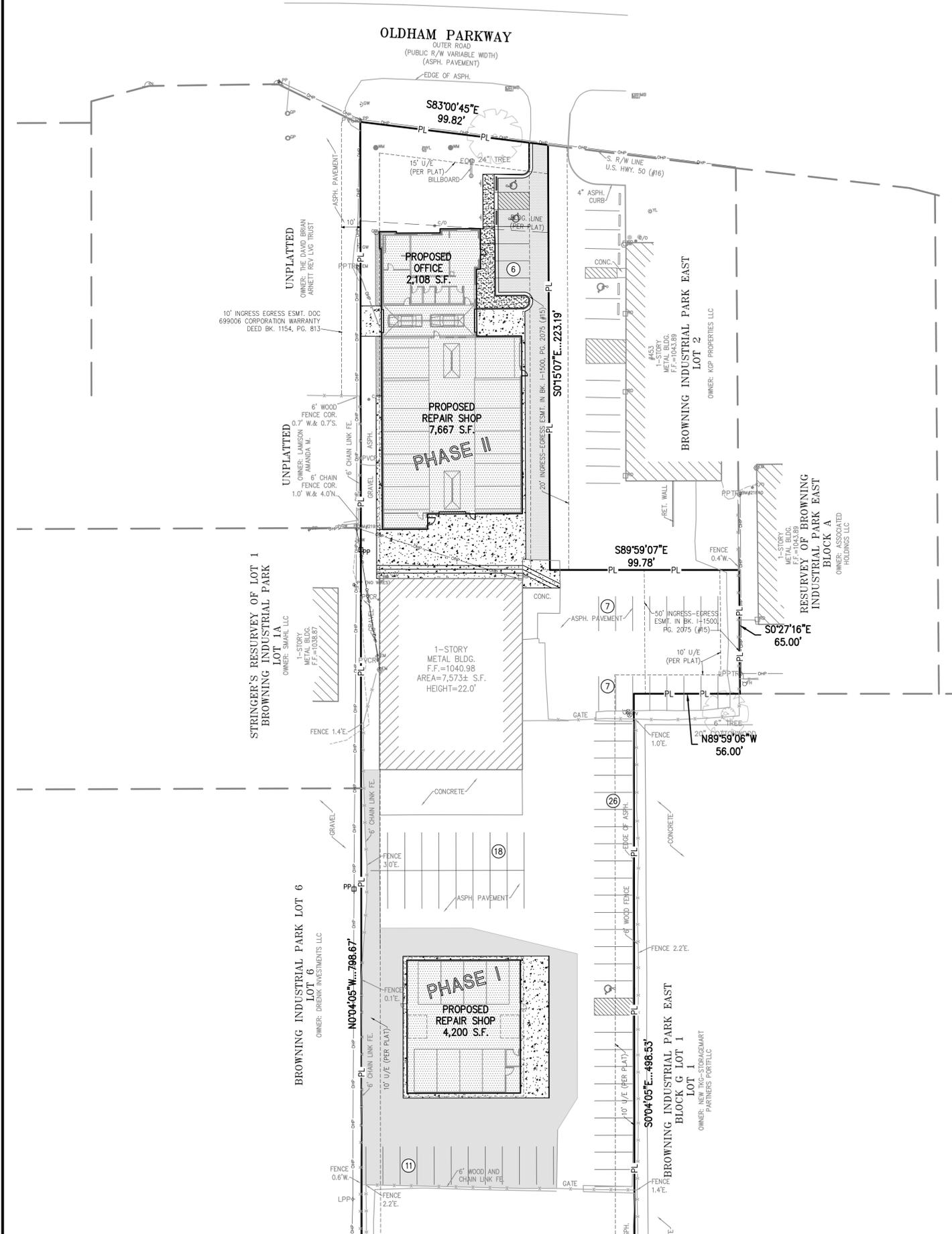
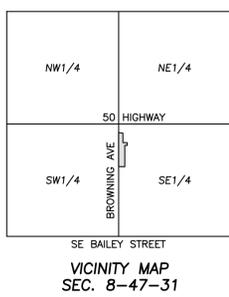
Table with 2 columns: Category and Value. Includes Site Area (107,552 S.F./2.47 Ac), Zoning (PI), Proposed Building No. of Stories (1), Total Building S.F. (7,573), Existing Building (7,573 S.F.), Proposed Office (2,108 S.F.), Proposed Repair Shop (North) (7,667 S.F.), Proposed Repair Shop (South) (4,200 S.F.), Total (21,548 S.F.), and Floor Area Ratio (FAR) (0.2003).

PARKING SUMMARY

Table with 2 columns: Category and Value. Includes Parking Required (Automobile Service: 57 Spaces) and Parking Provided (Standard: 72 Spaces, Handicap Accessible: 3 Spaces, Total: 75 Spaces).

LEGEND

- PL PROPERTY LINE
LL LOT LINE
R/W RIGHT-OF-WAY
2' CURB & GUTTER
6" CURB
B/L BUILDING SETBACK LINE
P/S PARKING SETBACK LINE
L/S LANDSCAPE SETBACK LINE
PROPOSED BUILDING
ASPHALT PAVEMENT
CONCRETE PAVEMENT
CONCRETE SIDEWALK
PROPOSED 2" ASPHALT MILL & OVERLAY
ROCK STRIP



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SITE PLAN CRASH CHAMPIONS 451 S.E. OLDHAM PARKWAY LEE'S SUMMIT, JACKSON COUNTY, MO

Revisions table with columns: No., Date, By, App.

PROJECT NO. 210229 DATE 05-24-22 CHECKED: DAF DRAWN: SNH APPROVED: JDC CREDENTIALED DATE OF AUTHORIZATION LAND SURVEYING - LS-82 ENGINEERING - E-361 MISSOURI STATE BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS 20070128 LICENSE NO. 26035038 SHEET C1









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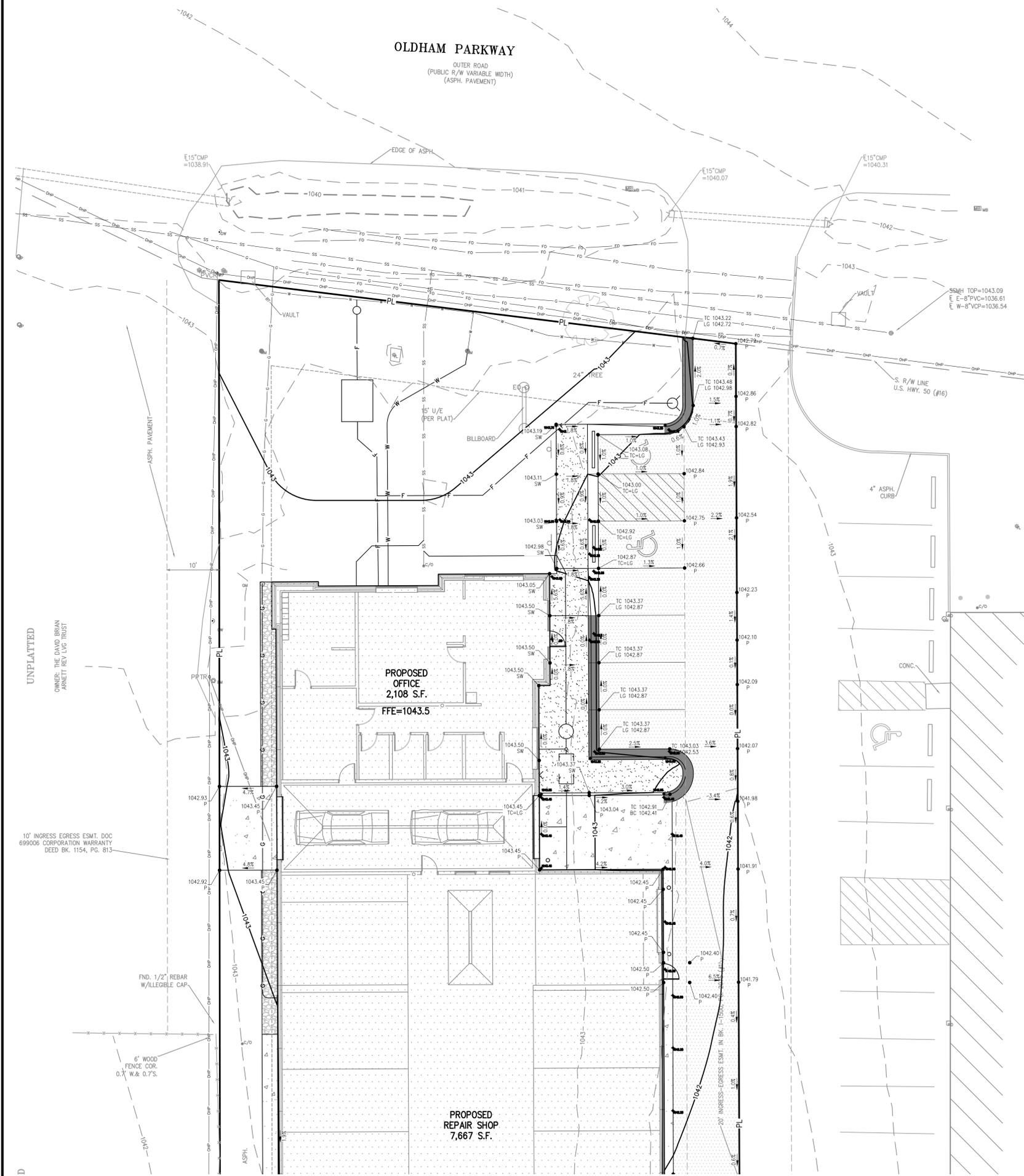
PLANNING  
 ENGINEERING  
 IMPLEMENTATION



**ENLARGED GRADING PLAN**  
 CRASH CHAMPIONS  
 451 S.E. OLDHAM PARKWAY  
 LEE'S SUMMIT, JACKSON COUNTY, MO

**OLDHAM PARKWAY**

OUTER ROAD  
 (PUBLIC R/W VARIABLE WIDTH)  
 (ASPH. PAVEMENT)



**SITE GRADING NOTES:**

- CONTOURS AND ELEVATIONS: Existing and proposed contours are shown on plans at one foot (1') contour intervals, unless otherwise noted, proposed contours and elevations shown represent approximate finish grade. Contractor shall hold down subgrades to allow for pavement and sub-base thicknesses.
- If the contractor does not accept existing topography as shown on the plans, without exception, he shall have made at his expense, a topographic survey by a registered land surveyor and submit it to the owner for review.
- CLEARING AND GRUBBING: Prior to beginning preparation of subgrade, all areas under pavements or buildings shall be stripped of all topsoil, vegetation, large rock fragments (greater than 6 inches in any dimension) and any other deleterious material. The actual stripping depth should be based on visual examination during construction and the results of proof-rolling operations. The root systems of all trees (not designated to remain) shall be removed in their entirety. Stripping materials shall not be incorporated into structural fills.
- TOPSOIL STRIPPING: Prior to the start of site grading, the contractor shall strip all topsoil from areas to be graded, and stockpiled at a location on or adjacent to the site as directed by the owner. At completion of grading operations and related construction, the contractor will be responsible for redistribution of topsoil over all areas disturbed by the construction activities. Topsoil shall be placed to a minimum depth of six inches (6") and in accordance with specifications for landscaping. At that time, and prior to the installation of landscaping or irrigation, all topsoil graded areas shall be visually inspected and accepted by the owner and I.T.L.
- Contractor shall adjust and/or cut existing pavement as necessary to assure a smooth fit and continuous grade. Contractor shall assure positive drainage away from buildings for all natural and paved areas.
- SUBGRADE PREPARATION: Prior to placement of new fill material, the existing subgrade shall be proofrolled and approved under the direction of the Geotechnical Engineer or his representative.
- PROOFROLLING: Subsequent to completion of stripping and over-excavation, all building and pavement areas to receive engineered fill should be systematically proof-rolled using a tandem axle dump truck loaded to approximately 20,000 pounds per axle. Also, any finished subgrade areas to receive paving shall be proof-rolled within 48 hours of paving. Unsuitable soils that are detected and that can not be recompacted should be over-excavated and replaced with controlled structural fill.
- EARTHWORK:
  - A) GEOTECHNICAL: All earthwork shall conform to the recommendations of the Geotechnical report. Said report and its recommendations are herein incorporated into the project requirements by reference. Prior to beginning construction, the contractor shall obtain a copy of and become familiar with the geotechnical report. Unless specifically noted on the plans, the recommendations in the geotechnical report are hereby incorporated into the project requirements and specifications.
  - B) SURFACE WATER: Surface water shall be intercepted and diverted during the placement of fill.
  - C) FILLS: All fills shall be considered controlled or structural fill and shall be free of vegetation, organic matter, topsoil and debris. In areas where the thickness of the engineered fill is greater than five feet building and pavement construction should not commence until so authorized by the on-site geotechnical engineer to allow for consolidation.
  - D) BUILDING SUBGRADE: As specified in the Geotechnical Engineering Report, the upper section of building subgrade shall consist of Low Volume Change (LVC) material defined as approved, compacted granular fill or low to moderate plasticity cohesive soil materials stabilized with Class C Flyash. Granular fill shall consist of compacted granular materials with a maximum particle size of two (2) inches or less, such as limestone screenings. Refer to geotechnical report for complete requirements.
  - E) EXISTING SLOPES: Where fill material is to be placed on existing slopes greater than 5:1 (horizontal to vertical), existing slopes shall be benched providing a minimum vertical face of twelve inches (12"). The benches should be cut wide enough to accommodate the compaction equipment. Fill material shall be placed and compacted in horizontal lifts not exceeding nine inches (9") (loose lift measurement), unless otherwise approved by the Geotechnical Engineer.
  - F) COMPACTION REQUIREMENTS: The upper 9 inches of pavement subgrade areas shall be compacted to a minimum density of ninety five percent (95%) of the material's maximum dry density as determined by ASTM D698 (standard proctor compaction). The moisture content at the time of placement and compaction shall within a range of 0% below to 4% above optimum moisture content as defined by the standard proctor compaction procedure. The moisture contents shall be maintained within this range until completion of the work. Where compaction of earth fill by a large roller is impractical or undesirable, the earth fill shall be hand compacted with small vibrating rollers or mechanical tampers.
- All cut or fill slopes shall be 3:1 or flatter. All asphalt parking areas shall be a minimum of 1% slope but not more than 5% slope unless otherwise noted. All pavements within ADA parking areas shall not exceed 2% total slope. All grades around building shall be held down 6" from finish floor and slope away another 6" in 10 feet. Contractor shall notify engineer prior to final subgrade construction of any areas not within this slope requirement.
- TESTING AND INSPECTION: Owner's Independent Testing Laboratory (ITL) shall make tests of earthwork during construction and observe the placement of fills and other work performed on this project to verify that work has been completed in accordance with Geotechnical Engineering Report, Project Specifications and within industry standards. The ITL will be selected by the owner and the cost of testing will be the owner's responsibility.
- CLASSIFICATION: All excavation shall be considered unclassified. No separate or additional payments shall be made for rock excavation.
- PERMANENT RESTORATION: All areas disturbed by earthwork operations shall be sodded, unless shown otherwise by the landscaping plan or erosion control plan.
- UTILITIES: The contractor is specifically cautioned that the location and/or elevation of existing utilities as shown on these plans is based on records of the various utility companies, and where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The contractor must call the appropriate utility companies at least 48 hours before any excavation to request exact field location of utilities. It shall be the responsibility of the contractor to relocate all existing utilities which conflict with the proposed improvements shown on the plans.
- LAND DISTURBANCE: The contractor shall adhere to all terms & conditions as outlined in the EPA or applicable state N.P.D.E.S. permit for storm water discharge associated with construction activities. Refer to project S.M.P.P.P. requirements.



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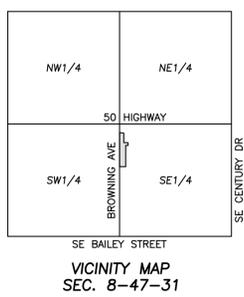
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- R.R. SPIKE IN W. FACE POWER POLE NEAR SE COR. #453 BLDG.  
 ELEVATION = 1043.66
  - R.R. SPIKE IN E. FACE POWER POLE ON W. PROPERTY LINE NEAR SW COR. #451 BLDG.  
 ELEVATION = 1043.33

**FLOOD NOTE:**

THIS PROPERTY LIES WITHIN ZONE X, DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON THE FLOOD INSURANCE RATE MAP PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE CITY OF LEE'S SUMMIT, COMMUNITY NO. 290174, JACKSON COUNTY, MISSOURI, MAP NO. 29095C0438G, AND DATED JANUARY 20, 2017.

**LEGEND**

- PL PROPERTY LINE
- LL LOT LINE
- R/W RIGHT-OF-WAY
- 2' CURB & GUTTER
- EXISTING CONTOURS
- 920 PROPOSED CONTOURS
- 918
- PROPOSED SPOT ELEVATION
- LG LIP OF GUTTER
- TC TOP OF CURB
- SW SIDEWALK
- ME MATCH EXISTING
- HP HIGH POINT
- LP LOW POINT
- P TOP OF PAVEMENT
- TE TOP OF STRUCTURE
- GR GROUND ELEVATION
- BS BOTTOM OF STEPS
- TS TOP OF STEPS
- BW BOTTOM OF WALL
- TW TOP OF WALL
- EXISTING STORM SEWER
- PROPOSED STORM PIPE
- PROPOSED WET CURB & GUTTER
- PROPOSED DRY CURB & GUTTER



Project No.	Date	By	App.
210229	05-24-22	DRANKS, JDC	
		CHECKED: DAF	
		APPROVED: JDC	
		CERTIFICATE OF AUTHORIZATION	
		LAND SURVEYING - LS-82	
		ENGINEERING - E-361	
		CERTIFICATE OF AUTHORIZATION	
		LAND SURVEYING-20070128	
		ENGINEERING-20030308	

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**PHILLIPS ENGINEERING, INC.**  
 1270 N. Winchester  
 Oshtemo, Kansas 66066  
 (913) 393-1155  
 Fax: (913) 393-1165  
 www.phillipsengineering.com



**ENLARGED GRADING PLAN**  
 CRASH CHAMPIONS  
 451 S.E. OLDHAM PARKWAY  
 LEE'S SUMMIT, JACKSON COUNTY, MO

- SITE GRADING NOTES:**
- CONTOURS AND ELEVATIONS: Existing and proposed contours are shown on plans at one foot (1') contour intervals, unless otherwise noted, proposed contours and elevations shown represent approximate finish grade. Contractor shall hold down subgrades to allow for pavement and sub-base thicknesses.
  - If the contractor does not accept existing topography as shown on the plans, without exception, he shall have made at his expense, a topographic survey by a registered land surveyor and submit it to the owner for review.
  - CLEARING AND GRUBBING: Prior to beginning preparation of subgrade, all areas under pavements or building shall be stripped of all topsoil, vegetation, large rock fragments (greater than 6 inches in any dimension) and any other deleterious material. The actual stripping depth should be based on visual examination during construction and the results of proof-rolling operations. The root systems of all trees (not designated to remain) shall be removed in their entirety. Stripping materials shall not be incorporated into structural fills.
  - TOPSOIL STRIPPING: Prior to the start of site grading, the contractor shall strip all topsoil from areas to be graded, and stockpiled at a location on or adjacent to the site as directed by the owner. At completion of grading operations and related construction, the contractor will be responsible for redistribution of topsoil over all areas disturbed by the construction activities. Topsoil shall be placed to a minimum depth of six inches (6") and in accordance with specifications for landscaping. At that time, and prior to the installation of landscaping or irrigation, all topsoil graded areas shall be visually inspected and accepted by the owner and I.T.L.
  - Contractor shall adjust and/or cut existing pavement as necessary to assure a smooth fit and continuous grade. Contractor shall assure positive drainage away from buildings for all natural and paved areas.
  - SUBGRADE PREPARATION: Prior to placement of new fill material, the existing subgrade shall be proofrolled and approved under the direction of the Geotechnical Engineer or his representative.
  - PROOFROLLING: Subsequent to completion of stripping and over-excavation, all building and pavement areas to receive engineered fill should be systematically proof-rolled using a tandem axle dump truck loaded to approximately 20,000 pounds per axle. Also, any finished subgrade areas to receive paving shall be proof-rolled within 48 hours of paving. Unsuitable soils that are detected and that can not be recompacted should be over-excavated and replaced with controlled structural fill.
  - EARTHWORK:
    - GEOTECHNICAL: All earthwork shall conform to the recommendations of the Geotechnical report. Said report and its recommendations are herein incorporated into the project requirements by reference. Prior to beginning construction, the contractor shall obtain a copy of and become familiar with the geotechnical report. Unless specifically noted on the plans, the recommendations in the geotechnical report are hereby incorporated into the project requirements and specifications.
    - SURFACE WATER: Surface water shall be intercepted and diverted during the placement of fill.
    - FILLS: All fills shall be considered controlled or structural fill and shall be free of vegetation, organic matter, topsoil and debris. In areas where the thickness of the engineered fill is greater than five feet building and pavement construction should not commence until so authorized by the on-site geotechnical engineer to allow for consolidation.
    - BUILDING SUBGRADE: As specified in the Geotechnical Engineering Report, the upper section of building subgrade shall consist of Low Volume Change (LVC) material defined as approved, compacted granular fill or low to moderate plasticity cohesive soil materials stabilized with Class C Flyash. Granular fill shall consist of compacted granular materials with a maximum particle size of two (2) inches or less, such as limestone screenings. Refer to geotechnical report for complete requirements.
    - EXISTING SLOPES: Where fill material is to be placed on existing slopes greater than 5:1 (horizontal to vertical), existing slopes shall be benched providing a minimum vertical face of twelve inches (12"). The benches should be cut wide enough to accommodate the compaction equipment. Fill material shall be placed and compacted in horizontal lifts not exceeding nine inches (9") (loose lift measurement), unless otherwise approved by the Geotechnical Engineer.
    - COMPACTION REQUIREMENTS: The upper 9 inches of pavement subgrade areas shall be compacted to a minimum density of ninety five percent (95%) of the material's maximum dry density as determined by ASTM D698 (standard proctor compaction). The moisture content at the time of placement and compaction shall be within a range of 0% below to 4% above optimum moisture content as defined by the standard proctor compaction procedure. The moisture contents shall be maintained within this range until completion of the work. Where compaction of earth fill by a large roller is impractical or undesirable, the earth fill shall be hand compacted with small vibrating rollers or mechanical tampers.
  - All cut or fill slopes shall be 3:1 or flatter. All asphalt parking areas shall be a minimum of 1% slope but not more than 5% slope unless otherwise noted. All pavements within ADA parking areas shall not exceed 2% total slope. All grades around building shall be held down 6" from finish floor and slope away another 6" in 10 feet. Contractor shall notify engineer prior to final subgrade construction of any areas not within this slope requirement.
  - TESTING AND INSPECTION: Owner's Independent Testing Laboratory (ITL) shall make tests of earthwork during construction and observe the placement of fills and other work performed on this project to verify that work has been completed in accordance with Geotechnical Engineering Report, Project Specifications and within industry standards. The ITL will be selected by the owner and the cost of testing will be the owner's responsibility.
  - CLASSIFICATION: All excavation shall be considered unclassified. No separate or additional payments shall be made for rock excavation.
  - PERMANENT RESTORATION: All areas disturbed by earthwork operations shall be sodded, unless shown otherwise by the landscaping plan or erosion control plan.
  - UTILITIES: The contractor is specifically cautioned that the location and/or elevation of existing utilities as shown on these plans is based on records of the various utility companies, and where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The contractor must call the appropriate utility companies at least 48 hours before any excavation to request exact field location of utilities. It shall be the responsibility of the contractor to relocate all existing utilities which conflict with the proposed improvements shown on the plans.
  - LAND DISTURBANCE: The contractor shall adhere to all terms & conditions as outlined in the EPA or applicable state N.P.D.E.S. permit for storm water discharge associated with construction activities. Refer to project S.M.P.P.P. requirements.



Know what's below.  
 Call before you dig.

**UTILITY NOTES:**  
 VISUAL INDICATIONS OF UTILITIES ARE AS SHOWN. UNDERGROUND LOCATIONS SHOWN, AS FURNISHED BY THEIR LESSORS, ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD AT THE TIME OF CONSTRUCTION. FOR ACTUAL FIELD LOCATIONS OF UNDERGROUND UTILITIES CALL 811.

**BENCHMARK:**

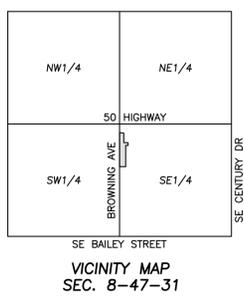
- VERTICAL DATUM = NAVD88 BASED ON GPS OBSERVATION USING MDOOT VRS
- R.R. SPIKE IN W. FACE POWER POLE NEAR SE COR. #453 BLDG.  
ELEVATION = 1043.66
  - R.R. SPIKE IN E. FACE POWER POLE ON W. PROPERTY LINE NEAR SW COR. #451 BLDG.  
ELEVATION = 1043.33

**FLOOD NOTE:**

THIS PROPERTY LIES WITHIN ZONE X, DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON THE FLOOD INSURANCE RATE MAP PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE CITY OF LEE'S SUMMIT, COMMUNITY NO. 290174, JACKSON COUNTY, MISSOURI, MAP NO. 29095C0438G, AND DATED JANUARY 20, 2017.

**LEGEND**

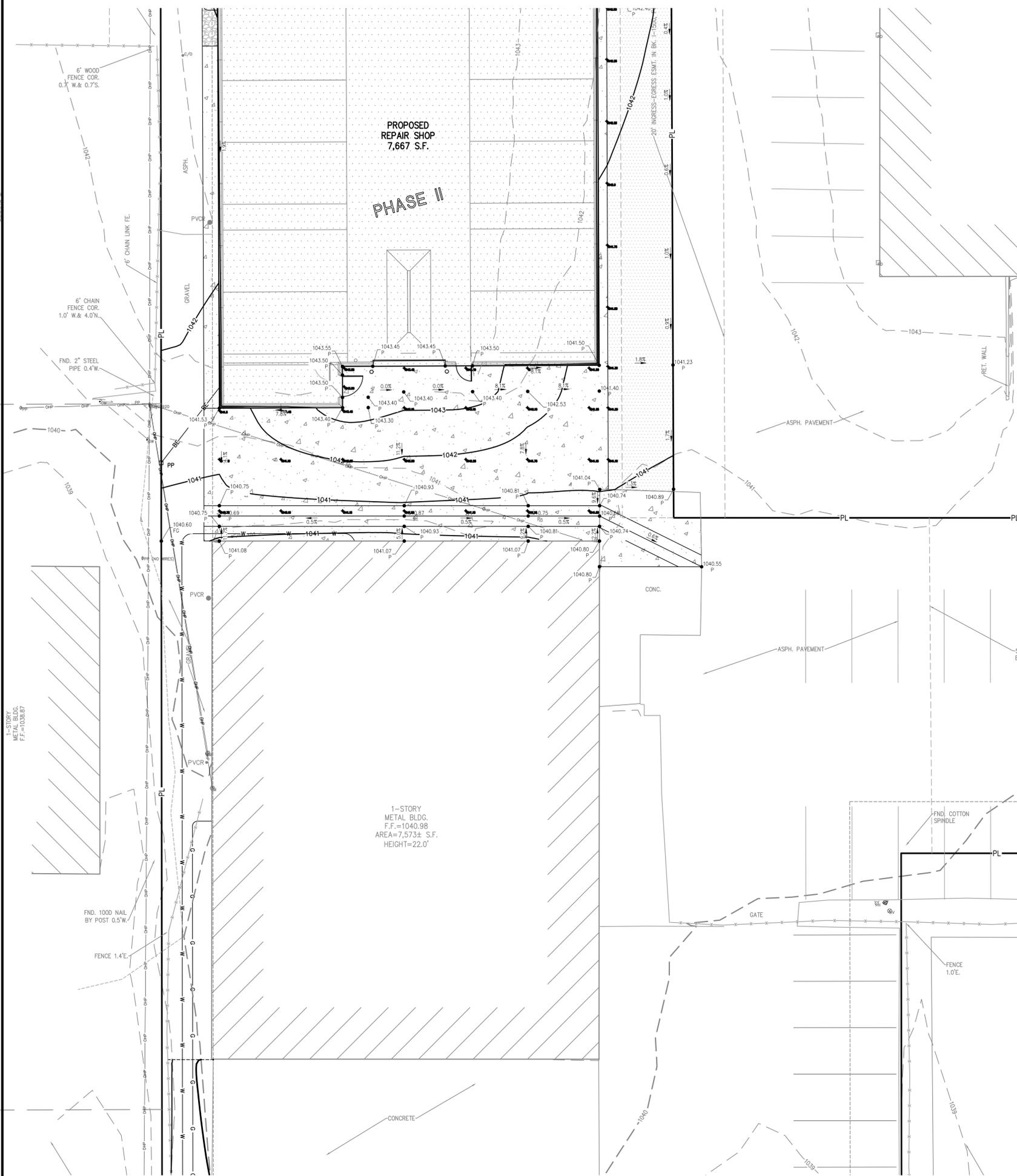
- PL — PROPERTY LINE
- LL — LOT LINE
- R/W — RIGHT-OF-WAY
- 2' CURB & GUTTER
- 920 — EXISTING CONTOURS
- 920 — PROPOSED CONTOURS
- 918 — PROPOSED CONTOURS
- XXX.XX TW — PROPOSED SPOT ELEVATION
- LG — LIP OF GUTTER
- TC — TOP OF CURB
- SW — SIDEWALK
- ME — MATCH EXISTING
- HP — HIGH POINT
- LP — LOW POINT
- P — TOP OF PAVEMENT
- TR — TOP OF STRUCTURE
- GR — GROUND ELEVATION
- BS — BOTTOM OF STEPS
- TS — TOP OF STEPS
- BW — BOTTOM OF WALL
- TW — TOP OF WALL
- — EXISTING STORM SEWER
- — PROPOSED STORM PIPE
- — PROPOSED WET CURB & GUTTER
- — PROPOSED DRY CURB & GUTTER



SCALE: 1"=10'  
 10' 20'

PROJECT NO.	DATE	BY	APP.
210229	2022-05-24	DR/MSH	JDC
		CHKD	DAF
		APPROVED	JDC
		CERTIFICATE OF AUTHORIZATION	
		LAND SURVEYING - LS-82	
		ENGINEERING - E-36	
		CERTIFICATE OF AUTHORIZATION	
		LAND SURVEYING-20070128	
		ENGINEERING-20030308	

