City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CITY OF MILWAUKEE DEPT. OF PUBLIC WORKS

MILWAUKEE, WISCONSIN 53202

CNG FUELING STATION

3025 W RUBY AVENUE
MILWAUKEE COUNTY

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

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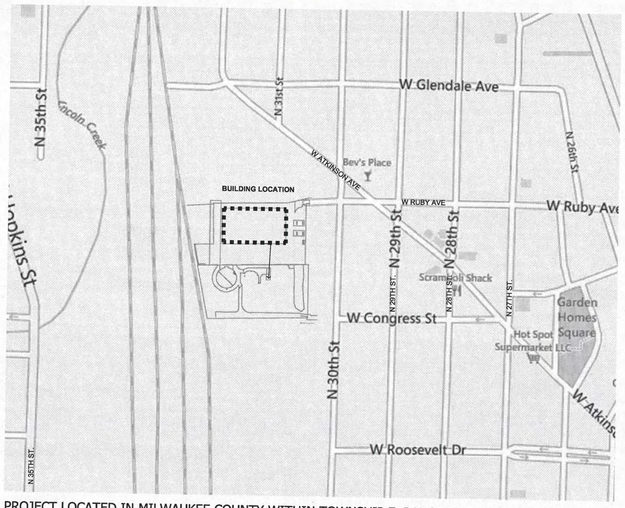

PROJECT LOCATED IN MILWAUKEE COUNTY WITHIN TOWNSHIP 7, RANGE 21 EAST MAP NOT SCALE

NORTH

GEOGRAPHIC VICINITY PLAN

I.D. 1693-35-72
PROJECT FEDERALLY FUNDED
15% DBE PARTICIPATION

ACCEPTED FOR CITY OF MILWAUKEE

DATE SIGNATURE

PROJECT SIGN-OFF

APPROVED:	SIGNATURE	DATE
SUPERVISOR IN CHARGE		11.18.14
CITY ENGINEER		12/4/14
COMMISSIONER OF PUBLIC WORKS		12/4/14

REVISION HISTORY - THIS SHEET

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COVER SHEET & INDEX

COMM. NO.	1203-005-03
SCALE	AS NOTED
DATE	September 2, 2014
DRAWN	HGA

Final RTA

G001

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DEMOLITION LEGEND

- VEGETATION TO BE REMOVED AND DISPOSED OF OFFSITE. IF SUITABLE FOR REUSE, TOPSOIL TO BE STOCKPILED. UNUSED AND UNSUITABLE TOPSOIL TO BE REMOVED OFFSITE. TOPSOIL THICKNESS MAY VARY. CONTAMINATED SOILS HAVE BEEN IDENTIFIED ON-SITE. REFER TO GEOTECHNICAL REPORT.
- ASPHALT PAVEMENT AND BASE MATERIAL TO BE REMOVED TO SUB-BASE AND DISPOSED OF OFFSITE. PAVEMENT AND BASE THICKNESS MAY VARY. REFER TO GEOTECHNICAL REPORT.
- CONCRETE AND BASE MATERIAL TO BE REMOVED TO SUB-BASE AND DISPOSED OF OFFSITE. CONCRETE AND BASE THICKNESS MAY VARY. REFER TO GEOTECHNICAL REPORT.
- CLEAR AND GRUB VEGETATION, REMOVE ROOTS AND STUMPS. REMOVE AND DISPOSE OF OFFSITE.
- XXXXXXXXXXX SAWCUT FULL DEPTH

DEMOLITION NOTES

1. CONSULT WITH OWNER TO DETERMINE A SAFE STORAGE LOCATION OF ITEMS SPECIFICALLY CALLED OUT TO BE SALVAGED FOR OWNER REUSE. EXERCISE CARE DURING REMOVAL AND TRANSPORT TO PREVENT DAMAGE.

2. THE UNDERGROUND AND OVERHEAD UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES, LOCAL MUNICIPALITY, PROPERTY OWNER, AND DIGGERS HOTLINE. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.

3. GENERAL CONTRACTOR OR THEIR SUB CONTRACTORS SHALL APPLY FOR AND OBTAIN ALL THEIR REQUIRED PERMITS AND APPROVALS PRIOR TO THE START OF THEIR WORK. CONSULT WITH AND OBTAIN FROM ENGINEER COPIES OF ENGINEERING DESIGN APPROVAL PERMITS, INCLUDING BUT NOT LIMITED TO WDNR, STATE OR LOCAL PLUMBING, WDOT, COUNTY, AND STORM WATER MANAGEMENT.

