PROPOSED NEW RECLAMATION BUILDING FOR :

ALTER TRADING

1640 WEST BRUCE STREET (FACILITY / CAMPUS ADDRESS)
1640 WEST BRUCE STREET (PROPOSED NEW BUILDING ADDRESS TO BE DETERMINED)
MILWAUKEE, WISCONSIN 53204

1 PERSPECTIVE VIEW LOOKING SOUTHEAST
12" = 1'-0"

CODE CALCULATIONS AND ANALYSIS:

OCCUPANCY CALCULATION:

OCCUPANCY F2 FACTORY / NON-FERROUS RECLAMATION FACILITY (PRIMARY)
100 SQUARE FEET IS MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT
20,317 SQUARE FEET GROSS / 100 SQUARE FEET PER PERSON = 203 PEOPLE

OCCUPANCY B BUSINESS (SECONDARY)
100 SQUARE FEET IS MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT
4,451 SQUARE FEET GROSS / 100 SQUARE FEET PER PERSON = 45 PEOPLE

TOTAL OCCUPANCY = 248 PEOPLE MAXIMUM CALCULATED

PLUMBING FIXTURE CALCULATION:

BASED ON B BUSINESS OCCUPANCY = 45 PEOPLE

TOILET FIXTURES (WC) REQUIRED AND PROVIDED ARE AS FOLLOWS:
B MEN = 0.9 FIXTURE (WC) REQUIRED
B WOMEN = 0.9 FIXTURE (WC) REQUIRED

BASED ON F-2 LOW HAZARD FACTORY OCCUPANCY = 203 PEOPLE

TOILET FIXTURES (WC) REQUIRED AND PROVIDED ARE AS FOLLOWS:
S-1 MEN = 1.02 FIXTURE (WC) REQUIRED
S-1 WOMEN = 1.02 FIXTURE (WC) REQUIRED

TOTAL (WC) FIXTURES REQUIRED - MEN = 1.92 FIXTURES 2 PROVIDED 5 PROVIDED
TOTAL (WC) FIXTURES REQUIRED - WOMEN = 1.92 FIXTURES 2 PROVIDED 2 PROVIDED

MEN AND WOMEN FIXTURES (WC) REQUIRED 4 TOTAL AND PROVIDED 6 TOTAL OK

LAVATORY FIXTURES REQUIRED AND PROVIDED ARE AS FOLLOWS:
B MEN AND WOMEN 45 = 1.13 LAVATORY FIXTURE REQUIRED. 2 PROVIDED 2
S-1 MEN AND WOMEN 203 = 2.03 LAVATORY FIXTURE REQUIRED. 2 PROVIDED 2

MEN AND WOMEN FIXTURES (LAV) REQUIRED 4 TOTAL AND PROVIDED 4 TOTAL OK

EXIT WIDTH REQUIRED AND EXIT ACCESS TRAVEL DISTANCE:

EXIT WIDTH REQUIRED 248 x .20 = 49.60 INCHES OR 32 INCHES EACH MINIMUM CLEAR X (2) EXITS
EXIT WIDTH PROVIDED (4) 36" WIDE DOORS x 34" = 132" WIDTH
TOTAL EXIT WIDTH PROVIDED OF 102" EXCEEDS REQUIRED EXIT WIDTH CALCULATED (49.6")
TOTAL NUMBER OF EXISTING EXITS PROVIDED (4) EXCEEDS THE NUMBER OF EXITS REQUIRED (2)
REFER TO SHEET A0.1 FOR ADDITIONAL INFORMATION

EXIT TRAVEL DISTANCE = LESS THAN 150' IBC TABLE 1017.2

AREA AND HEIGHT LIMITATION CALCULATIONS:

PER IBC TABLE 506.2
FOR OCCUPANCY GROUP F2 (TYPE 2B CONSTRUCTION (INCLUDES AUTOMATIC SPRINKLER INCREASE) PLUS FRONTAGE INCREASE.
1 STORY AND 92,000 S.F. ALLOWED FROM TABLE 506.2 WHICH INCLUDES SPRINKLER INCREASE FRONTAGE INCREASE = 43,240 S.F.
THE ACTUAL SIZE IS 20,316 OR 22,535 S.F.

FRONTAGE INCREASE CALCULATION IBC 506.3:
F = 503
P = 704
W= 30
503/704 - .25/30/30 = INCREASE RATIO
.72 - .25/1 = .47 (92,000) = 43,240 S.F.
AMOUNT OF FRONTAGE INCREASE ALLOWED IS 43,240 S.F. FOR A TOTAL OF 135,240 S.F.

THE MAXIMUM ALLOWABLE BUILDING AREA IS 92,000 + 43,240 = 135,240 S.F. ACTUAL IS 22,535 S.F.

THE BUILDING IS NOT CLASSIFIED AS AN UNLIMITED AREA BUILDING PER SECTION 507.4

THE BUILDING AREA IS AT OR BELOW THE ALLOWABLE AREA LIMITS AND
STORY LIMITS PER TABLE 506.2 WITH AUTOMATIC SPRINKLER INCREASE.

THE BUILDING IS BELOW ALLOWABLE HEIGHT LIMIT OF 55 FEET. THE ACTUAL HEIGHT IS 54'-4" FEET. PER TABLE 504.3
ALLOWABLE NUMBER OF STORIES IS TWO AND THE BUILDING HAS ONLY ONE STORY AND A MEZZANINE LEVEL.

MULTIPLE OCCUPANCIES:

BUILDING DESIGN IS BASED ON SEPARATED OCCUPANCIES PER IBC 508.

WE PROPOSED TO SEPARATE THE TWO OCCUPANCIES TYPES FROM EACH OTHER AND TWO CREATE TWO
BUILDINGS SEPARATED BY FIREWALL TO ALLOW FOR BUILDING AREA LIMITS TO COMPLY.

PER TABLE IBC 508.4 THE REQUIRED BETWEEN B AND H3 OCCUPANCY IS (1) HOUR; HOWEVER PER IBC SECTION
706 FIREWALLS WE ARE REQUIRED TO USE A 3 HOUR FIRE RESISTIVE RATING FOR EITHER B OR HE OCCUPANCIES.
SINCE WE NEED TO CREATE SEPARATED BUILDINGS, WE PROPOSE TO USE A 3 HOUR RATED FIREWALL PER IBC
TABLE 706.4. OPENINGS SHALL BE PROTECTED WITH CORRESPONDING 3 HOUR RATED OPENING PROTECTIVES.

CONSTRUCTION CLASSIFICATION REQUIREMENTS:

PER IBC TABLE 601 AND TABLE 602:
TYPE IIB CONSTRUCTION:

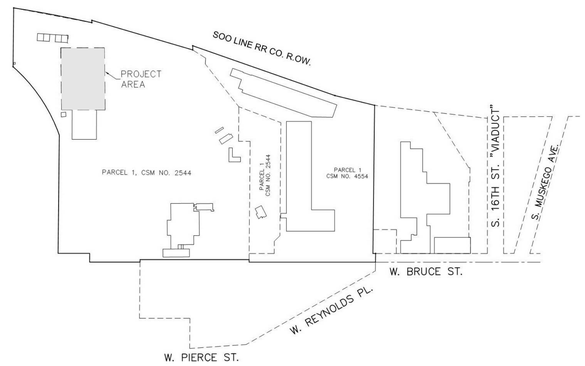
PRIMARY STRUCTURAL FRAME	"0" RATING REQUIRED
INTERIOR BEARING WALLS	"0" RATING REQUIRED
EXTERIOR BEARING WALLS	"0" RATING REQUIRED
EXTERIOR NON-BEARING WALLS (PER TABLE 602.10 < 30 FEET)	"0" RATING REQUIRED
NONBEARING WALLS AND PARTITIONS	"0" RATING REQUIRED
FLOOR CONSTRUCTION AND SECONDARY MEMBERS	"0" RATING REQUIRED
ROOF CONSTRUCTION AND SECONDARY MEMBERS	"0" RATING REQUIRED

EXTERIOR WALL OPENINGS ALLOWED:

PER IBC TABLE 705.8:
THE NEW WALLS OF THE PROPOSED ADDITION ARE GREATER THAN 30 FEET AWAY
FROM THE PROPERTY LINE OR STREET; THEREFORE, THERE ARE NO RESTRICTIONS
ON OPENINGS BOTH PROTECTED AND UNPROTECTED.

BUILDING ENVELOPE REQUIREMENTS:

BUILDING ENVELOPE REQUIREMENTS: PROPOSED TO USE PRESCRIPTIVE METHOD.
PER SPS 363.0402 BUILDING ENVELOPE REQUIREMENTS. (1) OPAQUE ASSEMBLIES.
SUBSTITUTE 2009 IECC TABLE 502.2 (1) PER SPS 363.5402 BUILDING ENVELOPE
REQUIREMENTS. (1) INSULATION AND FENESTRATION REQUIREMENTS BY
COMPONENT. REFER TO SHEET A5.1 EXTERIOR ELEVATIONS.



4 VICINITY MAP
N.T.S.

SHEET INDEX

PLAN COMMISSION SUBMITTAL PLANS

APRIL 16, 2019

OWNER :
ALTER TRADING CORPORATION
JAMIE WILSON

700 OFFICE PARKWAY
ST. LOUIS, MO 63141
(314) 787-3910 PHONE

GENERAL CONTRACTOR :
BRIOHN BUILDING CORPORATION
PEYTON PAQUIN, PM

3885 N. BROOKFIELD RD., SUITE 200
BROOKFIELD, WISCONSIN 53045
(262) 790-0500 PHONE
(262) 790-0505 FAX

ARCHITECT :
BRIOHN DESIGN GROUP LLC
DOMENICO FERRANTE, AIA

3885 N. BROOKFIELD RD., SUITE 200
BROOKFIELD, WISCONSIN 53045
(262) 790-0500 PHONE
(262) 790-0505 FAX

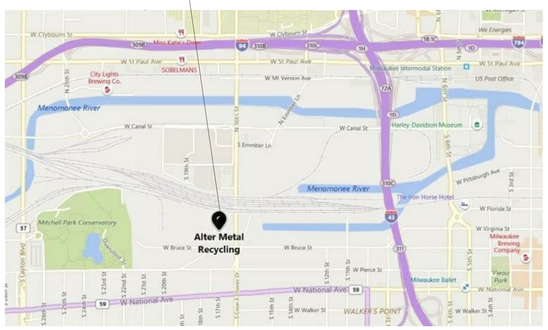
CIVIL ENGINEER:
CJ ENGINEERING
CHRISTOPHER A. JACKSON, PE

9205 W. CENTER STREET, SUITE 214
MILWAUKEE, WI 53222
(414) 443-1312 PHONE
(414) 940-4450 FAX

STRUCTURAL ENGINEER:
BRIOHN DESIGN GROUP LLC
KEVIN JANKOWSKI, PE

3885 N. BROOKFIELD RD., SUITE 200
BROOKFIELD, WISCONSIN 53045
(262) 790-0500 PHONE
(262) 790-0505 FAX

PROJECT LOCATION:



STREET MAP
N.T.S.

PROJECT INFORMATION:

BUILDING CODE:
2015 INTERNATIONAL BUILDING CODE WITH WISCONSIN AMENDMENTS SPS 362
2015 INTERNATIONAL EXISTING BUILDING CODE WITH WISCONSIN AMENDMENTS SPS 366
ACCESSIBILITY CODE:
2015 INTERNATIONAL BUILDING CODE WITH WISCONSIN AMENDMENTS SPS 362
2009 ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
ENERGY CODE:
2015 IECC INTERNATIONAL ENERGY CONSERVATION CODE WITH WISCONSIN AMENDMENTS SPS 363
MECHANICAL CODE:
2015 INTERNATIONAL MECHANICAL CODE WITH WISCONSIN AMENDMENTS SPS 364
PLUMBING CODE:
2014 WISCONSIN PLUMBING CODE SPS 381-387
ELECTRICAL CODE:
2011 NFPA 70 NATIONAL ELECTRICAL CODE WITH WISCONSIN AMENDMENTS SPS316
FIRE CODE:
2006 INTERNATIONAL FIRE CODE ADOPTED PER MILWAUKEE CODE OF ORDINANCES (MCO 214-3)

NOTE:
ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SPRINKLER ENGINEERING BY DESIGN-BUILD CONTRACTORS

OCCUPANCY:	MANUFACTURING FACILITY - PRIMARY OFFICE - SECONDARY
CLASS OF CONSTRUCTION:	TYPE 2B
SPRINKLER SYSTEM:	FULL
FLOOR LEVELS:	1
NUMBER OF STORIES	1+MEZZANINE

BUILDING AREA:

RECLAMATION AREA - FIRST FLOOR	20,316 SF
OFFICE AREA - FIRST FLOOR	2,219 SF
TOTAL - FOOTPRINT	22,535 SF
OFFICE AREA - MEZZANINE LEVEL	2,232 SF
TOTAL - OVERALL	24,767 SF

TRUE NORTH
PLAN NORTH
APPLICABLE TO ALL PLAN VIEWS

BRIOHN
DESIGN GROUP
3885 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
TITLE SHEET

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET:
T1.1

GENERAL NOTES

1. THE FOLLOWING SHALL APPLY TO ALL SUBCONTRACTORS AND SUPPLIERS ENGAGED IN EXECUTION OF THE WORK SHOWN ON THESE DRAWINGS AND SPECIFICATIONS.

2. THE COMPLETE CONSTRUCTION DOCUMENT SET IS INCLUSIVE OF THE DRAWING SHEETS LISTED IN THE DRAWING INDEX.

3. ALL WORK SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF THE LOCAL AND STATE BUILDING, HVAC AND FIRE SAFETY CODE; LOCAL AND STATE PLUMBING CODE; LOCAL AND STATE MECHANICAL CODES; LOCAL AND STATE ELECTRICAL CODE; OSHA BARRIER FREE DESIGN; LOCAL AND STATE FIRE PROTECTION CODES. ALL WORK SHALL CONFORM TO ALL NATIONAL CODES AND REFERENCE STANDARDS AS REFERENCED IN THE LOCAL AND STATE CODES. ALL WORK, MATERIALS AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH ALL ORDINANCES, STATE AND LOCAL BUILDING CODES, LATEST EDITION, OF THE AUTHORITIES HAVING JURISDICTION. DESIGN LOADS: LOADS AND CODE RESTRICTIONS FOR ALL DESIGN CONSIDERATIONS SHALL CONFORM TO THE LOCAL AND STATE CODES AND ALL GOVERNING CODES, AND ALL CONSTRUCTION IS TO COMPLY WITH ALL LOCAL SEISMIC REQUIREMENTS. REFER TO STRUCTURAL SPECIFICATIONS.

4. PERMITS: THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER APPLICATION FOR AND SECURING OF ALL NECESSARY PERMITS, AS WELL AS THE OBSERVANCE OF ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL LAWS, REGULATIONS OR ORDINANCES.

5. FIRE PROTECTION: SUBCONTRACTOR SHALL PROVIDE FIRE EXTINGUISHERS WITHIN THE PREMISES AS REQUIRED BY CODE AND OR INSURANCE COMPANIES (FOLLOW MORE STRINGENT REQUIREMENTS), OR VERIFY THAT AN ADEQUATE NUMBER OF FIRE EXTINGUISHERS EXIST IN THE CASE OF A REMODELING OR ALTERATION. DISCONNECT AND SEAL UTILITIES SERVING STRUCTURE TO BE DEMOLISHED, PRIOR TO START OF DEMOLITION WORK IF DEMOLITION WORK IS PART OF THE SCOPE OF WORK REQUIRED.
FIRE SPRINKLERS: THE GENERAL CONTRACTOR SHALL EMPLOY THE SERVICES OF A LICENSED FIRE SPRINKLER CONTRACTOR TO REWORK AND MODIFY THE EXISTING SYSTEM TO CONFORM WITH THE NEW ROOM AND CEILING HEIGHTS AS SHOWN IN THESE DRAWINGS. THE SPRINKLER CONTRACTOR SHALL DESIGN AND PREPARE SHOP DRAWINGS FOR THE PROPOSED SYSTEM MODIFICATIONS AND SUBMIT THESE DRAWINGS TO THE LOCAL AND STATE BUILDING AND CODE OFFICIALS AND THE ARCHITECT TO GAIN APPROVALS PRIOR TO CONNECTING ANY WORK. PROVIDE CONCEALED HEADS FOR AREAS WITH FINISHED CEILINGS UNLESS OTHERWISE NOTED.

6. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS..

7. CONTRACTOR COMPLIANCE: THE SUBCONTRACTOR SHALL VISIT THE PREMISES AND VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION AND SHALL REPORT ALL DISCREPANCIES TO THE ARCHITECT AND THE GENERAL CONTRACTOR. THE SUBCONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS REGARDING CONSTRUCTION PROCEDURES, INSURANCE, ETC AS SET FORTH BY THE GENERAL CONTRACTOR.

8. THE SUBCONTRACTOR SHALL SUBMIT A SPECIFIC CONSTRUCTION SCHEDULE TO THE GENERAL CONTRACTOR'S CONSTRUCTION/PROJECT MANAGER WITHIN 7 DAYS AFTER THE AWARD OF THE SUBCONTRACT.

9. HAZARDOUS MATERIALS: IN THE EVENT HAZARDOUS MATERIALS ARE ENCOUNTERED ON THE PREMISES DURING THE EXECUTION OF THE WORK, NOTIFY THE GENERAL CONTRACTOR BEFORE PROCEEDING WITH THE WORK. THE GENERAL CONTRACTOR SHALL NOTIFY THE OWNER/LANDLORD. AFTER THE OWNER/LANDLORD IS NOTIFIED AND WORK IS SUSPENDED, THE OWNER/LANDLORD IS RESPONSIBLE FOR DIRECTIONS TO THE GENERAL CONTRACTOR AS TO THE REMOVAL AND HANDLING OF HAZARDOUS MATERIALS. PROCEED WITH WORK WHEN THE OWNER/LANDLORD GIVES WRITTEN APPROVAL. REMOVAL AND HANDLING OF HAZARDOUS MATERIALS SHALL FOLLOW LOCAL AND STATE CODES AND REQUIREMENTS.

10. INFORMATION RELATED TO EXISTING CONDITIONS GIVEN IN THE CONSTRUCTION DOCUMENTS WAS OBTAINED FROM EXISTING BUILDING SCHEMATIC DRAWINGS AVAILABLE AT THE TIME OF DESIGN. ACCURACY CAN NOT BE GUARANTEED. DRAWINGS AND SPECIFICATIONS ARE INTENDED FOR ASSISTANCE AND GUIDANCE, BUT EXACT DIMENSIONS AND ELEVATIONS SHALL BE GOVERNED BY ACTUAL CONDITIONS AT THE SITE AND SHALL BE VERIFIED BY THE SUBCONTRACTOR.

11. NOTES ARE AN AID FOR THE SUBCONTRACTOR IN UNDERSTANDING THE WORK AND SHALL NOT BE CONSTRUED AS BEING COMPLETE IN EVERY DETAIL. IT IS THE RESPONSIBILITY OF THE SUBCONTRACTOR TO VISIT THE SITE, BECOME THOROUGHLY FAMILIAR WITH THE WORK AND REPORT ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE ACTUAL CONDITIONS TO THE ARCHITECT AND THE GENERAL CONTRACTOR.

12. DO NOT SUBSTITUTE, REVISE OR CHANGE THE WORK WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT AND THE GENERAL CONTRACTOR.

13. INSTALL WORK PLUMB LEVEL SQUARE TRUE AND IN PROPER ALIGNMENT.

14. WORK SHALL BE SCHEDULED AND PERFORMED SO AS NOT TO DISTURB OR CAUSE DAMAGE TO EXISTING BUILDING ELEMENTS INTENDED TO REMAIN WHICH IS NOT PART OF THE SCOPE OF THE WORK. WORK SHALL BE SCHEDULED AND PERFORMED SO AS NOT TO DISTURB OR CAUSE DAMAGE TO INSTALLED WORK.

15. NO WORK SHALL BE DONE IN OTHER NON DESIGNATED AREAS OR OTHER TENANT AREAS, UNLESS OTHERWISE NOTED. SCHEDULE AND PERFORM THE WORK SO THAT THE OTHER AREAS NOT DESIGNATED TO RECEIVE WORK AND THE OTHER TENANTS IN THE BUILDING WILL NOT BE DISTURBED AND COMPLY WITH THE BUILDING OWNERS REQUIREMENTS.

16. COORDINATE WORK AS REQUIRED WITH THE OWNER/LANDLORD'S REPRESENTATIVE INCLUDING THE USE OF ELEVATORS, TEMPORARY STORAGE, LOADING DOCKS, BUILDING KEYING SYSTEMS, ETC. AND PROVIDE NECESSARY BARRICADES, LIGHTING, SIGNAGE AND GUARDRAILS AS REQUIRED BY OWNER/LANDLORD AND/OR APPLICABLE REGULATORY AGENCIES FOR THE PROTECTION OF BUILDING OCCUPANTS, WORKERS, VISITORS, CUSTOMERS AND PEDESTRIANS.

17. EACH SUBCONTRACTOR IS CONSIDERED A SPECIALIST IN HIS/HER RESPECTIVE FIELD, AND PRIOR TO THE SUBMISSION OF BID OR PERFORMANCE OF WORK EACH SUBCONTRACTOR SHALL NOTIFY THE ARCHITECT AND GENERAL CONTRACTOR OF WORK CALLED OUT IN THE DRAWINGS OR SPECIFICATIONS IN HIS/HER TRADE THAT CANNOT BE FULLY GUARANTEED OR CONSTRUCTED ACCORDING TO THE DESIGN INTENT.

18. PROVIDE AND COORDINATE LOCATION AND TYPE OF BLOCKING/BACKING REQUIRED WITHIN PARTITIONS AT LOCATIONS OF WALL MOUNTED ITEMS.

19. THE DRAWINGS INDICATE LOCATION, DIMENSIONS, REFERENCE AND TYPICAL DETAILS OF CONSTRUCTION. THE DRAWINGS DO NOT ILLUSTRATE EVERY CONDITION. WORK NOT PARTICULARLY DETAILED SHALL BE OF CONSTRUCTION SIMILAR TO PARTS THAT ARE DETAILED. VERIFY WITH ARCHITECT AND GENERAL CONTRACTOR PRIOR TO FABRICATION OR INSTALLATION OF SPECIFIC DETAILS OF CONSTRUCTION.

20. DISCREPANCY IN THE PLANS SHALL BE REPORTED TO ARCHITECT AND GENERAL CONTRACTOR IMMEDIATELY. SUBCONTRACTOR SHALL NOT MAKE A DETERMINATION FOR CONFLICTS IN PLAN DIMENSIONS.

21. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT THE APPROVAL OF THE ARCHITECT AND GENERAL CONTRACTOR UNLESS NOTED +/-.

22. VERTICAL DIMENSIONS ARE FROM THE TOP OF FLOOR FINISH, ESTABLISHED BY THE ARCHITECT AND GENERAL CONTRACTOR UNLESS OTHERWISE NOTED.

23. DIMENSIONS MARKED "FIELD VERIFY" SHALL BE VERIFIED IN THE FIELD BY THE SUBCONTRACTOR'S AFFECTED.

24. HORIZONTAL DIMENSIONS SHALL BE SHOWN FROM THE FINISHED FACE OF CONSTRUCTION UNLESS OTHERWISE NOTED.

25. WASTE AND REFUSE CAUSED BY WORK SHALL BE REMOVED FROM THE PREMISES AND DISPOSED OF OR RECYCLED PROPERLY BY THE SUBCONTRACTOR DAILY. FINAL CLEANING PRIOR TO FINAL INSPECTION SHALL INCLUDE A THOROUGH CLEANING OF ALL SURFACES AND REPLACEMENT OF ALL FILTERS IN NEW INSTALLED HVAC EQUIPMENT AND EXISTING HVAC EQUIPMENT AFFECTED BY CONSTRUCTION OF WORK.

26. MAINTAIN STRICT CONTROL OF DUST AND DEBRIS EMANATING FROM THE PROJECT AREA. KEEP PROJECT AREA BROOM CLEAN AND CLEAR OF DEBRIS DAILY.

27. SUBCONTRACTOR SHALL PERFORM ANY AND ALL EXCAVATING, CUTTING, PATCHING, REPAIRING, RESTORING AND THE LIKE NECESSARY TO COMPLETE THE WORK OF THIS CONTRACT. RESTORE ANY DAMAGED OR AFFECTED SURFACES RESULTING FROM THE WORK OF THIS CONTRACT TO THEIR ORIGINAL CONDITION AND TO THE SATISFACTION OF THE ARCHITECT, GENERAL CONTRACTOR, AND THE OWNER/LANDLORD. PATCH DAMAGE WITHIN THE WORK AREA, AS WELL AS OUTSIDE THE LIMIT OF WORK AREA IF CAUSED BY THE EXECUTION OF THE WORK.

28. EACH SUBCONTRACTOR SHALL LEAVE THE SITE IN A NEAT, CLEAN AND ORDERLY CONDITION ON A DAILY BASIS AND UPON CONCLUSION OF HIS WORK. ALL WASTE, RUBBISH AND EXCESS MATERIALS SHALL BE REMOVED FROM THE SITE PROMPTLY. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL TRASH GENERATED FOR THE DURATION OF THE PROJECT.

29. CONSULT PROPERTY AS BUILT UTILITY PLANS BEFORE SAW CUTTING CONCRETE SLAB IF REQUIRED. IF AS BUILT DRAWINGS ARE NOT AVAILABLE UTILIZE OTHER MEANS TO UNCOVER BURIED UTILITIES.

30. NO SUBSTITUTIONS SHALL BE PERMITTED UNLESS PRIOR APPROVAL BY THE ARCHITECT AND THE GENERAL CONTRACTOR IS GIVEN.

31. PATCH AND REPAIR ALL FIREPROOFING AND FIRE STOPPING DAMAGED OR REMOVED DURING THE PERFORMANCE OF THE WORK.

32. ACCESSORIES, ETC. THEY SHALL BE PAINTED TO MATCH THE ADJACENT SURFACE AND AS DIRECTED BY THE ARCHITECT AND THE GENERAL CONTRACTOR.

33. EXTERIOR WALL OPENINGS, FLASHING, COUNTER FLASHING, COPING AND EXPANSION JOINTS SHALL BE WEATHERPROOF.

34. CAULKING AND SEALANTS: OPEN JOINTS PENETRATIONS AND OTHER OPENINGS IN THE BUILDING ENVELOPE SHALL BE SEALED, CAULKED, GASKETED, OR WEATHER STRIPPED TO LIMIT AIR LEAKAGE. MAINTAIN REQUIRED FIRE RATING.

35. USE ACOUSTICAL SEALANT AROUND ALL PIPES, DUCTS, CONDUITS, SWITCHES, ETC. ON BOTH SIDES OF WALLS (CROSSING/PENETRATION) WITH THERMAL AND ACOUSTIC INSULATION. MAINTAIN REQUIRED FIRE RATING.

36. NOISE BARRIER BATTS (SOUND INSULATION) SHALL BE NON COMBUSTIBLE.

37. MECHANICAL CONTRACTORS SHALL VERIFY EXACT LOCATIONS AND EXACT DIMENSIONS WITH EQUIPMENT MANUFACTURERS. MECHANICAL CONTRACTORS SHALL VERIFY ALL SIZES AND LOCATIONS OF DUCT OPENINGS BEFORE INSTALLATION AND VERIFY DISCREPANCIES, IF ANY.

38. DEFINITIONS:
A) AS REQUIRED: AS REQUIRED BY REGULATORY REQUIREMENTS BY REFERENCED STANDARDS, BY EXISTING CONDITIONS, BY GENERALLY ACCEPTED CONSTRUCTION PRACTICE OR BY THE CONTRACT DOCUMENTS.
B) TYPICAL: IDENTICAL FOR SIMILAR CONDITIONS, UNLESS OTHERWISE NOTED.
C) SIMILAR: COMPARABLE CHARACTERISTICS FOR THE CONDITION NOTED. DIFFERENCES CAN BE INFERRED FROM OTHER INFORMATION INDICATED. VERIFY DIMENSIONS AND ORIENTATIONS.
D) REMOVE: ELIMINATE AND RECYCLE OR DISPOSE OF PROPERLY.

39. SUBCONTRACTOR TO CROSS CHECK WITH ARCHITECTURAL, HVAC, AND PLUMBING PLANS FOR OTHER DETAILS, DIMENSIONS, ELEVATIONS, OPENINGS, INSERTS, BRICK LEDGES, ETC. BRIOHN DESIGN GROUP, LLC TO BE NOTIFIED OF ANY VARIANCE BEFORE CONTRACTOR BEGINS WORK.

40. DIMENSIONS SHOWN ON ARCHITECTURAL DRAWINGS SUPERSEDE DIMENSIONS SHOWN ON STRUCTURAL PLANS. THE USE OF A SCALE TO OBTAIN DIMENSIONS NOT SHOWN ON DRAWINGS IS NOT PERMITTED.

41. IN NO CASE SHALL STRUCTURAL ALTERATIONS OR WORK AFFECTING A STRUCTURAL MEMBER BE MADE, UNLESS APPROVED BY BRIOHN DESIGN GROUP, LLC.

GENERAL NOTES CONTINUED

42. IT IS THE SUBCONTRACTORS SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS AS MAY BE NECESSARY. ALL CONSTRUCTION AND ERECTION TO CONFORM TO OSHA REQUIREMENTS.

43. WHERE DETAILS ARE CALLED FOR IN A CERTAIN PORTION OF THE BUILDING, THEY SHALL BE DUPLICATED IN SIMILAR PORTIONS OF THE BUILDING UNLESS SHOWN OTHERWISE. CLARIFY WITH ARCHITECT BEFORE SUBCONTRACTOR BEGINS WORK.

44. CONSTRUCTION DOCUMENTS SHOW DIMENSIONS AND ELEVATIONS TO SIGNIFICANT WORKING POINTS (COLUMN CENTERLINES, OUTSIDE FACES OF WALLS, TOP OF FRAMING MEMBERS, ETC.) MATERIAL SUPPLIERS AND DESIGNERS ARE RESPONSIBLE FOR ALL OTHER INFORMATION IN ORDER TO DETAIL/FABRICATE THEIR WORK. CONTACT THE ARCHITECT WITH ANY DISCREPANCIES.

45. SUBCONTRACTOR SHALL PROVIDE A MINIMUM OF FOUR DETAILED SHOP DRAWINGS, OTHER RELATED DRAWINGS, ERECTION DRAWINGS AND SAMPLES WHERE REQUIRED PRIOR TO COMMENCEMENT OF FABRICATION AND INSTALLATION OF WORK.

GENERAL REQUIREMENTS

01. THE WORK SHALL INCLUDE ALL LABOR, MATERIAL, EQUIPMENT AND SERVICES NECESSARY FOR AND SAID HEADING AS INDICATED IN THE SPECIFICATIONS, DRAWINGS AND DESIGN BUILD CONSTRUCTION CONTRACT.

02. SUBCONTRACTORS SHALL VISIT THE PREMISES WHILE BIDDING AND SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND THE REQUIREMENTS OF THE PROJECT PRIOR TO DEVELOPING THEIR BID. MATERIAL QUANTITIES SHALL BE BASED ON ACTUAL FIELD CONDITIONS AND MEASUREMENTS. DO NOT RELY ON SCALING PLANS FOR ACCURATE DIMENSIONING.

03. PRIOR TO BEGINNING THE WORK, VERIFY ALL EXISTING DIMENSIONS AND SQUARE FOOTAGES. NOTIFY THE OWNER/LANDLORD OF COMPLIANCE OR DISCREPANCIES, COMPARING THOSE DISCREPANCIES TO THE NUMBERS ON THE TITLE SHEET.

04. SUBCONTRACTORS SHALL TAKE CARE TO PROTECT ADJACENT AREAS FROM DUST AND DAMAGE DURING THE CONSTRUCTION PROCESS AND SHALL CLEAN UP AFTER THEMSELVES AT THE END OF EACH WORKING DAY. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PROTECTION OF ADJACENT ITEMS AND SURFACES FROM DAMAGE RESULTING FROM THE FURNISHING OR INSTALLATION OF SUBCONTRACTORS WORK AND SHALL PROMPTLY REPLACE, AT HIS OWN COST, SUCH DAMAGED WORK. SUBCONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE PROPER PROTECTION OF HIS AND OTHERS WORK FROM DAMAGE. USE APPROPRIATE COVERINGS OVER FURNITURE, DISPLAY CASES, EQUIPMENT AND FINISHES AS REQUIRED.

05. RUBBISH AND TRASH SHALL BE REMOVED FROM THE PREMISES AND RECYCLED AND/OR PROPERLY DISPOSED OF EACH DAY. NO RUBBISH SHALL BE LEFT IN THE PREMISES AFTER WORK IS COMPLETED.

06. UPON COMPLETION OF THE WORK INTERIOR AND EXTERIOR OF ALL GLASS AND GLAZING, FLOORS, WALLS AND CEILING SURFACES, ELECTRICAL FIXTURES, MECHANICAL EQUIPMENT, ETC.; IT IS NECESSARY TO REMOVE ALL DIRT, STAINS AND MARKS.

06. DRAWINGS HEREIN CREATE AN ENTIRE PACKAGE. ALL TRADES SHALL BE RESPONSIBLE FOR REVIEWING THEIR RESPECTIVE REQUIREMENTS AND COORDINATING THEIR HIDDEN OR EXPOSED WORK WITH OTHER RELATED TRADES.

07. COORDINATE WORK OF THE VARIOUS TRADES AND SUBCONTRACTORS TO ASSURE EFFICIENT AND ORDERLY INSTALLATION. PROVIDE ACCOMMODATION FOR ITEMS INSTALLED AT A LATER DATE. VERIFY THAT CHARACTERISTICS OF ELEMENTS OF INTERRELATED OPERATING EQUIPMENT ARE COMPATIBLE. COORDINATE WORK OF VARIOUS SECTIONS WHICH HAVE INTERDEPENDENT RESPONSIBILITIES FOR INSTALLING, CONNECTING TO, AND PLACING IN SERVICE, SUCH EQUIPMENT. COORDINATE SPACE REQUIREMENTS AND INSTALLATION OF MECHANICAL AND ELECTRICAL WORK AND FIRE SPRINKLER SYSTEM WHICH ARE INDICATED, DETAILED OR IMPLIED DIAGRAMMATIC ALLY ON DRAWINGS.

08. UNLESS SPECIFICALLY NOTED, PROVIDE AND PAY FOR LABOR, MATERIALS AND EQUIPMENT, TOOLS, CONSTRUCTION EQUIPMENT AND MACHINERY AND OTHER FACILITIES AND SERVICES NECESSARY FOR PROPER EXECUTION AND COMPLETION OF WORK, INCLUDING PERMITS.

09. GENERAL CONTRACTOR AND SUBCONTRACTOR SHALL PURCHASE AND MAINTAIN INSURANCE COVERAGE IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER/LANDLORD.

10. FURNISH REQUIRED TEMPORARY FACILITIES AND TEMPORARY UTILITIES IMMEDIATELY AFTER RECEIPT OF NOTICE TO PROCEED FOR USE IN CONVENIENCE OF THOSE ENGAGED IN THE PROJECT WORK.

11. SUBCONTRACTORS MUST STAY BEHIND THE BARRIERS AND MAINTAIN ACCESS TO SUCH AREAS CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS. FAILURE TO MAINTAIN CLEAN WORK AREAS WILL RESULT IN GENERAL CONTRACTOR HAVING SUCH MATERIALS AND DEBRIS REMOVED AND CHARGES FOR MAINTENANCE BILLED TO THE SUBCONTRACTOR.

12. COORDINATE CONSTRUCTION, SCHEDULING WITH THE OWNER/LANDLORD OR REPRESENTATIVE REVIEWING SCHEDULED ACTIVITIES AT OUTSET OF CONSTRUCTION.

13. ALLOWABLE TOLERANCES - UNLESS OTHERWISE NOTED OR INDICATED, THE FOLLOWING TOLERANCES SHALL APPLY TO WORK WITHIN AND RELATED TO THE SCOPE OF THESE DOCUMENTS.

A) VERTICAL SURFACES SHALL BE PLUMB OR CONSTRUCTED TO THE EXACT SLOPES OR ANGLES INDICATED.

B) THE MAXIMUM DEVIATION FROM THE TRUE PLANE FOR VERTICAL AND HORIZONTAL SURFACES SHALL NOT BE GREATER THAN 1/8" IN 10'-0" AS MEASURED BY A STRAIGHT EDGE PLACED ANYWHERE ON THE SURFACE.

C) HORIZONTAL SURFACES SHALL BE LEVEL OR CONSTRUCTED TO THE EXACT ANGLE INDICATED OR INTENDED.

D) WALL AND SOFFIT INTERSECTIONS SHALL BE 90 DEGREES OR THE EXACT ANGLE INDICATED OR INTENDED.

E) CORNERS AND EDGES SHALL BE STRAIGHT AND TRUE WITHOUT DENTS, WAVES, BULGES OR OTHER BLEMISHES.

F) JOINTS SHALL BE TIGHT, STRAIGHT, EVEN AND SMOOTH.

G) OPERABLE ITEMS SHALL OPERATE SMOOTHLY WITHOUT STICKING OR BINDING AND WITHOUT EXCESSIVE "PLAY" OR LOOSENESS.

14. THE FOLLOWING MATERIALS SHALL BE LEFT AT THE JOBSITE. THEY SHALL BE TAKEN FROM THE SAME MATERIAL, LOT OR RUN USED TO CONSTRUCT AND FINISH THE PROJECT:

A) (5) PIECES OF EACH ENTRY OF TILE, IF USED.

B) (1) GALLON OF EACH COLOR PAINT IN A TIGHTLY SEALED AND MARKED CAN.

C) (1) BOX OF EACH TYPE OF CEILING TILE, IF USED.

15. THE OWNER/LANDLORD OR OWNER/LANDLORD'S SUBCONTRACTORS MAY OCCUPY PORTIONS OF THE PROJECT DURING THE FINAL STAGE OF CONSTRUCTION, WITH THE COOPERATION AND COORDINATION OF THE GENERAL CONTRACTOR AND APPROVAL OF THE LOCAL CODE OFFICIAL IF REQUIRED.

16. DIMENSIONS AND FINISHES SHALL BE VERIFIED AND COORDINATED WITH EXISTING CONDITIONS PRIOR TO CONSTRUCTION, FABRICATION OR PURCHASING. IN CASE OF CONFLICT BETWEEN THE PROJECT REQUIREMENTS AND/OR EXISTING CONDITIONS, THE ONE HAVING THE MOST STRINGENT REQUIREMENTS SHALL GOVERN, AS APPROVED BY THE ARCHITECT AND THE GENERAL CONTRACTOR.

17. PERFORM WORK IN ACCORDANCE WITH ACCEPTABLE TRADE PRACTICE TO ENSURE THE HIGHEST QUALITY FINISHED PRODUCT - EXPRESSED OR IMPLIED. PERFORM WORK BY SKILLED MECHANICS IN ACCORDANCE WITH ESTABLISHED STANDARDS OF WORKMANSHIP IN EACH OF THE VARIOUS TRADES.

18. COORDINATE BLOCKING REQUIREMENTS WITH ADJACENT OR RELATED TRADES, ACCESSORIES, EQUIPMENT AND FIXTURES INSTALL REQUIRED BLOCKING AT NO ADDITIONAL COST TO CONTRACT.

19. REPAIR PROPERTY DAMAGE BY THE INSTALLERS TO A LIKE - NEW CONDITION OR REPLACE DAMAGED SURFACES AND MATERIALS OF THE PREVIOUSLY INSTALLED WORK BY OTHER TRADES, INSTALLERS AND SUBCONTRACTORS.

20. WHERE REQUESTED BY THE OWNER/LANDLORD TO CERTIFY CONFORMANCE TO TRADE STANDARDS OR THE PROJECT REQUIREMENTS, THE SUBCONTRACTOR SHALL ENLIST A TESTING LABORATORY AT THE OWNER/LANDLORD'S COST. IF THE REQUESTED TEST SHOWS NON - CONFORMANCE TO GENERALLY ACCEPTED TRADE STANDARDS OR THE PROJECT REQUIREMENTS, THE SUBCONTRACTOR SHALL CORRECT THE DEFICIENCY AT NO ADDITIONAL COSTS TO THE OWNER/LANDLORD AND REIMBURSE THE COSTS OF THE TESTING TO THE OWNER/LANDLORD, UNLESS THE CONTRACTOR HAS USED PRODUCTS INCORRECTLY LABELED BY THE MANUFACTURER OR HAS MADE PREVIOUSLY APPROVED CHANGES.

21. PROVIDE SECURITY OF THE WORK, INCLUDING TOOLS AND UNINSTALLED MATERIALS. PROTECT THE WORK, STORED PRODUCTS, CONSTRUCTION EQUIPMENT AND OWNER/LANDLORD'S PROPERTY FROM THEFT AND VANDALISM AND THE PREMISES FROM ENTRY BY UNAUTHORIZED PERSONNEL UNTIL FINAL ACCEPTANCE BY OWNER/LANDLORD.

22. MAINTAIN ACTIVE FIRE EXTINGUISHERS AT THE PROJECT AS REQUIRED TO ADEQUATELY COVER THE WORK AREA.

23. DO NOT USE MATERIALS OR EQUIPMENT FOR A PURPOSE OTHER THAN THAT FOR WHICH IT IS SPECIFICALLY DESIGNED OR SPECIFIED FOR. MATERIALS AND EQUIPMENT THAT ARE SIMILAR SHALL BE THE SAME TYPE, MODEL AND STYLE FOR THE SAME USE THROUGHOUT THE PROJECT OR THEY SHALL BE REJECTED.

24. WHEN THE PROJECT REQUIREMENTS REQUIRE THAT THE INSTALLATION OF WORK SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS, PERFORM THE WORK IN STRICT ACCORDANCE WITH THE MOST CURRENT WRITTEN MANUFACTURER'S INSTRUCTIONS.

25. PRODUCTS AND EQUIPMENT SHALL BE DELIVERED IN UNDAMAGED CONDITION AND STORED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO AVOID DISRUPTION OF THE WORK OR DAMAGE TO THE ITEMS. REPLACE DAMAGED OR UNFIT MATERIALS, AT NO ADDITIONAL COST TO OWNER/LANDLORD.

26. NOTIFY THE OWNER/LANDLORD WHEN THE WORK IS SUBSTANTIALLY COMPLETE AND READY FOR INSPECTION. PROVIDE WRITTEN OPERATION AND MAINTENANCE INSTRUCTIONS AND GUARANTEES FOR ALL EQUIPMENT AND MATERIALS INSTALLED. PROVIDE WRITTEN GUARANTEES FOR A PERIOD OF ONE (1) YEAR FROM THE THE DATE OF FINAL ACCEPTANCE OF THE WORK.

27. PROVIDE FINAL CLEAN - UP AND DAMAGE REPAIR AT THE PROJECT CONCLUSION. LEAVE THE PREMISES NEAT, CLEAN AND CLEAR OF TOOLS, EQUIPMENT AND SURPLUS MATERIALS, UNLESS REQUESTED BY THE OWNER/LANDLORD. CLEAN - UP SHALL INCLUDE AND NOT BE LIMITED TO:

28. SUBCONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS CORRESPONDING TO THE LOCATION OF EXISTING ELEMENTS SUCH AS COLUMNS, BEAMS, WALLS, ETC. NEEDED TO CONSTRUCT THIS PROJECT.

29. SUBCONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ARCHITECT OF ANY CONFLICTS WITH CONSTRUCTION DOCUMENTS.

GENERAL REQUIREMENTS CONTINUED

30. REMOVE, REPLACE AND/OR MODIFY ALL EXISTING CONSTRUCTION (ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL) AS REQUIRED IN ORDER TO PLACE NEW STRUCTURAL WORK SHOWN ON THE CONSTRUCTION DOCUMENTS.

31. SUBCONTRACTOR SHALL DESIGN AND PROVIDE ALL SHORING REQUIRED TO SUPPORT EXISTING CONSTRUCTION AND NEW CONSTRUCTION AS REQUIRED TO BUILD THIS PROJECT.

32. IT SHALL BE THE SUBCONTRACTOR'S SOLE RESPONSIBILITY TO RECEIVE, CHECK AND CONFIRM THE ARRIVAL IN GOOD ORDER ALL ITEMS CALLED FOR TO BE FURNISHED BY THE OWNER AND INSTALLED BY THE CONTRACTOR. THE SUBCONTRACTOR SHALL NOTIFY BRIOHN BUILDING CORP. AND OWNER IN WRITING OF ANY SUCH ITEMS MISSING OR DAMAGED WITHIN 3 DAYS OF RECEIVING DATE. FAILURE TO SO NOTIFY THE BRIOHN BUILDING CORP. AND OWNER WILL BE CONSIDERED PROOF THE PROPER QUANTITIES WERE DELIVERED AND IN GOOD CONDITION, AND IT SHALL BE THE SUBCONTRACTOR'S RESPONSIBILITY (AT SUBCONTRACTOR'S OWN COST) TO PROMPTLY REORDER, REPLACE AND OR REPAIR ANY SUCH ITEMS NEEDED FOR THE PROPER COMPLETION OF THIS PROJECT, ON THE AGREED DATE OF COMPLETION.

33. THE APPLICATION OF A MATERIAL AND OR EQUIPMENT ITEM BY A SUBCONTRACTOR TO UNSATISFACTORY WORK INSTALLED BY OTHERS, CONSTITUTES ACCEPTANCE OF THAT WORK AND ASSUMPTION OF FULL RESPONSIBILITY. PRIOR TO STARTING THE SPECIFIC APPLICATION, NOTIFY BRIOHN BUILDING CORP. IN WRITING OF ANY DEFECT OR DEFICIENCY WHICH WOULD IMPAIR COMPLETE AND SATISFACTORY APPLICATIONS OR INSTALLATION OF SUBCONTRACTOR'S WORK INCLUDING GUARANTEE.

34. WHERE INSTALLATION INCLUDE MANUFACTURED PRODUCTS, COMPLY WITH MANUFACTURER'S APPLICABLE INSTRUCTIONS AND RECOMMENDATIONS FOR INSTALLATION, TO THE EXTENT THESE ARE MORE EXPLICIT OR MORE STRINGENT THAN REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS.

35. PROVIDE ATTACHMENT AND CONNECTION DEVISES AND METHODS FOR SECURING WORK PROPERLY AS IT IS INSTALLED; TRUE TO LINE AND LEVEL, AND WITHIN RECOGNIZED INDUSTRY TOLERANCES UNLESS OTHERWISE NOTED. ALLOW FOR EXPANSION AND BUILDING MOVEMENT.

36. PROVIDE UNIFORM JOINT WIDTHS IN EXPOSED WORK, ORGANIZED FOR BEST POSSIBLE VISUAL EFFECT. REFER QUESTIONABLE VISUAL-EFFECT CHOICES TO ARCHITECT AND GENERAL CONTRACTOR FOR A FINAL DECISION. RECHECK MEASUREMENTS AND DIMENSIONS OF THE WORK, AS AN INTEGRAL STEP OF STARTING EACH INSTALLATION.

37. MOUNTING HEIGHTS: WHERE MOUNTING HEIGHTS ARE NOT INDICATED, MOUNT INDIVIDUAL UNITS OF WORK AT INDUSTRY RECOGNIZED STANDARD MOUNTING HEIGHTS FOR APPLICATIONS INDICATED. REFER QUESTIONABLE MOUNTING HEIGHT CHOICES TO ARCHITECT AND GENERAL CONTRACTOR FOR FINAL DECISION.

38. PROVIDE AND COMPLETE ALL PRELIMINARY WORK AND TEMPORARY CONSTRUCTION REQUIRED AS INDICATED AND REQUIRED. INSTALL TEMPORARY BARRICADE AS REQUIRED BY LOCAL OFFICIALS IN MANNER STIPULATED BY SAME.

39. INSTALLATION OF ANY COMBUSTIBLE MATERIALS ABOVE FINISHED CEILINGS OR IN ANY OTHER CONCEALED, NON-SPRINKLERED SPACE IS STRICTLY PROHIBITED.

40. IMPOSING ANY STRUCTURAL LOAD, TEMPORARY OR PERMANENT ON ANY PART OF THE EXISTING OR PROPOSED STRUCTURE WITHOUT ARCHITECT AND STRUCTURAL ENGINEER'S APPROVAL IS STRICTLY PROHIBITED.

41. CUTTING ANY HOLE IN EXISTING OR PROPOSED FLOOR SLABS, WALLS, COLUMNS, BEAMS OR ROOF WITHOUT PROPER APPROVAL BY ARCHITECT AND STRUCTURAL ENGINEER AND NOT IN ACCORDANCE WITH INSTRUCTIONS HEREIN AND PROPER CONSTRUCTION PROCEDURES IS STRICTLY PROHIBITED.

42. ATTACHING ANY WORK TO METAL DECK OR HANGING WORK FROM PLUMBING AND SPRINKLER PIPING OR CONDUIT IS STRICTLY PROHIBITED.

SITE WORK

WATER DISTRIBUTION

PART 1 GENERAL
1.1 SUMMARY
A. THIS SECTION INCLUDES WATER-DISTRIBUTION PIPING AND RELATED COMPONENTS OUTSIDE THE BUILDING FOR COMBINED WATER SERVICE AND FIRE-SERVICE.
B. UTILITY-FURNISHED PRODUCTS INCLUDE WATER METERS THAT WILL BE FURNISHED TO THE SITE. C. RELATED SECTIONS:
1. EARTHWORK

1.2 REFERENCES
A. STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
B. MILWAUKEE WATER WORKS RULES AND REGULATIONS GOVERNING WATER SERVICE AND WATER SERVICE PIPING SPECIFICATIONS, LATEST EDITION.

1.3 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

1.4 QUALITY ASSURANCE
A. REGULATORY REQUIREMENTS:
1. COMPLY WITH REQUIREMENTS OF MILWAUKEE WATER WORKS.
2. COMPLY WITH STANDARDS OF AUTHORITIES HAVING JURISDICTION FOR POTABLE-WATER-SERVICE PIPING, INCLUDING MATERIALS, INSTALLATION, TESTING, AND DISINFECTION.
3. COMPLY WITH STANDARDS OF AUTHORITIES HAVING JURISDICTION FOR FIRE-SUPPRESSION WATER- SERVICE PIPING, INCLUDING MATERIALS, HOSE THREADS, INSTALLATION, AND TESTING.

1.5 PROJECT CONDITIONS
A. INTERRUPTION OF EXISTING WATER-DISTRIBUTION SERVICE: DO NOT INTERRUPT SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY WATER-DISTRIBUTION SERVICE ACCORDING TO REQUIREMENTS INDICATED:
1. NOTIFY ARCHITECT AND OWNER NO FEWER THAN FIVE (5) DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF SERVICE.
2. DO NOT PROCEED WITH INTERRUPTION OF WATER-DISTRIBUTION SERVICE WITHOUT ARCHITECT'S AND OWNER'S WRITTEN PERMISSION.

1.6 COORDINATION
A. COORDINATE CONNECTION TO WATER MAIN WITH MILWAUKEE WATER UTILITY.

PART 2 PRODUCTS

2.1 PIPE AND FITTINGS
A. DUCTILE-IRON PIPE WITH PUSH-ON RUBBER GASKETS JOINTS; CONFORM TO AWWA C151/A21.51-96 AND MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

2.2 CORPORATION VALVES AND CURB VALVES
A. CONFORM TO MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

2.3 WATER METERS
A. WATER METERS WILL BE FURNISHED BY UTILITY COMPANY.

PART 3 EXECUTION

3.1 EARTHWORK
A. REFER TO DIVISION 2 SECTION "EARTHWORK" FOR EXCAVATING, TRENCHING, AND BACKFILLING.

3.2 PIPING INSTALLATION
A. WATER-MAIN CONNECTION: TAP WATER MAIN ACCORDING TO REQUIREMENTS OF WATER UTILITY COMPANY AND OF SIZE AND IN LOCATION INDICATED.
B. INSTALL DUCTILE-IRON, WATER-SERVICE PIPING ACCORDING TO AWWA C600 AND AWWA M41 AND IN ACCORDANCE WITH MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

3.3 JOINT CONSTRUCTION
A. MAKE PIPE JOINTS ACCORDING TO THE FOLLOWING:.
1. DUCTILE-IRON PIPING, GASKETED JOINTS FOR WATER-SERVICE PIPING: AWA C600 AND AWWA M41 AND MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

3.4 VALVE INSTALLATION
A. IN ACCORDANCE WITH MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

3.5 FIELD QUALITY CONTROL
A. ARRANGE INSPECTION AND TESTING OF WATER SERVICE PIPING WITH MILWAUKEE WATER WORKS AND CITY OF MILWAUKEE DEPARTMENT OF NEIGHBORHOOD SERVICES PLUMBING INSPECTION. CONDUCT INSPECTION AND TESTING BEFORE JOINTS ARE COVERED.

3.6 CLEANING/DISINFECTION
A. CLEAN AND DISINFECT WATER SERVICE PIPING IN ACCORDANCE WITH DCOMM CHAPTER 82.40(8)(I) AND MILWAUKEE WATER WORKS REQUIREMENTS.

SANITARY SEWERAGE

PART 1 GENERAL
1.1 SUMMARY
A. THIS SECTION INCLUDES GRAVITY-FLOW, NONPRESSURE SANITARY SEWERAGE OUTSIDE THE BUILDING, WITH THE FOLLOWING COMPONENTS:
1. CLEANOUTS.
2. PRECAST CONCRETE MANHOLES.
B. RELATED SECTIONS
1. SECTION 31 20 00 EARTHWORK

1.2 REFERENCES
A. STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION
B. WISCONSIN DEPARTMENT OF COMMERCE PLUMBING CODE DCOMM CHAPTERS 82 – 85.

1.3 SUBMITTALS
A. SHOP DRAWINGS: FOR MANHOLES. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND FRAMES AND COVERS.
B. PRODUCT DATA: FORE EACH TYPE OF PRODUCT INDICATED.

PART 2 PRODUCTS

2.1 PIPING MATERIALS
A. PVC SEWER PIPE AND FITTINGS, ASTM D 3034, [SDR 35] , WITH BELL-AND-SPIGOT ENDS FOR GASKETED JOINTS IN ACCORDANCE WITH CHAPTER 8.10.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

2.2 NONPRESSURE-TYPE PIPE COUPLINGS
A. COMPLY WITH ASTM C 1173, ELASTOMERIC, SLEEVE-TYPE, REDUCING OR TRANSITION COUPLING, FOR JOINING UNDERGROUND NONPRESSURE PIPING. INCLUDE ENDS OF SAME SIZES AS PIPING TO BE JOINED AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.

SITE WORK CONTINUED

SANITARY SEWERAGE CONTINUED

B. SLEEVE MATERIALS:
1. FOR PLASTIC PIPES: ASTM F 477, ELASTOMERIC SEAL OR ASTM D 5926, PVC.
2. FOR DISSIMILAR PIPES: ASTM D 5926, PVC OR OTHER MATERIAL COMPATIBLE WITH PIPE MATERIALS BEING JOINED.
C. UNSHIELDED, FLEXIBLE COUPLINGS: ELASTOMERIC SLEEVE WITH STAINLESS-STEEL SHEAR RING AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
1. MANUFACTURERS:
A. DALLAS SPECIALTY & MFG. CO. B. FERNCO INC.
C. LOGAN CLAY PRODUCTS COMPANY (THE).
D. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC. E. NDS INC.
F. PLASTIC ODDITIES, INC.
G. SHIELDED, FLEXIBLE COUPLINGS: ASTM C 1460, ELASTOMERIC OR RUBBER SLEEVE WITH FULL-LENGTH, CORROSION-RESISTANT OUTER SHIELD AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
1. MANUFACTURERS:
A. CASCADE WATERWORKS MFG.
B. DALLAS SPECIALTY & MFG. CO.
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC.
E. RING-TYPE, FLEXIBLE COUPLINGS: ELASTOMERIC COMPRESSION SEAL WITH DIMENSIONS TO FIT INSIDE BELL OF LARGER PIPE AND FOR SPIGOT OF SMALLER PIPE TO FIT INSIDE RING.
1. MANUFACTURERS:
A. FERNCO INC.
B. LOGAN CLAY PRODUCTS COMPANY (THE).
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC.

2.3 CLEANOUTS
A. CLEANOUTS: IN ACCORDANCE WITH DEPARTMENT OF COMMERCE CODE CHAPTER 82.35.

2.4 MANHOLES
A. STANDARD PRECAST CONCRETE MANHOLES: CONFORM TO ASTM C478 AND SECTION 8.39.0 AND FILE NO. 12 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
B. MANHOLE STEPS: CONFORM TO SECTION 8.40.0 AND FILE NO. 15 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

PART 3 EXECUTION
3.1 PIPING APPLICATIONS
A. PIPE COUPLINGS AND FITTINGS WITH PRESSURE RATINGS AT LEAST EQUAL TO PIPING RATING MAY BE USED IN APPLICATIONS BELOW, UNLESS OTHERWISE INDICATED.
1. USE NONPRESSURE-TYPE FLEXIBLE COUPLINGS WHERE REQUIRED TO JOIN GRAVITY-FLOW, NONPRESSURE SEWER PIPING, UNLESS OTHERWISE INDICATED.
A. UNSHIELDED FLEXIBLE COUPLINGS FOR SAME OR MINOR DIFFERENCE OD PIPES.
B. UNSHIELDED, INCREASER/REDUCER-PATTERN, FLEXIBLE COUPLINGS FOR PIPES WITH DIFFERENT OD.
C. RING-TYPE FLEXIBLE COUPLINGS FOR PIPING OF DIFFERENT SIZES WHERE ANNULAR SPACE BETWEEN SMALLER PIPING'S OD AND LARGER PIPING'S ID PERMITS INSTALLATION.

3.2 PIPING INSTALLATION
A. GENERAL LOCATIONS AND ARRANGEMENTS: DRAWING PLANS AND DETAILS INDICATE GENERAL LOCATION AND ARRANGEMENT OF UNDERGROUND SANITARY SEWERAGE PIPING. LOCATION AND ARRANGEMENT OF PIPING LAYOUT TAKE DESIGN CONSIDERATIONS INTO ACCOUNT. INSTALL PIPING AS INDICATED, TO EXTENT PRACTICAL. WHERE SPECIFIC INSTALLATION IS NOT INDICATED, FOLLOW PIPING MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. INSTALL IN ACCORDANCE WITH CHAPTER 3.2.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
C. INSTALL PROPER SIZE INCREASERS, REDUCERS, AND COUPLINGS WHERE DIFFERENT SIZES OR MATERIALS OF PIPES AND FITTINGS ARE CONNECTED. REDUCING SIZE OF PIPING IN DIRECTION OF FLOW IS PROHIBITED.
D. USE CLASS B COMPACTED TRENCH SECTION IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
E. CLEAR INTERIOR OF PIPING AND MANHOLES OF DIRT AND SUPERFLUOUS MATERIAL AS WORK PROGRESSES.
MAINTAIN SWAB OR DRAG IN PIPING, AND PULL PAST EACH JOINT AS IT IS COMPLETED. PLACE PLUG IN END OF INCOMPLETE PIPING AT END OF DAY AND WHEN WORK STOPS.
F. INSTALL TRACER WIRE OVER NON-METALLIC PIPING IN ACCORDANCE WITH DCOMM CH. 82.30(11)(H).

3.3 PIPE JOINT CONSTRUCTION
A. FOLLOW PIPING MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. JOIN GRAVITY-FLOW, NONPRESSURE, DRAINAGE PIPING ACCORDING TO THE FOLLOWING:
1. JOIN PVC SEWER PIPING ACCORDING TO ASTM D 2321 AND ASTM D 3034 FOR ELASTOMERIC- GASKET JOINTS.
2. JOIN DISSIMILAR PIPE MATERIALS WITH NONPRESSURE-TYPE, FLEXIBLE COUPLINGS.

3.4 MANHOLE INSTALLATION
A. SET MANHOLE RIMS TO ELEVATIONS INDICATED.
B. INSTALL IN ACCORDANCE WITH SECTION 3.5.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

3.5 CLEANOUT INSTALLATION
A. INSTALL CLEANOUTS AND RISER EXTENSIONS FROM SEWER PIPES TO CLEANOUTS AT GRADE. INSTALL PIPING SO CLEANOUTS OPEN IN DIRECTION OF FLOW IN SEWER PIPE.
1. USE LIGHT-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN EARTH OR UNPAVED FOOT-TRAFFIC AREAS.
2. USE MEDIUM-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN PAVED FOOT-TRAFFIC AREAS.
3. USE HEAVY-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN VEHICLE-TRAFFIC SERVICE AREAS.
4. USE EXTRA-HEAVY-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN [ROADS] <INSERT OTHER>.
B. SET CLEANOUT FRAMES AND COVERS IN EARTH IN CAST-IN-PLACE-CONCRETE BLOCK, 18 BY 18 BY 12 INCHES DEEP. SET WITH TOPS 1 INCH ABOVE SURROUNDING GRADE.
C. SET CLEANOUT FRAMES AND COVERS IN PAVEMENT WITH TOPS FLUSH WITH PAVEMENT SURFACE.

3.6 FIELD QUALITY CONTROL
A. INSPECT INTERIOR OF PIPING TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED.
INSPECT AFTER APPROXIMATELY 24 INCHES OF BACKFILL IS IN PLACE, AND AGAIN AT COMPLETION OF PROJECT.
1. DEFECTS REQUIRING CORRECTION INCLUDE THE FOLLOWING:
A. ALIGNMENT: LESS THAN FULL DIAMETER OF INSIDE OF PIPE IS VISIBLE BETWEEN STRUCTURES.
B. DEFLECTION: FLEXIBLE PIPING WITH DEFLECTION THAT PREVENTS PASSAGE OF BALL OR CYLINDER OF SIZE NOT LESS THAN 92.5 PERCENT OF PIPING DIAMETER.
C. CRUSHED, BROKEN, CRACKED, OR OTHERWISE DAMAGED PIPING.
D. INFILTRATION: WATER LEAKAGE INTO PIPING.
E. EXFILTRATION: WATER LEAKAGE FROM OR AROUND PIPING.
1. REPLACE DEFECTIVE PIPING USING NEW MATERIALS, AND REPEAT INSPECTIONS UNTIL DEFECTS ARE WITHIN ALLOWANCES SPECIFIED.
2. REINSPECT AND REPEAT PROCEDURE UNTIL RESULTS ARE SATISFACTORY.
F. TEST NEW SANITARY BUILDING SEWER IN ACCORDANCE WITH SECTION 5.4.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
1. DO NOT ENCLOSE, COVER, OR PUT INTO SERVICE BEFORE INSPECTION AND APPROVAL.
2. SCHEDULE TESTS AND INSPECTIONS BY AUTHORITIES HAVING JURISDICTION WITH AT LEAST 24 HOURS' ADVANCE NOTICE.
3. SUBMIT SEPARATE REPORT FOR EACH TEST.
4. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.
5. REPLACE LEAKING PIPING USING NEW MATERIALS, AND REPEAT TESTING UNTIL LEAKAGE IS WITHIN ALLOWANCES SPECIFIED.

SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. REMOVING EXISTING TREES, SHRUBS, GROUNDCOVERS, PLANTS, AND GRASS.
2. CLEARING AND GRUBBING.
3. STRIPPING AND STOCKPILING TOPSOIL.
4. REMOVING ABOVE- AND BELOW-GRADE SITE IMPROVEMENTS.
5. DISCONNECTING AND CAPPING OR SEALING SITE UTILITIES.
6. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES.

1.2 MATERIAL OWNERSHIP
A. EXCEPT FOR STRIPPED TOPSOIL OR OTHER MATERIALS INDICATED TO REMAIN OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM PROJECT SITE.

1.3 PROJECT CONDITIONS
A. TRAFFIC: MINIMIZE INTERFERENCE WITH ADJOINING ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES DURING SITE-CLEARING OPERATIONS.
1. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER ADJACENT OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM OWNER AND AUTHORITIES HAVING JURISDICTION.
2. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY AUTHORITIES HAVING JURISDICTION.
B. SALVABLE IMPROVEMENTS: CAREFULLY REMOVE ITEMS INDICATED TO BE SALVAGED AND STORE ON OWNER'S PREMISES WHERE INDICATED.
C. UTILITY LOCATOR SERVICE: NOTIFY UTILITY LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE SITE CLEARING.
D. DO NOT COMMENCE SITE CLEARING OPERATIONS UNTIL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE.

PART 2 PRODUCTS

2.1 SOIL MATERIALS
A. SATISFACTORY SOIL MATERIALS: REQUIREMENTS FOR SATISFACTORY SOIL MATERIALS ARE SPECIFIED IN SECTION "EARTHWORK."
1. OBTAIN APPROVED BORROW SOIL MATERIALS OFF-SITE WHEN SATISFACTORY SOIL MATERIALS ARE NOT AVAILABLE ON-SITE.

PART 3 EXECUTION

3.1 PREPARATION
A. PROTECT AND MAINTAIN BENCHMARKS AND SURVEY CONTROL POINTS FROM DISTURBANCE DURING CONSTRUCTION.
B. LOCATE AND CLEARLY FLAG TREES AND VEGETATION TO REMAIN OR TO BE RELOCATED.
C. PROTECT EXISTING SITE IMPROVEMENTS TO REMAIN FROM DAMAGE DURING CONSTRUCTION.
1. RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO OWNER.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL
A. CONTRACTOR SHALL OBTAIN EROSION CONTROL PERMIT FROM CITY OF MILWAUKEE PRIOR TO ANY LAND DISTURBANCE.
B. PROVIDE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT SOIL EROSION AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS, ACCORDING TO SITE EROSION CONTROL PLAN, AND CITY OF MILWAUKEE EROSION CONTROL PERMIT.
C. INSPECT, REPAIR, AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
D. REMOVE EROSION AND SEDIMENTATION CONTROLS AND RESTORE AND STABILIZE AREAS DISTURBED DURING REMOVAL.

SITE WORK CONTINUED

SITE CLEARING CONTINUED

3.3 UTILITIES
A. LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF UTILITIES INDICATED TO BE REMOVED.
1. ARRANGE WITH UTILITY COMPANIES TO SHUT OFF INDICATED UTILITIES.
B. EXISTING UTILITIES: DO NOT INTERRUPT UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES ACCORDING TO REQUIREMENTS INDICATED:
1. NOTIFY ARCHITECT NOT LESS THAN TWO DAYS IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS.
2. DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT ARCHITECT'S WRITTEN PERMISSION.
C. REMOVAL OF UNDERGROUND UTILITIES IS INCLUDED IN DIVISION 2 SECTIONS COVERING SITE UTILITIES.

3.4 CLEARING AND GRUBBING
A. FILL DEPRESSIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SATISFACTORY SOIL MATERIAL UNLESS FURTHER EXCAVATION OR EARTHWORK IS INDICATED.
1. PLACE FILL MATERIAL IN HORIZONTAL LAYERS NOT EXCEEDING A LOOSE DEPTH OF 8 INCHES (200 MM), AND COMPACT EACH LAYER TO A DENSITY EQUAL TO ADJACENT ORIGINAL GROUND.

3.5 TOPSOIL STRIPPING
A. REMOVE SOD AND GRASS BEFORE STRIPPING TOPSOIL.
B. STRIP TOPSOIL TO WHATEVER DEPTHS ARE ENCOUNTERED IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER WASTE MATERIALS.
C. STOCKPILE TOPSOIL MATERIALS AWAY FROM EDGE OF EXCAVATIONS WITHOUT INTERMIXING WITH SUBSOIL. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.

3.6 SITE IMPROVEMENTS
A. REMOVE EXISTING ABOVE- AND BELOW-GRADE IMPROVEMENTS AS INDICATED AND AS NECESSARY TO FACILITATE NEW CONSTRUCTION.

3.7 DISPOSAL
A. DISPOSAL: REMOVE SURPLUS SOIL MATERIAL, UNSUITABLE TOPSOIL, OBSTRUCTIONS, DEMOLISHED MATERIALS, AND WASTE MATERIALS INCLUDING TRASH AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.
1. SEPARATE RECYCLABLE MATERIALS PRODUCED DURING SITE CLEARING FROM OTHER NONRECYCLABLE MATERIALS. STORE OR STOCKPILE WITHOUT INTERMIXING WITH OTHER MATERIALS AND TRANSPORT THEM TO RECYCLING FACILITIES.

EARTHWORK

PART 1 GENERAL
1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. PREPARING SUBGRADES FOR SLABS-ON-GRADE, WALKS, PAVEMENTS, LAWNS AND GRASSES AND EXTERIOR PLANTS.
2. EXCAVATING AND BACKFILLING FOR BUILDINGS AND STRUCTURES.
3. DRAINAGE COURSE FOR SLABS-ON-GRADE.
4. BASE COURSE FOR CONCRETE WALKS, PAVEMENTS.
5. BASE COURSE FOR ASPHALT PAVING.
6. EXCAVATING AND BACKFILLING FOR UTILITY TRENCHES.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 1 SECTION "TEMPORARY FACILITIES AND CONTROLS" FOR TEMPORARY CONTROLS, UTILITIES, AND SUPPORT FACILITIES.
2. SECTION "SITE CLEARING" FOR TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES, SITE STRIPPING, GRUBBING, STRIPPING AND STOCKPILING TOPSOIL, AND REMOVAL OF ABOVE- AND BELOW- GRADE IMPROVEMENTS AND UTILITIES.