SHEET  
**C2.1**



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 1-STORY METAL BLDG. F.F.=1040.98  
 1-STORY METAL BLDG. F.F.=1040.98  
 AREA=7,573± S.F.  
 HEIGHT=22.0'  
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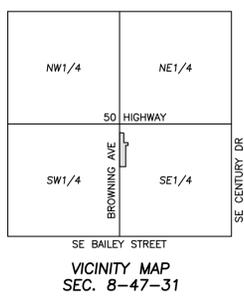
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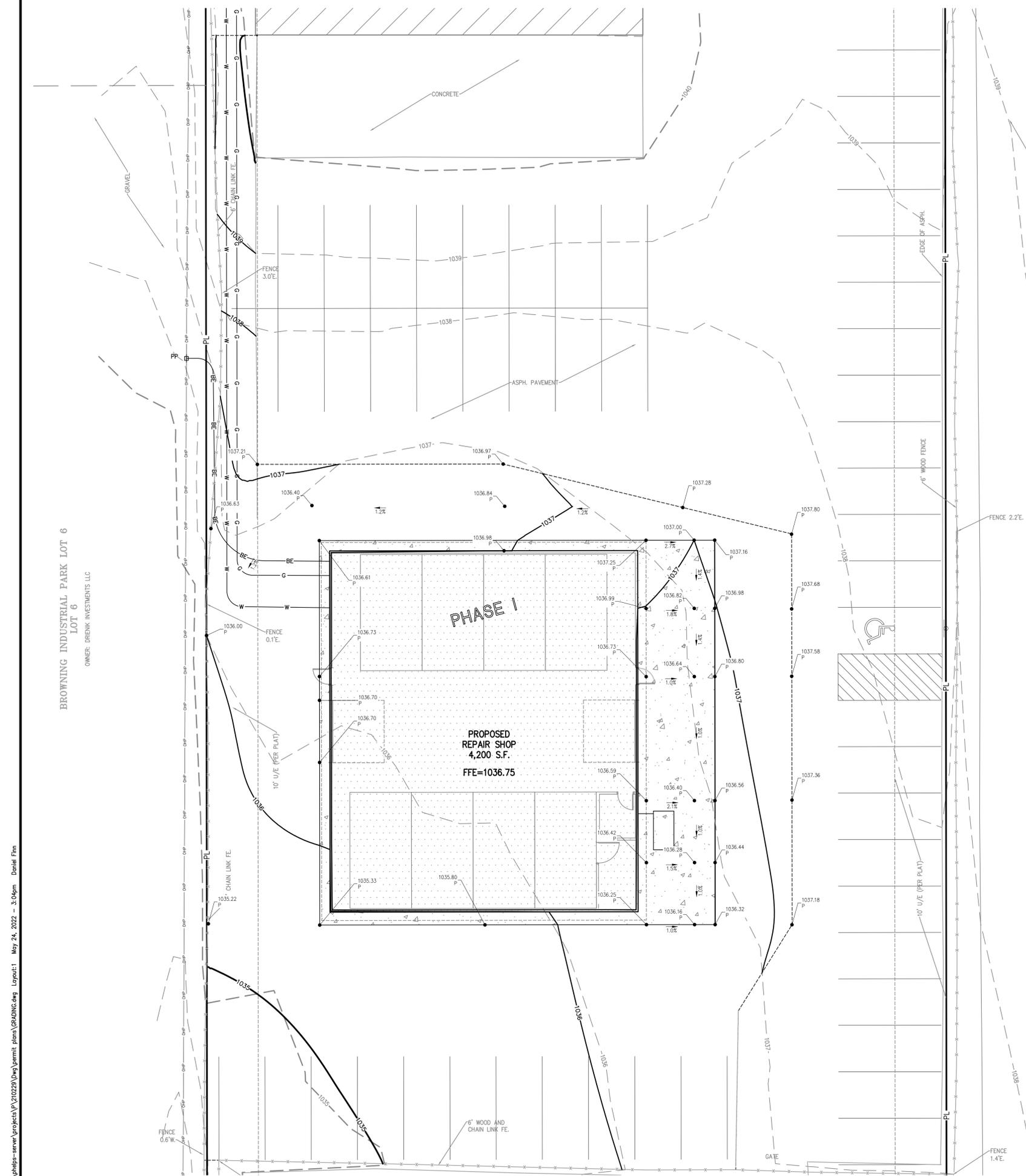
**LEGEND**

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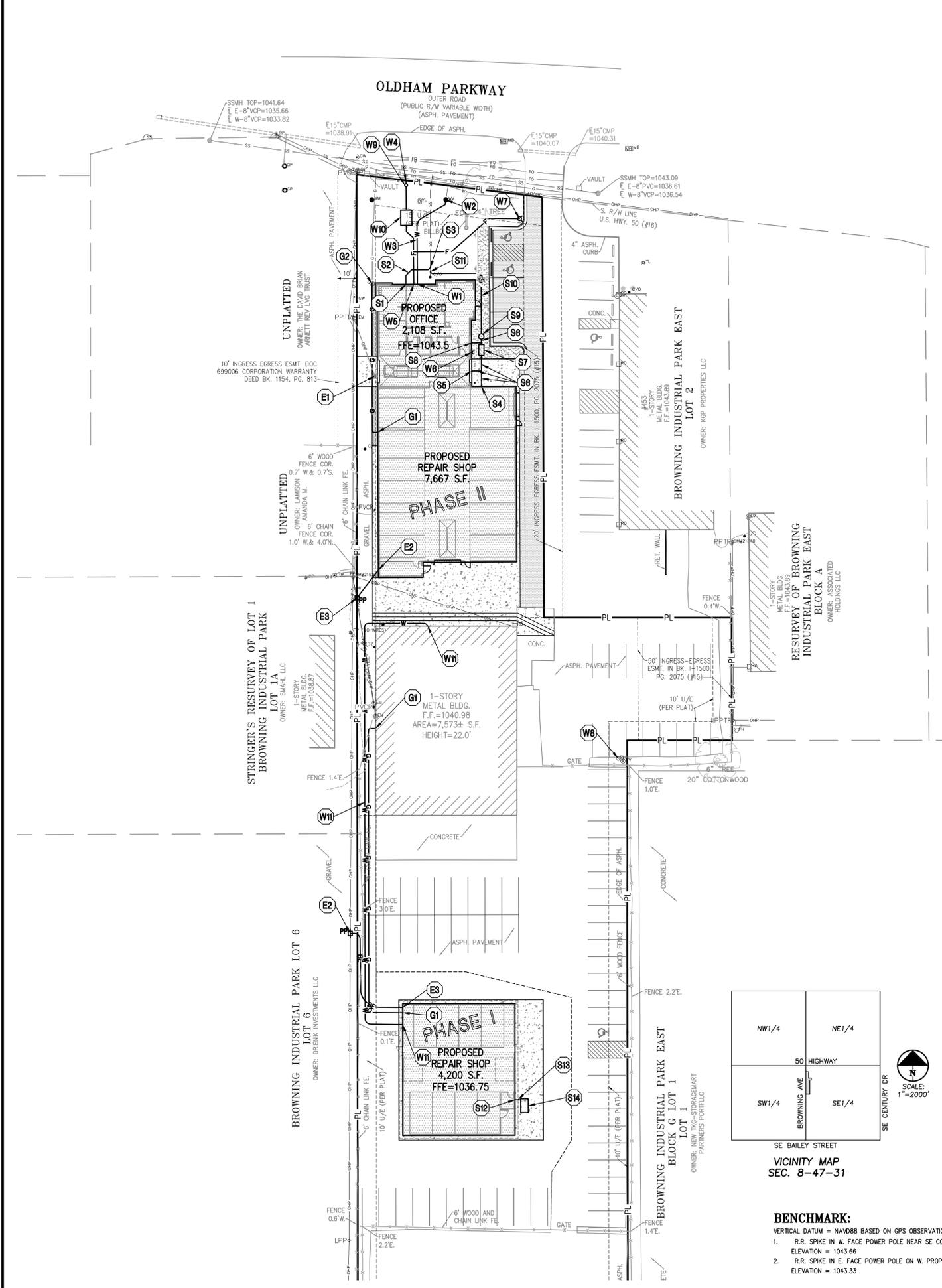
PROJECT NO.	DATE	BY	APP.	REVISIONS:
210229	05-24-22	DR/MSH	JDC	
		DR/MSH	JDC	

SHEET  
**C2.2**



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\\phelps-engineering.com\projects\210229\Draw\Utility.dwg Layout:1 May 24, 2022 - 3:06pm Daniel Fim

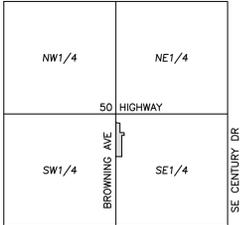


Know what's below.  
Call before you dig.

**UTILITY KEY NOTES:**

- (G1) GAS ENTRY WITH GAS METER. CONTRACTOR SHALL COORDINATE WITH GAS COMPANY FOR TYPING OF INDIVIDUAL METER. SIZE OF GAS MAIN SHALL BE AS DETERMINED BY UTILITY OR AS SHOWN ON BUILDING PLANS. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH GAS COMPANY REGARDING THE SIZE & INSTALLATION OF GAS SERVICE LINE.
- (G2) CONTRACTOR TO COORDINATE REMOVAL OF EXISTING GAS METER AND CONNECTION TO EXISTING GAS LINE FOR EXTENSION TO NEW GAS METER LOCATION (RE: MEP PLANS) WITH LOCAL UTILITY PROVIDER.
- (E1) CONTRACTOR TO COORDINATE RELOCATION OF EXISTING POWER SERVICE WITH LOCAL UTILITY PROVIDER.
- (E2) ELECTRIC ENTRY INTO BUILDING. FOLLOW LOCAL UTILITY PROVIDER REQUIREMENTS (RE: BUILDING ELECTRICAL PLAN).
- (E3) PROPOSED LOCATION OF NEW POWER POLE AND POLE MOUNTED TRANSFORMER. CONTRACTOR TO VERIFY EXACT LOCATION WITH JPL PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE SAID WORK WITH THE ELECTRIC COMPANY.
- (W1) 1-1/2" DOMESTIC WATER LINE ENTRY TO BUILDING. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ANY APPURTENANCES ON THE DOMESTIC LINE SUCH AS BACKFLOW PREVENTION DEVICES (RE: BUILDING PLANS), GATE VALVES, REDUCERS, BENDS, TEES, ETC., WHICH MAY BE REQUIRED. CONTRACTOR TO COORDINATE WITH WATER UTILITY.
- (W2) CONTRACTOR TO USE IN PLACE EXISTING WATER METER (COORDINATE WITH LOCAL UTILITY PROVIDER). CONTRACTOR TO VERIFY EXISTING METER SIZE AND CONTACT ENGINEER IF METER IS LESS THAN 1" CONTRACTOR TO COORDINATE AND PAY ALL FEES. ALL LABOR AND MATERIALS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR'S PLUMBER IN ACCORDANCE WITH WATER UTILITY STANDARDS.
- (W3) INSTALL 1-1/2" SOFT TYPE K COPPER DOMESTIC WATER LINE FROM THE EXISTING WATER METER CONNECTION TO THE BUILDING ENTRY.
- (W4) CONTRACTOR TO PERFORM & COORDINATE CONNECTION TO EXISTING MAIN VIA CUT-IN TEE FOR PROPOSED 6" C900 FIRE LINE. CONTACT WATER UTILITY FOR TAPPING REQUIREMENTS. CONTRACTOR TO PAY ALL FEES FOR WATER MAIN TAP. OWNER WILL REIMBURSE CONTRACTOR FOR ACTUAL METER & SYSTEM DEVELOPMENT FEES ASSESSED BY WATER UTILITY.
- (W5) 6" SPRINKLER ENTRY TO BUILDING. CONTRACTOR SHALL BE REQUIRED TO INSTALL ANY APPURTENANCES ON THE SPRINKLER LINE SUCH AS, BUT NOT LIMITED TO, GATE VALVES, REDUCERS, BENDS, TEES, ETC. (RE: BUILDING PLANS FOR BUILDING), WHICH MAY BE REQUIRED. CONTRACTOR TO COORDINATE WITH WATER UTILITY.
- (W6) FIRE DEPARTMENT CONNECTION (RE: MEP PLANS).
- (W7) INSTALL PRIVATE FIRE HYDRANT ASSEMBLY.
- (W8) EXISTING PRIVATE FIRE HYDRANT TO REMAIN.
- (W9) INSTALL 6" RESTRAINED VALVE AT CONNECTION TO MAIN PER CITY OF LEE'S SUMMIT STANDARDS AND REQUIREMENTS.
- (W10) INSTALL BACKFLOW VAULT CONTAINING DOUBLE CHECK DETECTOR ASSEMBLY FOR 6" FIRE LINE PER CITY OF LEE'S SUMMIT STANDARD DETAIL WAT-12.
- (S1) INSTALL 1-1/2" SOFT TYPE K COPPER DOMESTIC WATER LINE FROM EXISTING BUILDING PLUMBING TO NEW REPAIR SHOP (SOUTH BUILDING). RE: MEP PLANS.
- (S2) CONNECT TO BLDG. INTERIOR PLUMBING SANITARY SEWER LINE (RE: MEP PLANS) FL 4"=1040.80
- (S3) INSTALL 19 LF. 4" PVC SANITARY SEWER SERVICE LINE (SDR-26) @ 2.0% MIN. SLOPE.
- (S4) INSTALL WYE CONNECTION DOWNSTREAM OF EXISTING CLEANOUT (EXISTING CLEANOUT TO REMAIN) EX. 4" FL = 1040.40±
- (S5) CONNECT TO BLDG. INTERIOR PLUMBING SAND/OIL LINE (RE: MEP PLANS) FL 4"=1043.45
- (S6) CONNECT TO BLDG. INTERIOR PLUMBING SAND/OIL LINE (RE: MEP PLANS) FL 4"=1043.30
- (S7) INSTALL 4" PVC SANITARY SEWER SERVICE LINE (SDR-26) @ 2.0% MIN. SLOPE.
- (S8) INSTALL SAND OIL INTERCEPTOR (RE: MEP PLANS FOR SPECIFICATION) TE=1043.43 FL 4" IN=1040.03 FL 4" OUT=1040.03
- (S9) INSTALL 2" PVC VENT LINE (SDR-26) TO BUILDING (RE: MEP PLANS).
- (S10) INSTALL E1 GRINDER PUMP (WH01F-74) & HDPE PUMP BASIN. TE=1043.43 FL 4" IN=1039.93 FL 2" OUT=1040.23
- (S11) INSTALL 2" HDPE FORCE MAIN FROM E-ONE PUMP TO EXISTING 4" SANITARY SEWER LINE.
- (S12) INSTALL WYE CONNECTION DOWNSTREAM OF EXISTING CLEANOUT (EXISTING CLEANOUT TO REMAIN) EX. 4" FL = 1040.45±
- (S13) CONNECT TO BLDG. INTERIOR PLUMBING SANITARY SEWER LINE (RE: MEP PLANS) FL 4"=1036.75 FL 4"=1032.75
- (S14) INSTALL 3 LF. 4" PVC SANITARY SEWER SERVICE LINE (SDR-26) @ 2.0% MIN. SLOPE.
- (S15) INSTALL 1,000 GALLON HOLDING TANK. CONTRACTOR TO PROVIDE SPECIFICATION TO CIVIL ENGINEER FOR APPROVAL. TE=1036.70 FL 4" IN=1032.65

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VICINITY MAP  
SEC. 8-47-31

**BENCHMARK:**  
VERTICAL DATUM = NAVD88 BASED ON GPS OBSERVATION USING MDD07 VRS  
1. R.R. SPIKE IN W. FACE POWER POLE NEAR SE COR. #453 BLDG. ELEVATION = 1043.66  
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- The construction of storm sewers on this project shall conform to the requirements of the City's Technical Specifications and Design Criteria.
- The contractor shall field verify the exact location and elevation of the existing storm sewer lines and the existing elevation of locations where the proposed storm sewer collects or releases to existing ground. If discrepancies are encountered from the information shown on the plans, the contractor shall contact the design engineer. No pipes shall be laid until direction is received from the design engineer.
- It will be the contractor's responsibility to field adjust the top of all manholes and boxes as necessary to match the grade of the adjacent area. Tops of existing manholes shall be field verified and, if necessary, to be flush with proposed pavement elevations, and to be 6-inches above finished ground elevations in non-paved areas. No separate or additional compensation will be made to the contractor for making field adjustments to the manholes and boxes.
- Inlet locations, horizontal pipe information and vertical pipe information is shown to the center of the structure. Deflection angles shown for storm sewer pipes are measured from the center of curb inlets and manholes. The contractor shall adjust the horizontal location of the pipes to go to the face of the boxes. All roof drains shall be connected to storm sewer structures. Provide cleanouts on roof drain lines at 100' max. Spacing and at all bend points. Do not connect roof drains directly to storm sewer pipe.
- The contractor shall be responsible for furnishing and installing all fire and domestic water lines, meters, backflow devices, pits, valves and all other incidentals required for a complete operable fire protection and domestic water system. All costs associated with the complete water system for the buildings shall be the responsibility of the contractor. All work shall conform to the requirements of City.
- The contractor shall be responsible for furnishing and installing all sanitary sewer service lines from the buildings to the public line. All work shall conform to the requirements of the City.
- The contractor will be responsible for securing all permits, bonds and insurance required by the contract documents, City, and all other governing agencies (including local, county, state and federal authorities) having jurisdiction over the work proposed by these construction documents. The cost for all permits bonds and insurance shall be the contractor's responsibility and shall be included in the bid for the work.
- By the use of these construction documents the contractor hereby agrees that he/she shall be solely responsible for the safety of the construction workers and the public. The contractor agrees to hold the engineer and owner harmless for any and all injuries, claims, losses or damages related to the project.
- The Contractor shall be responsible for furnishing all materials, tools and equipment and installation of electrical power, telephone and gas service from a point of connection from the public utility lines to the building structures. This will include all conduits, service lines, meters, concrete pads and all other incidentals required for a complete and operational system as required by the owner and the public utilities. Refer to building plans for exact tie-in locations of all utilities. Contractor shall verify connection points prior to installation of utility line.
- All fill material is to be in place, compacted, and consolidated before installation of proposed utilities. On-site geotechnical engineer shall provide written confirmation that this requirement has been met and that utilities may proceed in the fill areas. All utilities are to be placed in trench conditions.
- Contractor shall notify the utility authorities inspectors 48 hours before connecting to any existing line.
- Water lines shall be as follows (unless otherwise shown on plans):  
A. Pipe sizes less than 3-inches that are installed below grade and outside building shall comply with the following:  
1. Seamless Copper Tubing: Type "K" soft copper, ASTM B88.  
2. Fittings: Wrought copper (95.5 Tin Antimony solder joint), ASME B 16.22.  
B. Pipe sizes 3-inches through 48-inches that are installed below grade and outside building shall comply with one of the following:  
1. Gray Cast Iron Water Pipe: ANSI A21.6, thickness class 52.  
a. Fittings: Either mechanical joint or push-on joint, AWWA C110 or AWWA C111.  
b. Elastomeric gaskets and lubricant: ASTM F477.  
c. Cement Mortar Lining, AWWA C104.  
2. Ductile Iron Water Pipe: AWWA C151, thickness class 50.  
a. Fittings: Either mechanical joint or push-on joint, AWWA C110 or AWWA C111.  
b. Elastomeric gaskets and lubricant: ASTM F477.  
c. Cement Mortar Lining, AWWA C104.  
3. Polyvinyl Chloride (PVC) Water Pipe: Pipe, AWWA C900, rated DR 18 (Class 150), continually marked as required.  
a. Elastomeric gaskets and lubricant: ASTM F477 for smaller pipes.  
b. Pipe joints: Integrally molded bell ends, ASTM D3119.  
c. Trace wires: Magnetic detectable conductor, (#12 Copper) brightly colored plastic covering imprinted with "Water Service" in large letters.
- Minimum trench width shall be 2 feet.
- Contractor shall maintain a minimum of 42" cover on all waterlines. All water line joints are to be mechanical joints with thrust blocking as called out in specifications and construction plans. Water mains and service lines shall be constructed in accordance to waterline's specifications for commercial services.
- All waterlines shall be kept min. ten (10') apart (parallel) from sanitary sewer lines or manholes. Or when crossing, on 24" vertical clearance (outside edge of pipe to outside edge of pipe) of the water line above the sewer line is required.
- Sanitary sewers will be resolved prior to permit issuance.
- In the event of a vertical conflict between waterlines, sanitary lines, storm lines and gas lines (existing and proposed), the sanitary line shall be ductile iron pipe with mechanical joints at least 10 feet on both sides of crossing (or encased in concrete this same distance), the waterline shall have mechanical joints with appropriate thrust blocking as required to provide a minimum of 24" clearance. Meeting requirements of ANSI A21.10 or ANSI 21.11 (AWWA C-151) (CLASS 50).
- All underground storm, sanitary, water and other utility lines shall be installed, inspected and approved before backfilling. Failure to have inspection approval prior to backfill will constitute rejection of work.
- All necessary inspections and/or certifications required by codes and/or utility service companies shall be performed prior to announced building possession and the final connection of service. Contractor shall coordinate with all utility companies for installation requirements and specifications.
- Refer to building plans for site lighting electrical plan, irrigation, parking lot security system and associated conduit requirements. Coordinate with Owner that all required conduits are in place & tested prior to paving.
- When a building utility connection from site utilities leading up to the building cannot be made immediately, temporarily mark all such site utility terminations.
- Refer to the building plans for site lighting electrical requirements, including conduits, pole bases, pull boxes, etc.

**UTILITY COMPANIES:**

- MISSOURI GAS ENERGY (816) 969-2218  
LUCAS WALLS (LUCAS.WALLS@SUG.COM)  
3025 SOUTHEAST CLOVER DRIVE  
LEE'S SUMMIT, MO 64082
- EVERGY (816) 347-4339  
PHILLIP INGRAM (PHILLIP.INGRAM@KCPL.COM)  
RON DEJARNETTE (RON.DEJARNETTE@KCPL.COM) (816) 347-4316  
1300 HAMBLEN ROAD  
LEE'S SUMMIT, MO 64081
- STORM SEWER (PUBLIC WORKS DEPARTMENT) (816) 969-1800  
220 SE GREEN STREET  
LEE'S SUMMIT, MO 64063
- SANITARY SEWER & WATER (WATER UTILITIES DEPT.) (816)-969-1900  
1200 SE HAMBLEN ROAD,  
LEE'S SUMMIT, MO 64081
- AT&T (913) 383-4929  
MR. CLAYTON ANSPAUGH (CA4089@ATT.COM) (913) 383-4849-FAX  
9444 NALL AVENUE  
OVERLAND PARK, KANSAS 66207

**LEGEND**

- PL PROPERTY LINE
- LL LOT LINE
- R/W RIGHT-OF-WAY
- CTV EXISTING CABLE TELEVISION LINE
- FO EXISTING FIBER OPTIC LINE
- G EXISTING GAS LINE
- BE EXISTING BURIED ELECTRIC LINE
- OHP EXISTING OVERHEAD POWER LINE
- HT EXISTING OVERHEAD TELEPHONE LINE
- SS EXISTING SANITARY SEWER LINE
- SS EXISTING STORM SEWER LINE (& SIZE)
- BT EXISTING BURIED TELEPHONE LINE
- W-6" EXISTING WATER LINE (& SIZE)
- G PROPOSED GAS LINE
- BE PROPOSED BURIED ELECTRIC LINE
- SS PROPOSED SANITARY SEWER LINE
- OHP PROPOSED OVERHEAD POWER LINE
- BT PROPOSED BURIED TELEPHONE LINE
- W PROPOSED WATER LINE (& SIZE)



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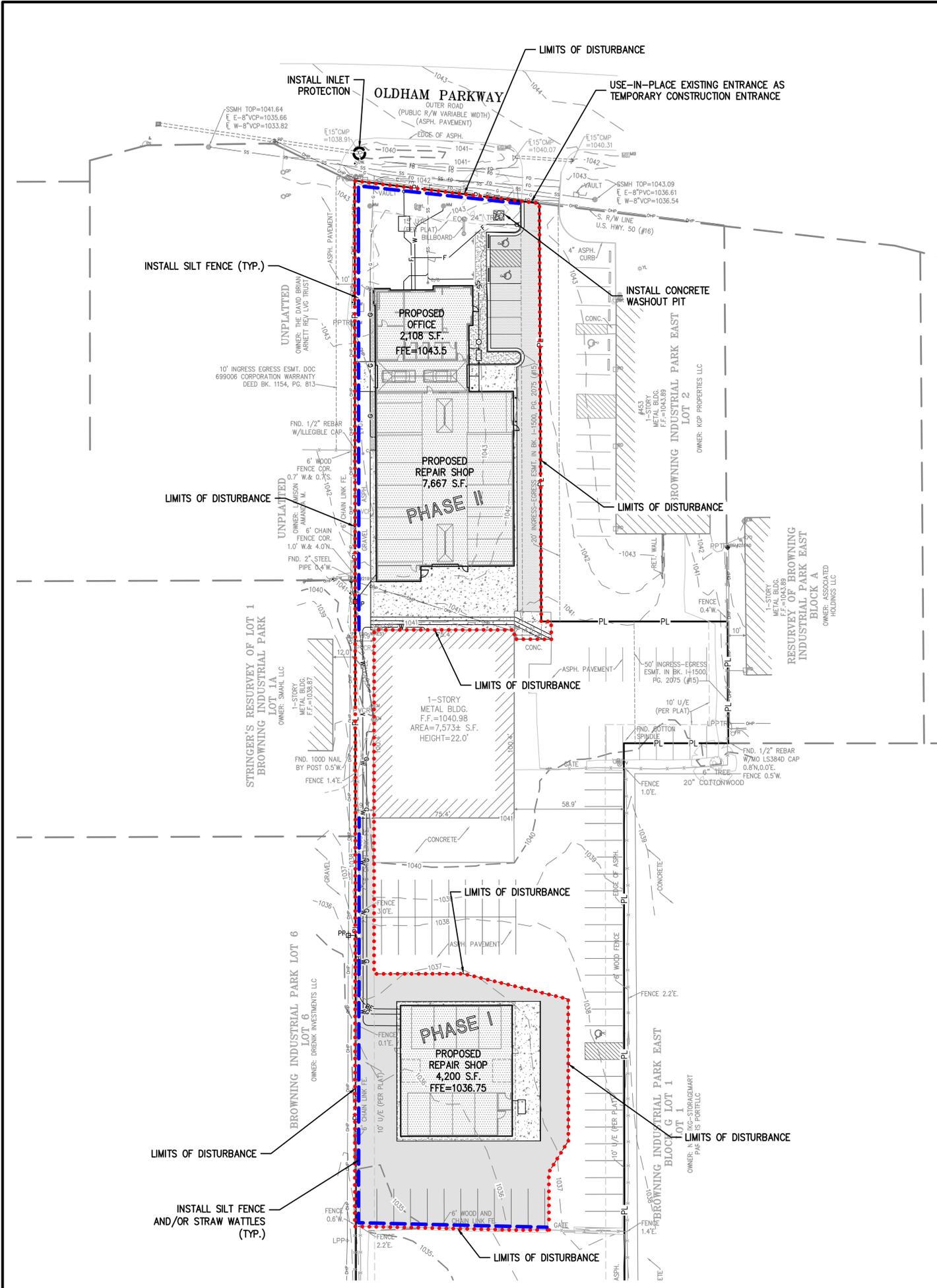
**PLANNING  
ENGINEERING  
IMPLEMENTATION**

**UTILITY PLAN**  
CRASH CHAMPIONS  
451 S.E. OLDHAM PARKWAY  
LEE'S SUMMIT, JACKSON COUNTY, MO

PROJECT NO.	DATE	BY	APP.	REVISIONS
210229	05-24-22	DRANKS/NH	JDC	
		CHECKED: DAF	APPROVED: JDC	
		CORROBORATE OF AUTHORIZATION		
		LAND SURVEYING - LS-82		
		ENGINEERING - E-36		
		CERTIFICATE OF AUTHORIZATION		
		LAND SURVEYING-200701028		
		LAND SURVEYING-200300308		

SHEET  
C3

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 Olathe, Kansas 66061  
 (913) 993-1155  
 Fax (913) 993-1165  
 www.philipsengineering.com

PLANNING  
 ENGINEERING  
 IMPLEMENTATION

**PEI**

**EROSION CONTROL PLAN**  
 CRASH CHAMPIONS  
 451 S.E. OLDHAM PARKWAY  
 LEE'S SUMMIT, JACKSON COUNTY, MO

Revisions:	No.	Date	By	App.

PROJECT NO. 210229  
 DATE 05-24-22  
 DRAWN: SNH  
 CHECKED: DAF  
 APPROVED: JDC  
 CREDIT: DATE OF AUTHORIZATION  
 LAND SURVEYING - LS-82  
 ENGINEERING - E-361  
 CREDIT: DATE OF AUTHORIZATION  
 LAND SURVEYING - 20070128  
 ENGINEERING - 20070038

**SHEET**  
**C4**



PROJECT NO.	DATE	NO.	REVISIONS
210229	2/10/22	1	ISSUED FOR BIDDING
210229	2/10/22	2	REVISED PER COMMENTS
210229	2/10/22	3	REVISED PER COMMENTS
210229	2/10/22	4	REVISED PER COMMENTS
210229	2/10/22	5	REVISED PER COMMENTS
210229	2/10/22	6	REVISED PER COMMENTS
210229	2/10/22	7	REVISED PER COMMENTS
210229	2/10/22	8	REVISED PER COMMENTS
210229	2/10/22	9	REVISED PER COMMENTS
210229	2/10/22	10	REVISED PER COMMENTS

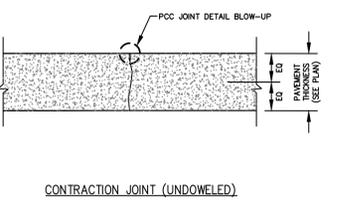
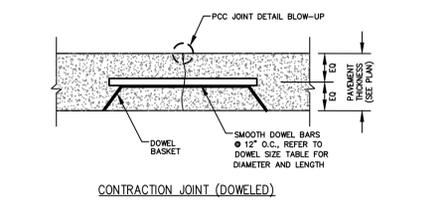
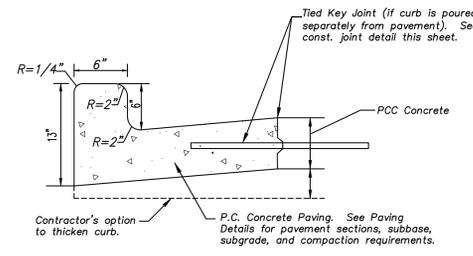
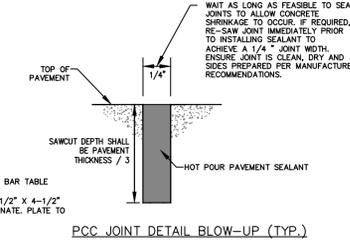
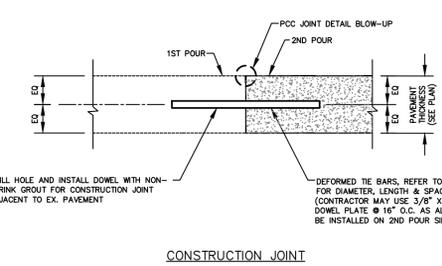
**Dowel size\***

Slab depth, in. (mm)	Dowel diameter, in. (mm)	Dowel embedment, in. (mm) <sup>1</sup>	Total dowel length, in. (mm) <sup>2</sup>
5 (125)	5/8 (16)	5 (125)	12 (300)
6 (150)	3/4 (19)	6 (150)	14 (360)
7 (180)	7/8 (22)	6 (150)	14 (360)
8 (200)	1 (25)	6 (150)	14 (360)
9 (230)	1-1/8 (29)	7 (180)	16 (400)

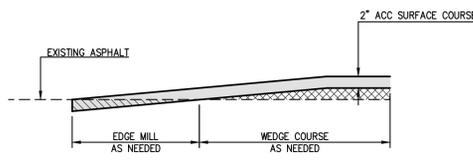
\*All dowels spaced at 12 in. (300 mm) centers.  
<sup>1</sup>On each side of joint.  
<sup>2</sup>Allowance made for joint openings and for minor errors in positioning dowels.