1.3 REFERENCES
A. STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION
B. STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
C. PRELOADING COMPLETION REPORT, NORTH REGION OF BLOCK 4 LOT 1 MENOMONEE VALLEY INDUSTRIAL PARK; GESTRA ENGINEERING; JUNE 30, 2011
D. GEOTECHNICAL RECOMMENDATIONS REVIEW, PROPOSED INDUSTRIAL DEVELOPMENT, NORTHERN HALF BLOCK 4 LOT 1 (MVBP); GESTRA ENGINEERING; JULY 22, 2013

1.4 DEFINITIONS
A. BACKFILL: SOIL MATERIAL USED TO FILL AN EXCAVATION.
B. BASE COURSE: COURSE PLACED BETWEEN THE PREPARED SUBGRADE AND HOT-MIX ASPHALT PAVING OR CEMENT CONCRETE PAVEMENT, SIDEWALK OR CURB AND GUTTER.
C. BEDDING COURSE: COURSE PLACED OVER THE EXCAVATED SUBGRADE IN A TRENCH BEFORE LAYING PIPE.
D. BORROW SOIL: SATISFACTORY SOIL IMPORTED FROM OFF-SITE FOR USE AS FILL OR BACKFILL.
E. DRAINAGE COURSE: COURSE SUPPORTING THE SLAB-ON-GRADE THAT ALSO MINIMIZES UPWARD CAPILLARY FLOW OF PORE WATER.
F. EXCAVATION: REMOVAL OF MATERIAL ENCOUNTERED ABOVE SUBGRADE ELEVATIONS AND TO LINES AND DIMENSIONS INDICATED.
1. AUTHORIZED ADDITIONAL EXCAVATION: EXCAVATION BELOW SUBGRADE ELEVATIONS OR BEYOND INDICATED LINES AND DIMENSIONS AS DIRECTED BY ARCHITECT. AUTHORIZED ADDITIONAL EXCAVATION AND REPLACEMENT MATERIAL WILL BE PAID FOR ACCORDING TO CONTRACT PROVISIONS FOR CHANGES IN THE WORK.
2. UNAUTHORIZED EXCAVATION: EXCAVATION BELOW SUBGRADE ELEVATIONS OR BEYOND INDICATED LINES AND DIMENSIONS WITHOUT DIRECTION BY ARCHITECT. UNAUTHORIZED EXCAVATION, AS WELL AS REMEDIAL WORK DIRECTED BY ARCHITECT, SHALL BE WITHOUT ADDITIONAL COMPENSATION.
G. FILL: SOIL MATERIALS USED TO RAISE EXISTING GRADES.
H. PIPE COVER MATERIAL: MATERIAL WHICH IS PLACED IN A TRENCH AROUND AND OVER SEWER OR WATER PIPE ABOVE THE BEDDING COURSE.
I. STRUCTURES: BUILDINGS, FOOTINGS, FOUNDATIONS, RETAINING WALLS, SLABS, TANKS, CURBS, MECHANICAL AND ELECTRICAL APPURTENANCES, OR OTHER MAN-MADE STATIONARY FEATURES CONSTRUCTED ABOVE OR BELOW THE GROUND SURFACE.
J. SUBGRADE: SURFACE OR ELEVATION REMAINING AFTER COMPLETING EXCAVATION, OR TOP SURFACE OF A FILL OR BACKFILL IMMEDIATELY BELOW BASE COURSE, DRAINAGE FILL, OR TOPSOIL MATERIALS.
K. TRENCH BACKFILL: MATERIAL PLACED IN A TRENCH AVOVE THE PIPE COVER MATERIAL FOR SEWER OR WATER PIPE.
L. UTILITIES: ON-SITE UNDERGROUND PIPES, CONDUITS, DUCTS, AND CABLES, AS WELL AS UNDERGROUND SERVICES WITHIN BUILDINGS.

1.5 SUBMITTALS
A. MATERIAL TEST REPORTS: FROM A QUALIFIED TESTING AGENCY INDICATING AND INTERPRETING TEST RESULTS FOR COMPLIANCE OF THE FOLLOWING WITH REQUIREMENTS INDICATED:
1. CLASSIFICATION ACCORDING TO ASTM D 2487 OF EACH ON-SITE AND BORROW SOIL MATERIAL PROPOSED FOR FILL AND BACKFILL.
2. LABORATORY COMPACTION CURVE ACCORDING TO ASTM D 1557 FOR EACH ON-SITE AND BORROW SOIL MATERIAL PROPOSED FOR FILL AND BACKFILL.
B. PREEXCAVATION PHOTOGRAPHS OR VIDEOTAPE: SHOW EXISTING CONDITIONS OF ADJOINING CONSTRUCTION AND SITE IMPROVEMENTS, INCLUDING FINISH SURFACES, THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY EARTHWORK OPERATIONS. SUBMIT BEFORE EARTHWORK BEGINS.

1.6 QUALITY ASSURANCE
A. GEOTECHNICAL TESTING AGENCY QUALIFICATIONS: AN INDEPENDENT TESTING AGENCY QUALIFIED ACCORDING TO ASTM E 329 TO CONDUCT SOIL MATERIALS AND ROCK-DEFINITION TESTING, AS DOCUMENTED ACCORDING TO ASTM D 3740 AND ASTM E 548.

1.7 PROJECT CONDITIONS
A. EXISTING UTILITIES: DO NOT INTERRUPT UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED IN WRITING BY ARCHITECT AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES ACCORDING TO REQUIREMENTS INDICATED.
1. NOTIFY ARCHITECT NOT LESS THAN TWO DAYS IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS.
2. DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT ARCHITECT'S WRITTEN PERMISSION.
3. CONTACT UTILITY-LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE EXCAVATING.
B. DEMOLISH AND COMPLETELY REMOVE FROM SITE EXISTING UNDERGROUND UTILITIES INDICATED TO BE REMOVED. COORDINATE WITH UTILITY COMPANIES TO SHUT OFF SERVICES IF LINES ARE ACTIVE.

PART 2 PRODUCTS

2.1 SOIL MATERIALS
A. GENERAL: PROVIDE BORROW SOIL MATERIALS WHEN SUFFICIENT SATISFACTORY SOIL MATERIALS ARE NOT AVAILABLE FROM EXCAVATIONS.
B. SATISFACTORY SOILS: ASTM D 2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, AND SM OR A COMBINATION OF THESE GROUPS; FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER OR ANY SOIL GROUP OR COMBINATION OF GROUPS APPROVED OF BY THE PROJECT GEOTECHNICAL ENGINEER
C. UNSATISFACTORY SOILS: SOIL CLASSIFICATION GROUPS GC, SC, CL, ML, OL, CH, MH, OH, AND PT
ACCORDING TO ASTM D 2487 OR A COMBINATION OF THESE GROUPS.
1. UNSATISFACTORY SOILS ALSO INCLUDE SATISFACTORY SOILS NOT MAINTAINED WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT AT TIME OF COMPACTION.
D. BASE COURSE: SHALL BE 1-1/4" DENSE GRADED BASE COURSE CONFORMING TO SECTION 305 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.
E. ENGINEERED FILL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 90 PERCENT PASSING A 1-1/2-INCH (37.5-MM) SIEVE AND NOT MORE THAN 12 PERCENT PASSING A NO. 200 SIEVE.
F. BEDDING COURSE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND CONFORMING TO THE REQUIREMENTS OF SECTION 8.43.2 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
G. DRAINAGE COURSE: NARROWLY GRADED MIXTURE OF WASHED,CRUSHED STONE, OR CRUSHED OR UNCRUSHED GRAVEL; ASTM D 448; COARSE-AGGREGATE GRADING SIZE 57; WITH 100 PERCENT PASSING A 1-1/2-INCH (37.5-MM) SIEVE AND 0 TO 5 PERCENT PASSING A NO. 8 SIEVE.
H. PIPE COVER MATERIAL: CONFORM TO SECTION 8.43.3 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
I. TRENCH BACKFILL: CONFORM TO SECTIONS 8.43.4 AND 8.43.5 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. TRENCH BACKFILL BENEATH AND WITHIN FIVE FEET OF PAVEMENT AREAS SHALL BE GRANULAR BACKFILL. TRENCH BACKFILL BENEATH LANDSCAPE AREAS MAY BE SATISFACTORY SOIL MATERIAL.

SITE WORK CONTINUED

EARTHWORK CONTINUED

PART 3 EXECUTION

3.1 PREPARATION
A. SITE PREPARATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE REFERENCED PRELOADING COMPLETION REPORT AND GEOTECHNICAL RECOMMENDATIONS REVIEW OR AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER IN THE FIELD.
B. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY EARTHWORK OPERATIONS.
C. PREPARATION OF SUBGRADE FOR EARTHWORK OPERATIONS INCLUDING REMOVAL OF VEGETATION, TOPSOIL, DEBRIS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE IS SPECIFIED IN DIVISION 2 SECTION "SITE CLEARING."
D. PROTECT AND MAINTAIN EROSION AND SEDIMENTATION CONTROLS, WHICH ARE SPECIFIED IN DIVISION 2 SECTION "SITE CLEARING," DURING EARTHWORK OPERATIONS.
E. PROVIDE PROTECTIVE INSULATING MATERIALS TO PROTECT SUBGRADES AND FOUNDATION SOILS AGAINST FREEZING TEMPERATURES OR FROST.

3.2 DEWATERING
A. PREVENT SURFACE WATER AND GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES, AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA.
B. PROTECT SUBGRADES FROM SOFTENING, UNDERMINING, WASHOUT, AND DAMAGE BY RAIN OR WATER ACCUMULATION.
1. REROUTE SURFACE WATER RUNOFF AWAY FROM EXCAVATED AREAS. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. DO NOT USE EXCAVATED TRENCHES AS TEMPORARY DRAINAGE DITCHES.
2. INSTALL A DEWATERING SYSTEM TO KEEP SUBGRADES DRY AND CONVEY GROUND WATER AWAY FROM EXCAVATIONS. MAINTAIN UNTIL DEWATERING IS NO LONGER REQUIRED.

3.3 EXPLOSIVES
A. EXPLOSIVES: DO NOT USE EXPLOSIVES.

3.4 EXCAVATION, GENERAL
A. UNCLASSIFIED EXCAVATION: EXCAVATE TO SUBGRADE ELEVATIONS REGARDLESS OF THE CHARACTER OF SURFACE AND SUBSURFACE CONDITIONS ENCOUNTERED. UNCLASSIFIED EXCAVATED MATERIALS MAY INCLUDE ROCK, SOIL MATERIALS, AND OBSTRUCTIONS. NO CHANGES IN THE CONTRACT SUM OR THE CONTRACT TIME WILL BE AUTHORIZED FOR ROCK EXCAVATION OR REMOVAL OF OBSTRUCTIONS.
1. IF EXCAVATED MATERIALS INTENDED FOR FILL AND BACKFILL INCLUDE UNSATISFACTORY SOIL MATERIALS AND ROCK, REPLACE WITH SATISFACTORY SOIL MATERIALS.
B. SHORING, SHEETING AND BRACING: SHORE, BRACE OR SLOPE BANKS OF EXCAVATION TO PROTECT WORKMEN, BANKS, ADJACENT PAVING, STRUCTURES, AND UTILITIES TO MEET OSHA REQUIREMENTS. DESIGN OF TEMPORARY SUPPORT OF EXCAVATION IS THE RESPONSIBILITY OF THE CONTRACTOR.

3.5 EXCAVATION FOR STRUCTURES
A. EXCAVATE TO INDICATED ELEVATIONS AND DIMENSIONS WITHIN A TOLERANCE OF PLUS OR MINUS 1 INCH. IF APPLICABLE, EXTEND EXCAVATIONS A SUFFICIENT DISTANCE FROM STRUCTURES FOR PLACING AND REMOVING CONCRETE FORMWORK, FOR INSTALLING SERVICES AND OTHER CONSTRUCTION, AND FOR INSPECTIONS.
1. EXCAVATIONS FOR FOOTINGS AND FOUNDATIONS: DO NOT DISTURB BOTTOM OF EXCAVATION. EXCAVATE BY HAND TO FINAL GRADE JUST BEFORE PLACING CONCRETE REINFORCEMENT. TRIM BOTTOMS TO REQUIRED LINES AND GRADES TO LEAVE SOLID BASE TO RECEIVE OTHER WORK.
2. PILE FOUNDATIONS: STOP EXCAVATIONS 6 TO 12 INCHES ABOVE BOTTOM OF PILE CAP BEFORE PILES ARE PLACED. AFTER PILES HAVE BEEN DRIVEN, REMOVE LOOSE AND DISPLACED MATERIAL. EXCAVATE TO FINAL GRADE, LEAVING SOLID BASE TO RECEIVE CONCRETE PILE CAPS.
3. EXCAVATION FOR UNDERGROUND TANKS, BASINS, AND MECHANICAL OR ELECTRICAL UTILITY STRUCTURES: EXCAVATE TO ELEVATIONS AND DIMENSIONS INDICATED WITHIN A TOLERANCE OF PLUS OR MINUS 1 INCH. DO NOT DISTURB BOTTOM OF EXCAVATIONS INTENDED AS BEARING SURFACES.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS
A. EXCAVATE SURFACES UNDER WALKS AND PAVEMENTS TO INDICATED LINES, CROSS SECTIONS, ELEVATIONS, AND SUBGRADES.

3.7 EXCAVATION FOR UTILITY TRENCHES
A. EXCAVATE TRENCHES TO INDICATED GRADIENTS, LINES, DEPTHS, AND ELEVATIONS.
B. TRENCH BOTTOMS: EXCAVATE TRENCHES DEEPER THAN BOTTOM OF PIPE ELEVATION TO ALLOW FOR REQUIRED BEDDING COURSE.
C. CONFORM TO CLASS B COMPACTED SECTION IN ACCORDANCE WITH FILE NO. 4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

3.8 SUBGRADE INSPECTION
A. PROOF-ROLL SUBGRADE BELOW THE BUILDING SLABS AND PAVEMENTS WITH HEAVY PNEUMATIC-TIRED EQUIPMENT TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. DO NOT PROOF-ROLL WET OR SATURATED SUBGRADES. PROOF ROLL IN PRESENCE OF PROJECT GEOTECHNICAL ENGINEER.
1. COMPLETELY PROOF-ROLL SUBGRADE IN ONE DIRECTION, REPEATING PROOF-ROLLING IN DIRECTION PERPENDICULAR TO FIRST DIRECTION. LIMIT VEHICLE SPEED TO 5 MPH.
2. PROOF-ROLL WITH A 20-TON TRI-AXIAL DUMP TRUCK.
3. EXCAVATE SOFT SPOTS, UNSATISFACTORY SOILS, AND AREAS OF EXCESSIVE PUMPING OR RUTTING, AS DETERMINED BY ENGINEER, AND REPLACE WITH COMPACTED BACKFILL OR FILL AS DIRECTED.
B. AUTHORIZED ADDITIONAL EXCAVATION AND REPLACEMENT MATERIAL WILL BE PAID FOR ACCORDING TO CONTRACT PROVISIONS FOR CHANGES IN THE WORK.
C. RECONSTRUCT SUBGRADES DAMAGED BY FREEZING TEMPERATURES, FROST, RAIN, ACCUMULATED WATER, OR CONSTRUCTION ACTIVITIES, AS DIRECTED BY ARCHITECT, WITHOUT ADDITIONAL COMPENSATION.

3.9 UNAUTHORIZED EXCAVATION
A. FILL UNAUTHORIZED EXCAVATION UNDER FOUNDATIONS OR WALL FOOTINGS BY EXTENDING BOTTOM ELEVATION OF CONCRETE FOUNDATION OR FOOTING TO EXCAVATION BOTTOM, WITHOUT ALTERING TOP ELEVATION. LEAN CONCRETE FILL, WITH 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI, MAY BE USED WHEN APPROVED BY ARCHITECT.
1. FILL UNAUTHORIZED EXCAVATIONS UNDER OTHER CONSTRUCTION OR UTILITY PIPE AS DIRECTED BY .

3.10 STORAGE OF SOIL MATERIALS
A. STOCKPILE BORROW SOIL MATERIALS AND EXCAVATED SATISFACTORY SOIL MATERIALS WITHOUT INTERMIXING. PLACE, GRADE, AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.
1. STOCKPILE SOIL MATERIALS AWAY FROM EDGE OF EXCAVATIONS. DO NOT STORE WITHIN DRIP LINE OF REMAINING TREES.

3.11 BACKFILL
A. PLACE AND COMPACT BACKFILL IN EXCAVATIONS PROMPTLY, BUT NOT BEFORE COMPLETING THE FOLLOWING:
1. CONSTRUCTION BELOW FINISH GRADE INCLUDING, WHERE APPLICABLE, SUBDRAINAGE, DAMPPROOFING, WATERPROOFING, AND PERIMETER INSULATION.
2. SURVEYING LOCATIONS OF UNDERGROUND UTILITIES FOR RECORD DOCUMENTS.
3. TESTING AND INSPECTING UNDERGROUND UTILITIES.
4. REMOVING CONCRETE FORMWORK.
5. REMOVING TRASH AND DEBRIS.
6. REMOVING TEMPORARY SHORING AND BRACING, AND SHEETING.
7. INSTALLING PERMANENT OR TEMPORARY HORIZONTAL BRACING ON HORIZONTALLY SUPPORTED WALLS.
B. PLACE BACKFILL ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.

3.12 UTILITY TRENCH BACKFILL
A. PLACE BACKFILL ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.
B. PLACE AND COMPACT BEDDING COURSE ON TRENCH BOTTOMS AND WHERE INDICATED. SHAPE BEDDING COURSE TO PROVIDE CONTINUOUS SUPPORT FOR BELLS, JOINTS, AND BARRELS OF PIPES AND FOR JOINTS, FITTINGS, AND BODIES OF CONDUITS.
C. CONFORM TO CLASS B COMPACTED TRENCH SECTION IN ACCORDANCE WITH FILE NO. 4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
D. BEDDING PLACEMENT: CONFORM TO SECTION 3.2.6 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
E. BACKFILL PLACEMENT: CONFORM TO SECTION 2.6.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION EXCEPT THAT FLOODING OF GRANULAR TRENCH BACKFILL SHALL NOT BE ALLOWED FOR BACKFILL CONSOLIDATION.
F. INSTALL TRACER WIRE ABOVE NON-METALLIC PIPING IN ACCORDANCE WITH WISCONSIN DEPARTMENT OF COMMERCE CODE SECTION 82.30(11)(H).

3.13 SOIL FILL
A. PLOW, SCARIFY, BENCH, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING MATERIAL.
B. PLACE AND COMPACT FILL MATERIAL IN LAYERS TO REQUIRED ELEVATIONS AS FOLLOWS:
1. UNDER GRASS AND PLANTED AREAS, USE SATISFACTORY SOIL MATERIAL.
2. UNDER WALKS AND PAVEMENTS, USE SATISFACTORY SOIL MATERIAL.
3. UNDER STEPS AND RAMPS, USE ENGINEERED FILL.
4. UNDER BUILDING SLABS, USE ENGINEERED FILL.
5. UNDER FOOTINGS AND FOUNDATIONS, USE ENGINEERED FILL.
C. PLACE SOIL FILL ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.

3.14 SOIL MOISTURE CONTROL
A. UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL SOIL LAYER BEFORE COMPACTION TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT.
1. DO NOT PLACE BACKFILL OR FILL SOIL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE.
2. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY OTHERWISE SATISFACTORY SOIL MATERIAL THAT EXCEEDS OPTIMUM MOISTURE CONTENT BY 2 PERCENT AND IS TOO WET TO COMPACT TO SPECIFIED DRY UNIT WEIGHT.

3.15 COMPACTION OF SOIL BACKFILLS AND FILLS
A. PLACE BACKFILL AND FILL SOIL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
B. PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE.
C. COMPACT SOIL MATERIALS TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 1557:
1. UNDER STRUCTURES, BUILDING SLABS, AND STEPS, SCARIFY AND RECOMPACT TOP 12 INCHES OF EXISTING SUBGRADE AND EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 92 PERCENT.
2. UNDER PAVEMENTS AND WALKWAYS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL WITHIN THREE FEET OF THE BASE COURSE ELEVATION AT 92 PERCENT.
3. UNDER LAWN OR UNPAVED AREAS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 85 PERCENT.

SITE WORK CONTINUED

EARTHWORK CONTINUED

3.16 GRADING
A. GENERAL: UNIFORMLY GRADE AREAS TO A SMOOTH SURFACE, FREE OF IRREGULAR SURFACE CHANGES. COMPLY WITH COMPACTION REQUIREMENTS AND GRADE TO CROSS SECTIONS, LINES, AND ELEVATIONS INDICATED.
1. PROVIDE A SMOOTH TRANSITION BETWEEN ADJACENT EXISTING GRADES AND NEW GRADES.
2. CUT OUT SOFT SPOTS, FILL LOW SPOTS, AND TRIM HIGH SPOTS TO COMPLY WITH REQUIRED SURFACE TOLERANCES.
B. SITE GRADING: SLOPE GRADES TO DIRECT WATER AWAY FROM BUILDINGS AND TO PREVENT PONDING. FINISH SUBGRADES TO REQUIRED ELEVATIONS WITHIN THE FOLLOWING TOLERANCES:
1. LAWN OR UNPAVED AREAS: PLUS OR MINUS 1 INCH.
2. WALKS: PLUS OR MINUS 1/2 INCH .
3. PAVEMENTS: PLUS OR MINUS 1/2 INCH.
C. GRADING INSIDE BUILDING LINES: FINISH SUBGRADE TO A TOLERANCE OF 1/2 INCH WHEN TESTED WITH A 10- FOOT STRAIGHTEDGE.

3.17 SUBBASE AND BASE COURSES
A. PLACE BASE COURSE ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.
B. ON PREPARED SUBGRADE, PLACE BASE COURSE UNDER PAVEMENTS AND WALKS AS FOLLOWS:
1. SHAPE BASE COURSE TO REQUIRED CROWN ELEVATIONS AND CROSS-SLOPE GRADES.
2. COMPACT BASE COURSE AT OPTIMUM MOISTURE CONTENT TO REQUIRED GRADES, LINES, CROSS SECTIONS, AND THICKNESS TO CONFORM TO STANDARD COMPACTION REQUIREMENTS CONTAINED IN SECTION 301.3.4.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

3.18 DRAINAGE COURSE
A. PLACE DRAINAGE COURSE ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.
B. ON PREPARED SUBGRADE, PLACE AND COMPACT DRAINAGE COURSE UNDER CAST-IN-PLACE CONCRETE SLABS- ON-GRADE AS FOLLOWS:
1. INSTALL SUBDRAINAGE GEOTEXTILE ON PREPARED SUBGRADE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, OVERLAPPING SIDES AND ENDS.
2. PLACE DRAINAGE COURSE 6 INCHES OR LESS IN COMPACTED THICKNESS IN A SINGLE LAYER.
3. PLACE DRAINAGE COURSE THAT EXCEEDS 6 INCHES IN COMPACTED THICKNESS IN LAYERS OF EQUAL THICKNESS, WITH NO COMPACTED LAYER MORE THAN 6 INCHES THICK OR LESS THAN 3 INCHES THICK.
4. COMPACT EACH LAYER OF DRAINAGE COURSE TO REQUIRED CROSS SECTIONS AND THICKNESSES TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698.

3.19 FIELD QUALITY CONTROL
A. TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT GEOTECHNICAL ENGINEERING TESTING AGENCY TO PERFORM FIELD QUALITY-CONTROL TESTING.
B. ALLOW TESTING AGENCY TO INSPECT AND TEST SUBGRADES AND EACH FILL OR BACKFILL LAYER. PROCEED WITH SUBSEQUENT EARTHWORK ONLY AFTER TEST RESULTS FOR PREVIOUSLY COMPLETED WORK COMPLY WITH REQUIREMENTS.
C. FOOTING SUBGRADE: AT FOOTING SUBGRADES, AT LEAST ONE TEST OF EACH SOIL STRATUM WILL BE PERFORMED TO VERIFY DESIGN BEARING CAPACITIES. SUBSEQUENT VERIFICATION AND APPROVAL OF OTHER FOOTING SUBGRADES MAY BE BASED ON A VISUAL COMPARISON OF SUBGRADE WITH TESTED SUBGRADE WHEN APPROVED BY ARCHITECT.
D. TESTING AGENCY SHALL OBSERVE PROOF ROLLING OF BUILDING AND PAVEMENT SUBGRADES.
E. TESTING AGENCY WILL TEST COMPACTION OF SOILS IN PLACE ACCORDING TO ASTM D 1556, ASTM D 2167, ASTM D 2922, AND ASTM D 2937, AS APPLICABLE. TESTS WILL BE PERFORMED AT THE FOLLOWING LOCATIONS AND FREQUENCIES:
1. BUILDING SLAB AREAS: AT SUBGRADE AND AT EACH COMPACTED FILL AND BACKFILL LAYER, AT LEAST 1 TEST FOR EVERY 2500 SQ. FT. OR LESS OF BUILDING SLAB, BUT IN NO CASE FEWER THAN 3 TESTS.
2. PAVEMENT AREAS: AT SUBGRADE AND AT EACH COMPACTED FILL AND BACKFILL LAYER, AT LEAST ONE TEST FOR EVERY 5,000 SQUARE FEET OF PAVEMENT AREA.
3. FOUNDATION WALL BACKFILL: AT EACH COMPACTED BACKFILL LAYER, AT LEAST 1 TEST FOR EACH 100 FEET OR LESS OF WALL LENGTH, BUT NO FEWER THAN 2 TESTS.
4. TRENCH BACKFILL: AT EACH COMPACTED INITIAL AND FINAL BACKFILL LAYER, AT LEAST 1 TEST FOR EACH 150 FEET OR LESS OF TRENCH LENGTH, BUT NO FEWER THAN 2 TESTS.
F. WHEN TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS HAVE NOT ACHIEVED DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.

3.20 PROTECTION
A. PROTECTING GRADED AREAS: PROTECT NEWLY GRADED AREAS FROM TRAFFIC, FREEZING, AND EROSION. KEEP FREE OF TRASH AND DEBRIS.
B. REPAIR AND REESTABLISH GRADES TO SPECIFIED TOLERANCES WHERE COMPLETED OR PARTIALLY COMPLETED SURFACES BECOME ERODED, RUTTED, SETTLED, OR WHERE THEY LOSE COMPACTION DUE TO SUBSEQUENT CONSTRUCTION OPERATIONS OR WEATHER CONDITIONS.
1. SCARIFY OR REMOVE AND REPLACE SOIL MATERIAL TO DEPTH AS DIRECTED BY ARCHITECT; RESHAPE AND RECOMPACT.
C. WHERE SETTLING OCCURS BEFORE PROJECT CORRECTION PERIOD ELAPSES, REMOVE FINISHED SURFACING, BACKFILL WITH ADDITIONAL SOIL MATERIAL, COMPACT, AND RECONSTRUCT SURFACING.
1. RESTORE APPEARANCE, QUALITY, AND CONDITION OF FINISHED SURFACING TO MATCH ADJACENT WORK, AND ELIMINATE EVIDENCE OF RESTORATION TO GREATEST EXTENT POSSIBLE.

3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS
A. DISPOSAL: REMOVE SURPLUS SATISFACTORY SOIL AND WASTE MATERIAL, INCLUDING UNSATISFACTORY SOIL, TRASH, AND DEBRIS, AND LEGALLY DISPOSE OF IT OFF OWNER'S PROPERTY.

HOT-MIX ASPHALT PAVING

PART 1 GENERAL
1.1 SUMMARY
A. THIS SECTION INCLUDES HOT-MIX ASPHALT PAVING.
B.RELATED SECTIONS:
1. SECTION 31 20 00 – EARTHWORK

1.2 REFERENCES
A. STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION (WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION).

1.3 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE TECHNICAL DATA AND TESTED PHYSICAL AND PERFORMANCE PROPERTIES.
B. JOB-MIX DESIGNS: CERTIFICATION THAT MIX MEETS OR EXCEEDS WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
C. MATERIAL CERTIFICATES CERTIFYING COMPLIANCE WITH WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

1.4 QUALITY ASSURANCE
A. MANUFACTURER QUALIFICATIONS: MANUFACTURER SHALL BE REGISTERED WITH AND APPROVED BY THE DOT OF THE STATE IN WHICH PROJECT IS LOCATED.
B. REGULATORY REQUIREMENTS: COMPLY WITH WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION FOR ASPHALT PAVING WORK.

1.5 PROJECT CONDITIONS
A. ENVIRONMENTAL LIMITATIONS: DO NOT APPLY ASPHALT MATERIALS IF BASE COURSE IS WET OR EXCESSIVELY DAMP OR IF THE FOLLOWING CONDITIONS ARE NOT MET:
1. ASPHALT LOWER LAYER COURSE, TACK COAT, ASPHALT UPPER LAYER COURSE: MINIMUM SURFACE TEMPERATURE OF 36 DEG F AND RISING AT TIME OF PLACEMENT.
B. PAVEMENT-MARKING PAINT: PROCEED WITH PAVEMENT MARKING ONLY ON CLEAN, DRY SURFACES. DO NOT APPLY BELOW THE MINIMUM PAVEMENT TEMPERATURE AS RECOMMENDED BY THE MANUFACTURER.

PART 2 PRODUCTS

2.1 AGGREGATES
A. IN ACCORDANCE WITH SECTION 460.2.2 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

2.2 ASPHALT MATERIALS
A. IN ACCORDANCE WITH CHAPTER 455 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

2.3 PAVEMENT MARKING PAINT
A. PROVIDE PAINT FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCTS LIST.
1. COLOR: WHITE

2.4 MIXES
A. HOT-MIX ASPHALT: ASPHALTIC BINDER COURSE AND SURFACE COURSE SHALL BE MIXTURE E-1 COMPLYING WITH THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

PART 3 EXECUTION

3.1 GENERAL
A. ASPHALT CONCRETE PAVING EQUIPMENT, WEATHER LIMITATIONS, JOB-MIX FORMULA, MIXING, CONSTRUCTION METHODS, COMPACTION, FINISHING, TOLERANCE AND PROTECTION SHALL CONFORM TO THE REQUIREMENTS OF THE APPROPRIATE SECTIONS OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

3.2 SURFACE PREPARATION
A. PROOF-ROLL BASE COURSE USING HEAVY, PNEUMATIC-TIRED ROLLERS TO LOCATE AREAS THAT ARE UNSTABLE OR THAT REQUIRE FURTHER COMPACTION.
B. IMMEDIATELY BEFORE PLACING ASPHALT MATERIALS, REMOVE LOOSE AND DELETERIOUS MATERIAL FROM SUBSTRATE SURFACES. ENSURE THAT PREPARED BASE COURSE IS READY TO RECEIVE PAVING.
1. SWEEP LOOSE GRANULAR PARTICLES FROM SURFACE OF UNBOUND-AGGREGATE BASE COURSE. DO NOT DISLODGE OR DISTURB AGGREGATE EMBEDDED IN COMPACTED SURFACE OF BASE COURSE.

3.3 HOT-MIX ASPHALT PLACING
A. SPREAD AND FINISH ASPHALTIC MIXTURE IN ACCORDANCE WITH SECTION 450.3.2.5 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.
B. PROMPTLY CORRECT SURFACE IRREGULARITIES IN PAVING COURSE BEHIND PAVER. USE SUITABLE HAND TOOLS TO REMOVE EXCESS MATERIAL FORMING HIGH SPOTS. FILL DEPRESSIONS WITH HOT-MIX ASPHALT TO PREVENT SEGREGATION OF MIX; USE SUITABLE HAND TOOLS TO SMOOTH SURFACE.

3.4 COMPACTION
A. COMPACT ASPHALTIC PAVEMENT IN ACCORDANCE WITH SECTION 450.3.2.6 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.
B. PROTECTION: AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED.
C. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO BECOME MARKED.

3.5 INSTALLATION TOLERANCES
A. THICKNESS: COMPACT EACH COURSE TO PRODUCE THE THICKNESS INDICATED WITHIN THE FOLLOWING TOLERANCES:
1. BASE COURSE: PLUS OR MINUS 1/2 INCH.
2. SURFACE COURSE: PLUS 1/4 INCH, NO MINUS.
B. SURFACE SMOOTHNESS: COMPACT EACH COURSE TO PRODUCE A SURFACE SMOOTHNESS WITHIN THE FOLLOWING TOLERANCES AS DETERMINED BY USING A 10-FOOT STRAIGHTEDGE APPLIED TRANSVERSELY OR LONGITUDINALLY TO PAVED AREAS:
1. LOWER LAYER: 1/4 INCH.
2. UPPER LAYER: 1/8 INCH.
3. REMOVE AND REPLACE ALL HUMPS OR DEPRESSIONS EXCEEDING THE SPECIFIED TOLERANCES

SITE WORK CONTINUED

HOT-MIX ASPHALT PAVING

3.6 PAVEMENT MARKING
A. DO NOT APPLY PAVEMENT-MARKING PAINT UNTIL LAYOUT, COLORS, AND PLACEMENT HAVE BEEN VERIFIED WITH ENGINEER.
B. APPLY MARKINGS TO A DRY SURFACE FREE FROM FROST. REMOVE DUST, DIRT, OIL, GREASE, GRAVEL, DEBRIS OR OTHER MATERIAL THAT MAY PREVENT BONDING TO THE PAVEMENT.
C. APPLY PAINT AS THE MANUFACTURER SPECIFIES WITH MECHANICAL EQUIPMENT TO PRODUCE PAVEMENT MARKINGS, OF DIMENSIONS INDICATED, WITH UNIFORM, STRAIGHT EDGES. APPLY AT MANUFACTURER'S RECOMMENDED RATES AT A MINIMUM RATE OF 17.6 GALLONS/MILE FOR A CONTINUOUS 4" LINE.

3.7 FIELD QUALITY CONTROL
A. TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND TO PREPARE TEST REPORTS.
B. ADDITIONAL TESTING AND INSPECTING, AT CONTRACTOR'S EXPENSE, WILL BE PERFORMED TO DETERMINE COMPLIANCE OF REPAIRS.

CEMENT CONCRETE PAVEMENT

PART 1 GENERAL
1.1 SUMMARY
A. THIS SECTION INCLUDES EXTERIOR CEMENT CONCRETE PAVEMENT FOR THE FOLLOWING:
1. SITE CURBS AND GUTTERS
2. SITE WALKWAYS
3. PUBLIC SIDEWALK
4. DRIVE APPROACH
5. PUBLIC CURB AND GUTTER
B. RELATED SECTIONS
1. SECTION 31 20 00 EARTHWORK

1.2 REFERENCES
A. WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
B. CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS

1.3 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. DESIGN MIXTURES: FOR EACH CONCRETE PAVEMENT MIXTURE.

1.4 QUALITY ASSURANCE
A. MANUFACTURER QUALIFICATIONS: MANUFACTURER OF READY-MIXED CONCRETE PRODUCTS WHO COMPLIES WITH ASTM C 94/C 94M REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT AND APPROVED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.
B. ACI PUBLICATIONS: COMPLY WITH ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE," UNLESS MODIFIED BY REQUIREMENTS IN THE CONTRACT DOCUMENTS.
C. MOCKUPS: PROVIDE MOCKUPS OF DECORATIVE STAMPED CONCRETE PAVING NOT LESS THAN 96 INCHES BY
96 INCHES TO DEMONSTRATE SURFACE COLOR, PATTERN, AND TEXTURE.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS: ON-SITE WORK
A. CONCRETE GRADE: GRADE A OR GRADE A-2 CONFORMING TO SECTION 501.3.1.3 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
B. AGGREGATES: CONFORM TO SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS. PROVIDE AGGREGATES FROM A SINGLE SOURCE.
C. WATER: ASTM C 94/C 94M AND SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
D. AIR-ENTRAINING ADMIXTURE: ASTM C 260 AND SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
E. CHEMICAL ADMIXTURES: PER SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
F. COLOR PIGMENT: ASTM C 979, SYNTHETIC MINERAL-OXIDE PIGMENTS OR COLORED WATER-REDUCING ADMIXTURES; COLOR STABLE, NONFADING, AND RESISTANT TO LIME AND OTHER ALKALIS.
G. CURING MATERIALS
1. IN ACCORDANCE WITH SECTION 415.3.12 OF THE WISDOT STANDARD SPECIFICATIONS.
H. RELATED MATERIALS
1. EXPANSION JOINT MATERIAL: CONFORM TO SECTION 415.2.2 OF THE WISDOT STANDARD SPECIFICATIONS.
I. CONCRETE MIXTURES
1. GRADE A OR GRADE A2 CONFORMING TO SECTION 501.3.1 OF THE WISDOT STANDARD SPECIFICATIONS.
J. CONCRETE MIXING
1. MEASURE, BATCH, AND MIX CONCRETE MATERIALS AND CONCRETE IN ACCORDANCE WITH SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.

2.2 CONCRETE MATERIALS: PUBLIC RIGHT OF WAY
A. CONFORM TO SECTION 902 OF THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS

PART 3 EXECUTION

3.1 GENERAL
A. CONFORM TO SECTION 415 OF THE WISDOT STANDARD SPECIFICATIONS FOR CONCRETE PAVEMENTS FOR ON- SITE WORK
B. CONFORM TO THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT- OF- WAY.

3.2 EXAMINATION AND PREPARATION
A. PROOF-ROLL PREPARED SUBBASE OR BASE SURFACE BELOW CONCRETE PAVING TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING.
B. REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE OR BASE SURFACE IMMEDIATELY BEFORE PLACING CONCRETE.

3.3 EDGE FORMS AND SCREED CONSTRUCTION
A. SET, BRACE, AND SECURE EDGE FORMS, BULKHEADS, AND INTERMEDIATE SCREED GUIDES FOR PAVEMENT TO REQUIRED LINES, GRADES, AND ELEVATIONS. INSTALL FORMS TO ALLOW CONTINUOUS PROGRESS OF WORK AND SO FORMS CAN REMAIN IN PLACE AT LEAST 24 HOURS AFTER CONCRETE PLACEMENT.
B. CLEAN FORMS AFTER EACH USE AND COAT WITH FORM-RELEASE AGENT TO ENSURE SEPARATION FROM CONCRETE WITHOUT DAMAGE.

3.4 JOINTS
A. GENERAL: FORM CONSTRUCTION, ISOLATION, AND CONTRACTION JOINTS AND TOOL EDGINGS TRUE TO LINE WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO CENTERLINE, UNLESS OTHERWISE INDICATED. CONFORM TO SECTION 415 OF THE WISDOT STANDARD SPECIFICATIONS FOR ON-SITE WORK. CONFORM TO CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT-OF-WAY.
B. CONSTRUCTION JOINTS: SET CONSTRUCTION JOINTS AT SIDE AND END TERMINATIONS OF PAVEMENT AND AT LOCATIONS WHERE PAVEMENT OPERATIONS ARE STOPPED FOR MORE THAN ONE-HALF HOUR UNLESS PAVEMENT TERMINATES AT ISOLATION JOINTS.
C. ISOLATION JOINTS: FORM ISOLATION JOINTS OF PREFORMED JOINT-FILLER STRIPS ABUTTING CONCRETE CURBS, CATCH BASINS, MANHOLES, INLETS, STRUCTURES, WALKS, OTHER FIXED OBJECTS, AND WHERE INDICATED.
D. CONTRACTION JOINTS: FORM WEAKENED-PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF THE CONCRETE THICKNESS TO MATCH JOINTING OF EXISTING ADJACENT CONCRETE PAVEMENT.
E. EDGING: TOOL EDGES OF PAVEMENT, GUTTERS, CURBS, AND JOINTS IN CONCRETE AFTER INITIAL FLOATING WITH AN EDGING TOOL TO A 1/4-INCH RADIUS. REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHES. ELIMINATE TOOL MARKS ON CONCRETE SURFACES.

3.5 CURBING
A. COMPLY WITH SECTION 601 OF THE WISDOT STANDARD SPECIFICATIONS FOR ON-SITE WORK.
B. COMPLY WITH SECTION 502 OF THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT-OF-WAY.

3.6 SIDEWALKS
A. COMPLY WITH SECTION 602 OF THE WISDOT STANDARD SPECIFICATIONS FOR ON-SITE WORK.
B. COMPLY WITH SECTION 503 OF THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR PUBLIC SIDEWALK CONSTRUCTION.

3.7 DRIVE APPROACH
A. COMPLY WITH SECTION 503 OF THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS.

3.8 CONCRETE PLACEMENT
A. MOISTEN SUBBASE TO PROVIDE A UNIFORM DAMPENED CONDITION AT TIME CONCRETE IS PLACED.
B. COMPLY WITH ACI 301 REQUIREMENTS AND WISDOT STANDARD SPECIFICATIONS SECTION 501 REQUIREMENTS FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE.

3.9 FINISHING
A. ON-SITE WORK
1. FINISH CURBING IN ACCORDANCE WITH SECTION 601.3.5 OF THE WISDOT STANDARD SPECIFICATIONS.
2. FINISH SIDEWALK AND PATIO IN ACCORDANCE WITH SECTION 602.3.2.3 OF THE WISDOT STANDARD SPECIFICATIONS (LIGHT BROOM FINISH).
B. COMPLY WITH CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT-OF- WAY.

3.10 STAMPING
A. MAT STAMPING: AFTER FLOATING AND WHILE CONCRETE IS PLASTIC, APPLY MAT-STAMPED FINISH.
1. PIGMENTED POWDER RELEASE AGENT: UNIFORMLY DISTRIBUTE ONTO CONCRETE AT A RATE OF 3 TO 4 LB./100 SQ. FT.
2. LIQUID RELEASE AGENT: APPLY LIQUID RELEASE AGENT TO THE CONCRETE SURFACE AND THE STAMP MAT. UNIFORMLY MIST SURFACE OF CONCRETE AT A RATE OF 5 GAL/1000 SQ. FT.
3. AFTER APPLICATION OF RELEASE AGENT, ACCURATELY ALIGN AND PLACE STAMP MATS IN SEQUENCE.
4. PRODUCE REQUIRED IMPRINT AND PATTERN AND DEPTH OF IMPRINT ON CONCRETE SURFACE. HAND STAMP EDGES AND SURFACES UNABLE TO BE IMPRINTED BY STAMP MATS.
5. REMOVE RESIDUAL RELEASE AGENT ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, BUT NO FEWER THAN THREE DAYS AFTER STAMPING CONCRETE.
B. TOOL STAMPING: AFTER FLOATING AND WHILE CONCRETE IS PLASTIC, APPLY TOOL-STAMPED FINISH.
1. COVER SURFACE WITH POLYETHYLENE FILM, STRETCH TAUT TO REMOVE WRINKLES, LAP SIDES AND ENDS, AND SECURE TO EDGE FORMS. LIGHTLY BROOM SURFACE TO REMOVE AIR BUBBLES.
2. ALIGN AND PLACE STAMP TOOLS IN SEQUENCE AND TAMP INTO CONCRETE TO PRODUCE REQUIRED IMPRINT PATTERN AND DEPTH OF IMPRINT ON CONCRETE SURFACE. HAND STAMP EDGES AND SURFACES UNABLE TO BE IMPRINTED BY STAMP TOOLS.
3. CAREFULLY REMOVE POLYETHYLENE FILM IMMEDIATELY AFTER TOOL STAMPING.
A. ROLLER STAMPING: AFTER FLOATING AND WHILE CONCRETE IS PLASTIC, APPLY ROLLER-STAMPED FINISH.
1. COVER SURFACE WITH POLYETHYLENE FILM, STRETCH TAUT TO REMOVE WRINKLES, LAP SIDES AND ENDS, AND SECURE TO EDGE FORMS. LIGHTLY BROOM SURFACE TO REMOVE AIR BUBBLES.
2. ALIGN ROLLER AND PERFORM ROLLING OPERATION TO PRODUCE REQUIRED IMPRINT PATTERN AND EPTH OF IMPRINT ON CONCRETE SURFACE. HAND STAMP SURFACES INACCESSIBLE TO ROLLER.
3. CAREFULLY REMOVE POLYETHYLENE FILM IMMEDIATELY AFTER ROLLER STAMPING.

SITE WORK CONTINUED

CEMENT CONCRETE PAVEMENT CONTINUED

3.11 CONCRETE PROTECTION AND CURING
A. ON-SITE WORK
1. PROTECT AND CURE SIDEWALK IN ACCORDANCE WITH SECTION 602.3.2.6 OF THE WISDOT STANDARD SPECIFICATIONS.
2. PROTECT AND CURE CURBING IN ACCORDANCE WITH SECTION 601.3.7 OF THE WISDOT STANDARD SPECIFICATIONS.
B. COMPLY WITH CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT-OF- WAY.

3.12 REPAIRS AND PROTECTION
A. REMOVE AND REPLACE CONCRETE PAVEMENT THAT IS BROKEN, DAMAGED, OR DEFECTIVE OR THAT DOES NOT COMPLY WITH REQUIREMENTS IN THIS SECTION.
B. PROTECT CONCRETE FROM DAMAGE. EXCLUDE TRAFFIC FROM PAVEMENT FOR AT LEAST 7 DAYS AFTER PLACEMENT.
C. MAINTAIN CONCRETE PAVEMENT FREE OF STAINS, DISCOLORATION, DIRT, AND OTHER FOREIGN MATERIAL. SWEEP CONCRETE PAVEMENT NOT MORE THAN TWO DAYS BEFORE DATE SCHEDULED FOR SUBSTANTIAL COMPLETION INSPECTIONS.

STORM DRAINAGE

PART 1 GENERAL

1.1 SUMMARY
A. THIS SECTION INCLUDES GRAVITY-FLOW, NONPRESSURE STORM DRAINAGE OUTSIDE THE BUILDING, WITH THE FOLLOWING COMPONENTS:
1. STORM SEWER PIPING
2. PRECAST CONCRETE CATCH BASINS.
B.RELATED SECTIONS:
1. SECTION 31 20 00 EARTHWORK

1.2 REFERENCES
A. STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION
B. WISCONSIN DEPARTMENT OF COMMERCE PLUMBING CODE DCOMM CHAPTERS 82 – 85.

1.3 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. SHOP DRAWINGS: FOR CATCH BASINS. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND CATCH BASIN FRAMES AND GRATES.

PART 2 PRODUCTS

2.1 PIPING MATERIALS
A. PVC SEWER PIPE AND FITTINGS: ASTM D 3034, SDR 35, WITH BELL-AND-SPIGOT ENDS WITH RUBBER GASKETED JOINTS IN ACCORDANCE WITH CHAPTER 8.10.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. JOINTS SHALL CONFORM TO ASTM D-3212.

2.2 NONPRESSURE-TYPE PIPE COUPLINGS
A. COMPLY WITH ASTM C 1173, ELASTOMERIC, SLEEVE-TYPE, REDUCING OR TRANSITION COUPLING, FOR JOINING UNDERGROUND NONPRESSURE PIPING. INCLUDE ENDS OF SAME SIZES AS PIPING TO BE JOINED AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
B. SLEEVE MATERIALS:
1. FOR PLASTIC PIPES: ASTM F 477, ELASTOMERIC SEAL OR ASTM D 5926, PVC.
2. FOR DISSIMILAR PIPES: ASTM D 5926, PVC OR OTHER MATERIAL COMPATIBLE WITH PIPE MATERIALS BEING JOINED.
C. UNSHIELDED FLEXIBLE COUPLINGS: ELASTOMERIC SLEEVE WITH STAINLESS-STEEL SHEAR RING AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
1. MANUFACTURERS:
A. DALLAS SPECIALTY & MFG. CO. B. FERNCO INC.
B. LOGAN CLAY PRODUCTS COMPANY (THE).
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC. NDS INC.
D. PLASTIC ODDITIES, INC.
E. SHIELDED FLEXIBLE COUPLINGS: ASTM C 1460, ELASTOMERIC OR RUBBER SLEEVE WITH FULL-LENGTH, CORROSION-RESISTANT OUTER SHIELD AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
1. MANUFACTURERS:
A.CASCADE WATERWORKS MFG.
B. DALLAS SPECIALTY & MFG. CO.
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC.
D. RING-TYPE FLEXIBLE COUPLINGS: ELASTOMERIC COMPRESSION SEAL WITH DIMENSIONS TO FIT INSIDE BELL OF LARGER PIPE AND FOR SPIGOT OF SMALLER PIPE TO FIT INSIDE RING.
1. MANUFACTURERS:
A. FERNCO INC.
B. LOGAN CLAY PRODUCTS COMPANY (THE).
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC.

2.3 CLEANOUTS
A. CLEANOUTS SHALL BE IN ACCORDANCE WITH DEPARTMENT OF COMMERCE CODE CHAPTER 82.35.

2.4 CATCH BASINS
A. STANDARD PRECAST CONCRETE CATCH BASINS: CONFORMING TO CHAPTER 3.6.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION, OF DEPTH INDICATED.
1. BASE SECTION: 12-INCH MINIMUM THICKNESS FOR FLOOR SLAB AND 5-INCH MINIMUM THICKNESS FOR WALLS AND BASE RISER SECTION.
2. TOP SECTION: ECCENTRIC-CONE TYPE.
B. FRAMES AND GRATES: ASTM A-48, CLASS NO. 35B. NEENAH R-2501 WITH TYPE G GRATE OR EQUAL. NEENAH R-3229-A FOR CURB TYPE FRAMES OR EQUAL.

2.5 MANHOLES
A. STANDARD PRECAST REINFORCED CONCRETE MANHOLES: CONFORM TO ASTM C478 AND SECTION 8.39.0 AND FILE NO. 12 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
B. MANHOLE STEPS: CONFORM TO SECTION 8.40.0 AND FILE NO. 15 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. C. FRAMES AND COVERS: AS INDICATED ON PLANS

2.6 TRENCH DRAIN
A. ACO MODEL S200K, OR EQUAL

PART 3 EXECUTION

3.1 PIPING APPLICATIONS
A. PIPE COUPLINGS AND FITTINGS WITH PRESSURE RATINGS AT LEAST EQUAL TO PIPING RATING MAY BE USED IN APPLICATIONS BELOW, UNLESS OTHERWISE INDICATED.
1. USE NONPRESSURE-TYPE FLEXIBLE COUPLINGS WHERE REQUIRED TO JOIN GRAVITY-FLOW, NONPRESSURE SEWER PIPING, UNLESS OTHERWISE INDICATED.
A. UNSHIELDED FLEXIBLE COUPLINGS FOR SAME OR MINOR DIFFERENCE OD PIPES.
B. UNSHIELDED, INCREASER/REDUCER-PATTERN, FLEXIBLE COUPLINGS FOR PIPES WITH DIFFERENT OD.
C. RING-TYPE FLEXIBLE COUPLINGS FOR PIPING OF DIFFERENT SIZES WHERE ANNULAR SPACE BETWEEN SMALLER PIPING'S OD AND LARGER PIPING'S ID PERMITS INSTALLATION.

3.2 PIPING INSTALLATION
A.GENERAL LOCATIONS AND ARRANGEMENTS: DRAWING PLANS AND DETAILS INDICATE GENERAL LOCATION AND ARRANGEMENT OF UNDERGROUND STORM DRAINAGE PIPING. LOCATION AND ARRANGEMENT OF PIPING LAYOUT TAKE DESIGN CONSIDERATIONS INTO ACCOUNT. INSTALL PIPING AS INDICATED, TO EXTENT PRACTICAL. WHERE SPECIFIC INSTALLATION IS NOT INDICATED, FOLLOW PIPING MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. INSTALL IN ACCORDANCE WITH CHAPTER 3.2.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
C. INSTALL PROPER SIZE INCREASERS, REDUCERS, AND COUPLINGS WHERE DIFFERENT SIZES OR MATERIALS OF PIPES AND FITTINGS ARE CONNECTED. REDUCING SIZE OF PIPING IN DIRECTION OF FLOW IS PROHIBITED.
D. USE CLASS B COMPACTED TRENCH SECTION IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
E. CLEAR INTERIOR OF PIPING AND MANHOLES OF DIRT AND SUPERFLUOUS MATERIAL AS WORK PROGRESSES.
F. INSTALL TRACER WIRE OVER NON-METALLIC PIPING IN ACCORDANCE WITH DCOMM CH. 82.30(11)(H) AND 82.36(7)(D).

3.3 PIPE JOINT CONSTRUCTION
A.BASIC PIPE JOINT CONSTRUCTION IS SPECIFIED IN DIVISION 2 SECTION "PIPED UTILITIES - BASIC MATERIALS AND METHODS." WHERE SPECIFIC JOINT CONSTRUCTION IS NOT INDICATED, FOLLOW PIPING MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. JOIN GRAVITY-FLOW, NONPRESSURE DRAINAGE PIPING ACCORDING TO THE FOLLOWING:
1. JOIN PVC SEWER PIPING ACCORDING TO ASTM D 2321 AND ASTM D 3034 FOR ELASTOMERIC- GASKET JOINTS.
2. JOIN DISSIMILAR PIPE MATERIALS WITH NONPRESSURE-TYPE FLEXIBLE COUPLINGS.

3.4 CLEANOUT INSTALLATION
A. INSTALL CLEANOUTS AND RISER EXTENSIONS FROM SEWER PIPES TO CLEANOUTS AT GRADE. INSTALL PIPING SO CLEANOUTS OPEN IN DIRECTION OF FLOW IN SEWER PIPE.
1. USE LIGHT-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN EARTH OR UNPAVED FOOT-TRAFFIC AREAS.
2. USE MEDIUM-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN PAVED FOOT-TRAFFIC AREAS.
3. USE HEAVY-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN VEHICLE-TRAFFIC SERVICE] AREAS. B. SET CLEANOUT FRAMES AND COVERS IN PAVEMENT WITH TOPS FLUSH WITH PAVEMENT SURFACE.

3.5 CATCH BASIN INSTALLATION
A. SET FRAMES AND GRATES TO ELEVATIONS INDICATED.
B. INSTALL IN ACCORDANCE WITH CHAPTER 3.6.1 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
C. CATCH BASIN EXCAVATION AND PREPARATION OF SUBGRADE SHALL BE IN ACCORDANCE WITH SECTION 3.5.4(A) AND (B) OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

3.6 MANHOLE INSTALLATION
A. SET MANHOLE RIMS TO ELEVATIONS INDICATED.
B. INSTALL IN ACCORDANCE WITH SECTION 3.5.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

3.7 FIELD QUALITY CONTROL
A. INSPECT INTERIOR OF PIPING TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED.
B. CONDUCT DEFLECTION TESTING OF INSTALLED PIPE IN ACCORDANCE WITH SECTION 3.2.6(I)4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
1. REPLACE ANY PIPE SECTION NOT PASSING THE DEFLECTION TEST USING NEW MATERIALS.
2.REINSPECT AND REPEAT PROCEDURE UNTIL RESULTS ARE SATISFACTORY.

B R I O H N
DESIGN GROUP
3885 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
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SHEET TITLE

SPECIFICATIONS

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB: 3149
DRAWN: CK/CJR
CHECKED: DF
DATE: 04-16-2019
SHEET:

GS.1

CONCRETE

01. ALL CONCRETE, UNLESS OTHERWISE SPECIFIED, SHALL BE READY MIXED IN ACCORDANCE WITH ASTM C94.

02. ALL CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C150 TYPE 1 AND SHALL BE THE PRODUCT OF ONE MANUFACTURER, IF POSSIBLE. PLEASE NOTIFY BRIOHN BUILDING CORP. IN WRITING IF NOT POSSIBLE, SO THAT THEY MAY DISCUSS IMPACT WITH THE CUSTOMER. THE TEMPERATURE OF CEMENT DELIVERED TO THE PLANT SHALL NOT EXCEED 150° AT THE TIME OF MIXING.

03. MIX DESIGN TO BE SUBMITTED TO BRIOHN DESIGN GROUP A MINIMUM OF 3 WEEKS PRIOR TO POUR AND APPROVED IN WRITING FOLLOWING PRE-POUR MEETING.

1. CLASS 'C' FLY ASH MAY BE ADDED.
2. 1 ½" STONE TO BE USED IN ALL SLABS THAT ARE MINIMUM 5" THICK.
3. TYPE 'A' WATER REDUCERS ARE PERMITTED.
4. LOW SHRINKAGE CEMENTS ARE PERMITTED.

04. CEMENT CONTENT PER CUBIC YARD SHALL CONFORM TO THE FOLLOWING BASIC REQUIREMENTS:

1. 2,000 PSI = SLURRY CONCRETE (SUBMIT SUPPLIERS MIX DESIGN FOR APPROVAL)
2. 3,000 PSI = 5 BAGS, 470# MIN. CEMENT
3. 3,500 PSI = 5 ⅓ BAGS, 510# MIN. CEMENT
4. 4,000 PSI =5 ⅞ BAGS, 550# MIN. CEMENT
5. 4,500 PSI = 6 ⅛ BAGS 590# MIN. CEMENT
6. 5,000 PSI = 6 ⅜ BAGS, 630# MIN. CEMENT
7. 3,000 PSI CONCRETE FOR FOOTINGS MAY BE REDI-MIX SUPPLIERS STANDARD FOOTING DESIGN.

05. AGGREGATES SHALL CONFORM TO ASTM C33.

06. ALL WATER SHALL BE CLEAN AND FREE FROM INJURIOUS AMOUNTS OF OIL, ACID, ALKALI, SALT, ORGANIC MATTER, AND OTHER DELETERIOUS SUBSTANCES. IN ALL CASES WATER FROM A MUNICIPAL WATER SOURCE WILL BE ACCEPTABLE.

07. THE USE OF CHEMICAL ADMIXTURES IN CONCRETE SHALL ALWAYS BE SUBJECT TO THE WRITTEN APPROVAL OF BRIOHN DESIGN GROUP, LLC.

08. CURING COMPOUNDS TO CONFORM TO ASTM C309, TYPE 1, MIN. 12%WEIGHT SOLIDS CONTENT, CLEAR SOLVENT TYPE. SONNEBORN KURE 'n SEAL IS ACCEPTABLE.

09. ISOLATION JOINT MATERIAL TO BE POLYETHYLENE FOAM EXPANSION ISOLATION JOINT FILLER OF ½" THICKNESS UNLESS OTHERWISE INDICATED. THE MINIMUM DEPTH OF ISOLATION JOINT MATERIAL TO BE EQUAL TO THE SMALL OF THE CONCRETE SLAB THICKNESS WITH WHICH IT COMES IN CONTACT.

10. VAPOR BARRIER TO BE MOISTOP GRADE 395 AS MANUFACTURED BY FORTIFIBER CORP.

11. USE FIBER MESH REINFORCED CONCRETE OVER PRE CAST DECK UNLESS OTHERWISE INDICATED.

12. MAXIMUM WATER TO CEMENT RATIO TO BE 0.5.

1. ASTM C94 REQUIRES THAT NO WATER FROM THE TRUCK WATER SYSTEM OR ELSEWHERE SHALL BE ADDED, EXCEPT WHEN ON ARRIVAL AT THE JOB SITE, THE SLUMP OF THE CONCRETE IS LESS THAN SPECIFIED.
2. IF WATER IS ADDED, FOLLOW DIRECTIONS OF ASTM C94. ONLY THE INDIVIDUAL AGREED TO AT THE PRE-POUR MEETING HAS AUTHORITY TO ADD WATER AFTER PRODUCT HAS LEFT BATCH PLANT.
3. SUCH ADDITIONAL WATER THAT IS ADDED TO BRING THE SLUMP WITHIN REQUIRED LIMITS SHALL BE INJECTED INTO THE MIXER UNDER CORRECT PRESSURES AND DIRECTION. THE DRUM OR BLADES SHALL BE TURNED AN ADDITIONAL 30 REVOLUTIONS OR MORE IF NECESSARY, AT MIXING SPEED, UNTIL UNIFORMITY OF THE CONCRETE. WATER SHALL NOT BE ADDED TO THE BATCH AT ANY LATER TIME. DISCHARGE OF THE CONCRETE SHALL BE COMPLETED WITHIN 1 ½ HOURS OR BEFORE THE DRUM HAS REVOLVED 300 TIMES, WHICHEVER COMES FIRST. SEE ASTM C94 FOR ADDITIONAL REQUIREMENTS. NO DEVIATION ALLOWED FROM THIS SECTION.

13. SLUMPS SHALL CONFORM TO THE FOLLOWING STANDARDS:

3½" = FORMED REINFORCED FOUNDATION WALLS AND FOOTINGS
3½" = FORMED PLAIN FOOTINGS AND STRUCTURAL WALLS
5" = EARTH FORM FOUNDATIONS
8" = CAISSONS
3½" = BUILDING COLUMNS
3½" = PAVEMENTS AND SLABS ON GRADE
3½" = STRUCTURAL SLABS
2" = MASS CONCRETE
4" = BOND BEAMS AND LINTELS
5" = METAL PANS AND STAIRS AND LANDINGS
9" = HIGH SLUMP CONCRETE FOR FILLING MASONRY PIERS AND PILASTERS

14. TOLERANCES = WHEN SPECIFIED SLUMP IS 3" OR LESS, + OR -½"

15. TOLERANCES = WHEN SPECIFIED SLUMP IS GREATER THAN 3", + OR - 1"

16. ALL CONCRETE EXPOSED TO FREEZING AND THAWING AND/OR REQUIRED TO BE WATERTIGHT SHALL HAVE AN AIR CONTENT AT THE TIME OF PLACEMENT OF 4.5% TO 7.5%. (CONCRETE TO BE "NON-REACTIVE" CHERT.)

17. ALL STRENGTH TESTS SHALL CONSIST OF FOUR STANDARD CYLINDERS, WITH TESTS AT THREE AND SEVEN DAYS AND TWO TESTS AT 28 DAYS. STRENGTH AT THREE DAYS TO BE MINIMUM 1800 PSI. CONCRETE TEST REPORTS SHALL DIRECTLY STATE WHETHER OR NOT THE TEST RESULTS COMPLY WITH THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS. CONCRETE TEST REPORTS SHALL STATE THE FOLLOWING INFORMATION:

LOCATION ON THE PROJECT WHERE THE CONCRETE IS USED
7 DAY COMPRESSIVE STRENGTH
28 DAY COMPRESSIVE STRENGTH
AIR CONTENT
SLUMP
AMOUNT OF WATER ADDED ON JOB SITE
MIX USED

18. PRIOR TO ALL WORK OF THIS SECTION, CAREFULLY INSPECT THE INSTALLED WORK OF OTHER TRADES AFFECTING CONCRETE PLACEMENT AND VERIFY THAT ALL SUCH WORK IS COMPLETE TO THE POINT WHERE THIS INSTALLATION MAY PROPERLY COMMENCE.

19. VERIFY THAT ALL ITEMS TO BE EMBEDDED IN CONCRETE ARE IN PLACE.

20. VERIFY THAT CONCRETE MAY BE PLACED TO THE LINES AND ELEVATIONS INDICATED ON THE DRAWINGS, WITH ALL REQUIRED CLEARANCE FROM REINFORCEMENT. PROVIDE THE FOLLOWING CLEAR COVER DISTANCES FOR REINFORCEMENT IN CONCRETE:

FOOTINGS - BOTTOM AND SIDES..................3"
FOOTINGS - TOP......................................2"
SLABS - BOTTOM AND SIDES.......................1"
SLABS - TOP.. 3/4"
INTERIOR WALLS......................................1"
EXTERIOR WALLS - OUTSIDE FACE................1 1/2"
BEAMS AND GIRDERS...............................1 1/2"
PIERS AND COLUMNS...........................2"

21. CONVEY CONCRETE FROM MIXER TO PLACE OF FINAL DEPOSIT BY METHODS THAT WILL PREVENT SEPARATION AND LOSS OF MATERIAL.

22. DEPOSIT CONCRETE AS NEARLY AS POSSIBLE IN ITS FINAL POSITION TO AVOID SEGREGATION DUE TO RE HANDLING AND FLOWING.

23. PLACE CONCRETE AS DRY AS POSSIBLE CONSISTENT WITH GOOD WORKMANSHIP, NEVER EXCEEDING THE MAXIMUM SPECIFIED SLUMP.

24. PLACE CONCRETE AT SUCH A RATE THAT CONCRETE IS AT ALL TIMES PLASTIC AND FLOWS READILY BETWEEN REINFORCEMENT.

25. WHEN PLACING IS ONCE STARTED, CARRY IT ON AS CONTINUOUS OPERATION UNTIL PLACEMENT OF THE PANEL SECTION IS COMPLETE.

26. DO NOT PLACE A GREATER AREA AT ONE TIME THAN CAN BE PROPERLY FINISHED WITHOUT CRACKING. THIS IS PARTICULARLY IMPORTANT DURING HOT OR DRY WEATHER.

27. THOROUGHLY CONSOLIDATE CONCRETE BY SUITABLE MEANS DURING PLACEMENT, WORKING IT AROUND ALL EMBEDDED FIXTURES AND INTO CORNERS OF THE FORMS. TYPE AND USE OF VIBRATORS SHALL BE IN STRICT CONFORMANCE WITH ACI C309.

28. INSTALL EXPANSION AND CONTROL JOINTS ONLY IN LOCATIONS SHOWN AND AS DETAILED ON THE DRAWINGS.

29. PLACE, CONSOLIDATE, STRIKE OFF AND LEVEL CONCRETE TO THE PROPER ELEVATIONS.

30. AFTER THE CONCRETE HAS STIFFENED SUFFICIENTLY TO PERMIT THE OPERATION AND THE WATER SHEEN HAS DISAPPEARED, THE SURFACE SHALL BE FLOATED AT LEAST TWICE TO A UNIFORM SANDY TEXTURE.

CONCRETE CONTINUED

31. TAKE CARE THAT THE SURFACE OF THE SLAB MEETS THE SCREEDS ACCURATELY AND DOES NOT RISE ABOVE OR FALL BELOW THEM.

32. CAREFULLY PROVIDE SLAB DEPRESSIONS AS REQUIRED FOR THE FINISHES INDICATED ON THE DRAWINGS.

33. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, MAKE ALL SLABS EVEN AND UNIFORM IN APPEARANCE AND IN TRUE PLANES, SO THE DEPRESSIONS BETWEEN HIGH SPOTS DO NOT EXCEED 3/16" UNDER A 10' STRAIGHT EDGE, OR Ff30.

34. WHERE FLOOR DRAINS OR FLOOR SLOPES ARE INDICATED, SLOPE SLABS UNIFORMLY TO PROVIDE EVEN FALL FOR DRAINAGE.

35. TROWEL ALL INTERIOR SLABS TO A SMOOTH, HARD FINISH USING STEEL TROWELS.

36. WHERE 'BROOM FINISH' IS INDICATED AND WHERE NO OTHER EXTERIOR SLAB FINISH IS INDICATED, FINISH THE EXPOSED CONCRETE SURFACES BY LIGHTLY COMBING WITH A MEDIUM STIFF BROOM AFTER FLOATING IS COMPLETE.

37. RUBBED SURFACES SHALL BE PROVIDED ON ALL EXPOSED WALLS AND PIERS, IMMEDIATELY AFTER FORMS ARE REMOVED. EXPOSED SURFACES SHALL BE WETTED AND RUBBED WITH CARBORUNDUM BRICK OR OTHER ABRASIVE UNTIL EVEN, SMOOTH, AND UNIFORM IN APPEARANCE.

38. PVC WATER STOPS SHALL BE INSTALLED IN LOCATIONS INDICATED, SUBCONTRACTOR SHALL ATTACH WATER STOPS FIRMLY TO REINFORCEMENT AND/OR FORM WORK TO ENSURE THAT WATER STOP WILL NOT BE DISPLACED OR BENT DURING CONCRETE OPERATIONS.

39. BRIOHN SUPERINTENDENT IS TO BE PRESENT DURING CONCRETE POURS, UNLESS SPECIFIC AUTHORITY IS GRANTED BY BRIOHN TO POUR WITHOUT SUPERINTENDENT PRESENT.

40. THE FOLLOWING CONCRETE FLOOR POUR PROCEDURES SHALL BE USED AS A GUIDE AND AMENDED AS NECESSARY FOR INDIVIDUAL PROJECT NEEDS. A PRE-POUR MEETING IS TO BE HELD WITH REPRESENTATIVES OF THE OWNER, BRIOHN BUILDING CORP., CONCRETE SUBCONTRACTOR, ELECTRICIAN, PLUMBER, TESTING AGENCY, CONCRETE SUPPLIER AND FLOORING CONTRACTOR. THIS MEETING TO BE HELD A MINIMUM OF ONE (1) WEEK PRIOR TO POURING. ACTUAL POUR PROCEDURES WILL BE AGREED TO AT THIS MEETING AND PUT IN WRITING BEFORE POURING BEGINS. THE FOLLOWING PROCEDURE WILL BE FOLLOWED, UNLESS OTHERWISE AGREED TO OR AUTHORIZED AT PRE-POUR MEETING:

41. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY IRREGULARITIES OR DEFECTS IN CONCRETE SLABS (CRACKS, BUMPS, FLOOR CURLING, ETC.) BEFORE ANY FLOOR FINISHES ARE APPLIED.

A. POUR CONCRETE FLOORS ONLY AFTER THE ROOF IS ON.

B. MAKE SURE THERE IS EQUIVALENT TEMPERATURES BETWEEN THE SUB GRADE AND THE AIR TEMPERATURE.

C. IF THE SUB GRADE IS EXTREMELY DRY, IT SHOULD BE WET DOWN PRIOR TO POURING THE CONCRETE TO AVOID RAPID DRYING UNDER SIDE OF SLAB.

D. THE TOP OF SLAB WILL BE COVERED WITH A 6 MIL VISQUEEN AS SOON AS POSSIBLE AFTER FINISHING TO PREVENT RAPID DRYING FOR A MINIMUM OF 7 DAYS.

E. THE CONCRETE SHALL BE POURED PER THIS SPECIFICATION WITH A SLUMP, PLUS OR MINUS 1". BRIOHN BUILDING CORP. HAS THE RIGHT TO TEST ALL LOADS PRIOR TO PLACEMENT.

F. MESH WILL BE FLAT, NOT ROLLED.

G. "DIAMOND" OVER POURS AT COLUMNS TO BE POURED.

H. THE FLOOR WILL BE SAW CUT ON A GRID PER PLANS GETTING ON THE FLOOR AS SOON AS POSSIBLE WITH A SOFT CUT SAW, AFTER IT IS POURED.

I. PUT A HARD TROWEL FINISH IN THIS CONCRETE.

J. KURE-N-SEAL WILL BE APPLIED TO ALL SLABS, INCLUDING A DOUBLE COAT ON ALL SAW CUTS, AS SOON AS POSSIBLE AFTER FINISHING.

K. NO WATER MAY BE ADDED TO CONCRETE ON SITE, UNLESS PRIOR AUTHORITY GRANTED. (SEE SECTION 3.01 A)

L. VERIFY FLOOR DRAINS ARE AT LOW POINT OF FLOOR AND FLOOR PITCHES TOWARDS DRAIN.

REINFORCED CONCRETE

1. WHERE REQUIRED, REMOVE UNSUITABLE EXISTING SOILS BELOW FOOTINGS AND SLABS ON GRADE. PROVIDE ENGINEERED FILL TO RAISE SITE TO ELEVATIONS CALLED FOR ON PLANS. REVIEW SOIL REPORT AND SITE PLAN. FILL MATERIAL SHALL HAVE A MINIMUM 3000 PSF BEARING CAPACITY. FILL MATERIAL SHALL BE APPROVED BY BRIOHN DESIGN GROUP, LLC. PLACEMENT SHALL CONFORM TO SOIL REPORT UNDER THE DIRECTION AND SUPERVISION OF BRIOHN BUILDING CORP.

2. FOOTING EXCAVATIONS MUST EXTEND TO COMPETENT BEARING MATERIAL. BRIOHN BUILDING CORP. TO HIRE A SOILS ENGINEER TO FIELD VERIFY NET ALLOWABLE SOIL BEARING CAPACITY STATED ON THESE CONSTRUCTION DOCUMENTS AND IN GEOTECHNICAL REPORT FOR THIS PROJECT. IF SUITABLE BEARING STRATUM DOES NOT EXIST AT FOOTING ELEVATIONS STATED ON CONSTRUCTION DOCUMENTS, EXCAVATIONS SHALL EXTEND UNTIL SOIL WITH STATED BEARING CAPACITY IS REACHED. PLACE COMPACTED FILL OR SLURRY BELOW FOOTINGS OR EXTEND FOOTINGS DOWN TO SUITABLE BEARING STRATUM. ENGINEERED FILL BELOW SLABS ON GRADE AND FOOTINGS SHALL BE FREE DRAINING GRANULAR MATERIAL COMPACTED TO 95% MODIFIED PROCTOR AND PLACED PER THE SOIL ENGINEERS' RECOMMENDATIONS.

3. ALL BACK FILL AGAINST WALLS TO BE FREE-DRAINING GRANULAR MATERIAL AS APPROVED BY BRIOHN DESIGN GROUP, LLC AND COMPACTED PER SOIL REPORT RECOMMENDATIONS UNDER SUPERVISIONS OF BRIOHN BUILDING CORP.

4. CENTER PIERS AND COLUMN FOOTINGS ON COLUMN CENTERLINES, AND CENTER WALL FOOTINGS ON WALL CENTERLINES, UNLESS NOTED OTHERWISE.

5. FILL OR BACK FILL SHALL EXTEND LATERALLY BEYOND THE EDGE OF BUILDING OR FOUNDATIONS A MINIMUM OF TWO FEET. SLOPES SHOULD NOT EXCEED 1:1 FOR COHESIVE SOILS AND 2(HORIZONTAL):1(VERTICAL) FOR GRANULAR SOILS.

6. SUBCONTRACTOR SHALL PLACE FOUNDATIONS ON UNDISTURBED NON-ORGANIC BEARING SOILS. IF EXCAVATION ACTIVITY LOOSENS BOTTOM OF FOOTING, BASE SHALL BE COMPACTED.

7. SUBCONTRACTOR SHALL FOLLOW ANY AND ALL ADDITIONAL REQUIREMENTS AS SPECIFIED IN SOIL REPORT.

8. ALL EXTERIOR FOOTINGS MUST BEAR AT A MINIMUM DEPTH OF 4'-0" BELOW ADJACENT FINISH EXTERIOR GRADE.

9. DO NOT PLACE ANY FOOTINGS ON FROZEN SUB-GRADE.

10. WHERE NEW FOOTINGS ABUT EXISTING FOOTINGS, STEP THE NEW FOOTING AS REQUIRED TO HAVE NEW BOTTOM OF FOOTING ELEVATION MATCH THE EXISTING BOTTOM OF FOOTING ELEVATION. SUBCONTRACTOR SHALL FIELD VERIFY EXISTING BOTTOM OF FOOTING ELEVATION.

REINFORCED CONCRETE FOUNDATIONS

1. WHERE REQUIRED, REMOVE UNSUITABLE EXISTING SOILS BELOW FOOTINGS AND SLABS ON GRADE. PROVIDE ENGINEERED FILL TO RAISE SITE TO ELEVATIONS CALLED FOR ON PLANS. REVIEW SOIL REPORT AND SITE PLAN. FILL MATERIAL SHALL HAVE A MINIMUM 3000 PSF BEARING CAPACITY. FILL MATERIAL SHALL BE APPROVED BY BRIOHN DESIGN GROUP, LLC. PLACEMENT SHALL CONFORM TO SOIL REPORT UNDER THE DIRECTION AND SUPERVISION OF BRIOHN BUILDING CORP.

2. FOOTING EXCAVATIONS MUST EXTEND TO COMPETENT BEARING MATERIAL. BRIOHN BUILDING CORP. TO HIRE A SOILS ENGINEER TO FIELD VERIFY NET ALLOWABLE SOIL BEARING CAPACITY STATED ON THESE CONSTRUCTION DOCUMENTS AND IN GEOTECHNICAL REPORT FOR THIS PROJECT. IF SUITABLE BEARING STRATUM DOES NOT EXIST AT FOOTING ELEVATIONS STATED ON CONSTRUCTION DOCUMENTS, EXCAVATIONS SHALL EXTEND UNTIL SOIL WITH STATED BEARING CAPACITY IS REACHED. PLACE COMPACTED FILL OR SLURRY BELOW FOOTINGS OR EXTEND FOOTINGS DOWN TO SUITABLE BEARING STRATUM. ENGINEERED FILL BELOW SLABS ON GRADE AND FOOTINGS SHALL BE FREE DRAINING GRANULAR MATERIAL COMPACTED TO 95% MODIFIED PROCTOR AND PLACED PER THE SOIL ENGINEERS' RECOMMENDATIONS.

3. ALL BACK FILL AGAINST WALLS TO BE FREE-DRAINING GRANULAR MATERIAL AS APPROVED BY BRIOHN DESIGN GROUP, LLC AND COMPACTED PER SOIL REPORT RECOMMENDATIONS UNDER SUPERVISIONS OF BRIOHN BUILDING CORP.

4. CENTER PIERS AND COLUMN FOOTINGS ON COLUMN CENTERLINES, AND CENTER WALL FOOTINGS ON WALL CENTERLINES, UNLESS NOTED OTHERWISE.

5. FILL OR BACK FILL SHALL EXTEND LATERALLY BEYOND THE EDGE OF BUILDING OR FOUNDATIONS A MINIMUM OF TWO FEET. SLOPES SHOULD NOT EXCEED 1:1 FOR COHESIVE SOILS AND 2(HORIZONTAL):1(VERTICAL) FOR GRANULAR SOILS.

6. SUBCONTRACTOR SHALL PLACE FOUNDATIONS ON UNDISTURBED NON-ORGANIC BEARING SOILS. IF EXCAVATION ACTIVITY LOOSENS BOTTOM OF FOOTING, BASE SHALL BE COMPACTED.

7. SUBCONTRACTOR SHALL FOLLOW ANY AND ALL ADDITIONAL REQUIREMENTS AS SPECIFIED IN SOIL REPORT.

8. ALL EXTERIOR FOOTINGS MUST BEAR AT A MINIMUM DEPTH OF 4'-0" BELOW ADJACENT FINISH EXTERIOR GRADE.

9. DO NOT PLACE ANY FOOTINGS ON FROZEN SUB-GRADE.

10. WHERE NEW FOOTINGS ABUT EXISTING FOOTINGS, STEP THE NEW FOOTING AS REQUIRED TO HAVE NEW BOTTOM OF FOOTING ELEVATION MATCH THE EXISTING BOTTOM OF FOOTING ELEVATION. SUBCONTRACTOR SHALL FIELD VERIFY EXISTING BOTTOM OF FOOTING ELEVATION.

TILT UP CONCRETE

01. TILT UP DESIGN SHALL CONFORM TO TCI AND ACI STANDARDS. GOVERNING SPECIFICATION FOR TILT UP CONCRETE PANELS TO BE IN ACCORDANCE WITH THE TILT-UP CONCRETE ASSOCIATIONS GUIDELINE SPECIFICATIONS. DESIGN LOADS SHALL CONFORM TO DESIGN LOADS INDICATED IN "DESIGN LOADS" SECTION OF THE PLAN AND APPLICABLE CODES. DESIGN AND CONSTRUCT TILT-UP WALL PANELS TO WITHSTAND CONSTRUCTION LOADS WHICH MAY OCCUR DURING LIFTING, BRACING, AND IMPACT OF ADJOINING PANELS. PERMANENT LOADS SHALL CONFORM TO CODE REQUIREMENTS.

02. THE PROJECT ARCHITECT/ENGINEER HAS NOT BEEN RETAINED TO DESIGN THE WALL PANELS OR THE FLOOR SLAB TO RESIST THE STRESSES CAUSED BY ERECTION OF THE WALL PANELS, NOR TO DETERMINE THE MEANS AND METHODS TO BE USED FOR ERECTION AND BRACING UNTIL PERMANENT BRACING IS IN PLACE.

03. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ERECT THE PANEL IN A MANNER THAT WILL BE BOTH SAFE FOR PERSONNEL AND PROPERTY, AND TO BRACE AND OTHERWISE PROTECT THE PANELS AGAINST WIND AND OTHER FORCES THAT MAY OCCUR DURING CONSTRUCTION AND UNTIL CONNECTIONS TO THE PERMANENT STRUCTURAL SYSTEM ARE COMPLETED.

04. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT A SUITABLE SLAB HAS BEEN PREPARED TO PROVIDE FOR THE LEVEL OF FINISH THAT HAS BEEN ESTABLISHED WITHIN THIS SPECIFICATION.

05. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE THE SLAB FINISHING INCLUDING SAW CUTTING OF ALL JOINTS WITH THE PANEL FORMING TO MINIMIZE THE IMPACT TO THE ARCHITECTURAL FINISH OF THE PANELS.

06. SHOP DRAWINGS
A. DRAWINGS SHALL BE COMPLETE AND INCLUDE PLANS, ELEVATIONS, CROSS SECTIONS AND DETAILS OF ALL BUILDING COMPONENTS AND ACCESSORIES TO BE FURNISHED BY THE TILT UP SUPPLIER.
B. APPROVAL OF SHOP AND ERECTION DRAWINGS IS AN APPROVAL OF GENERAL DESIGN ONLY AND DOES NOT RELIEVE THE TILT UP SUPPLIER FROM THE NECESSITY OF MAKING, WITHOUT COST, CHANGES OR CORRECTIONS DUE TO ERRORS IN FABRICATION, OR RESULTING FROM ERRORS IN SHOP AND/OR ERECTION DRAWING DIMENSIONS.
C. CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND COORDINATE ALL OPENINGS IN TILT UP WITH TILT UP SUPPLIER.
D. ONE TILT UP SUPPLIER WILL BE RESPONSIBLE FOR COORDINATING ENGINEERING, DRAFTING, AND SHOP DRAWING SUBMITTALS IN THE EVENT THAT TILT UP COMPONENTS WILL BE PROVIDED BY MORE THAN ONE SUPPLIER.
E. SUBMIT PRODUCT DATA, SHOP DRAWINGS, AND CONCRETE MIX DESIGNS TO OWNER AND OWNERS CONTRACTED TESTING LABORATORY FOR REVIEW.

07. TILT UP SUPPLIER SHALL INCLUDE ERECTION, GROUTING, SAWING OF OPENINGS AT NEW AND EXISTING TILT UP . TILT UP SUPPLIER SHALL INCLUDE CAULKING OF ALL TILT UP TO TILT UP JOINTS, AND CAULKING OF ALL TILT UP TO OTHER MATERIAL JOINTS AT ALL EXPOSED AREAS. CAULK TO BE "TREMCO DYMERIC 240 FC". PROVIDE "SONNEBORN DEGUSSA NP1" CAULK AT ALL STRANLOK FINISH LOCATIONS IN FOOD PROCESSING FACILITIES, FOOD PREP AND FOOD STORAGE AREAS. PROVIDE "TREMCO DYMERIC 240 FC" AT ALL NON-FINISH INTERIOR AND EXTERIOR LOCATIONS. SEE FLOOR PLAN.

08. FACING CONCRETE SHALL BE DESIGNED FOR MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS INDICATED ON PROJECT DRAWINGS, OR SPECIFIED, AND TESTED ACCORDING TO ASTM C39.

09. THE BOND BREAKER USED ON THE TILT-UP PANELS AND THE CASTING SLAB MUST BE COMPATIBLE WITH ANY COATING SUITABLE FOR INTERIOR AND EXTERIOR CONCRETE PANELS AND SLAB.

10. CONTRACTOR SHALL ENSURE THAT FINISHED FLOOR SLAB DOES NOT SHOW SPALLING, BOLT HOLES, OR OTHER SURFACE DEFECTS AFTER TILT-UP CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL FIGURE ALL COSTS REQUIRED TO PROVIDE OWNER WITH FLOOR SLABS THAT MEET ALL QUALITY REQUIREMENTS STATED WITHIN THIS SPECIFICATION. WASTE SLABS ARE STRONGLY RECOMMENDED.

11. CASTING SLAB SHALL BE CURED. SAW CUTS, CRACKS OR JOINTS IN THE CASTING BED SHALL BE FILLED AND LEVELED WITH A SEALANT SO AS TO MINIMIZE TRANSFER OF THE JOINT LINE TO THE PANEL FACE.

12. SURFACES TO BE PAINTED SHALL BE PREPARED TO RECEIVE PAINT FINISH AS SPECIFIED. ALL EXPOSED EXTERIOR SURFACES SHALL BE SACKED AND GROUTED TO CREATE A SMOOTH HONECOMB-FREE SURFACE TO ACCEPT FINAL PAINT.

13. PANELS DAMAGED DURING ERECTION, CRACKS READILY VISIBLE FROM 40 FEET, PERMANENT BOWING FROM ERECTION, SPALLS AND PANELS WITH INSUFFICIENT TESTED STRENGTH, SHALL BE REPAIRED OR REPLACED IN A MANNER ACCEPTABLE TO OWNER, AT THE CONTRACTORS EXPENSE. ANY DEMOLITION OR REPAIR OF OTHER MATERIALS OR SYSTEMS AS A RESULT OF REPAIR OR REPLACEMENT OF DEFECTIVE CONCRETE SHALL BE AT THE CONTRACTORS EXPENSE.

SECTION NOT USED

MASONRY

1. MASONRY CONSTRUCTION SHALL CONFORM TO THE CURRENT EDITION OF "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" ACI AND "SPECIFICATIONS FOR MASONRY STRUCTURES" ACI.

2. BOND BEAMS, PILASTERS, AND LINTELS SHALL BE FILLED WITH CONCRETE HAVING F'c = 3000 PSI UNLESS NOTED OTHERWISE. COARSE AGGREGATE SHALL PEA GRAVEL. REINFORCE ALL CONTINUOUS BOND BEAMS WITH 2-#5, U.N.O. PROVIDE CORNER BARS TO MATCH. THE MINIMUM LENGTH OF LAP FOR BARS EMBEDDED IN CONCRETE SHALL BE 24" FOR #4 BARS, 30" FOR #5 BARS, 36" FOR #6 BARS AND 42" FOR #7 BARS.

3. MASONRY CONTRACTORS TO GROUT COURSE(S) SOLID WHERE EXPANSION ANCHORS ARE SHOWN/CALLED OUT ON DRAWINGS.

4. USE ONLY U-SHAPED LINTEL BLOCK FOR MASONRY LINTELS. CENTERLINE OF REINFORCING TO BE LOCATED 3" MAX FROM BOTTOM OF LINTEL BLOCK.

5. LINTELS SHALL BEAR A MINIMUM OF 8" AT EACH END. THE FIRST COURSE OF MASONRY ABOVE THE LINTEL SHALL BE LAID WITH FULL MORTAR BEDDING. AT BEARING WALLS, GROUT END CELL SOLID TO FLOOR BELOW. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR SPECIAL BOND BEAM AND LINTEL CONDITIONS.

6. FOR STEEL BEAMS BEARING PERPENDICULAR TO MASONRY WALL, GROUT AN AREA OF 4 CELLS WIDE, 4 COURSES DEEP, UNLESS NOTED OTHERWISE.

7. PROVIDE POCKETS IN MASONRY WALLS FOR STEEL BEAMS, JOISTS, GIRDERS AND COLUMN BASE PLATES AND BACK PATCH.

8. WALLS MUST BE BRACED OR TIED INTO FLOORS PRIOR TO BACKFILLING.

9. GROUT PLACEMENT IN REINFORCED MASONRY WALLS OR PIERS SHALL FOLLOW THE PROCEDURES DESCRIBED IN NCMA TEK MANUAL 3-2A FOR EITHER LOW-LIFT OR HIGH-LIFT GROUTING.

10. PROVIDE HORIZONTAL JOINT REINFORCEMENT SUCH AS DUR-O-WALL, 16 INCHES ON CENTER VERTICALLY FOR RUNNING BOND WALLS, AND 8" AND 10" STACK BOND WALLS. FOR 12" STACK BOND WALLS, STANDARD HORIZONTAL JOINT REINFORCEMENT AT 8" ON CENTER OR HEAVY (A = 0.056*MIN) JOINT REINFORCEMENT AT 16" ON CENTER.

11. CONSTRUCTION SHALL BE RUNNING BOND UNLESS OTHERWISE NOTED.

12. REFER TO ARCHITECTURAL DRAWINGS &/OR STRUCTURAL FOUNDATION PLAN FOR LOCATION OF ALL VERTICAL CONTROL JOINTS IN EXTERIOR WALLS. SEE STANDARD CONTROL JOINT DETAIL.

13. CONNECTIONS OF MASONRY VENEERS TO STRUCTURAL BACKUP WALL TO ADHERE TO THE FOLLOWING:

A. MASONRY VENEER ANCHORED TO MASONRY BACKING MAY BE ATTACHED USING WIRE ANCHORS, ADJUSTABLE ANCHORS, OR JOINT REINFORCEMENT. VENEER ANCHORED TO A CONCRETE OR STEEL BACKING MUST BE ATTACHED WITH ADJUSTABLE ANCHORS. VENEER ANCHORED TO WOOD STUDS TO BE ATTACHED WITH MINIMUM 22 GA. CORRUGATED SHEET METAL. ANCHOR SPACING TO BE SPACED AT MAXIMUM 32" HORIZONTALLY & 18" VERTICALLY WITH A MAXIMUM WALL SURFACE SUPPORTED OF 2.67 SQ. FT.

B. AROUND OPENINGS LARGER THAN 16" IN EITHER DIMENSION, SPACE ANCHORS AROUND PERIMETER OF OPENING AT A MAXIMUM OF 3 FT. ON CENTER & PLACE ANCHORS WITHIN 12" OF OPENING.

C. WHEN MASONRY VENEER IS ANCHORED TO WOOD BACKING, ANCHOR TO BE ATTACHED WITH A CORROSION RESISTANT 8d COMMON MAIL, OR A FASTENER EQUIVALENT OR GREATER PULL-OUT VALUE. WHEN VENEER IS ANCHORED TO STEEL BACKING, ATTACH WITH CORROSION-RESISTANT SCREW THAT HAS A MINIMUM NOMINAL SHANK DIAMETER OF 0.19".

D. ALL WALL TIES, ANCHORS, AND CONNECTORS TO CONFORM WITH NCMA TEK MANUALS 3-6B AND 12-1A.

14. TEMPORARY CONSTRUCTION BRACING OF FREESTANDING WALLS IS THE RESPONSIBILITY OF THE SUB-CONTRACTOR. PROCEDURES OUTLINED IN NCMA TEK MANUAL 3-4B TO BE FOLLOWED.

METALS

01. PROVIDE MISCELLANEOUS METAL ITEMS INCLUDING MATERIALS, FABRICATIONS, FASTENINGS AND ACCESSORIES REQUIRED FOR FINISHED INSTALLATION AS INDICATED AND SPECIFIED.

02. WHERE METAL ITEMS ARE TO BE ERECTED AND IN CONTACT WITH DISSIMILAR MATERIALS. PROVIDE CONTACT SURFACES WITH COATING OF AN IMPROVED ZINC CHROMATE PRIMER IN A MANNER TO OBTAIN NOT LESS THAN 1.0 MIL DRY FILM THICKNESS.

03. ALUMINUM EXTRUSIONS SHALL CONFORM TO ASTM B221. PROVIDE A CLEAR ANODIZED FINISH UNLESS OTHERWISE NOTED.

04. FASTENERS SHALL BE AS REQUIRED FOR PROPER ASSEMBLY AND INSTALLATION OF FABRICATED ITEMS.

05. MISCELLANEOUS MATERIALS: PROVIDE INCIDENTAL ACCESSORY MATERIALS, TOOLS, METHODS AND METHODS AND EQUIPMENT REQUIRED FOR FABRICATION AND INSTALLATION OF MISCELLANEOUS METAL ITEMS AS INDICATED ON DRAWINGS.

06. VERIFY DIMENSIONS PRIOR TO FABRICATION OR CASTING. FORM METAL ITEMS TO ACCURATE SIZES AND CONFIGURATIONS AS INDICATED ON DRAWINGS AND OTHERWISE REQUIRED FOR PROPER INSTALLATION.
FABRICATE WITH ALL LINES STRAIGHT AND ANGLES SHARP, CLEAN AND TRUE. DRILL, COUNTERSINK, TAP AND OTHERWISE PREPARE ITEMS FOR CONNECTION WITH WORK OF OTHER TRADES MAKE PERMANENT CONNECTIONS BY WELDING AND GRIND ALL EXPOSED WELDS SMOOTH TO MATCH ADJACENT SURFACES. ROUGH JOINT SURFACES NOT PERMITTED. AVOID USING BOLTS AND SCREWS UNLESS SPECIFICALLY INDICATED OR APPROVED. WHEN USED, DRAW UP TIGHT AND TIE THREADS TO PREVENT LOOSENING.

07. ALL FERROUS METAL ITEMS SHALL BE SHOP FINISHED. TOUCH UP OR REPAIR DAMAGED AREAS PRIOR TO INSTALLATION WITH SAME MATERIAL.

08. PROVIDE ALL STEEL BLOCKING AND BRACING IN METAL STUD FRAMED PARTITIONS NECESSARY FOR A COMPLETE INSTALLATION INCLUDE AS REQUIRED FOR SUPPORT OF ALL WALL-MOUNTED EQUIPMENT AND FABRICATIONS AS INDICATED ON DRAWINGS. PROVIDE SUPPORTS AT JAMBS OF DOORS AND ELSEWHERE, AS REQUIRED.

09. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS AND SPECIFICATIONS.

METALS: STRUCTURAL STEEL

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL MEMBERS SHALL BE GOVERNED BY THE CURRENT EDITION OF AISC "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDERS TO BE CERTIFIED. ALL WELDING TO CONFORM TO AWS D1.1 LATEST EDITION USING E70-XX ELECTRODES.

3. BOLTED CONNECTIONS TO BE DOUBLE ANGLE WITH DIAMETER ASTM A-325 BOLTS UNLESS SHOWN OTHERWISE. USE DIAMETER A-325 BOLTS FOR SINGLE SHEAR, WING PLATE CONNECTIONS. PROVIDE MAXIMUM NUMBER OF BOLTS IN A SINGLE LINE WITH 3" GAGE. PROVIDE WASHERS FOR ALL ANCHOR BOLTS (ASTM A-307).

4. PROVIDE AND MAINTAIN TEMPORARY BRACING OF STEEL UNTIL SECURELY INCORPORATED INTO CONSTRUCTION SUCH AS SHEAR WALLS, X-BRACING, ETC.

5. STEEL COLUMNS BUILT IN MASONRY SHALL HAVE ADJUSTABLE MASONRY WALL ANCHORS AT 2-0" ON CENTER VERTICALLY EACH SIDE, LOCATED IN COURSING.

6. WIDE FLANGE BEAMS 12" OR DEEPER SHALL HAVE " STIFFENER PLATE EACH SIDE AT ALL POINTS OF SUPPORT INCLUDING BEARING ENDS ON CONCRETE OR MASONRY. PROVIDE BEARING PLATES WITH (2) " ANCHOR BOLTS 12" LONG WITH 3" HOOKS.

7. UNLESS NOTED OTHERWISE, FRAME AROUND ALL ROOF DECK OPENINGS LARGER THAN 12" IN DIAMETER, INCLUDING ROOF DRAINS/SUMPS, WITH 4-L'S 3X3X DOWN-TURNED.

8. ALL STEEL BEAMS SHALL BE FABRICATED WITH THE NATURAL CAMBER (WITHIN THE MILL TOLERANCE) LOCATED ABOVE THE HORIZONTAL CENTERLINE BETWEEN THE END CONNECTIONS.

9. STAIRS, HANDRAILS, AND GUARDRAILS SHALL BE DESIGNED BY THE STEEL SUPPLIER.

10. SUBCONTRACTOR SHALL SUBMIT FIVE SETS OF STEEL SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS MUST BE SUBMITTED TO BRIOHN DESIGN GROUP A MINIMUM OF SEVEN WORKING DAYS PRIOR TO FABRICATION DATE NEEDED FOR PROJECT SCHEDULING.

11. ROOF SLOPE TO BE " PER FOOT UNLESS OTHERWISE NOTED. ON CONSTRUCTION DOCUMENTS. ROOF SLOPE IS GENERALLY TO BE ACHIEVED BY SLOPING THE STRUCTURE UNLESS THICKENED OR TAPERED INSULATION IS NOTED ON THE ROOF PLAN. ROOF SLOPE MAY BE " PER FOOT IF A PONDING ANALYSIS IS PERFORMED PROVING STABILITY OF THE ROOF STRUCTURE AGAINST PROGRESSIVE DEFLECTIONS. SEE ASCE 7-05 SECTIONS 7.11 & 8.4. IF DIFFERENCE IN HEIGHT BETWEEN ROOF DRAINS AND HIGH POINT IN ROOF IS GREATER THAN 6", PLUMBING CONTRACTOR TO PROVIDE OVERFLOW DRAINS @ EACH DRAINAGE "FIELD" ON THE ROOF.

METALS: DECK

1. DECK, ACCESSORIES, AND ATTACHMENTS SHALL CONFORM WITH THE CURRENT EDITION OF "STEEL DECK INSTITUTE SPECIFICATIONS".

2. PROVIDE SUPPORT AT COLUMNS AS REQUIRED FOR DECK SUPPORT. PROVIDE L2X2X MINIMUM.

3. AT OPENINGS IN DECK LESS THAN 12"X12", PROVIDE A 16 GAUGE COVER PLATE FASTENED TO DECK WITH #12 TEK SCREWS.

4. AT CHANGE IN DECK DIRECTION, PROVIDE A 22 GAUGE X 12" CONTINUOUS PLATE. PROVIDE SAME PLATE AT ALL RIDGES, VALLEYS, AND HIPS BENT TO MATCH PROFILE OF ROOF.

METALS: STEEL JOISTS & JOIST GIRDERS

1. DESIGN, FABRICATION, AND ERECTION SHALL CONFORM TO THE CURRENT EDITION OF "STEEL JOIST INSTITUTE SPECIFICATIONS."

2. JOIST MANUFACTURER SHALL BE A MEMBER OF THE SJI (STEEL JOIST INSTITUTE).

3. SUBCONTRACTOR SHALL SUBMIT FIVE SETS OF STEEL JOIST SHOP DRAWINGS TO BRIOHN DESIGN GROUP FOR APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS MUST BE SUBMITTED TO BRIOHN DESIGN GROUP A MINIMUM OF SEVEN WORKING DAYS PRIOR TO FABRICATION DATE NEEDED FOR PROJECT SCHEDULING.

4. PROVIDE SJI STANDARD BRIDGING AS SHOWN ON THE CONSTRUCTION DOCUMENTS OR AS REQUIRED BY DESIGN.

5. DO NOT DRILL OR CUT THROUGH ANY JOIST OR GIRDER.

6. ALL CONCENTRATED LOADS SHALL BE APPLIED AT A JOIST PANEL POINT UNLESS SPECIFICALLY NOTED OTHERWISE.

7. JOIST MANUFACTURER SHALL DESIGN JOISTS FOR ROOF TOP UNIT LOADS AND SUSPENDED UNIT OR BULKHEAD LOADS SHOWN ON CONSTRUCTION DOCUMENTS. COORDINATE EXACT LOCATION OF APPLIED LOAD WITH APPROPRIATE SUB-CONTRACTOR.

8. DESIGN JOIST, JOIST GIRDERS, AND BRIDGING TO RESIST A NET UPLIFT LOAD OF 5 PSF UNLESS OTHERWISE NOTED.

9. PROVIDE CAMBER IN JOIST AS RECOMMENDED BY SJI SPECIFICATIONS UNLESS OTHERWISE NOTED ON CONSTRUCTION DOCUMENTS.

10. JOIST SUPPLIER SHALL COORDINATE HIS WORK WITH THE STEEL SUPPLIER ON THE PROJECT.

11. DESIGN JOISTS AND JOIST GIRDERS FOR L/240 LIVE LOAD DEFLECTION UNLESS NOTED OTHERWISE.

METALS: COLD-FORMED STEEL FRAMING

1. DESIGN, FABRICATION, AND ERECTION OF COLD-FORMED STEEL FRAMING SHALL BE IN ACCORDANCE WITH THE AISI DESIGN MANUAL AS AMENDED TO DATE. ALL FRAMING MEMBERS SHOWN ON PLANS ARE SCHEMATIC AND ARE SHOWN FOR INTENT ONLY. (ASSUMES THAT THE DESIGN AND CALCULATIONS ARE DONE BY THE SUPPLIER)

1A. ALL LIGHT GAUGE FRAMING DESIGN & CALCULATIONS TO BE DONE BY SUPPLIER. THIS INCLUDES BEAMS, HEADERS, STUDS, COLUMNS, ECT. INCLUDING ALL CONNECTIONS TO MASONRY, CONCRETE, STEEL & OTHER LIGHT GAUGE MEMBERS.

2. STEEL STUD CURTAIN WALL AND CONNECTIONS TO BE DESIGNED BY SUPPLIER. (STEEL STUD CURTAIN WALL AND CONNECTION DESIGN SHALL BE SEALED BY PROFESSIONAL STRUCTURAL ENGINEER EXPERIENCED IN THIS WORK)

COMPONENTS & CLADDING
UPLIFT.. PER ASCE 7 (FM 1-28)
V .... 90 MPH
I 1.15
GCPI 0.55

LIVE LOADS: GROUND SNOW LOAD .... 30 PSF
IMPORTANCE FACTOR 1.0
FLAT ROOF SNOW LOAD .... 27 PSF
FACTOR Ct 1.1
FACTOR Ce 1.1
L/600 FOR BRICK VENEER
L/360 FOR WALL STUDS W/ATTACHED DRYWALL

3. MINIMUM DESIGN THICKNESS OF STUDS AND TRACK AT EXTERIOR OF BUILDING VERTICALLY SUPPORTING MASONRY SHALL BE 0.045 INCHES (GAGE: 18)

4. MINIMUM DESIGN THICKNESS OF STUDS AND TRACK AT EXTERIOR OF BUILDING VERTICALLY NOT SUPPORTING MASONRY SHALL BE 0.045 INCHES (GAGE: 18)

5. LOAD BEARING STUDS VERTICALLY SUPPORTING MASONRY SHALL BE DESIGNED TO CARRY ALL GRAVITY LOADS AND LATERAL FORCES INCLUDING BUT NOT LIMITED TO DEAD LOADS, LIVE LOADS, WIND LOADS, AND AXIAL LOAD ECCENTRICITIES.

6. LOAD BEARING STUDS NOT VERTICALLY SUPPORTING MASONRY SHALL BE DESIGNED TO CARRY ALL GRAVITY LOADS AND LATERAL FORCES INCLUDING BUT NOT LIMITED TO DEAD LOADS, LIVE LOADS, WIND LOADS, AND AXIAL LOAD ECCENTRICITIES.

7. NON-LOAD BEARING STUDS NOT VERTICALLY SUPPORTING MASONRY SHALL TRANSFER LATERAL LOADS TO STRUCTURE BY MEANS OF SLIDE CLIPS TO ALLOW FOR VERTICAL MOVEMENT OF PRIMARY STRUCTURAL MEMBERS.

8. SPLICES IN AXIALLY LOADED STUDS ARE NOT PERMITTED.

9. STUDS, TRACK, AND ACCESSORIES SHALL BE GALVANIZED WITH A MINIMUM G-90 COATING PER ASTM A-525

10. STUDS SHALL BE PLUMBED, ALIGNED, AND SECURELY ATTACHED TO FLANGES OR WEBS OF LOWER TRACK. STUDS SHALL BE SEATED TIGHT TO TRACK, EXCEPT AS NEEDED FOR DIAGONAL BRACING OR REQUIRED FOR NON-PLUMB WALLS OR WARPED SURFACES AND SIMILAR REQUIREMENTS.

11. JOINTS SHALL BE LOCATED DIRECTLY OVER BEARING STUDS OR A LOAD DISTRIBUTION MEMBER SHALL BE PROVIDED AT THE TOP OF THE WALL.

12. REFER TO ARCHITECTURAL WALL SECTIONS AND DETAILS FOR ADDITIONAL INFO.

13. ALL MEMBERS 0.0566 INCH MINIMUM THICKNESS OR THICKER (16 GAGE OR LOWER) SHALL BE OF MINIMUM 50 KSI STEEL. ALL MEMBERS OF 0.0451 INCH MINIMUM THICKNESS OR THINNER (18 GAGE OR HIGHER) AND ALL ACCESSORIES SHALL BE OF MINIMUM 33 KSI STEEL.

14. STEEL STUD ERECTOR SHALL CONSTRUCT ALL LIGHT GAGE FRAMING IN A MANNER WHICH PROTECTS LATERAL STABILITY OF THE STRUCTURE.

15. ALL WELDS PERFORMED ON GALVANIZED LIGHT GAGE COMPONENTS SHALL BE COATED WITH ZINC RICH PAINT FOR CORROSION PROTECTION IN ACCORDANCE WITH ASTM A780. CONTRACTOR SHALL NOTIFY THE ENGINEER TO ALLOW ADEQUATE TIME FOR WELDS TO BE REVIEWED BEFORE SYSTEMS ARE ENCLOSED

16. STEEL STUD WALLS SHALL BE DESIGNED AND CONSTRUCTED TO PROVIDE REQUIRED CAPACITIES TO CARRY CONSTRUCTION LOADS. CONTRACTOR SHALL PROVIDE NECESSARY BRIDGING OR ATTACHMENT TO WALL SHEATHING BEFORE STRUCTURAL COMPONENTS ARE LOADED.

METALS: COLD-FORMED STEEL FRAMING CONT

17. INSTALL SUPPLEMENTARY FRAMING, BLOCKING AND BRACING IN METAL FRAMING SYSTEM WHENEVER WALLS OR PARTITIONS ARE INDICATED TO SUPPORT FIXTURES, EQUIPMENT, SERVICES, CASEWORK, HEAVY TRIM AND FURNISHING AND SIMILAR WORK.

WOOD AND PLASTICS

01. PROVIDE AND OR INSTALL ALL ROUGH CARPENTRY, FINISH CARPENTRY INCLUDING MILLWORK, FINISH HARDWARE, ROUGH HARDWARE, FASTENING DEVICES AND MISCELLANEOUS ACCESSORIES AS MAY BE REQUIRED HEREIN AND OR AS SHOWN ON THE DRAWINGS.

02. ROUGH CARPENTRY: FURNISH AND INSTALL ALL FRAMING AS MAY BE REQUIRED FOR INTERIOR PARTITION, BAFFLE, WALLS, SOFFITS, CEILINGS, STOREFRONTS, EXTERIOR WALLS, ETC. AS NOTED AND WHERE SHOWN ON THE DRAWINGS.

03. FINISH CARPENTRY: FURNISH AND INSTALL ALL THAT IS REQUIRED FOR DOORS AND FRAMES, FINISH TRIM AND MOLDING AND PANELING. PERFORM FINISH CARPENTRY WORK IN ACCORDANCE WITH AWI QUALITY STANDARDS, PREMIUM GRADE. USE FULL LENGTH PIECES, MITER ALL JOINTS, SHOULDER JOINT AT DOOR JAMBS. FILL ALL NAIL HOLES AND SAND SMOOTH.

04. PROVIDE ROUGH LUMBER AND PLYWOOD IN STANDARD DIMENSIONS, MOISTURE CONTENT NOT MORE THAN 19%.

05. PROVIDE ALL NECESSARY ROUGH HARDWARE IN SIZES AND QUANTITIES REQUIRED BY LOCAL CODE OR APPROVED BY ARCHITECT.

06. USE FINISH OR CASING NAILS FOR EXPOSED WORK. USE TYPE "S" TRIM HEAD SCREWS FOR ATTACHMENT OF WOOD TRIM TO METAL STUDS, RUNNERS OR FURRING.

07. RELIEVE BACKS OF WOOD TRIM. KERF BACKS OF MEMBERS MORE THAN 5" WIDE AND 1" NOMINAL THICKNESS. EASE ALL EXTERNAL CORNERS.

08. INSTALL LAMINATES ONLY WHEN RECEIVING SURFACES ARE IN A SATISFACTORY CONDITION FOR INSTALLATION.

09. USE ADHESIVES RECOMMENDED BY THE MANUFACTURER FOR THE PARTICULAR APPLICATION. INSTALL IN ACCORDANCE WITH MANUFACTURER'S MOST CURRENT PRINTED APPLICATION INSTRUCTIONS. USE LOWEST VOC ADHESIVES AVAILABLE WHICH MEET OR EXCEED THE MANUFACTURES REQUIREMENTS.

10. PROTECT FROM DAMAGE BY OTHER TRADES WORKING ADJACENT TO THE INSTALLATION. REPLACE DAMAGED SURFACES.

11. REMOVE EXCESS ADHESIVE AND CLEAN SURFACES USING MANUFACTURER'S RECOMMENDED SOLVENT AND CLEANING PROCEDURES.

12. FILL IN ALL SEAMS WITH MANUFACTURER'S RECOMMENDED SOLVENT AND CLEANING PROCEDURES. USE LOWEST VOC CLEANING AGENTS AVAILABLE THAT MEET OR EXCEED THE MANUFACTURER'S REQUIREMENTS.

13. WOOD PRODUCTS SHALL MEET OR EXCEED THE AMERICAN WOODWORK INSTITUTE STANDARDS.

14. INSTALL WOODS AND PLASTICS IN CONFORMANCE WITH DETAILS AND THE FOLLOWING CONSIDERATIONS AND REQUIREMENTS:
A) INSTALL WOODS AND PLASTICS WITH TIGHT JOINTS.
B) MITER CASINGS AND MOLDINGS UNLESS OTHERWISE NOTED.
C) ALL RUNNING TRIM ONE (1) PIECE UP TO 10'-0" LONG. MATCH GRAIN AND COLOR PIECE TO PIECE.
D) USE FINISH NAILS EXCEPT WHERE ARE SPECIFICALLY CALLED FOR OR WHERE SCREWS DO NOT SHOW.
E) SET FASTENERS FOR PUTTYING.
F) WHERE SCREW ATTACHMENT REQUIRED, SPACE SCREWS AT EQUAL INTERVALS. SINK AND PUTTY IN FINISH WOOD SURFACES.
G) ALL MEMBERS AND LINES LEVEL AND PLUMB.
H) SELECT AND CUT MATERIAL TO EXCLUDE DAMAGED, MARKED OR DEFECTIVE AREAS.
I) FINISH EXPOSED SURFACES SMOOTH, FREE FROM TOOL AND MACHINE MARKS.
J) EASE ALL EXPOSED WOOD EDGES 1/8" MINIMUM RADIUS.
K) INSTALL FIRE RATED DOORS IN ACCORDANCE WITH REQUIREMENTS OF NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RECOMMENDATIONS.

15. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS AND SPECIFICATIONS.

WOOD: LUMBER

01. LUMBER SHALL BE GRADED AND STAMPED WITH MINIMUM STRUCTURAL DESIGN VALUES AS LISTED BELOW:
A. #1/#2 DOUGLAS FIR 850 PSI FB. 95 PSI FV. 1600 KSI E (BEAMS, JOISTS, LINTELS & HEADERS, UNLESS OTHERWISE NOTED)
B. #1/#2 S.P.F. 875 PSI FB. 1150 PSI FV. 1400 KSI E (ALL STUDS & PLATES, UNLESS OTHERWISE NOTED)
C. LVL @1800 KSI E OR MICRO-LAM @1900 KSI E 2600 PSI FB. 285 PSI FV (OR AS NOTED ON THE STRUCTURAL DRAWINGS)
D. WOOD HEADER AND FRAMING MATERIAL MATERIAL SHALL BE THOROUGHLY SEASONED, FREE FROM WARP AND FREE OF ALL SPLITS, SHAKES AND CHECKS.

02. MISCELLANEOUS LUMBER: PROVIDE NO. 3 OR STANDARD GRADE LUMBER OF ANY SPECIES FOR SUPPORT OR ATTACHMENT OF OTHER CONSTRUCTION, INCLUDING ROOFTOP EQUIPMENT CURBS AND SUPPORT BASES, CANT STRIPS, BUCKS, NAILERS, BLOCKING AND SIMILAR MEMBERS.

03. PROTECTION AGAINST DECAY WITH PRESERVATIVE-TREATED WOOD SHALL BE REQUIRED IN THE FOLLOWING AREAS:
A. ALL WOOD SILL PLATES, FRAMING AND FURRING STRIPS ATTACHED TO EXTERIOR BELOW GRADE MASONRY AND CONCRETE WALLS.
B. ALL WOOD PLATES, BLOCKING, FRAMING AND FURRING STRIPS ATTACHED TO EXTERIOR, SINGLE WITHE MASONRY WALLS.
C. ALL WOOD CAP FLASHING BLOCKING ATTACHED TO MASONRY OR CONCRETE PARAPETS.
D. ALL WOOD SLEEPERS AND SILL PLATES ON CONCRETE SLABS IN DIRECT CONTACT WITH EARTH.
E. ALL WOOD IN CONTACT WITH GROUND OR EXPOSED TO THE WEATHER.

04. EXCEPTION: WOOD SILL PLATES ON CONCRETE SLABS SEPARATED FROM DIRECT CONTACT TO THE EARTH WITH A 10 MIL POLYETHYLENE VAPOR BARRIER WILL NOT REQUIRE PRESERVATIVE-TREATMENT.

05. FINISHES FOR FASTENERS AND HARDWARE IN CONTACT WITH PRESERVATIVE-TREATED WOOD ARE BASED ON THE FOLLOWING ASSUMPTIONS:
A. ALL INTERIOR TREATED WOOD SHALL USE AN ACQ-C, ACQ-D (CARBONATE), CBA-A OR CA-B TREATMENT WITH RETENTION LEVELS LESS THAN OR EQUAL TO 0.40 PCF, 0.40 PCF, 0.41 PCF AND 0.21 PCF RESPECTIVELY.
B. ALL CONNECTION HARDWARE AND FASTENERS IN DIRECT CONTACT WITH INTERIOR TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED, MECHANICALLY GALVANIZED OR STAINLESS STEEL.
C. ALL CONNECTION HARDWARE AND FASTENERS IN DIRECT CONTACT WITH EXPOSED EXTERIOR TREATED WOOD OR UNKNOWN TREATMENTS SHALL BE STAINLESS STEEL.
D. USE TAPCON CLIMASEAL FASTENERS TO CONNECT ACQ-TREATED WOOD BLOCKING TO MASONRY OR CONCRETE PARAPETS.

06. SHOP DRAWINGS FOR PRESERVATIVE-TREATED WOOD, HARDWARE AND FASTENERS:
A. THE SUBCONTRACTOR SHALL FURNISH MATERIAL CERTIFICATES FOR ALL PRESERVATIVE TREATED WOOD TYPES, SPECIFYING THE NAME OF THE TREATING COMPANY, THE PRESERVATIVE USED, THE LEVEL OF TREATMENT (0.10, 0.25, 0.40, ETC.). THE INTENDED USE (ABOVE GROUND, GROUND CONTACT, ETC.) AND A REFERENCE TO THE APPROPRIATE AWPA STANDARD.
B. THE SUBCONTRACTOR SHALL FURNISH MATERIAL DATA SHEETS FOR HARDWARE AND FASTENERS IN CONTACT WITH PRESERVATIVE-TREATED WOOD.

07. PLACE 2" THICK NOMINAL FIRE-BLOCKING IN STUD WALLS AT CEILING, SOFFIT, FLOOR LEVELS AND AT EACH10'0" HEIGHT OF STUD.

08. JOISTS SHALL BE BLOCKED AT SUPPORTS AND BRIDGED OR BLOCKED AT INTERVALS OF 8"0" WHERE JOISTS ARE 2'x12" OR DEEPER.

09. JOISTS UNDER NON-BEARING PARTITIONS SHALL BE DOUBLED AND TRIPLED FOR BEARING PARTITIONS ABOVE, UNLESS OTHERWISE NOTED.

10. COMMON NAILS SHALL BE USED, UNLESS OTHERWISE NOTED.

11. LAG BOLTS AND SCREWS SHALL BE PRE-DRILLED TO SHANK DIAMETER AND FULL DEPTH AND SCREWED, NOT DRIVEN INTO PLACE.

12. CUT WASHERS SHALL BE PLACED UNDER HEADS AND NUTS OF ALL BOLTS AND UNDER HEADS OF LAG BOLTS. ONE CUT WASHER SHALL BE USED FOR BOLTS CONNECTING WOOD LEDGERS TO CONCRETE OR MASONRY WALLS.

13. SEE LUMBER, PLYWOOD AND NAILING SPECIFICATIONS ON STRUCTURAL DRAWINGS. PROVIDE AND INSTALL ALL WOOD FRAMING AS INDICATED ON THE DRAWINGS.

14. METAL CONNECTORS AND FRAMING DEVICES SHOWN ON DRAWINGS OTHER THAN CUSTOM FABRICATED ITEMS SHALL BE "STRONG-TIE" CONNECTORS BY SIMPSON COMPANY.

SECTIONS NOT USED

THERMAL AND MOISTURE PROTECTION

01. CAULK AROUND ALL WINDOWS (HEAD AND JAMB), DOORS, VENT, OPENINGS, WHERE DIFFERENT MATERIALS MEET, ROOF OPENINGS, EAVES, SOFFITS, JOINTS, COUNTERTOPS, DOOR FRAMES, ETC. AS REQUIRED FOR A WATERTIGHT AND AIRTIGHT CONNECTION. PROVIDE CAULK PER MANUFACTURERS RECOMMENDATIONS. CAULK TO BE "TREMCO DYMERIC 240 FC" FOR FOOD PROCESSING FACILITIES OR FOOD PREP/FOOD STORAGE AREAS. CAULK TO BE INSTALLED AFTER FINISH IS APPLIED TO SURFACES PER MANUFACTURE'S RECOMMENDATIONS.

02. PROVIDE NON-SAG SEALANT COMPLYING WITH REQUIREMENTS OF FEDERAL SPECIFICATIONS TTS-1543 OR FS TT-S-230 TYPE "II", CLASS "A". PROVIDE ACOUSTICAL SEALANT WHICH SHALL BE NON-HARDENING, NONDRYING SYNTHETIC RUBBER SEALING COMPOUND WITH MINIMUM 90% SOLIDS. USE AT ALL INTERIOR JOINTS AT INTERSECTIONS BETWEEN PLANES. AROUND DOOR AND WINDOW FRAMES PRIMER SHALL BE MADE OR RECOMMENDED BY SEALANT MANUFACTURER FOR THE SPECIFIC CONDITIONS AND SUBSTRATES. USE LOWEST VOC SEALANTS AND CAULKING AVAILABLE WHICH MEET OR EXCEED THE CODE AND MANUFACTURES REQUIREMENTS.

03. PROVIDE BACKING MATERIAL BY DOW "ETHAFOAM" OR APPROVED EQUAL. APPLY SEALANT OVER BACKING TO UNIFORM THICKNESS IN CONTINUOUS BEADS FILLING ALL JOINTS AND VOIDS, SOLID. SUPERFICIAL POINTING WITH A SKIM BEAD WILL NOT BE ACCEPTED.

04. ALL SURFACES SHALL BE ADEQUATELY CLEANED AND PREPARED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS PRIOR TO INSTALLATION. USE LOWEST VOC CLEANING AGENTS AVAILABLE THAT MEET OR EXCEED THE MANUFACTURER'S REQUIREMENTS.

05. ISOLATION AND CONTROL JOINT MATERIAL TO BE POLYETHYLENE FOAM EXPANSION ISOLATION JOINT FILLER OF 1/2" THICKNESS UNLESS OTHERWISE INDICATED. THE MINIMUM DEPTH OF ISOLATION JOINT MATERIAL TO BE EQUAL TO THE SMALL OF THE CONCRETE SLAB THICKNESS WITH WHICH IT COMES IN CONTACT.

06. WIND RESISTANCE OF EDGE FLASHING SHALL MEET OR EXCEED THE MINIMUM STANDARDS PER THE CODE AND SATISFY THE ANSI AND SPRI REFERENCED STANDARDS INCLUDING TESTING.

07. REFER TO ROOF PLAN FOR ADDITIONAL REQUIREMENTS AND SPECIFICATIONS FOR ROOFING MATERIALS AS THEY PERTAIN TO THERMAL AND MOISTURE PROTECTION.

DOORS AND WINDOWS

01. PROVIDE PRIMED HOLLOW METAL GALVANIZED FRAMES FOR EXTERIOR DOOR FRAMES. PROVIDE PRIMED HOLLOW METAL FRAMES FOR INTERIOR DOORS. WHERE WEATHERSTRIPPING IS IDENTIFIED ON THE DOOR SCHEDULE PROVIDE "CURRISEAL" TYPE WEATHER STRIPPING FOR EXTERIOR AND INTERIOR APPLICATIONS.

02. PROVIDE HOLLOW METAL EXIT DOOR CONSTRUCTED WITH THE FOLLOWING MATERIALS:
A) MINIMUM 18 GA. FOR FACE SHEETS OF INTERIOR DOORS.
B) 16GA. FOR EDGE CHANNELS.
C) MINIMUM 22 GA. FOR FACE STIFFENERS.
D) MINIMUM 16GA. FOR INTERIOR FRAMES.

03. PROVIDE DOORS OF SIZES AND TYPES INDICATED ON DRAWINGS, FULLY WELDED SEAMLESS CONSTRUCTION WITH NO VISIBLE SEAMS OR JOINTS ON FACES OR VERTICAL EDGES. THICKNESS AS SCHEDULED ON DRAWINGS.

04. FACE STIFFENERS, EDGES AND HARDWARE REINFORCEMENT SHALL BE THE HIGHEST QUALITY WORKMANSHIP AND MATERIALS. PROVIDE IN ACCORDANCE WITH BEST TRADE PRACTICE AND MANUFACTURER'S WRITTEN REQUIREMENTS AND RECOMMENDATIONS FOR THE USE INTENDED.

05. PROVIDE CUSTOM MADE WELDED UNITS WITH INTEGRAL TRIM. SIZES AND SHAPES AS INDICATED ON DRAWINGS. FABRICATE UNITS SQUARE, TRUE AND FREE FROM DEFECTS.

06. HARDWARE REINFORCEMENT AND ANCHORS (ERECTION, FLOOR, AND JAMS) SHALL BE AS REQUIRED FOR A SECURE INSTALLATION AND SHALL BE IN ACCORDANCE WITH TRADE REQUIREMENTS FOR THE SPECIFIED HARDWARE AND INTENDED USE.

07. INSTALL FRAMES IN ACCURATE LOCATIONS AS INDICATED ON DRAWINGS. INSTALL RIGID, PLUMB, LEVEL AND TRUE. ALIGN WITH ADJACENT CONSTRUCTION. SECURE FLOOR ANCHORS TO FLOOR CONSTRUCTION WITH APPROVED TYPE MECHANICAL FASTENINGS. ANCHOR TO ADJOINING WALLS WITH SPECIFIED ANCHORS. BRACE FRAMES TO RETAIN POSITION AND CONTINUOUSLY CHECK ALIGNMENT DURING CONSTRUCTION OF ADJACENT WALLS. ADJUST FRAME LOCATIONS AS NECESSARY USING SHIMS BEFORE FASTENING. LEAVE READY TO RECEIVE SEALANT WHERE INDICATED ON DRAWINGS. ADJUST AND CHECK OPERATION OF EVERY UNIT. REPAIR OR REPLACE UNITS WHICH CANNOT BE ADJUSTED TO OPERATE FREELY AND SMOOTHLY.

08. INSTALL WOOD DOORS, FRAMES AND TRIM. SIZES AND THICKNESS AS SCHEDULED ON THE DRAWINGS.

09. HANG DOORS AS SCHEDULED ON DRAWINGS, IN ACCURATE LOCATIONS WITH 1/8" CLEARANCE AT THE TOPS AND 3/8" CLEARANCE AT BOTTOM, UNLESS SPECIFICALLY NOTED FOR "UNDERCUTS" OR OTHER DEVIATIONS IN FIT. MAKE NO JOB SITE FIT IN CUTS UNLESS APPROVED. HANG PAIRS OF DOORS AS SPECIFIED WITH 3/32" CLEARANCE AT MEETING EDGES. DEMONSTRATE THAT DOORS OPEN FREELY WITHOUT BINDING, AND WHEN CLOSED, WILL LATCH PROPERLY.

10. PROVIDE ACCESS DOORS AS REQUIRED FOR SPECIFIED RATING. SIZE AS INDICATED.

11. PROVIDE ALL DOORS PER DOOR AND FRAME AND HARDWARE SCHEDULES. INSTALLATION TO COMPLY WITH MANUFACTURER'S INSTRUCTIONS.

12. PROVIDE ALL HARDWARE WITH ALL NECESSARY SCREWS, AND OTHER FASTENERS OF SUITABLE SIZE AND TYPE TO ANCHOR THE HARDWARE IN POSITION FOR LONG LIFE UNDER HARD USE. FURNISH ITEMS COMPLETE WITH EXPANSION SHIELDS, TOGGLE BOLTS AND OTHER ANCHORS, IN ACCORDANCE WITH THE MATERIAL TO WHICH THE HARDWARE IS TO BE APPLIED TO AND THE RECOMMENDATIONS OF THE HARDWARE MANUFACTURER. FASTENER FINISH SHALL HARMONIZE WITH THE HARDWARE MATERIAL.

13 COORDINATE WITH OTHER TRADES TO ASSURE PROPER AND ADEQUATE PROVISION IN THE WORK OF THOSE TRADES FOR INTERFACE WITH THE WORK OF THIS SECTION.

FINISHES

01. GENERAL FINISH REQUIREMENTS:
A) PROVIDE AND INSTALL ALL FINISHES AS INDICATED ON PLANS.
B) INSTALL ALL MATERIALS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
C) "FINISH" INSTALLER INSPECT SUBSURFACE AND PREPARE AS PER MANUFACTURER'S REQUIREMENTS, RECOMMENDATIONS, AND SPECIFICATIONS PRIOR TO INSTALLATION OF PRODUCT.
D) ALL FINISHES TO MEET ALL CODE REQUIREMENTS AND REGULATIONS INCLUDING FLAME SPREAD AND SMOKE DEVELOPMENT.

SPECIALTIES

01. NOT USED.

EQUIPMENT

01. NOT USED.

FURNISHINGS

01. NOT USED.

SPECIAL CONSTRUCTION

01. NOT USED.

CONVEYING SYSTEMS

01. REFER TO ELEVATOR DRAWINGS.

MECHANICAL

01. REFER TO MECHANICAL DRAWINGS.

ELECTRICAL

01. REFER TO ELECTRICAL DRAWINGS.

BRIOHN
DESIGN GROUP
3885 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
SPECIFICATIONS

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB: 3149
DRAWN: CK/CJR
CHECKED: DF
DATE: 04-16-2019
SHEET:
GS.2

CJ engineering
civil design and consulting
9205 W. Center Street
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

ALTER TRADING

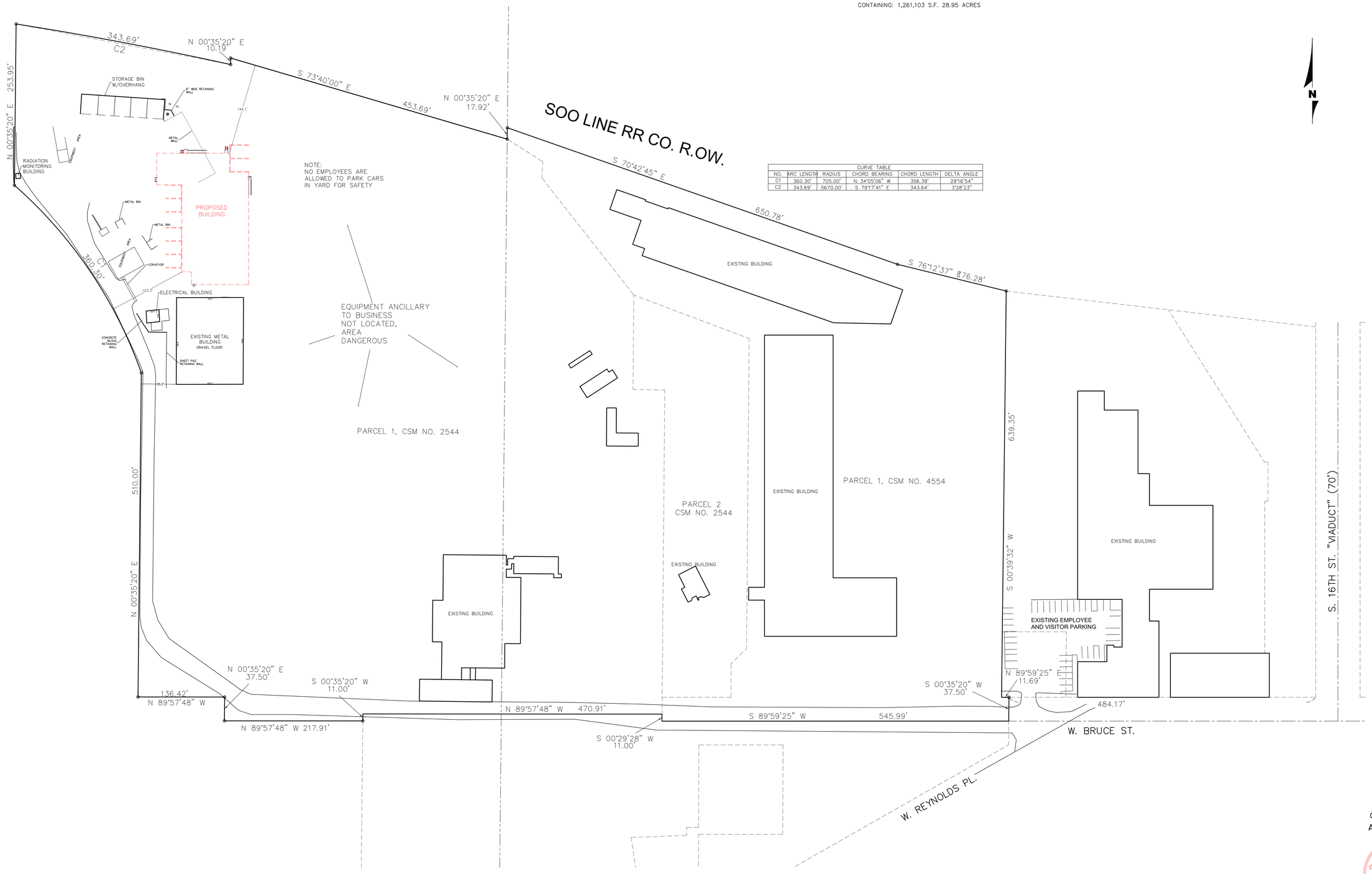
1800 W. BRUCE STREET MILWAUKEE, WI

DESCRIPTION

PARCEL 1 AND 2 OF, CERTIFIED SURVEY MAP NO. 2544 , BEING PARCEL II OF CERTIFIED SURVEY MAP NO. 2318, PARCEL 1 OF CERTIFIED SURVEY MAP NO. 4554, BEING A REDIVISION OF PARCEL 1 IN CERTIFIED SURVEY MAP 2219, PARCEL 1 IN CERTIFIED SURVEY MAP AND 3643 AND PARCELS 2 AND 3 OF CERTIFIED SURVEY MAP NO. 4114, BEING A PART OF THE NORTHEAST 1/4 AND NORTHWEST 1/4 OF SECTION 31, TOWN 7 NORTH, RANGE 22 EAST, IN THE CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN.

CONTAINING: 1,261,103 S.F. 28.95 ACRES

CURVE TABLE					
NO.	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH	DELTA ANGLE
C1	360.30'	705.00'	N 34°05'06" W	356.39'	29°16'54"
C2	343.69'	5670.00'	S 79°17'41" E	343.64'	3°28'23"



GRAPHIC SCALE

1 inch = 60 ft

CJE NO.: 1908R2
APRIL 15, 2019

WISCONSIN
CHRISTOPHER A. JACKSON
S-2851
WAUWATOSA, WI
LAND SURVEYOR

PLAT OF SURVEY

SV1.0

CJ engineering
civil design and consulting
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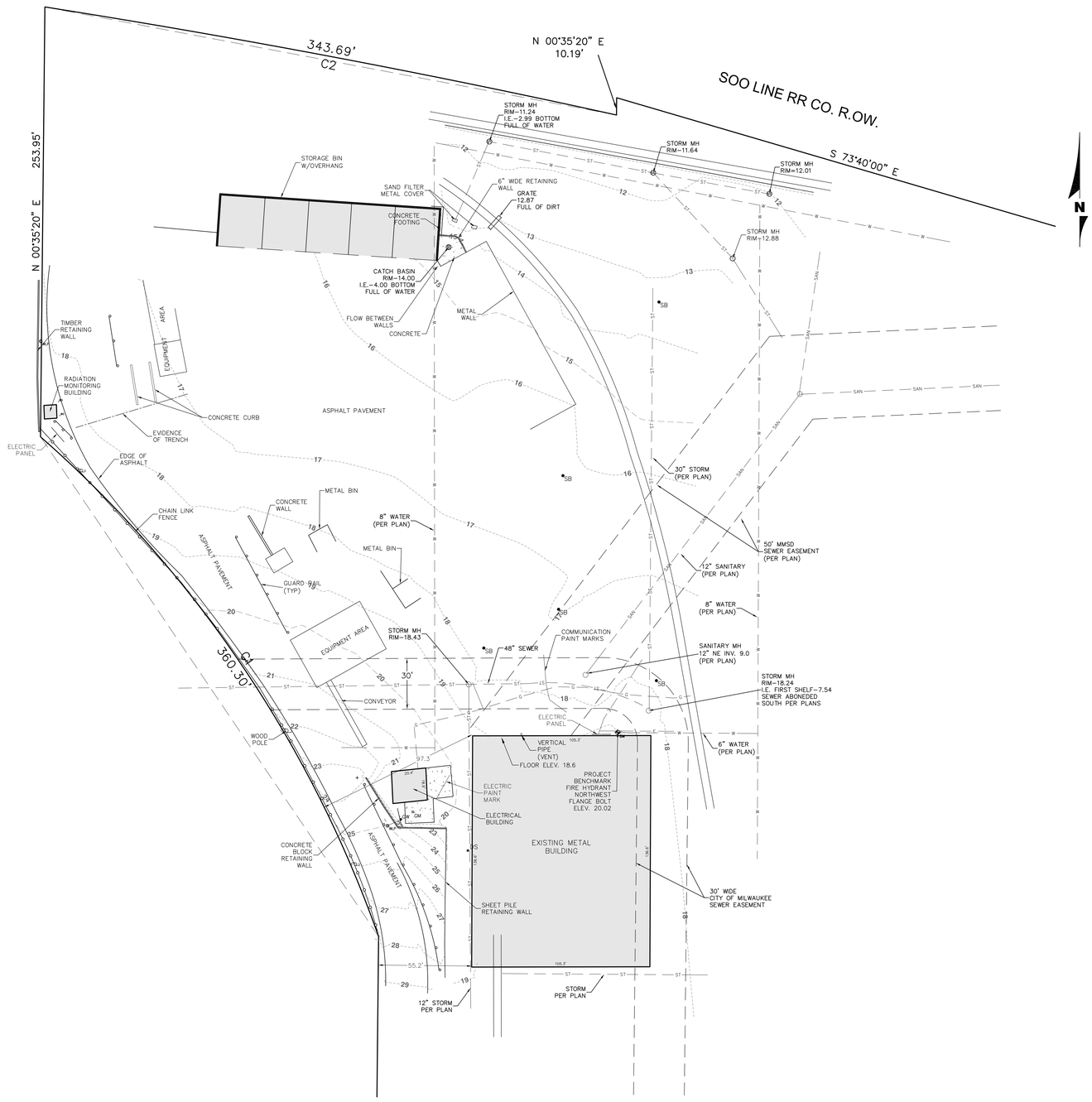
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

LIS
LAND INFORMATION SERVICES, INC.
ENGINEERS, SURVEYORS & CONSULTANTS
9100 W. STICKENY AVENUE
WAUWATOSA, WI 53226
T 262.512.9000
www.lisinc.net

ALTER TRADING

1800 W. BRUCE STREET MILWAUKEE, WI



DESCRIPTION

PART OF PARCEL 1, CERTIFIED SURVEY MAP NO. 2544, BEING PARCEL II OF CERTIFIED SURVEY MAP NO. 2318, BEING A PART OF THE NORTHEAST 1/4 AND NORTHWEST 1/4 OF SECTION 31, TOWN 7 NORTH, RANGE 22 EAST, IN THE CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN.

SURVEYOR'S NOTES

1) BASIS OF BEARINGS – PER CERTIFIED SURVEY MAP NO. 254

2) UNDERGROUND SEWER AND UTILITY INFORMATION AS SHOWN IS OBTAINED FROM THE RECORDS OF MUNICIPALITY AND LOCAL UTILITY COMPANIES. THE ACCURACY OF WHICH CAN NOT BE GUARANTEED OR CERTIFIED TO.

3) THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THIS SURVEY ARE APPROXIMATE. THERE MAY BE OTHER UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

4) UTILITY INFORMATION FROM BOTH FIELD LOCATION AND UTILITY PLANS OBTAINED.

5) SEE SHEET SV1.0 FOR ENTIRE PARCEL.

LEGEND

- BASKETBALL HOOP (BH)
- BENCHMARK (BM)
- BOLLARD (BO)
- BUSH, SHRUB, ETC.
- CATCH BASIN ROUND (CB)
- CATCH BASIN SQUARE (CB)
- CLEAN OUT (CO)
- CURB INLET (CB)
- EVERGREEN TREE (EG)
- FIRE HYDRANT (HYD)
- FLAG POLE (FP)
- GUY WIRE (GW)
- HANDICAP
- IRON PIPE (I.P.)
- LIGHT POLE
- MAIL BOX (MB)
- MANHOLE (MH)
- MONITORING WELL (MW)
- SIGN (TRAFFIC, ETC.)
- SOIL BORING (SB)
- TRAFFIC LIGHT (TL)
- DECIDUOUS TREE (TR)
- UTILITY MARKER
- UTILITY METER
- UTILITY PEDESTAL
- UTILITY POLE (UP)
- UTILITY VALVE
- WATER WELL

ABBREVIATIONS

F/A FLOW LINE
PVMT PAVEMENT ELEVATION
FND FOUND
MLP METAL LIGHT POLE
CLP CONCRETE LIGHT POLE
WLP WOOD LIGHT POLE
FGLP FIBERGLASS LIGHT POLE
MS METAL SIGN
GM GAS METER
EM ELECTRIC METER
B.S.E. DOOR SILL ELEVATION
EP ELECTRIC PEDESTAL
F.F.E. FINISHED FLOOR ELEVATION
FO FIBER OPTIC CABLE
GV GAS VALVE
WV WATER VALVE
CTP CABLE TV PEDESTAL
WLF WETLAND FLAG
YL YARD LIGHT

LINE TYPES

SANITARY FORCE MAIN

LINE TYPES (CONT.)