**Tie bar dimensions**

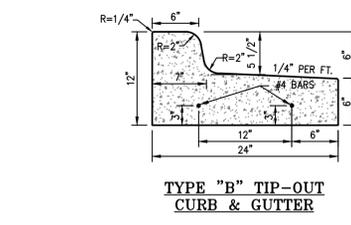
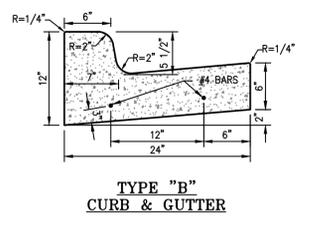
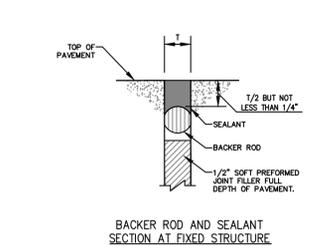
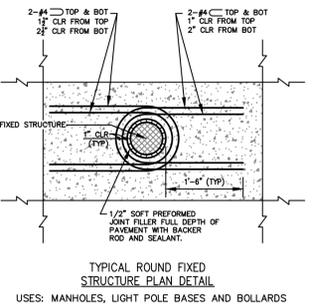
Slab depth, in. (mm)	Tiebar size, in. (mm)	Tiebar spacing			
		10 ft. in. (mm)	12 ft. in. (mm)	14 ft. in. (mm)	24 ft. in. (mm)
5 (125)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	28 (710)
5-1/2 (140)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	25 (630)
6 (150)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	23 (580)
6-1/2 (165)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	21 (530)
7 (180)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	20 (510)
7-1/2 (190)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	18 (460)
8 (200)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	30 (760)	17 (430)
8-1/2 (215)	1/2 x 24 (13 x 610)	30 (760)	30 (760)	36 (910)	16 (410)
9 (230)	1/2 x 30 (13 x 760)	36 (910)	36 (910)	—	24 (610)



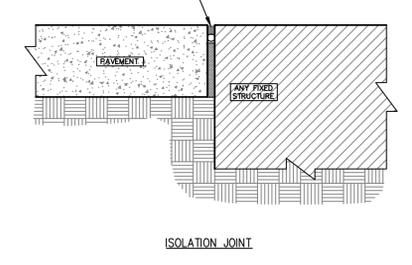
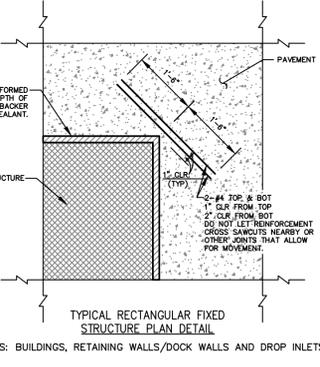
**CONCRETE JOINT DETAILS**  
 SCALE: N.T.S.



**ASPHALT MILL & OVERLAY DETAIL**  
 SCALE: N.T.S.

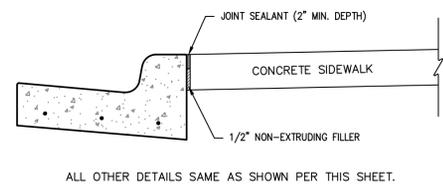


**PRIVATE TYPE "B" CONCRETE CURB & GUTTER DETAILS**  
 SCALE: N.T.S.

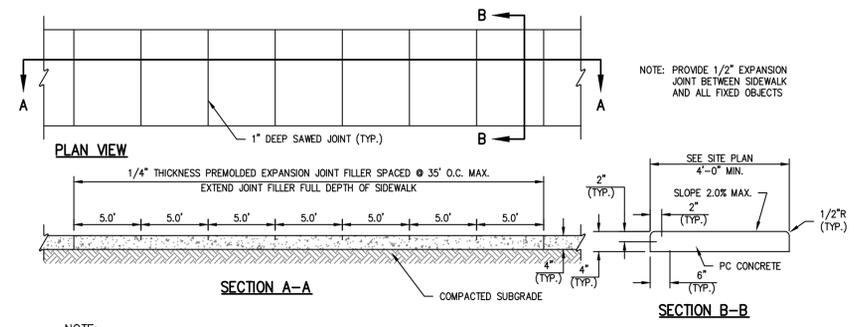


NOTES:  
 ISOLATION JOINT TO BE USED FOR FIXED STRUCTURES SUCH AS BUILDINGS, RETAINING WALLS/DOCK WALLS, DROP INLETS, MANHOLES, LIGHT POLE BASES AND BOLLARDS.  
 PAVEMENT IS NOT CONSIDERED A FIXED STRUCTURE.

**ISOLATION JOINT DETAILS**  
 SCALE: N.T.S.

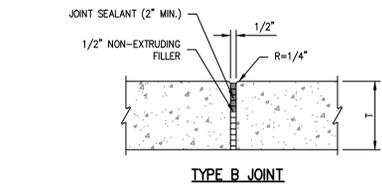
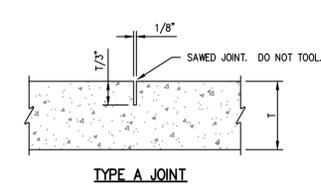


**SIDEWALK AT CURB DETAIL**  
 SCALE: N.T.S.



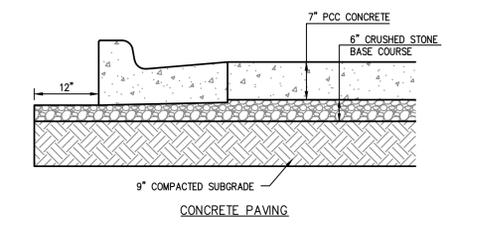
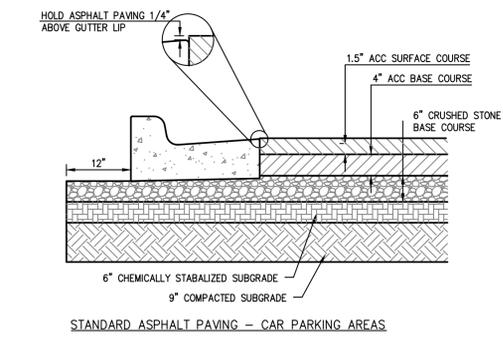
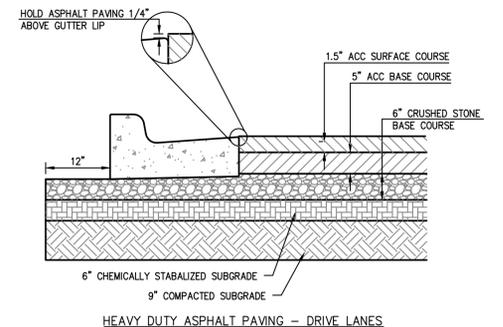
**PRIVATE CONCRETE SIDEWALKS (NON REINFORCED)**  
 SCALE: N.T.S.

NOTE:  
 1. USE KANSAS CITY MATERIALS METRO BOARD (KCMMB) MIX DESIGN SPECIFICATIONS FOR 4,000 P.S.I. AIR ENTRAINMENT CONCRETE FOR ALL PRIVATE SIDEWALKS.



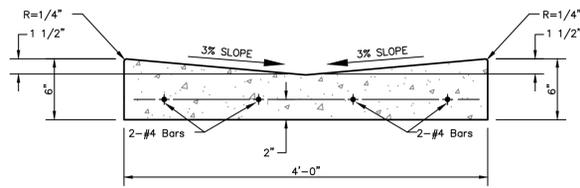
NOTE: TYPE A JOINTS SHALL NOT EXCEED 20 TIMES THE PAVEMENT THICKNESS (T).

**CONCRETE SIDEWALK JOINT DETAILS**  
 SCALE: N.T.S.

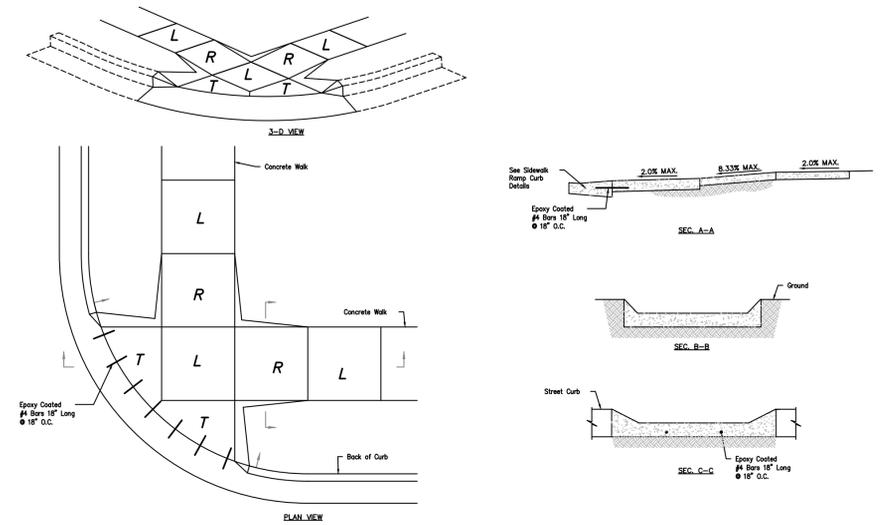
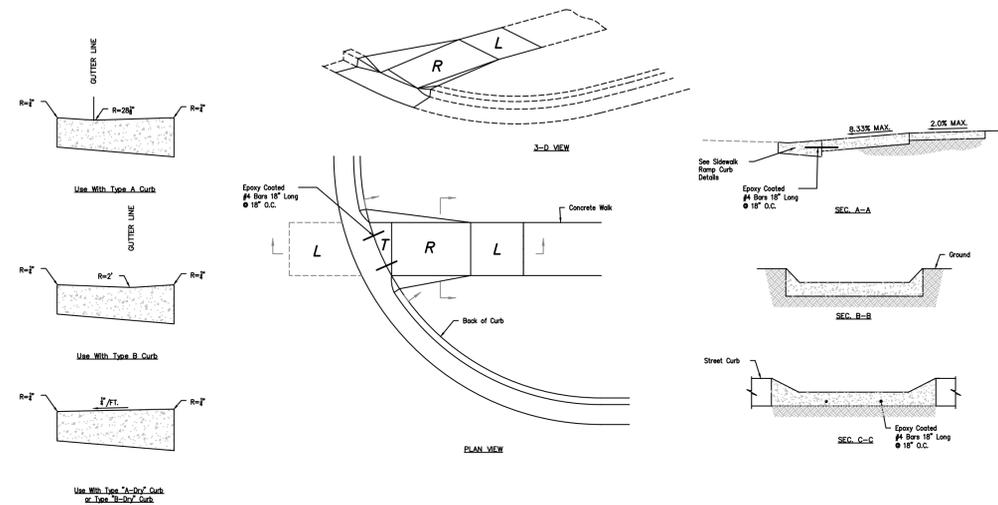
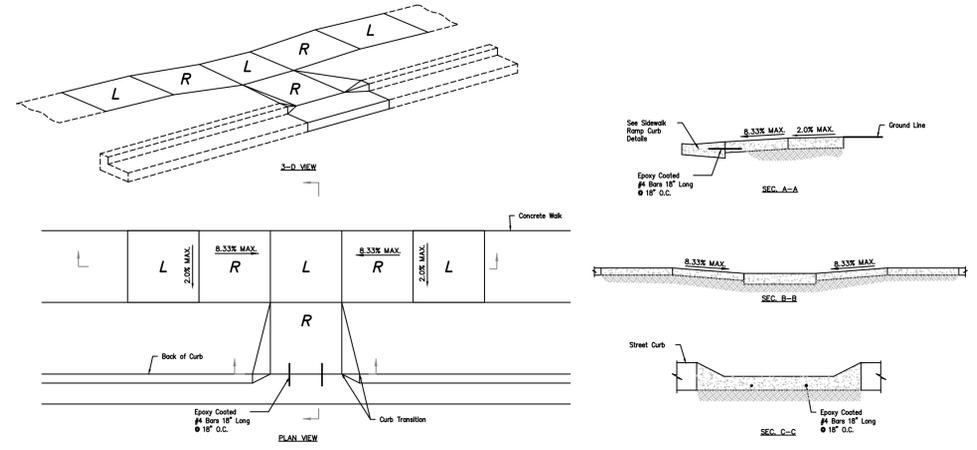
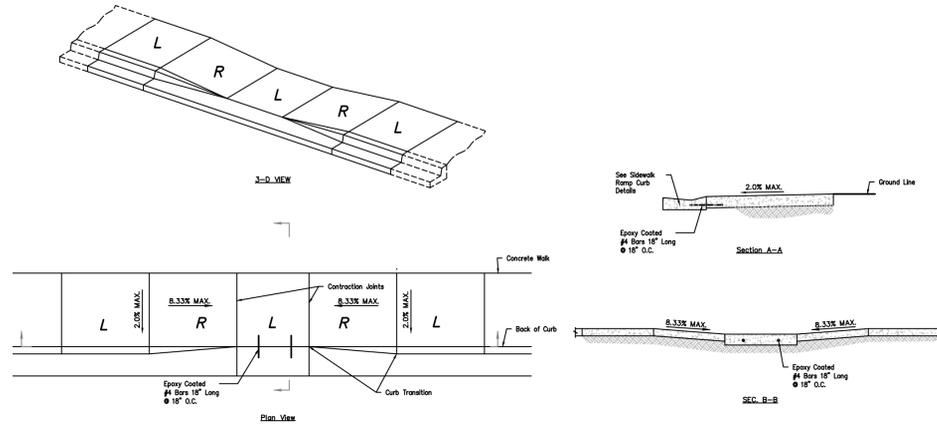


**GENERAL PAVING NOTES:**

- PRIOR TO PLACEMENT OF GRANULAR BASE OR ASPHALT, PROOF ROLL AND RE-COMPACT THE EXPOSED SURFACES UP TO A MINIMUM LATERAL DISTANCE OF TWO (2) FEET OUTSIDE THE PAVEMENT. ANY LOCALIZED SOFT, WET, OR LOOSE AREAS IDENTIFIED DURING THE PROOF ROLLING SHOULD BE REPAIRED PRIOR TO PAVING. FILL MATERIAL SHOULD BE PLACED IN LOOSE LIFTS UP TO A MAXIMUM OF EIGHT (8) INCHES IN THICKNESS AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698 AT MOISTURE CONTENTS WITHIN 0% AND +4% OF THE OPTIMUM FOR SOILS WITH A LIQUID LIMIT OF GREATER THAN 40, AND - +1/2 - 3% OF THE OPTIMUM FOR SOILS WITH A LIQUID LIMIT OF LESS THAN 40. MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT SHOULD BE DETERMINED BY THE STANDARD PROCTOR TEST (ASTM D 698).
- PROOFROLL WITH A 25 TON RUBBER TIRE VEHICLE AND REPAIR SUBGRADE DEFICIENCIES. IF ANY SIGNIFICANT EVENT, SUCH AS PRECIPITATION, OCCURS AFTER PROOFROLLING, THE SUBGRADE SHOULD BE REVIEWED BY QUALIFIED PERSONNEL IMMEDIATELY PRIOR TO PLACING THE PAVEMENT.
- CRUSHED STONE BASE COURSE USED BENEATH CONCRETE PAVING SHALL BE COMPACTED KDOT AB-3 OR EQUIVALENT.
- ASPHALTIC SURFACE COURSE SHALL BE APWA TYPE 3. THE SURFACE COURSE SHOULD BE COMPACTED TO A MINIMUM OF 97% MARSHALL DENSITY (ASTM SPECIFICATION D 1559). 30% RAP IS ALLOWED.
- ASPHALTIC BASE COURSE SHALL BE APWA TYPE 1. THE BASE COURSE SHOULD BE COMPACTED TO A MINIMUM OF 95% MARSHALL DENSITY (ASTM SPECIFICATION D 1559). 30% RAP IS ALLOWED.
- THE CONTRACTOR SHALL PROVIDE A TACK COAT BETWEEN LIFTS OF ASPHALT.
- ALL SITE CONCRETE (CURBS, PAVEMENTS, SIDEWALKS, ETC.) SHALL MEET KANSAS CITY MATERIALS METRO BOARD (KCMMB) MIX DESIGN SPECIFICATIONS FOR 4,000 P.S.I. AIR ENTRAINMENT CONCRETE.
- IN NEW PAVEMENT AREAS, CONTRACTOR SHALL OVER EXCAVATE AS REQUIRED TO ESTABLISH NEW COMPACTED SUBGRADE ELEVATIONS.
- CONTRACTOR IS RESPONSIBLE FOR ALL PAVEMENT AND SUBGRADE MATERIALS TESTING.



**CONCRETE PILOT CHANNEL**  
SCALE: N.T.S.



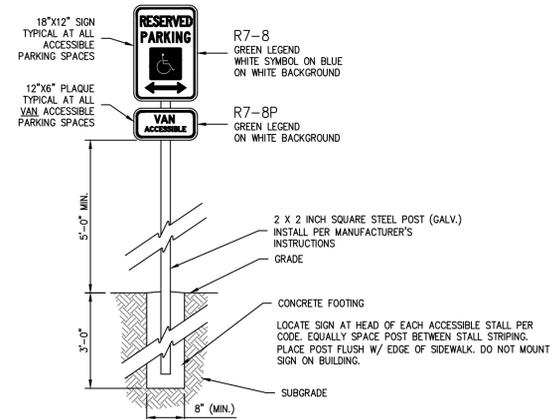
L = LANDING  
R = RAMP  
T = TRANSITION

RAMP (Required to transition elevation): Max. Longitudinal Slope = 0.33%  
Max. Cross Slope = 2.00%  
Min. Width = 5'  
Min. Length = 5'

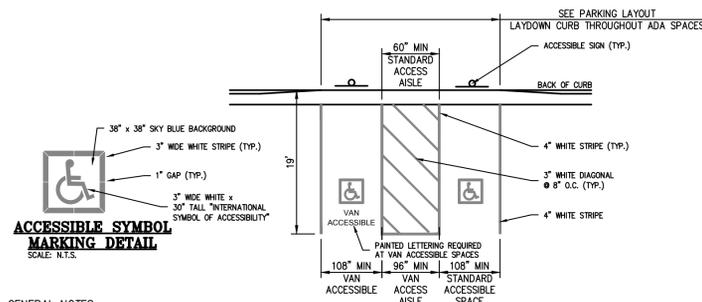
LANDING (Required to change direction of travel): Max. Longitudinal Slope = 2.00%  
Max. Cross Slope = 2.00%  
Min. Width = 5'

**PRIVATE SIDEWALK RAMPS**

SCALE: N.T.S.



**ACCESSIBLE SIGN DETAIL IN GRASS AREA**  
SCALE: N.T.S.



**ACCESSIBLE SYMBOL MARKING DETAIL**  
SCALE: N.T.S.

**GENERAL NOTES:**

- ALL PAVEMENT MARKINGS SHALL BE APPLIED BY A QUALIFIED CONTRACTOR HAVING A MINIMUM 3 YEARS EXPERIENCE IN TRAFFIC GRADE PAVEMENT MARKING APPLICATIONS.
- PANT SHALL BE A NON-BLEEDING, QUICK-DRYING, ALKYL PETROLEUM BASE PAINT SUITABLE FOR TRAFFIC-BEARING SURFACE AND SHALL MEET FS 17H-82 & MIXED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS BEFORE APPLICATION.
- SWEEP AND CLEAN SURFACE TO ELIMINATE LOOSE MATERIAL & DUST.
- APPLY TWO (2) COATS OF PAINT AT MANUFACTURER RECOMMENDED RATE WITHOUT THE ADDITION OF THINNER, WITH A MAXIMUM OF 100 SQUARE FEET PER GALLON. APPLY WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. AT SIDEWALK, CURBS, AND CROSSWALKS USE A STRAIGHTEDGE TO ENSURE A UNIFORM, CLEAN, & STRAIGHT STRIPE.
- THE FOLLOWING ITEMS SHALL BE PAINTED WITH THE COLORS NOTED BELOW:  
A. HANDICAP SYMBOLS: SEE DETAIL THIS SHEET.  
B. PARKING STALL STRIPING: WHITE.
- ACCESSIBLE PARKING SPACE DESIGN LAYOUT SHALL BE IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.
- SEE SITE PLANS FOR COMPLETE PARKING LAYOUT.

**ACCESSIBLE PARKING SPACE DETAIL**  
SCALE: N.T.S.



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PLANNING  
ENGINEERING  
IMPLEMENTATION

**PAVEMENT DETAILS**  
CRASH CHAMPIONS  
451 S.E. OLDHAM PARKWAY  
LEE'S SUMMIT, JACKSON COUNTY, MO

Project No.	Date	By	App.
210229			
DATE: 05-24-22			
CHECKED: DAF			
APPROVED: JDC			
CERTIFICATE OF AUTHORIZATION			
LAND SURVEYING - LS-82			
ENGINEERING - E-361			
CERTIFICATE OF AUTHORIZATION			
LAND SURVEYING - 200700128			
ENGINEERING - 200700338			

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# WH101F/WR101F

**General Features**

The model WH101F or WR101F grinder pump station is a complete unit that includes: the grinder pump, check valve, HDPE (high density polyethylene) tank, controls, and alarm panel. This station is designed for areas where high floodplain conditions occur. The WH101F or WR101F is a watertight, sealed station capable of sustaining a 15-foot flood above the top of the station. This type of flood condition will not affect the continued operation of the pump; the homeowner should rely on uninterrupted service.

- Rated for flows of 700 gpd (2650 lpd)
- 70 gallons (265 liters) of capacity
- Standard outdoor heights range from 60 inches to 160 inches

The WH101F is the "hardwired," or "wired," model where a cable connects the motor controls to the level controls through watertight penetrations.

The WR101F is the "radio frequency identification" (RFID), or "wireless," model that uses wireless technology to communicate between the level controls and the motor controls.

**Operational Information**

**Motor**

1 hp, 1.725 rpm, high torque, capacitor start, thermally protected, 120/240V, 60 Hz, 1 phase

**Inlet Connections**

4" PVC inlet flange for Schedule 40 pipe

**Discharge Connections**

Pump discharge terminates in 1.25-inch NPT female thread. Can easily be adapted to 1.25-inch PVC pipe or any other material required by local codes.

**Discharge**

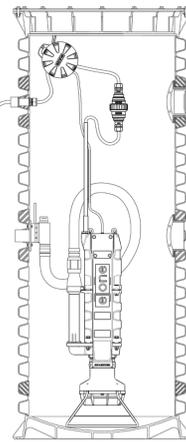
15 gpm at 0 psig (0.95 lps at 0 m)  
11 gpm at 40 psig (0.69 lps at 28 m)  
7.8 gpm at 80 psig (0.49 lps at 56 m)

**Accessories**

E/One requires that the Uni-Lateral, E/One's own stainless steel check valve, be installed between the grinder pump station and the street main for added protection against backflow.

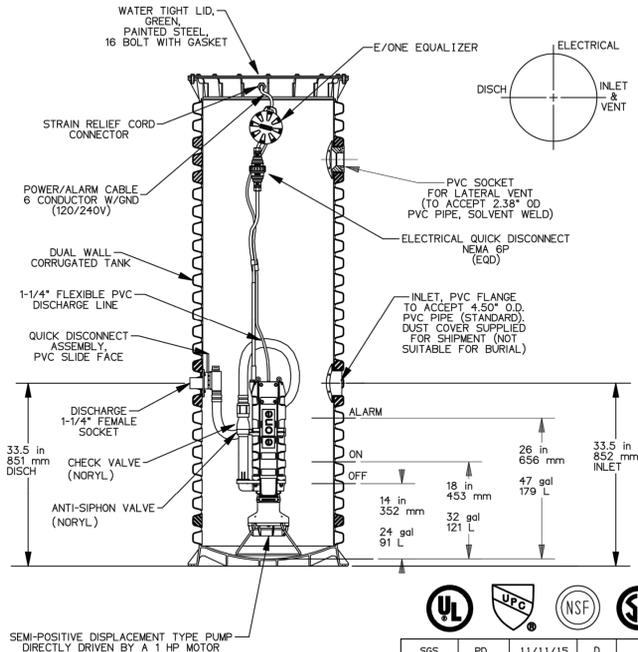
Alarm panels are available with a variety of options, from basic monitoring to advanced notice of service requirements.

The Remote Sentry is ideal for installations where the alarm panel may be hidden from view.



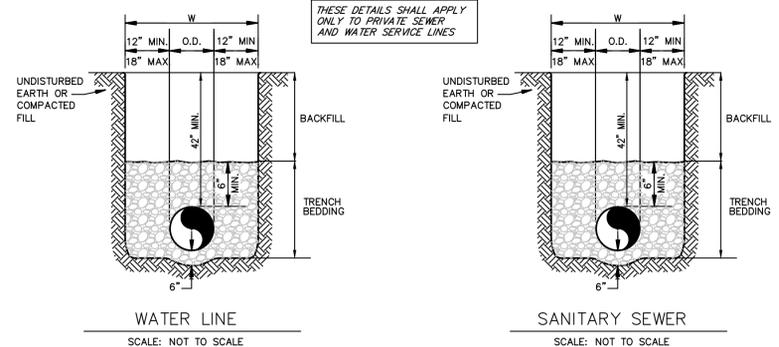
NA0058P01 Rev C

**OPTIONS :**  WH101F (HARD WIRED LEVEL CONTROLS)  
 WR101F (WIRELESS LEVEL CONTROLS)



SGS	PD	11/11/15	D	
DR BY	CHK'D	DATE	ISSUE	SCALE
<b>eone</b> SEWER SYSTEMS				
MODEL WH101F / WR101F DETAIL SHEET				
NA0058P02				

CONCRETE BALLAST MAY BE REQUIRED  
SEE INSTALLATION INSTRUCTIONS  
FOR DETAILS



REQUIREMENTS PER APWA 2100 AS FOLLOWS:

Sieve Size	3/8"
1"	100
3/4"	90 - 100
3/8"	20 - 55
No. 4	0 - 5
No. 8	0 - 2

Sieve Size	3/4"	1 1/2"	3/8"
1"	100		
3/4"	90 - 100	100	
1 1/2"		80 - 100	
3/8"	20 - 55	40 - 77	100
No. 4	0 - 10	0 - 15	30 - 40
No. 8	0 - 5	0 - 5	0 - 4

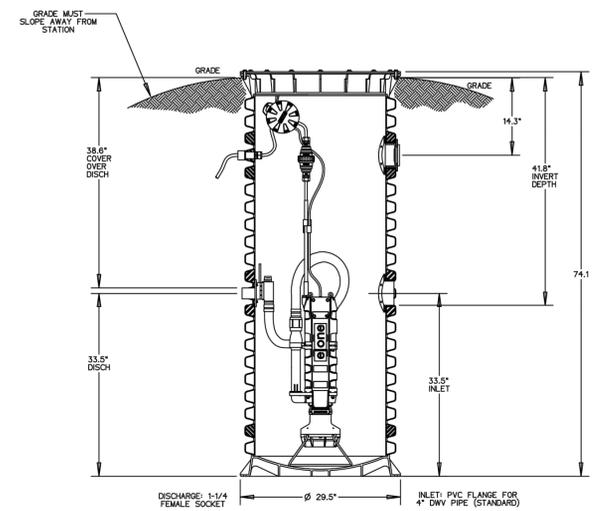
  

Sieve Size	Type 1 (1/2")	Type 2 (Buckshot)	Type 3 (Man. Sand)	Type 4 (River Sand)
3/4"	95 - 100		100	
3/8"	40 - 60	100	90 - 100	
1 1/4"			85 - 100	
No. 4	60 - 80	85 - 90	85 - 90	100
No. 20	0 - 5	0 - 15	10 - 25	
No. 200	0	0 - 10	0 - 10	

- Trench Backfill
- Backfill shall not be placed when material contains frost, is frozen, or a blanket of snow prevents proper compaction.
  - The Contractor shall remove from the project site waste material, trees, organic material, subsoil, or other deleterious materials.
  - All trees and debris shall be removed from the pipeline excavation prior to backfilling.
  - Backfill material shall be carefully placed to avoid damage to or displacement of the pipe, other utilities or structures.
  - Unless otherwise specified, all trenches and excavations around structures shall be backfilled to the original ground surface.
  - Outside of paved areas, the backfill material shall be placed in layers not exceeding 8-inches in loose thickness and be compacted to at least 90% of maximum density. Compaction testing shall be at the discretion of the Engineer.
  - The method of compaction and the equipment used shall be appropriate for the material to be compacted and shall not transmit damaging shocks to the pipe.
  - The combination of the thickness of the layer, the method of compaction and the type of compaction equipment used shall be at the discretion of the Contractor subject to obtaining the required densities.
- Pipe Embedment: All water, sanitary sewer, and storm sewer pipe shall be bedded in bedding aggregate as specified herein:
- Bedding shall cover the entire width of trench.
  - The first layer of bedding placed on the bottom of excavation shall be in accordance with Figures 1 through 3.
  - Bedding at bottom of trench, in the middle 1/3 of trench under the pipe shall be loose.
  - After pipe is placed, bedding material shall be placed in layers in accordance with manufacturer's recommendations.
  - Second layer of bedding material shall be placed under the lower haunches of the pipe up to the springline (center of pipe). Material shall be spaced to be placed under haunches and compacted at the springline elevation prior to placing additional bedding material.
  - The third layer of bedding material shall be placed to 12 inches over the top of pipe.
  - Contractor shall take measures to prevent pipe from floating during placement of bedding material so that pipe maintains proper line and grade as shown on the Plans.

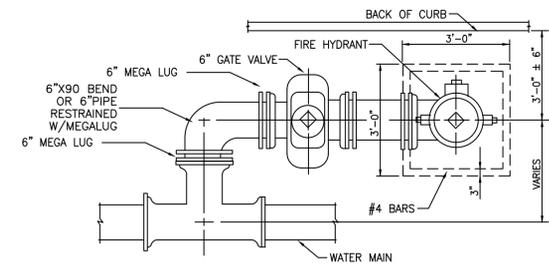
**UTILITY TRENCH AND BEDDING**

**OPTIONS :**  WH101F-74 (HARD WIRED LEVEL CONTROLS)  
 WR101F-74 (WIRELESS LEVEL CONTROLS)



CONCRETE BALLAST MAY BE REQUIRED  
SEE INSTALLATION INSTRUCTIONS  
FOR DETAILS

AD	CH	07/16/07	C	
DR BY	CHK'D	DATE	ISSUE	SCALE
<b>eone</b> SEWER SYSTEMS				
MODEL WH101F-74 / WR101F-74				
NA0058P04				



**NOTE:**  
ALL PIPING SHALL BE RESTRAINED JOINT PIPE.

\* HYDRANT BURY LINE

FINISHED GRADE

1/2" MIN

CONCRETE COLLAR (3000 PSI MIN, 28 DAY COMPRESSIVE STRENGTH)

ROOFING FELT OR FILTER FABRIC

PROVIDE A MIN. 1/2 C.U. YD. OF 3/4" GRANULAR FILL AROUND BASE OF HYDRANT

SET HYDRANT ON 1'-6" SQ. X 6" CONCRETE BASE

**NOTE:**  
WHEN FIRE HYDRANT'S GATE VALVE EXCEEDS THE DISTANCE OF 5'-0" FROM CENTER OF GATE VALE TO CENTERLINE OF TEE. GATE VALVE SHALL BE ASSEMBLED TO WATER MAIN'S TEE.