METAL FENCE
WOOD FENCE
GUARD RAIL
BURIED CABLE TV
BURIED COMMUNICATIONS
COMBINATION SEWER
BURIED ELECTRIC
BURIED FIBER OPTIC
BURIED GAS SERVICE
OVERHEAD UTILITY LINES
SANITARY SEWER
STORM SEWER
BURIED TELEPHONE
WATER MAIN / SERVICE

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CALL DIGGERS HOTLINE
811 or 1-800-242-8511 / MILW. AREA 259-1181
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

CURVE TABLE					
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GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft

CJE NO.: 1908R0EX
APRIL 16, 2019

SITE SURVEY SV1.1

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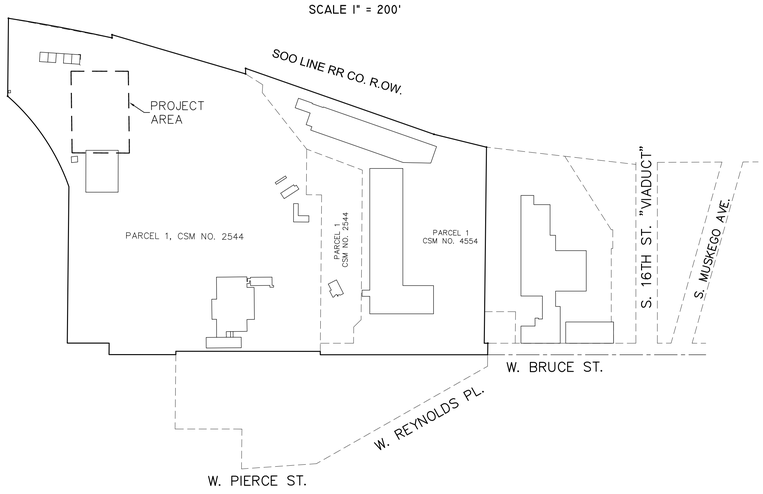
PH. (414) 443-1312
www.cj-engineering.com

ALTER TRADING

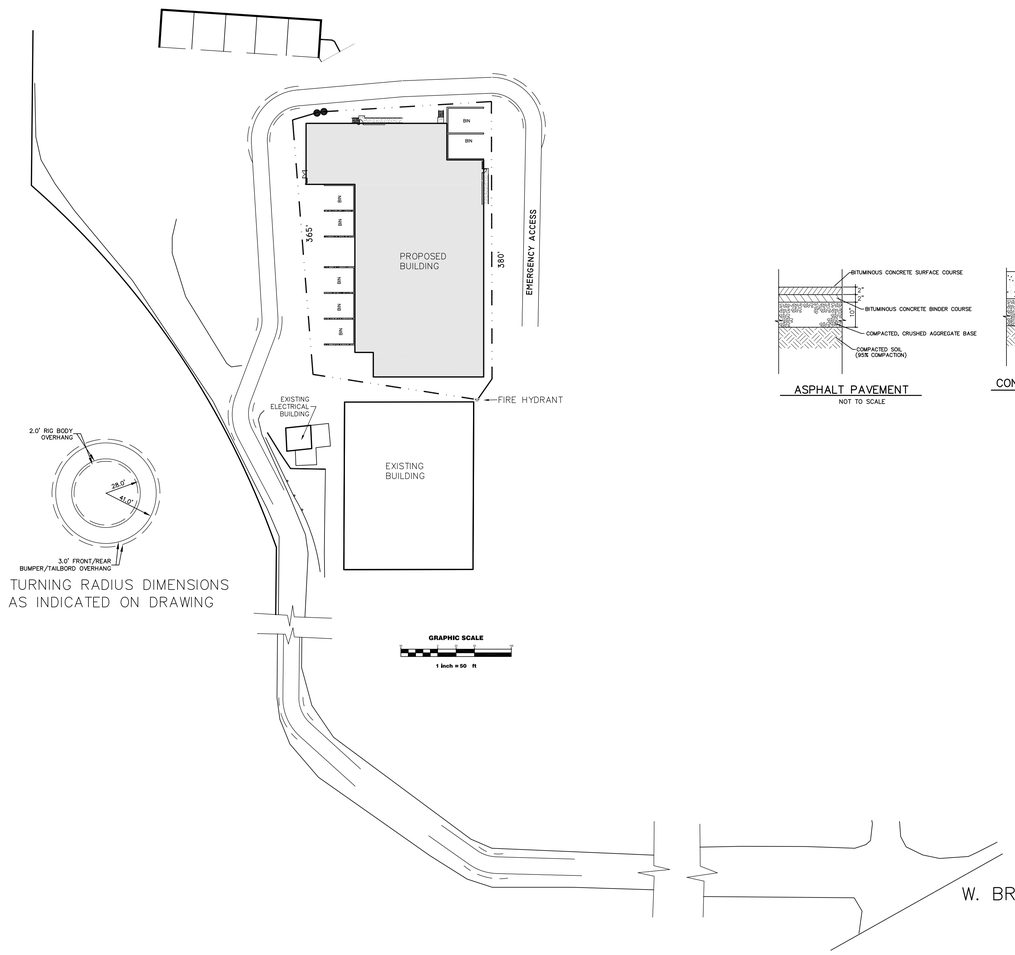
1800 W. BRUCE STREET MILWAUKEE, WI

SITE AREA MAP

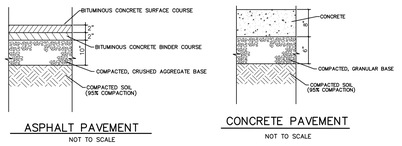
SCALE 1" = 200'



FIRE APPRARATUS AND HYDRANT EXHIBIT

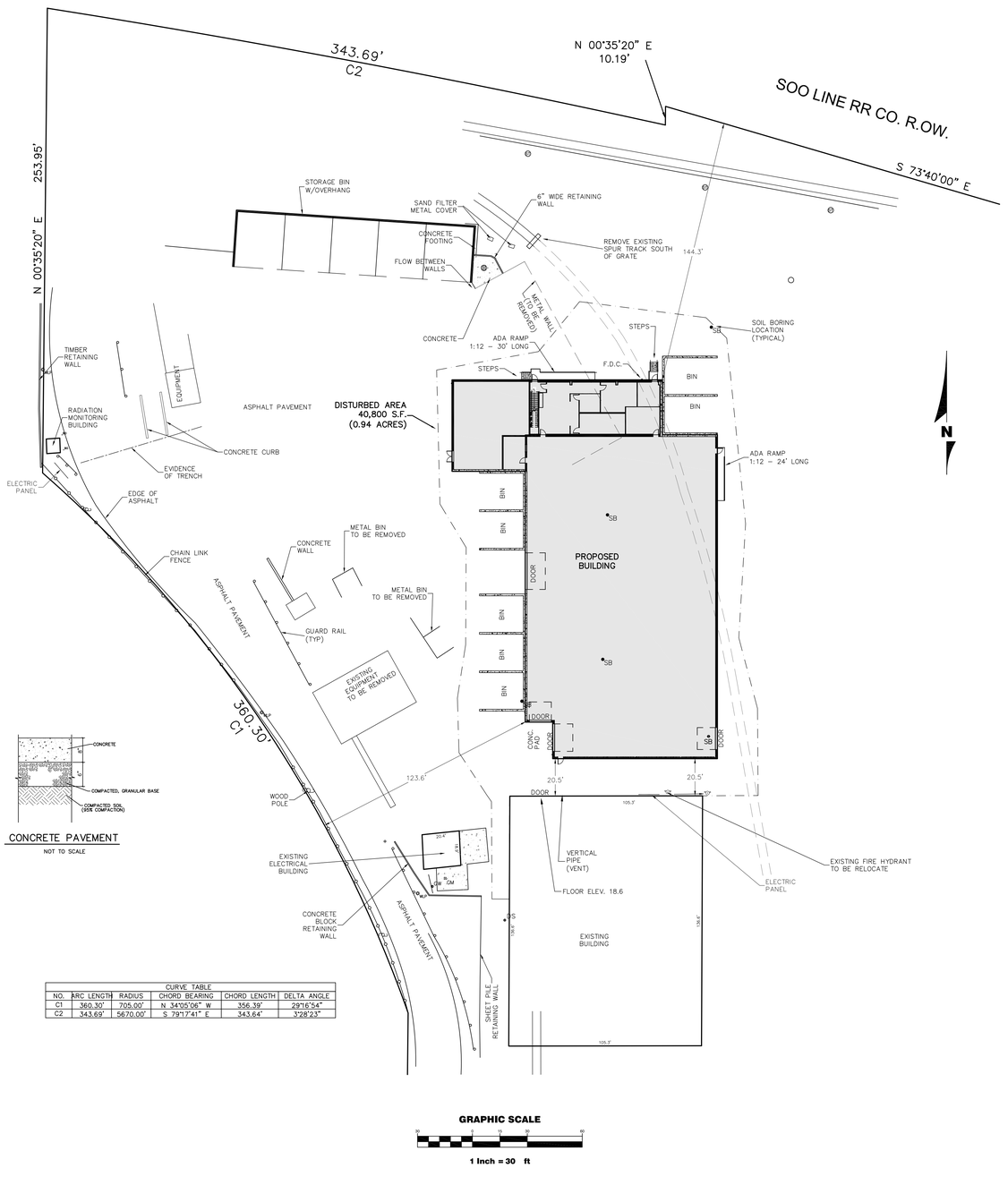


TURNING RADIUS DIMENSIONS AS INDICATED ON DRAWING



ASPHALT PAVEMENT
NOT TO SCALE

CONCRETE PAVEMENT
NOT TO SCALE



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NOTES:

1. THE PROPOSED DEVELOPMENT IS IN AN AREA OF 100% IMPERVIOUS SURFACE. SINCE THE DISTURBED AREA IS LESS THAN 1.0 ACRE AND THERE WILL BE NO CHANGE IN THE AMOUNT OF IMPERVIOUS SURFACE A STORM WATER MANAGEMENT PLAN IS NOT REQUIRED (PER CITY, MMSD AND STATE CODES, ORDINANCES AND RULES).

2. THE CONTRACTOR TO VERIFY PROPOSED PAVEMENT SECTIONS WITH PROPERTY OWNER.

CJE NO.: 1908R3
APRIL 17, 2019

SITE PLAN C1.0

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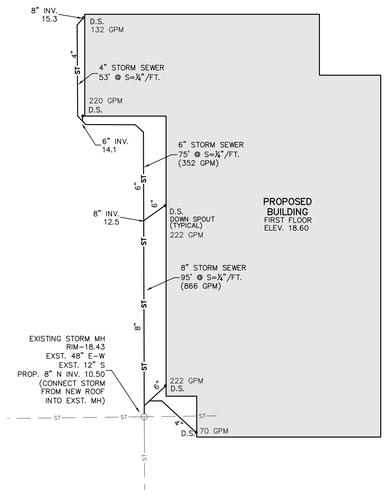
PH. (414) 443-1312
www.cj-engineering.com

ALTER TRADING

1800 W. BRUCE STREET MILWAUKEE, WI

STORM SEWER DESIGN



NOTES:

1. ALL STORM SEWER, SANITARY SEWER, AND WATER MAIN MATERIALS AND INSTALLATION PER APPLICABLE SECTIONS OF THE LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (STANDARD SPECIFICATIONS), WISCONSIN ADMINISTRATIVE PLUMBING CODE AND THE CITY OF MILWAUKEE REQUIREMENTS.

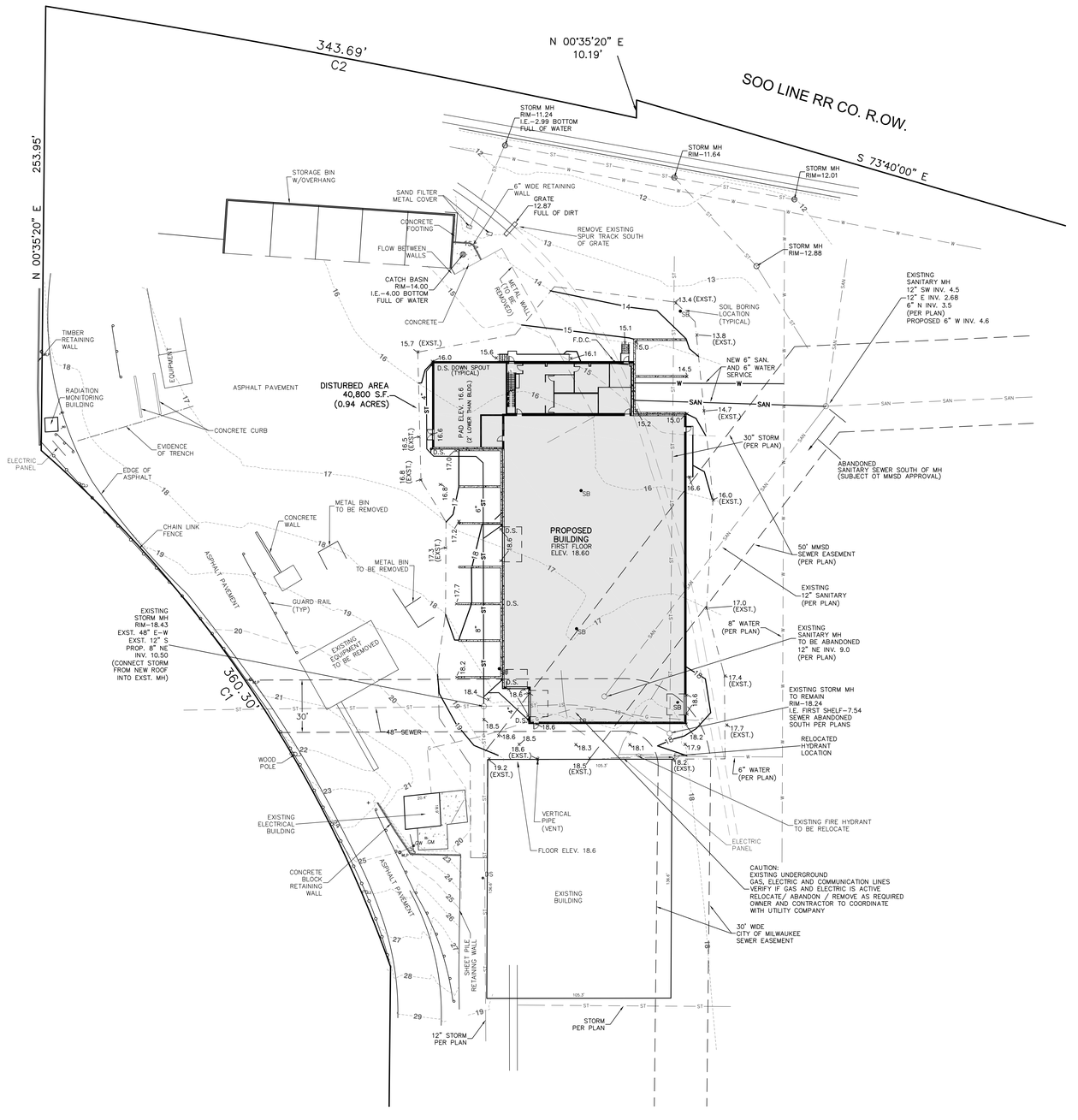
2. ALL TRENCHES IN PAVEMENT AREAS SHALL HAVE GRAVEL BACKFILL.

3. THE EXISTING UTILITIES ARE BASED ON PLANS PROVIDED BY THE OWNER AND WHAT DIGGERS HOTLINE WAS ABLE TO LOCATE PRIOR TO THE SURVEY. THERE MIGHT BE ADDITIONAL EXISTING UTILITIES NOT SHOWN ON THIS PLAN AND/OR THE EXACT EXISTING LOCATION OF THE PER PLAN UTILITIES MIGHT VARY FROM WHAT IS SHOWN.

4. PROPOSED WATER SERVICE SHALL HAVE A MINIMUM 6 FEET OF COVER.

5. THE CONTRACTOR SHALL VERIFY ALL SEWER AND WATER CONNECTIONS PRIOR TO UTILITY CONSTRUCTION. NOTIFY THE ENGINEER WITH ANY DISCREPANCIES.

6. THE PROPOSED DEVELOPMENT IS IN AN AREA OF 100% IMPERVIOUS SURFACE. SINCE THE DISTURBED AREA IS LESS THAN 1.0 ACRE AND THERE WILL BE NO CHANGE IN THE AMOUNT OF IMPERVIOUS SURFACE A STORM WATER MANAGEMENT PLAN IS NOT REQUIRED (PER CITY, MMSD AND STATE CODES, ORDINANCES AND RULES).



LEGEND

16	EXISTING CONTOUR
16	PROPOSED CONTOUR
x18.5	PROPOSED ELEVATION
ST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
W	EXISTING WATER MAIN
W	PROPOSED WATER MAIN
G	BURIED GAS MAIN
//	OVER HEAD WIRE
E	BURIED ELECTRIC
	DISTURBED AREA

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WS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

GRAPHIC SCALE
1 Inch = 30 ft

CJE NO.: 1908R3
APRIL 16, 2019

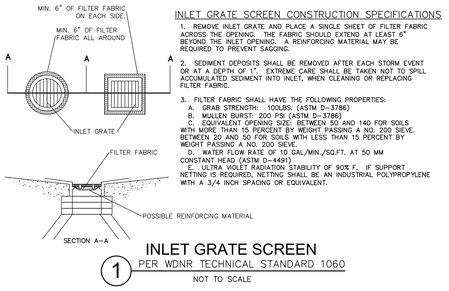
SITE GRADING AND UTILITY PLAN

C2.0

CJ engineering
civil design and consulting
9205 W. Center Street
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

ALTER TRADE GRADING

1800 W. BRUCE STREET MILWAUKEE, WI



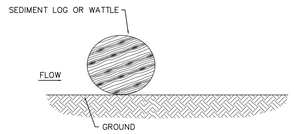
INLET GRATE SCREEN CONSTRUCTION SPECIFICATIONS

1. REMOVE INLET GRATE AND PLACE A SINGLE SHEET OF FILTER FABRIC ACROSS THE OPENING. THE FABRIC SHOULD EXTEND AT LEAST 6" BEYOND THE INLET OPENING. A REINFORCING MATERIAL MAY BE REQUIRED TO PREVENT SAGGING.

2. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR AT A DEPTH OF 1". EXTREME CARE SHALL BE TAKEN NOT TO SPILL ACCUMULATED SEDIMENT INTO INLET, WHEN CLEANING OR REPLACING FILTER FABRIC.

3. FILTER FABRIC SHALL HAVE THE FOLLOWING PROPERTIES:
   A. GRAB STRENGTH: 100LBS. (ASTM D-3786)
   B. MULLEN BURST: 200 PSI (ASTM D-3786)
   C. EQUIVALENT OPENING SIZE: BETWEEN 50 AND 140 FOR SOILS WITH MORE THAN 15 PERCENT BY WEIGHT PASSING A NO. 200 SIEVE. BETWEEN 20 AND 50 FOR SOILS WITH LESS THAN 15 PERCENT BY WEIGHT PASSING A NO. 200 SIEVE.
   D. WATER FLOW RATE OF 10 GAL/MIN./SQ.FT. AT 50 MM CONSTANT HEAD (ASTM D-4491)
   E. ULTRA VIOLET RADIATION STABILITY OF 90% F. IF SUPPORT NETTING IS REQUIRED, NETTING SHALL BE AN INDUSTRIAL POLYPROPYLENE WITH A 3/4 INCH SPACING OR EQUIVALENT.

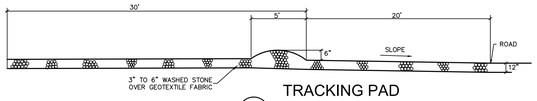
1 INLET GRATE SCREEN
PER WDNR TECHNICAL STANDARD 1060
NOT TO SCALE



2 WATTLE / SEDIMENT LOG
PER WDNR TECHNICAL STANDARD 1062
NOT TO SCALE

1. INSPECT SEDIMENT LOG WEEKLY AND WITHIN 24 HRS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE WITHIN A 24 HOUR PERIOD.

2. SEDIMENT LOG SHALL BE PER THE WDOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL).



3 TRACKING PAD
PER WDNR TECHNICAL STANDARD 1057
NOT TO SCALE

CONSTRUCTION SCHEDULE

1. OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS.
2. FLAG THE WORK LIMIT AND BUFFER AREA FOR PROTECTION.
3. INSTALL INLET GRATE SCREENS IN THE EXISTING CATCH BASIN.
4. INSTALL SEDIMENT LOG (WATTLE) AS SOON AS FEASIBLE.
5. DEMO EXISTING EQUIPMENT TO BE REMOVED.
6. INSTALL TRACKING PAD.
7. ROUGH GRADE SITE.
8. BEGIN BUILDING CONSTRUCTION.
9. INSTALL PROPOSED UTILITIES.
10. INSTALL BASE COURSE OF PAVEMENT.
11. FINAL GRADE SLOPES AND TOPSOIL CRITICAL SLOPES; VEGETATE AND MULCH ALL DISTURBED AREAS.
12. ALL EROSION CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND AFTER RAINFALL. NEEDED REPAIRS WILL BE PERFORMED IMMEDIATELY.
13. AFTER SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND VEGETATE THE DISTURBED AREAS.
14. ESTIMATED TIME BEFORE FINAL STABILIZATION = 3 MONTHS.

MAINTENANCE PLAN

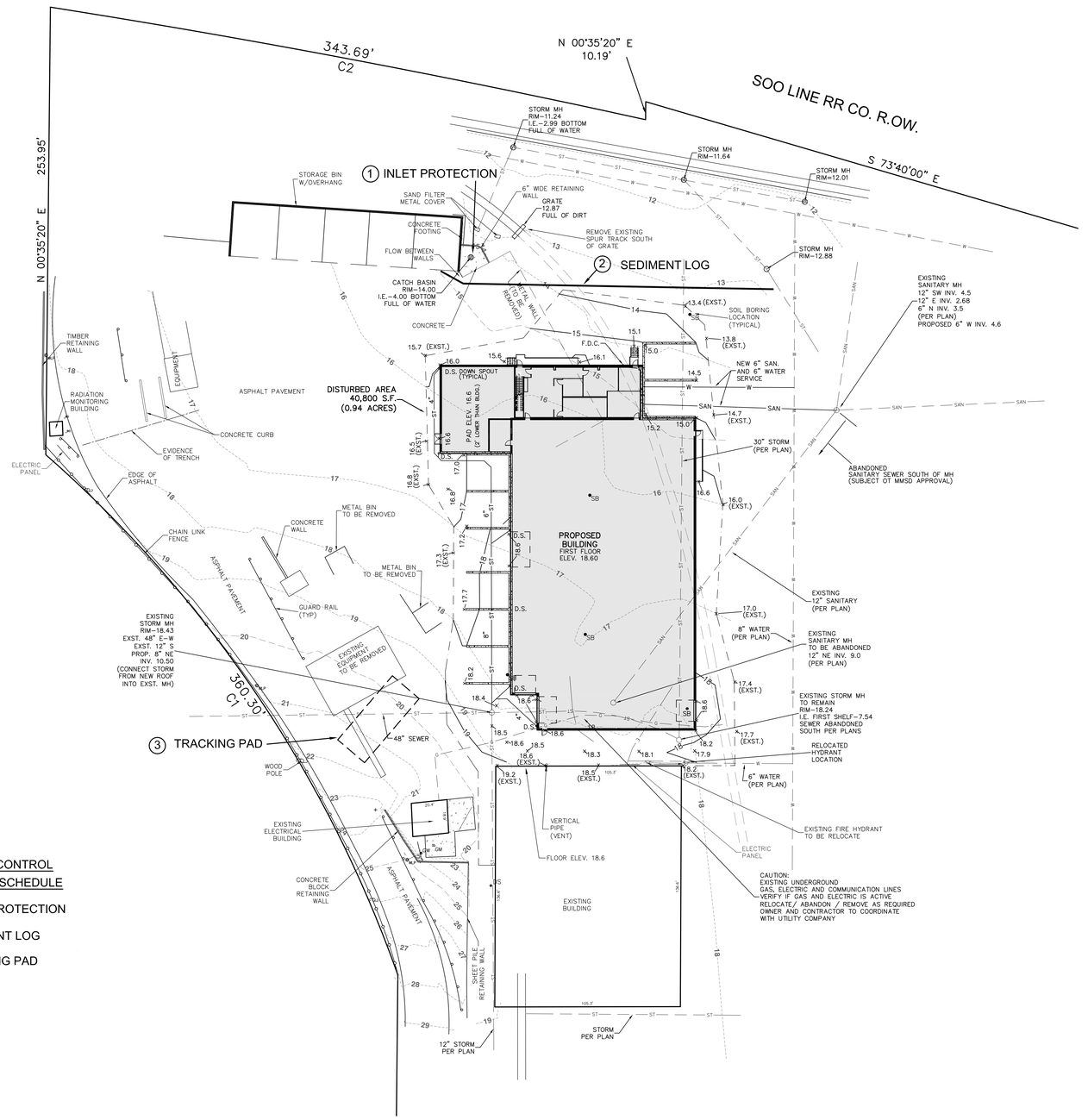
1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY ½" RUNOFF-PRODUCTION RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.

2. SEDIMENT WILL BE REMOVED FROM BEHIND THE WATTLE WHEN IT BECOMES ABOUT 0.3 FT. DEEP. THE WATTLE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.

3. ANY SEDIMENT REACHING A PUBLIC OR PRIVATE ROAD SHALL BE REMOVED BY STREET CLEANING BEFORE THE END OF EACH DAY.

EROSION CONTROL PRACTICES SCHEDULE

1. INLET PROTECTION
2. SEDIMENT LOG
3. TRACKING PAD



LEGEND

16	EXISTING CONTOUR
16	PROPOSED CONTOUR
x 18.5	PROPOSED ELEVATION
ST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
W	EXISTING WATER MAIN
W	PROPOSED WATER MAIN
G	BURIED GAS MAIN
OHW	OVER HEAD WIRE
E	BURIED ELECTRIC
	DISTURBED AREA

DISTURBED AREA: 40,800 S.F. (0.94 ACRES)

DIGGERS HOTLINE
CALL DIGGERS HOTLINE
811 or 1-800-242-8511 / MILW. AREA 259-1181
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

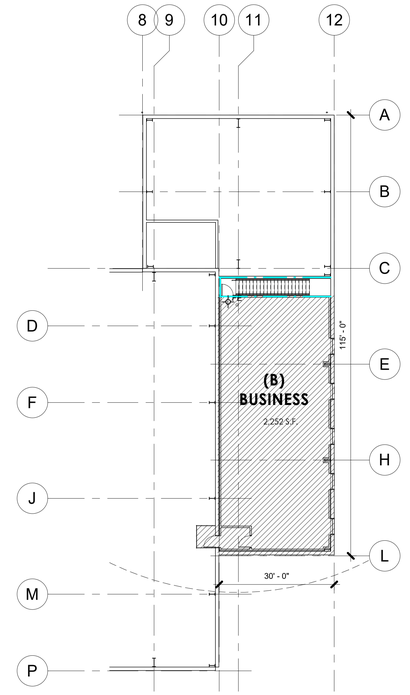
NOTE:

THE PROPOSED DEVELOPMENT IS IN AN AREA OF 100% IMPERVIOUS SURFACE. SINCE THE DISTURBED AREA IS LESS THAN 1.0 ACRE AND THERE WILL BE NO CHANGE IN THE AMOUNT OF IMPERVIOUS SURFACE A STORM WATER MANAGEMENT PLAN IS NOT REQUIRED (PER CITY, MMSD AND STATE CODES, ORDINANCES AND RULES).

GRAPHIC SCALE
30 0 15 30 60
1 Inch = 30 ft

CJE NO.: 1908R3
APRIL 16, 2019

EROSION CONTROL PLAN C3.0



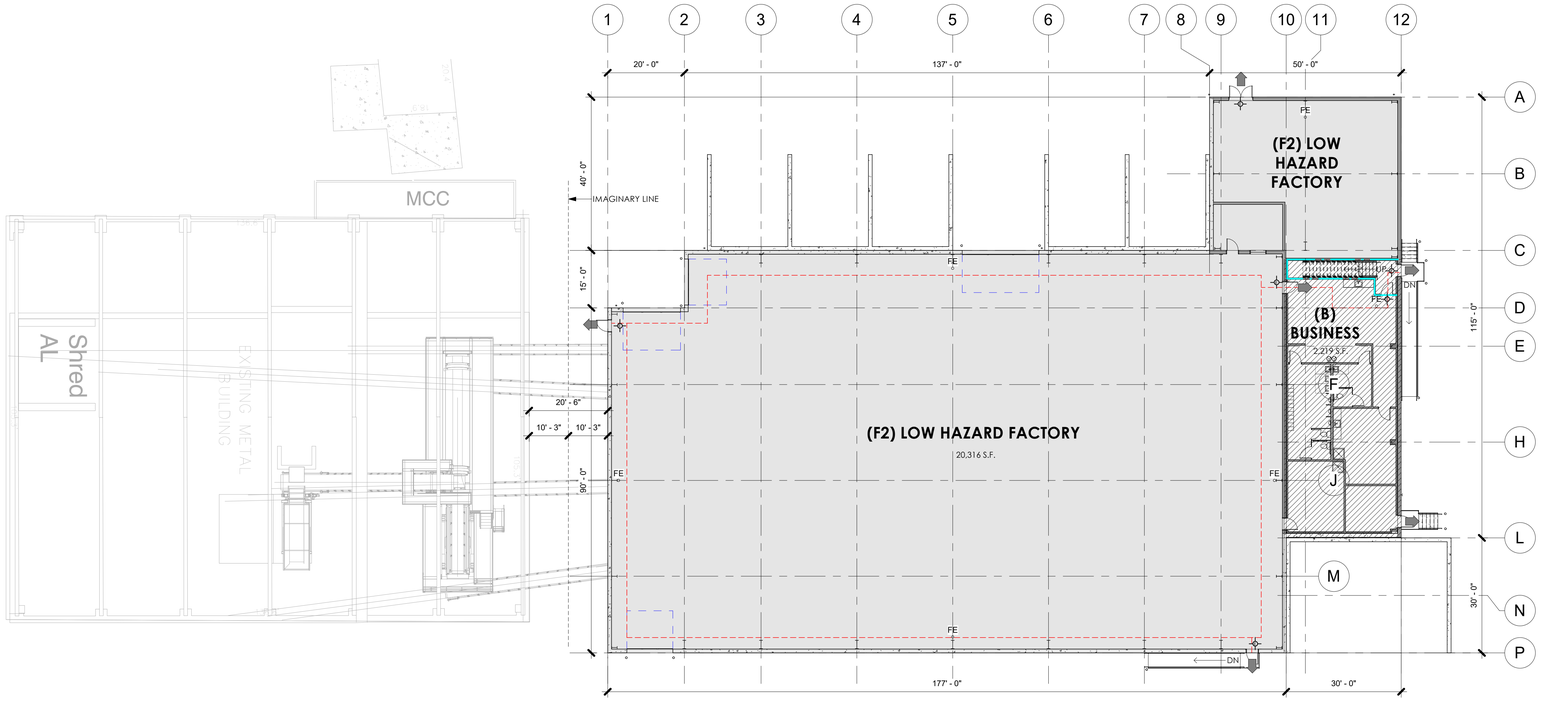
2 MEZZANINE FLOOR
1/16" = 1'-0"

CODE PLAN LEGEND

- EXIT ACCESS
- 34" EXIT WIDTH
- E EXIT LIGHT
- FE FIRE EXTINGUISHER BRACKET MTD.
- FEC FIRE EXTINGUISHER CABINET

RATED PARTITION LEGEND

- 1 HOUR RATED FIRE BARRIER WALL
- 2 HOUR RATED FIRE WALL
- 3 HOUR RATED FIRE WALL



1 FIRST FLOOR
1/16" = 1'-0"

TRUE NORTH

PLAN NORTH

APPLICABLE TO ALL PLAN VIEWS

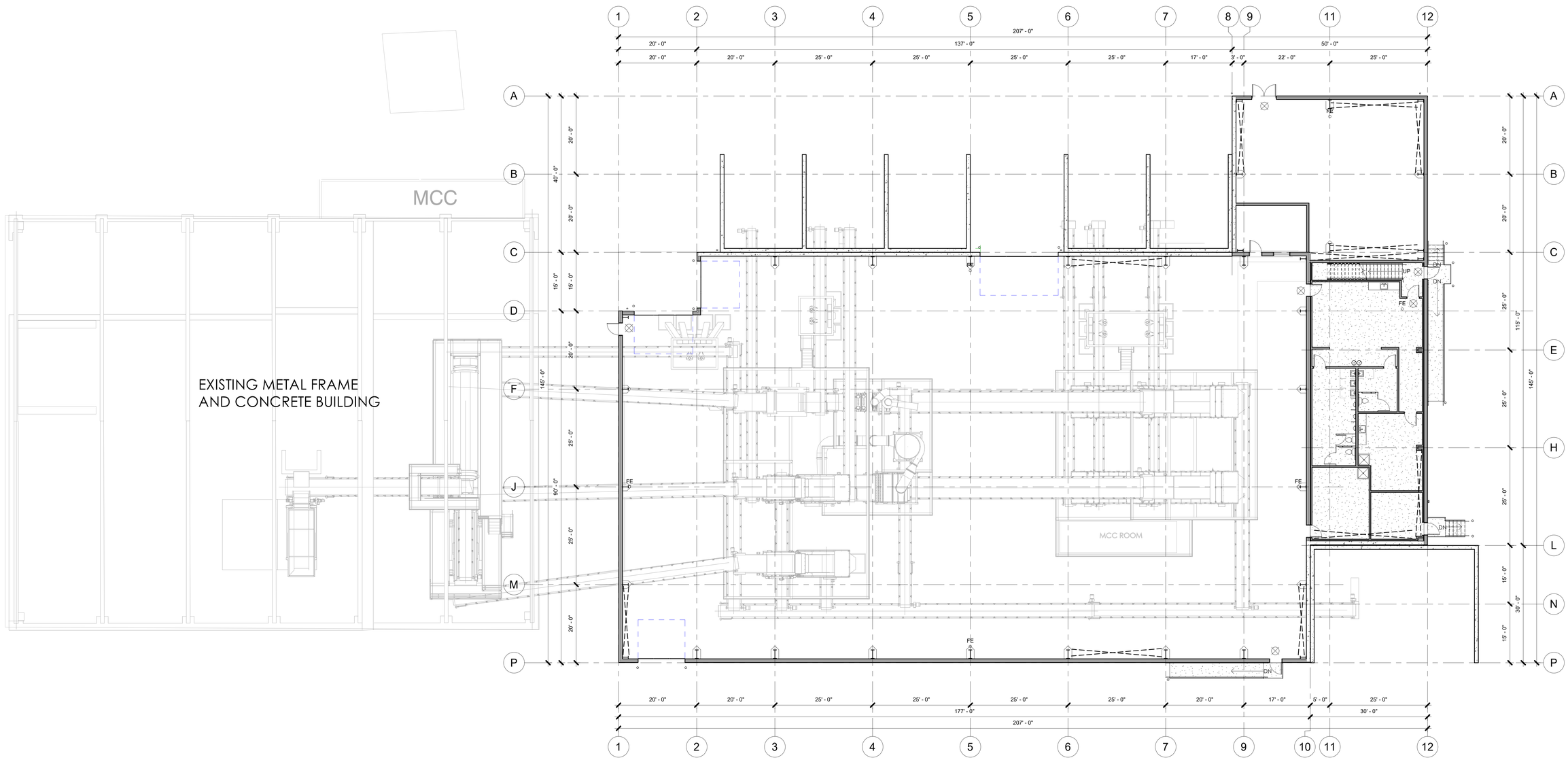
BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
CODE PLAN

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET:
A0.1



1 OVERALL FLOOR PLAN
3/32" = 1'-0"

BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
OVERALL FLOOR PLAN

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

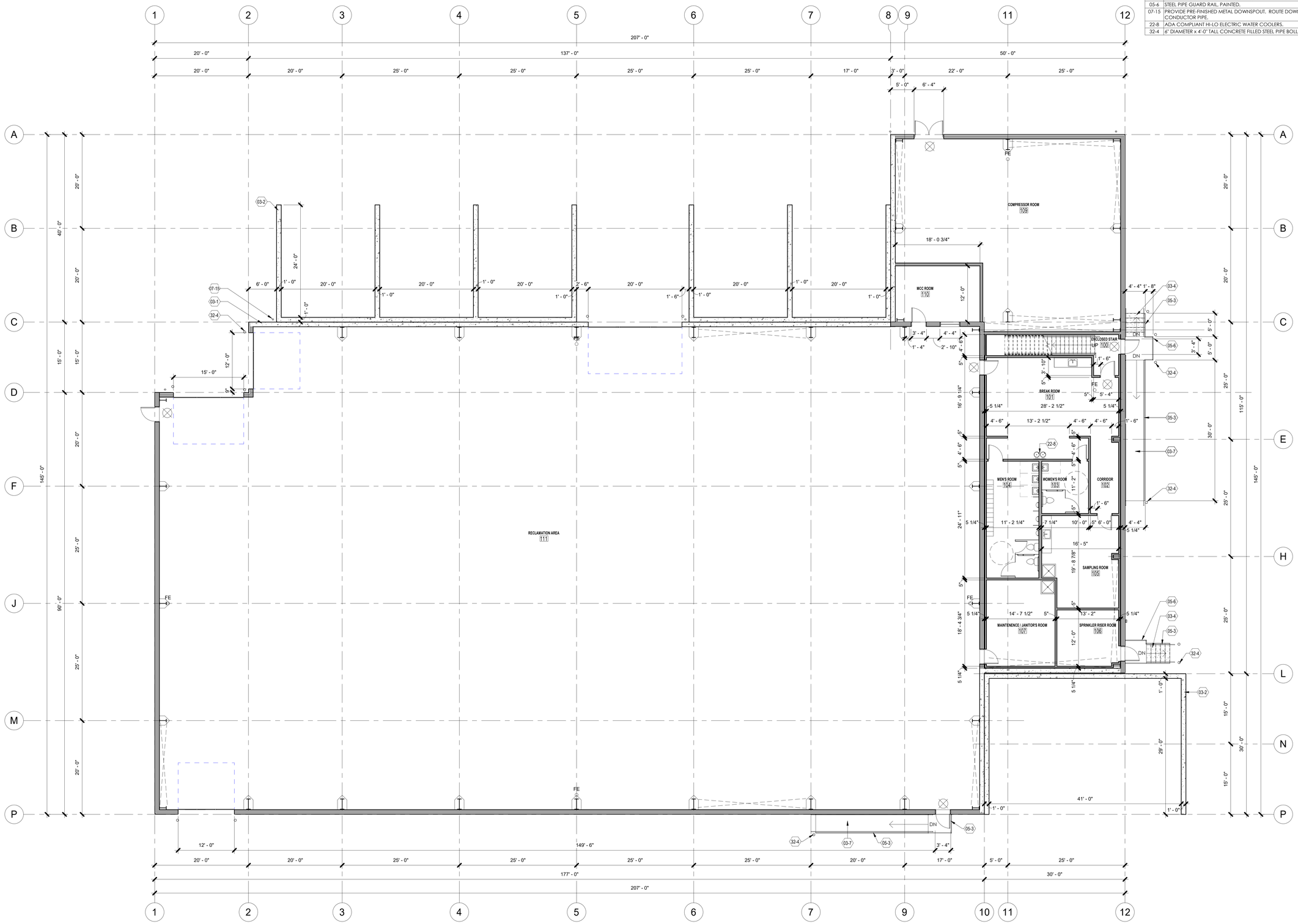
TRUE NORTH
PLAN NORTH
APPLICABLE TO ALL PLAN VIEWS

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET:
A1.0

KEYNOTE LEGEND

VALUE	FLOOR PLAN CODED NOTES
03-1	12" THICK CONCRETE WAINSCOT WALL, PAINTED
03-2	12" THICK CONCRETE CONTAINMENT WALLS, PAINTED
03-4	POURED CONCRETE STAIRS
03-7	POURED CONCRETE RAMP
05-3	STEEL PIPE GUARD AND HANDRAILING, PAINTED.
05-6	STEEL PIPE GUARD RAIL, PAINTED.
07-15	PROVIDE PRE-FINISHED METAL DOWNSPOUT. ROUTE DOWN FACE OF WALL TO VERTICAL CONDUCTOR PIPE.
22-8	ADA COMPLIANT HI-LO ELECTRIC WATER COOLERS.
32-4	6" DIAMETER x 4'-0" TALL CONCRETE FILLED STEEL PIPE BOLLARD(S), PAINTED SAFETY YELLOW



1 OVERALL FLOOR PLAN
1/8" = 1'-0"

BRIOHN DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

NEW FLOOR PLAN

SHEET TITLE

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

TRUE NORTH

PLAN NORTH

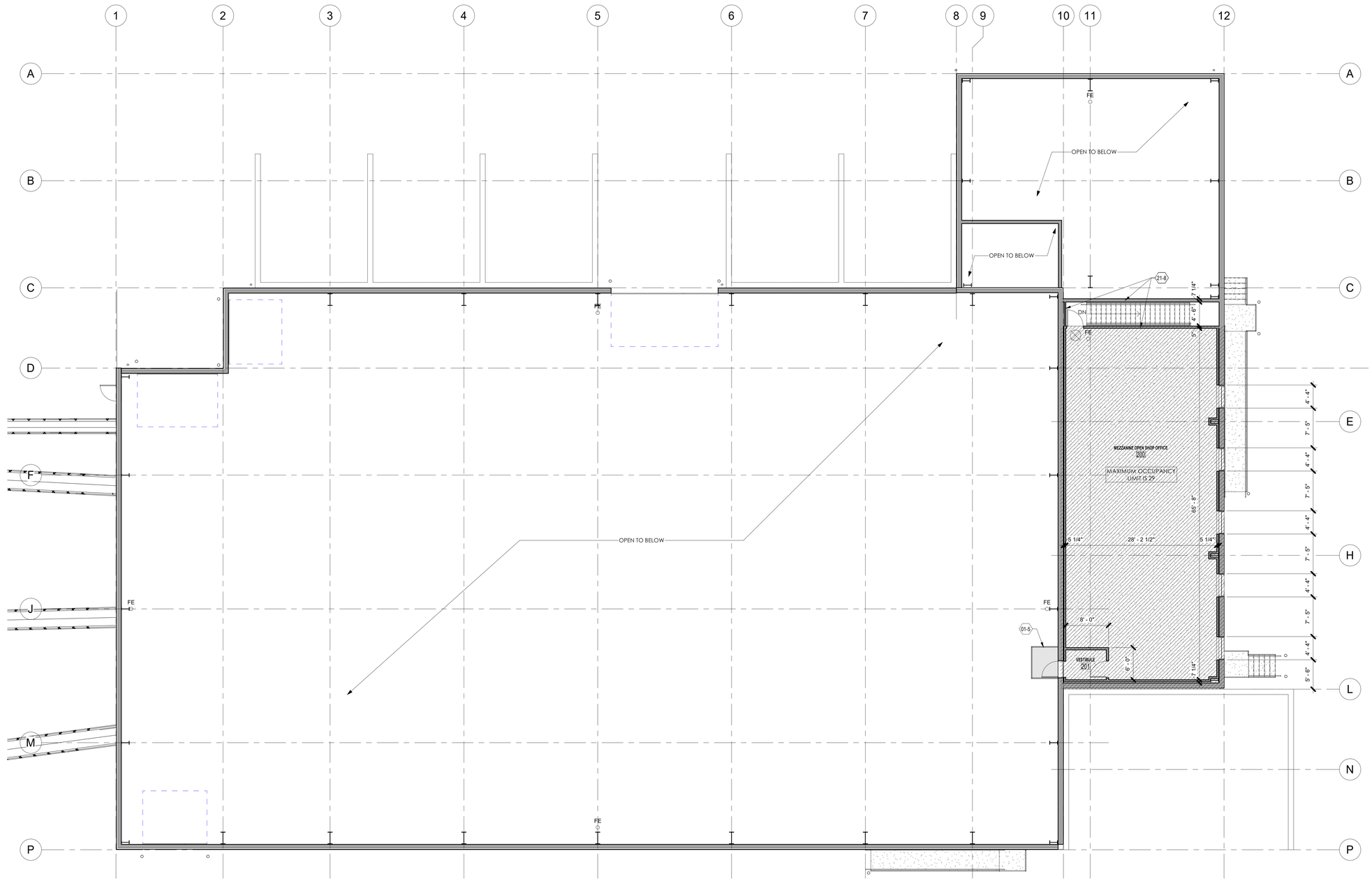
APPLICABLE TO ALL PLAN VIEWS

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET: A1.1

KEYNOTE LEGEND

VALUE	FLOOR PLAN CODED NOTES
01-5	PROVIDE STEEL GRATE LANDING FOR PLATFORM WITH SUPPORT COLUMNS - INCLUDE 42" HIGH GUARD RAIL PER OSHA AND IBC.
21-8	1 HOUR RATED FIRE BARRIER DRYWALL PARTITION WALLS FOR STAIR ENCLOSURE.



1 MEZZANINE FLOOR PLAN
1/8" = 1'-0"

BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
MEZZANINE FLOOR PLAN

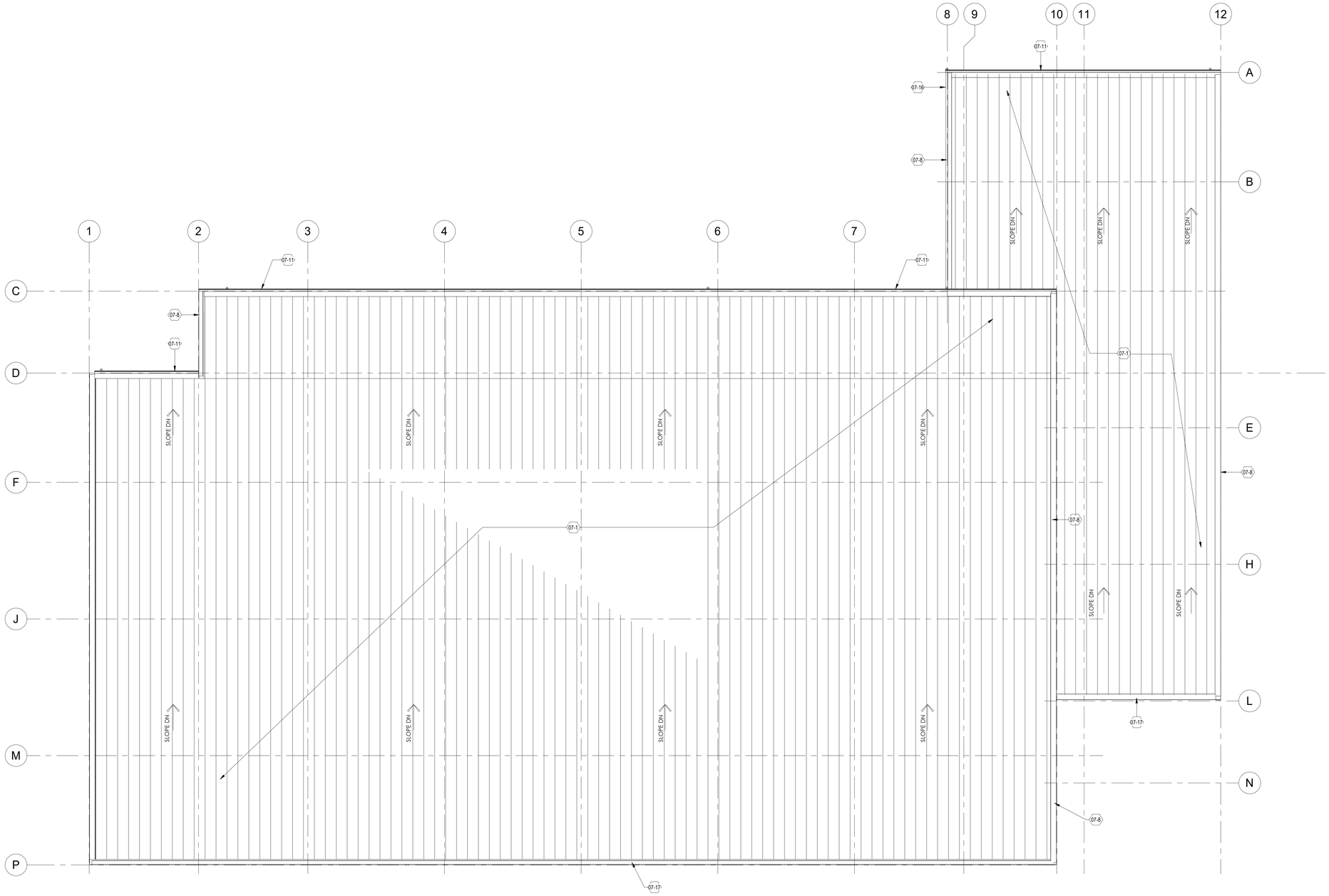
PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

TRUE NORTH
PLAN NORTH
APPLICABLE TO ALL PLAN VIEWS

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019
SHEET:	A1.2

KEYNOTE LEGEND

VALUE	FLOOR PLAN CODED NOTES
07-1	PRE-FINISHED METAL STANDING SEAM / IMP INSULATED PANEL ROOF
07-8	PRE FINISHED METAL RAKE TRIM.
07-11	PRE-FINISHED METAL GUTTER SIZED TO MEET REQUIRED CAPACITY FOR ROOF DRAINAGE.
07-16	PRE-FINISHED METAL DOWNSPOUT RUN HORIZONTALLY SLOPED AS REQUIRED BY CODE TO CONNECTING VERTICAL DOWNSPOUT. ROUTE HORIZONTAL DOWN ALONG FACE OF WALL.
07-17	PRE-FINISHED TRANSITION FLASHING (ROOF TO WALL)



1 NEW ROOF PLAN
1/8" = 1'-0"

BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

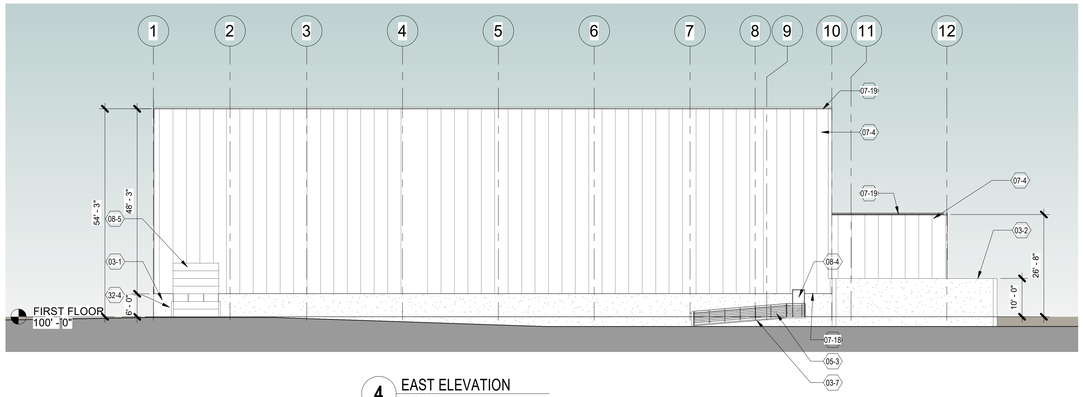
SHEET TITLE
NEW ROOF PLAN

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

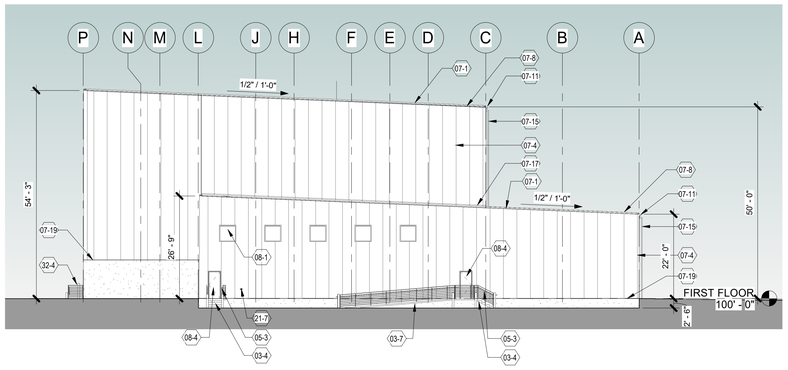
TRUE NORTH
PLAN NORTH
APPLICABLE TO ALL PLAN VIEWS

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

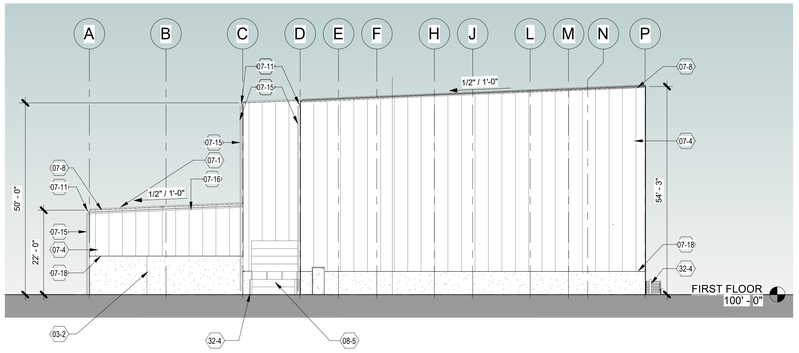
SHEET:
A4.1



4 EAST ELEVATION
1/16" = 1'-0"



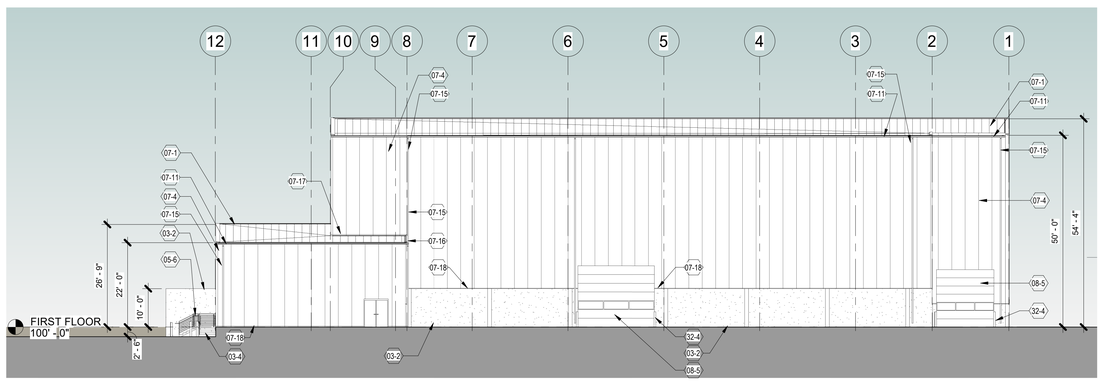
3 NORTH ELEVATION
1/16" = 1'-0"



2 SOUTH ELEVATION
1/16" = 1'-0"

KEYNOTE LEGEND

VALUE	FLOOR PLAN CODED NOTES
03-1	12" THICK CONCRETE WAINSCOT WALL, PAINTED
03-2	12" THICK CONCRETE CONTAINMENT WALLS, PAINTED
03-4	POURED CONCRETE STAIRS
03-7	POURED CONCRETE RAMP
05-3	STEEL PIPE GUARD AND HANDRAILING, PAINTED.
05-6	STEEL PIPE GUARD RAIL, PAINTED.
07-1	PRE-FINISHED METAL STANDING SEAM / IMP INSULATED PANEL ROOF
07-4	3" METAL SANDWICH PANEL. EXTERIOR FACING: HARD AGGREGATED FIBER-REINFORCED POLYMER COATING G-90 GALVANIZED OR AZ-50 ALUMINUM-ZINC COATED STEEL IN 22 GA. FORM CORE: FOAMED-IN-PLACE, NON-CFC & ZERO ODP POLYURETHANE, FAM CLASS 1 APPROVAL. INTERIOR FACING: LIGHT MESA WAVE PATTERN, NOMINAL 1/16" DEEP G-90 GALVANIZED OR AZ-50 ALUMINUM-ZINC COATED STEEL IN 26, 24 AND 22 GA.
07-8	PRE FINISHED METAL RAKE TRIM.
07-11	PRE-FINISHED METAL GUTTER SIZED TO MEET REQUIRED CAPACITY FOR ROOF DRAINAGE.
07-15	PROVIDE PRE-FINISHED METAL DOWNSPOUT. ROUTE DOWN FACE OF WALL TO VERTICAL CONDUCTOR PIPE.
07-16	PRE-FINISHED METAL DOWNSPOUT RUN HORIZONTALLY SLOPED AS REQUIRED BY CODE TO CONNECTING VERTICAL DOWNSPOUT. ROUTE HORIZONTAL DOWN ALONG FACE OF WALL.
07-17	PRE-FINISHED TRANSITION FLASHING (ROOF TO WALL)
07-18	PRE-FINISHED METAL BASE TRIM FLASHING
07-19	PRE-FINISHED METAL EAVE FLASHING
08-1	4'-0" X 4'-0" THERMALLY BROKEN CLEAR ANODIZED ALUMINUM FIXED FRAMED STOREFRONT WINDOW SYSTEM W/1" INSULATED LOW-E GLASS
08-4	PAINTED HOLLOW METAL SERVICE DOOR AND FRAME
08-5	INSULATED OH DOOR. FACTORY FINISHED WITH VISION WINDOWS.
21-7	FIRE DEPARTMENT CONNECTION AND ALARM - REFER FLOOR PLAN.
32-4	6" DIAMETER x 4'-0" TALL CONCRETE FILLED STEEL PIPE BOLLARD(S). PAINTED SAFETY YELLOW



1 WEST ELEVATION
1/16" = 1'-0"

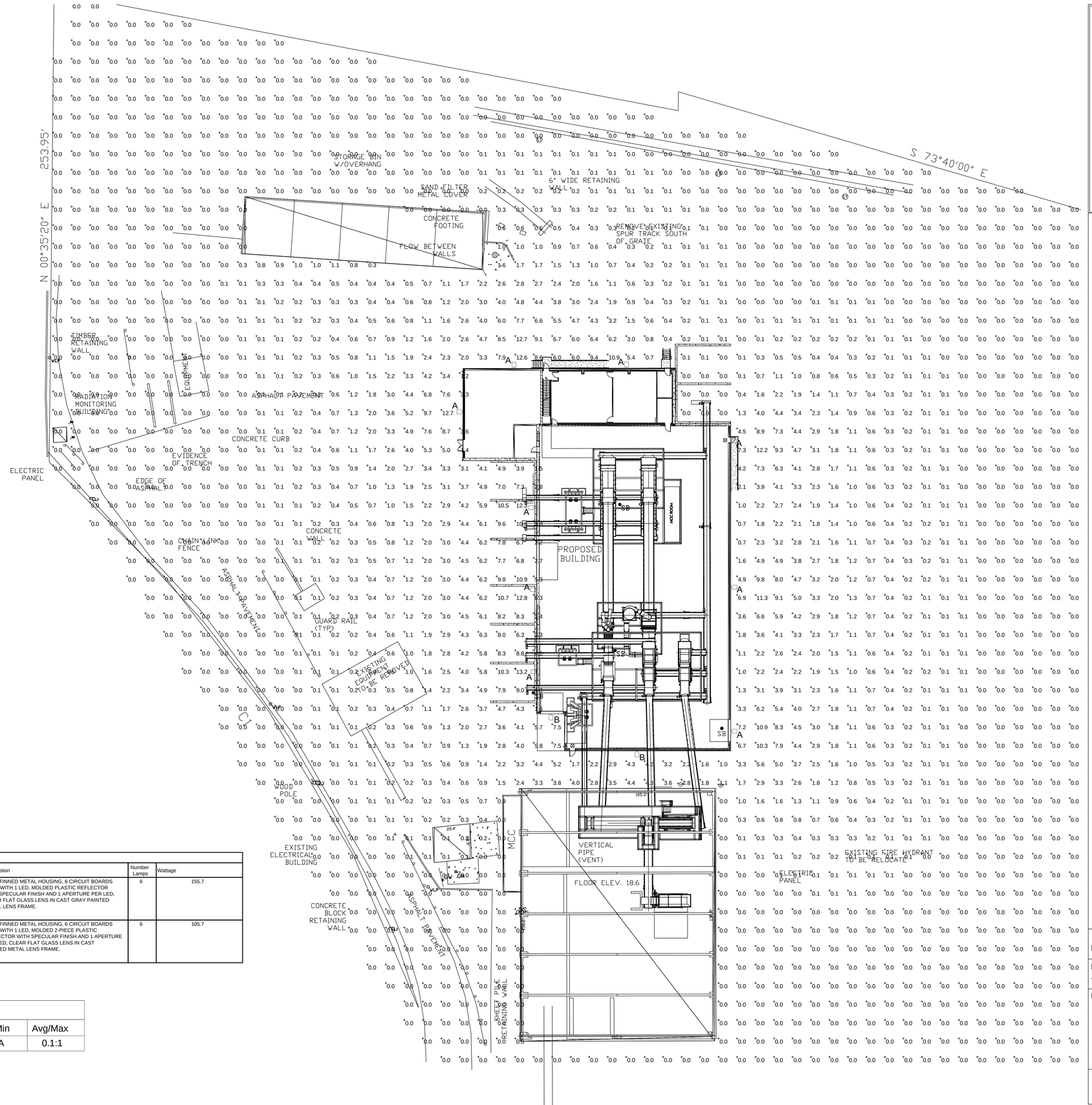
BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
EXTERIOR ELEVATIONS

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET:
A5.1



Luminaire Schedule							
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Wattage
	A	9	RAB LIGHTING, INC.	WPLED4T150 (TYPE IV) Building Mounted at 22'	CAST FINNED METAL HOUSING, 6 CIRCUIT BOARDS EACH WITH 1 LED, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST GRAY PAINTED METAL LENS FRAME.	6	155.7
	B	2	RAB LIGHTING, INC.	WPLED4T105 (TYPE IV) Building Mounted at 22'	CAST FINNED METAL HOUSING, 6 CIRCUIT BOARDS EACH WITH 1 LED, MOLDED 2-PIECE PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST PAINTED METAL LENS FRAME.	6	105.7

Statistics							
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
Calc Zone #1	+	0.8 fc	13.2 fc	0.0 fc	N/A	N/A	0.1:1

HFR electric
ELECTRICAL CONTRACTOR
RESIDENTIAL·COMMERCIAL·INDUSTRIAL
262-644-6940

Alter Trading

1800 W. Bruce Street
Milwaukee, WI

Exterior Lighting

DATE:
4-16-19

REVISIONS:

E-1

WPLED4T150

RAB | Outdoor

Color: Bronze

Weight: 34.8 lbs

Project: Alter Trading	**Type:** A
Prepared By: HFR electric inc.	**Date:** 4-16-19

Driver Info

Type	Constant Current
120V	1.31A
208V	0.80A
240V	0.69A
277V	0.60A
Input Watts	155.8W

LED Info

Watts	150W
Color Temp	5000K (Cool)
Color Accuracy	71 CRI
L70 Lifespan	100,000
Lumens	18,464
Efficacy	118.5 LPW

Technical Specifications

Listings

UL Listing:

Suitable for wet locations

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P0000174K

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations

LEDs:

Multi-chip, high-output, long-life LEDs

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5-year period

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type IV distribution (also known as a Forward Throw) is especially suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. It produces a semiCircular distribution with essentially the same candlepower at lateral angles from 90° to 270°.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Maximum Ambient Temperature:

Suitable for use in 40°C (104°F)

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior thermal management with external "Air-Flow" fins

Housing:

Die-cast aluminum housing, lens frame and mounting arm

Mounting:

Heavy-duty mounting arm with "O" ring seal & stainless steel screws

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets

Finish:

Formulated for high durability and long-lasting color

Green Technology:

Mercury and UV free. RoHS-compliant components.

WPLED4T150

RAB | Outdoor

Technical Specifications (continued)

Other

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at www.rablighting.com/legal#warranty

Patents:

The design of WPLED150 is protected by patents pending in US, Canada, China, Taiwan and Mexico

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Optical

BUG Rating:

B1 U0 G3

Electrical

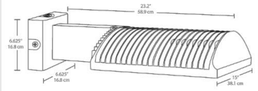
Driver:

One Driver, Constant Current, Class 2, 2100mA 100-277V, 50-60Hz, Power Factor 99%

THD:

4.7% at 120V, 13.3% at 277V

Dimensions



Features

- High performance LED light engine
- Maintains 70% of initial lumens at 100,000-hours
- Weatherproof high temperature silicone gaskets
- Superior heat sinking with die cast aluminum housing and external fins
- Replaces 400W MH
- 100 up to 277 Volts
- 5-Year, No-Compromise Warranty

Ordering Matrix

Family	Optics	Wattage	Color Temp	Mounting	Finish	Driver Options	Other Options
WPLED	4T	150					
	4T = Type IV **3T =** Type III **2T =** Type II	**50 =** 50W **78 =** 78W **105 =** 105W **125 =** 125W **150 =** 150W	**Blank =** 5000K (Cool) **N =** 4000K (Neutral) **Y =** 3000K (Warm)	**Blank =** Arm **FX =** Flat Mount	**Blank =** Bronze **W =** White	**Blank =** Standard **/480 =** 480V **/BL =** Bi-Level **/D10 =** 0-10V Dimming **/480/D10 =** 480V 0-10V Dimming	**Blank =** Standard **/PC =** 120V Photocell **/PC2 =** 277V Photocell **/PCT =** 120-277V Twistlock Photocell **/PCT4 =** 480V Twistlock Photocell **/PCS =** 120V Swivel Photocell **/PCS2 =** 277V Swivel Photocell **/PCS4 =** 480V Swivel Photocell **/WS2 =** Multi-Level Motion Sensor (20 ft. mt. ht.) **/WS4 =** Multi-Level Motion Sensor (40 ft. mt. ht.) **/LC =** Lightcloud Controller

WPLED4T105

RAB | Outdoor

Color: Bronze

Weight: 34.8 lbs

Project: Alter Trading	**Type:** B
Prepared By: HFR electric inc.	**Date:** 4-16-19

Driver Info

Type	Constant Current
120V	0.89A
208V	0.58A
240V	0.50A
277V	0.44A
Input Watts	109.4W

LED Info

Watts	105W
Color Temp	5000K (Cool)
Color Accuracy	70 CRI
L70 Lifespan	100,000
Lumens	13,680
Efficacy	125 LPW

Technical Specifications

Listings

UL Listing:

Suitable for wet locations

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P0000179G

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations

LEDs:

Multi-chip, high-output, long-life LEDs

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5-year period

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type IV distribution (also known as a Forward Throw) is especially suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. It produces a semiCircular distribution with essentially the same candlepower at lateral angles from 90° to 270°.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Maximum Ambient Temperature:

Suitable for use in 40°C (104°F)

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior thermal management with external "Air-Flow" fins

Housing:

Die-cast aluminum housing, lens frame and mounting arm

Mounting:

Heavy-duty mounting arm with "O" ring seal & stainless steel screws

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets

Finish:

Formulated for high durability and long-lasting color

Green Technology:

Mercury and UV free. RoHS-compliant components.