**TYPICAL  
FIRE HYDRANT  
INSTALLATION DETAIL**

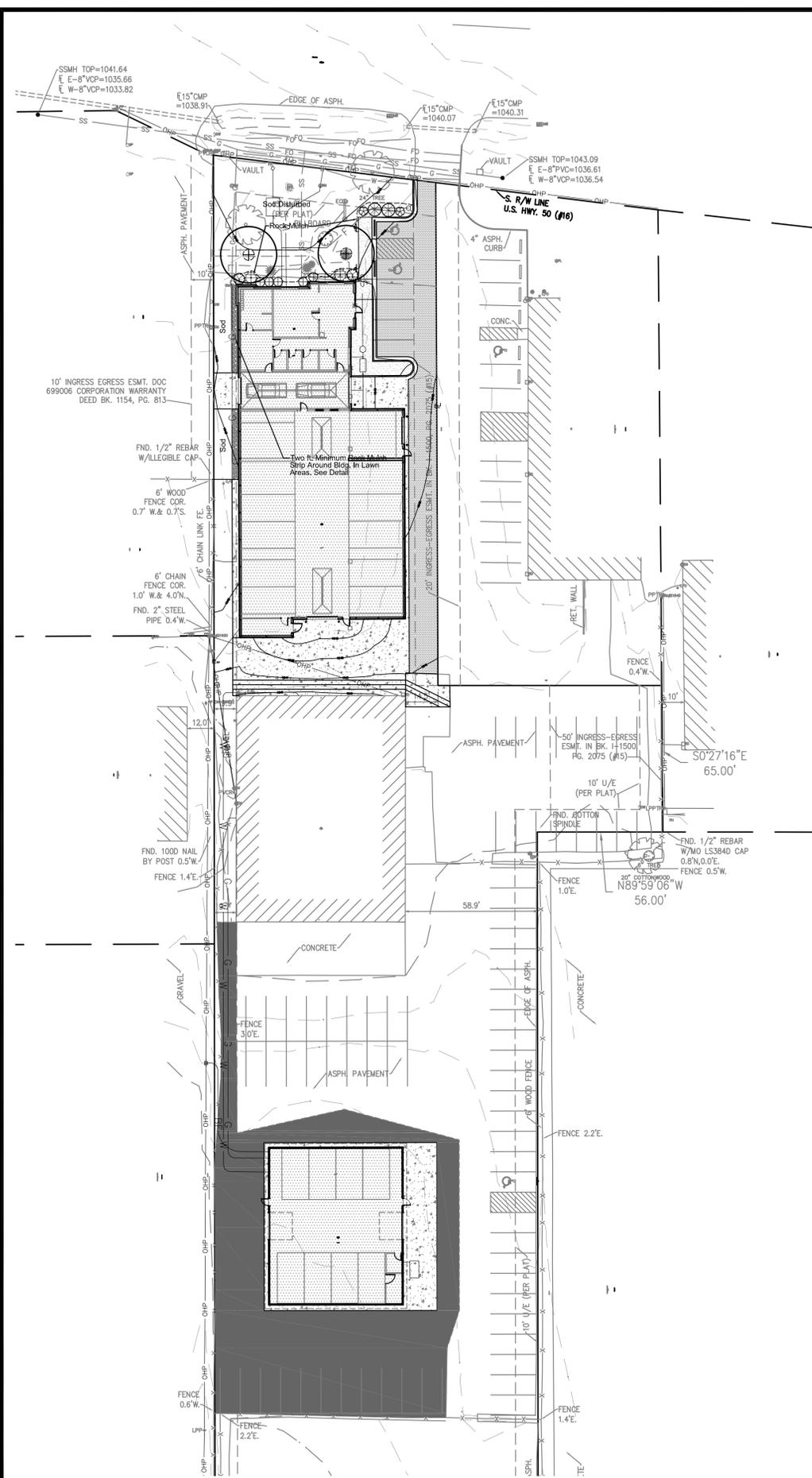


**PHelps ENGINEERING, INC.**  
1370 N. Winchester  
Olathe, Kansas 66061  
(913) 993-1155  
Fax: (913) 993-1165  
www.phelpsenr.com



**SANITARY & WATER DETAILS**  
CRASH CHAMPIONS  
451 S.E. OLDHAM PARKWAY  
LEE'S SUMMIT, JACKSON COUNTY, MO

PROJECT NO.	DATE	NO.	DATE	BY	APP.
210229	05-24-22	1			
Revisions:					



**PLANT SCHEDULE**

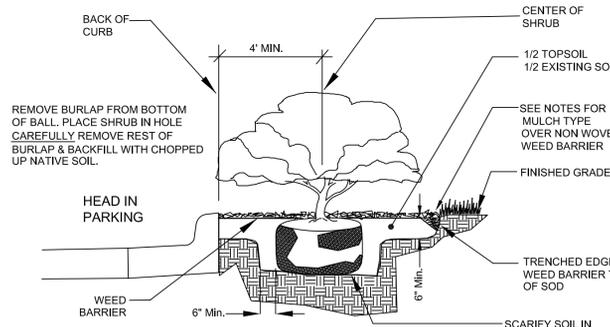
TREES	QTY	BOTANICAL / COMMON NAME	CONT	CAL
⊕	2	Gleditsia triacanthos 'Skyline' / 'Skyline' Honey Locust	B & B	2.5" Cal
SHRUBS	QTY	BOTANICAL / COMMON NAME	CONT	
⊗	2	Juniperus chinensis 'Sea Green' / Sea Green Juniper 24"-30" hgt. & sp.	5 gal	
⊕	2	Juniperus virginiana 'Grey Owl' / Grey Owl Juniper 24" sp.	3 gal	
⊗	2	Physocarpus opulifolius 'Center Glow' / Center Glow Ninebark 24"-30" hgt. & sp.	3 gal	
⊗	2	Spiraea x bumalda 'Anthony Waterer' / Anthony Waterer Spiraea 18"-24" hgt.	3 gal	
⊕	5	Spiraea x bumalda 'Gold Flame' / Gold Flame Spirea 18"-24" hgt.	3 gal	

**GENERAL LANDSCAPE NOTES:**

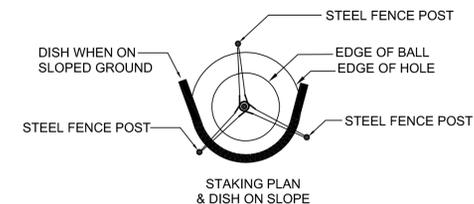
- CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL UTILITIES BEFORE STARTING ANY WORK.
- CONTRACTOR SHALL VERIFY ALL LANDSCAPE MATERIAL QUANTITIES AND SHALL REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR SHALL MAKE NO SUBSTITUTIONS WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL STAKE LAYOUT PLAN IN THE FIELD AND SHALL HAVE THE LAYOUT APPROVED BY THE LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH THE INSTALLATION.
- ALL LANDSCAPE BEDS SHALL BE TREATED WITH THE PRE-EMERGENT HERBICIDE PRE M 60 DG (GRANULAR) OR AN APPROVED EQUAL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- ALL LANDSCAPE BEDS SHALL RECEIVE A TRENCHED EDGE. SEE SHRUB PLANTING DETAIL.
- FERTILIZER FOR FESCUE SODDED LAWN, TREES AND CONTAINER STOCK AREAS SHALL BE A BALANCED FERTILIZER BASED ON RECOMMENDATIONS FROM A SOIL TEST SUPPLIED BY THE LANDSCAPE CONTRACTOR FROM AN APPROVED TESTING LAB.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE PLANTS UNTIL COMPLETION OF THE JOB AND ACCEPTANCE BY THE OWNER.
- CONTRACTOR SHALL WARRANTY ALL LANDSCAPE WORK AND PLANT MATERIAL FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF THE WORK BY THE OWNER.
- CONTRACTOR SHALL PROVIDE MAINTENANCE OF ALL TREES AND SHRUBS FOR A PERIOD OF ONE YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION IF CONTRACTED BY THE OWNER.
- ANY PLANT MATERIAL WHICH DIES DURING THE ONE YEAR WARRANTY PERIOD SHALL BE REPLACED BY THE CONTRACTOR DURING NORMAL PLANTING SEASONS.
- ALL PLANT NAMES ON THE PLANT LIST CONFORM TO THE STANDARDIZED PLANT NAMES PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE OR TO NAMES GENERALLY ACCEPTED IN THE NURSERY TRADE.
- ALL PLANT MATERIAL SHALL BE SPECIMEN QUALITY STOCK AS DETERMINED IN THE "AMERICAN STANDARDS FOR NURSERY STOCK" PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, FREE OF PLANT DISEASES AND PESTS, OF TYPICAL GROWTH OF THE SPECIES AND HAVING A HEALTHY, NORMAL ROOT SYSTEM.
- SIZES INDICATED ON THE PLANT LIST ARE THE MINIMUM, ACCEPTABLE SIZE. IN NO CASE WILL SIZES LESS THAN THE SPECIFIED SIZES BE ACCEPTED.
- PLANTS SHALL NOT BE THRUDED PRIOR TO DELIVERY TO THE SITE OR AFTER INSTALLATION EXCEPT FOR THOSE BRANCHES THAT HAVE BEEN DAMAGED IN SOME WAY.
- PLANTS SHALL NOT HAVE NAME TAGS REMOVED PRIOR TO FINAL INSPECTION.
- ALL PLANTINGS SHALL RECEIVE A COMMERCIAL TRANSPLANT ADDITIVE PER MANUFACTURER'S RECOMMENDED RATES AND INSTRUCTIONS FOR APPLICATION.
- MULCH SHALL BE 3" DEPTH OF KANSAS LARGE 2" SIZE AVAILABLE FROM STURGIS MATERIALS OR APPROVED EQUAL. OVER A FELT TYPE SOIL SEPARATOR CUT INTO THE GROUND WITH A TRENCHED EDGE. SEE TREE DETAIL FOR DIFFERENT MULCH AROUND TREES.
- SEE PLANTING DETAILS FOR SOIL MIX IN PLANTING HOLES.
- SOD SHALL BE A TURF-TYPE-TALL FESCUE GRASS BLEND. CONTRACTOR SHALL BE RESPONSIBLE FOR AN ACCEPTABLE STAND OF TURF TO BE APPROVED BY THE OWNER AND/OR LANDSCAPE ARCHITECT.
- SUCCESSFUL LANDSCAPE BIDDER SHALL BE RESPONSIBLE FOR THE MODIFICATION OF ANY EXISTING IRRIGATION SYSTEM, OR THE DESIGN AND INSTALLATION OF A NEW IRRIGATION SYSTEM TO BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION IF THE OWNER DESIRES AN IRRIGATION SYSTEM.
- WOOD MULCH FOR TREES SHALL BE A DYED BROWN SHREDDED HARDWOOD.

**Transplant Additives:**

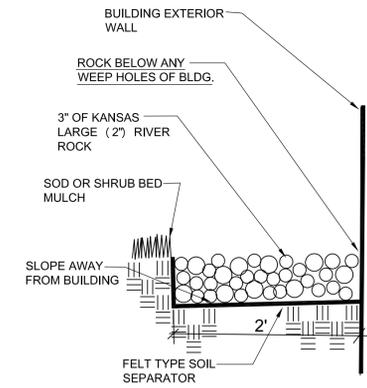
- Apply a commercial transplant additive (approved by the Landscape Architect) to all trees, shrubs and groundcover at rates recommended by the manufacturer during the planting. This item shall be subsidiary to other planting items.
- Transplant additive shall be Horticultural Alliance "DIEHARD Transplant" (or approved equal) mycorrhizal fungal transplant inoculant or equivalent equal containing the appropriate species of mycorrhizal fungi and bacteria, fungi stimulant, water retaining agents, mineral & organic nutrients and inert ingredients.
- Demonstrate installation of all transplant additives for this project to the Landscape Architect. Provide actual additive product as evidence of sufficient quantity of product. (Empty product bags to be stockpiled for inspection by the Landscape Architect prior to disposal).
- Number of transplant additive packets per tree, shrub or groundcover shall be applied according to the manufacturer's recommended rates and instructions. For all plants the packet mix shall be evenly distributed into the upper approximately 8" of backfill soil next to the rootball. Do not place mix in the bottom of the planting pit.
- Furnishing and application of transplant additive shall be subsidiary to the planting operations.



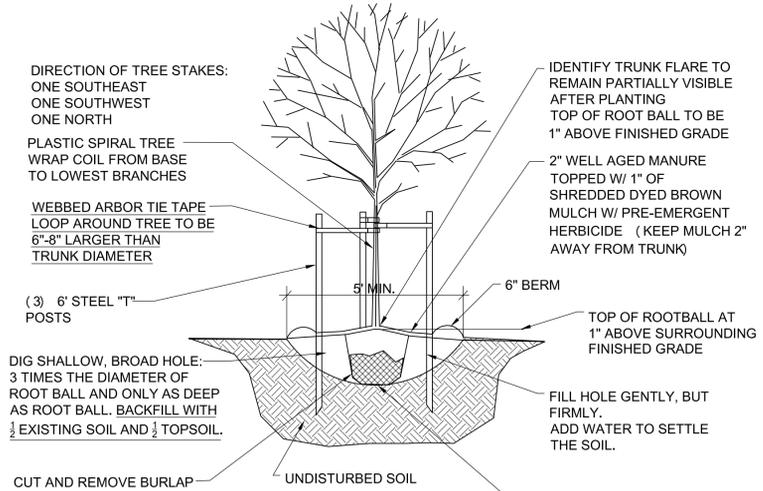
**SHRUB BED & PARKING SETBACK DETAIL**  
NO SCALE



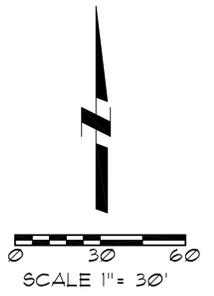
**STAKING PLAN & DISH ON SLOPE**



**BUILDING ROCK EDGE**  
NO SCALE



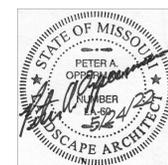
**TREE PLANTING DETAIL**  
NO SCALE



**Utility Note:**  
Utilities shown on plan are diagrammatic and some may be missing. Before starting any construction call appropriate locating service. In Missouri call 1-800-DIG-RITE (344-7483) to have utilities located.

\*PLACE ROCK AROUND ENTIRE BLDG. PERIMETER WHEREVER THERE IS NOT CONCRETE OR ASPHALT

**Landscape Plan  
Crash Champions**  
451 SE Oldham Parkway  
Lee's Summit, MO

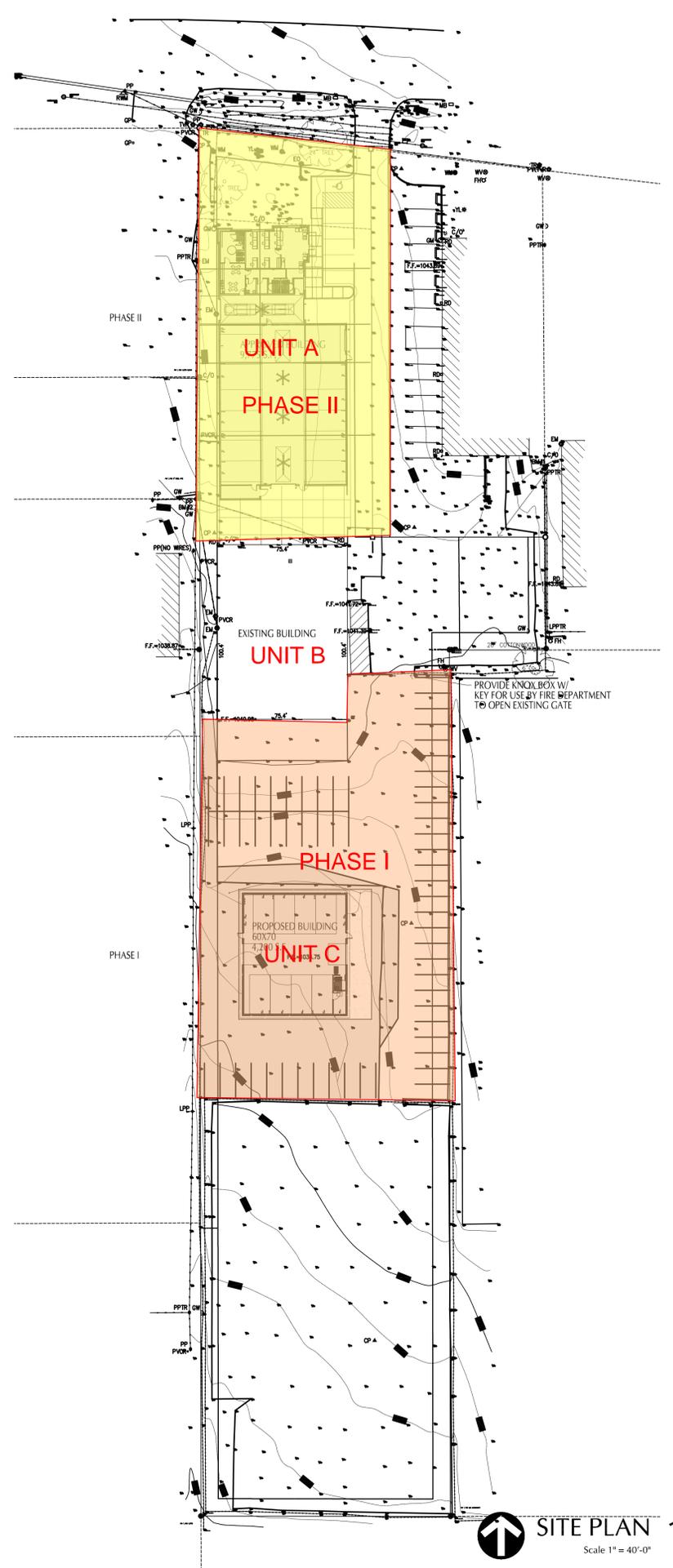


**Oppermann LandDesign, LLC**  
Land Planning & Landscape Architecture  
22 Debra Lane  
New Windsor, New York 12553  
pete@opperland.com  
913.592.5598

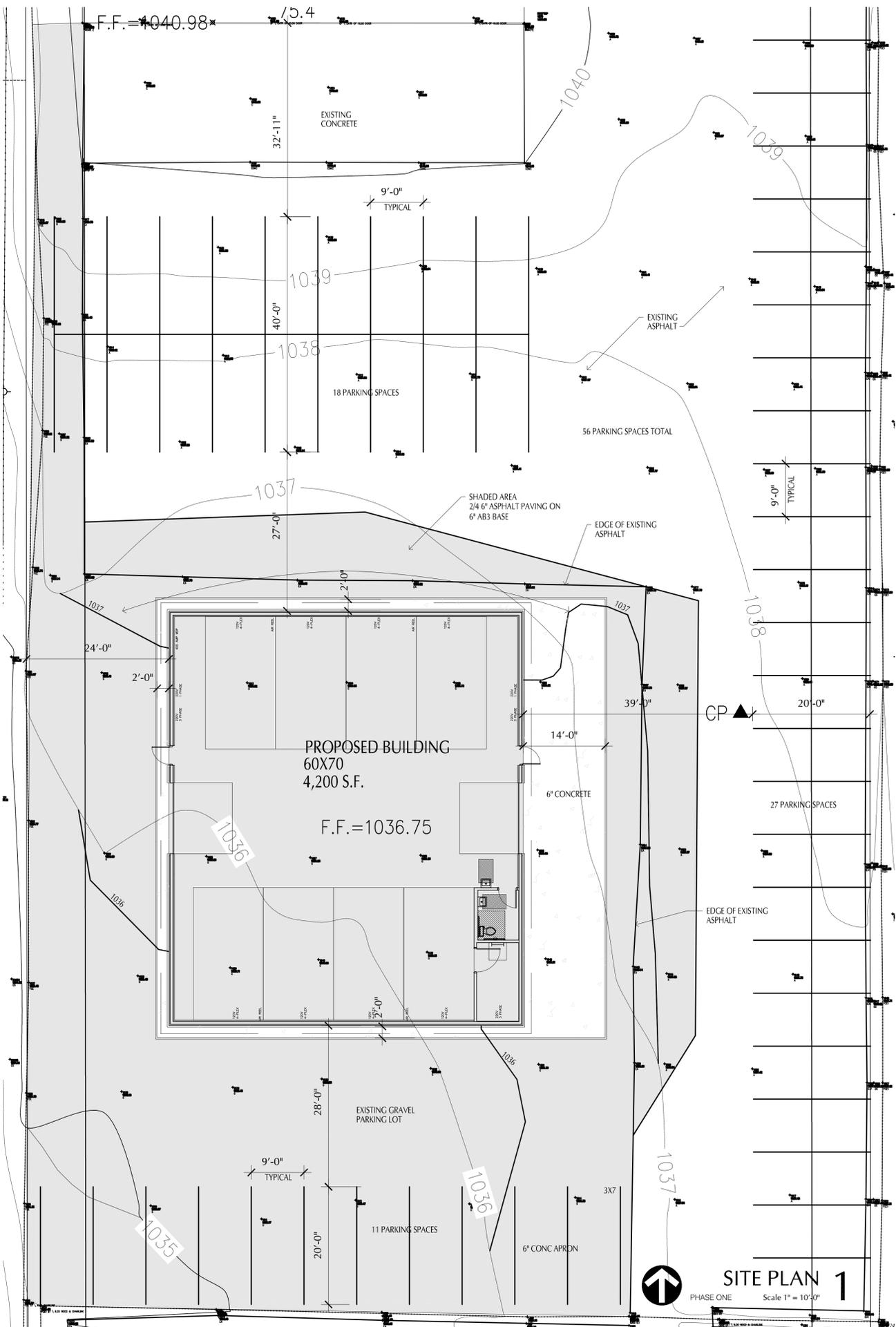
05/24/2022

LS-1

Jun 13, 2022 - 9:12am - USER ChrisB  
 T:\Rose\Drawings-Current\22009 Crash Champions Lees Summit\Production\Planning & Zoning\Architectural\A1.0 SITE PLAN.dwg  
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**SITE PLAN 1**  
 Scale 1" = 40'-0"



**SITE PLAN 1**  
 Scale 1" = 10'-0"

**PLAN NOTES**

DISCLAIMER  
 CHRISTOPHER R. BELL, ARCHITECT  
 STATE OF MISSOURI  
 REGISTERED ARCHITECT  
 NUMBER A-6275  
 06-14-22  
 CHRISTOPHER R. BELL - ARCHITECT  
 MO# A-6275

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 ARCHITECTS ■ PLANNERS  
 A Division of Rose Design Build  
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 P.O. BOX 100 OLATHE, KS 66051  
 KANSAS STATE CERTIFICATE OF AUTHORITY # A-53 www.BuiltWithRose.com

**CRASH CHAMPIONS**  
 COLLISION REPAIR TEAM

**PROPOSED BODY SHOP BUILDING FOR:  
 CRASH CHAMPIONS  
 451 SE OLDHAM PARKWAY  
 LEE'S SUMMIT, MISSOURI**

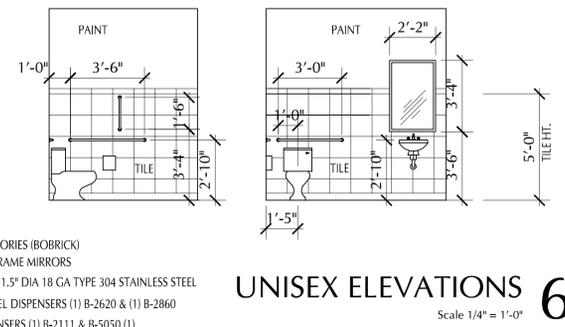
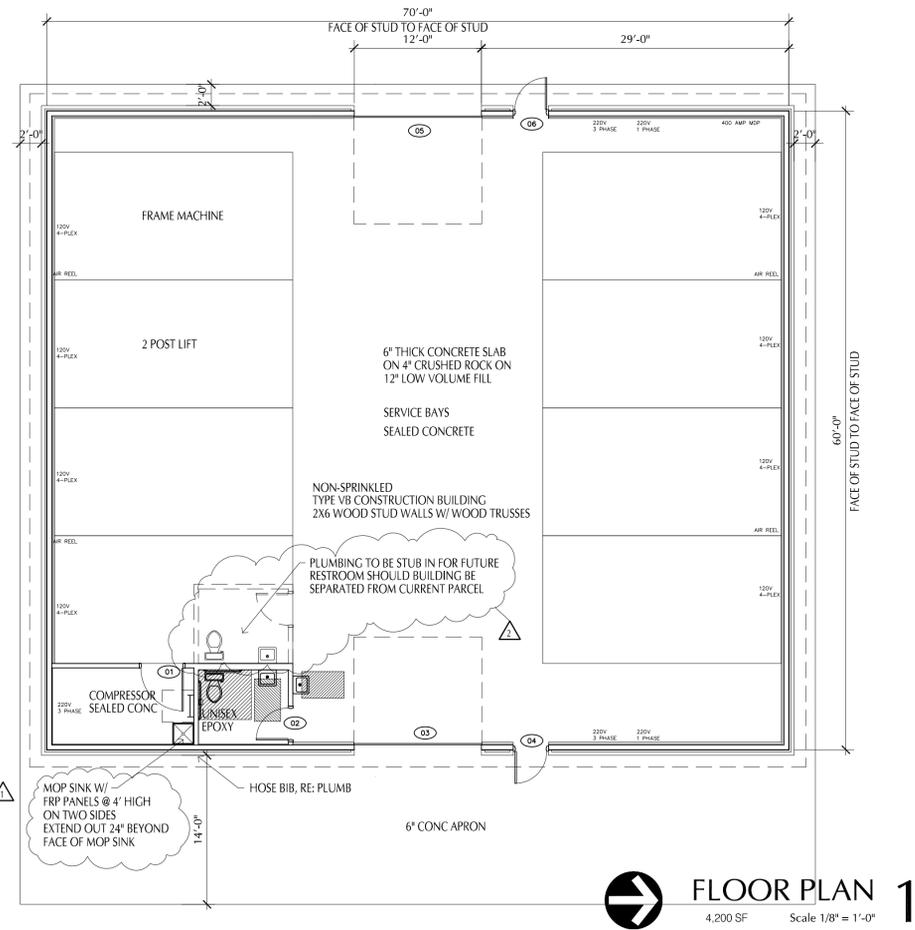
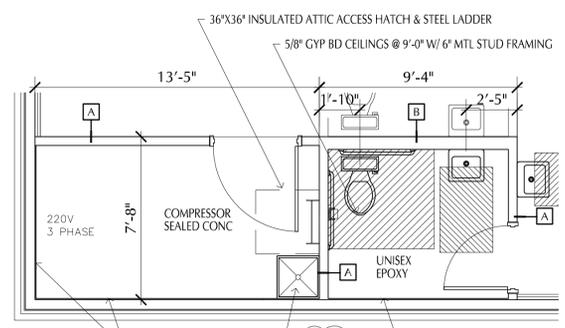
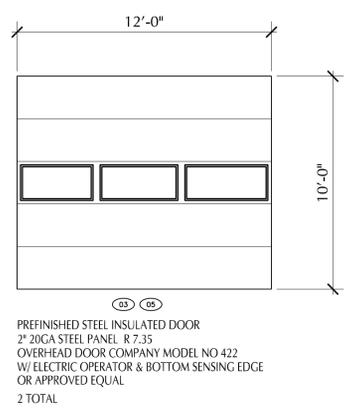
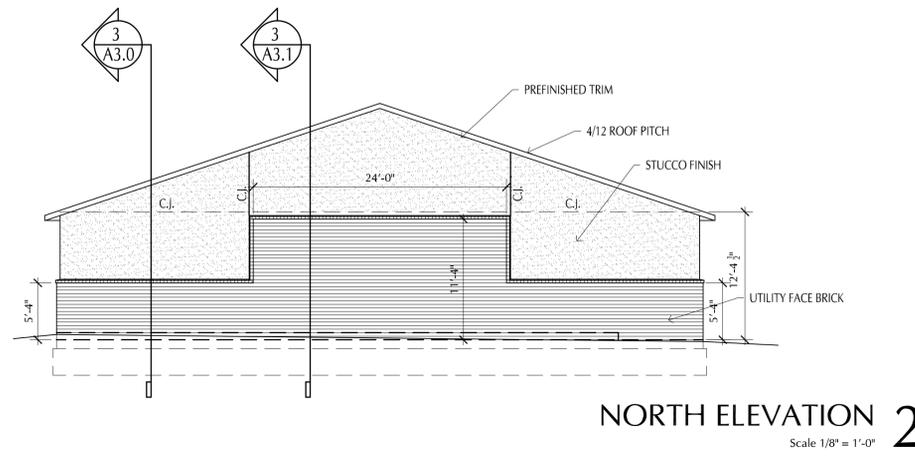
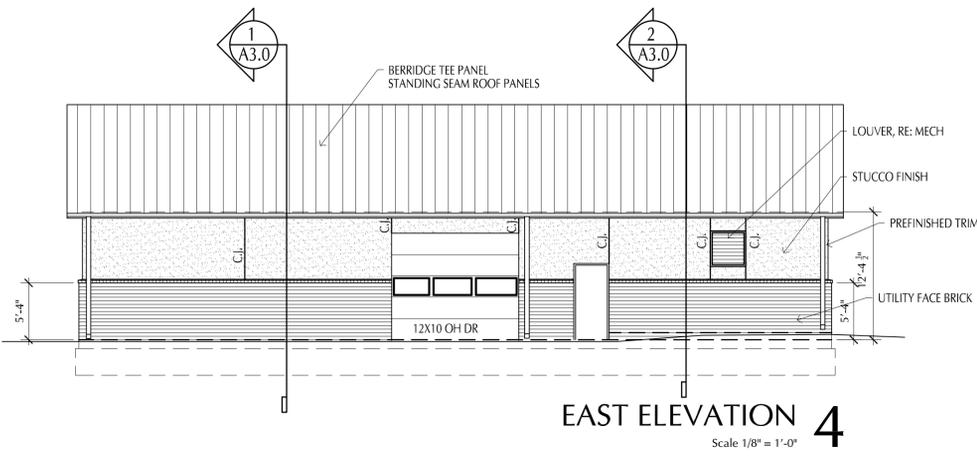
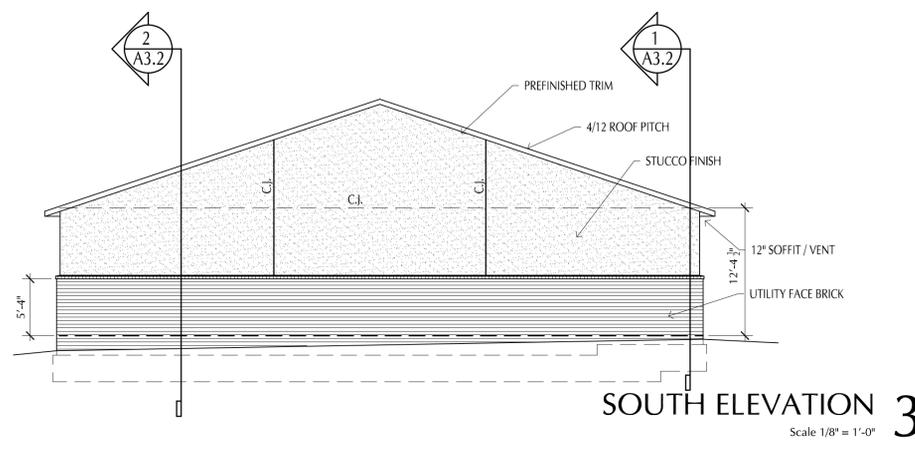
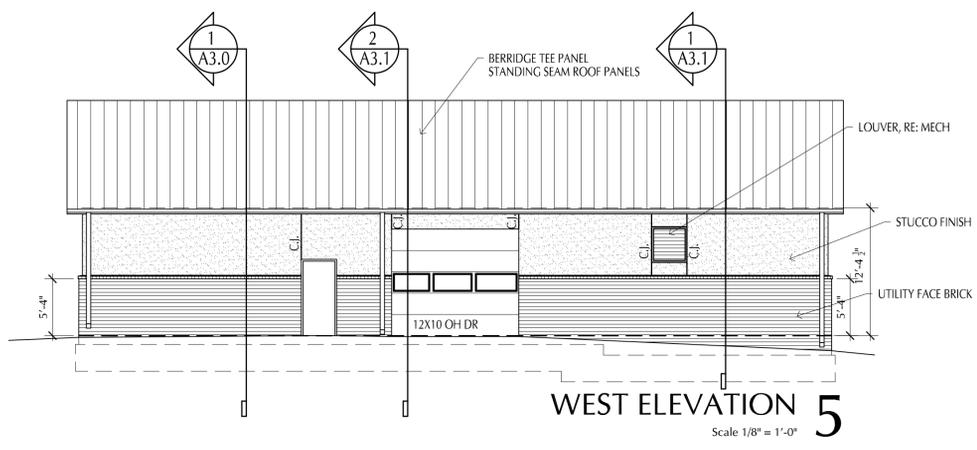
NO.	DESCRIPTION	DATE

PROJECT NUMBER 22009  
 DATE ISSUED: 06 / 14 / 22  
 SHEET NUMBER

**A1.0**

SITE PLAN

Jul 13, 2022 - 12:03pm - USER ChrisB  
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- NOTES:**
- PROVIDE WOOD BLOCKING IN WALLS FOR ALL RESTROOM GRAB BARS & ACCESSORIES
  - PROVIDE INSULATION WRAPS / COVERS FOR ALL EXPOSED LAVATORY WATER & DRAIN LINES

- TOILET ACCESSORIES (BOBRICK)**
- CHANNEL-FRAME MIRRORS
  - GRAB BARS: 1.5" DIA 18 GA TYPE 304 STAINLESS STEEL
  - PAPER TOWEL DISPENSERS (1) B-2620 & (1) B-2860
  - SOAP DISPENSERS (1) B-2111 & B-5050 (1)

**PLAN NOTES**

Gray Screen SW 7071

COLOR: SW 7071 GRAY SCREEN

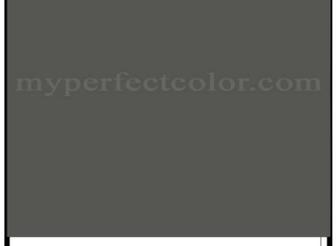


KNOCK DOWN TROWEL FINISH

STUCCO WALL ONE COAT SYSTEM



UTILITY FACE BRICK  
 GLEN GERRY BRICK COMPANY  
 EBONITE SMOOTH  
 UTILITY SIZE



BERRIDGE TEE PANEL  
 STANDING SEAM ROOF PANELS  
 COLOR CHARCOAL GREY

**WALL TYPES**

- 5/8" GYP BD ON 3 5/8" 20 GA. METAL STUDS @ 16" O.C. TO STRUCTURE ABOVE W/SOUND BATT INSULATION
- 5/8" GYP BD ON 6" 20 GA. METAL STUDS @ 16" O.C. TO STRUCTURE ABOVE W/SOUND BATT INSULATION

DISCLAIMER  
 CHRISTOPHER R. BELL, ARCHITECT  
 STATE OF MISSOURI  
 REGISTERED ARCHITECT  
 NUMBER A-6275  
 06-14-22  
 CHRISTOPHER R. BELL - ARCHITECT  
 MO# A-6275

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 KANSAS STATE CERTIFICATE OF AUTHORITY # A-63  
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**CRASH CHAMPIONS**  
 COLLISION REPAIR TEAM

**PROPOSED BODY SHOP BUILDING FOR:**  
**CRASH CHAMPIONS**  
 451 SE OLDHAM PARKWAY UNIT C  
 LEE'S SUMMIT, MISSOURI

NO.	DESCRIPTION	DATE
1	CITY REVIEW COMMENTS	07-07-22
2	CITY REVIEW COMMENTS	07-13-22

PROJECT NUMBER 22009  
 DATE ISSUED: 06 / 14 / 22

SHEET NUMBER  
**A2.0**

PHASE I  
 FLOOR PLAN

Jun 13, 2022 - 11:36am - USER ChrisB  
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FINISH SCHEDULE										NOTES	
ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CLG	CEILING HEIGHT		
01	COMPRESSOR	F2	B1	W4	W4	W4	W4				
02	SHOP	F2	B1	W1	W1	W1	W1				B1 GYP BD WALLS ONLY
03	UNISEX	F1	B2	W3	W3	W3	W3	C1	9'-0"		

FINISH LEGEND				
SYMBOL	PRODUCT	MANUFACTURER	PRODUCT / COLOR	NOTES
<b>FLOORING</b>				
F1	EPOXY FLOORING	DUR-A-FLEX SHOP FLOOR	DOUBLE BROADCAST - GRAY SPECKLED	3
F2	SEALED CONCRETE	PROSOCO	CONSOLDECK-SB & LS SYSTEMS W/ JOINT FILLER	
<b>WALLS</b>				
W1	PAINT	S.W. PROMAR 400 EGGSHELL	SW CUSTOM SHOP COLOR	2
W2	PAINT	S.W. PROMAR 400 EGGSHELL	SW CUSTOM SHOP COLOR & SW 7005 PURE WHITE	5
W3	CERAMIC TILE & PAINT	S.W. PROMAR 400 EGGSHELL	SW 7653-SILVERPOINTE	1
W4	PAINT	S.W. PROMAR 400 EGGSHELL	SW 7653-SILVERPOINTE	
<b>BASE</b>				
B1	4" RUBBER BASE	ROPPE	700 SERIES, 129 DOLPHIN	
B2	6" EPOXY BASE			
<b>CEILING</b>				
C1	2X2 ACOUSTICAL TILE	ARMSTRONG	ULTIMA BEVELED TEGULAR 1911A	

- NOTES:  
 1. CERAMIC WALL TILE SIZE: 12" X 24" X 1/4" TROVATA - DIARY, MANUF: EMSER, PAINT ABOVE, GROUT: MAPEI, COLOR: T.B.D.  
 2. 60" TALL WAINSCOT FOR CUSTOM COLOR  
 3. PROVIDE TRANSITION STRIPS WHERE REQUIRED  
 4. DOOR FRAME COLOR: SW MATCH RUBBER BASE - DOLPHIN - EGGSHELL  
 5. PAINT COMBO COLOR ON SHOP SIDE OF GYP BD WALLS

SHERWIN-WILLIAMS 703265 815-469-7557	08/29/21 Order# 0321217
INTERIOR PROMAR 200 ZERO VOC SEMI-GLOSS	ARCHITECTURAL LATEX IFC 6012NP
INTERIOR SHOP GRAY CUSTOM MANUAL MATCH	
CCE*COLORANT	02 32 64 128
W1-White	4 48 - 1
B1-Black	30 13 1 1
R2-Maroon	- 38 1 1
R3-Magenta	10 - - -
Y1-Yellow	12 27 - 1
FIVE GALLON B31402653	DEEP 650187230



DOOR SCHEDULE								
DOOR NO.	DOOR SIZE	DETAILS			DOOR TYPE	FRAME TYPE	HINGE TYPE	HARDWARE
		HEAD	JAMB	SWEEP				
01	4' X 7' X 1 3/4"				1	A	2	
02	3' X 7' X 1 3/4"				1	A	3	
04	3' X 7' X 1 3/4"				1	A	1	
06	3' X 7' X 1 3/4"				1	A	1	

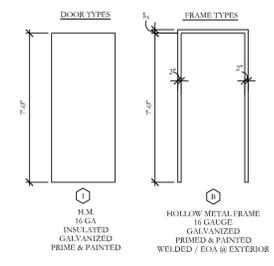
- HARDWARE SCHEDULE**
- HARDWARE SET 1 US32D  
 3 EA BB NRP HINGES (4.5X4.5)  
 1 EA PANIC HARDWARE  
 1 EA THRESHOLD 3/0  
 1 EA SWEEP  
 1 EA WEATHERSTRIP 3/0 X 7/0  
 1 EA ALUM CLOSER
- HARDWARE SET 2 US32D  
 3 EA HINGES (4.5X4.5) US32D  
 1 EA PASSAGE SET  
 1 WALL STOP
- HARDWARE SET 3 US32D  
 3 EA HINGES (4.5X4.5)  
 1 EA LEVER PRIVACY  
 1 WALL STOP

HARDWARE SPECS:  
 DOOR LEVER: CAL ROYAL PIONEER SL SERIES (SL)  
 OR APPROVED EQUAL  
 CLOSURES: LCN 4040 SERIES  
 APPROVED EQUAL: CAL ROYAL 900 SERIES  
 PANIC HARDWARE: VON DUPRIN #9848  
 APPROVED EQUAL: CAL ROYAL 9800 RIM TYPE  
 SHALL MEET REQUIREMENTS PER IBC SECTION 1008.1.10

INTERIOR HINGES:  
 STANDARD WEIGHT BALL BEARING CONCEALED

EXTERIOR HINGES:  
 HEAVY WEIGHT BALL BEARING CONCEALED

ALL COMMERCIAL HARDWARE GRADE LEVEL 1



PLAN NOTES

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 STATE OF MISSOURI  
 REGISTERED ARCHITECT  
 NUMBER  
 A-6275  
 06-14-22  
 CHRISTOPHER R. BELL - ARCHITECT  
 MO# A-6275

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 DESIGN GROUP INC.

ARCHITECTS ■ PLANNERS

A Division of Rose Design Build

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KANSAS STATE CERTIFICATE OF AUTHORITY # A-53 www.BuiltWithRose.com

**CRASH CHAMPIONS**  
 COLLISION REPAIR TEAM

PROPOSED BODY SHOP BUILDING FOR:  
**CRASH CHAMPIONS**  
 451 SE OLDHAM PARKWAY  
 LEE'S SUMMIT, MISSOURI

NO.	DESCRIPTION	DATE

PROJECT NUMBER 22009  
 DATE ISSUED: 06 / 14 / 22  
 SHEET NUMBER

**A2.1**

FINISH SCHEDULES

Jun 13, 2022 - 9:38am - USER ChrisB  
 T:\Rose\Drawings-Current\22009 Crash Champions Lee's Summit\Architectural\A3.0 WALL SECTIONS.dwg  
 COMPANIES - PROPERTY: THE DOCUMENT IS THE PROPERTY OF ROSE DESIGN BUILD, INC. AND IS SUBJECT TO RETURN UPON REQUEST. THE DOCUMENT INCLUDES CONFIDENTIAL AND PROPRIETARY INFORMATION OF ROSE DESIGN BUILD, INC. AND IS NOT TO BE COPIED OR REPRODUCED WITHOUT THE EXPRESS WRITTEN PERMISSION OF ROSE DESIGN BUILD, INC. ALL PATENT RIGHTS ARE RESERVED.

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**CRASH CHAMPIONS**  
 COLLISION REPAIR TEAM

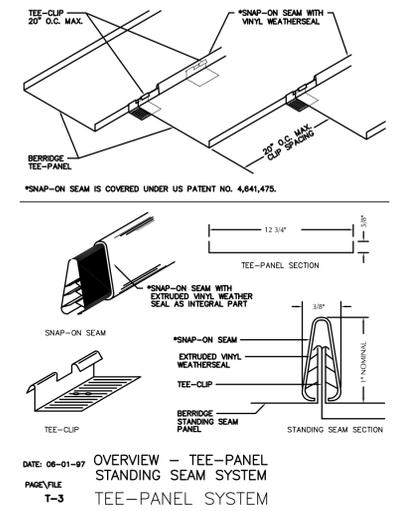
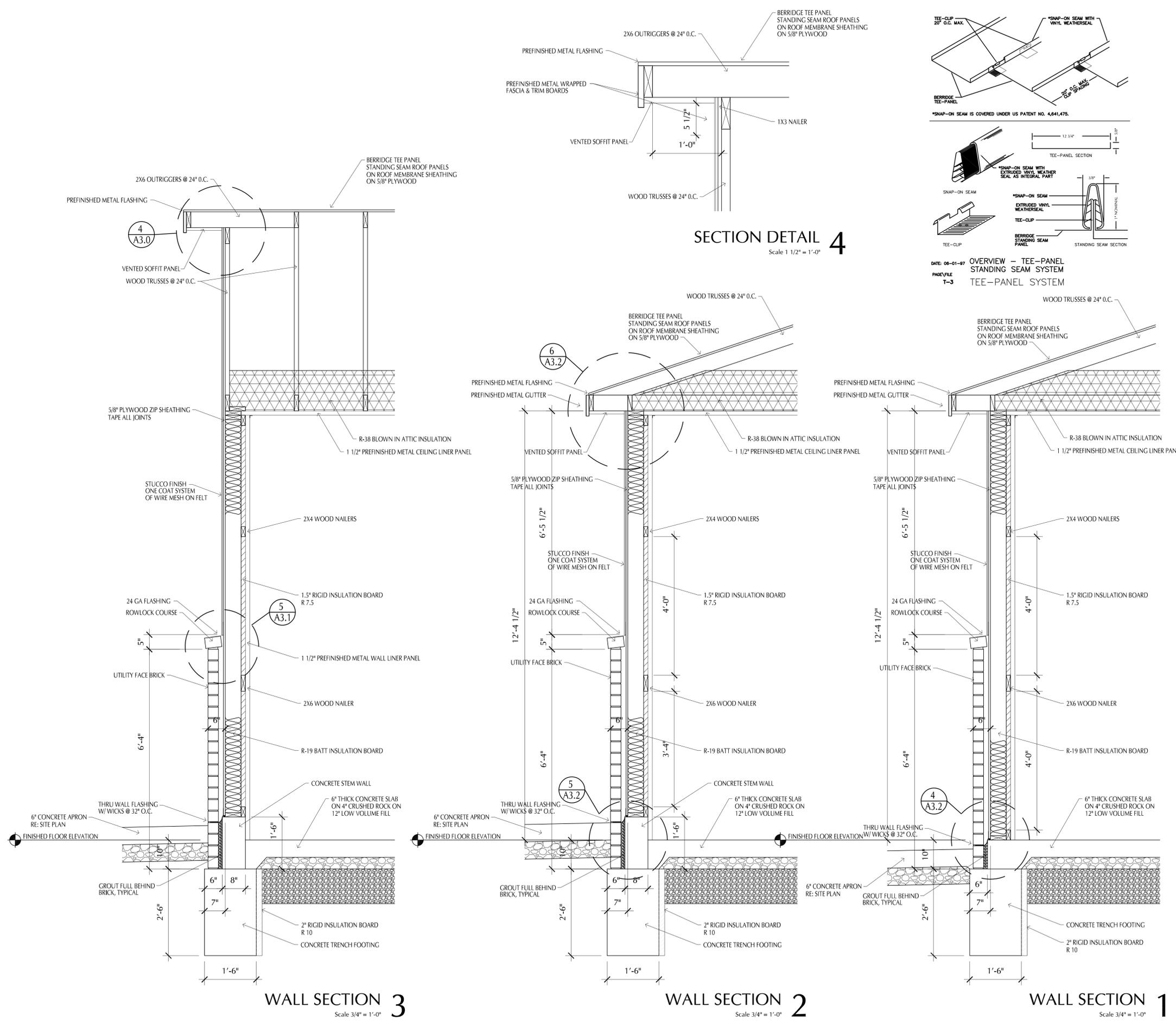
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**CRASH CHAMPIONS**  
 451 SE OLDHAM PARKWAY  
 LEE'S SUMMIT, MISSOURI

NO.	DESCRIPTION	DATE

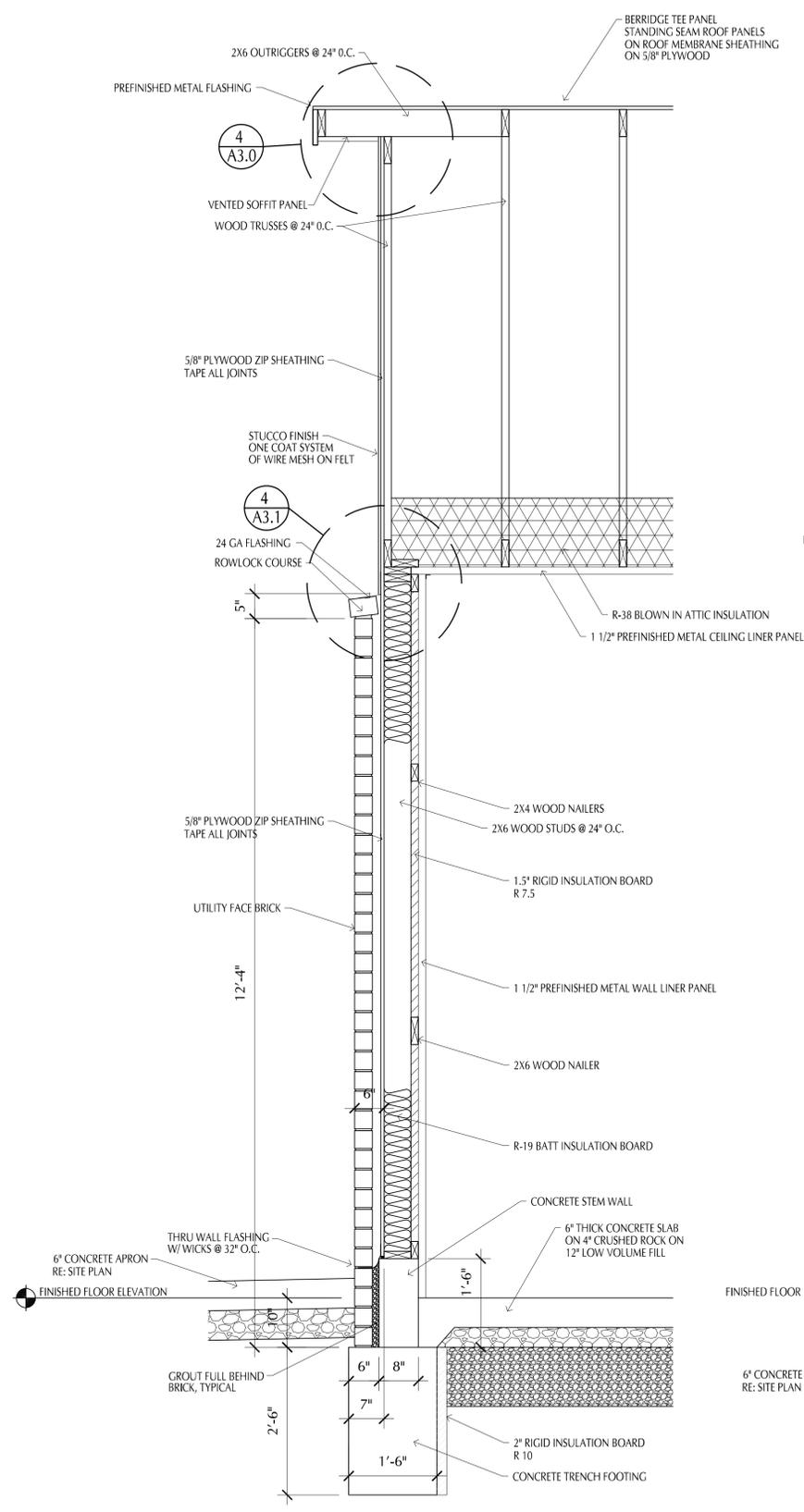
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 SHEET NUMBER

**A3.0**

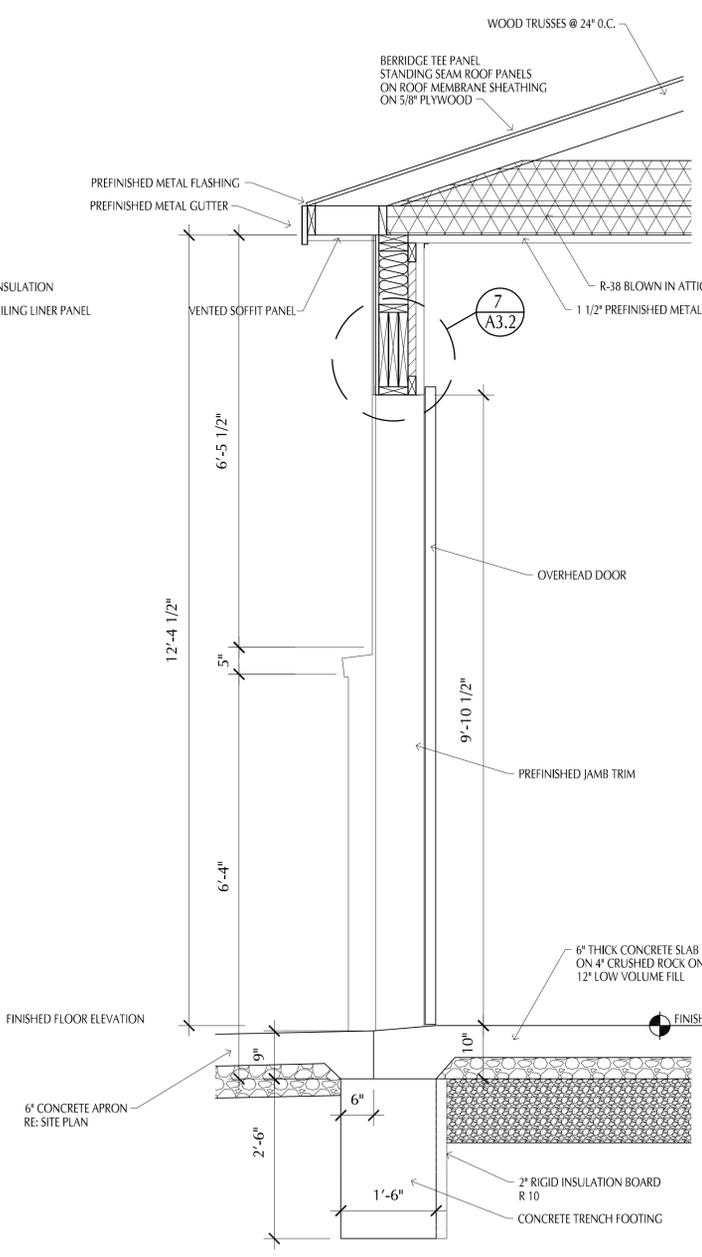
WALL SECTIONS



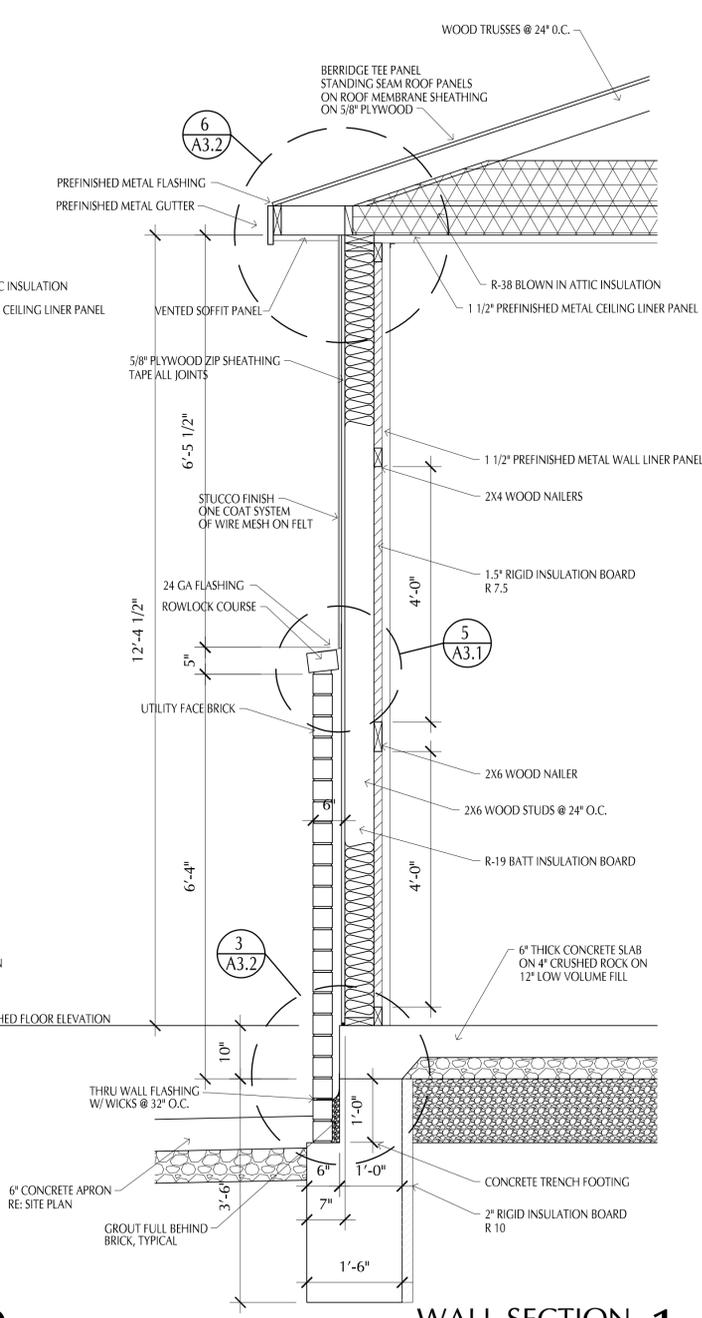
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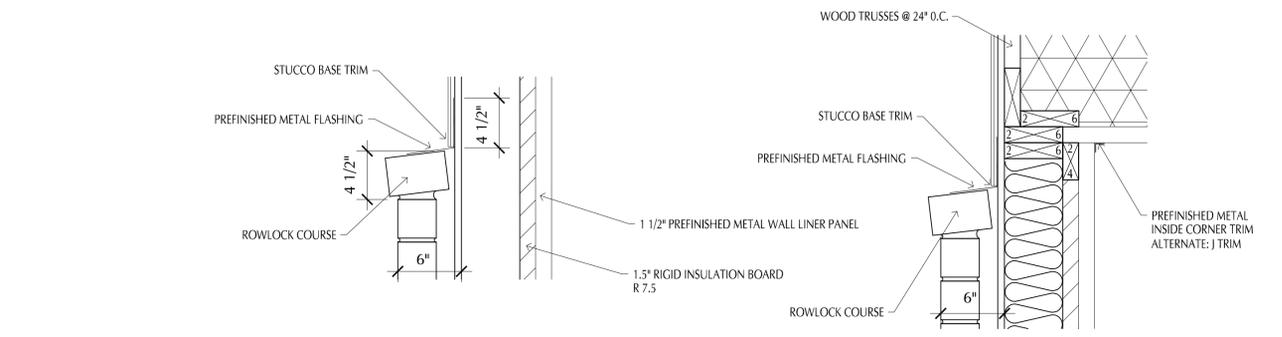
**WALL SECTION 3**  
 Scale 3/4" = 1'-0"



**WALL SECTION 2**  
 Scale 3/4" = 1'-0"



**WALL SECTION 1**  
 Scale 3/4" = 1'-0"



**SECTION DETAIL 5**  
 Scale 1 1/2" = 1'-0"

**SECTION DETAIL 4**  
 Scale 1 1/2" = 1'-0"

**PLAN NOTES**

DISCLAIMER  
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**CRASH CHAMPIONS**  
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**PROPOSED BODY SHOP BUILDING FOR:**  
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 SHEET NUMBER

**A3.1**

WALL SECTIONS



GENERAL NOTES - STRUCTURAL

- The contractor shall verify dimensions and conditions before construction and notify the engineer of any discrepancies, inconsistencies, or difficulties affecting the work before proceeding.
- The contractor shall coordinate all disciplines, verifying size and location of all openings, whether shown on structural drawings or not, as called for on architectural, mechanical, or electrical drawings. Conflicts, inconsistencies, or other difficulties affecting structural work shall be called to the architect or engineer's attention for direction before proceeding.
- All design and construction work for this project shall conform to the requirements of the 2018 International Building Code, as amended by the City of Lees Summit, MO.
- These drawings are for this specific project and no other use is authorized.
- Structural Design Load Criteria:
  - Roof Live = 25 psf
  - Snow:  $P_g = 20\text{psf}$ ,  $P_f = 14\text{psf}$ ,  $I_s = 1.0$   
 $C_e = 1.0$ ,  $C_t = 1.0$ ,  $D_r$  per ASCE/SEI 7-10
  - Lateral Loads:
    - Wind  $V = 115$  mph, exposure 'C'
    - Occupancy [Risk] Category II,  $I_w = 1.0$
    - $C_p = +/- 0.8$
 Design wind pressures to be used for the design of exterior component and cladding materials on the design windward zones of wall and roof surfaces shall be per section 30.7 and Table 30.7-2 of ASCE/SEI 7-10. Tabulated pressures shall be multiplied by effective area reduction factors, exposure adjustment factors, and topographic factors where applicable.
  - This project is designed to resist the most critical effects resulting from the load combinations of section 1603.3 of the 2018 International Building Code.
- Concrete:
  - All concrete for grade beams shall develop minimum ultimate compressive design strength of 3500 psi in 28 days, but not less than 300 pounds of cement shall be used per cubic yard of concrete regardless of strengths obtained, not over 6 gallons of water per 100 pounds of cement and not over 4 inches of slump.
  - All concrete for interior flat work shall develop minimum ultimate compressive design strength of 4000 psi in 28 days, but not less than 360 pounds of cement shall be used per cubic yard of concrete regardless of strengths obtained, not over 5 gallons of water per 100 pounds of cement and not over 4 inches of slump.
  - All concrete for exterior flatwork shall have a minimum design compressive strength of 4500 psi in 28 days, with not less than 360 pounds of cement per cubic yard of concrete, not over 5 gallons of water per 100 pounds of cement, with 6% +/- 1% air entrainment, and a maximum of 4 inches of slump.
  - The preceding minimum mix requirements may have water-reducing admixtures conforming to ASTM C494 added to the mix at manufacturer's dosage rates for improved workability.
  - The preceding minimum mix requirements may have up to 15% maximum of the cement content replaced with an approved ASTM C618 Class C Fly ash, provided the total minimum cementitious content is not reduced.
  - Combined aggregate (coarse plus fine) for all concrete shall be well graded from coarsest to finest with no more than 10 percent and not less than 8 percent retained on an individual sieve, except that less than 8 percent may be retained on coarsest sieve and on No. 50 and finer sieves. Submit this gradation report with the concrete mix design shop drawings.
  - All interior concrete slabs on grade shall be placed over 15 mil, Class A Vapor Barrier per ASTM E1745 with less than 0.01 perms, tested after mandatory conditioning. All joints shall be lapped and sealed per manufacturer's recommendations. All penetrations, as well as damaged vapor barrier material shall also be sealed per manufacturer's recommendation prior to concrete placement. Install barrier per manufacturer recommended details at all discontinuous edges (at interior columns, exterior edge of slab etc.) to ensure terms of warranty are followed. The vapor barrier shall be placed over free-draining granular material as prescribed by the project soils report.
  - All concrete is reinforced concrete unless specifically called out as unreinforced. Reinforce all concrete not otherwise shown with same steel as in similar sections or areas. Any details not shown shall be detailed per ACI 315 and meet requirements of ACI 318, current editions.
  - Contractor shall verify that all concrete inserts, reinforcing and embedded items are correctly located and rigidly secured prior to concrete placement.
  - Construction joints in grade beams shall occur at midspan (middle third) unless noted otherwise. Provide 2 x 4 horizontal keys at construction joints for shear transfer.
  - No aluminum items shall be embedded in any concrete.
- Reinforcing Steel:
  - All reinforcing steel shall conform to the requirements of ASTM A615 or A706 grade 60 steel. Welded plain wire fabric shall be supplied in sheets and conform to the requirements of ASTM A1064.
  - Clear coverage of concrete over reinforcing steel shall be as follows:
 

Concrete placed against earth	3"
Formed concrete against earth	2"
Slabs	1"
Other	2"

 All coverage shall be nominal bar diameter minimum.
  - At corners of all grade beams supply corner bars (minimum 2'-6" in each direction or 4# bar diameters) in outside face of wall, matching size and spacing of horizontal bars.
  - Bars marked continuous shall be lapped 48 bar diameters (2'-6" minimum) at splices.
  - Accessories shall be as specified in latest edition of the ACI Detailing Handbook and the concrete Reinforcing Steel Institute Design Handbook. Maximum accessory spacing shall be 4'-0" on center, and all accessories on exposed surfaces are to have plastic coated feet.
  - All slabs not shown otherwise shall be 6" thick with #4 bars at 12" on center each way. Slope patches 1/8" per foot for drainage unless noted otherwise.
- Foundations:
  - Spread footings, grade beams, and retaining walls are designed to bear on engineered fill or undisturbed soil capable of safely sustaining 2000 psf.
  - Contractor shall provide for denaturing at excavations from either surface water or seepage.
  - All foundation excavations shall be inspected by a qualified soil engineer, approved by the architect and/or structural engineer, prior to placement of steel or concrete. This inspection shall be at the owner's expense.
  - Maintaining content in soils beneath building locations should not be allowed to change after footing excavations and after grading for slabs on grade are completed. If subgrade materials become desiccated or softened by water or other conditions, recompact materials to the density and water content specified for engineered fill. Do not place concrete on frozen ground.
- Timber and Wood Framing:
  - Quality and construction of wood framing members and their fasteners for load supporting purposes not otherwise indicated on the drawings shall be in accordance with the 2018 International Building Code.