WPLED4T105

RAB | Outdoor

Technical Specifications (continued)

Other

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at www.rablighting.com/legal#warranty

Patents:

The design of WPLED105 is protected by patents pending in US, Canada, China, Taiwan and Mexico

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

BUG Rating:

B1 U0 G2

Electrical

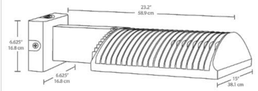
Drivers:

Two Drivers, Constant Current, Class 2, 1400mA, 100-277V, 50/60Hz, 0.8A, Power Factor 99%

THD:

7.6% at 120V, 16.5% at 277V

Dimensions



Features

- High performance LED light engine
- Maintains 70% of initial lumens at 100,000-hours
- Weatherproof high temperature silicone gaskets
- Superior heat sinking with die cast aluminum housing and external fins
- Replaces 400W MH
- 100 up to 277 Volts
- 5-Year, No-Compromise Warranty

Ordering Matrix

Family	Optics	Wattage	Color Temp	Mounting	Finish	Driver Options	Other Options
WPLED	4T	105					
	4T = Type IV **3T =** Type III **2T =** Type II	**50 =** 50W **78 =** 78W **105 =** 105W **125 =** 125W **150 =** 150W	**Blank =** 5000K (Cool) **N =** 4000K (Neutral) **Y =** 3000K (Warm)	**Blank =** Arm **FX =** Flat Mount	**Blank =** Bronze **W =** White	**Blank =** Standard **/480 =** 480V **/BL =** Bi-Level **/D10 =** 0-10V Dimming **/480/D10 =** 480V 0-10V Dimming	**Blank =** Standard **/PC =** 120V Photocell **/PC2 =** 277V Photocell **/PCT =** 120-277V Twistlock Photocell **/PCT4 =** 480V Twistlock Photocell **/PCS =** 120V Swivel Photocell **/PCS2 =** 277V Swivel Photocell **/PCS4 =** 480V Swivel Photocell **/WS2 =** Multi-Level Motion Sensor (20 ft. mt. ht.) **/WS4 =** Multi-Level Motion Sensor (40 ft. mt. ht.) **/LC =** Lightcloud Controller

BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
LIGHTING CUT SHEETS

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB:	3149
DRAWN:	HFR
CHECKED:	HFR
DATE:	04-16-2019
SHEET:	E2

PROPOSED NEW RECLAMATION BUILDING FOR :

ALTER TRADING

1640 WEST BRUCE STREET (FACILITY / CAMPUS ADDRESS)
WEST BRUCE STREET (PROPOSED NEW BUILDING ADDRESS TO BE DETERMINED)
MILWAUKEE, WISCONSIN 53204

1 PERSPECTIVE VIEW LOOKING SOUTHEAST
12" = 1'-0"

CODE CALCULATIONS AND ANALYSIS:

OCCUPANCY CALCULATION:

OCCUPANCY F2 FACTORY / NON-FERROUS RECLAMATION FACILITY (PRIMARY)
100 SQUARE FEET IS MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT
20,317 SQUARE FEET GROSS / 100 SQUARE FEET PER PERSON = 203 PEOPLE

OCCUPANCY B BUSINESS (SECONDARY)
100 SQUARE FEET IS MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT
4,451 SQUARE FEET GROSS / 100 SQUARE FEET PER PERSON = 45 PEOPLE

TOTAL OCCUPANCY = 248 PEOPLE MAXIMUM CALCULATED

PLUMBING FIXTURE CALCULATION:

BASED ON B BUSINESS OCCUPANCY = 45 PEOPLE

TOILET FIXTURES (WC) REQUIRED AND PROVIDED ARE AS FOLLOWS:
B MEN = 0.9 FIXTURE (WC) REQUIRED
B WOMEN = 0.9 FIXTURE (WC) REQUIRED

BASED ON F-2 LOW HAZARD FACTORY OCCUPANCY = 203 PEOPLE

TOILET FIXTURES (WC) REQUIRED AND PROVIDED ARE AS FOLLOWS:
S-1 MEN = 1.02 FIXTURE (WC) REQUIRED
S-1 WOMEN = 1.02 FIXTURE (WC) REQUIRED

TOTAL (WC) FIXTURES REQUIRED - MEN = 1.92 FIXTURES 2 PROVIDED 5 PROVIDED
TOTAL (WC) FIXTURES REQUIRED - WOMEN = 1.92 FIXTURES 2 PROVIDED 2 PROVIDED

MEN AND WOMEN FIXTURES (WC) REQUIRED 4 TOTAL AND PROVIDED 6 TOTAL OK

LAVATORY FIXTURES REQUIRED AND PROVIDED ARE AS FOLLOWS:
B MEN AND WOMEN 45 = 1.13 LAVATORY FIXTURE REQUIRED. 2 PROVIDED 2
S-1 MEN AND WOMEN 203 = 2.03 LAVATORY FIXTURE REQUIRED. 2 PROVIDED 2

MEN AND WOMEN FIXTURES (LAV) REQUIRED 4 TOTAL AND PROVIDED 4 TOTAL OK

EXIT WIDTH REQUIRED AND EXIT ACCESS TRAVEL DISTANCE:

EXIT WIDTH REQUIRED 248 x .20 = 49.60 INCHES OR 32 INCHES EACH MINIMUM CLEAR X (2) EXITS
EXIT WIDTH PROVIDED (4) 36" WIDE DOORS x 34" = 132" WIDTH
TOTAL EXIT WIDTH PROVIDED OF 102" EXCEEDS REQUIRED EXIT WIDTH CALCULATED (49.6")
TOTAL NUMBER OF EXISTING EXITS PROVIDED (4) EXCEEDS THE NUMBER OF EXITS REQUIRED (2)
REFER TO SHEET A0.1 FOR ADDITIONAL INFORMATION

EXIT TRAVEL DISTANCE = LESS THAN 150' IBC TABLE 1017.2

AREA AND HEIGHT LIMITATION CALCULATIONS:

PER IBC TABLE 506.2
FOR OCCUPANCY GROUP F2 (TYPE 2B CONSTRUCTION (INCLUDES AUTOMATIC SPRINKLER INCREASE) PLUS FRONTAGE INCREASE.
1 STORY AND 92,000 S.F. ALLOWED FROM TABLE 506.2 WHICH INCLUDES SPRINKLER INCREASE FRONTAGE INCREASE = 43,240 S.F.
THE ACTUAL SIZE IS 20,316 OR 22,535 S.F.

FRONTAGE INCREASE CALCULATION IBC 506.3:
F = 503
P = 704
W= 30
503/704 - .25/30/30 = INCREASE RATIO
.72 - .25/1 = .47 (92,000) = 43,240 S.F.
AMOUNT OF FRONTAGE INCREASE ALLOWED IS 43,240 S.F. FOR A TOTAL OF 135,240 S.F.

THE MAXIMUM ALLOWABLE BUILDING AREA IS 92,000 + 43,240 = 135,240 S.F. ACTUAL IS 22,535 S.F.

THE BUILDING IS NOT CLASSIFIED AS AN UNLIMITED AREA BUILDING PER SECTION 507.4

THE BUILDING AREA IS AT OR BELOW THE ALLOWABLE AREA LIMITS AND
STORY LIMITS PER TABLE 506.2 WITH AUTOMATIC SPRINKLER INCREASE.

THE BUILDING IS BELOW ALLOWABLE HEIGHT LIMIT OF 55 FEET. THE ACTUAL HEIGHT IS 54'-4" FEET. PER TABLE 504.3
ALLOWABLE NUMBER OF STORIES IS TWO AND THE BUILDING HAS ONLY ONE STORY AND A MEZZANINE LEVEL.

MULTIPLE OCCUPANCIES:

BUILDING DESIGN IS BASED ON SEPARATED OCCUPANCIES PER IBC 508.

WE PROPOSED TO SEPARATE THE TWO OCCUPANCIES TYPES FROM EACH OTHER AND TWO CREATE TWO BUILDINGS SEPARATED BY FIREWALL TO ALLOW FOR BUILDING AREA LIMITS TO COMPLY.

PER TABLE IBC 508.4 THE REQUIRED BETWEEN B AND H3 OCCUPANCY IS (1) HOUR; HOWEVER PER IBC SECTION 706 FIREWALLS WE ARE REQUIRED TO USE A 3 HOUR FIRE RESISTIVE RATING FOR EITHER B OR HE OCCUPANCIES. SINCE WE NEED TO CREATE SEPARATED BUILDINGS, WE PROPOSE TO USE A 3 HOUR RATED FIREWALL PER IBC TABLE 706.4. OPENINGS SHALL BE PROTECTED WITH CORRESPONDING 3 HOUR RATED OPENING PROTECTIVES.

CONSTRUCTION CLASSIFICATION REQUIREMENTS:

PER IBC TABLE 601 AND TABLE 602:
TYPE IIB CONSTRUCTION:

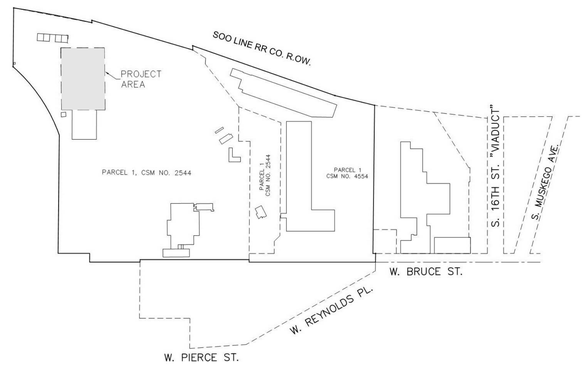
PRIMARY STRUCTURAL FRAME	"0" RATING REQUIRED
INTERIOR BEARING WALLS	"0" RATING REQUIRED
EXTERIOR BEARING WALLS	"0" RATING REQUIRED
EXTERIOR NON-BEARING WALLS (PER TABLE 602.10 < 30 FEET)	"0" RATING REQUIRED
NONBEARING WALLS AND PARTITIONS	"0" RATING REQUIRED
FLOOR CONSTRUCTION AND SECONDARY MEMBERS	"0" RATING REQUIRED
ROOF CONSTRUCTION AND SECONDARY MEMBERS	"0" RATING REQUIRED

EXTERIOR WALL OPENINGS ALLOWED:

PER IBC TABLE 705.8:
THE NEW WALLS OF THE PROPOSED ADDITION ARE GREATER THAN 30 FEET AWAY FROM THE PROPERTY LINE OR STREET; THEREFORE, THERE ARE NO RESTRICTIONS ON OPENINGS BOTH PROTECTED AND UNPROTECTED.

BUILDING ENVELOPE REQUIREMENTS:

BUILDING ENVELOPE REQUIREMENTS: PROPOSED TO USE PRESCRIPTIVE METHOD. PER SPS 363.0402 BUILDING ENVELOPE REQUIREMENTS. (1) OPAQUE ASSEMBLIES. SUBSTITUTE 2009 IECC TABLE 502.2 (1) PER SPS 363.5402 BUILDING ENVELOPE REQUIREMENTS. (1) INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT. REFER TO SHEET A5.1 EXTERIOR ELEVATIONS.



4 VICINITY MAP
N.T.S.

SHEET INDEX

PLAN COMMISSION SUBMITTAL PLANS

APRIL 16, 2019

OWNER :
ALTER TRADING CORPORATION
JAMIE WILSON

700 OFFICE PARKWAY
ST. LOUIS, MO 63141
(314) 787-3910 PHONE

GENERAL CONTRACTOR :
BRIOHN BUILDING CORPORATION
PEYTON PAQUIN, PM

3885 N. BROOKFIELD RD., SUITE 200
BROOKFIELD, WISCONSIN 53045
(262) 790-0500 PHONE
(262) 790-0505 FAX

ARCHITECT :
BRIOHN DESIGN GROUP LLC
DOMENICO FERRANTE, AIA

3885 N. BROOKFIELD RD., SUITE 200
BROOKFIELD, WISCONSIN 53045
(262) 790-0500 PHONE
(262) 790-0505 FAX

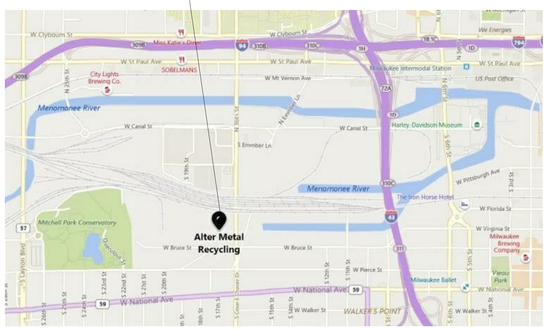
CIVIL ENGINEER:
CJ ENGINEERING
CHRISTOPHER A. JACKSON, PE

9205 W. CENTER STREET, SUITE 214
MILWAUKEE, WI 53222
(414) 443-1312 PHONE
(414) 940-4450 FAX

STRUCTURAL ENGINEER:
BRIOHN DESIGN GROUP LLC
KEVIN JANKOWSKI, PE

3885 N. BROOKFIELD RD., SUITE 200
BROOKFIELD, WISCONSIN 53045
(262) 790-0500 PHONE
(262) 790-0505 FAX

PROJECT LOCATION:



STREET MAP
N.T.S.

PROJECT INFORMATION:

BUILDING CODE:
2015 INTERNATIONAL BUILDING CODE WITH WISCONSIN AMENDMENTS SPS 362
2015 INTERNATIONAL EXISTING BUILDING CODE WITH WISCONSIN AMENDMENTS SPS 366
ACCESSIBILITY CODE:
2015 INTERNATIONAL BUILDING CODE WITH WISCONSIN AMENDMENTS SPS 362
2009 ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
ENERGY CODE:
2015 IECC INTERNATIONAL ENERGY CONSERVATION CODE WITH WISCONSIN AMENDMENTS SPS 363
MECHANICAL CODE:
2015 INTERNATIONAL MECHANICAL CODE WITH WISCONSIN AMENDMENTS SPS 364
PLUMBING CODE:
2014 WISCONSIN PLUMBING CODE SPS 381-387
ELECTRICAL CODE:
2011 NFPA 70 NATIONAL ELECTRICAL CODE WITH WISCONSIN AMENDMENTS SPS316
FIRE CODE:
2006 INTERNATIONAL FIRE CODE ADOPTED PER MILWAUKEE CODE OF ORDINANCES (MCO 214-3)

NOTE:
ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SPRINKLER ENGINEERING BY DESIGN-BUILD CONTRACTORS

OCCUPANCY:	MANUFACTURING FACILITY - PRIMARY OFFICE - SECONDARY
CLASS OF CONSTRUCTION:	TYPE 2B
SPRINKLER SYSTEM:	FULL
FLOOR LEVELS:	1
NUMBER OF STORIES	1+MEZZANINE

BUILDING AREA:

RECLAMATION AREA - FIRST FLOOR	20,316 SF
OFFICE AREA - FIRST FLOOR	2,219 SF
TOTAL - FOOTPRINT	22,535 SF
OFFICE AREA - MEZZANINE LEVEL	2,232 SF
TOTAL - OVERALL	24,767 SF

TRUE NORTH
PLAN NORTH
APPLICABLE TO ALL PLAN VIEWS

BRIOHN
DESIGN GROUP
3885 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
TITLE SHEET

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET:
T1.1

GENERAL NOTES

1. THE FOLLOWING SHALL APPLY TO ALL SUBCONTRACTORS AND SUPPLIERS ENGAGED IN EXECUTION OF THE WORK SHOWN ON THESE DRAWINGS AND SPECIFICATIONS.

2. THE COMPLETE CONSTRUCTION DOCUMENT SET IS INCLUSIVE OF THE DRAWING SHEETS LISTED IN THE DRAWING INDEX.

3. ALL WORK SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF THE LOCAL AND STATE BUILDING, HVAC AND FIRE SAFETY CODE; LOCAL AND STATE PLUMBING CODE; LOCAL AND STATE MECHANICAL CODES; LOCAL AND STATE ELECTRICAL CODE; OSHA BARRIER FREE DESIGN; LOCAL AND STATE FIRE PROTECTION CODES. ALL WORK SHALL CONFORM TO ALL NATIONAL CODES AND REFERENCE STANDARDS AS REFERENCED IN THE LOCAL AND STATE CODES. ALL WORK, MATERIALS AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH ALL ORDINANCES, STATE AND LOCAL BUILDING CODES, LATEST EDITION, OF THE AUTHORITIES HAVING JURISDICTION. DESIGN LOADS: LOADS AND CODE RESTRICTIONS FOR ALL DESIGN CONSIDERATIONS SHALL CONFORM TO THE LOCAL AND STATE CODES AND ALL GOVERNING CODES, AND ALL CONSTRUCTION IS TO COMPLY WITH ALL LOCAL SEISMIC REQUIREMENTS. REFER TO STRUCTURAL SPECIFICATIONS.

4. PERMITS: THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER APPLICATION FOR AND SECURING OF ALL NECESSARY PERMITS, AS WELL AS THE OBSERVANCE OF ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL LAWS, REGULATIONS OR ORDINANCES.

5. FIRE PROTECTION: SUBCONTRACTOR SHALL PROVIDE FIRE EXTINGUISHERS WITHIN THE PREMISES AS REQUIRED BY CODE AND OR INSURANCE COMPANIES (FOLLOW MORE STRINGENT REQUIREMENTS), OR VERIFY THAT AN ADEQUATE NUMBER OF FIRE EXTINGUISHERS EXIST IN THE CASE OF A REMODELING OR ALTERATION. DISCONNECT AND SEAL UTILITIES SERVING STRUCTURE TO BE DEMOLISHED, PRIOR TO START OF DEMOLITION WORK IF DEMOLITION WORK IS PART OF THE SCOPE OF WORK REQUIRED.
FIRE SPRINKLERS: THE GENERAL CONTRACTOR SHALL EMPLOY THE SERVICES OF A LICENSED FIRE SPRINKLER CONTRACTOR TO REWORK AND MODIFY THE EXISTING SYSTEM TO CONFORM WITH THE NEW ROOM AND CEILING HEIGHTS AS SHOWN IN THESE DRAWINGS. THE SPRINKLER CONTRACTOR SHALL DESIGN AND PREPARE SHOP DRAWINGS FOR THE PROPOSED SYSTEM MODIFICATIONS AND SUBMIT THESE DRAWINGS TO THE LOCAL AND STATE BUILDING AND CODE OFFICIALS AND THE ARCHITECT TO GAIN APPROVALS PRIOR TO CONNECTING ANY WORK. PROVIDE CONCEALED HEADS FOR AREAS WITH FINISHED CEILINGS UNLESS OTHERWISE NOTED.

6. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS..

7. CONTRACTOR COMPLIANCE: THE SUBCONTRACTOR SHALL VISIT THE PREMISES AND VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION AND SHALL REPORT ALL DISCREPANCIES TO THE ARCHITECT AND THE GENERAL CONTRACTOR. THE SUBCONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS REGARDING CONSTRUCTION PROCEDURES, INSURANCE, ETC AS SET FORTH BY THE GENERAL CONTRACTOR.

8. THE SUBCONTRACTOR SHALL SUBMIT A SPECIFIC CONSTRUCTION SCHEDULE TO THE GENERAL CONTRACTOR'S CONSTRUCTION/PROJECT MANAGER WITHIN 7 DAYS AFTER THE AWARD OF THE SUBCONTRACT.

9. HAZARDOUS MATERIALS: IN THE EVENT HAZARDOUS MATERIALS ARE ENCOUNTERED ON THE PREMISES DURING THE EXECUTION OF THE WORK, NOTIFY THE GENERAL CONTRACTOR BEFORE PROCEEDING WITH THE WORK. THE GENERAL CONTRACTOR SHALL NOTIFY THE OWNER/LANDLORD. AFTER THE OWNER/LANDLORD IS NOTIFIED AND WORK IS SUSPENDED, THE OWNER/LANDLORD IS RESPONSIBLE FOR DIRECTIONS TO THE GENERAL CONTRACTOR AS TO THE REMOVAL AND HANDLING OF HAZARDOUS MATERIALS. PROCEED WITH WORK WHEN THE OWNER/LANDLORD GIVES WRITTEN APPROVAL. REMOVAL AND HANDLING OF HAZARDOUS MATERIALS SHALL FOLLOW LOCAL AND STATE CODES AND REQUIREMENTS.

10. INFORMATION RELATED TO EXISTING CONDITIONS GIVEN IN THE CONSTRUCTION DOCUMENTS WAS OBTAINED FROM EXISTING BUILDING SCHEMATIC DRAWINGS AVAILABLE AT THE TIME OF DESIGN. ACCURACY CAN NOT BE GUARANTEED. DRAWINGS AND SPECIFICATIONS ARE INTENDED FOR ASSISTANCE AND GUIDANCE, BUT EXACT DIMENSIONS AND ELEVATIONS SHALL BE GOVERNED BY ACTUAL CONDITIONS AT THE SITE AND SHALL BE VERIFIED BY THE SUBCONTRACTOR.

11. NOTES ARE AN AID FOR THE SUBCONTRACTOR IN UNDERSTANDING THE WORK AND SHALL NOT BE CONSTRUED AS BEING COMPLETE IN EVERY DETAIL. IT IS THE RESPONSIBILITY OF THE SUBCONTRACTOR TO VISIT THE SITE, BECOME THOROUGHLY FAMILIAR WITH THE WORK AND REPORT ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE ACTUAL CONDITIONS TO THE ARCHITECT AND THE GENERAL CONTRACTOR.

12. DO NOT SUBSTITUTE, REVISE OR CHANGE THE WORK WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT AND THE GENERAL CONTRACTOR.

13. INSTALL WORK PLUMB LEVEL SQUARE TRUE AND IN PROPER ALIGNMENT.

14. WORK SHALL BE SCHEDULED AND PERFORMED SO AS NOT TO DISTURB OR CAUSE DAMAGE TO EXISTING BUILDING ELEMENTS INTENDED TO REMAIN WHICH IS NOT PART OF THE SCOPE OF THE WORK. WORK SHALL BE SCHEDULED AND PERFORMED SO AS NOT TO DISTURB OR CAUSE DAMAGE TO INSTALLED WORK.

15. NO WORK SHALL BE DONE IN OTHER NON DESIGNATED AREAS OR OTHER TENANT AREAS, UNLESS OTHERWISE NOTED. SCHEDULE AND PERFORM THE WORK SO THAT THE OTHER AREAS NOT DESIGNATED TO RECEIVE WORK AND THE OTHER TENANTS IN THE BUILDING WILL NOT BE DISTURBED AND COMPLY WITH THE BUILDING OWNERS REQUIREMENTS.

16. COORDINATE WORK AS REQUIRED WITH THE OWNER/LANDLORD'S REPRESENTATIVE INCLUDING THE USE OF ELEVATORS, TEMPORARY STORAGE, LOADING DOCKS, BUILDING KEYING SYSTEMS, ETC. AND PROVIDE NECESSARY BARRICADES, LIGHTING, SIGNAGE AND GUARDRAILS AS REQUIRED BY OWNER/LANDLORD AND/OR APPLICABLE REGULATORY AGENCIES FOR THE PROTECTION OF BUILDING OCCUPANTS, WORKERS, VISITORS, CUSTOMERS AND PEDESTRIANS.

17. EACH SUBCONTRACTOR IS CONSIDERED A SPECIALIST IN HIS/HER RESPECTIVE FIELD, AND PRIOR TO THE SUBMISSION OF BID OR PERFORMANCE OF WORK EACH SUBCONTRACTOR SHALL NOTIFY THE ARCHITECT AND GENERAL CONTRACTOR OF WORK CALLED OUT IN THE DRAWINGS OR SPECIFICATIONS IN HIS/HER TRADE THAT CANNOT BE FULLY GUARANTEED OR CONSTRUCTED ACCORDING TO THE DESIGN INTENT.

18. PROVIDE AND COORDINATE LOCATION AND TYPE OF BLOCKING/BACKING REQUIRED WITHIN PARTITIONS AT LOCATIONS OF WALL MOUNTED ITEMS.

19. THE DRAWINGS INDICATE LOCATION, DIMENSIONS, REFERENCE AND TYPICAL DETAILS OF CONSTRUCTION. THE DRAWINGS DO NOT ILLUSTRATE EVERY CONDITION. WORK NOT PARTICULARLY DETAILED SHALL BE OF CONSTRUCTION SIMILAR TO PARTS THAT ARE DETAILED. VERIFY WITH ARCHITECT AND GENERAL CONTRACTOR PRIOR TO FABRICATION OR INSTALLATION OF SPECIFIC DETAILS OF CONSTRUCTION.

20. DISCREPANCY IN THE PLANS SHALL BE REPORTED TO ARCHITECT AND GENERAL CONTRACTOR IMMEDIATELY. SUBCONTRACTOR SHALL NOT MAKE A DETERMINATION FOR CONFLICTS IN PLAN DIMENSIONS.

21. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT THE APPROVAL OF THE ARCHITECT AND GENERAL CONTRACTOR UNLESS NOTED +/-.

22. VERTICAL DIMENSIONS ARE FROM THE TOP OF FLOOR FINISH, ESTABLISHED BY THE ARCHITECT AND GENERAL CONTRACTOR UNLESS OTHERWISE NOTED.

23. DIMENSIONS MARKED "FIELD VERIFY" SHALL BE VERIFIED IN THE FIELD BY THE SUBCONTRACTOR'S AFFECTED.

24. HORIZONTAL DIMENSIONS SHALL BE SHOWN FROM THE FINISHED FACE OF CONSTRUCTION UNLESS OTHERWISE NOTED.

25. WASTE AND REFUSE CAUSED BY WORK SHALL BE REMOVED FROM THE PREMISES AND DISPOSED OF OR RECYCLED PROPERLY BY THE SUBCONTRACTOR DAILY. FINAL CLEANING PRIOR TO FINAL INSPECTION SHALL INCLUDE A THOROUGH CLEANING OF ALL SURFACES AND REPLACEMENT OF ALL FILTERS IN NEW INSTALLED HVAC EQUIPMENT AND EXISTING HVAC EQUIPMENT AFFECTED BY CONSTRUCTION OF WORK.

26. MAINTAIN STRICT CONTROL OF DUST AND DEBRIS EMANATING FROM THE PROJECT AREA. KEEP PROJECT AREA BROOM CLEAN AND CLEAR OF DEBRIS DAILY.

27. SUBCONTRACTOR SHALL PERFORM ANY AND ALL EXCAVATING, CUTTING, PATCHING, REPAIRING, RESTORING AND THE LIKE NECESSARY TO COMPLETE THE WORK OF THIS CONTRACT. RESTORE ANY DAMAGED OR AFFECTED SURFACES RESULTING FROM THE WORK OF THIS CONTRACT TO THEIR ORIGINAL CONDITION AND TO THE SATISFACTION OF THE ARCHITECT, GENERAL CONTRACTOR, AND THE OWNER/LANDLORD. PATCH DAMAGE WITHIN THE WORK AREA, AS WELL AS OUTSIDE THE LIMIT OF WORK AREA IF CAUSED BY THE EXECUTION OF THE WORK.

28. EACH SUBCONTRACTOR SHALL LEAVE THE SITE IN A NEAT, CLEAN AND ORDERLY CONDITION ON A DAILY BASIS AND UPON CONCLUSION OF HIS WORK. ALL WASTE, RUBBISH AND EXCESS MATERIALS SHALL BE REMOVED FROM THE SITE PROMPTLY. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL TRASH GENERATED FOR THE DURATION OF THE PROJECT.

29. CONSULT PROPERTY AS BUILT UTILITY PLANS BEFORE SAW CUTTING CONCRETE SLAB IF REQUIRED. IF AS BUILT DRAWINGS ARE NOT AVAILABLE UTILIZE OTHER MEANS TO UNCOVER BURIED UTILITIES.

30. NO SUBSTITUTIONS SHALL BE PERMITTED UNLESS PRIOR APPROVAL BY THE ARCHITECT AND THE GENERAL CONTRACTOR IS GIVEN.

31. PATCH AND REPAIR ALL FIREPROOFING AND FIRE STOPPING DAMAGED OR REMOVED DURING THE PERFORMANCE OF THE WORK.

32. ACCESSORIES, ETC. THEY SHALL BE PAINTED TO MATCH THE ADJACENT SURFACE AND AS DIRECTED BY THE ARCHITECT AND THE GENERAL CONTRACTOR.

33. EXTERIOR WALL OPENINGS, FLASHING, COUNTER FLASHING, COPING AND EXPANSION JOINTS SHALL BE WEATHERPROOF.

34. CAULKING AND SEALANTS: OPEN JOINTS PENETRATIONS AND OTHER OPENINGS IN THE BUILDING ENVELOPE SHALL BE SEALED, CAULKED, GASKETED, OR WEATHER STRIPPED TO LIMIT AIR LEAKAGE. MAINTAIN REQUIRED FIRE RATING.

35. USE ACOUSTICAL SEALANT AROUND ALL PIPES, DUCTS, CONDUITS, SWITCHES, ETC. ON BOTH SIDES OF WALLS (CROSSING/PENETRATION) WITH THERMAL AND ACOUSTIC INSULATION. MAINTAIN REQUIRED FIRE RATING.

36. NOISE BARRIER BATTS (SOUND INSULATION) SHALL BE NON COMBUSTIBLE.

37. MECHANICAL CONTRACTORS SHALL VERIFY EXACT LOCATIONS AND EXACT DIMENSIONS WITH EQUIPMENT MANUFACTURERS. MECHANICAL CONTRACTORS SHALL VERIFY ALL SIZES AND LOCATIONS OF DUCT OPENINGS BEFORE INSTALLATION AND VERIFY DISCREPANCIES, IF ANY.

38. DEFINITIONS:
A) AS REQUIRED: AS REQUIRED BY REGULATORY REQUIREMENTS BY REFERENCED STANDARDS, BY EXISTING CONDITIONS, BY GENERALLY ACCEPTED CONSTRUCTION PRACTICE OR BY THE CONTRACT DOCUMENTS.
B) TYPICAL: IDENTICAL FOR SIMILAR CONDITIONS, UNLESS OTHERWISE NOTED.
C) SIMILAR: COMPARABLE CHARACTERISTICS FOR THE CONDITION NOTED. DIFFERENCES CAN BE INFERRED FROM OTHER INFORMATION INDICATED. VERIFY DIMENSIONS AND ORIENTATIONS.
D) REMOVE: ELIMINATE AND RECYCLE OR DISPOSE OF PROPERLY.

39. SUBCONTRACTOR TO CROSS CHECK WITH ARCHITECTURAL, HVAC, AND PLUMBING PLANS FOR OTHER DETAILS, DIMENSIONS, ELEVATIONS, OPENINGS, INSERTS, BRICK LEDGES, ETC. BRIOHN DESIGN GROUP, LLC TO BE NOTIFIED OF ANY VARIANCE BEFORE CONTRACTOR BEGINS WORK.

40. DIMENSIONS SHOWN ON ARCHITECTURAL DRAWINGS SUPERSEDE DIMENSIONS SHOWN ON STRUCTURAL PLANS. THE USE OF A SCALE TO OBTAIN DIMENSIONS NOT SHOWN ON DRAWINGS IS NOT PERMITTED.

41. IN NO CASE SHALL STRUCTURAL ALTERATIONS OR WORK AFFECTING A STRUCTURAL MEMBER BE MADE, UNLESS APPROVED BY BRIOHN DESIGN GROUP, LLC.

GENERAL NOTES CONTINUED

42. IT IS THE SUBCONTRACTORS SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS AS MAY BE NECESSARY. ALL CONSTRUCTION AND ERECTION TO CONFORM TO OSHA REQUIREMENTS.

43. WHERE DETAILS ARE CALLED FOR IN A CERTAIN PORTION OF THE BUILDING, THEY SHALL BE DUPLICATED IN SIMILAR PORTIONS OF THE BUILDING UNLESS SHOWN OTHERWISE. CLARIFY WITH ARCHITECT BEFORE SUBCONTRACTOR BEGINS WORK.

44. CONSTRUCTION DOCUMENTS SHOW DIMENSIONS AND ELEVATIONS TO SIGNIFICANT WORKING POINTS (COLUMN CENTERLINES, OUTSIDE FACES OF WALLS, TOP OF FRAMING MEMBERS, ETC.) MATERIAL SUPPLIERS AND DESIGNERS ARE RESPONSIBLE FOR ALL OTHER INFORMATION IN ORDER TO DETAIL/FABRICATE THEIR WORK. CONTACT THE ARCHITECT WITH ANY DISCREPANCIES.

45. SUBCONTRACTOR SHALL PROVIDE A MINIMUM OF FOUR DETAILED SHOP DRAWINGS, OTHER RELATED DRAWINGS, ERECTION DRAWINGS AND SAMPLES WHERE REQUIRED PRIOR TO COMMENCEMENT OF FABRICATION AND INSTALLATION OF WORK.

GENERAL REQUIREMENTS

01. THE WORK SHALL INCLUDE ALL LABOR, MATERIAL, EQUIPMENT AND SERVICES NECESSARY FOR AND SAID HEADING AS INDICATED IN THE SPECIFICATIONS, DRAWINGS AND DESIGN BUILD CONSTRUCTION CONTRACT.

02. SUBCONTRACTORS SHALL VISIT THE PREMISES WHILE BIDDING AND SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND THE REQUIREMENTS OF THE PROJECT PRIOR TO DEVELOPING THEIR BID. MATERIAL QUANTITIES SHALL BE BASED ON ACTUAL FIELD CONDITIONS AND MEASUREMENTS. DO NOT RELY ON SCALING PLANS FOR ACCURATE DIMENSIONING.

03. PRIOR TO BEGINNING THE WORK, VERIFY ALL EXISTING DIMENSIONS AND SQUARE FOOTAGES. NOTIFY THE OWNER/LANDLORD OF COMPLIANCE OR DISCREPANCIES, COMPARING THOSE DISCREPANCIES TO THE NUMBERS ON THE TITLE SHEET.

04. SUBCONTRACTORS SHALL TAKE CARE TO PROTECT ADJACENT AREAS FROM DUST AND DAMAGE DURING THE CONSTRUCTION PROCESS AND SHALL CLEAN UP AFTER THEMSELVES AT THE END OF EACH WORKING DAY. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PROTECTION OF ADJACENT ITEMS AND SURFACES FROM DAMAGE RESULTING FROM THE FURNISHING OR INSTALLATION OF SUBCONTRACTORS WORK AND SHALL PROMPTLY REPLACE, AT HIS OWN COST, SUCH DAMAGED WORK. SUBCONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE PROPER PROTECTION OF HIS AND OTHERS WORK FROM DAMAGE. USE APPROPRIATE COVERINGS OVER FURNITURE, DISPLAY CASES, EQUIPMENT AND FINISHES AS REQUIRED.

05. RUBBISH AND TRASH SHALL BE REMOVED FROM THE PREMISES AND RECYCLED AND/OR PROPERLY DISPOSED OF EACH DAY. NO RUBBISH SHALL BE LEFT IN THE PREMISES AFTER WORK IS COMPLETED.

06. UPON COMPLETION OF THE WORK INTERIOR AND EXTERIOR OF ALL GLASS AND GLAZING, FLOORS, WALLS AND CEILING SURFACES, ELECTRICAL FIXTURES, MECHANICAL EQUIPMENT, ETC.; IT IS NECESSARY TO REMOVE ALL DIRT, STAINS AND MARKS.

06. DRAWINGS HEREIN CREATE AN ENTIRE PACKAGE. ALL TRADES SHALL BE RESPONSIBLE FOR REVIEWING THEIR RESPECTIVE REQUIREMENTS AND COORDINATING THEIR HIDDEN OR EXPOSED WORK WITH OTHER RELATED TRADES.

07. COORDINATE WORK OF THE VARIOUS TRADES AND SUBCONTRACTORS TO ASSURE EFFICIENT AND ORDERLY INSTALLATION. PROVIDE ACCOMMODATION FOR ITEMS INSTALLED AT A LATER DATE. VERIFY THAT CHARACTERISTICS OF ELEMENTS OF INTERRELATED OPERATING EQUIPMENT ARE COMPATIBLE. COORDINATE WORK OF VARIOUS SECTIONS WHICH HAVE INTERDEPENDENT RESPONSIBILITIES FOR INSTALLING, CONNECTING TO, AND PLACING IN SERVICE, SUCH EQUIPMENT. COORDINATE SPACE REQUIREMENTS AND INSTALLATION OF MECHANICAL AND ELECTRICAL WORK AND FIRE SPRINKLER SYSTEM WHICH ARE INDICATED, DETAILED OR IMPLIED DIAGRAMMATIC ALLY ON DRAWINGS.

08. UNLESS SPECIFICALLY NOTED, PROVIDE AND PAY FOR LABOR, MATERIALS AND EQUIPMENT, TOOLS, CONSTRUCTION EQUIPMENT AND MACHINERY AND OTHER FACILITIES AND SERVICES NECESSARY FOR PROPER EXECUTION AND COMPLETION OF WORK, INCLUDING PERMITS.

09. GENERAL CONTRACTOR AND SUBCONTRACTOR SHALL PURCHASE AND MAINTAIN INSURANCE COVERAGE IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER/LANDLORD.

10. FURNISH REQUIRED TEMPORARY FACILITIES AND TEMPORARY UTILITIES IMMEDIATELY AFTER RECEIPT OF NOTICE TO PROCEED FOR USE IN CONVENIENCE OF THOSE ENGAGED IN THE PROJECT WORK.

11. SUBCONTRACTORS MUST STAY BEHIND THE BARRIERS AND MAINTAIN ACCESS TO SUCH AREAS CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS. FAILURE TO MAINTAIN CLEAN WORK AREAS WILL RESULT IN GENERAL CONTRACTOR HAVING SUCH MATERIALS AND DEBRIS REMOVED AND CHARGES FOR REMOVAL BILLED TO THE SUBCONTRACTOR.

12. COORDINATE CONSTRUCTION, SCHEDULING WITH THE OWNER/LANDLORD OR REPRESENTATIVE REVIEWING SCHEDULED ACTIVITIES AT OUTSET OF CONSTRUCTION.

13. ALLOWABLE TOLERANCES - UNLESS OTHERWISE NOTED OR INDICATED, THE FOLLOWING TOLERANCES SHALL APPLY TO WORK WITHIN AND RELATED TO THE SCOPE OF THESE DOCUMENTS.

A) VERTICAL SURFACES SHALL BE PLUMB OR CONSTRUCTED TO THE EXACT SLOPES OR ANGLES INDICATED.

B) THE MAXIMUM DEVIATION FROM THE TRUE PLANE FOR VERTICAL AND HORIZONTAL SURFACES SHALL NOT BE GREATER THAN 1/8" IN 10'-0" AS MEASURED BY A STRAIGHT EDGE PLACED ANYWHERE ON THE SURFACE.

C) HORIZONTAL SURFACES SHALL BE LEVEL OR CONSTRUCTED TO THE EXACT ANGLE INDICATED OR INTENDED.

D) WALL AND SOFFIT INTERSECTIONS SHALL BE 90 DEGREES OR THE EXACT ANGLE INDICATED OR INTENDED.

E) CORNERS AND EDGES SHALL BE STRAIGHT AND TRUE WITHOUT DENTS, WAVES, BULGES OR OTHER BLEMISHES.

F) JOINTS SHALL BE TIGHT, STRAIGHT, EVEN AND SMOOTH.

G) OPERABLE ITEMS SHALL OPERATE SMOOTHLY WITHOUT STICKING OR BINDING AND WITHOUT EXCESSIVE "PLAY" OR LOOSENESS.

14. THE FOLLOWING MATERIALS SHALL BE LEFT AT THE JOBSITE. THEY SHALL BE TAKEN FROM THE SAME MATERIAL, LOT OR RUN USED TO CONSTRUCT AND FINISH THE PROJECT:

A) (5) PIECES OF EACH ENTRY OF TILE, IF USED.

B) (1) GALLON OF EACH COLOR PAINT IN A TIGHTLY SEALED AND MARKED CAN.

C) (1) BOX OF EACH TYPE OF CEILING TILE, IF USED.

15. THE OWNER/LANDLORD OR OWNER/LANDLORD'S SUBCONTRACTORS MAY OCCUPY PORTIONS OF THE PROJECT DURING THE FINAL STAGE OF CONSTRUCTION, WITH THE COOPERATION AND COORDINATION OF THE GENERAL CONTRACTOR AND APPROVAL OF THE LOCAL CODE OFFICIAL IF REQUIRED.

16. DIMENSIONS AND FINISHES SHALL BE VERIFIED AND COORDINATED WITH EXISTING CONDITIONS PRIOR TO CONSTRUCTION, FABRICATION OR PURCHASING. IN CASE OF CONFLICT BETWEEN THE PROJECT REQUIREMENTS AND/OR EXISTING CONDITIONS, THE ONE HAVING THE MOST STRINGENT REQUIREMENTS SHALL GOVERN, AS APPROVED BY THE ARCHITECT AND THE GENERAL CONTRACTOR.

17. PERFORM WORK IN ACCORDANCE WITH ACCEPTABLE TRADE PRACTICE TO ENSURE THE HIGHEST QUALITY FINISHED PRODUCT - EXPRESSED OR IMPLIED. PERFORM WORK BY SKILLED MECHANICS IN ACCORDANCE WITH ESTABLISHED STANDARDS OF WORKMANSHIP IN EACH OF THE VARIOUS TRADES.

18. COORDINATE BLOCKING REQUIREMENTS WITH ADJACENT OR RELATED TRADES, ACCESSORIES, EQUIPMENT AND FIXTURES INSTALL REQUIRED BLOCKING AT NO ADDITIONAL COST TO CONTRACT.

19. REPAIR PROPERTY DAMAGE BY THE INSTALLERS TO A LIKE - NEW CONDITION OR REPLACE DAMAGED SURFACES AND MATERIALS OF THE PREVIOUSLY INSTALLED WORK BY OTHER TRADES, INSTALLERS AND SUBCONTRACTORS.

20. WHERE REQUESTED BY THE OWNER/LANDLORD TO CERTIFY CONFORMANCE TO TRADE STANDARDS OR THE PROJECT REQUIREMENTS, THE SUBCONTRACTOR SHALL ENLIST A TESTING LABORATORY AT THE OWNER/LANDLORD'S COST. IF THE REQUESTED TEST SHOWS NON - CONFORMANCE TO GENERALLY ACCEPTED TRADE STANDARDS OR THE PROJECT REQUIREMENTS, THE SUBCONTRACTOR SHALL CORRECT THE DEFICIENCY AT NO ADDITIONAL COSTS TO THE OWNER/LANDLORD AND REIMBURSE THE COSTS OF THE TESTING TO THE OWNER/LANDLORD, UNLESS THE CONTRACTOR HAS USED PRODUCTS INCORRECTLY LABELED BY THE MANUFACTURER OR HAS MADE PREVIOUSLY APPROVED CHANGES.

21. PROVIDE SECURITY OF THE WORK, INCLUDING TOOLS AND UNINSTALLED MATERIALS. PROTECT THE WORK, STORED PRODUCTS, CONSTRUCTION EQUIPMENT AND OWNER/LANDLORD'S PROPERTY FROM THEFT AND VANDALISM AND THE PREMISES FROM ENTRY BY UNAUTHORIZED PERSONNEL UNTIL FINAL ACCEPTANCE BY OWNER/LANDLORD.

22. MAINTAIN ACTIVE FIRE EXTINGUISHERS AT THE PROJECT AS REQUIRED TO ADEQUATELY COVER THE WORK AREA.

23. DO NOT USE MATERIALS OR EQUIPMENT FOR A PURPOSE OTHER THAN THAT FOR WHICH IT IS SPECIFICALLY DESIGNED OR SPECIFIED FOR. MATERIALS AND EQUIPMENT THAT ARE SIMILAR SHALL BE THE SAME TYPE, MODEL AND STYLE FOR THE SAME USE THROUGHOUT THE PROJECT OR THEY SHALL BE REJECTED.

24. WHEN THE PROJECT REQUIREMENTS REQUIRE THAT THE INSTALLATION OF WORK SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS, PERFORM THE WORK IN STRICT ACCORDANCE WITH THE MOST CURRENT WRITTEN MANUFACTURER'S INSTRUCTIONS.

25. PRODUCTS AND EQUIPMENT SHALL BE DELIVERED IN UNDAMAGED CONDITION AND STORED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO AVOID DISRUPTION OF THE WORK OR DAMAGE TO THE ITEMS. REPLACE DAMAGED OR UNFIT MATERIALS, AT NO ADDITIONAL COST TO OWNER/LANDLORD.

26. NOTIFY THE OWNER/LANDLORD WHEN THE WORK IS SUBSTANTIALLY COMPLETE AND READY FOR INSPECTION. PROVIDE WRITTEN OPERATION AND MAINTENANCE INSTRUCTIONS AND GUARANTEES FOR ALL EQUIPMENT AND MATERIALS INSTALLED. PROVIDE WRITTEN GUARANTEES FOR A PERIOD OF ONE (1) YEAR FROM THE THE DATE OF FINAL ACCEPTANCE OF THE WORK.

27. PROVIDE FINAL CLEAN - UP AND DAMAGE REPAIR AT THE PROJECT CONCLUSION. LEAVE THE PREMISES NEAT, CLEAN AND CLEAR OF TOOLS, EQUIPMENT AND SURPLUS MATERIALS, UNLESS REQUESTED BY THE OWNER/LANDLORD. CLEAN - UP SHALL INCLUDE AND NOT BE LIMITED TO:

28. SUBCONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS CORRESPONDING TO THE LOCATION OF EXISTING ELEMENTS SUCH AS COLUMNS, BEAMS, WALLS, ETC. NEEDED TO CONSTRUCT THIS PROJECT.

29. SUBCONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ARCHITECT OF ANY CONFLICTS WITH CONSTRUCTION DOCUMENTS.

GENERAL REQUIREMENTS CONTINUED

30. REMOVE, REPLACE AND/OR MODIFY ALL EXISTING CONSTRUCTION (ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL) AS REQUIRED IN ORDER TO PLACE NEW STRUCTURAL WORK SHOWN ON THE CONSTRUCTION DOCUMENTS.

31. SUBCONTRACTOR SHALL DESIGN AND PROVIDE ALL SHORING REQUIRED TO SUPPORT EXISTING CONSTRUCTION AND NEW CONSTRUCTION AS REQUIRED TO BUILD THIS PROJECT.

32. IT SHALL BE THE SUBCONTRACTOR'S SOLE RESPONSIBILITY TO RECEIVE, CHECK AND CONFIRM THE ARRIVAL IN GOOD ORDER ALL ITEMS CALLED FOR TO BE FURNISHED BY THE OWNER AND INSTALLED BY THE CONTRACTOR. THE SUBCONTRACTOR SHALL NOTIFY BRIOHN BUILDING CORP. AND OWNER IN WRITING OF ANY SUCH ITEMS MISSING OR DAMAGED WITHIN 3 DAYS OF RECEIVING DATE. FAILURE TO SO NOTIFY THE BRIOHN BUILDING CORP. AND OWNER WILL BE CONSIDERED PROOF THE PROPER QUANTITIES WERE DELIVERED AND IN GOOD CONDITION, AND IT SHALL BE THE SUBCONTRACTOR'S RESPONSIBILITY (AT SUBCONTRACTOR'S OWN COST) TO PROMPTLY REORDER, REPLACE AND OR REPAIR ANY SUCH ITEMS NEEDED FOR THE PROPER COMPLETION OF THIS PROJECT, ON THE AGREED DATE OF COMPLETION.

33. THE APPLICATION OF A MATERIAL AND OR EQUIPMENT ITEM BY A SUBCONTRACTOR TO UNSATISFACTORY WORK INSTALLED BY OTHERS, CONSTITUTES ACCEPTANCE OF THAT WORK AND ASSUMPTION OF FULL RESPONSIBILITY. PRIOR TO STARTING THE SPECIFIC APPLICATION, NOTIFY BRIOHN BUILDING CORP. IN WRITING OF ANY DEFECT OR DEFICIENCY WHICH WOULD IMPAIR COMPLETE AND SATISFACTORY APPLICATIONS OR INSTALLATION OF SUBCONTRACTOR'S WORK INCLUDING GUARANTEE.

34. WHERE INSTALLATION INCLUDE MANUFACTURED PRODUCTS, COMPLY WITH MANUFACTURER'S APPLICABLE INSTRUCTIONS AND RECOMMENDATIONS FOR INSTALLATION, TO THE EXTENT THESE ARE MORE EXPLICIT OR MORE STRINGENT THAN REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS.

35. PROVIDE ATTACHMENT AND CONNECTION DEVISES AND METHODS FOR SECURING WORK PROPERLY AS IT IS INSTALLED; TRUE TO LINE AND LEVEL, AND WITHIN RECOGNIZED INDUSTRY TOLERANCES UNLESS OTHERWISE NOTED. ALLOW FOR EXPANSION AND BUILDING MOVEMENT.

36. PROVIDE UNIFORM JOINT WIDTHS IN EXPOSED WORK, ORGANIZED FOR BEST POSSIBLE VISUAL EFFECT. REFER QUESTIONABLE VISUAL-EFFECT CHOICES TO ARCHITECT AND GENERAL CONTRACTOR FOR A FINAL DECISION. RECHECK MEASUREMENTS AND DIMENSIONS OF THE WORK, AS AN INTEGRAL STEP OF STARTING EACH INSTALLATION.

37. MOUNTING HEIGHTS: WHERE MOUNTING HEIGHTS ARE NOT INDICATED, MOUNT INDIVIDUAL UNITS OF WORK AT INDUSTRY RECOGNIZED STANDARD MOUNTING HEIGHTS FOR APPLICATIONS INDICATED. REFER QUESTIONABLE MOUNTING HEIGHT CHOICES TO ARCHITECT AND GENERAL CONTRACTOR FOR FINAL DECISION.

38. PROVIDE AND COMPLETE ALL PRELIMINARY WORK AND TEMPORARY CONSTRUCTION REQUIRED AS INDICATED AND REQUIRED. INSTALL TEMPORARY BARRICADE AS REQUIRED BY LOCAL OFFICIALS IN MANNER STIPULATED BY SAME.

39. INSTALLATION OF ANY COMBUSTIBLE MATERIALS ABOVE FINISHED CEILINGS OR IN ANY OTHER CONCEALED, NON-SPRINKLERED SPACE IS STRICTLY PROHIBITED.

40. IMPOSING ANY STRUCTURAL LOAD, TEMPORARY OR PERMANENT ON ANY PART OF THE EXISTING OR PROPOSED STRUCTURE WITHOUT ARCHITECT AND STRUCTURAL ENGINEER'S APPROVAL IS STRICTLY PROHIBITED.

41. CUTTING ANY HOLE IN EXISTING OR PROPOSED FLOOR SLABS, WALLS, COLUMNS, BEAMS OR ROOF WITHOUT PROPER APPROVAL BY ARCHITECT AND STRUCTURAL ENGINEER AND NOT IN ACCORDANCE WITH INSTRUCTIONS HEREIN AND PROPER CONSTRUCTION PROCEDURES IS STRICTLY PROHIBITED.

42. ATTACHING ANY WORK TO METAL DECK OR HANGING WORK FROM PLUMBING AND SPRINKLER PIPING OR CONDUIT IS STRICTLY PROHIBITED.

SITE WORK

WATER DISTRIBUTION

PART 1 GENERAL
1.1 SUMMARY
A. THIS SECTION INCLUDES WATER-DISTRIBUTION PIPING AND RELATED COMPONENTS OUTSIDE THE BUILDING FOR COMBINED WATER SERVICE AND FIRE-SERVICE.
B. UTILITY-FURNISHED PRODUCTS INCLUDE WATER METERS THAT WILL BE FURNISHED TO THE SITE. C. RELATED SECTIONS:
1. EARTHWORK

1.2 REFERENCES
A. STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
B. MILWAUKEE WATER WORKS RULES AND REGULATIONS GOVERNING WATER SERVICE AND WATER SERVICE PIPING SPECIFICATIONS, LATEST EDITION.

1.3 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

1.4 QUALITY ASSURANCE
A. REGULATORY REQUIREMENTS:
1. COMPLY WITH REQUIREMENTS OF MILWAUKEE WATER WORKS.
2. COMPLY WITH STANDARDS OF AUTHORITIES HAVING JURISDICTION FOR POTABLE-WATER-SERVICE PIPING, INCLUDING MATERIALS, INSTALLATION, TESTING, AND DISINFECTION.
3. COMPLY WITH STANDARDS OF AUTHORITIES HAVING JURISDICTION FOR FIRE-SUPPRESSION WATER- SERVICE PIPING, INCLUDING MATERIALS, HOSE THREADS, INSTALLATION, AND TESTING.

1.5 PROJECT CONDITIONS
A. INTERRUPTION OF EXISTING WATER-DISTRIBUTION SERVICE: DO NOT INTERRUPT SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY WATER-DISTRIBUTION SERVICE ACCORDING TO REQUIREMENTS INDICATED:
1. NOTIFY ARCHITECT AND OWNER NO FEWER THAN FIVE (5) DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF SERVICE.
2. DO NOT PROCEED WITH INTERRUPTION OF WATER-DISTRIBUTION SERVICE WITHOUT ARCHITECT'S AND
OWNER'S WRITTEN PERMISSION.

1.6 COORDINATION
A. COORDINATE CONNECTION TO WATER MAIN WITH MILWAUKEE WATER UTILITY.

PART 2 PRODUCTS

2.1 PIPE AND FITTINGS
A. DUCTILE-IRON PIPE WITH PUSH-ON RUBBER GASKETS JOINTS; CONFORM TO AWWA C151/A21.51-96 AND MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

2.2 CORPORATION VALVES AND CURB VALVES
A. CONFORM TO MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

2.3 WATER METERS
A. WATER METERS WILL BE FURNISHED BY UTILITY COMPANY.

PART 3 EXECUTION

3.1 EARTHWORK
A. REFER TO DIVISION 2 SECTION "EARTHWORK" FOR EXCAVATING, TRENCHING, AND BACKFILLING.

3.2 PIPING INSTALLATION
A. WATER-MAIN CONNECTION: TAP WATER MAIN ACCORDING TO REQUIREMENTS OF WATER UTILITY COMPANY AND OF SIZE AND IN LOCATION INDICATED.
B. INSTALL DUCTILE-IRON, WATER-SERVICE PIPING ACCORDING TO AWWA C600 AND AWWA M41 AND IN ACCORDANCE WITH MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

3.3 JOINT CONSTRUCTION
A. MAKE PIPE JOINTS ACCORDING TO THE FOLLOWING:.
1. DUCTILE-IRON PIPING, GASKETED JOINTS FOR WATER-SERVICE PIPING: AWA C600 AND AWWA M41 AND MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

3.4 VALVE INSTALLATION
A. IN ACCORDANCE WITH MILWAUKEE WATER WORKS WATER SERVICE PIPING SPECIFICATIONS.

3.5 FIELD QUALITY CONTROL
A. ARRANGE INSPECTION AND TESTING OF WATER SERVICE PIPING WITH MILWAUKEE WATER WORKS AND CITY OF MILWAUKEE DEPARTMENT OF NEIGHBORHOOD SERVICES PLUMBING INSPECTION. CONDUCT INSPECTION AND TESTING BEFORE JOINTS ARE COVERED.

3.6 CLEANING/DISINFECTION
A. CLEAN AND DISINFECT WATER SERVICE PIPING IN ACCORDANCE WITH DCOMM CHAPTER 82.40(8)(I) AND
MILWAUKEE WATER WORKS REQUIREMENTS.

SANITARY SEWERAGE

PART 1 GENERAL
1.1 SUMMARY
A. THIS SECTION INCLUDES GRAVITY-FLOW, NONPRESSURE SANITARY SEWERAGE OUTSIDE THE BUILDING, WITH THE FOLLOWING COMPONENTS:
1. CLEANOUTS.
2. PRECAST CONCRETE MANHOLES.
B. RELATED SECTIONS
1. SECTION 31 20 00 EARTHWORK

1.2 REFERENCES
A. STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION
B. WISCONSIN DEPARTMENT OF COMMERCE PLUMBING CODE DCOMM CHAPTERS 82 – 85.

1.3 SUBMITTALS
A. SHOP DRAWINGS: FOR MANHOLES. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND FRAMES AND COVERS.
B. PRODUCT DATA: FORE EACH TYPE OF PRODUCT INDICATED.

PART 2 PRODUCTS

2.1 PIPING MATERIALS
A. PVC SEWER PIPE AND FITTINGS, ASTM D 3034, [SDR 35] , WITH BELL-AND-SPIGOT ENDS FOR GASKETED JOINTS IN ACCORDANCE WITH CHAPTER 8.10.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

2.2 NONPRESSURE-TYPE PIPE COUPLINGS
A. COMPLY WITH ASTM C 1173, ELASTOMERIC, SLEEVE-TYPE, REDUCING OR TRANSITION COUPLING, FOR JOINING UNDERGROUND NONPRESSURE PIPING. INCLUDE ENDS OF SAME SIZES AS PIPING TO BE JOINED AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.

SITE WORK CONTINUED

SANITARY SEWERAGE CONTINUED

B. SLEEVE MATERIALS:
1. FOR PLASTIC PIPES: ASTM F 477, ELASTOMERIC SEAL OR ASTM D 5926, PVC.
2. FOR DISSIMILAR PIPES: ASTM D 5926, PVC OR OTHER MATERIAL COMPATIBLE WITH PIPE MATERIALS BEING JOINED.
C. UNSHIELDED, FLEXIBLE COUPLINGS: ELASTOMERIC SLEEVE WITH STAINLESS-STEEL SHEAR RING AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
1. MANUFACTURERS:
A. DALLAS SPECIALTY & MFG. CO. B. FERNCO INC.
C. LOGAN CLAY PRODUCTS COMPANY (THE).
D. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC. E. NDS INC.
F. PLASTIC ODDITIES, INC.
G. SHIELDED, FLEXIBLE COUPLINGS: ASTM C 1460, ELASTOMERIC OR RUBBER SLEEVE WITH FULL-LENGTH, CORROSION-RESISTANT OUTER SHIELD AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
1. MANUFACTURERS:
A. CASCADE WATERWORKS MFG.
B. DALLAS SPECIALTY & MFG. CO.
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC.
E. RING-TYPE, FLEXIBLE COUPLINGS: ELASTOMERIC COMPRESSION SEAL WITH DIMENSIONS TO FIT INSIDE BELL OF LARGER PIPE AND FOR SPIGOT OF SMALLER PIPE TO FIT INSIDE RING.
1. MANUFACTURERS:
A. FERNCO INC.
B. LOGAN CLAY PRODUCTS COMPANY (THE).
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC.

2.3 CLEANOUTS
A. CLEANOUTS: IN ACCORDANCE WITH DEPARTMENT OF COMMERCE CODE CHAPTER 82.35.

2.4 MANHOLES
A. STANDARD PRECAST CONCRETE MANHOLES: CONFORM TO ASTM C478 AND SECTION 8.39.0 AND FILE NO. 12 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
B. MANHOLE STEPS: CONFORM TO SECTION 8.40.0 AND FILE NO. 15 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

PART 3 EXECUTION
3.1 PIPING APPLICATIONS
A. PIPE COUPLINGS AND FITTINGS WITH PRESSURE RATINGS AT LEAST EQUAL TO PIPING RATING MAY BE USED IN APPLICATIONS BELOW, UNLESS OTHERWISE INDICATED.
1. USE NONPRESSURE-TYPE FLEXIBLE COUPLINGS WHERE REQUIRED TO JOIN GRAVITY-FLOW, NONPRESSURE SEWER PIPING, UNLESS OTHERWISE INDICATED.
A. UNSHIELDED FLEXIBLE COUPLINGS FOR SAME OR MINOR DIFFERENCE OD PIPES.
B. UNSHIELDED, INCREASER/REDUCER-PATTERN, FLEXIBLE COUPLINGS FOR PIPES WITH DIFFERENT OD.
C. RING-TYPE FLEXIBLE COUPLINGS FOR PIPING OF DIFFERENT SIZES WHERE ANNULAR SPACE BETWEEN SMALLER PIPING'S OD AND LARGER PIPING'S ID PERMITS INSTALLATION.

3.2 PIPING INSTALLATION
A. GENERAL LOCATIONS AND ARRANGEMENTS: DRAWING PLANS AND DETAILS INDICATE GENERAL LOCATION AND ARRANGEMENT OF UNDERGROUND SANITARY SEWERAGE PIPING. LOCATION AND ARRANGEMENT OF PIPING LAYOUT TAKE DESIGN CONSIDERATIONS INTO ACCOUNT. INSTALL PIPING AS INDICATED, TO EXTENT PRACTICAL. WHERE SPECIFIC INSTALLATION IS NOT INDICATED, FOLLOW PIPING MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. INSTALL IN ACCORDANCE WITH CHAPTER 3.2.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER
CONSTRUCTION IN WISCONSIN, LATEST EDITION.
C. INSTALL PROPER SIZE INCREASERS, REDUCERS, AND COUPLINGS WHERE DIFFERENT SIZES OR MATERIALS OF PIPES AND FITTINGS ARE CONNECTED. REDUCING SIZE OF PIPING IN DIRECTION OF FLOW IS PROHIBITED.
D. USE CLASS B COMPACTED TRENCH SECTION IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
E. CLEAR INTERIOR OF PIPING AND MANHOLES OF DIRT AND SUPERFLUOUS MATERIAL AS WORK PROGRESSES.
MAINTAIN SWAB OR DRAG IN PIPING, AND PULL PAST EACH JOINT AS IT IS COMPLETED. PLACE PLUG IN END OF INCOMPLETE PIPING AT END OF DAY AND WHEN WORK STOPS.
F. INSTALL TRACER WIRE OVER NON-METALLIC PIPING IN ACCORDANCE WITH DCOMM CH. 82.30(11)(H).

3.3 PIPE JOINT CONSTRUCTION
A. FOLLOW PIPING MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. JOIN GRAVITY-FLOW, NONPRESSURE, DRAINAGE PIPING ACCORDING TO THE FOLLOWING:
1. JOIN PVC SEWER PIPING ACCORDING TO ASTM D 2321 AND ASTM D 3034 FOR ELASTOMERIC- GASKET JOINTS.
2. JOIN DISSIMILAR PIPE MATERIALS WITH NONPRESSURE-TYPE, FLEXIBLE COUPLINGS.

3.4 MANHOLE INSTALLATION
A. SET MANHOLE RIMS TO ELEVATIONS INDICATED.
B. INSTALL IN ACCORDANCE WITH SECTION 3.5.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

3.5 CLEANOUT INSTALLATION
A. INSTALL CLEANOUTS AND RISER EXTENSIONS FROM SEWER PIPES TO CLEANOUTS AT GRADE. INSTALL PIPING SO CLEANOUTS OPEN IN DIRECTION OF FLOW IN SEWER PIPE.
1. USE LIGHT-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN EARTH OR UNPAVED FOOT-TRAFFIC AREAS.
2. USE MEDIUM-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN PAVED FOOT-TRAFFIC AREAS.
3. USE HEAVY-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN VEHICLE-TRAFFIC SERVICE AREAS.
4. USE EXTRA-HEAVY-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN [ROADS] <INSERT OTHER>.
B. SET CLEANOUT FRAMES AND COVERS IN EARTH IN CAST-IN-PLACE-CONCRETE BLOCK, 18 BY 18 BY 12 INCHES DEEP. SET WITH TOPS 1 INCH ABOVE SURROUNDING GRADE.
C. SET CLEANOUT FRAMES AND COVERS IN PAVEMENT WITH TOPS FLUSH WITH PAVEMENT SURFACE.

3.6 FIELD QUALITY CONTROL
A. INSPECT INTERIOR OF PIPING TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED.
INSPECT AFTER APPROXIMATELY 24 INCHES OF BACKFILL IS IN PLACE, AND AGAIN AT COMPLETION OF PROJECT.
1. DEFECTS REQUIRING CORRECTION INCLUDE THE FOLLOWING:
A. ALIGNMENT: LESS THAN FULL DIAMETER OF INSIDE OF PIPE IS VISIBLE BETWEEN STRUCTURES.
B. DEFLECTION: FLEXIBLE PIPING WITH DEFLECTION THAT PREVENTS PASSAGE OF BALL OR CYLINDER OF SIZE NOT LESS THAN 92.5 PERCENT OF PIPING DIAMETER.
C. CRUSHED, BROKEN, CRACKED, OR OTHERWISE DAMAGED PIPING.
D. INFILTRATION: WATER LEAKAGE INTO PIPING.
E. EXFILTRATION: WATER LEAKAGE FROM OR AROUND PIPING.
1. REPLACE DEFECTIVE PIPING USING NEW MATERIALS, AND REPEAT INSPECTIONS UNTIL DEFECTS ARE WITHIN ALLOWANCES SPECIFIED.
2. REINSPECT AND REPEAT PROCEDURE UNTIL RESULTS ARE SATISFACTORY.
F. TEST NEW SANITARY BUILDING SEWER IN ACCORDANCE WITH SECTION 5.4.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
1. DO NOT ENCLOSE, COVER, OR PUT INTO SERVICE BEFORE INSPECTION AND APPROVAL.
2. SCHEDULE TESTS AND INSPECTIONS BY AUTHORITIES HAVING JURISDICTION WITH AT LEAST 24 HOURS' ADVANCE NOTICE.
3. SUBMIT SEPARATE REPORT FOR EACH TEST.
4. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.
5. REPLACE LEAKING PIPING USING NEW MATERIALS, AND REPEAT TESTING UNTIL LEAKAGE IS WITHIN ALLOWANCES SPECIFIED.

SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. REMOVING EXISTING TREES, SHRUBS, GROUNDCOVERS, PLANTS, AND GRASS.
2. CLEARING AND GRUBBING.
3. STRIPPING AND STOCKPILING TOPSOIL.
4. REMOVING ABOVE- AND BELOW-GRADE SITE IMPROVEMENTS.
5. DISCONNECTING AND CAPPING OR SEALING SITE UTILITIES.
6. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES.

1.2 MATERIAL OWNERSHIP
A. EXCEPT FOR STRIPPED TOPSOIL OR OTHER MATERIALS INDICATED TO REMAIN OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM PROJECT SITE.

1.3 PROJECT CONDITIONS
A. TRAFFIC: MINIMIZE INTERFERENCE WITH ADJOINING ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES DURING SITE-CLEARING OPERATIONS.
1. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER ADJACENT OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM OWNER AND AUTHORITIES HAVING JURISDICTION.
2. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY AUTHORITIES HAVING JURISDICTION.
B. SALVABLE IMPROVEMENTS: CAREFULLY REMOVE ITEMS INDICATED TO BE SALVAGED AND STORE ON OWNER'S PREMISES WHERE INDICATED.
C. UTILITY LOCATOR SERVICE: NOTIFY UTILITY LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE SITE CLEARING.
D. DO NOT COMMENCE SITE CLEARING OPERATIONS UNTIL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE.

PART 2 PRODUCTS

2.1 SOIL MATERIALS
A. SATISFACTORY SOIL MATERIALS: REQUIREMENTS FOR SATISFACTORY SOIL MATERIALS ARE SPECIFIED IN SECTION "EARTHWORK."
1. OBTAIN APPROVED BORROW SOIL MATERIALS OFF-SITE WHEN SATISFACTORY SOIL MATERIALS ARE NOT AVAILABLE ON-SITE.

PART 3 EXECUTION

3.1 PREPARATION
A. PROTECT AND MAINTAIN BENCHMARKS AND SURVEY CONTROL POINTS FROM DISTURBANCE DURING CONSTRUCTION.
B. LOCATE AND CLEARLY FLAG TREES AND VEGETATION TO REMAIN OR TO BE RELOCATED.
C. PROTECT EXISTING SITE IMPROVEMENTS TO REMAIN FROM DAMAGE DURING CONSTRUCTION.
1. RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO OWNER.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL
A. CONTRACTOR SHALL OBTAIN EROSION CONTROL PERMIT FROM CITY OF MILWAUKEE PRIOR TO ANY LAND DISTURBANCE.
B. PROVIDE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT SOIL EROSION AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS, ACCORDING TO SITE EROSION CONTROL PLAN, AND CITY OF MILWAUKEE EROSION CONTROL PERMIT.
C. INSPECT, REPAIR, AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
D. REMOVE EROSION AND SEDIMENTATION CONTROLS AND RESTORE AND STABILIZE AREAS DISTURBED DURING REMOVAL.

SITE WORK CONTINUED

SITE CLEARING CONTINUED

3.3 UTILITIES
A. LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF UTILITIES INDICATED TO BE REMOVED.
1. ARRANGE WITH UTILITY COMPANIES TO SHUT OFF INDICATED UTILITIES.
B. EXISTING UTILITIES: DO NOT INTERRUPT UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES ACCORDING TO REQUIREMENTS INDICATED:
1. NOTIFY ARCHITECT NOT LESS THAN TWO DAYS IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS.
2. DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT ARCHITECT'S WRITTEN PERMISSION.
C. REMOVAL OF UNDERGROUND UTILITIES IS INCLUDED IN DIVISION 2 SECTIONS COVERING SITE UTILITIES.

3.4 CLEARING AND GRUBBING
A. FILL DEPRESSIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SATISFACTORY SOIL MATERIAL UNLESS FURTHER EXCAVATION OR EARTHWORK IS INDICATED.
1. PLACE FILL MATERIAL IN HORIZONTAL LAYERS NOT EXCEEDING A LOOSE DEPTH OF 8 INCHES (200 MM), AND COMPACT EACH LAYER TO A DENSITY EQUAL TO ADJACENT ORIGINAL GROUND.

3.5 TOPSOIL STRIPPING
A. REMOVE SOD AND GRASS BEFORE STRIPPING TOPSOIL.
B. STRIP TOPSOIL TO WHATEVER DEPTHS ARE ENCOUNTERED IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER WASTE MATERIALS.
C. STOCKPILE TOPSOIL MATERIALS AWAY FROM EDGE OF EXCAVATIONS WITHOUT INTERMIXING WITH SUBSOIL. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.

3.6 SITE IMPROVEMENTS
A. REMOVE EXISTING ABOVE- AND BELOW-GRADE IMPROVEMENTS AS INDICATED AND AS NECESSARY TO FACILITATE NEW CONSTRUCTION.

3.7 DISPOSAL
A. DISPOSAL: REMOVE SURPLUS SOIL MATERIAL, UNSUITABLE TOPSOIL, OBSTRUCTIONS, DEMOLISHED MATERIALS, AND WASTE MATERIALS INCLUDING TRASH AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.
1. SEPARATE RECYCLABLE MATERIALS PRODUCED DURING SITE CLEARING FROM OTHER NONRECYCLABLE MATERIALS. STORE OR STOCKPILE WITHOUT INTERMIXING WITH OTHER MATERIALS AND TRANSPORT THEM TO RECYCLING FACILITIES.

EARTHWORK

PART 1 GENERAL
1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. PREPARING SUBGRADES FOR SLABS-ON-GRADE, WALKS, PAVEMENTS, LAWNS AND GRASSES AND EXTERIOR PLANTS.
2. EXCAVATING AND BACKFILLING FOR BUILDINGS AND STRUCTURES.
3. DRAINAGE COURSE FOR SLABS-ON-GRADE.
4. BASE COURSE FOR CONCRETE WALKS, PAVEMENTS.
5. BASE COURSE FOR ASPHALT PAVING.
6. EXCAVATING AND BACKFILLING FOR UTILITY TRENCHES.
B. RELATED SECTIONS INCLUDE THE FOLLOWING:
1. DIVISION 1 SECTION "TEMPORARY FACILITIES AND CONTROLS" FOR TEMPORARY CONTROLS, UTILITIES, AND SUPPORT FACILITIES.
2. SECTION "SITE CLEARING" FOR TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES, SITE STRIPPING, GRUBBING, STRIPPING AND STOCKPILING TOPSOIL, AND REMOVAL OF ABOVE- AND BELOW- GRADE IMPROVEMENTS AND UTILITIES.