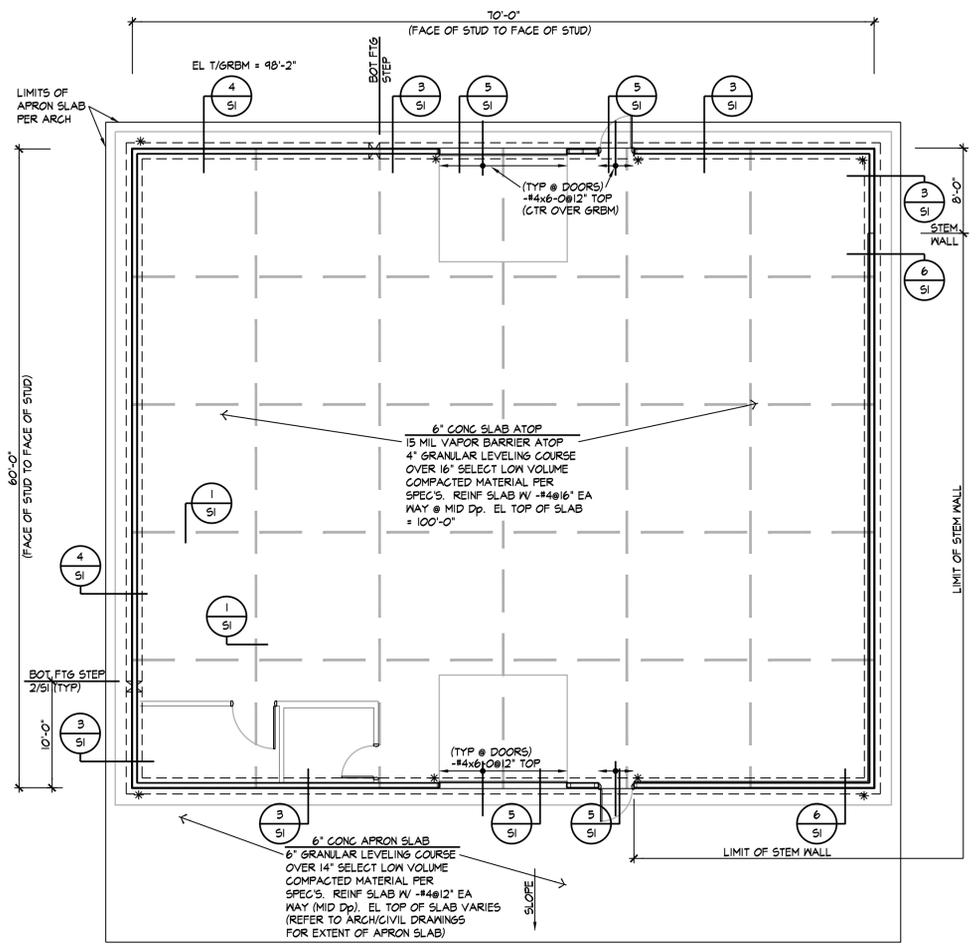
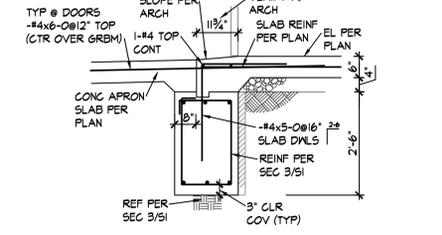
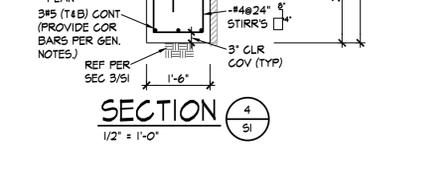
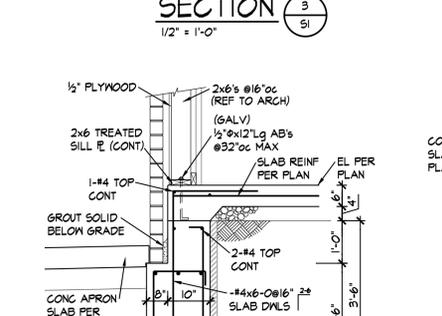
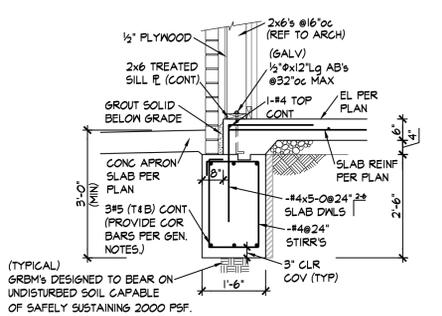
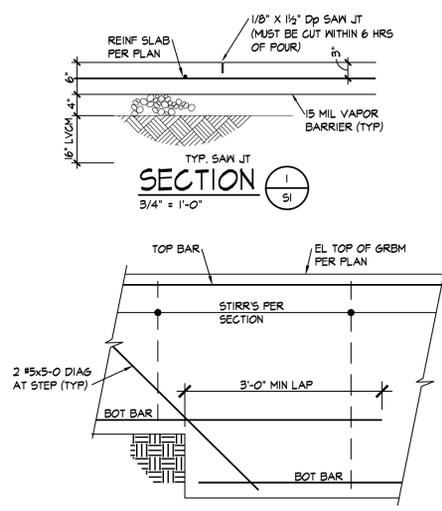
- Blocking of stud bearing walls and shear walls shall be solid, wood sheathing joints.
- Wood members and sheathing shall be fastened with number and size of fasteners not less than that set forth in Table 2304.4.1 of the 2012 International Building Code. Sheathing of shear walls or roof diaphragms shall be edge nailed with 8d common nails at 6" on center and nailed to intermediate framing members with blocking members with 8d common nails at 12" on center unless otherwise noted on the drawings.
- Sill plates shall be bolted to concrete walls or steel beams with 1/2" diameter galvanized bolts at 32" on center. Plates in direct contact with concrete shall be treated lumber.
- Service condition - dry with moisture content at or below 19% in service.
- Laminated veneer lumber (LVL) shall have an allowable flexural stress ( $F_b$ ) of 2600 psi (reduced by size factor) and an elastic modulus ( $E$ ) of 1,900,000 psi.
- Pre-engineered wood trusses shall be designed in accordance with the Truss Plate Institute's national design standard for metal-plate connected wood truss construction (ANSI/TPI-1 latest edition). Trusses shall be designed and manufactured by an authorized member of the Wood Truss Council of America (WTCOA). Truss design shall conform to specified codes, allowable stress increases, deflection limitations and other applicable criteria of the governing code.
- Shop drawings showing complete erection and fabrication details and calculations (including connections) shall be submitted to the project architect / engineer for review prior to fabrication and/or erection. Such drawings shall bear the seal of a professional engineer, registered in the state of the project location. Shop drawings shall also be submitted to the local government controlling agency when requested by that agency.
- All trusses shall be securely braced both during erection and permanently, as indicated on the approved truss design drawings and in accordance with TPI's commentary and recommendations for handling, installing and bracing metal-plate connected wood trusses (H15-11 booklet) and the latest edition of ANSI/TPI-1.
- The truss manufacturer shall supply all hardware and fasteners for joining truss members together and fastening truss members to their supports. Metal connector plates shall be manufactured by a member of the Wood Truss Council of America (WTCOA) and shall be 20 gauge minimum. Connector plates shall meet or exceed ASTM A653, grade 33, with ASTM A924 galvanized coating designation 660.
- Shipment, handling, and erection of trusses shall be by experienced, qualified persons and shall be performed in a manner so as not to endanger life or property. Apparent truss damage shall be reported to the truss manufacturer for evaluation prior to erection. Cutting or alteration of trusses is not permitted.
- Pre-engineered roof truss design load and deflection criteria are as follows:
  - Top Chord Dead Loads: 15psf
  - Top Chord Live Loads: 25psf
  - Bottom Chord Dead Loads: 10psf
  - Add mechanical unit weight to truss loads
  - Add 20 psf Live Load at Flat Roof Area.
  - Uplift due to wind applied to truss top chord shall be calculated per the governing building code listed in General Note 3 and using the design criteria listed in General Note 5. Superimposed Roof Dead Load listed in General Note 5 shall not be included in wind uplift load combinations.
  - Allowable Total Load Deflection: L/300
  - Allowable Live Load Deflection: L/360

10. Shop Drawing Review:

- Bob D. Campbell and Company, Inc. will review the General Contractor's (GC) shop drawings and related submittals (as indicated below) with respect to the ability of the detailed work, when complete, to be a properly functioning integral element of the overall structural system designed by Bob D. Campbell and Company, Inc.
  - Prior to submittal of a shop drawing or any related material to Bob D. Campbell and Company, Inc., the GC shall:
    - Review each submission for conformance with the means, methods, techniques, sequences and operations of construction and safety precautions and programs incidental thereto, all of which are the sole responsibility of the GC.
    - Review and approve each submission.
    - Stamp each submission as approved.
  - Bob D. Campbell and Company, Inc. shall assume that no submission comprises a variation unless the GC advises Bob D. Campbell and Company, Inc. with written documentation.
  - Shop drawings and related material (if any) required are indicated below. Should Bob D. Campbell and Company, Inc. require more than ten (10) working days to perform the review, Bob D. Campbell and Company, Inc. shall so notify the GC.
    - Concrete mix designs and material certificates including admixtures and compounds applied to the concrete after placement.
    - Reinforcing steel shop drawings including erection drawings and bending details. Bar list will not be reviewed for correct quantities.
    - Wood truss design calculations and detailed erection and fabrication drawings. Standard stick framing shop drawings need not be submitted.
  - Bob D. Campbell and Company, Inc. shall review shop drawings and related materials with comments provided that each submission has met the above requirements. Bob D. Campbell and Company, Inc. shall return without comment unrequired material or submissions without GC approval stamp.
11. Structural Special Inspection:
- The structural design for this project is based on completion of special inspections during construction in accordance with section 1704 of the 2018 International Building Code. The owner shall employ one or more qualified special inspectors to provide the required special inspections.
  - Special Inspections shall be required for the items indicated below. The General Contractor shall provide notification to the inspector when items requiring inspection are ready to be inspected and provide access for those inspections.
    - Placement of Concrete
    - Testing of Concrete
    - Boils in Concrete
    - Placement of Reinforcing Steel
    - Verification of Soil Bearing Capacities
  - The special inspector shall furnish inspection reports to the building official, owner, architect and structural engineer, and any other designated person.
  - All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design authority, building official and structural engineer.
  - The special inspector shall submit a final signed report stating that the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable workmanship provisions of the building code.
12. Copyright and Disclaimer:
- All drawings in the structural set (5-series drawings) are the copyrighted work of Bob D. Campbell and company, Inc. These drawings may not be photographed, traced, or copies in any manner without the written permission of Bob D. Campbell and Company, Inc. Exception: Original drawings may be printed for distribution to the owner, architect, and general contractor for coordination, bidding,

and construction. Subcontractors may not reproduce these drawings for any purpose or in any manner.

1. Michael J. Folbe, P.E., registered engineer and a representative of Bob D. Campbell and Company, Inc., do hereby accept professional responsibility as required by the professional registration laws of this state for the structural design drawings consisting of 5-series drawings. I hereby disclaim responsibility for all other drawings in the construction document package, they being the responsibility of other design professionals whose seals and signed statements may appear elsewhere in the construction document package.



FOUNDATION & FLOOR PLAN NORTH

- 1/8" = 1'-0"
- NOTE:
- REFER TO GENERAL NOTES ON SHEET S-1
  - \* - INDICATES SIMPSON HDU5-SD525 HOLLOW W/ DEL 2x6 STUD
  - 1/8" x 24" LG THREADED ROD (A-36) DRILL & EPOXY 8" MIN INTO GRM.
  - REFER TO ARCH DRAWINGS FOR DIMENSIONS.
  - REFER TO 2/51 FOR TYPICAL GRM STEP.

Jun 15, 2022 - 10:52am - USER: ged  
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 U:\0-5\RCI Projects\RCI2210.00 - Crash Champions Expansion\RCI2210.00 Drawings\S1-2.dwg  
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**PROPOSED BODY SHOP BUILDING FOR:**  
**CRASH CHAMPIONS**  
 451 SE OLDHAM PARKWAY  
 LEE'S SUMMIT, MISSOURI

NO.	DESCRIPTION	DATE

PROJECT NUMBER: 22009  
 DATE ISSUED: 06 / 14 / 22  
 SHEET NUMBER

S1

Foundation & Floor Plan,  
 General Notes



Jun 15, 2022 - 7:42am - USER: ScottGroshans  
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**LINETYPES LEGEND:**

- NEW
- - - NEW - ON ROOF
- · - · - EXISTING - ON ROOF
- · - · - DEMOLITION

**DUCTWORK LEGEND:**

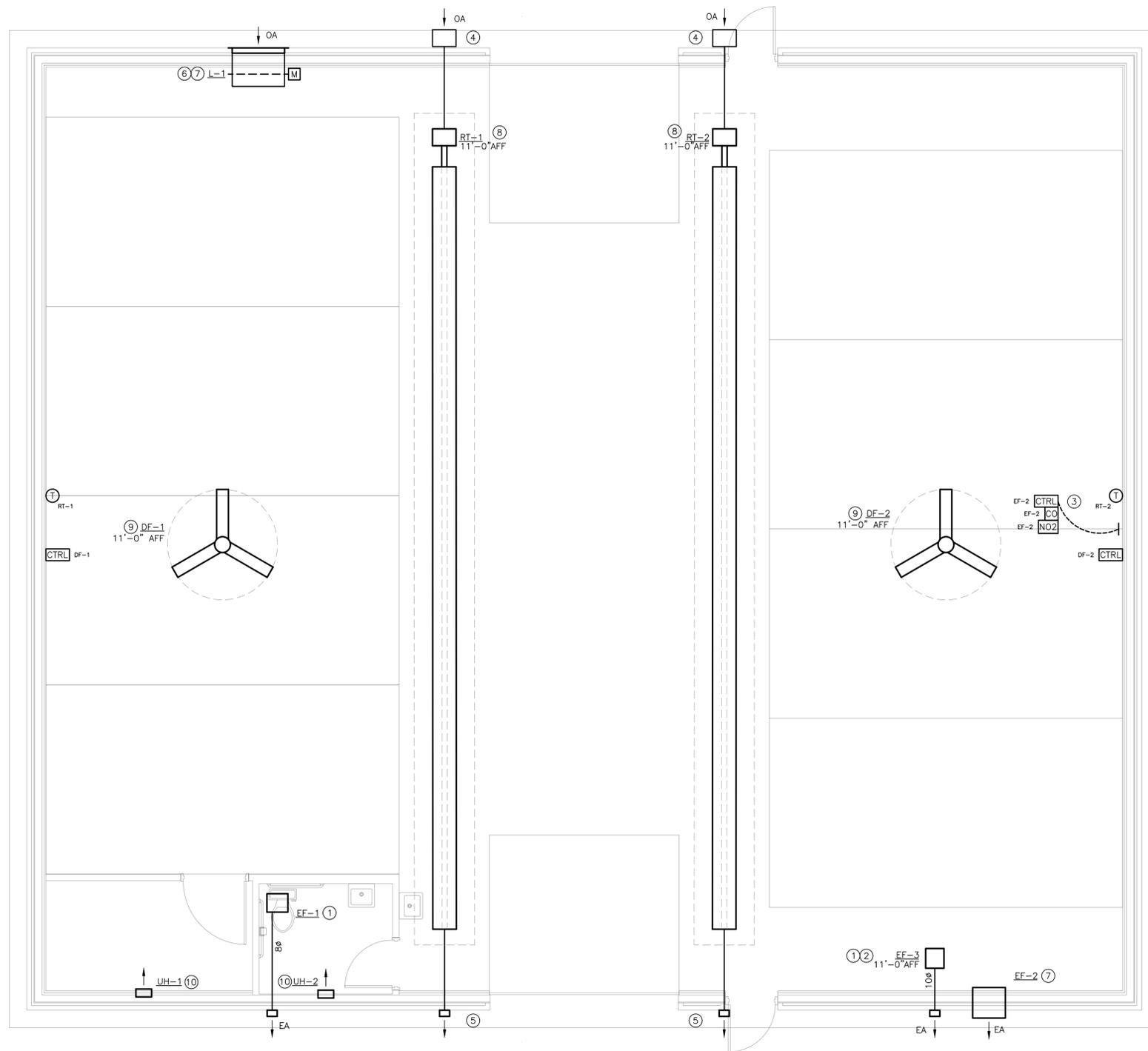
- DUCT (SINGLE LINE)
- DUCT (DOUBLE LINE)
- → ROUND O/A OR S/A DOWN
- ⊗ → ROUND O/A OR S/A UP
- → ROUND E/A OR R/A DOWN
- ⊗ → ROUND E/A OR R/A UP
- ▭ → RECTANGULAR O/A OR S/A DOWN
- ⊗ → RECTANGULAR O/A OR S/A UP
- ▭ → RECTANGULAR E/A OR R/A DOWN
- ⊗ → RECTANGULAR E/A OR R/A UP
- ⊗ O/A OR S/A DIFFUSER
- ▭ E/A OR R/A GRILLE
- ⊗ AIR DEVICE WITH FLEX DUCT CONNECTION
- ⊗ AIR DEVICE WITH HARD DUCT CONNECTION
- ⊗ FLEXIBLE CONNECTION TO EQUIPMENT
- ⊗ DUCT BREAK/CONTINUATION
- ⊗ MANUAL BALANCING DAMPER
- ⊗ MOTOR-OPERATED DAMPER
- ⊗ BACKDRAFT DAMPER
- ⊗ FIRE DAMPER
- ⊗ FIRE/SMOKE DAMPER
- ⊗ SMOKE DAMPER
- ⊗ THERMOSTAT
- ⊗ CARBON MONOXIDE SENSOR
- CTRL CONTROLLER
- NO2 NITROGEN DIOXIDE SENSOR

**ANNOTATION LEGEND:**

- ABC-1 EQUIPMENT / FIXTURE TAG
- PLAN NOTE
- ⊗ CONNECT TO EXISTING
- AIR FLOW DIRECTION
- S-1 G/R/D TAG
- 80 NECK SIZE
- 300 AIR FLOW (CFM)

**ABBREVIATIONS LEGEND:**

- AFF ABOVE FINISHED FLOOR
- APD AIR PRESSURE DROP
- CFM CUBIC FEET PER MINUTE
- EA EXHAUST AIR
- EF EXHAUST FAN
- ESP EXTERNAL STATIC PRESSURE
- FPM FEET PER MINUTE
- HC HEATING CAPACITY
- HP HORSEPOWER
- IN.WG INCHES WATER GAUGE
- MAX MAXIMUM
- MBH 1,000 BTUH
- MIN MINIMUM
- NC NOISE CRITERIA
- OA OUTDOOR AIR
- QTY QUANTITY
- TSP TOTAL STATIC PRESSURE
- VEL VELOCITY



1 MECHANICAL PLAN  
SCALE: 1/4" = 1'-0"

**MECHANICAL PLAN NOTES:**

1. ROUTE EXHAUST DUCT OF SIZE INDICATED ON PLAN FROM EXHAUST FAN THROUGH WALL AS SHOWN. PROVIDE WALL PENETRATION AND VENT CAP PER MANUFACTURER'S RECOMMENDATIONS. LOCATE DISCHARGE AT MINIMUM OF 10'-0" FROM ANY BUILDING OPENINGS OR OUTDOOR AIR INTAKES.
2. SUSPEND INLINE EXHAUST FAN FROM STRUCTURE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. PROVIDE CARBON MONOXIDE / NITROGEN DIOXIDE DETECTION SYSTEM, MONOXIVENT MODEL # FDS-SA-CO-NO OR EQUAL, WITH CONTROLLER AND QUANTITY OR SENSORS AS RECOMMENDED BY THE MANUFACTURER. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
4. PROVIDE 4# COMBUSTION AIR INTAKE THROUGH WALL. TERMINATE WITH KIT FURNISHED WITH TUBE HEATER. REFER TO TUBE HEATER MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR INTAKE MATERIAL REQUIREMENTS.
5. PROVIDE 4# COMBUSTION AIR EXHAUST THROUGH WALL. TERMINATE WITH KIT FURNISHED WITH TUBE HEATER. REFER TO TUBE HEATER MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR COMBUSTION EXHAUST MATERIAL REQUIREMENTS.
6. PROVIDE MOTOR OPERATED DAMPER IN LOUVER AS SHOWN. MATCH DAMPER SIZE TO LOUVER FACE DIMENSIONS. ACTUATOR TO BE 120 VOLT, SPRING CLOSED. INTERLOCK DAMPER WITH GAS DETECTION SYSTEM.
7. INSTALL INDICATED EQUIPMENT AS HIGH AS POSSIBLE ON EXTERIOR WALL.
8. INSTALL RADIANT TUBE HEATER WITH DEFLECTOR SHIELD DIRECTED AT 30° ANGLE TOWARDS EXTERIOR WALL.
9. COORDINATE INSTALLATION OF HVLS FAN WITH OTHER TRADES. MAINTAIN OPERATIONAL AND MAINTENANCE CLEARANCES AS REQUIRED BY MANUFACTURER.
10. LOCATE UNIT HEATER ON WALL WHERE SHOWN, MIN 1'-0" AFF. INSTALL PER MANUFACTURER'S REQUIREMENTS.



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**PROPOSED BODY SHOP BUILDING FOR:**  
**CRASH CHAMPIONS**  
**451 SE OLDHAM PARKWAY**  
**LEE'S SUMMIT, MISSOURI**

NO.	DESCRIPTION	DATE
---	FOR PERMIT	06 / 14 / 2022

PROJECT NUMBER 22009  
DATE ISSUED: 06 / 14 / 2022  
SHEET NUMBER

M1.0

MECHANICAL PLAN

5BY5

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**MECHANICAL GENERAL NOTES:**

- DRAWINGS ARE SCHEMATIC IN NATURE. COORDINATE ALL MECHANICAL WORK WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES PRIOR TO START OF WORK.
- MECHANICAL WORK SHALL CONFORM TO APPLICABLE CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- COORDINATE WITH ELECTRICAL CONTRACTOR FOR REQUIRED ELECTRICAL POWER WIRING AND ROUGH-IN FOR LOW-VOLTAGE CONTROL WIRING. PROVIDE ALL CONTROL WIRING AND FINAL CONTROL DEVICE (E.G. THERMOSTATS).
- FABRICATE AND INSTALL DUCTWORK PER SMACNA RECOMMENDATIONS FOR THE PRESSURE CLASSIFICATIONS ENCOUNTERED.
  - EXHAUST AIR (UPSTREAM OF FAN): -2.0 IN.WG
  - EXHAUST AIR (DOWNSTREAM OF FAN): +1.0 IN.WG
- PROVIDE MITERED ELBOWS AT CHANGES IN DIRECTION IN RECTANGULAR DUCTWORK. PROVIDE TURNING VANES IN ALL ELBOWS WHERE AIRFLOW CHANGES DIRECTION AT ANGLES 45° AND GREATER, EXCEPT FOR RETURN AIR TRANSFER DUCTS.
- FLEXIBLE DUCTWORK SHALL HAVE 2" THICK, MINIMUM R-6.0 INSULATION. FLEXIBLE DUCTWORK SHALL NOT EXCEED 3'-0" IN LENGTH FOR EXHAUST AIR APPLICATIONS.
- TOILET ROOM EXHAUST FANS SHALL BE AS SCHEDULED. PROVIDE A MINIMUM OF 75 CFM EXHAUST PER FLUSH FIXTURE.
- ALL DIMENSIONS SHOWN ON PLAN ARE IN INCHES, UNLESS EXPLICITLY LABELED OTHERWISE.
- PROVIDE ACCESS PANELS AND ADEQUATE CLEARANCE FOR ACCESS TO ALL EQUIPMENT, VALVES, DAMPERS AND DEVICES.

DESTRATIFICATION FAN SCHEDULE									
TAG	AREA SERVED	MANUFACTURER	MODEL	FAN DIAMETER	MOTOR POWER	DRIVE TYPE	V/PH	WEIGHT (LBS)	NOTES
DF-1	SHOP	HUNTER	XP	7'-0"	5/8 HP	DIRECT EC	120/1	100	ALL
DF-2	SHOP	HUNTER	XP	7'-0"	5/8 HP	DIRECT EC	120/1	100	ALL

NOTES:  
 A. COORDINATE FINISH COLOR WITH ARCHITECT, PRIOR TO ORDER.  
 B. FURNISH WITH WALL CONTROLLER. REFER TO PLAN FOR MULTIPLE FANS TO BE CONTROLLED BY ONE CONTROLLER.

UNIT HEATER SCHEDULE									
TAG	LOCATION	MANUFACTURER	MODEL	MOUNTING	OUTPUT	INPUT	VOLT/PHASE	AMP	NOTES
UH-1	COMPRESSOR RM	QMARK	CWH1201	WALL	6.1 MBH	1,800 WATTS	120/1/60	15	A,B
UH-2	RESTROOM	QMARK	CWH1201	WALL	6.1 MBH	1,800 WATTS	120/1/60	15	A,B

NOTES:  
 A. PROVIDE WITH UNIT MOUNTED THERMOSTAT AND DISCONNECT SWITCH.  
 B. PROVIDE WITH MANUFACTURER'S STANDARD TRIM FOR WALL MOUNTING.

LOUVER SCHEDULE							
TAG	MANUFACTURER	MODEL	SIZE (W"xH")	FREE AREA	MAX VELOCITY (FPM)	MAX DP	NOTES
L-1	RUSKIN	ELF375DX	40x40	5.97 SQ/FT	502	0.05	A-D

NOTES:  
 A. PROVIDE WITH MANUFACTURER'S STANDARD ALUMINUM BIRDSCREEN.  
 B. PROVIDE WITH STANDARD MILL FINISH. COLOR TO BE SELECTED BY THE ARCHITECT.  
 C. FRAME TYPE SHALL MATCH WALL CONSTRUCTION. COORDINATE WITH ARCHITECT FOR EXACT FRAME TYPE.  
 D. PROVIDE WITH INTEGRAL MOTORIZED DAMPER, RUSKIN MODEL CD356 OR EQUAL. INTERLOCK MOTORIZED DAMPER WITH GAS DETECTION SYSTEM. COORDINATE WITH ELECTRICAL CONTRACTOR.

RADIANT TUBE HEATER SCHEDULE														
TAG	AREA SERVED	MANUFACTURER	MODEL	HEATER LENGTH (MIN)	NOM INPUT (MBH) (MIN)	(MAX)	MIN EFF (%)	NG PRESS (IN.WG) (MIN)	(MAX)	STAGES	V/PH	FLA	WEIGHT (LBS)	NOTES
RT-1	SHOP	DETROIT RADIANT	HL3-50-150	50'-9"	100	150	80	5.0	14.0	2	120/1	4.8	235	ALL
RT-2	SHOP	DETROIT RADIANT	HL3-50-150	50'-9"	100	150	80	5.0	14.0	2	120/1	4.8	235	ALL

NOTES:  
 A. PROVIDE WITH MANUFACTURER'S STANDARD WALL-MOUNTED THERMOSTAT  
 B. COORDINATE WITH ELECTRICAL CONTRACTOR FOR PROVIDE DISCONNECT SWITCH.  
 C. FURNISH INFRARED HEATER WITH COMBUSTION AIR INTAKE KIT AND WALL VENT KIT.  
 D. FURNISH WITH SINGLE MOUNT BRACKETS AND CHAIN HANGING SETS.

FAN SCHEDULE										
TAG	AREA SERVED	MANUFACTURER	MODEL	MOUNTING	AIR FLOW (CFM)	ESP (IN.WG)	MOTOR POWER	DRIVE TYPE	V/PH	NOTES
EF-1	RESTROOM	COOK	GC-146	CEILING	75	0.25	0.04 HP	DIRECT	120/1	A-D,H
EF-2	SHOP	COOK	18XP29D132	WALL	3000	0.2	0.75 HP	DIRECT	120/1	C,E,G
EF-3	SHOP	COOK	GC-342	INLINE	200	0.2	0.063 HP	DIRECT	120/1	C,D,F,H

NOTES:  
 A. PROVIDE WITH MANUFACTURER'S STANDARD HANGING KIT AND CEILING MOUNT TRIM.  
 B. INTERLOCK FAN WITH ASSOCIATED RESTROOM LIGHT SWITCH.  
 C. PROVIDE WITH DISCONNECT SWITCH.  
 D. PROVIDE WITH BACKDRAFT DAMPER.  
 E. PROVIDE WITH MANUFACTURER'S STANDARD WALL MOUNT TRIM KIT AND DISCHARGE SHUTTERS.  
 F. FAN TO OPERATE AT ALL TIMES. COORDINATE WITH ELECTRICAL CONTRACTOR.  
 G. FAN TO OPERATE SUBJECT TO GAS DETECTION SYSTEM STATE. COORDINATE WITH ELECTRICAL CONTRACTOR.  
 H. FURNISH WITH MANUFACTURER'S STANDARD WALL DISCHARGE CAP.

OUTDOOR AIR CALCULATIONS (MECHANICAL VENTILATION)							
TAG	LOCATION	OCCUPANCY CLASSIFICATION	AREA (FT²)	R <sub>a</sub> (CFM/FT²)	MIN REQ'D O/A FLOW (CFM)	PROVIDED MIN O/A FLOW (CFM)	NOTES
EF-2	SHOP 03 RM	REPAIR GARAGE	3,851	0.75	2,889	3,000	A
EF-3		PARKING GARAGE		0.05	193	200	

NOTES:  
 A. R<sub>a</sub> REPRESENTS AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE PER TABLE 403.3.

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PROPOSED BODY SHOP BUILDING FOR:

**CRASH CHAMPIONS**

451 SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

NO.	DESCRIPTION	DATE
---	FOR PERMIT	06 / 14 / 2022

PROJECT NUMBER 22009  
 DATE ISSUED: 06 / 14 / 2022  
 SHEET NUMBER

**M2.0**

MECHANICAL SCHEDULES AND DETAILS

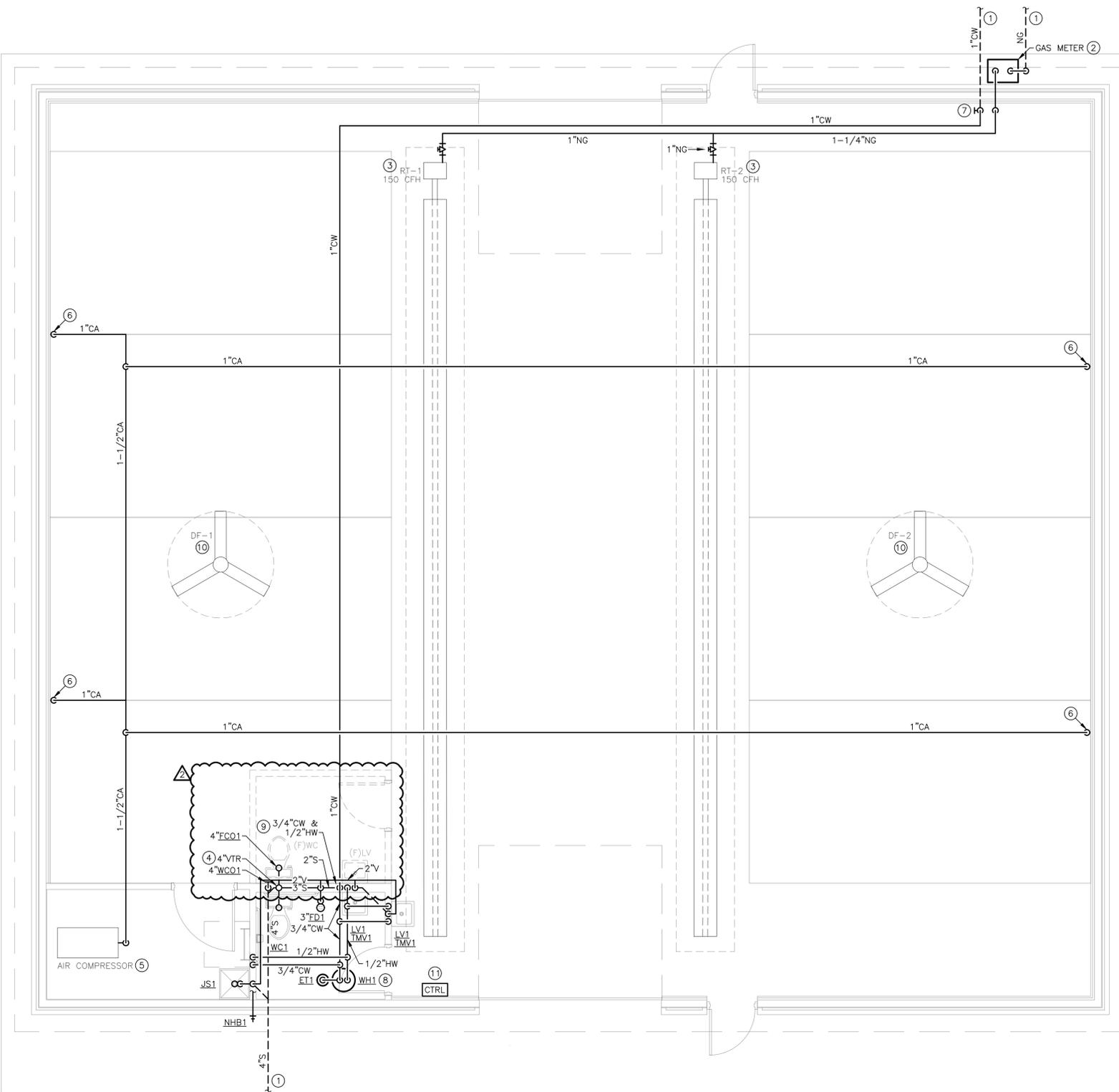
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- LINETYPES LEGEND:**
- NEW — ABOVE SLAB
  - - - NEW — BELOW SLAB
  - EXISTING — ABOVE SLAB
  - - - EXISTING — BELOW SLAB
  - DEMOLITION

- PIPING LEGEND:**
- ⊘ ELBOW DOWN
  - ⊙ ELBOW UP
  - ⊘ P-TRAP
  - ⊕ TEE DOWN
  - ⊙ ELBOW UP
  - ⊘ SHUT-OFF VALVE (GENERIC)
  - ⊘ BALL VALVE
  - ⊘ GLOBE VALVE
  - ⊘ BUTTERFLY VALVE
  - ⊘ GATE VALVE
  - ⊘ CHECK VALVE
  - ⊘ BALANCING VALVE
  - ⊘ PRESSURE REDUCING VALVE
  - ⊘ GAS COCK
  - ⊘ WYE-STRAINER
  - ⊘ UNION
  - ⊘ FLANGE
  - ⊘ RELIEF VALVE
  - ⊘ AIR VENT (MANUAL / AUTOMATIC)
  - ⊘ FLOW DIRECTION
  - ⊘ PIPE BREAK / CONTINUATION
  - FLOOR DRAIN
  - FLOOR SINK
  - FLOOR CLEANOUT
  - ⊕ HOSE BIBB

- ANNOTATION LEGEND:**
- ABC-1 EQUIPMENT / FIXTURE TAG
  - ⊙ PLAN NOTE
  - ⊕ CONNECT TO EXISTING

- ABBREVIATIONS LEGEND:**
- AFF ABOVE FINISHED FLOOR
  - BOP BOTTOM OF PIPE
  - CFH CUBIC FEET PER HOUR
  - CO CLEANOUT
  - CW DOMESTIC COLD WATER
  - ET EXPANSION TANK
  - (F) FUTURE
  - FCO FLOOR CLEANOUT
  - FD FLOOR DRAIN
  - GPM GALLONS PER MINUTE
  - HB HOSE BIBB
  - IE INVERT ELEVATION
  - IN.WG INCHES WATER GAUGE
  - LV LAVATORY
  - MAX MAXIMUM
  - MBH 1,000 BTUH
  - MIN MINIMUM
  - NG NATURAL GAS
  - NHB NON-FREEZE HOSE BIBB
  - QTY QUANTITY
  - S SANITARY WASTE
  - TMV THERMOSTATIC MIXING VALVE
  - TRA TO ROOF ABOVE
  - V VENT
  - WC WATER CLOSET
  - WH WATER HEATER
  - WCO WALL CLEANOUT



1 PLUMBING PLAN  
SCALE: 1/4" = 1'-0"

**PLUMBING GENERAL NOTES:**

- REFER TO P2.0 FOR PLUMBING GENERAL NOTES.

⊙ PLUMBING PLAN NOTES:

1. REFER TO CIVIL UTILITY PLAN FOR CONTINUATION OF PIPING OUTSIDE OF BUILDING FOOTPRINT.
2. PROVIDE NEW NATURAL GAS SERVICE ENTRANCE AND METER WHERE SHOWN ON PLAN. REFER TO NATURAL GAS LOAD SCHEDULE FOR LOAD, TOTAL DEVELOPED LENGTH, AND SIZING DETAILS.
3. CONNECT NATURAL GAS TO MECHANICAL EQUIPMENT AS SHOWN. PROVIDE DIRT LEG, GAS COCK, AND REGULATOR. REFER TO MECHANICAL EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ADDITIONAL REQUIREMENTS. COORDINATE WITH MECHANICAL CONTRACTOR.
4. ROUTE 4" VENT UP THROUGH ROOF (VTR). DISCHARGE AT MINIMUM 1'-6" ABOVE FINISHED ROOF. INSTALL AT MINIMUM OF 10'-0" FROM ALL MECHANICAL OUTDOOR AIR INTAKES.
5. AIR COMPRESSOR PROVIDED BY OTHERS. PROVIDE COMPRESSED AIR PIPING CONNECTION WITH VALVES AND SPECIALS PER AIR COMPRESSOR MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE 1"CA DROP DOWN WALL. TERMINATE WITH SHUTOFF VALVE. COORDINATE CONNECTION TO OWNER EQUIPMENT WITH OTHER TRADES.
7. 1" DOMESTIC WATER SERVICE ENTRANCE, FED BY ADJACENT BUILDING. PROVIDE SHUTOFF VALVE AT 4'-0" AFF.
8. INSTALL WATER ABOVE CEILING WHERE SHOWN ON PLAN. CONNECT WATER PIPING, VALVES, AND EXPANSION TANK TO WATER HEATER SYSTEM PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND DETAIL 1/P2.0.
9. PROVIDE COLD WATER AND HOT WATER PIPING OF SIZES INDICATED ON PLAN DOWN IN WALL. ROUTE PIPING IN WALL CAVITY AND CONNECT TO PLUMBING FIXTURES ALONG WET WALL PER FIXTURE CONNECTION SCHEDULE ON P2.0.
10. COORDINATE ALL PIPE ROUTING WITH CLEARANCE REQUIREMENTS OF DESTRATIFICATION FAN.
11. PROVIDE HIGH LEVEL ALARM SYSTEM WITH MECHANICAL ALARM FLOAT FOR SANITARY HOLDING TANK. SEPTIC PRODUCTS INC "OBSERVER 200" OR EQUAL. INSTALL CONTROLLER WHERE INDICATED ON PLAN. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.



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**PROPOSED BODY SHOP BUILDING FOR:**  
**CRASH CHAMPIONS**  
**451 SE OLDHAM PARKWAY**  
**LEE'S SUMMIT, MISSOURI**

NO.	DESCRIPTION	DATE
---	FOR PERMIT	06 / 14 / 2022
1	CITY COMMENTS	07 / 07 / 2022

PROJECT NUMBER 22009  
DATE ISSUED: 06 / 14 / 2022  
SHEET NUMBER

**P1.0**

PLUMBING PLAN

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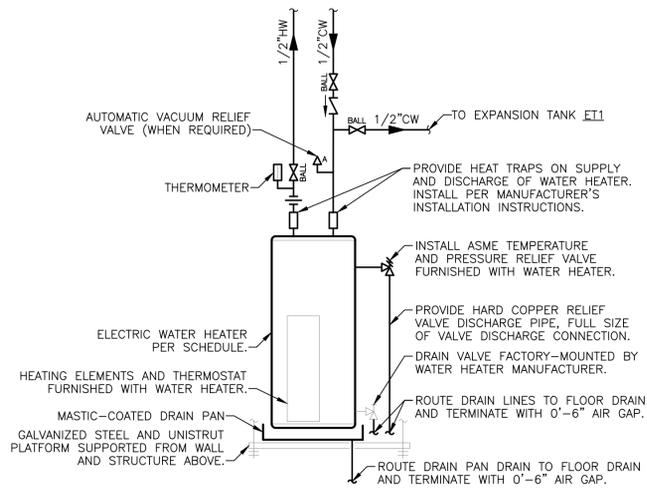
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FIXTURE CONNECTION SCHEDULE					
FIXTURE	WASTE	VENT	COLD	HOT	NOTES
FLOOR DRAIN	SEE PLAN	2"	---	---	---
HOSE BIBBS	---	---	3/4"	---	VB
JANITOR'S SINK	2"	1-1/2"	1/2"	1/2"	VB
LAVATORY - PUBLIC	2"	1-1/2"	1/2"	1/2"	TMV
WATER CLOSET (TANK TYPE)	4"	2"	1/2"	---	---

NOTES:  
 TMV: POINT OF USE THERMOSTATIC MIXING VALVE CONFORMING TO ASSE 1070.  
 VB: ATMOSPHERIC TYPE VACUUM BREAKER CONFORMING TO ASSE 1020.

NATURAL GAS LOAD SCHEDULE				
EQUIPMENT TAG	QTY	DESCRIPTION	CFH INPUT (EACH)	TOTAL CFH
RT-1	1	RADIANT TUBE HEATER	150	150
RT-2	1	RADIANT TUBE HEATER	150	150
SYSTEM TOTAL =			300	

NOTES:  
 A. METER DISCHARGE PRESSURE: 11 IN. WG.  
 B. TOTAL DEVELOPED LENGTH: 100 FT.  
 C. DESIGN NATURAL GAS PIPING SYSTEM PRESSURE DROP: 0.5 IN. WG.  
 D. INLET PRESSURE FOR ALL GAS-FIRED EQUIPMENT: 7 TO 11 IN. WG.



NOTES:  
 • STRUCTURE AND PLATFORM SHALL BE DESIGNED TO HOLD THE MAXIMUM WEIGHT OF THE WATER HEATER. CONFIRM CAPACITY OF SHELF WITH MANUFACTURER PRIOR TO INSTALLATION.

1 WATER HEATER DETAIL  
 SCALE: NTS

**PLUMBING FIXTURE SCHEDULE:**

INFORMATION BELOW IS FOR GENERAL FIXTURE REQUIREMENTS ONLY. PLUMBING CONTRACTOR SHALL COORDINATE WITH OWNER AND ARCHITECT FOR EXACT FIXTURE REQUIRED FOR THE PROJECT. COORDINATE WITH OWNER FOR INFORMATION ON PROCURING FIXTURES AND ASSOCIATED COSTS. CONTRACTOR SHALL BE CLEAR AS TO WHAT FIXTURES ARE INCLUDED IN THEIR PROPOSED COSTS.

FIXTURES IN THIS SCHEDULE, OR THE APPROVED EQUIVALENT, SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FURTHER REQUIREMENTS.

- ET1**
- EXPANSION TANK: 150 PSIG MAXIMUM WORKING PRESSURE, 2.0-GALLON CAPACITY, 0.45 MAXIMUM ACCEPTANCE FACTOR, AND 3/4" PIPE CONNECTION. SET THE AIR CHARGE PRESSURE TO MATCH EXISTING WATER SYSTEM PRESSURE.
- FCO1**
- HEAVY DUTY FLOOR CLEANOUT: CAST IRON BODY, FLASHING FLANGE WITH CLAMPING COLLAR, ABS PLUG, AND ADJUSTABLE ROUND SECURED HEAVY-DUTY SCORATED NICKEL BRONZE TOP.

- FD1**
- PVC FLOOR DRAIN: FLOOR DRAIN WITH ADJUSTABLE 6" ROUND MEDIUM-DUTY CAST NICKEL STRAINER, WITH FLANGED PVC ADAPTER, CLEAN AND POLISH STRAINER AFTER INSTALLATION. PROVIDE A DEEP SEAL TRAP, FLANGED PVC ADAPTER, AND TRAP GUARD.

- HB1**
- HOSE BIBB: ROUGH CHROME-PLATED BRASS, 3/4" FEMALE INLET, 3/4" THREADED HOSE CONNECTION, QUARTER-TURN WHEEL HANDLE, AND INTEGRAL VACUUM BREAKER.

- JS1**
- JANITOR'S SINK: 24"W x 24"L x 10"H MOLDED FIBER BASIN WITH INTEGRAL STAINLESS STEEL DRAIN BODY.
  - FAUCET: FAUCET WITH WALL BRACE, INTEGRAL VACUUM BREAKER, PAIL HOOK, AND 3/4" MALE HOSE THREADED OUTLET. SECURE FAUCET IN WALL WITH BACKBOARD.
  - TRIM: TYPE 304 20-GAUGE STAINLESS STEEL WALL SURROUNDS, 3'-0" LONG REINFORCED HOSE WITH 3/4" CHROME COUPLING AND WALL HOOK, EXTRUDED VINYL BUMPER GUARD, AND 2'-0" STAINLESS STEEL MOP HANGER.

- LV1**
- WALL-MOUNTED LAVATORY (ADA ACCESSIBLE): RECTANGULAR WALL-MOUNTED WHITE VITREOUS CHINA FIXTURE WITH FAUCET LEDGE AND FRONT OVERFLOW.
  - FAUCET: 4" CENTERSET, VANDAL-RESISTANT FAUCET WITH LEVER HANDLES AND 0.5 GPM AERATOR.
  - TRIM: GRID DRAIN WITH TAILPIECE, QUARTER-TURN BALL TYPE ANGLE STOP VALVES WITH RISERS AND ESCUTCHEONS, 1-1/4" 17-GAUGE TUBULAR CHROME PLATED BRASS ADJUSTABLE P-TRAP AND WASTE ARM WITH CLEANOUT PLUG AND ESCUTCHEON, CONCEALED ARM CARRIER WITH STANCHIONS TO FLOOR, AND INSULATION KIT FOR WATER AND WASTE PIPES.

- TMV1**
- THERMOSTATIC MIXING VALVE: SOLID BRASS BODY, THERMOSTATIC WAX ELEMENT, CORROSION RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT, CAPABLE OF 2.2 GPM WITH A 20 PSI DIFFERENTIAL AND A MINIMUM FLOW RATE OF 0.5 GPM. MAXIMUM TEMPERATURE STOP-SET FOR 110°F. MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS.

- WC1**
- FLOOR-MOUNTED WATER CLOSET (ADA ACCESSIBLE): TANK TYPE WHITE VITREOUS CHINA FIXTURE WITH ELONGATED BOWL, 1.6 GALLON PER FLUSH, SIPHON FLUSH ACTION, AND CLOSE-COUPLED TANK WITH TRIP LEVER ON THE WIDE SIDE OF THE STALL.
  - TRIM: WHITE OPEN-FRONT CONTOURED, SOLID PLASTIC, HEAVY-DUTY, SEAT-LESS-COVER WITH SELF-SUSTAINING HINGES AND STAINLESS STEEL BOLTS; QUARTER-TURN BALL TYPE ANGLE STOP VALVE WITH RISER AND CHROME-PLATED ESCUTCHEON.

- WCO1**
- WALL CLEANOUT: CAST IRON CLEANOUT TEE, COUNTER-SUNK CAST IRON PLUG WITH GASKET SEAL, AND STAINLESS STEEL ROUND COVER WITH SCREW.

- WH1**
- WATER HEATER: ELECTRIC, 10 GALLON, 1.5 KW INPUT, 8 GALLON PER HOUR RECOVERY AT 80°F TEMPERATURE RISE AND 120°F OPERATING TEMPERATURE. PROVIDE ALL WATER CONNECTIONS, VALVES, AND SPECIALS PER MANUFACTURER'S INSTALLATION REQUIREMENTS.
  - ELECTRICAL REQUIREMENTS: 120-VOLT, SINGLE PHASE, 13 FULL LOAD AMPS.
  - BASIS OF DESIGN: A.O. SMITH MODEL # DEL-10.

**PLUMBING GENERAL NOTES:**

- DRAWINGS ARE SCHEMATIC IN NATURE. COORDINATE ALL PLUMBING WORK WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES PRIOR TO BID OR START OF WORK.
- PLUMBING WORK SHALL CONFORM TO APPLICABLE CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- EXACT LOCATION AND ELEVATIONS OF ALL UTILITIES SHALL BE VERIFIED PRIOR TO ANY INSTALLATION OF CONNECTIONS THEREOF. ALL CONNECTIONS TO UTILITIES (E.G. DOMESTIC WATER, SEWER, AND NATURAL GAS) SHALL BE MADE WITH APPROVAL OF THE ADMINISTRATIVE AUTHORITY AND THE RESPECTIVE UTILITY COMPANIES.
- SANITARY WASTE AND VENT PIPING BELOW GRADE SHALL BE SCHEDULE 40 PVC WITH SOLVENT-WELDED JOINTS.
- SANITARY WASTE AND VENT PIPING ABOVE GRADE SHALL BE NO-HUB CAST IRON IN RETURN AIR PLENUM APPLICATIONS. SCHEDULE 40 PVC PIPING WITH SOLVENT WELDED JOINTS CAN BE USED IN AREAS OTHER THAN RETURN AIR PLENUMS AS ALLOWED BY CODE.
- SLOPE SANITARY PIPING AS FOLLOWS: 1/4" PER FOOT FOR PIPE SIZES 2-1/2" AND SMALLER, AND 1/8" PER FOOT FOR PIPE SIZES 3" AND LARGER.
- PROVIDE WATER SUPPLY SHUT-OFF VALVES ON EACH TOILET ROOM GROUP AND TO MISCELLANEOUS EQUIPMENT.
- PROVIDE SIZE "A" WATER HAMMER ARRESTORS ON SUPPLY TO ALL PLUMBING FIXTURES.
- PROVIDE STOP VALVES ON ALL INDIVIDUAL PLUMBING FIXTURE SUPPLIES.
- COORDINATE SELECTION OF ALL PLUMBING FIXTURES WITH ARCHITECT AND OWNER. ALL HANDICAPPED FIXTURES (WHERE REQUIRED) SHALL COMPLY WITH A.D.A. REQUIREMENTS.
- DOMESTIC WATER PIPING BELOW GRADE SHALL BE TYPE K SOFT COPPER WITH FLARED FITTINGS OR TYPE K HARD COPPER WITH WROUGHT FITTINGS AND SOLDERED JOINTS.
- DOMESTIC WATER PIPING ABOVE GRADE SHALL BE TYPE L COPPER WITH WROUGHT FITTINGS AND SOLDERED JOINTS.
- INSULATE NEW DOMESTIC COLD WATER AND HOT WATER PIPING WITH MINIMUM 1" FIBERGLASS INSULATION (MINIMUM R-4.0) WITH PAPER COVERING.
- NATURAL GAS AND COMPRESSED AIR PIPING SHALL BE SCHEDULE 40 BLACK STEEL WITH THREADED FITTINGS.
- PROVIDE RUST-INHIBITOR ON PAINT ALL NATURAL GAS PIPING LOCATED EXTERIOR TO THE BUILDING.
- PROVIDE A.G.A. APPROVED GAS COCKS AND DIRT LEGS AT CONNECTIONS TO ALL GAS-FIRED EQUIPMENT.
- INSTALL ALL PLUMBING EQUIPMENT, FIXTURES, VALVES, ETC. PER MANUFACTURER'S INSTALLATION REQUIREMENTS. PROVIDE ADDITIONAL APPURTENANCES PER MANUFACTURER'S INSTALLATION REQUIREMENTS.
- INSTALL CLEANOUTS AT EVERY END OF SANITARY PIPING RUNS, AT MINIMUM OF EVERY 100'-0" OF SANITARY PIPING, AND AT EVERY CHANGE IN DIRECTION GREATER THAN 45'. REFER TO SECTION 708 OF THE INTERNATIONAL PLUMBING CODE FOR ADDITIONAL REQUIREMENTS.



SCOTT D. GROSHANS  
 MO LICENSE # PE-2019012798



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 P.O. BOX 100 OLATHE, KS 66051

KANSAS STATE CERTIFICATE OF AUTHORITY # A-83 www.5by5eng.com



PROPOSED BODY SHOP BUILDING FOR:

CRASH CHAMPIONS

451 SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

NO.	DESCRIPTION	DATE
---	FOR PERMIT	06 / 14 / 2022
1	CITY COMMENTS	07 / 07 / 2022

PROJECT NUMBER 22009  
 DATE ISSUED: 06 / 14 / 2022

SHEET NUMBER

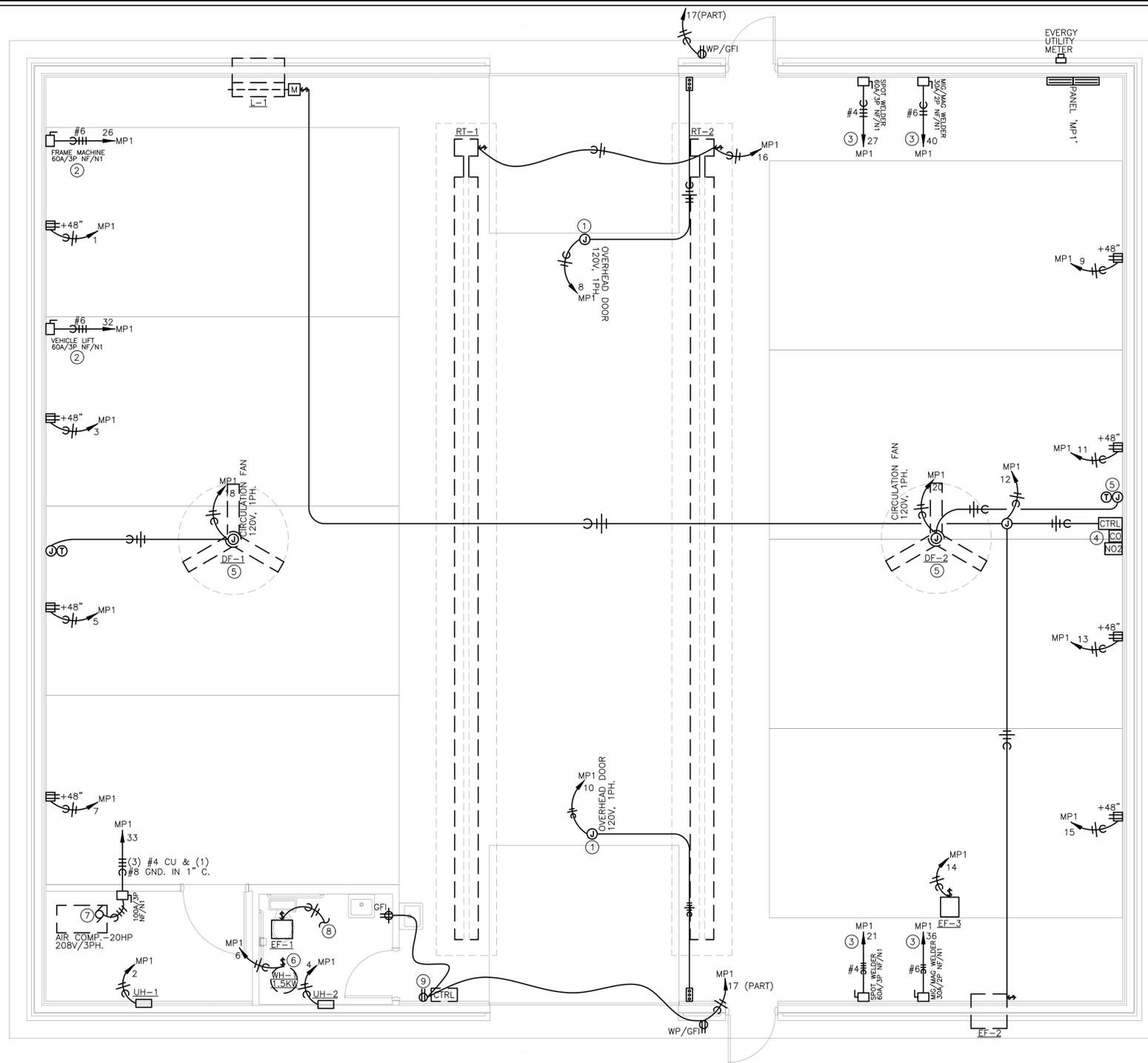
P2.0

PLUMBING DETAILS & SCHEDULES

**5BY5**  
 ENGINEERS

1100 Main Street, 4th Floor  
 Kansas City, MO 64105  
 Kansas COA: E-2361  
 913-689-9449  
 contact@5by5eng.com  
 5by5eng.com

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**ELECTRICAL GENERAL NOTES:**

• REFER TO SHEET E3.0 FOR ELECTRICAL GENERAL NOTES.