1.3 REFERENCES
A. STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION
B. STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
C. PRELOADING COMPLETION REPORT, NORTH REGION OF BLOCK 4 LOT 1 MENOMONEE VALLEY INDUSTRIAL PARK; GESTRA ENGINEERING; JUNE 30, 2011
D. GEOTECHNICAL RECOMMENDATIONS REVIEW, PROPOSED INDUSTRIAL DEVELOPMENT, NORTHERN HALF BLOCK 4 LOT 1 (MVBP); GESTRA ENGINEERING; JULY 22, 2013

1.4 DEFINITIONS
A. BACKFILL: SOIL MATERIAL USED TO FILL AN EXCAVATION.
B. BASE COURSE: COURSE PLACED BETWEEN THE PREPARED SUBGRADE AND HOT-MIX ASPHALT PAVING OR CEMENT CONCRETE PAVEMENT, SIDEWALK OR CURB AND GUTTER.
C. BEDDING COURSE: COURSE PLACED OVER THE EXCAVATED SUBGRADE IN A TRENCH BEFORE LAYING PIPE.
D. BORROW SOIL: SATISFACTORY SOIL IMPORTED FROM OFF-SITE FOR USE AS FILL OR BACKFILL.
E. DRAINAGE COURSE: COURSE SUPPORTING THE SLAB-ON-GRADE THAT ALSO MINIMIZES UPWARD CAPILLARY FLOW OF PORE WATER.
F. EXCAVATION: REMOVAL OF MATERIAL ENCOUNTERED ABOVE SUBGRADE ELEVATIONS AND TO LINES AND DIMENSIONS INDICATED.
1. AUTHORIZED ADDITIONAL EXCAVATION: EXCAVATION BELOW SUBGRADE ELEVATIONS OR BEYOND INDICATED LINES AND DIMENSIONS AS DIRECTED BY ARCHITECT. AUTHORIZED ADDITIONAL EXCAVATION AND REPLACEMENT MATERIAL WILL BE PAID FOR ACCORDING TO CONTRACT PROVISIONS FOR CHANGES IN THE WORK.
2. UNAUTHORIZED EXCAVATION: EXCAVATION BELOW SUBGRADE ELEVATIONS OR BEYOND INDICATED LINES AND DIMENSIONS WITHOUT DIRECTION BY ARCHITECT. UNAUTHORIZED EXCAVATION, AS WELL AS REMEDIAL WORK DIRECTED BY ARCHITECT, SHALL BE WITHOUT ADDITIONAL COMPENSATION.
G. FILL: SOIL MATERIALS USED TO RAISE EXISTING GRADES.
H. PIPE COVER MATERIAL: MATERIAL WHICH IS PLACED IN A TRENCH AROUND AND OVER SEWER OR WATER PIPE ABOVE THE BEDDING COURSE.
I. STRUCTURES: BUILDINGS, FOOTINGS, FOUNDATIONS, RETAINING WALLS, SLABS, TANKS, CURBS, MECHANICAL AND ELECTRICAL APPURTENANCES, OR OTHER MAN-MADE STATIONARY FEATURES CONSTRUCTED ABOVE OR BELOW THE GROUND SURFACE.
J. SUBGRADE: SURFACE OR ELEVATION REMAINING AFTER COMPLETING EXCAVATION, OR TOP SURFACE OF A FILL OR BACKFILL IMMEDIATELY BELOW BASE COURSE, DRAINAGE FILL, OR TOPSOIL MATERIALS.
K. TRENCH BACKFILL: MATERIAL PLACED IN A TRENCH AVOVE THE PIPE COVER MATERIAL FOR SEWER OR WATER PIPE.
L. UTILITIES: ON-SITE UNDERGROUND PIPES, CONDUITS, DUCTS, AND CABLES, AS WELL AS UNDERGROUND SERVICES WITHIN BUILDINGS.

1.5 SUBMITTALS
A. MATERIAL TEST REPORTS: FROM A QUALIFIED TESTING AGENCY INDICATING AND INTERPRETING TEST RESULTS FOR COMPLIANCE OF THE FOLLOWING WITH REQUIREMENTS INDICATED:
1. CLASSIFICATION ACCORDING TO ASTM D 2487 OF EACH ON-SITE AND BORROW SOIL MATERIAL PROPOSED FOR FILL AND BACKFILL.
2. LABORATORY COMPACTION CURVE ACCORDING TO ASTM D 1557 FOR EACH ON-SITE AND BORROW SOIL MATERIAL PROPOSED FOR FILL AND BACKFILL.
B. PREEXCAVATION PHOTOGRAPHS OR VIDEOTAPE: SHOW EXISTING CONDITIONS OF ADJOINING CONSTRUCTION AND SITE IMPROVEMENTS, INCLUDING FINISH SURFACES, THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY EARTHWORK OPERATIONS. SUBMIT BEFORE EARTHWORK BEGINS.

1.6 QUALITY ASSURANCE
A. GEOTECHNICAL TESTING AGENCY QUALIFICATIONS: AN INDEPENDENT TESTING AGENCY QUALIFIED ACCORDING TO ASTM E 329 TO CONDUCT SOIL MATERIALS AND ROCK-DEFINITION TESTING, AS DOCUMENTED ACCORDING TO ASTM D 3740 AND ASTM E 548.

1.7 PROJECT CONDITIONS
A. EXISTING UTILITIES: DO NOT INTERRUPT UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED IN WRITING BY ARCHITECT AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES ACCORDING TO REQUIREMENTS INDICATED:
1. NOTIFY ARCHITECT NOT LESS THAN TWO DAYS IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS.
2. DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT ARCHITECT'S WRITTEN PERMISSION.
3. CONTACT UTILITY-LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE EXCAVATING.
B. DEMOLISH AND COMPLETELY REMOVE FROM SITE EXISTING UNDERGROUND UTILITIES INDICATED TO BE REMOVED. COORDINATE WITH UTILITY COMPANIES TO SHUT OFF SERVICES IF LINES ARE ACTIVE.

PART 2 PRODUCTS

2.1 SOIL MATERIALS
A. GENERAL: PROVIDE BORROW SOIL MATERIALS WHEN SUFFICIENT SATISFACTORY SOIL MATERIALS ARE NOT AVAILABLE FROM EXCAVATIONS.
B. SATISFACTORY SOILS: ASTM D 2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, AND SM OR A COMBINATION OF THESE GROUPS; FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER OR ANY SOIL GROUP OR COMBINATION OF GROUPS APPROVED OF BY THE PROJECT GEOTECHNICAL ENGINEER
C. UNSATISFACTORY SOILS: SOIL CLASSIFICATION GROUPS GC, SC, CL, ML, OL, CH, MH, OH, AND PT
ACCORDING TO ASTM D 2487 OR A COMBINATION OF THESE GROUPS.
1. UNSATISFACTORY SOILS ALSO INCLUDE SATISFACTORY SOILS NOT MAINTAINED WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT AT TIME OF COMPACTION.
D. BASE COURSE: SHALL BE 1-1/4" DENSE GRADED BASE COURSE CONFORMING TO SECTION 305 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.
E. ENGINEERED FILL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 90 PERCENT PASSING A 1-1/2-INCH (37.5-MM) SIEVE AND NOT MORE THAN 12 PERCENT PASSING A NO. 200 SIEVE.
F. BEDDING COURSE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND CONFORMING TO THE REQUIREMENTS OF SECTION 8.43.2 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
G. DRAINAGE COURSE: NARROWLY GRADED MIXTURE OF WASHED,CRUSHED STONE, OR CRUSHED OR UNCRUSHED GRAVEL; ASTM D 448; COARSE-AGGREGATE GRADING SIZE 57; WITH 100 PERCENT PASSING A 1-1/2-INCH (37.5-MM) SIEVE AND 0 TO 5 PERCENT PASSING A NO. 8 SIEVE.
H. PIPE COVER MATERIAL: CONFORM TO SECTION 8.43.3 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
I. TRENCH BACKFILL: CONFORM TO SECTIONS 8.43.4 AND 8.43.5 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. TRENCH BACKFILL BENEATH AND WITHIN FIVE FEET OF PAVEMENT AREAS SHALL BE GRANULAR BACKFILL, TRENCH BACKFILL BENEATH LANDSCAPE AREAS MAY BE SATISFACTORY SOIL MATERIAL.

SITE WORK CONTINUED

EARTHWORK CONTINUED

PART 3 EXECUTION

3.1 PREPARATION
A. SITE PREPARATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE REFERENCED PRELOADING COMPLETION REPORT AND GEOTECHNICAL RECOMMENDATIONS REVIEW OR AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER IN THE FIELD.
B. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY EARTHWORK OPERATIONS.
C. PREPARATION OF SUBGRADE FOR EARTHWORK OPERATIONS INCLUDING REMOVAL OF VEGETATION, TOPSOIL, DEBRIS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE IS SPECIFIED IN DIVISION 2 SECTION "SITE CLEARING."
D. PROTECT AND MAINTAIN EROSION AND SEDIMENTATION CONTROLS, WHICH ARE SPECIFIED IN DIVISION 2 SECTION "SITE CLEARING," DURING EARTHWORK OPERATIONS.
E. PROVIDE PROTECTIVE INSULATING MATERIALS TO PROTECT SUBGRADES AND FOUNDATION SOILS AGAINST FREEZING TEMPERATURES OR FROST.

3.2 DEWATERING
A. PREVENT SURFACE WATER AND GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES, AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA.
B. PROTECT SUBGRADES FROM SOFTENING, UNDERMINING, WASHOUT, AND DAMAGE BY RAIN OR WATER ACCUMULATION.
1. REROUTE SURFACE WATER RUNOFF AWAY FROM EXCAVATED AREAS. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. DO NOT USE EXCAVATED TRENCHES AS TEMPORARY DRAINAGE DITCHES.
2. INSTALL A DEWATERING SYSTEM TO KEEP SUBGRADES DRY AND CONVEY GROUND WATER AWAY FROM EXCAVATIONS. MAINTAIN UNTIL DEWATERING IS NO LONGER REQUIRED.

3.3 EXPLOSIVES
A. EXPLOSIVES: DO NOT USE EXPLOSIVES.

3.4 EXCAVATION, GENERAL
A. UNCLASSIFIED EXCAVATION: EXCAVATE TO SUBGRADE ELEVATIONS REGARDLESS OF THE CHARACTER OF SURFACE AND SUBSURFACE CONDITIONS ENCOUNTERED. UNCLASSIFIED EXCAVATED MATERIALS MAY INCLUDE ROCK, SOIL MATERIALS, AND OBSTRUCTIONS. NO CHANGES IN THE CONTRACT SUM OR THE CONTRACT TIME WILL BE AUTHORIZED FOR ROCK EXCAVATION OR REMOVAL OF OBSTRUCTIONS.
1. IF EXCAVATED MATERIALS INTENDED FOR FILL AND BACKFILL INCLUDE UNSATISFACTORY SOIL MATERIALS AND ROCK, REPLACE WITH SATISFACTORY SOIL MATERIALS.
B. SHORING, SHEETING AND BRACING: SHORE, BRACE OR SLOPE BANKS OF EXCAVATION TO PROTECT WORKMEN, BANKS, ADJACENT PAVING, STRUCTURES, AND UTILITIES TO MEET OSHA REQUIREMENTS. DESIGN OF TEMPORARY SUPPORT OF EXCAVATION IS THE RESPONSIBILITY OF THE CONTRACTOR.

3.5 EXCAVATION FOR STRUCTURES
A. EXCAVATE TO INDICATED ELEVATIONS AND DIMENSIONS WITHIN A TOLERANCE OF PLUS OR MINUS 1 INCH. IF APPLICABLE, EXTEND EXCAVATIONS A SUFFICIENT DISTANCE FROM STRUCTURES FOR PLACING AND REMOVING CONCRETE FORMWORK, FOR INSTALLING SERVICES AND OTHER CONSTRUCTION, AND FOR INSPECTIONS.
1. EXCAVATIONS FOR FOOTINGS AND FOUNDATIONS: DO NOT DISTURB BOTTOM OF EXCAVATION.
EXCAVATE BY HAND TO FINAL GRADE JUST BEFORE PLACING CONCRETE REINFORCEMENT. TRIM BOTTOMS TO REQUIRED LINES AND GRADES TO LEAVE SOLID BASE TO RECEIVE OTHER WORK.
2. PILE FOUNDATIONS: STOP EXCAVATIONS 6 TO 12 INCHES ABOVE BOTTOM OF PILE CAP BEFORE PILES ARE PLACED. AFTER PILES HAVE BEEN DRIVEN, REMOVE LOOSE AND DISPLACED MATERIAL. EXCAVATE TO FINAL GRADE, LEAVING SOLID BASE TO RECEIVE CONCRETE PILE CAPS.
3. EXCAVATION FOR UNDERGROUND TANKS, BASINS, AND MECHANICAL OR ELECTRICAL UTILITY STRUCTURES: EXCAVATE TO ELEVATIONS AND DIMENSIONS INDICATED WITHIN A TOLERANCE OF PLUS OR MINUS 1 INCH. DO NOT DISTURB BOTTOM OF EXCAVATIONS INTENDED AS BEARING SURFACES.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS
A. EXCAVATE SURFACES UNDER WALKS AND PAVEMENTS TO INDICATED LINES, CROSS SECTIONS, ELEVATIONS, AND SUBGRADES.

3.7 EXCAVATION FOR UTILITY TRENCHES
A. EXCAVATE TRENCHES TO INDICATED GRADIENTS, LINES, DEPTHS, AND ELEVATIONS.
B. TRENCH BOTTOMS: EXCAVATE TRENCHES DEEPER THAN BOTTOM OF PIPE ELEVATION TO ALLOW FOR BEDDING COURSE.
C. CONFORM TO CLASS B COMPACTED SECTION IN ACCORDANCE WITH FILE NO. 4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

3.8 SUBGRADE INSPECTION
A. PROOF-ROLL SUBGRADE BELOW THE BUILDING SLABS AND PAVEMENTS WITH HEAVY PNEUMATIC-TIRED EQUIPMENT TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. DO NOT PROOF-ROLL WET OR SATURATED SUBGRADES. PROOF ROLL IN PRESENCE OF PROJECT GEOTECHNICAL ENGINEER.
1. COMPLETELY PROOF-ROLL SUBGRADE IN ONE DIRECTION, REPEATING PROOF-ROLLING IN DIRECTION PERPENDICULAR TO FIRST DIRECTION. LIMIT VEHICLE SPEED TO 5 MPH.
2. PROOF-ROLL WITH A 20-TON TRI-AXIAL DUMP TRUCK.
3. EXCAVATE SOFT SPOTS, UNSATISFACTORY SOILS, AND AREAS OF EXCESSIVE PUMPING OR RUTTING, AS DETERMINED BY ENGINEER, AND REPLACE WITH COMPACTED BACKFILL OR FILL AS DIRECTED.
B. AUTHORIZED ADDITIONAL EXCAVATION AND REPLACEMENT MATERIAL WILL BE PAID FOR ACCORDING TO CONTRACT PROVISIONS FOR CHANGES IN THE WORK.
C. RECONSTRUCT SUBGRADES DAMAGED BY FREEZING TEMPERATURES, FROST, RAIN, ACCUMULATED WATER, OR CONSTRUCTION ACTIVITIES, AS DIRECTED BY ARCHITECT, WITHOUT ADDITIONAL COMPENSATION.

3.9 UNAUTHORIZED EXCAVATION
A. FILL UNAUTHORIZED EXCAVATION UNDER FOUNDATIONS OR WALL FOOTINGS BY EXTENDING BOTTOM ELEVATION OF CONCRETE FOUNDATION OR FOOTING TO EXCAVATION BOTTOM, WITHOUT ALTERING TOP ELEVATION. LEAN CONCRETE FILL, WITH 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI, MAY BE USED WHEN APPROVED BY ARCHITECT.
1. FILL UNAUTHORIZED EXCAVATIONS UNDER OTHER CONSTRUCTION OR UTILITY PIPE AS DIRECTED BY .

3.10 STORAGE OF SOIL MATERIALS
A. STOCKPILE BORROW SOIL MATERIALS AND EXCAVATED SATISFACTORY SOIL MATERIALS WITHOUT INTERMIXING. PLACE, GRADE, AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.
1. STOCKPILE SOIL MATERIALS AWAY FROM EDGE OF EXCAVATIONS. DO NOT STORE WITHIN DRIP LINE OF REMAINING TREES.

3.11 BACKFILL
A. PLACE AND COMPACT BACKFILL IN EXCAVATIONS PROMPTLY, BUT NOT BEFORE COMPLETING THE FOLLOWING:
1. CONSTRUCTION BELOW FINISH GRADE INCLUDING, WHERE APPLICABLE, SUBDRAINAGE, DAMPPROOFING, WATERPROOFING, AND PERIMETER INSULATION.
2. SURVEYING LOCATIONS OF UNDERGROUND UTILITIES FOR RECORD DOCUMENTS.
3. TESTING AND INSPECTING UNDERGROUND UTILITIES.
4. REMOVING CONCRETE FORMWORK.
5. REMOVING TRASH AND DEBRIS.
6. REMOVING TEMPORARY SHORING AND BRACING, AND SHEETING.
7. INSTALLING PERMANENT OR TEMPORARY HORIZONTAL BRACING ON HORIZONTALLY SUPPORTED WALLS.
B. PLACE BACKFILL ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.

3.12 UTILITY TRENCH BACKFILL
A. PLACE BACKFILL ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.
B. PLACE AND COMPACT BEDDING COURSE ON TRENCH BOTTOMS AND WHERE INDICATED. SHAPE BEDDING COURSE TO PROVIDE CONTINUOUS SUPPORT FOR BELLS, JOINTS, AND BARRELS OF PIPES AND FOR JOINTS, FITTINGS, AND BODIES OF CONDUITS.
C. CONFORM TO CLASS B COMPACTED TRENCH SECTION IN ACCORDANCE WITH FILE NO. 4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
D. BEDDING PLACEMENT: CONFORM TO SECTION 3.2.6 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
E. BACKFILL PLACEMENT: CONFORM TO SECTION 2.6.0 OF THE STANDARD SPECIFICATIONS FOR SEWERE AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION EXCEPT THAT FLOODING OF GRANULAR TRENCH BACKFILL SHALL NOT BE ALLOWED FOR BACKFILL CONSOLIDATION.
F. INSTALL TRACER WIRE ABOVE NON-METALLIC PIPING IN ACCORDANCE WITH WISCONSIN DEPARTMENT OF COMMERCE CODE SECTION 82.30(11)(H).

3.13 SOIL FILL
A. PLOW, SCARIFY, BENCH, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING MATERIAL.
B. PLACE AND COMPACT FILL MATERIAL IN LAYERS TO REQUIRED ELEVATIONS AS FOLLOWS:
1. UNDER GRASS AND PLANTED AREAS, USE SATISFACTORY SOIL MATERIAL.
2. UNDER WALKS AND PAVEMENTS, USE SATISFACTORY SOIL MATERIAL.
3. UNDER STEPS AND RAMPS, USE ENGINEERED FILL.
4. UNDER BUILDING SLABS, USE ENGINEERED FILL.
5. UNDER FOOTINGS AND FOUNDATIONS, USE ENGINEERED FILL.
C. PLACE SOIL FILL ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.

3.14 SOIL MOISTURE CONTROL
A. UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL SOIL LAYER BEFORE COMPACTION TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT.
1. DO NOT PLACE BACKFILL OR FILL SOIL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE.
2. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY OTHERWISE SATISFACTORY SOIL MATERIAL THAT EXCEEDS OPTIMUM MOISTURE CONTENT BY 2 PERCENT AND IS TOO WET TO COMPACT TO SPECIFIED DRY UNIT WEIGHT.

3.15 COMPACTION OF SOIL BACKFILLS AND FILLS
A. PLACE BACKFILL AND FILL SOIL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
B. PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE.
C. COMPACT SOIL MATERIALS TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 1557:
1. UNDER STRUCTURES, BUILDING SLABS, AND STEPS, SCARIFY AND RECOMPACT TOP 12 INCHES OF EXISTING SUBGRADE AND EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 92 PERCENT.
2. UNDER PAVEMENT AND WALKWAYS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL WITHIN THREE FEET OF THE BASE COURSE ELEVATION AT 92 PERCENT.
3. UNDER LAWN OR UNPAVED AREAS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 85 PERCENT.

SITE WORK CONTINUED

EARTHWORK CONTINUED

3.16 GRADING
A. GENERAL: UNIFORMLY GRADE AREAS TO A SMOOTH SURFACE, FREE OF IRREGULAR SURFACE CHANGES. COMPLY WITH COMPACTION REQUIREMENTS AND GRADE TO CROSS SECTIONS, LINES, AND ELEVATIONS INDICATED.
1. PROVIDE A SMOOTH TRANSITION BETWEEN ADJACENT EXISTING GRADES AND NEW GRADES.
2. CUT OUT SOFT SPOTS, FILL LOW SPOTS, AND TRIM HIGH SPOTS TO COMPLY WITH REQUIRED SURFACE TOLERANCES.
B. SITE GRADING: SLOPE GRADES TO DIRECT WATER AWAY FROM BUILDINGS AND TO PREVENT PONDING. FINISH SUBGRADES TO REQUIRED ELEVATIONS WITHIN THE FOLLOWING TOLERANCES:
1. LAWN OR UNPAVED AREAS: PLUS OR MINUS 1 INCH.
2. WALKS: PLUS OR MINUS 1/2 INCH .
3. PAVEMENTS: PLUS OR MINUS 1/2 INCH.
C. GRADING INSIDE BUILDING LINES: FINISH SUBGRADE TO A TOLERANCE OF 1/2 INCH WHEN TESTED WITH A 10- FOOT STRAIGHTEDGE.

3.17 SUBBASE AND BASE COURSES
A. PLACE BASE COURSE ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.
B. ON PREPARED SUBGRADE, PLACE BASE COURSE UNDER PAVEMENTS AND WALKS AS FOLLOWS:
1. SHAPE BASE COURSE TO REQUIRED CROWN ELEVATIONS AND CROSS-SLOPE GRADES.
2. COMPACT BASE COURSE AT OPTIMUM MOISTURE CONTENT TO REQUIRED GRADES, LINES, CROSS SECTIONS, AND THICKNESS TO CONFORM TO STANDARD COMPACTION REQUIREMENTS CONTAINED IN SECTION 301.3.4.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

3.18 DRAINAGE COURSE
A. PLACE DRAINAGE COURSE ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.
B. ON PREPARED SUBGRADE, PLACE AND COMPACT DRAINAGE COURSE UNDER CAST-IN-PLACE CONCRETE SLABS- ON-GRADE AS FOLLOWS:
1. INSTALL SUBGRADE GEOTEXTILE ON PREPARED SUBGRADE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, OVERLAPPING SIDES AND ENDS.
2. PLACE DRAINAGE COURSE 6 INCHES OR LESS IN COMPACTED THICKNESS IN A SINGLE LAYER.
3. PLACE DRAINAGE COURSE THAT EXCEEDS 6 INCHES IN COMPACTED THICKNESS IN LAYERS OF EQUAL THICKNESS, WITH NO COMPACTED LAYER MORE THAN 6 INCHES THICK OR LESS THAN 3 INCHES THICK.
4. COMPACT EACH LAYER OF DRAINAGE COURSE TO REQUIRED CROSS SECTIONS AND THICKNESSES TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698.

3.19 FIELD QUALITY CONTROL
A. TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT GEOTECHNICAL ENGINEERING TESTING AGENCY TO PERFORM FIELD QUALITY-CONTROL TESTING.
B. ALLOW TESTING AGENCY TO INSPECT AND TEST SUBGRADES AND EACH FILL OR BACKFILL LAYER. PROCEED WITH SUBSEQUENT EARTHWORK ONLY AFTER TEST RESULTS FOR PREVIOUSLY COMPLETED WORK COMPLY WITH REQUIREMENTS.
C. FOOTING SUBGRADE: AT FOOTING SUBGRADES, AT LEAST ONE TEST OF EACH SOIL STRATUM WILL BE PERFORMED TO VERIFY DESIGN BEARING CAPACITIES. SUBSEQUENT VERIFICATION AND APPROVAL OF OTHER FOOTING SUBGRADES MAY BE BASED ON A VISUAL COMPARISON OF SUBGRADE WITH TESTED SUBGRADE WHEN APPROVED BY ARCHITECT.
D. TESTING AGENCY SHALL OBSERVE PROOF ROLLING OF BUILDING AND PAVEMENT SUBGRADES.
E. TESTING AGENCY WILL TEST COMPACTION OF SOILS IN PLACE ACCORDING TO ASTM D 1556, ASTM D 2167, ASTM D 2922, AND ASTM D 2937, AS APPLICABLE. TESTS WILL BE PERFORMED AT THE FOLLOWING LOCATIONS AND FREQUENCIES:
1. BUILDING SLAB AREAS: AT SUBGRADE AND AT EACH COMPACTED FILL AND BACKFILL LAYER, AT LEAST 1 TEST FOR EVERY 2500 SQ. FT. OR LESS OF BUILDING SLAB, BUT IN NO CASE FEWER THAN 3 TESTS.
2. PAVEMENT AREAS: AT SUBGRADE AND AT EACH COMPACTED FILL AND BACKFILL LAYER, AT LEAST ONE TEST FOR EVERY 5,000 SQUARE FEET OF PAVEMENT AREA.
3. FOUNDATION WALL BACKFILL: AT EACH COMPACTED BACKFILL LAYER, AT LEAST 1 TEST FOR EACH 100 FEET OR LESS OF WALL LENGTH, BUT NO FEWER THAN 2 TESTS.
4. TRENCH BACKFILL: AT EACH COMPACTED INITIAL AND FINAL BACKFILL LAYER, AT LEAST 1 TEST FOR EACH 150 FEET OR LESS OF TRENCH LENGTH, BUT NO FEWER THAN 2 TESTS.
F. WHEN TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS HAVE NOT ACHIEVED DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.

3.20 PROTECTION
A. PROTECTING GRADED AREAS: PROTECT NEWLY GRADED AREAS FROM TRAFFIC, FREEZING, AND EROSION. KEEP FREE OF TRASH AND DEBRIS.
B. REPAIR AND REESTABLISH GRADES TO SPECIFIED TOLERANCES WHERE COMPLETED OR PARTIALLY COMPLETED SURFACES BECOME ERODED, RUTTED, SETTLED, OR WHERE THEY LOSE COMPACTION DUE TO SUBSEQUENT CONSTRUCTION OPERATIONS OR WEATHER CONDITIONS.
1. SCARIFY OR REMOVE AND REPLACE SOIL MATERIAL TO DEPTH AS DIRECTED BY ARCHITECT; RESHAPE AND RECOMPACT.
C. WHERE SETTLING OCCURS BEFORE PROJECT CORRECTION PERIOD ELAPSES, REMOVE FINISHED SURFACING, BACKFILL WITH ADDITIONAL SOIL MATERIAL, COMPACT, AND RECONSTRUCT SURFACING.
1. RESTORE APPEARANCE, QUALITY, AND CONDITION OF FINISHED SURFACING TO MATCH ADJACENT WORK, AND ELIMINATE EVIDENCE OF RESTORATION TO GREATEST EXTENT POSSIBLE.

3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS
A. DISPOSAL: REMOVE SURPLUS SATISFACTORY SOIL AND WASTE MATERIAL, INCLUDING UNSATISFACTORY SOIL, TRASH, AND DEBRIS, AND LEGALLY DISPOSE OF IT OFF OWNER'S PROPERTY.

HOT-MIX ASPHALT PAVING

PART 1 GENERAL
1.1 SUMMARY
A. THIS SECTION INCLUDES HOT-MIX ASPHALT PAVING.
B.RELATED SECTIONS;
1. SECTION 31 20 00 – EARTHWORK

1.2 REFERENCES
A. STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION (WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION).

1.3 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE TECHNICAL DATA AND TESTED PHYSICAL AND PERFORMANCE PROPERTIES.
B. JOB-MIX DESIGNS: CERTIFICATION THAT MIX MEETS OR EXCEEDS WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
C. MATERIAL CERTIFICATES CERTIFYING COMPLIANCE WITH WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

1.4 QUALITY ASSURANCE
A. MANUFACTURER QUALIFICATIONS: MANUFACTURER SHALL BE REGISTERED WITH AND APPROVED BY THE DOT OF THE STATE IN WHICH PROJECT IS LOCATED.
B. REGULATORY REQUIREMENTS: COMPLY WITH WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION FOR ASPHALT PAVING WORK.

1.5 PROJECT CONDITIONS
A. ENVIRONMENTAL LIMITATIONS: DO NOT APPLY ASPHALT MATERIALS IF BASE COURSE IS WET OR EXCESSIVELY DAMP OR IF THE FOLLOWING CONDITIONS ARE NOT MET:
1. ASPHALT LOWER LAYER COURSE, TACK COAT, ASPHALT UPPER LAYER COURSE: MINIMUM SURFACE TEMPERATURE OF 36 DEG F AND RISING AT TIME OF PLACEMENT.
B. PAVEMENT-MARKING PAINT: PROCEED WITH PAVEMENT MARKING ONLY ON CLEAN, DRY SURFACES. DO NOT APPLY BELOW THE MINIMUM PAVEMENT TEMPERATURE AS RECOMMENDED BY THE MANUFACTURER.

PART 2 PRODUCTS

2.1 AGGREGATES
A. IN ACCORDANCE WITH SECTION 460.2.2 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

2.2 ASPHALT MATERIALS
A. IN ACCORDANCE WITH CHAPTER 455 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

2.3 PAVEMENT MARKING PAINT
A. PROVIDE PAINT FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCTS LIST.
1. COLOR: WHITE

2.4 MIXES
A. HOT-MIX ASPHALT: ASPHALTIC BINDER COURSE AND SURFACE COURSE SHALL BE MIXTURE E-1 COMPLYING WITH THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

PART 3 EXECUTION

3.1 GENERAL
A. ASPHALT CONCRETE PAVING EQUIPMENT, WEATHER LIMITATIONS, JOB-MIX FORMULA, MIXING, CONSTRUCTION METHODS, COMPACTION, FINISHING, TOLERANCE AND PROTECTION SHALL CONFORM TO THE REQUIREMENTS OF THE APPROPRIATE SECTIONS OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.

3.2 SURFACE PREPARATION
A. PROOF-ROLL BASE COURSE USING HEAVY, PNEUMATIC-TIRED ROLLERS TO LOCATE AREAS THAT ARE UNSTABLE OR THAT REQUIRE FURTHER COMPACTION.
B. IMMEDIATELY BEFORE PLACING ASPHALT MATERIALS, REMOVE LOOSE AND DELETERIOUS MATERIAL FROM SUBSTRATE SURFACES. ENSURE THAT PREPARED BASE COURSE IS READY TO RECEIVE PAVING.
1. SWEEP LOOSE GRANULAR PARTICLES FROM SURFACE OF UNBOUND-AGGREGATE BASE COURSE. DO NOT DISLODGE OR DISTURB AGGREGATE EMBEDDED IN COMPACTED SURFACE OF BASE COURSE.

3.3 HOT-MIX ASPHALT PLACING
A. SPREAD AND FINISH ASPHALTIC MIXTURE IN ACCORDANCE WITH SECTION 450.3.2.5 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
B. PROMPTLY CORRECT SURFACE IRREGULARITIES IN PAVING COURSE BEHIND PAVER. USE SUITABLE HAND TOOLS TO REMOVE EXCESS MATERIAL FORMING HIGH SPOTS. FILL DEPRESSIONS WITH HOT-MIX ASPHALT TO PREVENT SEGREGATION OF MIX; USE SUITABLE HAND TOOLS TO SMOOTH SURFACE.

3.4 COMPACTION
A. COMPACT ASPHALTIC PAVEMENT IN ACCORDANCE WITH SECTION 450.3.2.6 OF THE WISDOT STANDARD
SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.
B. PROTECTION: AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED.
C. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO BECOME MARKED.

3.5 INSTALLATION TOLERANCES
A. THICKNESS: COMPACT EACH COURSE TO PRODUCE THE THICKNESS INDICATED WITHIN THE FOLLOWING TOLERANCES:
1. BASE COURSE: PLUS OR MINUS 1/2 INCH.
2. SURFACE COURSE: PLUS 1/4 INCH, NO MINUS.
B. SURFACE SMOOTHNESS: COMPACT EACH COURSE TO PRODUCE A SURFACE SMOOTHNESS WITHIN THE FOLLOWING TOLERANCES AS DETERMINED BY USING A 10-FOOT STRAIGHTEDGE APPLIED TRANSVERSELY OR LONGITUDINALLY TO PAVED AREAS:
1. LOWER LAYER: 1/4 INCH.
2. UPPER LAYER: 1/8 INCH.
3. REMOVE AND REPLACE ALL HUMPS OR DEPRESSIONS EXCEEDING THE SPECIFIED TOLERANCES

SITE WORK CONTINUED

HOT-MIX ASPHALT PAVING

3.6 PAVEMENT MARKING
A. DO NOT APPLY PAVEMENT-MARKING PAINT UNTIL LAYOUT, COLORS, AND PLACEMENT HAVE BEEN VERIFIED WITH ENGINEER.
B. APPLY MARKINGS TO A DRY SURFACE FREE FROM FROST. REMOVE DUST, DIRT, OIL, GREASE, GRAVEL, DEBRIS OR OTHER MATERIAL THAT MAY PREVENT BONDING TO THE PAVEMENT.
C. APPLY PAINT AS THE MANUFACTURER SPECIFIES WITH MECHANICAL EQUIPMENT TO PRODUCE PAVEMENT MARKINGS, OF DIMENSIONS INDICATED, WITH UNIFORM, STRAIGHT EDGES. APPLY AT MANUFACTURER'S RECOMMENDED RATES AT A MINIMUM RATE OF 17.6 GALLONS/MILE FOR A CONTINUOUS 4" LINE.

3.7 FIELD QUALITY CONTROL
A. TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND TO PREPARE TEST REPORTS.
B. ADDITIONAL TESTING AND INSPECTING, AT CONTRACTOR'S EXPENSE, WILL BE PERFORMED TO DETERMINE COMPLIANCE OF REPAIRS.

CEMENT CONCRETE PAVEMENT

PART 1 GENERAL
1.1 SUMMARY
A. THIS SECTION INCLUDES EXTERIOR CEMENT CONCRETE PAVEMENT FOR THE FOLLOWING:
1. SITE CURBS AND GUTTERS
2. SITE WALKWAYS
3. PUBLIC SIDEWALK
4. DRIVE APPROACH
5. PUBLIC CURB AND GUTTER
B. RELATED SECTIONS
1. SECTION 31 20 00 EARTHWORK

1.2 REFERENCES
A. WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
B. CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS

1.3 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. DESIGN MIXTURES: FOR EACH CONCRETE PAVEMENT MIXTURE.

1.4 QUALITY ASSURANCE
A. MANUFACTURER QUALIFICATIONS: MANUFACTURER OF READY-MIXED CONCRETE PRODUCTS WHO COMPLIES WITH ASTM C 94/C 94M REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT AND APPROVED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.
B. ACI PUBLICATIONS: COMPLY WITH ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE," UNLESS MODIFIED BY REQUIREMENTS IN THE CONTRACT DOCUMENTS.
C. MOCKUPS: PROVIDE MOCKUPS OF DECORATIVE STAMPED CONCRETE PAVING NOT LESS THAN 96 INCHES BY
96 INCHES TO DEMONSTRATE SURFACE COLOR, PATTERN, AND TEXTURE.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS: ON-SITE WORK
A. CONCRETE GRADE: GRADE A OR GRADE A-2 CONFORMING TO SECTION 501.3.1.3 OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
B. AGGREGATES: CONFORM TO SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS. PROVIDE AGGREGATES FROM A SINGLE SOURCE.
C. WATER: ASTM C 94/C 94M AND SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
D. AIR-ENTRAINING ADMIXTURE: ASTM C 260 AND SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
E. CHEMICAL ADMIXTURES: PER SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
F. COLOR PIGMENT: ASTM C 979, SYNTHETIC MINERAL-OXIDE PIGMENTS OR COLORED WATER-REDUCING ADMIXTURES; COLOR STABLE, NONFADING, AND RESISTANT TO LIME AND OTHER ALKALIS.
G. CURING MATERIALS
1. IN ACCORDANCE WITH SECTION 415.3.12 OF THE WISDOT STANDARD SPECIFICATIONS.
H. RELATED MATERIALS
1. EXPANSION JOINT MATERIAL: CONFORM TO SECTION 415.2.2 OF THE WISDOT STANDARD
SPECIFICATIONS.
I. CONCRETE MIXTURES
1. GRADE A OR GRADE A2 CONFORMING TO SECTION 501.3.1 OF THE WISDOT STANDARD SPECIFICATIONS.
J. CONCRETE MIXING
1. MEASURE, BATCH, AND MIX CONCRETE MATERIALS AND CONCRETE IN ACCORDANCE WITH SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.

2.2 CONCRETE MATERIALS: PUBLIC RIGHT OF WAY
A. CONFORM TO SECTION 902 OF THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS

PART 3 EXECUTION

3.1 GENERAL
A. CONFORM TO SECTION 415 OF THE WISDOT STANDARD SPECIFICATIONS FOR CONCRETE PAVEMENTS FOR ON- SITE WORK
B. CONFORM TO THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT- OF-WAY.

3.2 EXAMINATION AND PREPARATION
A. PROOF-ROLL PREPARED SUBBASE OR BASE SURFACE BELOW CONCRETE PAVING TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING.
B. REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE OR BASE SURFACE IMMEDIATELY BEFORE PLACING CONCRETE.

3.3 EDGE FORMS AND SCREED CONSTRUCTION
A. SET, BRACE, AND SECURE EDGE FORMS, BULKHEADS, AND INTERMEDIATE SCREED GUIDES FOR PAVEMENT TO REQUIRED LINES, GRADES, AND ELEVATIONS. INSTALL FORMS TO ALLOW CONTINUOUS PROGRESS OF WORK AND SO FORMS CAN REMAIN IN PLACE AT LEAST 24 HOURS AFTER CONCRETE PLACEMENT.
B. CLEAN FORMS AFTER EACH USE AND COAT WITH FORM-RELEASE AGENT TO ENSURE SEPARATION FROM CONCRETE WITHOUT DAMAGE.

3.4 JOINTS
A. GENERAL: FORM CONSTRUCTION, ISOLATION, AND CONTRACTION JOINTS AND TOOL EDGINGS TRUE TO LINE WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO CENTERLINE, UNLESS OTHERWISE INDICATED. CONFORM TO SECTION 415 OF THE WISDOT STANDARD SPECIFICATIONS FOR ON-SITE WORK. CONFORM TO CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT-OF-WAY.
B. CONSTRUCTION JOINTS: SET CONSTRUCTION JOINTS AT SIDE AND END TERMINATIONS OF PAVEMENT AND AT LOCATIONS WHERE PAVEMENT OPERATIONS ARE STOPPED FOR MORE THAN ONE-HALF HOUR UNLESS PAVEMENT TERMINATES AT ISOLATION JOINTS.
C. ISOLATION JOINTS: FORM ISOLATION JOINTS OF PREFORMED JOINT-FILLER STRIPS ABUTTING CONCRETE CURBS, CATCH BASINS, MANHOLES, INLETS, STRUCTURES, WALKS, OTHER FIXED OBJECTS, AND WHERE INDICATED.
D. CONTRACTION JOINTS: FORM WEAKENED-PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF THE CONCRETE THICKNESS TO MATCH JOINTING OF EXISTING ADJACENT CONCRETE PAVEMENT.
E. EDGING: TOOL EDGES OF PAVEMENT, GUTTERS, CURBS, AND JOINTS IN CONCRETE AFTER INITIAL FLOATING WITH AN EDGING TOOL TO A 1/4-INCH RADIUS. REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHES. ELIMINATE TOOL MARKS ON CONCRETE SURFACES.

3.5 CURBING
A. COMPLY WITH SECTION 601 OF THE WISDOT STANDARD SPECIFICATIONS FOR ON-SITE WORK.
B. COMPLY WITH SECTION 502 OF THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT-OF-WAY.

3.6 SIDEWALKS
A. COMPLY WITH SECTION 602 OF THE WISDOT STANDARD SPECIFICATIONS FOR ON-SITE WORK.
B. COMPLY WITH SECTION 503 OF THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR PUBLIC SIDEWALK CONSTRUCTION.

3.7 DRIVE APPROACH
A. COMPLY WITH SECTION 503 OF THE CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS.

3.8 CONCRETE PLACEMENT
A. MOISTEN SUBBASE TO PROVIDE A UNIFORM DAMPENED CONDITION AT TIME CONCRETE IS PLACED.
B. COMPLY WITH ACI 301 REQUIREMENTS AND WISDOT STANDARD SPECIFICATIONS SECTION 501 REQUIREMENTS FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE.

3.9 FINISHING
A. ON-SITE WORK
1. FINISH CURBING IN ACCORDANCE WITH SECTION 601.3.5 OF THE WISDOT STANDARD
SPECIFICATIONS.
2. FINISH SIDEWALK AND PATIO IN ACCORDANCE WITH SECTION 602.3.2.3 OF THE WISDOT STANDARD
SPECIFICATIONS (LIGHT BROOM FINISH).
B. COMPLY WITH CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT- OF-WAY.

3.10 STAMPING
A. MAT STAMPING: AFTER FLOATING AND WHILE CONCRETE IS PLASTIC, APPLY MAT-STAMPED FINISH.
1. PIGMENTED POWDER RELEASE AGENT: UNIFORMLY DISTRIBUTE ONTO CONCRETE AT A RATE OF 3 TO 4 LB./100 SQ. FT.
2. LIQUID RELEASE AGENT: APPLY LIQUID RELEASE AGENT TO THE CONCRETE SURFACE AND THE STAMP MAT. UNIFORMLY MIST SURFACE OF CONCRETE AT A RATE OF 5 GAL/1000 SQ. FT.
3. AFTER APPLICATION OF RELEASE AGENT, ACCURATELY ALIGN AND PLACE STAMP MATS IN SEQUENCE.
4. PRODUCE REQUIRED IMPRINT AND PATTERN AND DEPTH OF IMPRINT ON CONCRETE SURFACE. HAND STAMP EDGES AND SURFACES UNABLE TO BE IMPRINTED BY STAMP MATS.
5. REMOVE RESIDUAL RELEASE AGENT ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, BUT NO FEWER THAN THREE DAYS AFTER STAMPING CONCRETE.
B. TOOL STAMPING: AFTER FLOATING AND WHILE CONCRETE IS PLASTIC, APPLY TOOL-STAMPED FINISH.
1. COVER SURFACE WITH POLYETHYLENE FILM, STRETCH TAUT TO REMOVE WRINKLES, LAP SIDES AND ENDS, AND SECURE TO EDGE FORMS. LIGHTLY BROOM SURFACE TO REMOVE AIR BUBBLES.
2. ALIGN AND PLACE STAMP TOOLS IN SEQUENCE AND TAMP INTO CONCRETE TO PRODUCE REQUIRED IMPRINTED PATTERN AND DEPTH OF IMPRINT ON CONCRETE SURFACE, HAND STAMP EDGES AND SURFACES UNABLE TO BE IMPRINTED BY STAMP TOOLS.
3. CAREFULLY REMOVE POLYETHYLENE FILM IMMEDIATELY AFTER TOOL STAMPING.
A. ROLLER STAMPING: AFTER FLOATING AND WHILE CONCRETE IS PLASTIC, APPLY ROLLER-STAMPED FINISH.
1. COVER SURFACE WITH POLYETHYLENE FILM, STRETCH TAUT TO REMOVE WRINKLES, LAP SIDES AND ENDS, AND SECURE TO EDGE FORMS. LIGHTLY BROOM SURFACE TO REMOVE AIR BUBBLES.
2. ALIGN ROLLER AND PERFORM ROLLING OPERATION TO PRODUCE REQUIRED IMPRINT PATTERN AND EPTH OF IMPRINT ON CONCRETE SURFACE. HAND STAMP SURFACES INACCESSIBLE TO ROLLER.
3. CAREFULLY REMOVE POLYETHYLENE FILM IMMEDIATELY AFTER ROLLER STAMPING.

SITE WORK CONTINUED

CEMENT CONCRETE PAVEMENT CONTINUED

3.11 CONCRETE PROTECTION AND CURING
A. ON-SITE WORK
1. PROTECT AND CURE SIDEWALK IN ACCORDANCE WITH SECTION 602.3.2.6 OF THE WISDOT STANDARD SPECIFICATIONS.
2. PROTECT AND CURE CURBING IN ACCORDANCE WITH SECTION 601.3.7 OF THE WISDOT STANDARD SPECIFICATIONS.
B. COMPLY WITH CITY OF MILWAUKEE STREET CONSTRUCTION SPECIFICATIONS FOR WORK IN THE PUBLIC RIGHT-OF- WAY.

3.12 REPAIRS AND PROTECTION
A. REMOVE AND REPLACE CONCRETE PAVEMENT THAT IS BROKEN, DAMAGED, OR DEFECTIVE OR THAT DOES NOT COMPLY WITH REQUIREMENTS IN THIS SECTION.
B. PROTECT CONCRETE FROM DAMAGE. EXCLUDE TRAFFIC FROM PAVEMENT FOR AT LEAST 7 DAYS AFTER PLACEMENT.
C. MAINTAIN CONCRETE PAVEMENT FREE OF STAINS, DISCOLORATION, DIRT, AND OTHER FOREIGN MATERIAL. SWEEP CONCRETE PAVEMENT NOT MORE THAN TWO DAYS BEFORE DATE SCHEDULED FOR SUBSTANTIAL COMPLETION INSPECTIONS.

STORM DRAINAGE

PART 1 GENERAL

1.1 SUMMARY
A. THIS SECTION INCLUDES GRAVITY-FLOW, NONPRESSURE STORM DRAINAGE OUTSIDE THE BUILDING, WITH THE FOLLOWING COMPONENTS:
1. STORM SEWER PIPING
2. PRECAST CONCRETE CATCH BASINS.
B.RELATED SECTIONS:
1. SECTION 31 20 00 EARTHWORK

1.2 REFERENCES
A. STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION
B. WISCONSIN DEPARTMENT OF COMMERCE PLUMBING CODE DCOMM CHAPTERS 82 – 85.

1.3 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. SHOP DRAWINGS: FOR CATCH BASINS. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND CATCH BASIN FRAMES AND GRATES.

PART 2 PRODUCTS

2.1 PIPING MATERIALS
A. PVC SEWER PIPE AND FITTINGS: ASTM D 3034, SDR 35, WITH BELL-AND-SPIGOT ENDS WITH RUBBER GASKETED JOINTS IN ACCORDANCE WITH CHAPTER 8.10.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. JOINTS SHALL CONFORM TO ASTM D-3212.

2.2 NONPRESSURE-TYPE PIPE COUPLINGS
A. COMPLY WITH ASTM C 1173, ELASTOMERIC, SLEEVE-TYPE, REDUCING OR TRANSITION COUPLING, FOR JOINING UNDERGROUND NONPRESSURE PIPING. INCLUDE ENDS OF SAME SIZES AS PIPING TO BE JOINED AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
B. SLEEVE MATERIALS:
1. FOR PLASTIC PIPES: ASTM F 477, ELASTOMERIC SEAL OR ASTM D 5926, PVC.
2. FOR DISSIMILAR PIPES: ASTM D 5926, PVC OR OTHER MATERIAL COMPATIBLE WITH PIPE MATERIALS BEING JOINED.
C. UNSHIELDED FLEXIBLE COUPLINGS: ELASTOMERIC SLEEVE WITH STAINLESS-STEEL SHEAR RING AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
1. MANUFACTURERS:
A. DALLAS SPECIALTY & MFG. CO. B. FERNCO INC.
B. LOGAN CLAY PRODUCTS COMPANY (THE).
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC. NDS INC.
D. PLASTIC ODDITIES, INC.
E. SHIELDED FLEXIBLE COUPLINGS: ASTM C 1460, ELASTOMERIC OR RUBBER SLEEVE WITH FULL-LENGTH, CORROSION-RESISTANT OUTER SHIELD AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
1. MANUFACTURERS:
A.CASCADE WATERWORKS MFG.
B. DALLAS SPECIALTY & MFG. CO.
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC.
D. RING-TYPE FLEXIBLE COUPLINGS: ELASTOMERIC COMPRESSION SEAL WITH DIMENSIONS TO FIT INSIDE BELL OF LARGER PIPE AND FOR SPIGOT OF SMALLER PIPE TO FIT INSIDE RING.
1. MANUFACTURERS:
A. FERNCO INC.
B. LOGAN CLAY PRODUCTS COMPANY (THE).
C. MISSION RUBBER COMPANY; A DIVISION OF MCP INDUSTRIES, INC.

2.3 CLEANOUTS
A. CLEANOUTS SHALL BE IN ACCORDANCE WITH DEPARTMENT OF COMMERCE CODE CHAPTER 82.35.

2.4 CATCH BASINS
A. STANDARD PRECAST CONCRETE CATCH BASINS: CONFORMING TO CHAPTER 3.6.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION, OF DEPTH INDICATED.
1. BASE SECTION: 12-INCH MINIMUM THICKNESS FOR FLOOR SLAB AND 5-INCH MINIMUM THICKNESS FOR WALLS AND BASE RISER SECTION.
2. TOP SECTION: ECCENTRIC-CONE TYPE.
B. FRAMES AND GRATES: ASTM A-48, CLASS NO. 35B. NEENAH R-2501 WITH TYPE G GRATE OR EQUAL. NEENAH R-3229-A FOR CURB TYPE FRAMES OR EQUAL.

2.5 MANHOLES
A. STANDARD PRECAST REINFORCED CONCRETE MANHOLES: CONFORM TO ASTM C478 AND SECTION 8.39.0 AND FILE NO. 12 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
B. MANHOLE STEPS: CONFORM TO SECTION 8.40.0 AND FILE NO. 15 OF THE STANDARD SPECIFICATIONS FOR
SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. C. FRAMES AND COVERS: AS INDICATED ON PLANS

2.6 TRENCH DRAIN
A. ACO MODEL S200K, OR EQUAL

PART 3 EXECUTION

3.1 PIPING APPLICATIONS
A. PIPE COUPLINGS AND FITTINGS WITH PRESSURE RATINGS AT LEAST EQUAL TO PIPING RATING MAY BE USED IN APPLICATIONS BELOW, UNLESS OTHERWISE INDICATED.
1. USE NONPRESSURE-TYPE FLEXIBLE COUPLINGS WHERE REQUIRED TO JOIN GRAVITY-FLOW, NONPRESSURE SEWER PIPING, UNLESS OTHERWISE INDICATED.
A. UNSHIELDED FLEXIBLE COUPLINGS FOR SAME OR MINOR DIFFERENCE OD PIPES.
B. UNSHIELDED, INCREASER/REDUCER-PATTERN, FLEXIBLE COUPLINGS FOR PIPES WITH DIFFERENT OD.
C. RING-TYPE FLEXIBLE COUPLINGS FOR PIPING OF DIFFERENT SIZES WHERE ANNULAR SPACE BETWEEN SMALLER PIPING'S OD AND LARGER PIPING'S ID PERMITS INSTALLATION.

3.2 PIPING INSTALLATION
A.GENERAL LOCATIONS AND ARRANGEMENTS: DRAWING PLANS AND DETAILS INDICATE GENERAL LOCATION AND ARRANGEMENT OF UNDERGROUND STORM DRAINAGE PIPING. LOCATION AND ARRANGEMENT OF PIPING LAYOUT TAKE DESIGN CONSIDERATIONS INTO ACCOUNT. INSTALL PIPING AS INDICATED, TO EXTENT PRACTICAL. WHERE SPECIFIC INSTALLATION IS NOT INDICATED, FOLLOW PIPING MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. INSTALL IN ACCORDANCE WITH CHAPTER 3.2.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER
CONSTRUCTION IN WISCONSIN, LATEST EDITION.
C. INSTALL PROPER SIZE INCREASERS, REDUCERS, AND COUPLINGS WHERE DIFFERENT SIZES OR MATERIALS OF PIPES AND FITTINGS ARE CONNECTED. REDUCING SIZE OF PIPING IN DIRECTION OF FLOW IS PROHIBITED.
D. USE CLASS B COMPACTED TRENCH SECTION IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR
SEWER AND WATER CONSTRUCTION IN WISCONSIN.
E. CLEAR INTERIOR OF PIPING AND MANHOLES OF DIRT AND SUPERFLUOUS MATERIAL AS WORK PROGRESSES.
F. INSTALL TRACER WIRE OVER NON-METALLIC PIPING IN ACCORDANCE WITH DCOMM CH. 82.30(11)(H) AND 82.36(7)(D).

3.3 PIPE JOINT CONSTRUCTION
A.BASIC PIPE JOINT CONSTRUCTION IS SPECIFIED IN DIVISION 2 SECTION "PIPED UTILITIES - BASIC MATERIALS AND METHODS." WHERE SPECIFIC JOINT CONSTRUCTION IS NOT INDICATED, FOLLOW PIPING MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. JOIN GRAVITY-FLOW, NONPRESSURE DRAINAGE PIPING ACCORDING TO THE FOLLOWING:
1. JOIN PVC SEWER PIPING ACCORDING TO ASTM D 2321 AND ASTM D 3034 FOR ELASTOMERIC- GASKET JOINTS.
2. JOIN DISSIMILAR PIPE MATERIALS WITH NONPRESSURE-TYPE FLEXIBLE COUPLINGS.

3.4 CLEANOUT INSTALLATION
A. INSTALL CLEANOUTS AND RISER EXTENSIONS FROM SEWER PIPES TO CLEANOUTS AT GRADE. INSTALL PIPING SO CLEANOUTS OPEN IN DIRECTION OF FLOW IN SEWER PIPE.
1. USE LIGHT-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN EARTH OR UNPAVED FOOT-TRAFFIC AREAS.
2. USE MEDIUM-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN PAVED FOOT-TRAFFIC AREAS.
3. USE HEAVY-DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN VEHICLE-TRAFFIC SERVICE] AREAS. B. SET CLEANOUT FRAMES AND COVERS IN PAVEMENT WITH TOPS FLUSH WITH PAVEMENT SURFACE.

3.5 CATCH BASIN INSTALLATION
A. SET FRAMES AND GRATES TO ELEVATIONS INDICATED.
B. INSTALL IN ACCORDANCE WITH CHAPTER 3.6.1 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER
CONSTRUCTION IN WISCONSIN, LATEST EDITION.
C. CATCH BASIN EXCAVATION AND PREPARATION OF SUBGRADE SHALL BE IN ACCORDANCE WITH SECTION 3.5.4(A) AND (B) OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

3.6 MANHOLE INSTALLATION
A. SET MANHOLE RIMS TO ELEVATIONS INDICATED.
B. INSTALL IN ACCORDANCE WITH SECTION 3.5.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER
CONSTRUCTION IN WISCONSIN, LATEST EDITION.

3.7 FIELD QUALITY CONTROL
A. INSPECT INTERIOR OF PIPING TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED.
B. CONDUCT DEFLECTION TESTING OF INSTALLED PIPE IN ACCORDANCE WITH SECTION 3.2.6(I)4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
1. REPLACE ANY PIPE SECTION NOT PASSING THE DEFLECTION TEST USING NEW MATERIALS.
2.REINSPECT AND REPEAT PROCEDURE UNTIL RESULTS ARE SATISFACTORY.

BRIOHN
DESIGN GROUP
3885 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
SPECIFICATIONS

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET:
GS.1

CONCRETE

01. ALL CONCRETE, UNLESS OTHERWISE SPECIFIED, SHALL BE READY MIXED IN ACCORDANCE WITH ASTM C94.

02. ALL CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C150 TYPE 1 AND SHALL BE THE PRODUCT OF ONE MANUFACTURER, IF POSSIBLE. PLEASE NOTIFY BRIOHN BUILDING CORP. IN WRITING IF NOT POSSIBLE, SO THAT THEY MAY DISCUSS IMPACT WITH THE CUSTOMER. THE TEMPERATURE OF CEMENT DELIVERED TO THE PLANT SHALL NOT EXCEED 150° AT THE TIME OF MIXING.

03. MIX DESIGN TO BE SUBMITTED TO BRIOHN DESIGN GROUP A MINIMUM OF 3 WEEKS PRIOR TO POUR AND APPROVED IN WRITING FOLLOWING PRE-POUR MEETING.

1. CLASS 'C' FLY ASH MAY BE ADDED.
2. 1 ½" STONE TO BE USED IN ALL SLABS THAT ARE MINIMUM 5" THICK.
3. TYPE 'A' WATER REDUCERS ARE PERMITTED.
4. LOW SHRINKAGE CEMENTS ARE PERMITTED.

04. CEMENT CONTENT PER CUBIC YARD SHALL CONFORM TO THE FOLLOWING BASIC REQUIREMENTS:

1. 2,000 PSI = SLURRY CONCRETE (SUBMIT SUPPLIERS MIX DESIGN FOR APPROVAL)
2. 3,000 PSI = 5 BAGS, 470# MIN. CEMENT
3. 3,500 PSI = 5 ⅓ BAGS, 510# MIN. CEMENT
4. 4,000 PSI =5 ⅞ BAGS, 550# MIN. CEMENT
5. 4,500 PSI = 6 ⅛ BAGS 590# MIN. CEMENT
6. 5,000 PSI = 6 ⅜ BAGS, 630# MIN. CEMENT
7. 3,000 PSI CONCRETE FOR FOOTINGS MAY BE REDI-MIX SUPPLIERS STANDARD FOOTING DESIGN.

05. AGGREGATES SHALL CONFORM TO ASTM C33.

06. ALL WATER SHALL BE CLEAN AND FREE FROM INJURIOUS AMOUNTS OF OIL, ACID, ALKALI, SALT, ORGANIC MATTER, AND OTHER DELETERIOUS SUBSTANCES. IN ALL CASES WATER FROM A MUNICIPAL WATER SOURCE WILL BE ACCEPTABLE.

07. THE USE OF CHEMICAL ADMIXTURES IN CONCRETE SHALL ALWAYS BE SUBJECT TO THE WRITTEN APPROVAL OF BRIOHN DESIGN GROUP, LLC.

08. CURING COMPOUNDS TO CONFORM TO ASTM C309, TYPE 1, MIN. 12%WEIGHT SOLIDS CONTENT, CLEAR SOLVENT TYPE. SONNEBORN KURE 'n SEAL IS ACCEPTABLE.

09. ISOLATION JOINT MATERIAL TO BE POLYETHYLENE FOAM EXPANSION ISOLATION JOINT FILLER OF ½" THICKNESS UNLESS OTHERWISE INDICATED. THE MINIMUM DEPTH OF ISOLATION JOINT MATERIAL TO BE EQUAL TO THE SMALL OF THE CONCRETE SLAB THICKNESS WITH WHICH IT COMES IN CONTACT.

10. VAPOR BARRIER TO BE MOISTOP GRADE 395 AS MANUFACTURED BY FORTIFIBER CORP.

11. USE FIBER MESH REINFORCED CONCRETE OVER PRE CAST DECK UNLESS OTHERWISE INDICATED.

12. MAXIMUM WATER TO CEMENT RATIO TO BE 0.5.

1. ASTM C94 REQUIRES THAT NO WATER FROM THE TRUCK WATER SYSTEM OR ELSEWHERE SHALL BE ADDED, EXCEPT WHEN ON ARRIVAL AT THE JOB SITE, THE SLUMP OF THE CONCRETE IS LESS THAN SPECIFIED.
2. IF WATER IS ADDED, FOLLOW DIRECTIONS OF ASTM C94. ONLY THE INDIVIDUAL AGREED TO AT THE PRE-POUR MEETING HAS AUTHORITY TO ADD WATER AFTER PRODUCT HAS LEFT BATCH PLANT.
3. SUCH ADDITIONAL WATER THAT IS ADDED TO BRING THE SLUMP WITHIN REQUIRED LIMITS SHALL BE INJECTED INTO THE MIXER UNDER CORRECT PRESSURES AND DIRECTION. THE DRUM OR BLADES SHALL BE TURNED AN ADDITIONAL 30 REVOLUTIONS OR MORE IF NECESSARY, AT MIXING SPEED, UNTIL UNIFORMITY OF THE CONCRETE. WATER SHALL NOT BE ADDED TO THE BATCH AT ANY LATER TIME. DISCHARGE OF THE CONCRETE SHALL BE COMPLETED WITHIN 1½ HOURS OR BEFORE THE DRUM HAS REVOLVED 300 TIMES, WHICHEVER COMES FIRST. SEE ASTM C94 FOR ADDITIONAL REQUIREMENTS. NO DEVIATION ALLOWED FROM THIS SECTION.

13. SLUMPS SHALL CONFORM TO THE FOLLOWING STANDARDS:

3½" = FORMED REINFORCED FOUNDATION WALLS AND FOOTINGS
3½" = FORMED PLAIN FOOTINGS AND STRUCTURAL WALLS
5" = EARTH FORM FOUNDATIONS
8" = CAISSONS
3½" = BUILDING COLUMNS
3½" = PAVEMENTS AND SLABS ON GRADE
3½" = STRUCTURAL SLABS
2" = MASS CONCRETE
4" = BOND BEAMS AND LINTELS
5" = METAL PANS AND STAIRS AND LANDINGS
9" = HIGH SLUMP CONCRETE FOR FILLING MASONRY PIERS AND PILASTERS

14. TOLERANCES = WHEN SPECIFIED SLUMP IS 3" OR LESS, + OR - ½"

15. TOLERANCES = WHEN SPECIFIED SLUMP IS GREATER THAN 3", + OR - 1"

16. ALL CONCRETE EXPOSED TO FREEZING AND THAWING AND/OR REQUIRED TO BE WATERTIGHT SHALL HAVE AN AIR CONTENT AT THE TIME OF PLACEMENT OF 4.5% TO 7.5%. (CONCRETE TO BE "NON-REACTIVE" CHERT.)

17. ALL STRENGTH TESTS SHALL CONSIST OF FOUR STANDARD CYLINDERS, WITH TESTS AT THREE AND SEVEN DAYS AND TWO TESTS AT 28 DAYS. STRENGTH AT THREE DAYS TO BE MINIMUM 1800 PSI. CONCRETE TEST REPORTS SHALL DIRECTLY STATE WHETHER OR NOT THE TEST RESULTS COMPLY WITH THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS. CONCRETE TEST REPORTS SHALL STATE THE FOLLOWING INFORMATION:

LOCATION ON THE PROJECT WHERE THE CONCRETE IS USED
7 DAY COMPRESSIVE STRENGTH
28 DAY COMPRESSIVE STRENGTH
AIR CONTENT
SLUMP
AMOUNT OF WATER ADDED ON JOB SITE
MIX USED

18. PRIOR TO ALL WORK OF THIS SECTION, CAREFULLY INSPECT THE INSTALLED WORK OF OTHER TRADES AFFECTING CONCRETE PLACEMENT AND VERIFY THAT ALL SUCH WORK IS COMPLETE TO THE POINT WHERE THIS INSTALLATION MAY PROPERLY COMMENCE.

19. VERIFY THAT ALL ITEMS TO BE EMBEDDED IN CONCRETE ARE IN PLACE.

20. VERIFY THAT CONCRETE MAY BE PLACED TO THE LINES AND ELEVATIONS INDICATED ON THE DRAWINGS, WITH ALL REQUIRED CLEARANCE FROM REINFORCEMENT. PROVIDE THE FOLLOWING CLEAR COVER DISTANCES FOR REINFORCEMENT IN CONCRETE:

FOOTINGS - BOTTOM AND SIDES..................3"
FOOTINGS - TOP......................................2"
SLABS - BOTTOM AND SIDES......................1"
SLABS - TOP.. ¾"
INTERIOR WALLS......................................1"
EXTERIOR WALLS - OUTSIDE FACE................1½"
BEAMS AND GIRDERS..............................1½"
PIERS AND COLUMNS...............................2"

21. CONVEY CONCRETE FROM MIXER TO PLACE OF FINAL DEPOSIT BY METHODS THAT WILL PREVENT SEPARATION AND LOSS OF MATERIAL.

22. DEPOSIT CONCRETE AS NEARLY AS POSSIBLE IN ITS FINAL POSITION TO AVOID SEGREGATION DUE TO RE HANDLING AND FLOWING.

23. PLACE CONCRETE AS DRY AS POSSIBLE CONSISTENT WITH GOOD WORKMANSHIP, NEVER EXCEEDING THE MAXIMUM SPECIFIED SLUMP.

24. PLACE CONCRETE AT SUCH A RATE THAT CONCRETE IS AT ALL TIMES PLASTIC AND FLOWS READILY BETWEEN REINFORCEMENT.

25. WHEN PLACING IS ONCE STARTED, CARRY IT ON AS CONTINUOUS OPERATION UNTIL PLACEMENT OF THE PANEL SECTION IS COMPLETE.

26. DO NOT PLACE A GREATER AREA AT ONE TIME THAN CAN BE PROPERLY FINISHED WITHOUT CRACKING. THIS IS PARTICULARLY IMPORTANT DURING HOT OR DRY WEATHER.

27. THOROUGHLY CONSOLIDATE CONCRETE BY SUITABLE MEANS DURING PLACEMENT, WORKING IT AROUND ALL EMBEDDED FIXTURES AND INTO CORNERS OF THE FORMS. TYPE AND USE OF VIBRATORS SHALL BE IN STRICT CONFORMANCE WITH ACI C309.

28. INSTALL EXPANSION AND CONTROL JOINTS ONLY IN LOCATIONS SHOWN AND AS DETAILED ON THE DRAWINGS.

29. PLACE, CONSOLIDATE, STRIKE OFF AND LEVEL CONCRETE TO THE PROPER ELEVATIONS.

30. AFTER THE CONCRETE HAS STIFFENED SUFFICIENTLY TO PERMIT THE OPERATION AND THE WATER SHEEN HAS DISAPPEARED, THE SURFACE SHALL BE FLOATED AT LEAST TWICE TO A UNIFORM SANDY TEXTURE.

CONCRETE CONTINUED

31. TAKE CARE THAT THE SURFACE OF THE SLAB MEETS THE SCREEDS ACCURATELY AND DOES NOT RISE ABOVE OR FALL BELOW THEM.

32. CAREFULLY PROVIDE SLAB DEPRESSIONS AS REQUIRED FOR THE FINISHES INDICATED ON THE DRAWINGS.

33. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, MAKE ALL SLABS EVEN AND UNIFORM IN APPEARANCE AND IN TRUE PLANES, SO THE DEPRESSIONS BETWEEN HIGH SPOTS DO NOT EXCEED 3/16" UNDER A 10' STRAIGHT EDGE, OR Ff30.

34. WHERE FLOOR DRAINS OR FLOOR SLOPES ARE INDICATED, SLOPE SLABS UNIFORMLY TO PROVIDE EVEN FALL FOR DRAINAGE.

35. TROWEL ALL INTERIOR SLABS TO A SMOOTH, HARD FINISH USING STEEL TROWELS.

36. WHERE 'BROOM FINISH' IS INDICATED AND WHERE NO OTHER EXTERIOR SLAB FINISH IS INDICATED, FINISH THE EXPOSED CONCRETE SURFACES BY LIGHTLY COMBING WITH A MEDIUM STIFF BROOM AFTER FLOATING IS COMPLETE.

37. RUBBED SURFACES SHALL BE PROVIDED ON ALL EXPOSED WALLS AND PIERS, IMMEDIATELY AFTER FORMS ARE REMOVED. EXPOSED SURFACES SHALL BE WETTED AND RUBBED WITH CARBORUNDUM BRICK OR OTHER ABRASIVE UNTIL EVEN, SMOOTH, AND UNIFORM IN APPEARANCE.

38. PVC WATER STOPS SHALL BE INSTALLED IN LOCATIONS INDICATED, SUBCONTRACTOR SHALL ATTACH WATER STOPS FIRMLY TO REINFORCEMENT AND/OR FORM WORK TO ENSURE THAT WATER STOP WILL NOT BE DISPLACED OR BENT DURING CONCRETE OPERATIONS.

39. BRIOHN SUPERINTENDENT IS TO BE PRESENT DURING CONCRETE POURS, UNLESS SPECIFIC AUTHORITY IS GRANTED BY BRIOHN TO POUR WITHOUT SUPERINTENDENT PRESENT.

40. THE FOLLOWING CONCRETE FLOOR POUR PROCEDURES SHALL BE USED AS A GUIDE AND AMENDED AS NECESSARY FOR INDIVIDUAL PROJECT NEEDS. A PRE-POUR MEETING IS TO BE HELD WITH REPRESENTATIVES OF THE OWNER, BRIOHN BUILDING CORP., CONCRETE SUBCONTRACTOR, ELECTRICIAN, PLUMBER, TESTING AGENCY, CONCRETE SUPPLIER AND FLOORING CONTRACTOR. THIS MEETING TO BE HELD A MINIMUM OF ONE (1) WEEK PRIOR TO POURING. ACTUAL POUR PROCEDURES WILL BE AGREED TO AT THIS MEETING AND PUT IN WRITING BEFORE POURING BEGINS. THE FOLLOWING PROCEDURE WILL BE FOLLOWED, UNLESS OTHERWISE AGREED TO OR AUTHORIZED AT PRE-POUR MEETING:

41. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY IRREGULARITIES OR DEFECTS IN CONCRETE SLABS (CRACKS, BUMPS, FLOOR CURLING, ETC.) BEFORE ANY FLOOR FINISHES ARE APPLIED.

A. POUR CONCRETE FLOORS ONLY AFTER THE ROOF IS ON.

B. MAKE SURE THERE IS EQUIVALENT TEMPERATURES BETWEEN THE SUB GRADE AND THE AIR TEMPERATURE.

C. IF THE SUB GRADE IS EXTREMELY DRY, IT SHOULD BE WET DOWN PRIOR TO POURING THE CONCRETE TO AVOID RAPID DRYING UNDER SIDE OF SLAB.

D. THE TOP OF SLAB WILL BE COVERED WITH A 6 MIL VISQUEEN AS SOON AS POSSIBLE AFTER FINISHING TO PREVENT RAPID DRYING FOR A MINIMUM OF 7 DAYS.

E. THE CONCRETE SHALL BE POURED PER THIS SPECIFICATION WITH A 4" SLUMP, PLUS OR MINUS 1". BRIOHN BUILDING CORP. HAS THE RIGHT TO TEST ALL LOADS PRIOR TO PLACEMENT.

F. MESH WILL BE FLAT, NOT ROLLED.

G. "DIAMOND" OVER POURS AT COLUMNS TO BE POURED BELOW.

H. THE FLOOR WILL BE SAW CUT ON A GRID PER PLANS GETTING ON THE FLOOR AS SOON AS POSSIBLE WITH A SOFT CUT SAW, AFTER IT IS POURED.

I. PUT A HARD TROWEL FINISH IN THIS CONCRETE.

J. KURE-N-SEAL WILL BE APPLIED TO ALL SLABS, INCLUDING A DOUBLE COAT ON ALL SAW CUTS, AS SOON AS POSSIBLE AFTER FINISHING.

K. NO WATER MAY BE ADDED TO CONCRETE ON SITE, UNLESS PRIOR AUTHORITY GRANTED. (SEE SECTION 3.01 A)

L. VERIFY FLOOR DRAINS ARE AT LOW POINT OF FLOOR AND FLOOR PITCHES TOWARDS DRAIN.

REINFORCED CONCRETE

1. WHERE REQUIRED, REMOVE UNSUITABLE EXISTING SOILS BELOW FOOTINGS AND SLABS ON GRADE. PROVIDE ENGINEERED FILL TO RAISE SITE TO ELEVATIONS CALLED FOR ON PLANS. REVIEW SOIL REPORT AND SITE PLAN. FILL MATERIAL SHALL HAVE A MINIMUM 3000 PSF BEARING CAPACITY. FILL MATERIAL SHALL BE APPROVED BY BRIOHN DESIGN GROUP, LLC. PLACEMENT SHALL CONFORM TO SOIL REPORT UNDER THE DIRECTION AND SUPERVISION OF BRIOHN BUILDING CORP.

2. FOOTING EXCAVATIONS MUST EXTEND TO COMPETENT BEARING MATERIAL. BRIOHN BUILDING CORP. TO HIRE A SOILS ENGINEER TO FIELD VERIFY NET ALLOWABLE SOIL BEARING CAPACITY STATED ON THESE CONSTRUCTION DOCUMENTS AND IN GEOTECHNICAL REPORT FOR THIS PROJECT. IF SUITABLE BEARING STRATUM DOES NOT EXIST AT FOOTING ELEVATIONS STATED ON CONSTRUCTION DOCUMENTS, EXCAVATIONS SHALL EXTEND UNTIL SOIL WITH STATED BEARING CAPACITY IS REACHED. PLACE COMPACTED FILL OR SLURRY BELOW FOOTINGS OR EXTEND FOOTINGS DOWN TO SUITABLE BEARING STRATUM. ENGINEERED FILL BELOW SLABS ON GRADE AND FOOTINGS SHALL BE FREE DRAINING GRANULAR MATERIAL COMPACTED TO 95% MODIFIED PROCTOR AND PLACED PER THE SOIL ENGINEERS' RECOMMENDATIONS.

3. ALL BACK FILL AGAINST WALLS TO BE FREE-DRAINING GRANULAR MATERIAL AS APPROVED BY BRIOHN DESIGN GROUP, LLC AND COMPACTED PER SOIL REPORT RECOMMENDATIONS UNDER SUPERVISIONS OF BRIOHN BUILDING CORP.

4. CENTER PIERS AND COLUMN FOOTINGS ON COLUMN CENTERLINES, AND CENTER WALL FOOTINGS ON WALL CENTERLINES, UNLESS NOTED OTHERWISE.

5. FILL OR BACK FILL SHALL EXTEND LATERALLY BEYOND THE EDGE OF BUILDING OR FOUNDATIONS A MINIMUM OF TWO FEET. SLOPES SHOULD NOT EXCEED 1:1 FOR COHESIVE SOILS AND 2(HORIZONTAL):1(VERTICAL) FOR GRANULAR SOILS.

6. SUBCONTRACTOR SHALL PLACE FOUNDATIONS ON UNDISTURBED NON-ORGANIC BEARING SOILS. IF EXCAVATION ACTIVITY LOOSENS BOTTOM OF FOOTING, BASE SHALL BE COMPACTED.

7. SUBCONTRACTOR SHALL FOLLOW ANY AND ALL ADDITIONAL REQUIREMENTS AS SPECIFIED IN SOIL REPORT.

8. ALL EXTERIOR FOOTINGS MUST BEAR AT A MINIMUM DEPTH OF 4'-0" BELOW ADJACENT FINISH EXTERIOR GRADE.

9. DO NOT PLACE ANY FOOTINGS ON FROZEN SUB-GRADE.

10. WHERE NEW FOOTINGS ABUT EXISTING FOOTINGS, STEP THE NEW FOOTING AS REQUIRED TO HAVE NEW BOTTOM OF FOOTING ELEVATION MATCH THE EXISTING BOTTOM OF FOOTING ELEVATION. SUBCONTRACTOR SHALL FIELD VERIFY EXISTING BOTTOM OF FOOTING ELEVATION.

REINFORCED CONCRETE FOUNDATIONS

1. WHERE REQUIRED, REMOVE UNSUITABLE EXISTING SOILS BELOW FOOTINGS AND SLABS ON GRADE. PROVIDE ENGINEERED FILL TO RAISE SITE TO ELEVATIONS CALLED FOR ON PLANS. REVIEW SOIL REPORT AND SITE PLAN. FILL MATERIAL SHALL HAVE A MINIMUM 3000 PSF BEARING CAPACITY. FILL MATERIAL SHALL BE APPROVED BY BRIOHN DESIGN GROUP, LLC. PLACEMENT SHALL CONFORM TO SOIL REPORT UNDER THE DIRECTION AND SUPERVISION OF BRIOHN BUILDING CORP.

2. FOOTING EXCAVATIONS MUST EXTEND TO COMPETENT BEARING MATERIAL. BRIOHN BUILDING CORP. TO HIRE A SOILS ENGINEER TO FIELD VERIFY NET ALLOWABLE SOIL BEARING CAPACITY STATED ON THESE CONSTRUCTION DOCUMENTS AND IN GEOTECHNICAL REPORT FOR THIS PROJECT. IF SUITABLE BEARING STRATUM DOES NOT EXIST AT FOOTING ELEVATIONS STATED ON CONSTRUCTION DOCUMENTS, EXCAVATIONS SHALL EXTEND UNTIL SOIL WITH STATED BEARING CAPACITY IS REACHED. PLACE COMPACTED FILL OR SLURRY BELOW FOOTINGS OR EXTEND FOOTINGS DOWN TO SUITABLE BEARING STRATUM. ENGINEERED FILL BELOW SLABS ON GRADE AND FOOTINGS SHALL BE FREE DRAINING GRANULAR MATERIAL COMPACTED TO 95% MODIFIED PROCTOR AND PLACED PER THE SOIL ENGINEERS' RECOMMENDATIONS.

3. ALL BACK FILL AGAINST WALLS TO BE FREE-DRAINING GRANULAR MATERIAL AS APPROVED BY BRIOHN DESIGN GROUP, LLC AND COMPACTED PER SOIL REPORT RECOMMENDATIONS UNDER SUPERVISIONS OF BRIOHN BUILDING CORP.

4. CENTER PIERS AND COLUMN FOOTINGS ON COLUMN CENTERLINES, AND CENTER WALL FOOTINGS ON WALL CENTERLINES, UNLESS NOTED OTHERWISE.

5. FILL OR BACK FILL SHALL EXTEND LATERALLY BEYOND THE EDGE OF BUILDING OR FOUNDATIONS A MINIMUM OF TWO FEET. SLOPES SHOULD NOT EXCEED 1:1 FOR COHESIVE SOILS AND 2(HORIZONTAL):1(VERTICAL) FOR GRANULAR SOILS.

6. SUBCONTRACTOR SHALL PLACE FOUNDATIONS ON UNDISTURBED NON-ORGANIC BEARING SOILS. IF EXCAVATION ACTIVITY LOOSENS BOTTOM OF FOOTING, BASE SHALL BE COMPACTED.

7. SUBCONTRACTOR SHALL FOLLOW ANY AND ALL ADDITIONAL REQUIREMENTS AS SPECIFIED IN SOIL REPORT.

8. ALL EXTERIOR FOOTINGS MUST BEAR AT A MINIMUM DEPTH OF 4'-0" BELOW ADJACENT FINISH EXTERIOR GRADE.

9. DO NOT PLACE ANY FOOTINGS ON FROZEN SUB-GRADE.

10. WHERE NEW FOOTINGS ABUT EXISTING FOOTINGS, STEP THE NEW FOOTING AS REQUIRED TO HAVE NEW BOTTOM OF FOOTING ELEVATION MATCH THE EXISTING BOTTOM OF FOOTING ELEVATION. SUBCONTRACTOR SHALL FIELD VERIFY EXISTING BOTTOM OF FOOTING ELEVATION.

TILT UP CONCRETE

01. TILT UP DESIGN SHALL CONFORM TO TCI AND ACI STANDARDS. GOVERNING SPECIFICATION FOR TILT UP CONCRETE PANELS TO BE IN ACCORDANCE WITH THE TILT-UP CONCRETE ASSOCIATIONS GUIDELINE SPECIFICATIONS. DESIGN LOADS SHALL CONFORM TO DESIGN LOADS INDICATED IN "DESIGN LOADS" SECTION OF THE PLAN AND APPLICABLE CODES. DESIGN AND CONSTRUCT TILT-UP WALL PANELS TO WITHSTAND CONSTRUCTION LOADS WHICH MAY OCCUR DURING LIFTING, BRACING, AND IMPACT OF ADJOINING PANELS. PERMANENT LOADS SHALL CONFORM TO CODE REQUIREMENTS.

02. THE PROJECT ARCHITECT/ENGINEER HAS NOT BEEN RETAINED TO DESIGN THE WALL PANELS OR THE FLOOR SLAB TO RESIST THE STRESSES CAUSED BY ERECTION OF THE WALL PANELS, NOR TO DETERMINE THE MEANS AND METHODS TO BE USED FOR ERECTION AND BRACING UNTIL PERMANENT BRACING IS IN PLACE.

03. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ERECT THE PANEL IN A MANNER THAT WILL BE BOTH SAFE FOR PERSONNEL AND PROPERTY, AND TO BRACE AND OTHERWISE PROTECT THE PANELS AGAINST WIND AND OTHER FORCES THAT MAY OCCUR DURING CONSTRUCTION AND UNTIL CONNECTIONS TO THE PERMANENT STRUCTURAL SYSTEM ARE COMPLETED.

04. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT A SUITABLE SLAB HAS BEEN PREPARED TO PROVIDE FOR THE LEVEL OF FINISH THAT HAS BEEN ESTABLISHED WITHIN THIS SPECIFICATION.

05. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE THE SLAB FINISHING INCLUDING SAW CUTTING OF ALL JOINTS WITH THE PANEL FORMING TO MINIMIZE THE IMPACT TO THE ARCHITECTURAL FINISH OF THE PANELS.

06. SHOP DRAWINGS
- A. DRAWINGS SHALL BE COMPLETE AND INCLUDE PLANS, ELEVATIONS, CROSS SECTIONS AND DETAILS OF ALL BUILDING COMPONENTS AND ACCESSORIES TO BE FURNISHED BY THE TILT UP SUPPLIER.
- B. APPROVAL OF SHOP AND ERECTION DRAWINGS IS AN APPROVAL OF GENERAL DESIGN ONLY AND DOES NOT RELIEVE THE TILT UP SUPPLIER FROM THE NECESSITY OF MAKING, WITHOUT COST, CHANGES OR CORRECTIONS DUE TO ERRORS IN FABRICATION, OR RESULTING FROM ERRORS IN SHOP AND/OR ERECTION DRAWING DIMENSIONS.
- C. CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND COORDINATE ALL OPENINGS IN TILT UP WITH TILT UP SUPPLIER.
- D. ONE TILT UP SUPPLIER WILL BE RESPONSIBLE FOR COORDINATING ENGINEERING, DRAFTING, AND SHOP DRAWING SUBMITTALS IN THE EVENT THAT TILT UP COMPONENTS WILL BE PROVIDED BY MORE THAN ONE SUPPLIER.
- E. SUBMIT PRODUCT DATA, SHOP DRAWINGS, AND CONCRETE MIX DESIGNS TO OWNER AND OWNERS CONTRACTED TESTING LABORATORY FOR REVIEW.

07. TILT UP SUPPLIER SHALL INCLUDE ERECTION, GROUTING, SAWING OF OPENINGS AT NEW AND EXISTING TILT UP . TILT UP SUPPLIER SHALL INCLUDE CAULKING OF ALL TILT UP TO TILT UP JOINTS, AND CAULKING OF ALL TILT UP TO OTHER MATERIAL JOINTS AT ALL EXPOSED AREAS. CAULK TO BE "TREMCO DYMERIC 240 FC". PROVIDE "SONNEBORN DEGUSSA NP1" CAULK AT ALL STRANLOK FINISH LOCATIONS IN FOOD PROCESSING FACILITIES, FOOD PREP AND FOOD STORAGE AREAS. PROVIDE "TREMCO DYMERIC 240 FC" AT ALL NON-FINISH INTERIOR AND EXTERIOR LOCATIONS. SEE FLOOR PLAN.

08. FACING CONCRETE SHALL BE DESIGNED FOR MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS INDICATED ON PROJECT DRAWINGS, OR SPECIFIED, AND TESTED ACCORDING TO ASTM C39.

09. THE BOND BREAKER USED ON THE TILT-UP PANELS AND THE CASTING SLAB MUST BE COMPATIBLE WITH ANY COATING SUITABLE FOR INTERIOR AND EXTERIOR CONCRETE PANELS AND SLAB.

10. CONTRACTOR SHALL ENSURE THAT FINISHED FLOOR SLAB DOES NOT SHOW SPALLING, BOLT HOLES, OR OTHER SURFACE DEFECTS AFTER TILT-UP CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL FIGURE ALL COSTS REQUIRED TO PROVIDE OWNER WITH FLOOR SLABS THAT MEET ALL QUALITY REQUIREMENTS STATED WITHIN THIS SPECIFICATION. WASTE SLABS ARE STRONGLY RECOMMENDED.

11. CASTING SLAB SHALL BE CURED. SAW CUTS, CRACKS OR JOINTS IN THE CASTING BED SHALL BE FILLED AND LEVELED WITH A SEALANT SO AS TO MINIMIZE TRANSFER OF THE JOINT LINE TO THE PANEL FACE.

12. SURFACES TO BE PAINTED SHALL BE PREPARED TO RECEIVE PAINT FINISH AS SPECIFIED. ALL EXPOSED EXTERIOR SURFACES SHALL BE SACKED AND GROUTED TO CREATE A SMOOTH HONECOMB-FREE SURFACE TO ACCEPT FINAL PAINT.

13. PANELS DAMAGED DURING ERECTION, CRACKS READILY VISIBLE FROM 40 FEET, PERMANENT BOWING FROM ERECTION, SPALLS AND PANELS WITH INSUFFICIENT TESTED STRENGTH, SHALL BE REPAIRED OR REPLACED IN A MANNER ACCEPTABLE TO OWNER, AT THE CONTRACTORS EXPENSE. ANY DEMOLITION OR REPAIR OF OTHER MATERIALS OR SYSTEMS AS A RESULT OF REPAIR OR REPLACEMENT OF DEFECTIVE CONCRETE SHALL BE AT THE CONTRACTORS EXPENSE.

SECTION NOT USED

MASONRY

1. MASONRY CONSTRUCTION SHALL CONFORM TO THE CURRENT EDITION OF "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" ACI AND "SPECIFICATIONS FOR MASONRY STRUCTURES" ACI.

2. BOND BEAMS, PILASTERS, AND LINTELS SHALL BE FILLED WITH CONCRETE HAVING F'c = 3000 PSI UNLESS NOTED OTHERWISE. COARSE AGGREGATE SHALL PEA GRAVEL. REINFORCE ALL CONTINUOUS BOND BEAMS WITH 2-#5, U.N.O. PROVIDE CORNER BARS TO MATCH. THE MINIMUM LENGTH OF LAP FOR BARS EMBEDDED IN CONCRETE SHALL BE 24" FOR #4 BARS, 30" FOR #5 BARS, 36" FOR #6 BARS AND 42" FOR #7 BARS.

3. MASONRY CONTRACTORS TO GROUT COURSE(S) SOLID WHERE EXPANSION ANCHORS ARE SHOWN/CALLED OUT ON DRAWINGS.

4. USE ONLY U-SHAPED LINTEL BLOCK FOR MASONRY LINTELS. CENTERLINE OF REINFORCING TO BE LOCATED 3" MAX FROM BOTTOM OF LINTEL BLOCK.

5. LINTELS SHALL BEAR A MINIMUM OF 8" AT EACH END. THE FIRST COURSE OF MASONRY ABOVE THE LINTEL SHALL BE LAID WITH FULL MORTAR BEDDING. AT BEARING WALLS, GROUT END CELL SOLID TO FLOOR BELOW. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR SPECIAL BOND BEAM AND LINTEL CONDITIONS.

6. FOR STEEL BEAMS BEARING PERPENDICULAR TO MASONRY WALL, GROUT AN AREA OF 4 CELLS WIDE, 4 COURSES DEEP, UNLESS NOTED OTHERWISE.

7. PROVIDE POCKETS IN MASONRY WALLS FOR STEEL BEAMS, JOISTS, GIRDERS AND COLUMN BASE PLATES AND BACK PATCH.

8. WALLS MUST BE BRACED OR TIED INTO FLOORS PRIOR TO BACKFILLING.

9. GROUT PLACEMENT IN REINFORCED MASONRY WALLS OR PIERS SHALL FOLLOW THE PROCEDURES DESCRIBED IN NCMA TEK MANUAL 3-2A FOR EITHER LOW-LIFT OR HIGH-LIFT GROUTING.

10. PROVIDE HORIZONTAL JOINT REINFORCEMENT SUCH AS DUR-O-WALL, 16 INCHES ON CENTER VERTICALLY FOR RUNNING BOND WALLS, AND 8" AND 10" STACK BOND WALLS. FOR 12" STACK BOND WALLS, STANDARD HORIZONTAL JOINT REINFORCEMENT AT 8" ON CENTER OR HEAVY (A = 0.056*MIN) JOINT REINFORCEMENT AT 16" ON CENTER.

11. CONSTRUCTION SHALL BE RUNNING BOND UNLESS OTHERWISE NOTED.

12. REFER TO ARCHITECTURAL DRAWINGS &/OR STRUCTURAL FOUNDATION PLAN FOR LOCATION OF ALL VERTICAL CONTROL JOINTS IN EXTERIOR WALLS. SEE STANDARD CONTROL JOINT DETAIL.

13. CONNECTIONS OF MASONRY VENEERS TO STRUCTURAL BACKUP WALL TO ADHERE TO THE FOLLOWING:

A. MASONRY VENEER ANCHORED TO MASONRY BACKING MAY BE ATTACHED USING WIRE ANCHORS, ADJUSTABLE ANCHORS, OR JOINT REINFORCEMENT. VENEER ANCHORED TO A CONCRETE OR STEEL BACKING MUST BE ATTACHED WITH ADJUSTABLE ANCHORS. VENEER ANCHORED TO WOOD STUDS TO BE ATTACHED WITH MINIMUM 22 GA. CORRUGATED SHEET METAL. ANCHOR SPACING TO BE SPACED AT MAXIMUM 32" HORIZONTALLY & 18" VERTICALLY WITH A MAXIMUM WALL SURFACE SUPPORTED OF 2.67 SQ. FT.

B. AROUND OPENINGS LARGER THAN 16" IN EITHER DIMENSION, SPACE ANCHORS AROUND PERIMETER OF OPENING AT A MAXIMUM OF 3 FT. ON CENTER & PLACE ANCHORS WITHIN 12" OF OPENING.

C. WHEN MASONRY VENEER IS ANCHORED TO WOOD BACKING, ANCHOR TO BE ATTACHED WITH A CORROSION RESISTANT 8d COMMON MAIL, OR A FASTENER EQUIVALENT OR GREATER PULL-OUT VALUE. WHEN VENEER IS ANCHORED TO STEEL BACKING, ATTACH WITH CORROSION-RESISTANT SCREW THAT HAS A MINIMUM NOMINAL SHANK DIAMETER OF 0.19".

D. ALL WALL TIES, ANCHORS, AND CONNECTORS TO CONFORM WITH NCMA TEK MANUALS 3-6B AND 12-1A.

14. TEMPORARY CONSTRUCTION BRACING OF FREESTANDING WALLS IS THE RESPONSIBILITY OF THE SUB-CONTRACTOR. PROCEDURES OUTLINED IN NCMA TEK MANUAL 3-4B TO BE FOLLOWED.

METALS

01. PROVIDE MISCELLANEOUS METAL ITEMS INCLUDING MATERIALS, FABRICATIONS, FASTENINGS AND ACCESSORIES REQUIRED FOR FINISHED INSTALLATION AS INDICATED AND SPECIFIED.

02. WHERE METAL ITEMS ARE TO BE ERECTED AND IN CONTACT WITH DISSIMILAR MATERIALS. PROVIDE CONTACT SURFACES WITH COATING OF AN IMPROVED ZINC CHROMATE PRIMER IN A MANNER TO OBTAIN NOT LESS THAN 1.0 MIL DRY FILM THICKNESS.

03. ALUMINUM EXTRUSIONS SHALL CONFORM TO ASTM B221. PROVIDE A CLEAR ANODIZED FINISH UNLESS OTHERWISE NOTED.

04. FASTENERS SHALL BE AS REQUIRED FOR PROPER ASSEMBLY AND INSTALLATION OF FABRICATED ITEMS.

05. MISCELLANEOUS MATERIALS: PROVIDE INCIDENTAL ACCESSORY MATERIALS, TOOLS, METHODS AND METHODS AND EQUIPMENT REQUIRED FOR FABRICATION AND INSTALLATION OF MISCELLANEOUS METAL ITEMS AS INDICATED ON DRAWINGS.

06. VERIFY DIMENSIONS PRIOR TO FABRICATION OR CASTING. FORM METAL ITEMS TO ACCURATE SIZES AND CONFIGURATIONS AS INDICATED ON DRAWINGS AND OTHERWISE REQUIRED FOR PROPER INSTALLATION.
FABRICATE WITH ALL LINES STRAIGHT AND ANGLES SHARP, CLEAN AND TRUE. DRILL, COUNTERSINK, TAP AND OTHERWISE PREPARE ITEMS FOR CONNECTION WITH WORK OF OTHER TRADES MAKE PERMANENT CONNECTIONS BY WELDING AND GRIND ALL EXPOSED WELDS SMOOTH TO MATCH ADJACENT SURFACES. ROUGH JOINT SURFACES NOT PERMITTED. AVOID USING BOLTS AND SCREWS UNLESS SPECIFICALLY INDICATED OR APPROVED. WHEN USED, DRAW UP TIGHT AND TIE THREADS TO PREVENT LOOSENING.

07. ALL FERROUS METAL ITEMS SHALL BE SHOP FINISHED. TOUCH UP OR REPAIR DAMAGED AREAS PRIOR TO INSTALLATION WITH SAME MATERIAL.

08. PROVIDE ALL STEEL BLOCKING AND BRACING IN METAL STUD FRAMED PARTITIONS NECESSARY FOR A COMPLETE INSTALLATION INCLUDE AS REQUIRED FOR SUPPORT OF ALL WALL-MOUNTED EQUIPMENT AND FABRICATIONS AS INDICATED ON DRAWINGS. PROVIDE SUPPORTS AT JAMBS OF DOORS AND ELSEWHERE, AS REQUIRED.

09. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS AND SPECIFICATIONS.

METALS: STRUCTURAL STEEL

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL MEMBERS SHALL BE GOVERNED BY THE CURRENT EDITION OF AISC "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDERS TO BE CERTIFIED. ALL WELDING TO CONFORM TO AWS D1.1 LATEST EDITION USING E70-XX ELECTRODES.

3. BOLTED CONNECTIONS TO BE DOUBLE ANGLE WITH ¾" DIAMETER ASTM A-325 BOLTS UNLESS SHOWN OTHERWISE. USE ¾" DIAMETER A-325 BOLTS FOR SINGLE SHEAR, WING PLATE CONNECTIONS. PROVIDE MAXIMUM NUMBER OF BOLTS IN A SINGLE LINE WITH 3" GAGE. PROVIDE WASHERS FOR ALL ANCHOR BOLTS (ASTM A-307).

4. PROVIDE AND MAINTAIN TEMPORARY BRACING OF STEEL UNTIL SECURELY INCORPORATED INTO CONSTRUCTION SUCH AS SHEAR WALLS, X-BRACING, ETC.

5. STEEL COLUMNS BUILT IN MASONRY SHALL HAVE ADJUSTABLE MASONRY WALL ANCHORS AT 2-0" ON CENTER VERTICALLY EACH SIDE, LOCATED IN COURSING.

6. WIDE FLANGE BEAMS 12" OR DEEPER SHALL HAVE ⅜" STIFFENER PLATE EACH SIDE AT ALL POINTS OF SUPPORT INCLUDING BEARING ENDS ON CONCRETE OR MASONRY. PROVIDE BEARING PLATES WITH (2) ¾" ANCHOR BOLTS 12" LONG WITH 3" HOOKS.

7. UNLESS NOTED OTHERWISE, FRAME AROUND ALL ROOF DECK OPENINGS LARGER THAN 12" IN DIAMETER, INCLUDING ROOF DRAINS/SUMPS, WITH 4-L'S 3X3X¼ DOWN-TURNED.

8. ALL STEEL BEAMS SHALL BE FABRICATED WITH THE NATURAL CAMBER (WITHIN THE MILL TOLERANCE) LOCATED ABOVE THE HORIZONTAL CENTERLINE BETWEEN THE END CONNECTIONS.

9. STAIRS, HANDRAILS, AND GUARDRAILS SHALL BE DESIGNED BY THE STEEL SUPPLIER.

10. SUBCONTRACTOR SHALL SUBMIT FIVE SETS OF STEEL SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS MUST BE SUBMITTED TO BRIOHN DESIGN GROUP A MINIMUM OF SEVEN WORKING DAYS PRIOR TO FABRICATION DATE NEEDED FOR PROJECT SCHEDULING.

11. ROOF SLOPE TO BE ¼" PER FOOT UNLESS OTHERWISE NOTED. ON CONSTRUCTION DOCUMENTS. ROOF SLOPE IS GENERALLY TO BE ACHIEVED BY SLOPING THE STRUCTURE UNLESS THICKENED OR TAPERED INSULATION IS NOTED ON THE ROOF PLAN. ROOF SLOPE MAY BE ⅛" PER FOOT IF A PONDING ANALYSIS IS PERFORMED PROVING STABILITY OF THE ROOF STRUCTURE AGAINST PROGRESSIVE DEFLECTIONS. SEE ASCE 7-05 SECTIONS 7.11 & 8.4. IF DIFFERENCE IN HEIGHT BETWEEN ROOF DRAINS AND HIGH POINT IN ROOF IS GREATER THAN 6", PLUMBING CONTRACTOR TO PROVIDE OVERFLOW DRAINS @ EACH DRAINAGE "FIELD" ON THE ROOF.

METALS: DECK

1. DECK, ACCESSORIES, AND ATTACHMENTS SHALL CONFORM WITH THE CURRENT EDITION OF "STEEL DECK INSTITUTE SPECIFICATIONS".

2. PROVIDE SUPPORT AT COLUMNS AS REQUIRED FOR DECK SUPPORT. PROVIDE L3X3X¼ MINIMUM.

3. AT OPENINGS IN DECK LESS THAN 12"X12", PROVIDE A 16 GAUGE COVER PLATE FASTENED TO DECK WITH #12 TEK SCREWS.

4. AT CHANGE IN DECK DIRECTION, PROVIDE A 22 GAUGE X 12" CONTINUOUS PLATE. PROVIDE SAME PLATE AT ALL RIDGES, VALLEYS, AND HIPS BENT TO MATCH PROFILE OF ROOF.

METALS: STEEL JOISTS & JOIST GIRDERS

1. DESIGN, FABRICATION, AND ERECTION SHALL CONFORM TO THE CURRENT EDITION OF "STEEL JOIST INSTITUTE SPECIFICATIONS."

2. JOIST MANUFACTURER SHALL BE A MEMBER OF THE SJI (STEEL JOIST INSTITUTE).

3. SUBCONTRACTOR SHALL SUBMIT FIVE SETS OF STEEL JOIST SHOP DRAWINGS TO BRIOHN DESIGN GROUP FOR APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS MUST BE SUBMITTED TO BRIOHN DESIGN GROUP A MINIMUM OF SEVEN WORKING DAYS PRIOR TO FABRICATION DATE NEEDED FOR PROJECT SCHEDULING.

4. PROVIDE SJI STANDARD BRIDGING AS SHOWN ON THE CONSTRUCTION DOCUMENTS OR AS REQUIRED BY DESIGN.

5. DO NOT DRILL OR CUT THROUGH ANY JOIST OR GIRDER.

6. ALL CONCENTRATED LOADS SHALL BE APPLIED AT A JOIST PANEL POINT UNLESS SPECIFICALLY NOTED OTHERWISE.

7. JOIST MANUFACTURER SHALL DESIGN JOISTS FOR ROOF TOP UNIT LOADS AND SUSPENDED UNIT OR BULKHEAD LOADS SHOWN ON CONSTRUCTION DOCUMENTS. COORDINATE EXACT LOCATION OF APPLIED LOAD WITH APPROPRIATE SUB-CONTRACTOR.

8. DESIGN JOIST, JOIST GIRDERS, AND BRIDGING TO RESIST A NET UPLIFT LOAD OF 5 PSF UNLESS OTHERWISE NOTED.

9. PROVIDE CAMBER IN JOIST AS RECOMMENDED BY SJI SPECIFICATIONS UNLESS OTHERWISE NOTED ON CONSTRUCTION DOCUMENTS.

10. JOIST SUPPLIER SHALL COORDINATE HIS WORK WITH THE STEEL SUPPLIER ON THE PROJECT.

11. DESIGN JOISTS AND JOIST GIRDERS FOR L/240 LIVE LOAD DEFLECTION UNLESS NOTED OTHERWISE.

METALS: COLD-FORMED STEEL FRAMING

1. DESIGN, FABRICATION, AND ERECTION OF COLD-FORMED STEEL FRAMING SHALL BE IN ACCORDANCE WITH THE AISI DESIGN MANUAL AS AMENDED TO DATE. ALL FRAMING MEMBERS SHOWN ON PLANS ARE SCHEMATIC AND ARE SHOWN FOR INTENT ONLY. (ASSUMES THAT THE DESIGN AND CALCULATIONS ARE DONE BY THE SUPPLIER)

1A. ALL LIGHT GAUGE FRAMING DESIGN & CALCULATIONS TO BE DONE BY SUPPLIER. THIS INCLUDES BEAMS, HEADERS, STUDS, COLUMNS, ECT. INCLUDING ALL CONNECTIONS TO MASONRY, CONCRETE, STEEL & OTHER LIGHT GAUGE MEMBERS.

2. STEEL STUD CURTAIN WALL AND CONNECTIONS TO BE DESIGNED BY SUPPLIER. (STEEL STUD CURTAIN WALL AND CONNECTION DESIGN SHALL BE SEALED BY PROFESSIONAL STRUCTURAL ENGINEER EXPERIENCED IN THIS WORK)

COMPONENTS & CLADDING
UPLIFT.. PER ASCE 7 (FM 1-28)
V .... 90 MPH
I 1.15
GCPI 0.55

LIVE LOADS: GROUND SNOW LOAD .... 30 PSF
IMPORTANCE FACTOR 1.0
FLAT ROOF SNOW LOAD .... 27 PSF
FACTOR Ct 1.1
FACTOR Ce 1.1
L/600 FOR BRICK VENEER
L/360 FOR WALL STUDS W/ATTACHED DRYWALL

3. MINIMUM DESIGN THICKNESS OF STUDS AND TRACK AT EXTERIOR OF BUILDING VERTICALLY SUPPORTING MASONRY SHALL BE 0.045 INCHES (GAGE: 18)

4. MINIMUM DESIGN THICKNESS OF STUDS AND TRACK AT EXTERIOR OF BUILDING VERTICALLY NOT SUPPORTING MASONRY SHALL BE 0.045 INCHES (GAGE: 18)

5. LOAD BEARING STUDS VERTICALLY SUPPORTING MASONRY SHALL BE DESIGNED TO CARRY ALL GRAVITY LOADS AND LATERAL FORCES INCLUDING BUT NOT LIMITED TO DEAD LOADS, LIVE LOADS, WIND LOADS, AND AXIAL LOAD ECCENTRICITIES.

6. LOAD BEARING STUDS NOT VERTICALLY SUPPORTING MASONRY SHALL BE DESIGNED TO CARRY ALL GRAVITY LOADS AND LATERAL FORCES INCLUDING BUT NOT LIMITED TO DEAD LOADS, LIVE LOADS, WIND LOADS, AND AXIAL LOAD ECCENTRICITIES.

7. NON-LOAD BEARING STUDS NOT VERTICALLY SUPPORTING MASONRY SHALL TRANSFER LATERAL LOADS TO STRUCTURE BY MEANS OF SLIDE CLIPS TO ALLOW FOR VERTICAL MOVEMENT OF PRIMARY STRUCTURAL MEMBERS.

8. SPLICES IN AXIALLY LOADED STUDS ARE NOT PERMITTED.

9. STUDS, TRACK, AND ACCESSORIES SHALL BE GALVANIZED WITH A MINIMUM G-90 COATING PER ASTM A-525

10. STUDS SHALL BE PLUMBED, ALIGNED, AND SECURELY ATTACHED TO FLANGES OR WEBS OF LOWER TRACK. STUDS SHALL BE SEATED TIGHT TO TRACK, EXCEPT AS NEEDED FOR DIAGONAL BRACING OR REQUIRED FOR NON-PLUMB WALLS OR WARPED SURFACES AND SIMILAR REQUIREMENTS.

11. JOINTS SHALL BE LOCATED DIRECTLY OVER BEARING STUDS OR A LOAD DISTRIBUTION MEMBER SHALL BE PROVIDED AT THE TOP OF THE WALL.

12. REFER TO ARCHITECTURAL WALL SECTIONS AND DETAILS FOR ADDITIONAL INFO.

13. ALL MEMBERS 0.0566 INCH MINIMUM THICKNESS OR THICKER (16 GAGE OR LOWER) SHALL BE OF MINIMUM 50 KSI STEEL. ALL MEMBERS OF 0.0451 INCH MINIMUM THICKNESS OR THINNER (18 GAGE OR HIGHER) AND ALL ACCESSORIES SHALL BE OF MINIMUM 33 KSI STEEL.

14. STEEL STUD ERECTOR SHALL CONSTRUCT ALL LIGHT GAGE FRAMING IN A MANNER WHICH PROTECTS LATERAL STABILITY OF THE STRUCTURE.

15. ALL WELDS PERFORMED ON GALVANIZED LIGHT GAGE COMPONENTS SHALL BE COATED WITH ZINC RICH PAINT FOR CORROSION PROTECTION IN ACCORDANCE WITH ASTM A780. CONTRACTOR SHALL NOTIFY THE ENGINEER TO ALLOW ADEQUATE TIME FOR WELDS TO BE REVIEWED BEFORE SYSTEMS ARE ENCLOSED

16. STEEL STUD WALLS SHALL BE DESIGNED AND CONSTRUCTED TO PROVIDE REQUIRED CAPACITIES TO CARRY CONSTRUCTION LOADS. CONTRACTOR SHALL PROVIDE NECESSARY BRIDGING OR ATTACHMENT TO WALL SHEATHING BEFORE STRUCTURAL COMPONENTS ARE LOADED.

METALS: COLD-FORMED STEEL FRAMING CONT

17. INSTALL SUPPLEMENTARY FRAMING, BLOCKING AND BRACING IN METAL FRAMING SYSTEM WHENEVER WALLS OR PARTITIONS ARE INDICATED TO SUPPORT FIXTURES, EQUIPMENT, SERVICES, CASEWORK, HEAVY TRIM AND FURNISHING AND SIMILAR WORK.

WOOD AND PLASTICS

01. PROVIDE AND OR INSTALL ALL ROUGH CARPENTRY, FINISH CARPENTRY INCLUDING MILLWORK, FINISH HARDWARE, ROUGH HARDWARE, FASTENING DEVICES AND MISCELLANEOUS ACCESSORIES AS MAY BE REQUIRED HEREIN AND OR AS SHOWN ON THE DRAWINGS.

02. ROUGH CARPENTRY: FURNISH AND INSTALL ALL FRAMING AS MAY BE REQUIRED FOR INTERIOR PARTITION, BAFFLE, WALLS, SOFFITS, CEILINGS, STOREFRONTS, EXTERIOR WALLS, ETC. AS NOTED AND WHERE SHOWN ON THE DRAWINGS.

03. FINISH CARPENTRY: FURNISH AND INSTALL ALL THAT IS REQUIRED FOR DOORS AND FRAMES, FINISH TRIM AND MOLDING AND PANELING. PERFORM FINISH CARPENTRY WORK IN ACCORDANCE WITH AWI QUALITY STANDARDS, PREMIUM GRADE. USE FULL LENGTH PIECES, MITER ALL JOINTS, SHOULDER JOINT AT DOOR JAMBS. FILL ALL NAIL HOLES AND SAND SMOOTH.

04. PROVIDE ROUGH LUMBER AND PLYWOOD IN STANDARD DIMENSIONS, MOISTURE CONTENT NOT MORE THAN 19%.

05. PROVIDE ALL NECESSARY ROUGH HARDWARE IN SIZES AND QUANTITIES REQUIRED BY LOCAL CODE OR APPROVED BY ARCHITECT.

06. USE FINISH OR CASING NAILS FOR EXPOSED WORK. USE TYPE "S" TRIM HEAD SCREWS FOR ATTACHMENT OF WOOD TRIM TO METAL STUDS, RUNNERS OR FURRING.

07. RELIEVE BACKS OF WOOD TRIM. KERF BACKS OF MEMBERS MORE THAN 5" WIDE AND 1" NOMINAL THICKNESS. EASE ALL EXTERNAL CORNERS.

08. INSTALL LAMINATES ONLY WHEN RECEIVING SURFACES ARE IN A SATISFACTORY CONDITION FOR INSTALLATION.

09. USE ADHESIVES RECOMMENDED BY THE MANUFACTURER FOR THE PARTICULAR APPLICATION. INSTALL IN ACCORDANCE WITH MANUFACTURER'S MOST CURRENT PRINTED APPLICATION INSTRUCTIONS. USE LOWEST VOC ADHESIVES AVAILABLE WHICH MEET OR EXCEED THE MANUFACTURES REQUIREMENTS.

10. PROTECT FROM DAMAGE BY OTHER TRADES WORKING ADJACENT TO THE INSTALLATION. REPLACE DAMAGED SURFACES.

11. REMOVE EXCESS ADHESIVE AND CLEAN SURFACES USING MANUFACTURER'S RECOMMENDED SOLVENT AND CLEANING PROCEDURES.

12. FILL IN ALL SEAMS WITH MANUFACTURER'S RECOMMENDED SOLVENT AND CLEANING PROCEDURES. USE LOWEST VOC CLEANING AGENTS AVAILABLE THAT MEET OR EXCEED THE MANUFACTURER'S REQUIREMENTS.

13. WOOD PRODUCTS SHALL MEET OR EXCEED THE AMERICAN WOODWORK INSTITUTE STANDARDS.

14. INSTALL WOODS AND PLASTICS IN CONFORMANCE WITH DETAILS AND THE FOLLOWING CONSIDERATIONS AND REQUIREMENTS:
A) INSTALL WOODS AND PLASTICS WITH TIGHT JOINTS.
B) MITER CASINGS AND MOLDINGS UNLESS OTHERWISE NOTED.
C) ALL RUNNING TRIM ONE (1) PIECE UP TO 10'-0" LONG. MATCH GRAIN AND COLOR PIECE TO PIECE.
D) USE FINISH NAILS EXCEPT WHERE ARE SPECIFICALLY CALLED FOR OR WHERE SCREWS DO NOT SHOW.
E) SET FASTENERS FOR PUTTYING.
F) WHERE SCREW ATTACHMENT REQUIRED, SPACE SCREWS AT EQUAL INTERVALS. SINK AND PUTTY IN FINISH WOOD SURFACES.
G) ALL MEMBERS AND LINES LEVEL AND PLUMB.
H) SELECT AND CUT MATERIAL TO EXCLUDE DAMAGED, MARKED OR DEFECTIVE AREAS.
I) FINISH EXPOSED SURFACES SMOOTH, FREE FROM TOOL AND MACHINE MARKS.
J) EASE ALL EXPOSED WOOD EDGES 1/8" MINIMUM RADIUS.
K) INSTALL FIRE RATED DOORS IN ACCORDANCE WITH REQUIREMENTS OF NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RECOMMENDATIONS.

15. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS AND SPECIFICATIONS.

WOOD: LUMBER

01. LUMBER SHALL BE GRADED AND STAMPED WITH MINIMUM STRUCTURAL DESIGN VALUES AS LISTED BELOW:
A. #1/#2 DOUGLAS FIR 850 PSI FB. 95 PSI FV. 1600 KSI E (BEAMS, JOISTS, LINTELS & HEADERS, UNLESS OTHERWISE NOTED)
B. #1/#2 S.P.F. 875 PSI FB. 1150 PSI FV. 1400 KSI E (ALL STUDS & PLATES, UNLESS OTHERWISE NOTED)
C. LVL @1800 KSI E OR MICRO-LAM @1900 KSI E 2600 PSI FB. 285 PSI FV (OR AS NOTED ON THE STRUCTURAL DRAWINGS)
D. WOOD HEADER AND FRAMING MATERIAL MATERIAL SHALL BE THOROUGHLY SEASONED, FREE FROM WARP AND FREE OF ALL SPLITS, SHAKES AND CHECKS.

02. MISCELLANEOUS LUMBER: PROVIDE NO. 3 OR STANDARD GRADE LUMBER OF ANY SPECIES FOR SUPPORT OR ATTACHMENT OF OTHER CONSTRUCTION, INCLUDING ROOFTOP EQUIPMENT CURBS AND SUPPORT BASES, CANT STRIPS, BUCKS, NAILERS, BLOCKING AND SIMILAR MEMBERS.

03. PROTECTION AGAINST DECAY WITH PRESERVATIVE-TREATED WOOD SHALL BE REQUIRED IN THE FOLLOWING AREAS:
A. ALL WOOD SILL PLATES, FRAMING AND FURRING STRIPS ATTACHED TO EXTERIOR BELOW GRADE MASONRY AND CONCRETE WALLS.
B. ALL WOOD PLATES, BLOCKING, FRAMING AND FURRING STRIPS ATTACHED TO EXTERIOR, SINGLE WITHE MASONRY WALLS.
C. ALL WOOD CAP FLASHING BLOCKING ATTACHED TO MASONRY OR CONCRETE PARAPETS.
D. ALL WOOD SLEEPERS AND SILL PLATES ON CONCRETE SLABS IN DIRECT CONTACT WITH EARTH.
E. ALL WOOD IN CONTACT WITH GROUND OR EXPOSED TO THE WEATHER.

04. EXCEPTION: WOOD SILL PLATES ON CONCRETE SLABS SEPARATED FROM DIRECT CONTACT TO THE EARTH WITH A 10 MIL POLYETHYLENE VAPOR BARRIER WILL NOT REQUIRE PRESERVATIVE-TREATMENT.

05. FINISHES FOR FASTENERS AND HARDWARE IN CONTACT WITH PRESERVATIVE-TREATED WOOD ARE BASED ON THE FOLLOWING ASSUMPTIONS:
A. ALL INTERIOR TREATED WOOD SHALL USE AN ACQ-C, ACQ-D (CARBONATE), CBA-A OR CA-B TREATMENT WITH RETENTION LEVELS LESS THAN OR EQUAL TO 0.40 PCF, 0.40 PCF, 0.41 PCF AND 0.21 PCF RESPECTIVELY.
B. ALL CONNECTION HARDWARE AND FASTENERS IN DIRECT CONTACT WITH INTERIOR TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED, MECHANICALLY GALVANIZED OR STAINLESS STEEL.
C. ALL CONNECTION HARDWARE AND FASTENERS IN DIRECT CONTACT WITH EXPOSED EXTERIOR TREATED WOOD OR UNKNOWN TREATMENTS SHALL BE STAINLESS STEEL.
D. USE TAPCON CLIMASEAL FASTENERS TO CONNECT ACQ-TREATED WOOD BLOCKING TO MASONRY OR CONCRETE PARAPETS.

06. SHOP DRAWINGS FOR PRESERVATIVE-TREATED WOOD, HARDWARE AND FASTENERS:
A. THE SUBCONTRACTOR SHALL FURNISH MATERIAL CERTIFICATES FOR ALL PRESERVATIVE TREATED WOOD TYPES, SPECIFYING THE NAME OF THE TREATING COMPANY, THE PRESERVATIVE USED, THE LEVEL OF TREATMENT (0.10, 0.25, 0.40, ETC.). THE INTENDED USE (ABOVE GROUND, GROUND CONTACT, ETC.) AND A REFERENCE TO THE APPROPRIATE AWPA STANDARD.
B. THE SUBCONTRACTOR SHALL FURNISH MATERIAL DATA SHEETS FOR HARDWARE AND FASTENERS IN CONTACT WITH PRESERVATIVE-TREATED WOOD.

07. PLACE 2" THICK NOMINAL FIRE-BLOCKING IN STUD WALLS AT CEILING, SOFFIT, FLOOR LEVELS AND AT EACH10'0" HEIGHT OF STUD.

08. JOISTS SHALL BE BLOCKED AT SUPPORTS AND BRIDGED OR BLOCKED AT INTERVALS OF 8"0" WHERE JOISTS ARE 2'x12" OR DEEPER.

09. JOISTS UNDER NON-BEARING PARTITIONS SHALL BE DOUBLED AND TRIPLED FOR BEARING PARTITIONS ABOVE, UNLESS OTHERWISE NOTED.

10. COMMON NAILS SHALL BE USED, UNLESS OTHERWISE NOTED.

11. LAG BOLTS AND SCREWS SHALL BE PRE-DRILLED TO SHANK DIAMETER AND FULL DEPTH AND SCREWED, NOT DRIVEN INTO PLACE.

12. CUT WASHERS SHALL BE PLACED UNDER HEADS AND NUTS OF ALL BOLTS AND UNDER HEADS OF LAG BOLTS. ONE CUT WASHER SHALL BE USED FOR BOLTS CONNECTING WOOD LEDGERS TO CONCRETE OR MASONRY WALLS.

13. SEE LUMBER, PLYWOOD AND NAILING SPECIFICATIONS ON STRUCTURAL DRAWINGS. PROVIDE AND INSTALL ALL WOOD FRAMING AS INDICATED ON THE DRAWINGS.

14. METAL CONNECTORS AND FRAMING DEVICES SHOWN ON DRAWINGS OTHER THAN CUSTOM FABRICATED ITEMS SHALL BE "STRONG-TIE" CONNECTORS BY SIMPSON COMPANY.

SECTIONS NOT USED

THERMAL AND MOISTURE PROTECTION

01. CAULK AROUND ALL WINDOWS (HEAD AND JAMB), DOORS, VENT, OPENINGS, WHERE DIFFERENT MATERIALS MEET, ROOF OPENINGS, EAVES, SOFFITS, JOINTS, COUNTERTOPS, DOOR FRAMES, ETC. AS REQUIRED FOR A WATERTIGHT AND AIRTIGHT CONNECTION. PROVIDE CAULK PER MANUFACTURERS RECOMMENDATIONS. CAULK TO BE "TREMCO DYMERIC 240 FC" FOR FOOD PROCESSING FACILITIES OR FOOD PREP/FOOD STORAGE AREAS. CAULK TO BE INSTALLED AFTER FINISH IS APPLIED TO SURFACES PER MANUFACTURE'S RECOMMENDATIONS.

02. PROVIDE NON-SAG SEALANT COMPLYING WITH REQUIREMENTS OF FEDERAL SPECIFICATIONS TTS-1543 OR FS TT-S-230 TYPE "II", CLASS "A". PROVIDE ACOUSTICAL SEALANT WHICH SHALL BE NON-HARDENING, NONDRYING SYNTHETIC RUBBER SEALING COMPOUND WITH MINIMUM 90% SOLIDS. USE AT ALL INTERIOR JOINTS AT INTERSECTIONS BETWEEN PLANES. AROUND DOOR AND WINDOW FRAMES PRIMER SHALL BE MADE OR RECOMMENDED BY SEALANT MANUFACTURER FOR THE SPECIFIC CONDITIONS AND SUBSTRATES. USE LOWEST VOC SEALANTS AND CAULKING AVAILABLE WHICH MEET OR EXCEED THE CODE AND MANUFACTURES REQUIREMENTS.

03. PROVIDE BACKING MATERIAL BY DOW "ETHAFOAM" OR APPROVED EQUAL. APPLY SEALANT OVER BACKING TO UNIFORM THICKNESS IN CONTINUOUS BEADS FILLING ALL JOINTS AND VOIDS, SOLID. SUPERFICIAL POINTING WITH A SKIM BEAD WILL NOT BE ACCEPTED.

04. ALL SURFACES SHALL BE ADEQUATELY CLEANED AND PREPARED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS PRIOR TO INSTALLATION. USE LOWEST VOC CLEANING AGENTS AVAILABLE THAT MEET OR EXCEED THE MANUFACTURER'S REQUIREMENTS.

05. ISOLATION AND CONTROL JOINT MATERIAL TO BE POLYETHYLENE FOAM EXPANSION ISOLATION JOINT FILLER OF 1/2" THICKNESS UNLESS OTHERWISE INDICATED. THE MINIMUM DEPTH OF ISOLATION JOINT MATERIAL TO BE EQUAL TO THE SMALL OF THE CONCRETE SLAB THICKNESS WITH WHICH IT COMES IN CONTACT.

06. WIND RESISTANCE OF EDGE FLASHING SHALL MEET OR EXCEED THE MINIMUM STANDARDS PER THE CODE AND SATISFY THE ANSI AND SPRI REFERENCED STANDARDS INCLUDING TESTING.

07. REFER TO ROOF PLAN FOR ADDITIONAL REQUIREMENTS AND SPECIFICATIONS FOR ROOFING MATERIALS AS THEY PERTAIN TO THERMAL AND MOISTURE PROTECTION.

DOORS AND WINDOWS

01. PROVIDE PRIMED HOLLOW METAL GALVANIZED FRAMES FOR EXTERIOR DOOR FRAMES. PROVIDE PRIMED HOLLOW METAL FRAMES FOR INTERIOR DOORS. WHERE WEATHERSTRIPPING IS IDENTIFIED ON THE DOOR SCHEDULE PROVIDE "CURRISEAL" TYPE WEATHER STRIPPING FOR EXTERIOR AND INTERIOR APPLICATIONS.

02. PROVIDE HOLLOW METAL EXIT DOOR CONSTRUCTED WITH THE FOLLOWING MATERIALS:
A) MINIMUM 18 GA. FOR FACE SHEETS OF INTERIOR DOORS.
B) 16GA. FOR EDGE CHANNELS.
C) MINIMUM 22 GA. FOR FACE STIFFENERS.
D) MINIMUM 16GA. FOR INTERIOR FRAMES.

03. PROVIDE DOORS OF SIZES AND TYPES INDICATED ON DRAWINGS, FULLY WELDED SEAMLESS CONSTRUCTION WITH NO VISIBLE SEAMS OR JOINTS ON FACES OR VERTICAL EDGES. THICKNESS AS SCHEDULED ON DRAWINGS.

04. FACE STIFFENERS, EDGES AND HARDWARE REINFORCEMENT SHALL BE THE HIGHEST QUALITY WORKMANSHIP AND MATERIALS. PROVIDE IN ACCORDANCE WITH BEST TRADE PRACTICE AND MANUFACTURER'S WRITTEN REQUIREMENTS AND RECOMMENDATIONS FOR THE USE INTENDED.

05. PROVIDE CUSTOM MADE WELDED UNITS WITH INTEGRAL TRIM. SIZES AND SHAPES AS INDICATED ON DRAWINGS. FABRICATE UNITS SQUARE, TRUE AND FREE FROM DEFECTS.

06. HARDWARE REINFORCEMENT AND ANCHORS (ERECTION, FLOOR, AND JAMS) SHALL BE AS REQUIRED FOR A SECURE INSTALLATION AND SHALL BE IN ACCORDANCE WITH TRADE REQUIREMENTS FOR THE SPECIFIED HARDWARE AND INTENDED USE.

07. INSTALL FRAMES IN ACCURATE LOCATIONS AS INDICATED ON DRAWINGS. INSTALL RIGID, PLUMB, LEVEL AND TRUE. ALIGN WITH ADJACENT CONSTRUCTION. SECURE FLOOR ANCHORS TO FLOOR CONSTRUCTION WITH APPROVED TYPE MECHANICAL FASTENINGS. ANCHOR TO ADJOINING WALLS WITH SPECIFIED ANCHORS. BRACE FRAMES TO RETAIN POSITION AND CONTINUOUSLY CHECK ALIGNMENT DURING CONSTRUCTION OF ADJACENT WALLS. ADJUST FRAME LOCATIONS AS NECESSARY USING SHIMS BEFORE FASTENING. LEAVE READY TO RECEIVE SEALANT WHERE INDICATED ON DRAWINGS. ADJUST AND CHECK OPERATION OF EVERY UNIT. REPAIR OR REPLACE UNITS WHICH CANNOT BE ADJUSTED TO OPERATE FREELY AND SMOOTHLY.

08. INSTALL WOOD DOORS, FRAMES AND TRIM. SIZES AND THICKNESS AS SCHEDULED ON THE DRAWINGS.

09. HANG DOORS AS SCHEDULED ON DRAWINGS, IN ACCURATE LOCATIONS WITH 1/8" CLEARANCE AT THE TOPS AND 3/8" CLEARANCE AT BOTTOM, UNLESS SPECIFICALLY NOTED FOR "UNDERCUTS" OR OTHER DEVIATIONS IN FIT. MAKE NO JOB SITE FIT IN CUTS UNLESS APPROVED. HANG PAIRS OF DOORS AS SPECIFIED WITH 3/32" CLEARANCE AT MEETING EDGES. DEMONSTRATE THAT DOORS OPEN FREELY WITHOUT BINDING, AND WHEN CLOSED, WILL LATCH PROPERLY.

10. PROVIDE ACCESS DOORS AS REQUIRED FOR SPECIFIED RATING. SIZE AS INDICATED.

11. PROVIDE ALL DOORS PER DOOR AND FRAME AND HARDWARE SCHEDULES. INSTALLATION TO COMPLY WITH MANUFACTURER'S INSTRUCTIONS.

12. PROVIDE ALL HARDWARE WITH ALL NECESSARY SCREWS, AND OTHER FASTENERS OF SUITABLE SIZE AND TYPE TO ANCHOR THE HARDWARE IN POSITION FOR LONG LIFE UNDER HARD USE. FURNISH ITEMS COMPLETE WITH EXPANSION SHIELDS, TOGGLE BOLTS AND OTHER ANCHORS, IN ACCORDANCE WITH THE MATERIAL TO WHICH THE HARDWARE IS TO BE APPLIED TO AND THE RECOMMENDATIONS OF THE HARDWARE MANUFACTURER. FASTENER FINISH SHALL HARMONIZE WITH THE HARDWARE MATERIAL.

13 COORDINATE WITH OTHER TRADES TO ASSURE PROPER AND ADEQUATE PROVISION IN THE WORK OF THOSE TRADES FOR INTERFACE WITH THE WORK OF THIS SECTION.

FINISHES

01. GENERAL FINISH REQUIREMENTS:
A) PROVIDE AND INSTALL ALL FINISHES AS INDICATED ON PLANS.
B) INSTALL ALL MATERIALS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
C) "FINISH" INSTALLER INSPECT SUBSURFACE AND PREPARE AS PER MANUFACTURER'S REQUIREMENTS, RECOMMENDATIONS, AND SPECIFICATIONS PRIOR TO INSTALLATION OF PRODUCT.
D) ALL FINISHES TO MEET ALL CODE REQUIREMENTS AND REGULATIONS INCLUDING FLAME SPREAD AND SMOKE DEVELOPMENT.

SPECIALTIES

01. NOT USED.

EQUIPMENT

01. NOT USED.

FURNISHINGS

01. NOT USED.

SPECIAL CONSTRUCTION

01. NOT USED.

CONVEYING SYSTEMS

01. REFER TO ELEVATOR DRAWINGS.

MECHANICAL

01. REFER TO MECHANICAL DRAWINGS.

ELECTRICAL

01. REFER TO ELECTRICAL DRAWINGS.

B R I O H N
DESIGN GROUP
3885 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE

SPECIFICATIONS

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB: 3149
DRAWN: CK/CJR
CHECKED: DF
DATE: 04-16-2019
SHEET:

GS.2

CJ engineering
civil design and consulting
9205 W. Center Street
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

ALTER TRADING

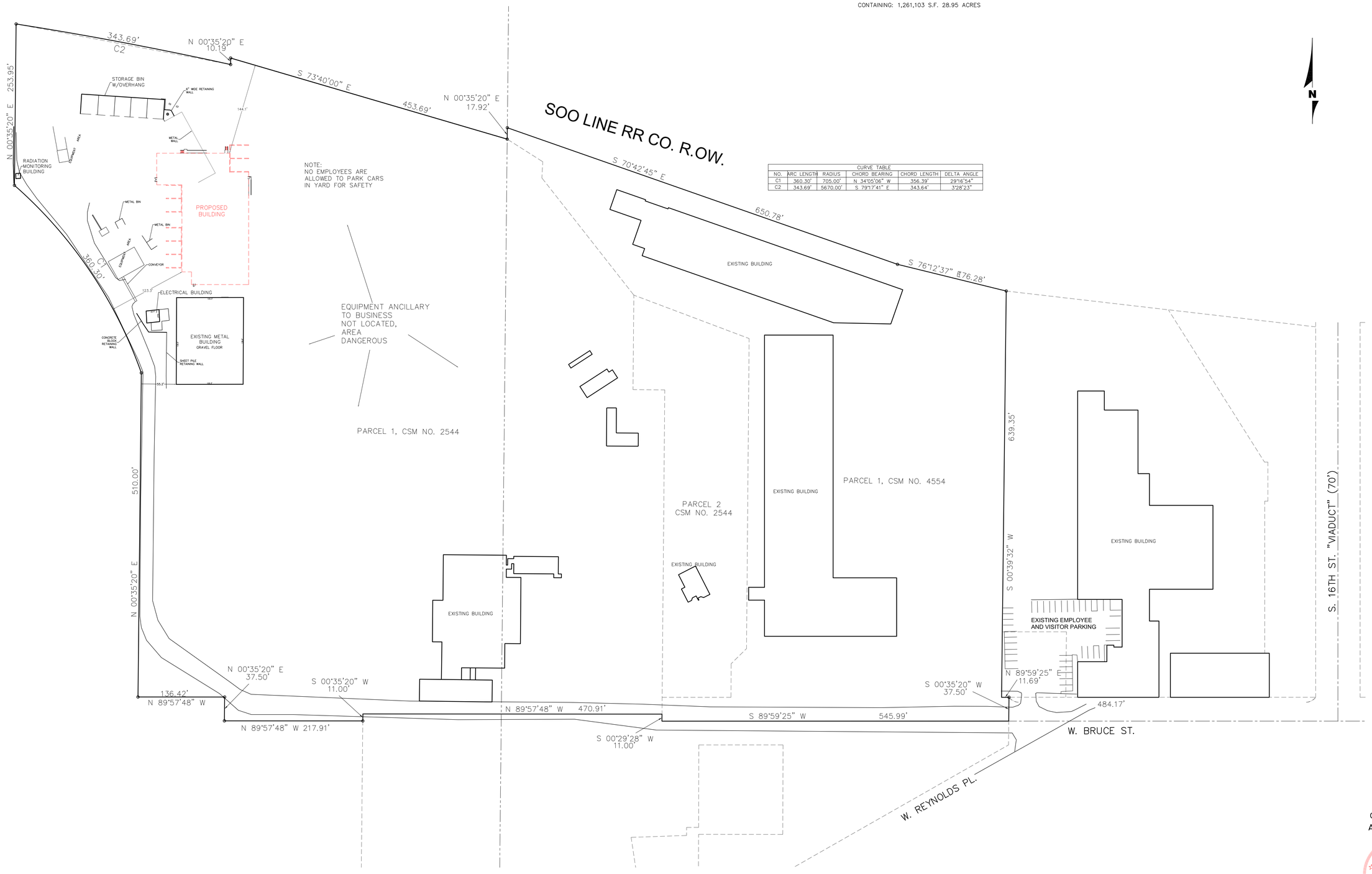
1800 W. BRUCE STREET MILWAUKEE, WI

DESCRIPTION

PARCEL 1 AND 2 OF, CERTIFIED SURVEY MAP NO. 2544 , BEING PARCEL II OF CERTIFIED SURVEY MAP NO. 2318, PARCEL 1 OF CERTIFIED SURVEY MAP NO. 4554, BEING A REDIVISION OF PARCEL 1 IN CERTIFIED SURVEY MAP 2219, PARCEL 1 IN CERTIFIED SURVEY MAP AND 3643 AND PARCELS 2 AND 3 OF CERTIFIED SURVEY MAP NO. 4114, BEING A PART OF THE NORTHEAST 1/4 AND NORTHWEST 1/4 OF SECTION 31, TOWN 7 NORTH, RANGE 22 EAST, IN THE CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN.

CONTAINING: 1,261,103 S.F. 28.95 ACRES

CURVE TABLE					
NO.	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH	DELTA ANGLE
C1	360.30'	705.00'	N 34°05'06" W	356.39'	29°16'54"
C2	343.69'	5670.00'	S 79°17'41" E	343.64'	3°28'23"



GRAPHIC SCALE

1 inch = 60 ft

CJE NO.: 1908R2
APRIL 15, 2019

WISCONSIN
CHRISTOPHER A. JACKSON
S-2851
WAUWATOSA, WI
LAND SURVEYOR

PLAT OF SURVEY

SV1.0

CJ engineering
civil design and consulting
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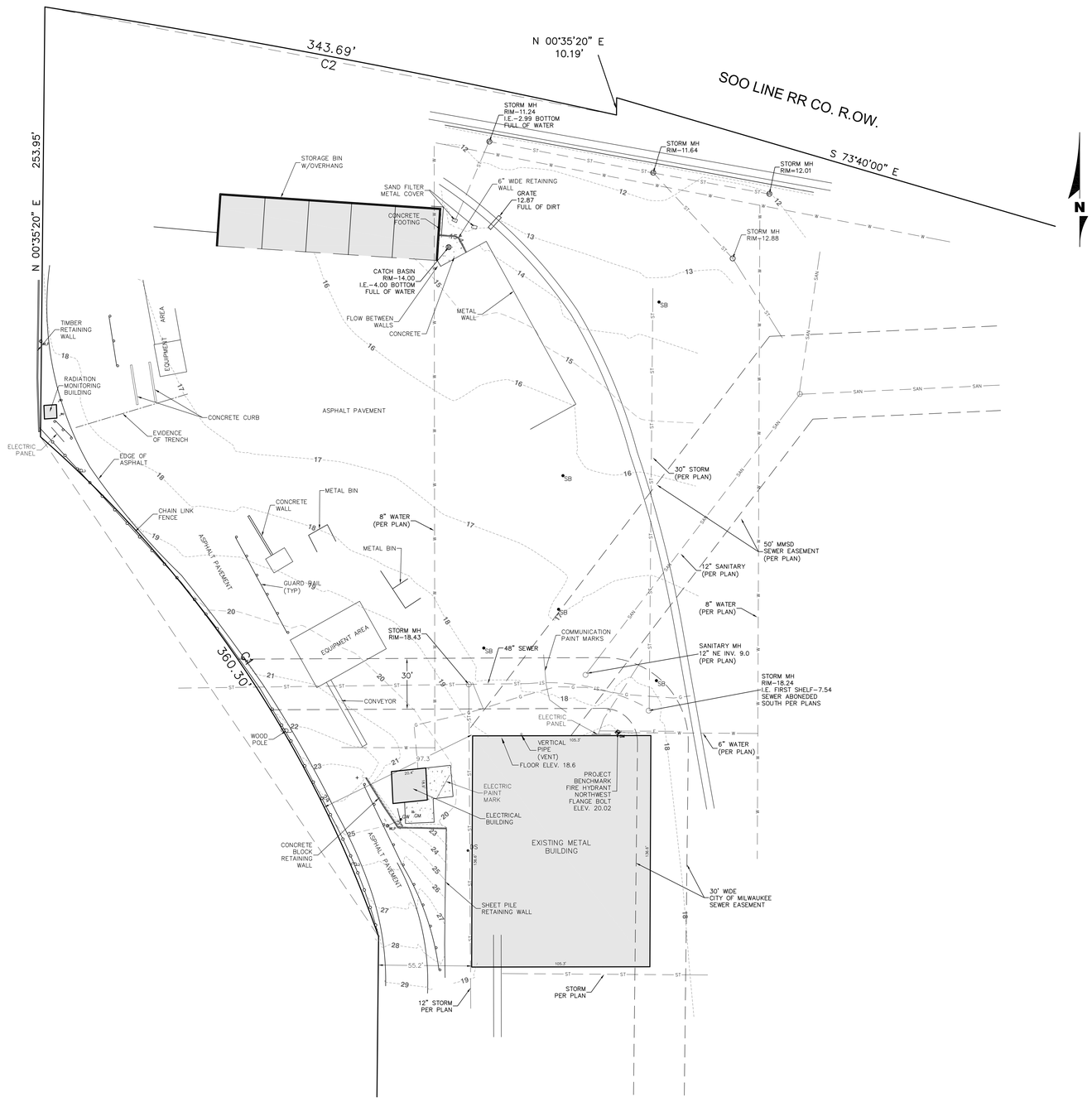
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

LIS
LAND INFORMATION SERVICES, INC.
ENGINEERS, SURVEYORS & CONSULTANTS
9100 W. STICKENY AVENUE
WAUWATOSA, WI 53226
T 262.512.9000
www.lisinc.net

ALTER TRADING

1800 W. BRUCE STREET MILWAUKEE, WI



DESCRIPTION

PART OF PARCEL 1, CERTIFIED SURVEY MAP NO. 2544, BEING PARCEL II OF CERTIFIED SURVEY MAP NO. 2318, BEING A PART OF THE NORTHEAST 1/4 AND NORTHWEST 1/4 OF SECTION 31, TOWN 7 NORTH, RANGE 22 EAST, IN THE CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN.

SURVEYOR'S NOTES

1) BASIS OF BEARINGS – PER CERTIFIED SURVEY MAP NO. 254

2) UNDERGROUND SEWER AND UTILITY INFORMATION AS SHOWN IS OBTAINED FROM THE RECORDS OF MUNICIPALITY AND LOCAL UTILITY COMPANIES. THE ACCURACY OF WHICH CAN NOT BE GUARANTEED OR CERTIFIED TO.

3) THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THIS SURVEY ARE APPROXIMATE. THERE MAY BE OTHER UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

4) UTILITY INFORMATION FROM BOTH FIELD LOCATION AND UTILITY PLANS OBTAINED.

5) SEE SHEET SV1.0 FOR ENTIRE PARCEL.

LEGEND

- BASKETBALL HOOP (BH)
- BENCHMARK (BM)
- BOLLARD (BO)
- BUSH, SHRUB, ETC.
- CATCH BASIN ROUND (CB)
- CATCH BASIN SQUARE (CB)
- CLEAN OUT (CO)
- CURB INLET (CB)
- EVERGREEN TREE (EG)
- FIRE HYDRANT (HYD)
- FLAG POLE (FP)
- GUY WIRE (GW)
- HANDICAP
- IRON PIPE (I.P.)
- LIGHT POLE
- MAIL BOX (MB)
- MANHOLE (MH)
- MONITORING WELL (MW)
- SIGN (TRAFFIC, ETC.)
- SOIL BORING (SB)
- TRAFFIC LIGHT (TL)
- DECIDUOUS TREE (TR)
- UTILITY MARKER
- UTILITY METER
- UTILITY PEDESTAL
- UTILITY POLE (UP)
- UTILITY VALVE
- WATER WELL

ABBREVIATIONS

F/A FLOW LINE
PVMT PAVEMENT ELEVATION
FND FOUND
MLP METAL LIGHT POLE
CLP CONCRETE LIGHT POLE
WLP WOOD LIGHT POLE
FGLP FIBERGLASS LIGHT POLE
MS METAL SIGN
GM GAS METER
EM ELECTRIC METER
B.S.E. DOOR SILL ELEVATION
EP ELECTRIC PEDESTAL
F.F.E. FINISHED FLOOR ELEVATION
FO FIBER OPTIC CABLE
GV GAS VALVE
WV WATER VALVE
CTP CABLE TV PEDESTAL
WLF WETLAND FLAG
YL YARD LIGHT

LINE TYPES

SANITARY FORCE MAIN

LINE TYPES (CONT.)