**ELECTRICAL PLAN NOTES:**

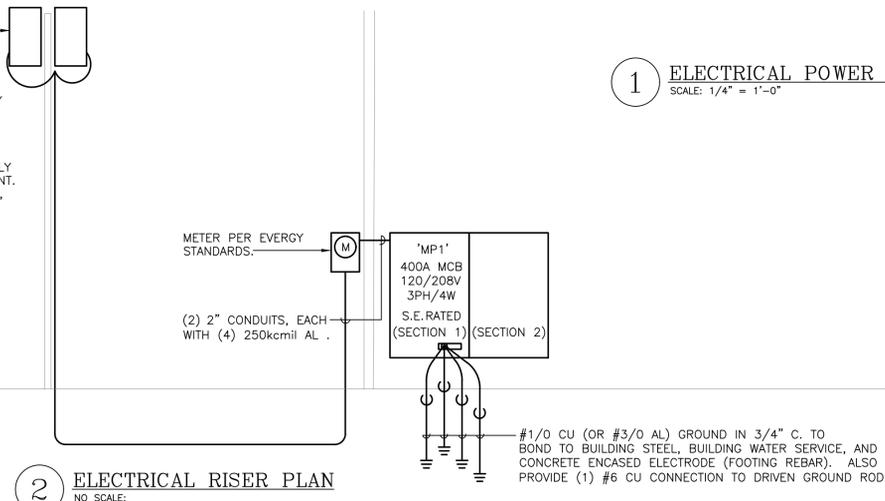
1. PROVIDE 120V CONNECTION TO OVERHEAD DOOR OPERATOR. MOUNT CONTROL STATION PROVIDED WITH DOOR IN LOCATION APPROVED BY OWNER ADJACENT TO OVERHEAD DOOR FOR PUSH-BUTTON CONTROLS. PROVIDE CONDUIT AND WIRING BETWEEN CONTROLLER AND OPERATOR. COORDINATE WITH DOOR INSTALLER FOR SPECIFIC ELECTRICAL REQUIREMENTS.
2. PROVIDE DISCONNECT AND FLEX CONNECTION TO BODY SHOP EQUIPMENT. VERIFY EXACT LOCATION AND SPECIFIC REQUIREMENTS PRIOR TO ROUGH IN. COORDINATE WITH OWNER LOCATION AND PHASING TO RELOCATE EQUIPMENT.
3. PROVIDE DISCONNECT AND FLEXIBLE CONNECTION TO SHOP WELDING EQUIPMENT. CONFIRM ACTUAL REQUIREMENTS WITH SHOP OWNER PRIOR TO ROUGH-IN.
4. MOUNT 'CO' CONTROL PANEL ON WALL, AND ROUTE POWER WIRING TO EXHAUST FAN 'EF-2' AND MOTORIZED LOUVER 'L-1'. COORDINATE INSTALL WITH MECHANICAL CONTRACTOR. ALL FANS, LOUVERS & CONTROL DEVICES SHALL BE FURNISHED BY MECHANICAL. MOUNTING OF CONTROL PANEL AND ALL WIRING SHALL BE BY ELECTRICAL CONTRACTOR.
5. PROVIDE JUNCTION BOX FOR POWER TO CIRCULATION FAN, AND INSTALL FAN CONTROL DEVICE. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. ALL FANS & CONTROL DEVICES SHALL BE FURNISHED BY MECHANICAL. MOUNTING OF CONTROL PANEL AND ALL WIRING SHALL BE BY ELECTRICAL CONTRACTOR.
6. PROVIDE CONNECTION TO 1500 WATT 120V ELECTRIC WATER HEATER MOUNTED ABOVE THE CEILING. PROVIDE TOGGLE SWITCH DISCONNECT SWITCH.
7. PROVIDE DISCONNECT AND FLEXIBLE CONNECTION TO AIR COMPRESSOR. COORDINATE HOOK-UP AND EXACT REQUIREMENTS WITH OWNER.
8. CONNECT BATHROOM EXHAUST FAN ON TO SWITCHED BATHROOM LIGHTS.
9. DUPLEX RECEPTACLE FOR SEPTIC TANK LEVEL MONITORING PANEL. COORDINATE EXACT LOCATION WITH PLUMBING CONTRACTOR.

NEW UTILITY POLE MOUNT TRANSFORMERS (3) 37.5kva ESTIMATED AVAILABLE  
 FCA ~ 15,139A

NOTE: FINAL AVAILABLE FAULT CURRENT SHALL BE DETERMINED BY ENERGY.

ALL SERVICE ENTRANCE AND DISTRIBUTION EQUIPMENT SHALL BE RATED TO ACCOMMODATE AND SAFELY INTERRUPT AVAILABLE FAULT CURRENT. SERIES RATED EQUIPMENT PER NEC, UL AND MANUFACTURERS REQUIREMENTS IS ACCEPTABLE.

ELECTRICAL CONTRACTOR SHALL PROVIDE ENOUGH CONDUCTOR AND PVC CONDUIT TO EXTEND UP THE POLE. ALL WORK SHALL BE PER ENERGY STANDARDS.



**1 ELECTRICAL POWER PLAN**  
 SCALE: 1/4" = 1'-0"

**2 ELECTRICAL RISER PLAN**  
 NO SCALE:

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**CRASH CHAMPIONS**  
 COLLISION REPAIR TEAM

**PROPOSED BODY SHOP BUILDING FOR:**  
**CRASH CHAMPIONS**  
 451 SE OLDHAM PARKWAY  
 LEE'S SUMMIT, MISSOURI

NO.	DESCRIPTION	DATE
---	FOR PERMIT	06 / 14 / 2022

PROJECT NUMBER 22009  
 DATE ISSUED: 06 / 14 / 2022  
 SHEET NUMBER

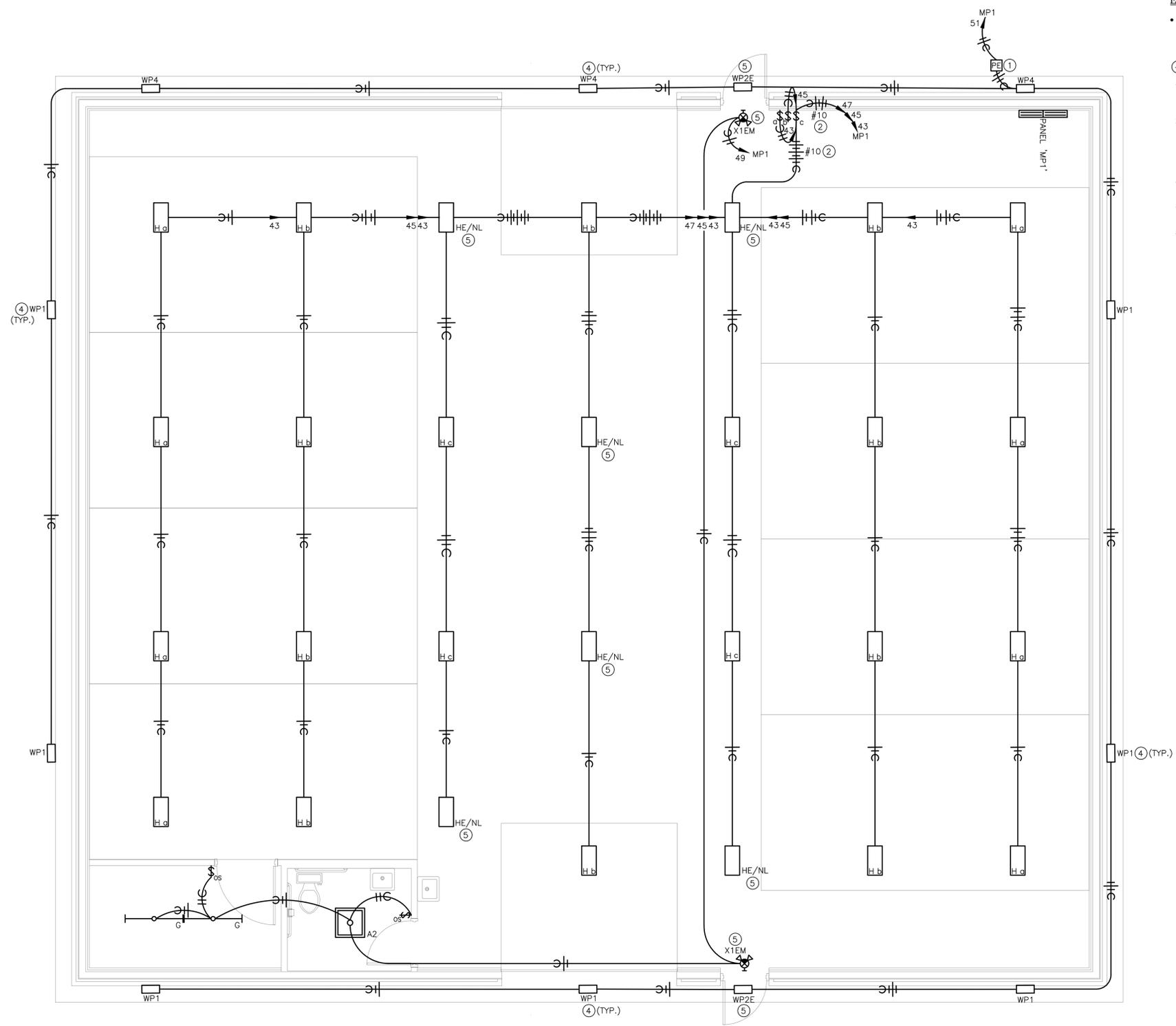
**E1.0**

ELECTRICAL POWER PLAN

**5BY5**  
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1 ELECTRICAL LIGHTING PLAN  
 SCALE: 1/4" = 1'-0"

**ELECTRICAL GENERAL NOTES:**

- REFER TO E3.0 FOR ELECTRICAL GENERAL NOTES.

**ELECTRICAL LIGHTING PLAN NOTES:**

- PROVIDE BOX MOUNTED LINE VOLTAGE PHOTO-CELL FOR CONTROL OF EXTERIOR LIGHTING. ADJUST TO BRING LIGHTING ON AT DUSK AND OFF AT DAWN.
- WALL SWITCHES FOR CONTROL OF SHOP LIGHTING. LIGHT FIXTURES SHALL BE ALTERNATELY SWITCHED TO PROVIDE BI-LEVEL LIGHTING. LOWER CASE LETTER INDICATES SWITCHING CONFIGURATION. UPSIZE HOME-RUN PORTION OF CIRCUIT TO MINIMIZE VOLTAGE DROP.
- MOUNT SHOP HI-BAY FIXTURES AS HIGH AS POSSIBLE TO STRUCTURE.
- CONFIRM ALL MOUNTING HEIGHTS WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- CONNECT EXIT AND EMERGENCY FIXTURES TO CONTINUOUS HOT UN-SWITCHED LIGHTING CIRCUIT. HIGH-BAY SHOP NIGHT/EMERGENCY LIGHTING SHALL BE ON CIRCUIT "HP1-47".



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**PROPOSED BODY SHOP BUILDING FOR:**  
**CRASH CHAMPIONS**  
 451 SE OLDHAM PARKWAY  
 LEE'S SUMMIT, MISSOURI

NO.	DESCRIPTION	DATE
---	FOR PERMIT	06 / 14 / 2022

PROJECT NUMBER 22009  
 DATE ISSUED: 06 / 14 / 2022  
 SHEET NUMBER

**E2.0**

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ELECTRICAL LIGHTING PLAN

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**LINETYPES LEGEND:**

- NEW
- EXISTING OR BY OTHERS
- DEMOLITION

**LIGHTING LEGEND:**

- CEILING MOUNTED LIGHT FIXTURE, 2'x2' OR 2'x4'
- CEILING MOUNTED LIGHT FIXTURE, 2'x2' OR 2'x4' (NIGHT LIGHT OR EMERGENCY CIRCUIT)
- STRIP LIGHT FIXTURE. REFER TO FIXTURE SCHEDULE FOR LENGTH.
- WALL-MOUNT SCONCE OR WALL BRACKET LIGHT FIXTURE.
- RECESSED WALL WASH CAN LIGHT FIXTURE.
- RECESSED, SURFACE, OR STEM HUNG LIGHT FIXTURE.
- SINGLE FACE EXIT LIGHT FIXTURE, WALL OR CEILING MOUNT, WITH FIELD CONFIGURABLE ARROWS. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS. SHADED AREA INDICATES EXIT LIGHT FACE.
- DOUBLE FACE EXIT LIGHT FIXTURE, WALL OR CEILING MOUNT, WITH FIELD CONFIGURABLE ARROWS. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS. SHADED AREA INDICATES EXIT LIGHT FACE.
- COMBINATION SINGLE FACE EXIT/EMERGENCY LIGHT FIXTURE, WALL OR CEILING MOUNT, WITH FIELD CONFIGURABLE ARROWS. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS. SHADED AREA INDICATES EXIT LIGHT FACE.

NOTE: REFER TO LIGHT FIXTURE SCHEDULE AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION AND MOUNTING HEIGHTS.

**POWER LEGEND:**

- INDICATES ABOVE COUNTER (TYP)
- DUPLEX RECEPTACLE MOUNTED AT +18" AFF TO CENTER OF RECEPTACLE (UNO). ABOVE COUNTER RECEPTACLES SHALL BE +48" AFF (UNO).
- DUPLEX ISOLATED GROUND RECEPTACLE MOUNTED AT +18" AFF TO CENTER OF RECEPTACLE (UNO). ABOVE COUNTER RECEPTACLES SHALL BE +48" AFF (UNO).
- DUPLEX RECEPTACLE ON STAND-BY GENERATOR POWER, MOUNTED AT +18" AFF TO CENTER OF RECEPTACLE (UNO). RECEPTACLES SHOWN ABOVE COUNTER SHALL BE +48" AFF (UNO).
- FLOOR-MOUNTED DUPLEX OR FOURPLEX RECEPTACLE MOUNTED IN PVC FLOORBOX, OR POKE-THRU
- SPECIAL RECEPTACLE, NUMBER REFERS TO "NEMA" CONFIGURATION. MOUNT AT +18" AFF TO CENTER OF RECEPTACLE (UNO).
- FOURPLEX RECEPTACLE MOUNTED AT +18" AFF TO CENTER OF RECEPTACLE (UNO). RECEPTACLES SHOWN TO BE ABOVE COUNTER SHALL BE +48" AFF (UNO)
- FLUSH MOUNT COMBINATION POWER AND VOICE/DATA FLOORBOX.
- SINGLE POLE WALL MOUNT TOGGLE SWITCH. MOUNT AT +48" AFF TO CENTER OF SWITCH.
- WALL MOUNTED OCCUPANCY SENSOR SWITCH. MOUNT AT +48" AFF TO CENTER OF SWITCH.
- WALL MOUNTED OCCUPANCY SENSOR SWITCH WITH 0-10V DIMMING CONTROL. MOUNT AT +48" AFF TO CENTER OF SWITCH.
- WALL MOUNTED LOW VOLTAGE SWITCH WITH 0-10V DIMMING CONTROL. MOUNT AT +48" AFF TO CENTER OF SWITCH.
- CEILING MOUNTED OCCUPANCY SENSOR.
- ROOM CONTROLLER/POWER PACK FOR LIGHT FIXTURE CONTROL. DEVICE SHALL BE CONCEALED IN CEILING.
- VOICE OPENING. PROVIDE RING WITH STRING TO ABOVE CEILING. DEVICES SHOWN TO BE COUNTER SHALL BE +48" AFF (UNO).
- DATA OPENING. PROVIDE RING WITH STRING TO ABOVE CEILING. DEVICES SHOWN TO BE COUNTER SHALL BE +48" AFF (UNO).
- COMBINATION VOICE/DATA OPENING. PROVIDE RING WITH STRING TO ABOVE CEILING. DEVICES SHOWN TO BE COUNTER SHALL BE +48" AFF (UNO).
- FLUSH FLOOR MOUNT VOICE/DATA OUTLET MOUNTED IN PVC FLOORBOX.
- DISCONNECT SWITCH, STARTER, & COMBINATION STARTER/DISCONNECT SWITCH. SIZE AS INDICATED ON DRAWINGS.
- ELECTRICAL PANEL BOARD, FLUSH OR SURFACE MOUNT
- JUNCTION BOX

NOTE: LINE THROUGH DEVICE INDICATES TO BE MOUNTED ABOVE COUNTERTOP OR CABINET. REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS IF NOT INDICATED ON POWER PLAN.

REFER TO LIGHTING CONTROL DEVICE SCHEDULE AND ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.

**ABBREVIATIONS LEGEND:**

- HOMERUN TO PANELBOARD WITH NUMBER AND SIZE OF CONDUCTORS INDICATED ON PLANS.
- GROUNDING CONDUCTOR.
- CONDUIT OR CIRCUIT BREAK/CONTINUATION.
- CONDUIT WITH ENDCAP FOR FUTURE USE.
- GROUNDING SOURCE.

**ABBREVIATIONS LEGEND:**

- AFF ABOVE FINISHED FLOOR
- ED EXISTING TO BE DEMOLISHED
- EM EMERGENCY
- ER EXISTING TO BE RELOCATED
- ETR EXISTING TO REMAIN
- GFCI GROUND FAULT CURRENT INTERRUPTER
- NL NIGHT LIGHT
- TR TAMPER RESISTANT
- UNO UNLESS NOTED OTHERWISE
- WP WEATHER PROTECTED COVER / GFCI

LIGHT FIXTURE SCHEDULE												
TYPE	MANUFACTURER AND MODEL #	LIGHT SOURCE	WATT S	MINIMUM LUMENS	VOLTAGE	CRI	COLOR TEMP	DIMMABLE	FINISH	DESCRIPTION	NOTES	
A2	METALUX 22FR-LD4-32-UNV-L835-CD1	INTEGRAL LED	30	3300	UNV	80	3500	0-10V / 10%	WHITE	2'X2' LED LIGHT TROFFER WITH CENTER BASKET, 3500K COLOR TEMPERATURE DIMMABLE UNIVERSAL VOLTAGE DRIVER.	1-5	
EM	SURE LITES XR-6/9-C	INTEGRAL LED	6	1100	UNV	80	-	0-10V / 10%	WHITE	EMERGENCY WALL MOUNTED FIXTURE. FIXTURE SHALL BE PROVIDED WITH INTEGRAL EMERGENCY 90 MINUTE BATTERY PACK.	1-5	
H	BUILDERS PACK TR08-165W-2FT-40K-PDN	INTEGRAL LED	165	20900	UNV	80	4000	0-10V / 10%	WHITE	LED HIGHBAY CABLE MOUNTED, 20,900 LUMEN PACKAGE. 4000K PROVIDE WITH WIREGUARD. PROVIDE WITH POWER CORD AND AIRCRAFT CABLE. CONFIRM LENGTHS NEEDED PRIOR TO ORDERING.	1-5	
HE	BUILDERS PACK TR08-165W-2FT-40K-PDN - EM	INTEGRAL LED	165	20900	UNV	80	4000	0-10V / 10%	WHITE	LED HIGHBAY CABLE MOUNTED, 20,900 LUMEN PACKAGE. 4000K PROVIDE WITH WIREGUARD. PROVIDE WITH POWER CORD AND AIRCRAFT CABLE. CONFIRM LENGTHS NEEDED PRIOR TO ORDERING. FIXTURE SHALL BE PROVIDED WITH INTEGRAL EMERGENCY 90 MINUTE BATTERY PACK.	1-5	
G	HE WILLIAMS - 755-4-L65-8-40-DMA-DIM-UNV	INTEGRAL LED	43	6500	UNV	80	4000	0-10V / 10%	WHITE	LED LINEAR RIGID CHAIN OR AIRCRAFT CABLE SUSPENDED TO 10'-0" AFF.	1-5	
WP1	MCGRAW EDISON - GLEON-SA3D-740-U-SL4	INTEGRAL LED	95	22,500	UNV	80	4000	NA	DARK BRONZE	LED ARCHITECTURAL SITE WALL MOUNTED FIXTURE. MOUNT AT 18'-0" A.G.	1-5	
WP2E	MCGRAW EDISON - IST-SA1-E-740-U-T4FT-XX-CBP	INTEGRAL LED	25	2200	UNV	80	4000	NA	DARK BRONZE	EXTERIOR LED WALL PACK. FIXTURE SHALL BE PROVIDED WITH INTEGRAL EMERGENCY 90 MINUTE BATTERY PACK.	1-5	
WP4	MCGRAW EDISON - GLEON-SA3D-740-U-SL2-HSS	INTEGRAL LED	95	19,600	UNV	80	4000	NA	DARK BRONZE	LED ARCHITECTURAL SITE WALL MOUNTED FIXTURE. PROVIDE WITH HOUSE SHIELD.	1-5	
X1EM	SURELITE SLX70RWH	INTEGRAL LED	10.3	-	UNV	NA	NA	NA	WHITE	COMBINATION EMERGENCY EGRESS / SINGLE FACE LED EXIT LIGHT FIXTURE WITH BATTERY PACK, RED LETTERS AND FIELD CONFIGURED ARROWS.	1-5	

- NOTES:
- COORDINATE ALL LIGHT FIXTURE SELECTIONS AND/OR SUBSTITUTIONS WITH ARCHITECT, OWNER AND/OR ENGINEER PRIOR TO ORDER.
  - PROVIDE LIGHTING CONTROLS THAT ARE COMPATIBLE WITH FIXTURES PROVIDED.
  - COORDINATE WITH ARCHITECT, OWNER AND/OR ENGINEER FOR DIMMING REQUIREMENTS PRIOR TO INSTALLATION.
  - PROVIDE ALL COMPONENTS AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERABLE INSTALLATION.
  - EQUIVALENTS MUST BE SUBMITTED AND APPROVED PRIOR TO BID.

**ELECTRICAL GENERAL NOTES:**

- DRAWINGS ARE SCHEMATIC IN NATURE AND BASED ON PRELIMINARY SITE OBSERVATION AND ORIGINAL DESIGN DRAWINGS (WHEN AVAILABLE). PRIOR TO BID, CONTRACTOR SHALL INVESTIGATE THE PROJECT SITE AND BECOME FULLY AWARE OF ALL FIELD CONDITIONS, CURRENT SYSTEM OPERATION AS WELL AS COORDINATION REQUIREMENTS. COORDINATE ALL MECHANICAL WORK WITH ARCHITECTURAL DRAWINGS, EXISTING CONDITIONS AND OTHER TRADES PRIOR TO BID OR START OF WORK.
- ELECTRICAL WORK SHALL CONFORM TO APPLICABLE CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION. REFER TO ARCHITECTURAL CODE PLANS FOR SPECIFIC CODE REFERENCES.
- COORDINATE ELECTRICAL WORK WITH ALL OTHER PROJECT TRADES (E.G. ARCHITECTURAL, STRUCTURAL, ELECTRICAL, PLUMBING, FIRE SPRINKLER, ETC.).
- COORDINATE EXACT LOCATIONS OF ALL LIGHT FIXTURES AND ELECTRICAL DEVICES WITH ARCHITECTURAL DRAWING AND OTHER TRADES PRIOR TO ROUGH-IN. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRE TO PROPERLY INSTALL ALL SYSTEMS.
- INSTALL PULL STRING IN ALL EMPTY CONDUIT/RACEWAY. TERMINATE CONDUIT STUB-UP WITH A NYLON BUSHING.
- COLOR FOR RECEPTACLES, SWITCHES, NETWORK DEVICES AND COVER PLATES SHALL MATCH. COLOR SHALL MATCH AND BE SELECTED AS BRIGHT WHITE UNLESS NOTED OTHERWISE. CONFIRM EXACT COLOR WITH ARCHITECT PRIOR TO ORDER.
- ELECTRICAL CONTRACTOR SHALL INSPECT ALL ELECTRICAL EQUIPMENT TO REMAIN. REPORT ANY DEFICIENCIES TO OWNER PRIOR TO START OF WORK.
- ALL CONDUCTORS SHALL BE INSTALLED IN ELECTRICAL METALLIC TUBING (EMT) AND SHALL CONFIRM TO THE NATIONAL ELECTRIC CODE (NEC). ALL INSTALLATION SHALL BE PER NEC REQUIREMENTS. ALL WIRING IN CONDUIT SHALL BE SURFACE MOUNTED.
- IF ACCEPTABLE BY OWNER, MC CABLE CAN BE USED FOR CIRCUITING TO LIGHTING WIRING AT STRUCTURE. "HOME RUNS" SHALL BE ROUTED IN CONDUIT. ALL WIRING SHALL BE PER NEC REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ALL ROUGH-IN LOCATIONS AND QUANTITIES FOR GENERAL USE POWER AND DATA WITH OWNER AND/OR ARCHITECT PRIOR TO INSTALLATION.
- ALL WIRE SIZES LISTED ON PLANS ASSUME COPPER CONDUCTORS ARE USED (UNLESS NOTED OTHERWISE).
- CONTRACTOR SHALL LABEL ALL RECEPTACLES, BOXES, PANELBOARDS, ETC. WITH PANEL, CIRCUIT NUMBER, ETC. PER INDUSTRY STANDARDS. COORDINATE WITH OWNER FOR FINAL PANEL AND EQUIPMENT DESIGNATIONS.



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**PROPOSED BODY SHOP BUILDING FOR:**  
**CRASH CHAMPIONS**  
**451 SE OLDHAM PARKWAY**  
**LEE'S SUMMIT, MISSOURI**

PANELBOARD MP1													
BUS AMPS: 400A			LOCATION: ELECTRICAL ROOM			GROUND BUS: YES							
MAIN SIZE / TYPE: MCB			NEMA RATING: NEMA 1			ISOL. GROUND BUS: NO							
VOLTS/PHASE: 208Y/120V, 3PH, 4W			AFC VALUE:			FEED THRU LUGS: YES							
MOUNTING: SURFACE			AIC RATING: 22K			SECTIONS: 1 OF 2							
CKT #	CIRCUIT DESCRIPTION	BREAKER AMPS	WIRE SIZE	LOAD (VA)	CONNECTED PER PHASE (VA)			LOAD (VA)	WIRE SIZE	BREAKER AMPS	CIRCUIT DESCRIPTION	CKT #	
					A	B	C						
1	RECEPTACLES - SERVICE BAY	20	1	360	2,160			1,800	1	20	UNIT HEATER 'UH-1'	2	
3	RECEPTACLES - SERVICE BAY	20	1	360		2,160		1,800	1	20	UNIT HEATER 'UH-2'	4	
5	RECEPTACLES - SERVICE BAY	20	1	360			1,860	1,500	1	20	WATER HEATER 'WH-1'	6	
7	RECEPTACLES - SERVICE BAY	20	1	360	1,360			1,000	1	20	OVERHEAD DOOR	8	
9	RECEPTACLES - SERVICE BAY	20	1	360		1,360		1,000	1	20	OVERHEAD DOOR	10	
11	RECEPTACLES - SERVICE BAY	20	1	360			1,110	750	1	20	EXHAUST FAN 'EF-2'	12	
13	RECEPTACLES - SERVICE BAY	20	1	360	610			250	1	20	EXHAUST FAN 'EF-3'	14	
15	RECEPTACLES - SERVICE BAY	20	1	360		1,460		1,100	1	20	RADIANT HEATERS	16	
17	RECEPTACLES	20	1	360			1,110	750	1	20	CEILING FAN 'DF-1'	18	
19				5,000	5,750			750	1	20	CEILING FAN 'DF-2'	20	
21	SPOT WELDER	60	3	#4	5,000			0	1	20	SPARE	22	
23				5,000			9,000	4,000	-	-	-	24	
25				5,000	9,000			4,000	#6	3	60	FRAME MACHINE	26
27	SPOT WELDER	60	3	#4	5,000			9,000	-	-	-	28	
29				5,000			9,000	4,000	-	-	-	30	
31				7,000	11,000			4,000	#6	3	60	VEHICLE LIFT	32
33	AIR COMPRESSOR	100	3	#4	7,000			11,000	-	-	-	34	
35				7,000			9,600	2,600	#6	2	30	MIG/MAG WELDER	36
37	SPARE	20	1	0	2,600			2,600	-	-	-	38	
39	SPARE	20	1	0	2,600			2,600	#6	2	30	MIG/MAG WELDER	40
41	SPARE	20	1	0	2,600			2,600	-	-	-	42	
PER PHASE SUB-TOTALS					32,480	32,580	34,280	LEGEND:					
TOTAL CONNECTED PANELBOARD (VA)					99,340			TS - V/A TIME SWITCH			ST - SHUNT TRIP		
TOTAL CONNECTED PANELBOARD (AMPS)					276			GF - GROUND FAULT INTERRUPTER			LCK - LOCKING TAB		
TOTAL PANELBOARD DEMAND (VA)					104,840			FA - FIRE ALARM / RED / LOCKING TAB			IG - ISOLATED GROUND		
TOTAL PANELBOARD DEMAND (AMPS)					291			EM - EMERGENCY LTG. / LOCKING TAB			OL - RE: ONE-LINE DIAGRAM		

PANELBOARD MP1												
BUS AMPS: 400A			LOCATION: ELECTRICAL ROOM			GROUND BUS: YES						
MAIN SIZE / TYPE: MLO			NEMA RATING: NEMA 1			ISOL. GROUND BUS: NO						
VOLTS/PHASE: 208Y/120V, 3PH, 4W			AFC VALUE:			FEED THRU LUGS: NO						
MOUNTING: SURFACE			AIC RATING: 22K			SECTIONS: 2 OF 2						
CKT #	CIRCUIT DESCRIPTION	BREAKER AMPS	WIRE SIZE	LOAD (VA)	CONNECTED PER PHASE (VA)			LOAD (VA)	WIRE SIZE	BREAKER AMPS	CIRCUIT DESCRIPTION	CKT #
					A	B	C					
43	LIGHTING - SHOP AREA	20	1	1,320	1,320			0	1	20	SPARE	44
45	LIGHTING - SHOP AREA	20	1	1,650		1,650		0	1	20	SPARE	46
47	LIGHTING - SHOP AREA	20	1	1,650			1,650	0	1	20	SPARE	48
49	LIGHTING - RR, EXITS & COMP. RM	20	1	950	950			0	1	20	SPARE	50
51	LIGHTING - EXTERIOR	20	1	0				0	1	20	SPARE	52
53	SPARE	20	1	0			0	0	1	20	SPARE	54
55	SPARE	20	1	0	0			0	1	20	SPARE	56
57	SPARE	20	1	0			0	0	1	20	SPARE	58
59	SPARE	20	1	0			0	0	1	20	SPARE	60
61	SPARE	20	1	0	0			0	1	20	SPARE	62
63	SPARE	20	1	0		0		0	1	20	SPARE	64
65	SPARE	20	1	0			0	0	1	20	SPARE	66
67	SPACE ONLY			0	0			0			SPACE ONLY	68
69	SPACE ONLY			0			0	0			SPACE ONLY	70
71	SPACE ONLY			0			0	0			SPACE ONLY	72
73	SPACE ONLY			0	0			0			SPACE ONLY	74
75	SPACE ONLY			0			0	0			SPACE ONLY	76
77	SPACE ONLY			0			0	0			SPACE ONLY	78
79	SPACE ONLY			0	0			0			SPACE ONLY	80
81	SPACE ONLY			0			0	0			SPACE ONLY	82
83	SPACE ONLY			0			0	0			SPACE ONLY	84
PER PHASE SUB-TOTALS					2,270	1,650	1,650	LEGEND:				
TOTAL CONNECTED PANELBOARD (VA)					5,570			TS - V/A TIME SWITCH			ST - SHUNT TRIP	
TOTAL CONNECTED PANELBOARD (AMPS)					15			GF - GROUND FAULT INTERRUPTER			LCK - LOCKING TAB	
TOTAL PANELBOARD DEMAND (VA)					6,963			FA - FIRE ALARM / RED / LOCKING TAB			IG - ISOLATED GROUND	
TOTAL PANELBOARD DEMAND (AMPS)					19			EM - EMERGENCY LTG. / LOCKING TAB			OL - RE: ONE-LINE DIAGRAM	

COMMERCIAL LOAD SUMMARY				
BUILDING AREA:	4,200 SQ. FT	VOLTAGE:	208Y/120V, 3PH, 4W	
LOAD DESCRIPTION	CONNECTED LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)	
LIGHTING				
INTERIOR LIGHTING	4,620	x 125%	=	0
EXTERIOR LIGHTING	950	x 125%	=	1,188
SIGNAGE	0	x 125%	=	0
MINIMUM GENERAL LIGHTING PER NEC-220 x 125%				7,875
MINIMUM TRACK LIGHTING/SHOW WINDOW PER NEC-220 x 125%				0
POWER & HVAC				
EXISTING	0	x 100%	=	0