METAL FENCE
WOOD FENCE
GUARD RAIL
BURIED CABLE TV
BURIED COMMUNICATIONS
COMBINATION SEWER
BURIED ELECTRIC
BURIED FIBER OPTIC
BURIED GAS SERVICE
OVERHEAD UTILITY LINES
SANITARY SEWER
STORM SEWER
BURIED TELEPHONE
WATER MAIN / SERVICE

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811 or 1-800-242-8511 / MILW. AREA 259-1181
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

CURVE TABLE					
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C2	343.69'	5670.00'	S 79°17'41" E	343.64'	3°28'23"

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft

CJE NO.: 1908R0EX
APRIL 16, 2019

SITE SURVEY SV1.1

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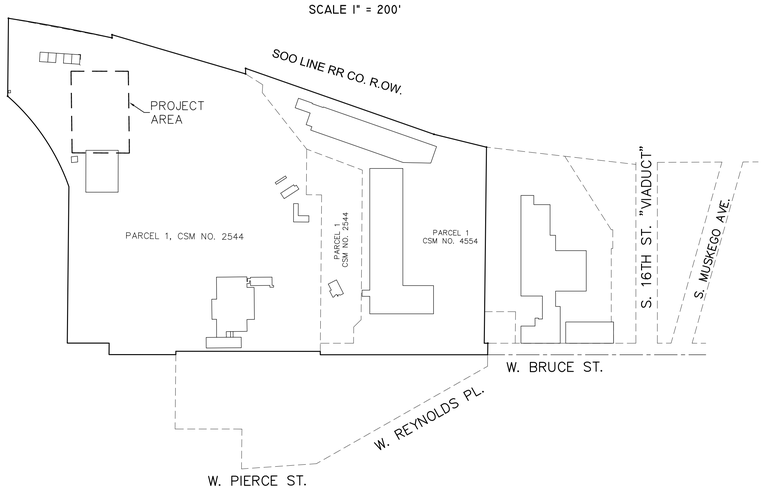
www.cj-engineering.com

ALTER TRADING

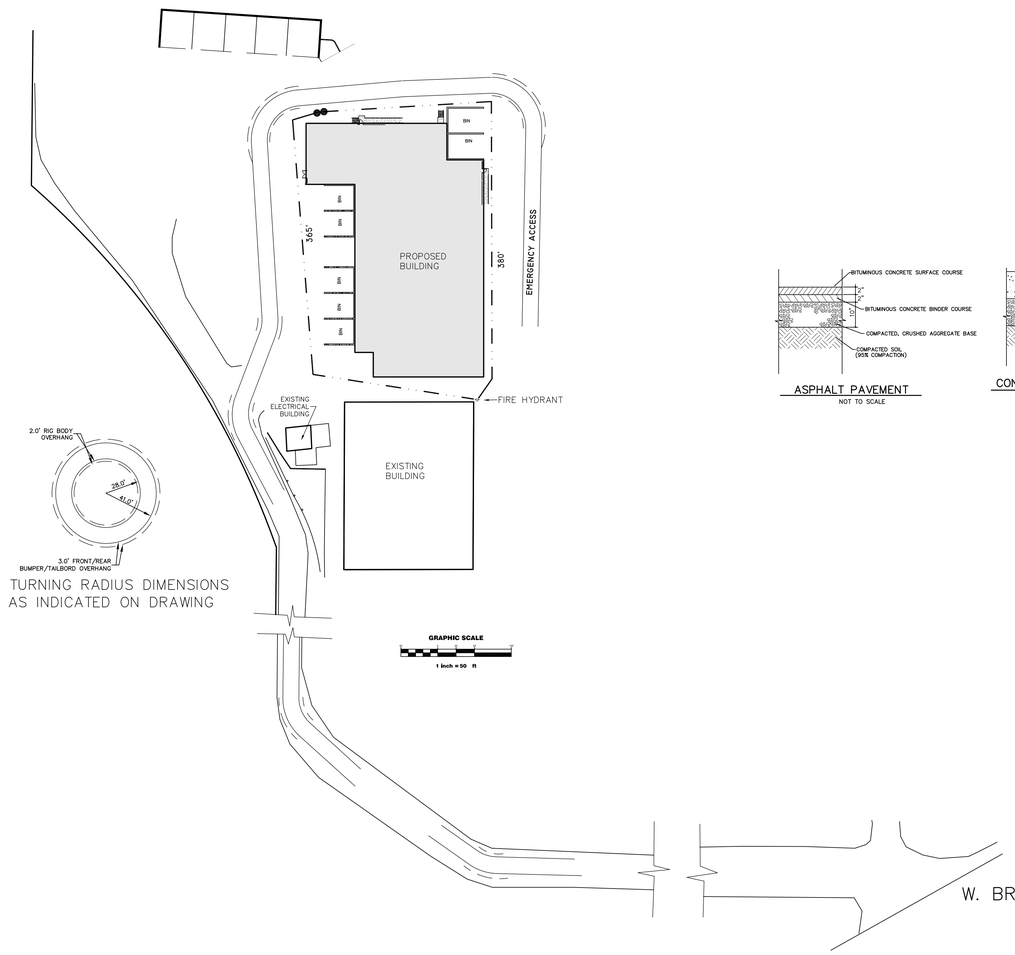
1800 W. BRUCE STREET MILWAUKEE, WI

SITE AREA MAP

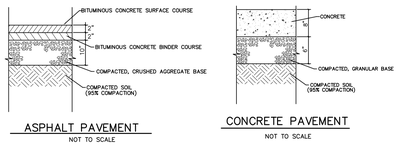
SCALE 1" = 200'



FIRE APPRARATUS AND HYDRANT EXHIBIT

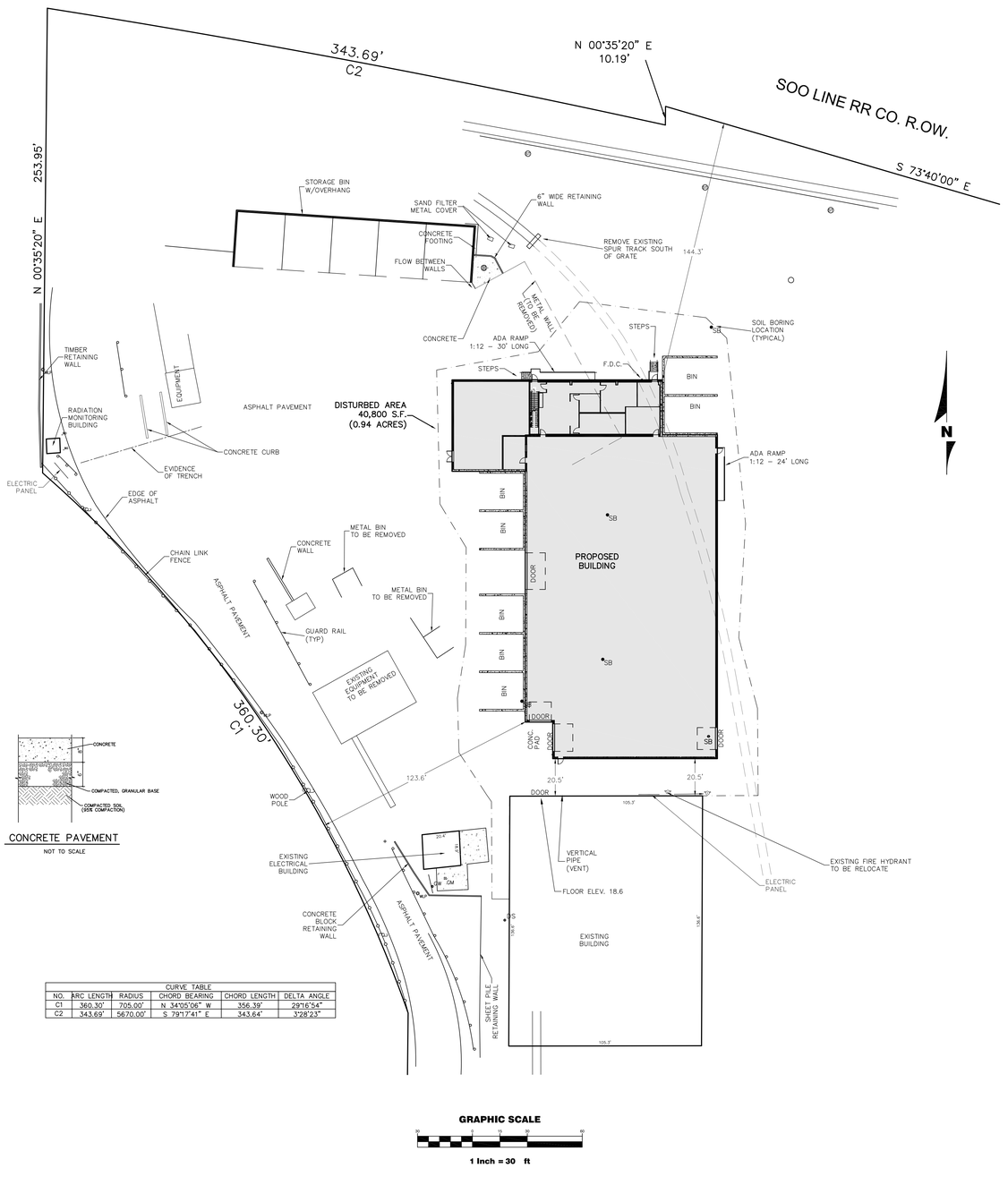


TURNING RADIUS DIMENSIONS AS INDICATED ON DRAWING



ASPHALT PAVEMENT
NOT TO SCALE

CONCRETE PAVEMENT
NOT TO SCALE



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NOTES:

1. THE PROPOSED DEVELOPMENT IS IN AN AREA OF 100% IMPERVIOUS SURFACE. SINCE THE DISTURBED AREA IS LESS THAN 1.0 ACRE AND THERE WILL BE NO CHANGE IN THE AMOUNT OF IMPERVIOUS SURFACE A STORM WATER MANAGEMENT PLAN IS NOT REQUIRED (PER CITY, MMSD AND STATE CODES, ORDINANCES AND RULES).

2. THE CONTRACTOR TO VERIFY PROPOSED PAVEMENT SECTIONS WITH PROPERTY OWNER.

CJE NO.: 1908R3
APRIL 17, 2019

SITE PLAN C1.0

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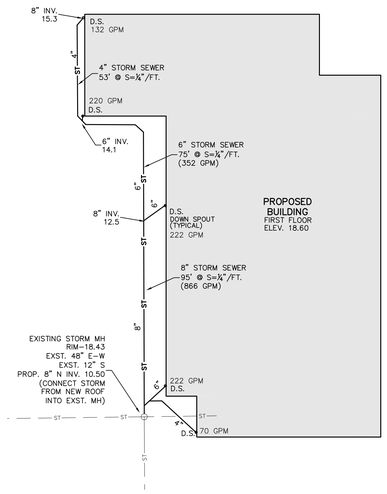
www.cj-engineering.com

ALTER TRADING

1800 W. BRUCE STREET MILWAUKEE, WI

STORM SEWER DESIGN



NOTES:

1. ALL STORM SEWER, SANITARY SEWER, AND WATER MAIN MATERIALS AND INSTALLATION PER APPLICABLE SECTIONS OF THE LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (STANDARD SPECIFICATIONS), WISCONSIN ADMINISTRATIVE PLUMBING CODE AND THE CITY OF MILWAUKEE REQUIREMENTS.

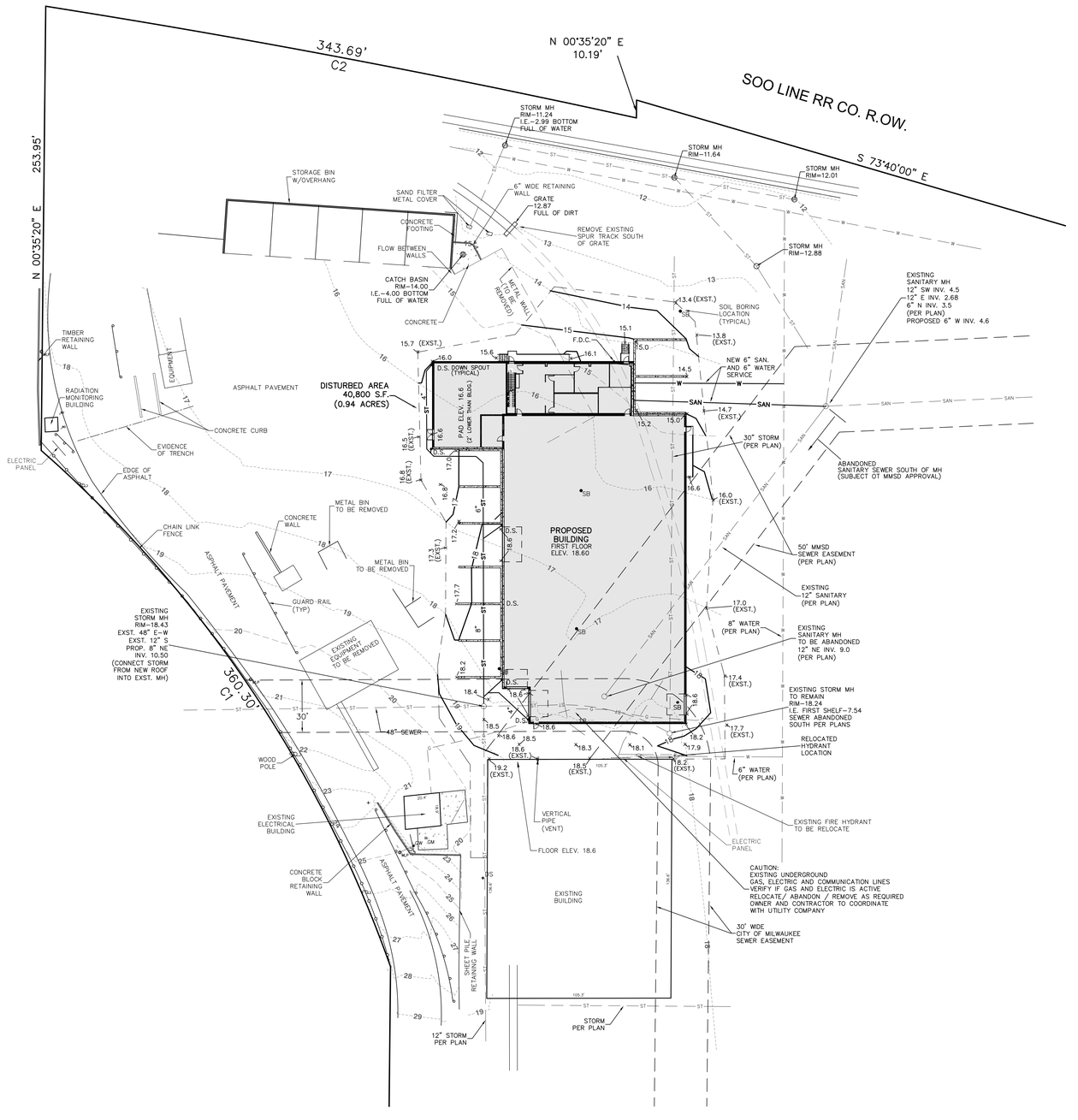
2. ALL TRENCHES IN PAVEMENT AREAS SHALL HAVE GRAVEL BACKFILL.

3. THE EXISTING UTILITIES ARE BASED ON PLANS PROVIDED BY THE OWNER AND WHAT DIGGERS HOTLINE WAS ABLE TO LOCATE PRIOR TO THE SURVEY. THERE MIGHT BE ADDITIONAL EXISTING UTILITIES NOT SHOWN ON THIS PLAN AND/OR THE EXACT EXISTING LOCATION OF THE PER PLAN UTILITIES MIGHT VARY FROM WHAT IS SHOWN.

4. PROPOSED WATER SERVICE SHALL HAVE A MINIMUM 6 FEET OF COVER.

5. THE CONTRACTOR SHALL VERIFY ALL SEWER AND WATER CONNECTIONS PRIOR TO UTILITY CONSTRUCTION. NOTIFY THE ENGINEER WITH ANY DISCREPANCIES.

6. THE PROPOSED DEVELOPMENT IS IN AN AREA OF 100% IMPERVIOUS SURFACE. SINCE THE DISTURBED AREA IS LESS THAN 1.0 ACRE AND THERE WILL BE NO CHANGE IN THE AMOUNT OF IMPERVIOUS SURFACE A STORM WATER MANAGEMENT PLAN IS NOT REQUIRED (PER CITY, MMSD AND STATE CODES, ORDINANCES AND RULES).



LEGEND

16	EXISTING CONTOUR
16	PROPOSED CONTOUR
x18.5	PROPOSED ELEVATION
ST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
W	EXISTING WATER MAIN
W	PROPOSED WATER MAIN
G	BURIED GAS MAIN
//	OVER HEAD WIRE
E	BURIED ELECTRIC
	DISTURBED AREA

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WS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

GRAPHIC SCALE
1 Inch = 30 ft

CJE NO.: 1908R3
APRIL 16, 2019

SITE GRADING AND UTILITY PLAN

C2.0

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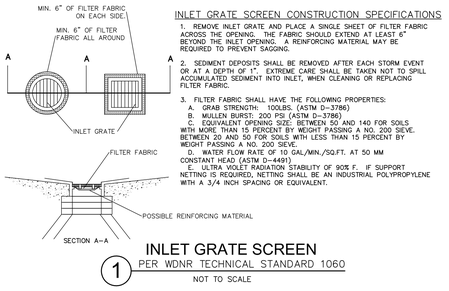
9205 W. Center Street
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

ALTER TRADE GRADING

1800 W. BRUCE STREET MILWAUKEE, WI



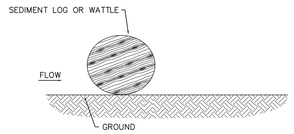
INLET GRATE SCREEN CONSTRUCTION SPECIFICATIONS

1. REMOVE INLET GRATE AND PLACE A SINGLE SHEET OF FILTER FABRIC ACROSS THE OPENING. THE FABRIC SHOULD EXTEND AT LEAST 6" BEYOND THE INLET OPENING. A REINFORCING MATERIAL MAY BE REQUIRED TO PREVENT SAGGING.

2. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR AT A DEPTH OF 1". EXTREME CARE SHALL BE TAKEN NOT TO SPILL ACCUMULATED SEDIMENT INTO INLET, WHEN CLEANING OR REPLACING FILTER FABRIC.

3. FILTER FABRIC SHALL HAVE THE FOLLOWING PROPERTIES:
   A. GRAB STRENGTH: 100LBS. (ASTM D-3786)
   B. MULLEN BURST: 200 PSI (ASTM D-3786)
   C. EQUIVALENT OPENING SIZE: BETWEEN 50 AND 140 FOR SOILS WITH MORE THAN 15 PERCENT BY WEIGHT PASSING A NO. 200 SIEVE. BETWEEN 20 AND 50 FOR SOILS WITH LESS THAN 15 PERCENT BY WEIGHT PASSING A NO. 200 SIEVE.
   D. WATER FLOW RATE OF 10 GAL/MIN./SQ.FT. AT 50 MM CONSTANT HEAD (ASTM D-4491)
   E. ULTRA VIOLET RADIATION STABILITY OF 90% F. IF SUPPORT NETTING IS REQUIRED, NETTING SHALL BE AN INDUSTRIAL POLYPROPYLENE WITH A 3/4 INCH SPACING OR EQUIVALENT.

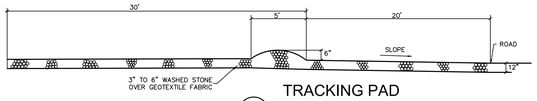
1 INLET GRATE SCREEN
PER WDNR TECHNICAL STANDARD 1060
NOT TO SCALE



2 WATTLE / SEDIMENT LOG
PER WDNR TECHNICAL STANDARD 1062
NOT TO SCALE

1. INSPECT SEDIMENT LOG WEEKLY AND WITHIN 24 HRS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES 0.5 INCHES OF RAIN OR MORE WITHIN A 24 HOUR PERIOD.

2. SEDIMENT LOG SHALL BE PER THE WDOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL).



3 TRACKING PAD
PER WDNR TECHNICAL STANDARD 1057
NOT TO SCALE

CONSTRUCTION SCHEDULE

1. OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS.
2. FLAG THE WORK LIMIT AND BUFFER AREA FOR PROTECTION.
3. INSTALL INLET GRATE SCREENS IN THE EXISTING CATCH BASIN.
4. INSTALL SEDIMENT LOG (WATTLE) AS SOON AS FEASIBLE.
5. DEMO EXISTING EQUIPMENT TO BE REMOVED.
6. INSTALL TRACKING PAD.
7. ROUGH GRADE SITE.
8. BEGIN BUILDING CONSTRUCTION.
9. INSTALL PROPOSED UTILITIES.
10. INSTALL BASE COURSE OF PAVEMENT.
11. FINAL GRADE SLOPES AND TOPSOIL CRITICAL SLOPES; VEGETATE AND MULCH ALL DISTURBED AREAS.
12. ALL EROSION CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND AFTER RAINFALL. NEEDED REPAIRS WILL BE PERFORMED IMMEDIATELY.
13. AFTER SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND VEGETATE THE DISTURBED AREAS.
14. ESTIMATED TIME BEFORE FINAL STABILIZATION = 3 MONTHS.

MAINTENANCE PLAN

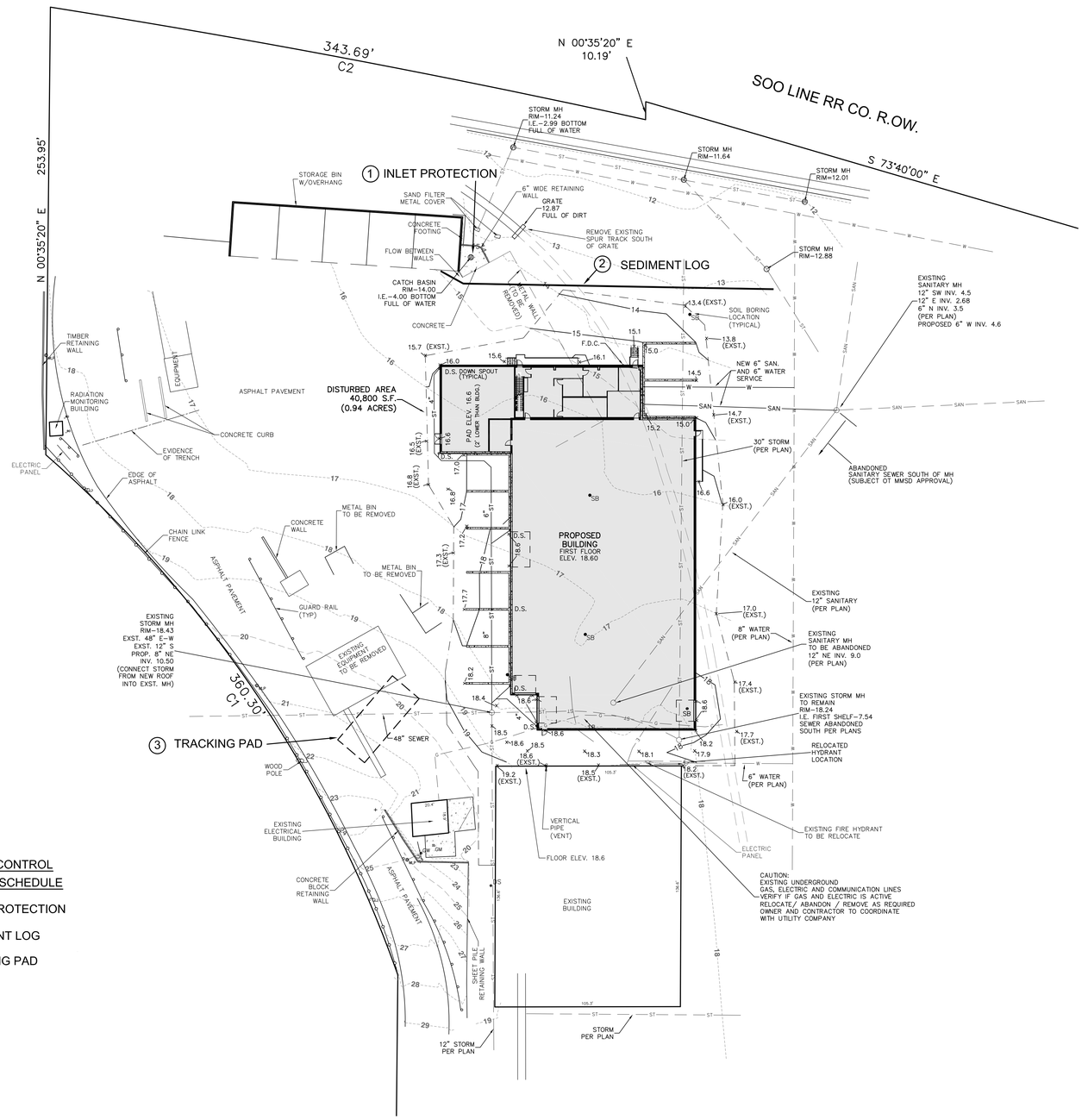
1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY ½" RUNOFF-PRODUCTION RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.

2. SEDIMENT WILL BE REMOVED FROM BEHIND THE WATTLE WHEN IT BECOMES ABOUT 0.3 FT. DEEP. THE WATTLE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.

3. ANY SEDIMENT REACHING A PUBLIC OR PRIVATE ROAD SHALL BE REMOVED BY STREET CLEANING BEFORE THE END OF EACH DAY.

EROSION CONTROL PRACTICES SCHEDULE

1. INLET PROTECTION
2. SEDIMENT LOG
3. TRACKING PAD



LEGEND

16	EXISTING CONTOUR
16	PROPOSED CONTOUR
x 18.5	PROPOSED ELEVATION
ST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
W	EXISTING WATER MAIN
W	PROPOSED WATER MAIN
G	BURIED GAS MAIN
OHW	OVER HEAD WIRE
E	BURIED ELECTRIC
	DISTURBED AREA

DISTURBED AREA: 40,800 S.F. (0.94 ACRES)

DIGGERS HOTLINE
CALL DIGGERS HOTLINE
811 or 1-800-242-8511 / MILW. AREA 259-1181
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

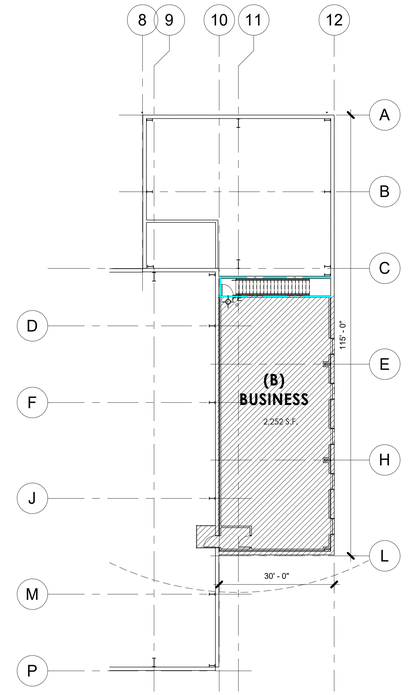
NOTE:

THE PROPOSED DEVELOPMENT IS IN AN AREA OF 100% IMPERVIOUS SURFACE. SINCE THE DISTURBED AREA IS LESS THAN 1.0 ACRE AND THERE WILL BE NO CHANGE IN THE AMOUNT OF IMPERVIOUS SURFACE A STORM WATER MANAGEMENT PLAN IS NOT REQUIRED (PER CITY, MMSD AND STATE CODES, ORDINANCES AND RULES).

GRAPHIC SCALE
30 0 15 30 60
1 Inch = 30 ft

CJE NO.: 1908R3
APRIL 16, 2019

EROSION CONTROL PLAN C3.0



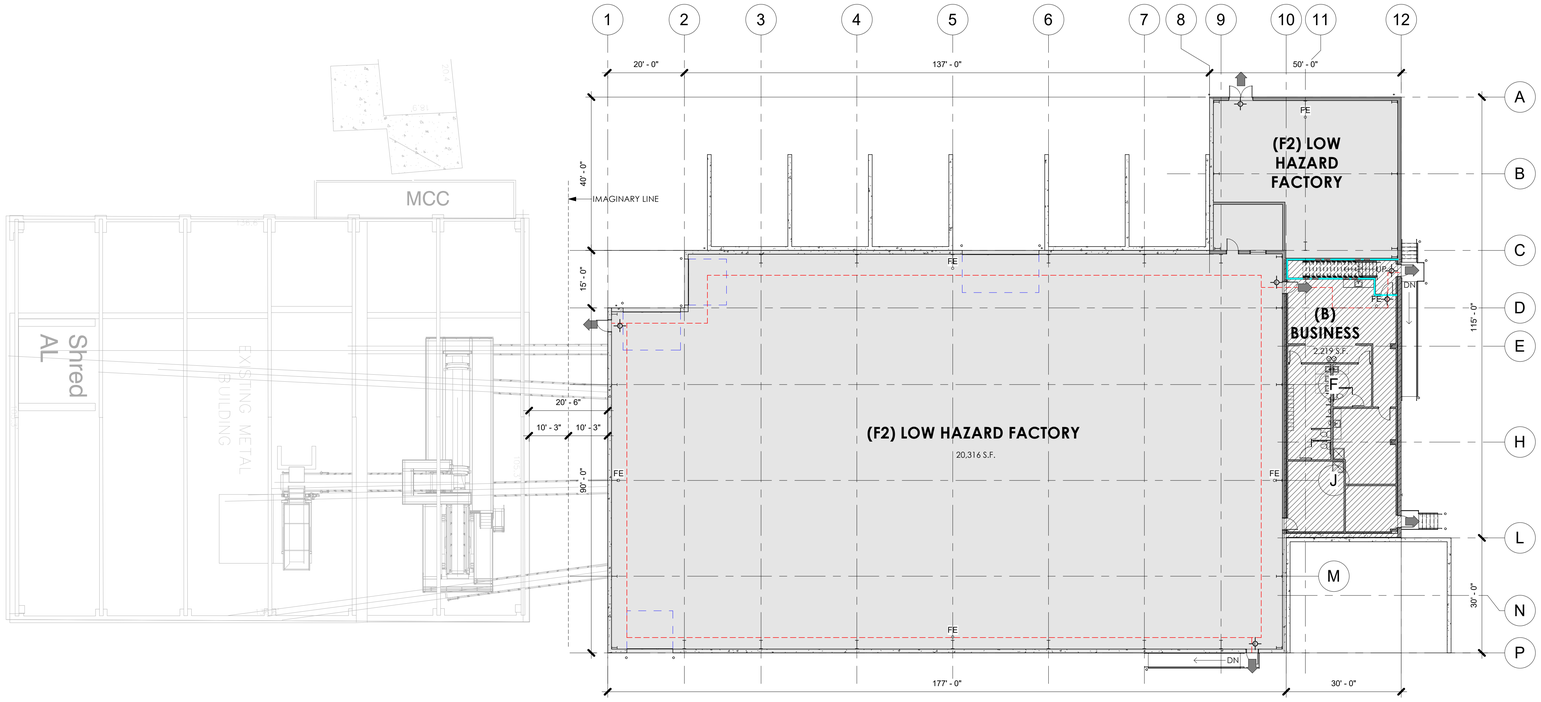
2 MEZZANINE FLOOR
1/16" = 1'-0"

CODE PLAN LEGEND

- EXIT ACCESS
- 34" EXIT WIDTH
- E EXIT LIGHT
- FE FIRE EXTINGUISHER BRACKET MTD.
- FEC FIRE EXTINGUISHER CABINET

RATED PARTITION LEGEND

- 1 HOUR RATED FIRE BARRIER WALL
- 2 HOUR RATED FIRE WALL
- 3 HOUR RATED FIRE WALL



1 FIRST FLOOR
1/16" = 1'-0"

TRUE NORTH

PLAN NORTH

APPLICABLE TO ALL PLAN VIEWS

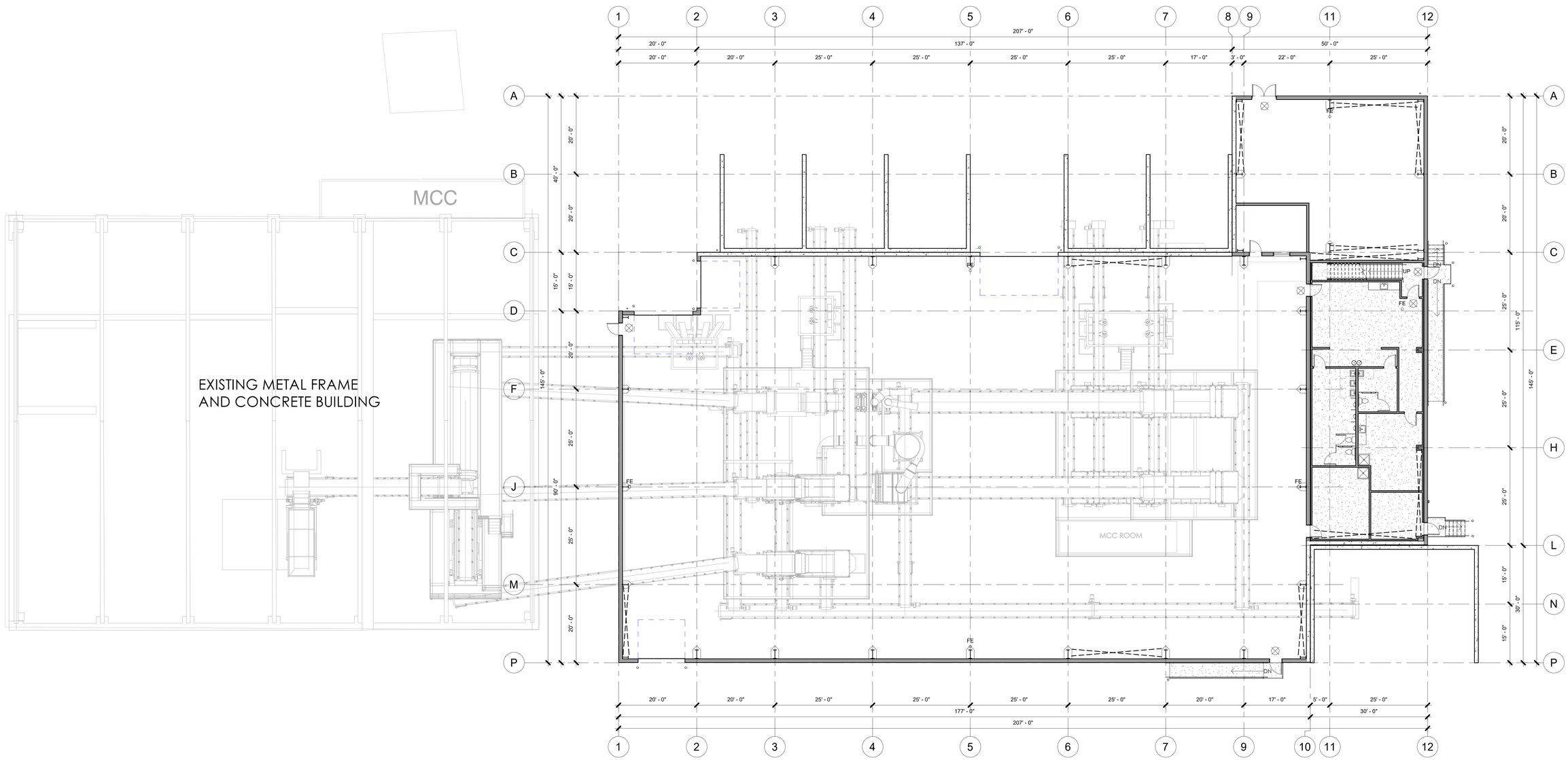
BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
CODE PLAN

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET:
A0.1



1 OVERALL FLOOR PLAN
3/32" = 1'-0"

BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
OVERALL FLOOR PLAN

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

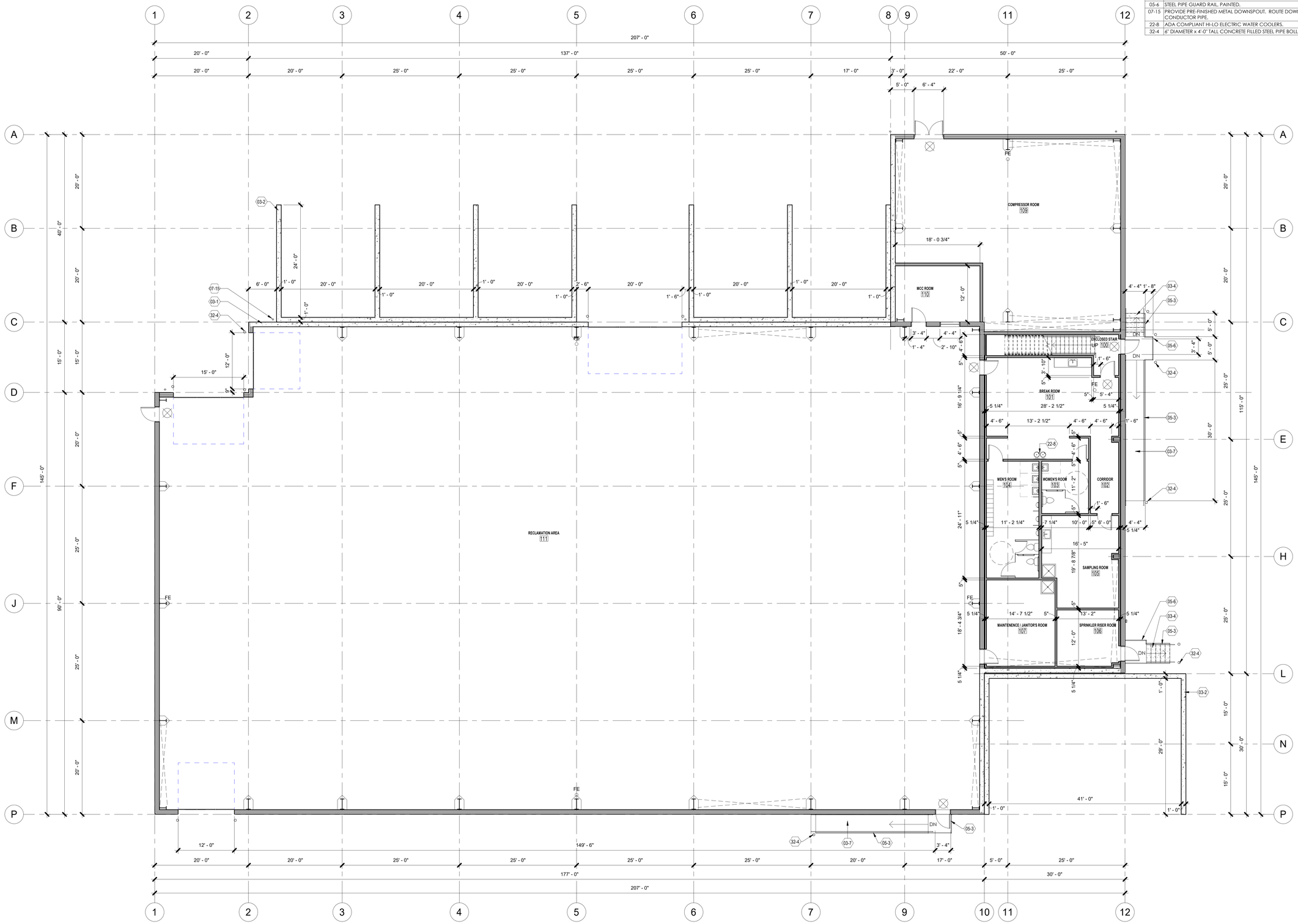
TRUE NORTH
PLAN NORTH
APPLICABLE TO ALL PLAN VIEWS

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET:
A1.0

KEYNOTE LEGEND

VALUE	FLOOR PLAN CODED NOTES
03-1	12" THICK CONCRETE WAINSCOT WALL, PAINTED
03-2	12" THICK CONCRETE CONTAINMENT WALLS, PAINTED
03-4	POURED CONCRETE STAIRS
03-7	POURED CONCRETE RAMP
05-3	STEEL PIPE GUARD AND HANDRAILING, PAINTED.
05-6	STEEL PIPE GUARD RAIL, PAINTED.
07-15	PROVIDE PRE-FINISHED METAL DOWNSPOUT. ROUTE DOWN FACE OF WALL TO VERTICAL CONDUCTOR PIPE.
22-8	ADA COMPLIANT HI-LO ELECTRIC WATER COOLERS.
32-4	6" DIAMETER x 4'-0" TALL CONCRETE FILLED STEEL PIPE BOLLARD(S), PAINTED SAFETY YELLOW



1 OVERALL FLOOR PLAN
1/8" = 1'-0"

BRIOHN DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

NEW FLOOR PLAN

SHEET TITLE

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

TRUE NORTH

PLAN NORTH

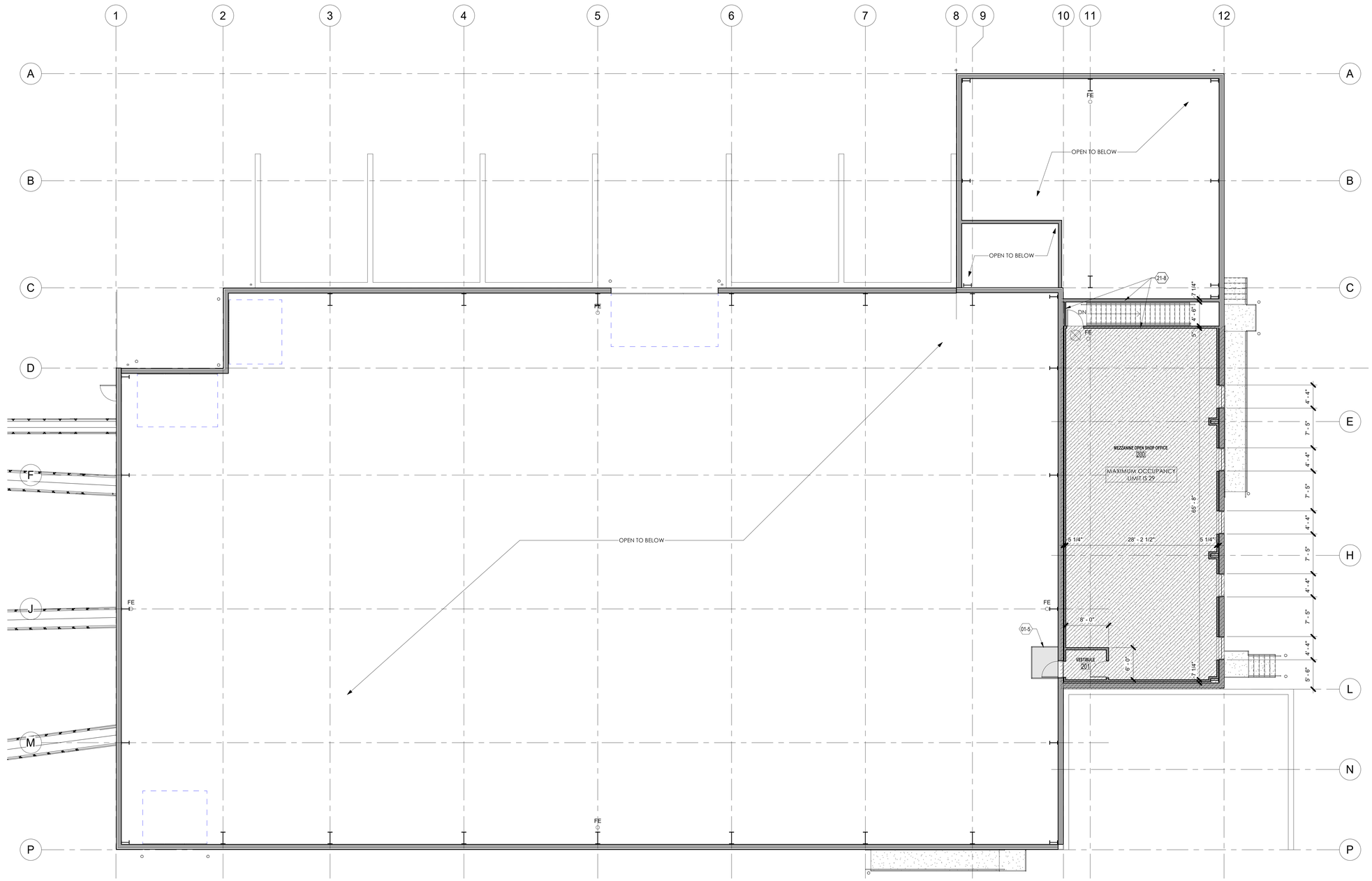
APPLICABLE TO ALL PLAN VIEWS

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET: A1.1

KEYNOTE LEGEND

VALUE	FLOOR PLAN CODED NOTES
01-5	PROVIDE STEEL GRATE LANDING FOR PLATFORM WITH SUPPORT COLUMNS - INCLUDE 42" HIGH GUARD RAIL PER OSHA AND IBC.
21-8	1 HOUR RATED FIRE BARRIER DRYWALL PARTITION WALLS FOR STAIR ENCLOSURE.



1 MEZZANINE FLOOR PLAN
1/8" = 1'-0"

BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
MEZZANINE FLOOR PLAN

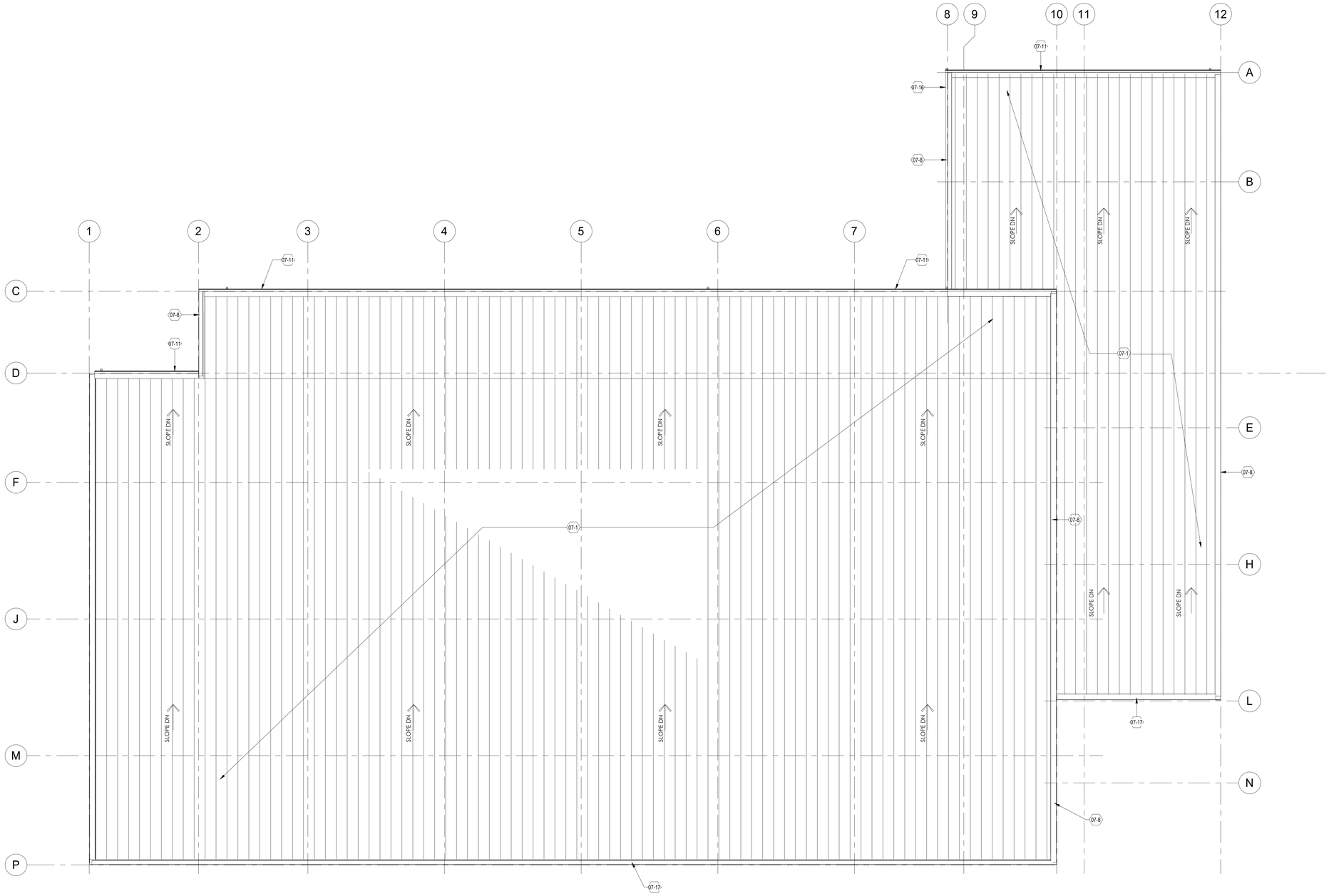
PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

TRUE NORTH
PLAN NORTH
APPLICABLE TO ALL PLAN VIEWS

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019
SHEET:	A1.2

KEYNOTE LEGEND

VALUE	FLOOR PLAN CODED NOTES
07-1	PRE-FINISHED METAL STANDING SEAM / IMP INSULATED PANEL ROOF
07-8	PRE FINISHED METAL RAKE TRIM.
07-11	PRE-FINISHED METAL GUTTER SIZED TO MEET REQUIRED CAPACITY FOR ROOF DRAINAGE.
07-16	PRE-FINISHED METAL DOWNSPOUT RUN HORIZONTALLY SLOPED AS REQUIRED BY CODE TO CONNECTING VERTICAL DOWNSPOUT. ROUTE HORIZONTAL DOWN ALONG FACE OF WALL.
07-17	PRE-FINISHED TRANSITION FLASHING (ROOF TO WALL)



1 NEW ROOF PLAN
1/8" = 1'-0"

BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

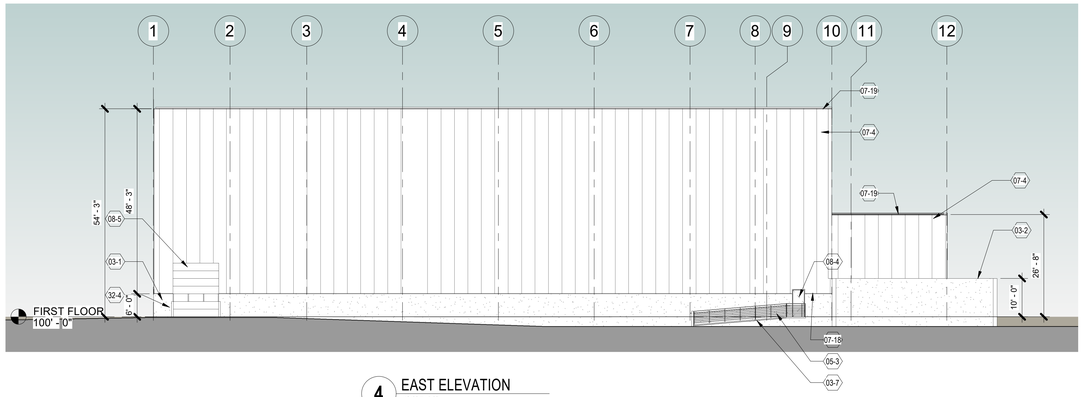
SHEET TITLE
NEW ROOF PLAN

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

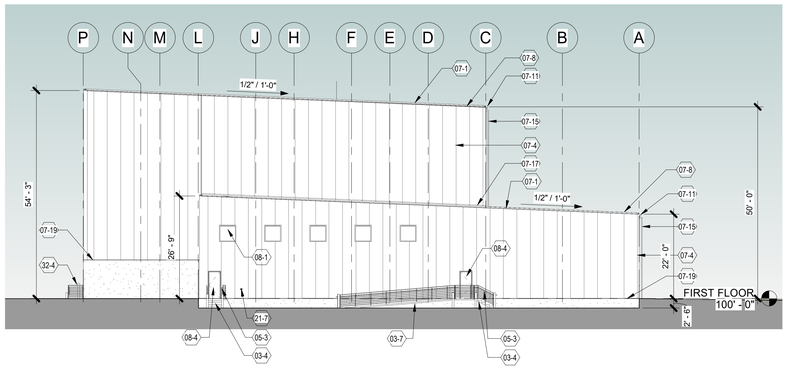
TRUE NORTH
PLAN NORTH
APPLICABLE TO ALL PLAN VIEWS

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

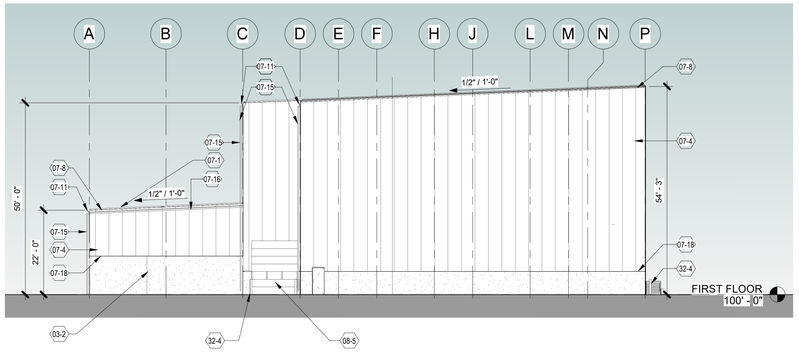
SHEET:
A4.1



4 EAST ELEVATION
1/16" = 1'-0"



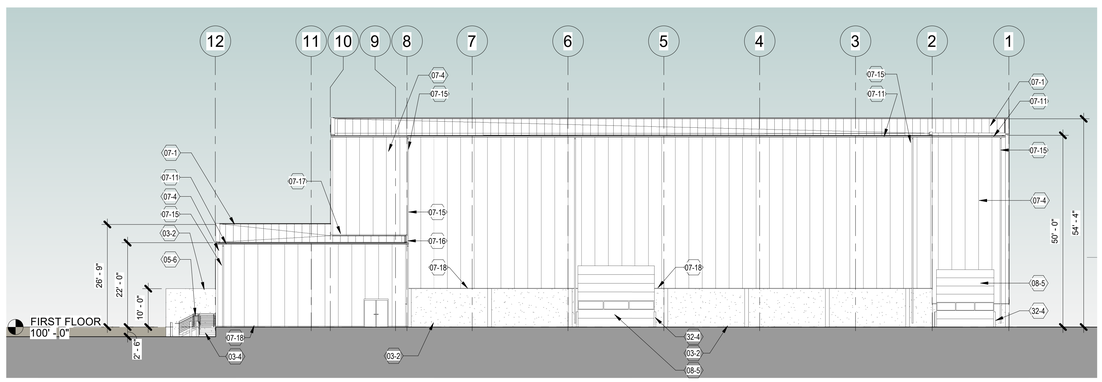
3 NORTH ELEVATION
1/16" = 1'-0"



2 SOUTH ELEVATION
1/16" = 1'-0"

KEYNOTE LEGEND

VALUE	FLOOR PLAN CODED NOTES
03-1	12" THICK CONCRETE WAINSCOT WALL, PAINTED
03-2	12" THICK CONCRETE CONTAINMENT WALLS, PAINTED
03-4	POURED CONCRETE STAIRS
03-7	POURED CONCRETE RAMP
05-3	STEEL PIPE GUARD AND HANDRAILING, PAINTED.
05-6	STEEL PIPE GUARD RAIL, PAINTED.
07-1	PRE-FINISHED METAL STANDING SEAM / IMP INSULATED PANEL ROOF
07-4	3" METAL SANDWICH PANEL. EXTERIOR FACING: HARD AGGREGATED FIBER-REINFORCED POLYMER COATING G-90 GALVANIZED OR AZ-50 ALUMINUM-ZINC COATED STEEL IN 22 GA. FORM CORE: FOAMED-IN-PLACE, NON-CFC & ZERO ODP POLYURETHANE, FAM CLASS 1 APPROVAL. INTERIOR FACING: LIGHT MESA WAVE PATTERN, NOMINAL 1/16" DEEP G-90 GALVANIZED OR AZ-50 ALUMINUM-ZINC COATED STEEL IN 26, 24 AND 22 GA.
07-8	PRE FINISHED METAL RAKE TRIM.
07-11	PRE-FINISHED METAL GUTTER SIZED TO MEET REQUIRED CAPACITY FOR ROOF DRAINAGE.
07-15	PROVIDE PRE-FINISHED METAL DOWNSPOUT. ROUTE DOWN FACE OF WALL TO VERTICAL CONDUCTOR PIPE.
07-16	PRE-FINISHED METAL DOWNSPOUT RUN HORIZONTALLY SLOPED AS REQUIRED BY CODE TO CONNECTING VERTICAL DOWNSPOUT. ROUTE HORIZONTAL DOWN ALONG FACE OF WALL.
07-17	PRE-FINISHED TRANSITION FLASHING (ROOF TO WALL)
07-18	PRE-FINISHED METAL BASE TRIM FLASHING
07-19	PRE-FINISHED METAL EAVE FLASHING
08-1	4'-0" X 4'-0" THERMALLY BROKEN CLEAR ANODIZED ALUMINUM FIXED FRAMED STOREFRONT WINDOW SYSTEM W/1" INSULATED LOW-E GLASS
08-4	PAINTED HOLLOW METAL SERVICE DOOR AND FRAME
08-5	INSULATED OH DOOR. FACTORY FINISHED WITH VISION WINDOWS.
21-7	FIRE DEPARTMENT CONNECTION AND ALARM - REFER FLOOR PLAN.
32-4	6" DIAMETER x 4'-0" TALL CONCRETE FILLED STEEL PIPE BOLLARD(S). PAINTED SAFETY YELLOW



1 WEST ELEVATION
1/16" = 1'-0"

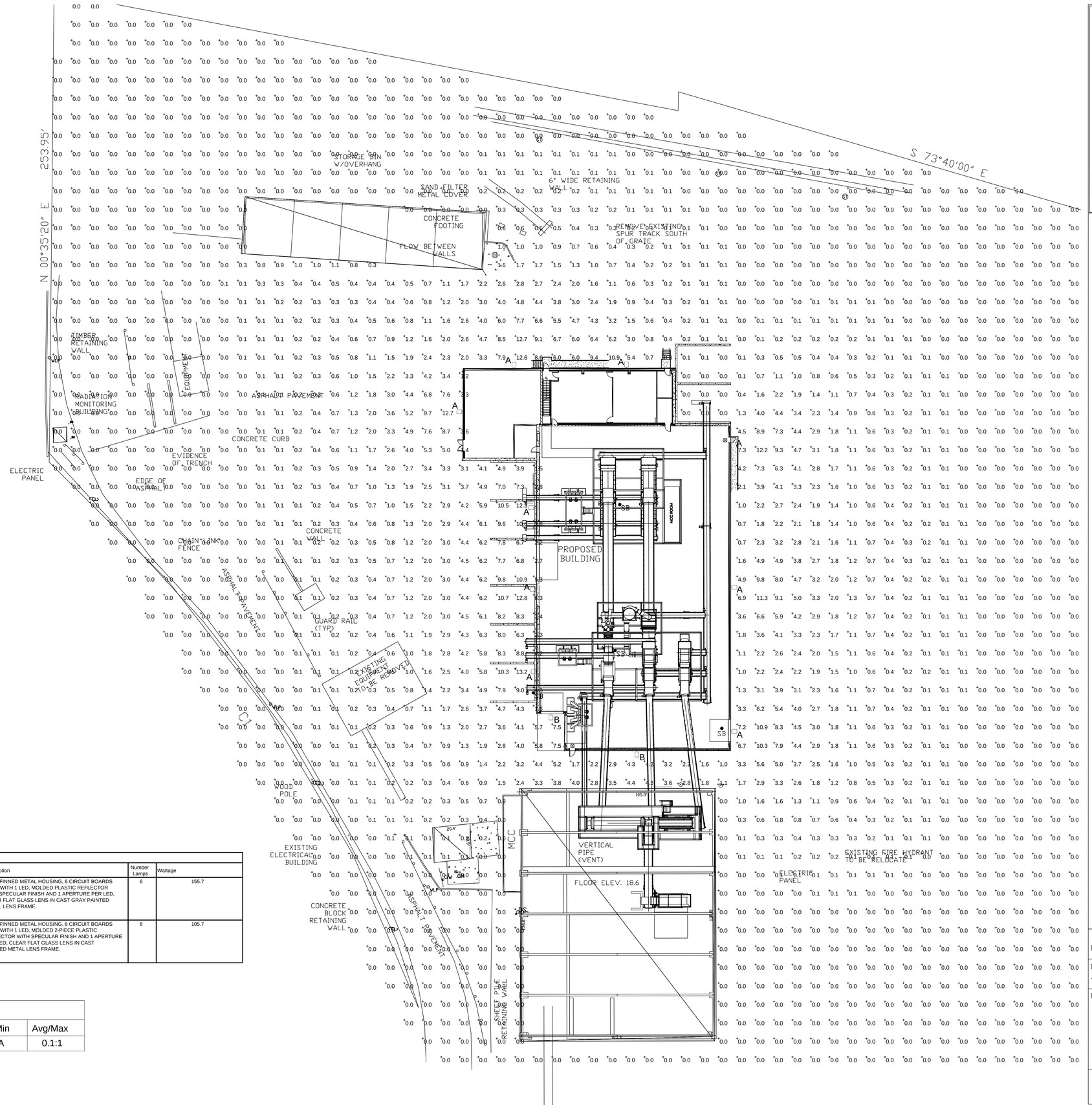
BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
EXTERIOR ELEVATIONS

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB:	3149
DRAWN:	CK/CJR
CHECKED:	DF
DATE:	04-16-2019

SHEET:
A5.1



Luminaire Schedule							
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Wattage
	A	9	RAB LIGHTING, INC.	WPLED4T150 (TYPE IV) Building Mounted at 22'	CAST FINNED METAL HOUSING, 6 CIRCUIT BOARDS EACH WITH 1 LED, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST GRAY PAINTED METAL LENS FRAME.	6	155.7
	B	2	RAB LIGHTING, INC.	WPLED4T105 (TYPE IV) Building Mounted at 22'	CAST FINNED METAL HOUSING, 6 CIRCUIT BOARDS EACH WITH 1 LED, MOLDED 2-PIECE PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST PAINTED METAL LENS FRAME.	6	105.7

Statistics							
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
Calc Zone #1	+	0.8 fc	13.2 fc	0.0 fc	N/A	N/A	0.1:1

HFR electric
ELECTRICAL CONTRACTOR
RESIDENTIAL·COMMERCIAL·INDUSTRIAL
262-644-6940

Alter Trading

1800 W. Bruce Street
Milwaukee, WI

Exterior Lighting

DATE:
4-16-19

REVISIONS:

E-1

WPLED4T150

RAB | Outdoor

Color: Bronze

Weight: 34.8 lbs

Project: Alter Trading	**Type:** A
Prepared By: HFR electric inc.	**Date:** 4-16-19

Driver Info

Type	Constant Current
120V	1.31A
208V	0.80A
240V	0.69A
277V	0.60A
Input Watts	155.8W

LED Info

Watts	150W
Color Temp	5000K (Cool)
Color Accuracy	71 CRI
L70 Lifespan	100,000
Lumens	18,464
Efficacy	118.5 LPW

Technical Specifications

Listings

UL Listing:

Suitable for wet locations

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P0000174K

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations

LEDs:

Multi-chip, high-output, long-life LEDs

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5-year period

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type IV distribution (also known as a Forward Throw) is especially suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. It produces a semiCircular distribution with essentially the same candlepower at lateral angles from 90° to 270°.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Maximum Ambient Temperature:

Suitable for use in 40°C (104°F)

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior thermal management with external "Air-Flow" fins

Housing:

Die-cast aluminum housing, lens frame and mounting arm

Mounting:

Heavy-duty mounting arm with "O" ring seal & stainless steel screws

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets

Finish:

Formulated for high durability and long-lasting color

Green Technology:

Mercury and UV free. RoHS-compliant components.

WPLED4T150

RAB | Outdoor

Technical Specifications (continued)

Other

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at www.rablighting.com/legal#warranty

Patents:

The design of WPLED150 is protected by patents pending in US, Canada, China, Taiwan and Mexico

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Optical

BUG Rating:

B1 U0 G3

Electrical

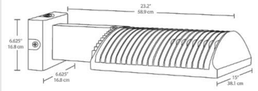
Driver:

One Driver, Constant Current, Class 2, 2100mA 100-277V, 50-60Hz, Power Factor 99%

THD:

4.7% at 120V, 13.3% at 277V

Dimensions



Features

- High performance LED light engine
- Maintains 70% of initial lumens at 100,000-hours
- Weatherproof high temperature silicone gaskets
- Superior heat sinking with die cast aluminum housing and external fins
- Replaces 400W MH
- 100 up to 277 Volts
- 5-Year, No-Compromise Warranty

Ordering Matrix

Family	Optics	Wattage	Color Temp	Mounting	Finish	Driver Options	Other Options
WPLED	4T	150					
	4T = Type IV **3T =** Type III **2T =** Type II	**50 =** 50W **78 =** 78W **105 =** 105W **125 =** 125W **150 =** 150W	**Blank =** 5000K (Cool) **N =** 4000K (Neutral) **Y =** 3000K (Warm)	**Blank =** Arm **FX =** Flat Mount	**Blank =** Bronze **W =** White	**Blank =** Standard **/480 =** 480V **/BL =** Bi-Level **/D10 =** 0-10V Dimming **/480/D10 =** 480V 0-10V Dimming	**Blank =** Standard **/PC =** 120V Photocell **/PC2 =** 277V Photocell **/PCT =** 120-277V Twistlock Photocell **/PCT4 =** 480V Twistlock Photocell **/PCS =** 120V Swivel Photocell **/PCS2 =** 277V Swivel Photocell **/PCS4 =** 480V Swivel Photocell **/WS2 =** Multi-Level Motion Sensor (20 ft. mt. ht.) **/WS4 =** Multi-Level Motion Sensor (40 ft. mt. ht.) **/LC =** Lightcloud Controller

WPLED4T105

RAB | Outdoor

Color: Bronze

Weight: 34.8 lbs

Project: Alter Trading	**Type:** B
Prepared By: HFR electric inc.	**Date:** 4-16-19

Driver Info

Type	Constant Current
120V	0.89A
208V	0.58A
240V	0.50A
277V	0.44A
Input Watts	109.4W

LED Info

Watts	105W
Color Temp	5000K (Cool)
Color Accuracy	70 CRI
L70 Lifespan	100,000
Lumens	13,680
Efficacy	125 LPW

Technical Specifications

Listings

UL Listing:

Suitable for wet locations

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P0000179G

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations

LEDs:

Multi-chip, high-output, long-life LEDs

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5-year period

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type IV distribution (also known as a Forward Throw) is especially suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. It produces a semiCircular distribution with essentially the same candlepower at lateral angles from 90° to 270°.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Maximum Ambient Temperature:

Suitable for use in 40°C (104°F)

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior thermal management with external "Air-Flow" fins

Housing:

Die-cast aluminum housing, lens frame and mounting arm

Mounting:

Heavy-duty mounting arm with "O" ring seal & stainless steel screws

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets

Finish:

Formulated for high durability and long-lasting color

Green Technology:

Mercury and UV free. RoHS-compliant components.

WPLED4T105

RAB | Outdoor

Technical Specifications (continued)

Other

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at www.rablighting.com/legal#warranty

Patents:

The design of WPLED105 is protected by patents pending in US, Canada, China, Taiwan and Mexico

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

BUG Rating:

B1 U0 G2

Electrical

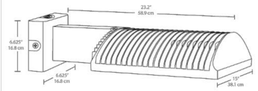
Drivers:

Two Drivers, Constant Current, Class 2, 1400mA, 100-277V, 50/60Hz, 0.8A, Power Factor 99%

THD:

7.6% at 120V, 16.5% at 277V

Dimensions



Features

- High performance LED light engine
- Maintains 70% of initial lumens at 100,000-hours
- Weatherproof high temperature silicone gaskets
- Superior heat sinking with die cast aluminum housing and external fins
- Replaces 400W MH
- 100 up to 277 Volts
- 5-Year, No-Compromise Warranty

Ordering Matrix

Family	Optics	Wattage	Color Temp	Mounting	Finish	Driver Options	Other Options
WPLED	4T	105					
	4T = Type IV **3T =** Type III **2T =** Type II	**50 =** 50W **78 =** 78W **105 =** 105W **125 =** 125W **150 =** 150W	**Blank =** 5000K (Cool) **N =** 4000K (Neutral) **Y =** 3000K (Warm)	**Blank =** Arm **FX =** Flat Mount	**Blank =** Bronze **W =** White	**Blank =** Standard **/480 =** 480V **/BL =** Bi-Level **/D10 =** 0-10V Dimming **/480/D10 =** 480V 0-10V Dimming	**Blank =** Standard **/PC =** 120V Photocell **/PC2 =** 277V Photocell **/PCT =** 120-277V Twistlock Photocell **/PCT4 =** 480V Twistlock Photocell **/PCS =** 120V Swivel Photocell **/PCS2 =** 277V Swivel Photocell **/PCS4 =** 480V Swivel Photocell **/WS2 =** Multi-Level Motion Sensor (20 ft. mt. ht.) **/WS4 =** Multi-Level Motion Sensor (40 ft. mt. ht.) **/LC =** Lightcloud Controller

BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-9500 PHONE
(262) 790-9505 FAX

SHEET TITLE
LIGHTING CUT SHEETS

PROPOSED NEW BUILDING FOR:
ALTER TRADING
1640 WEST BRUCE STREET
MILWAUKEE, WISCONSIN

JOB:	3149
DRAWN:	HFR
CHECKED:	HFR
DATE:	04-16-2019
SHEET:	E2