4. GENERAL CONTRACTOR OR THEIR SUB CONTRACTORS SHALL CONTACT DIGGER'S HOTLINE TO ALLOW THEM SUFFICIENT TIME TO LOCATE EXISTING UTILITIES PRIOR TO COMMENCEMENT OF WORK.

5. GENERAL CONTRACTOR OR THEIR SUB CONTRACTORS ARE RESPONSIBLE FOR COORDINATING THEIR WORK WITH ALL OTHER CONTRACTORS.

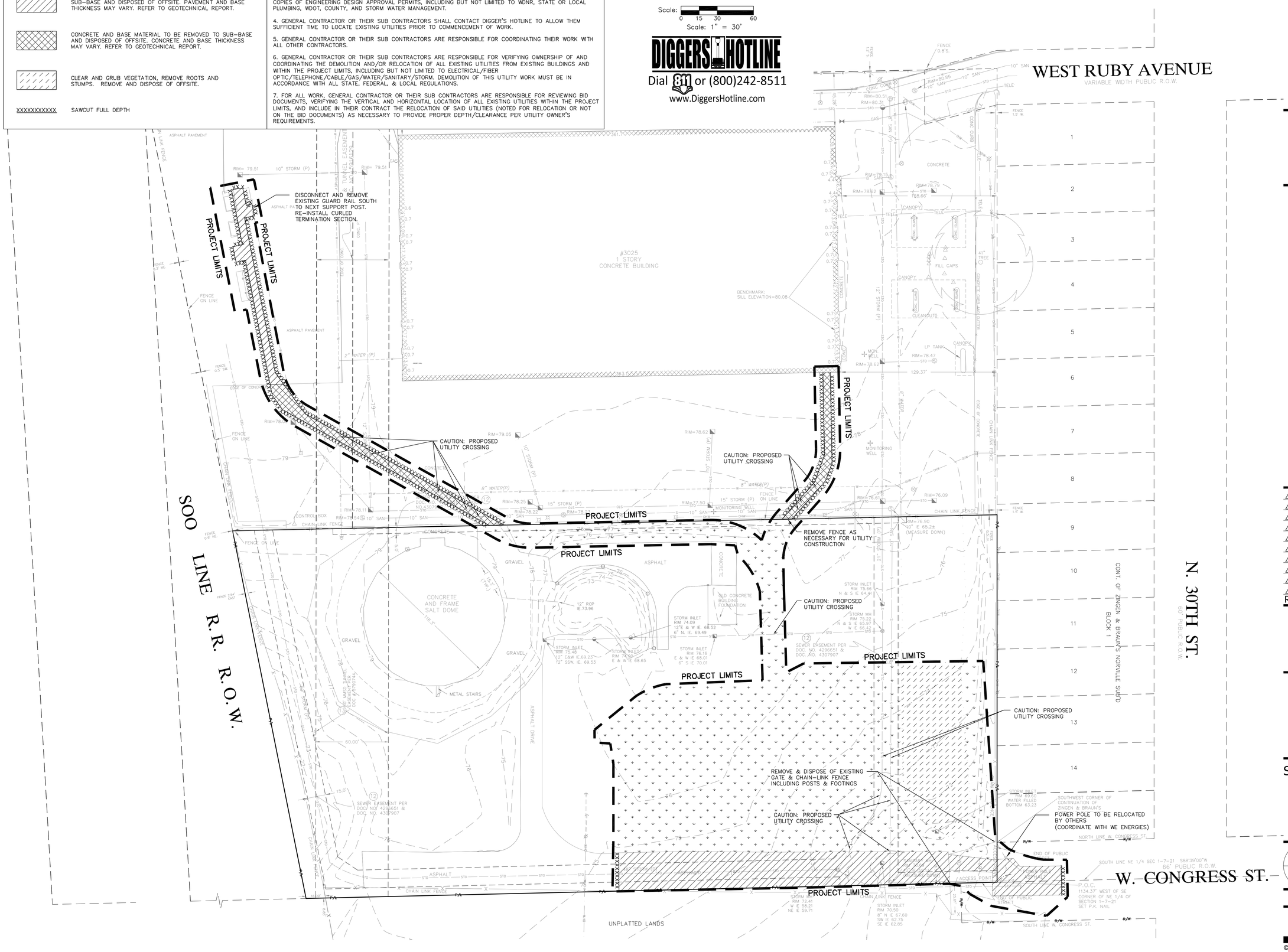
6. GENERAL CONTRACTOR OR THEIR SUB CONTRACTORS ARE RESPONSIBLE FOR VERIFYING OWNERSHIP OF AND COORDINATING THE DEMOLITION AND/OR RELOCATION OF ALL EXISTING UTILITIES FROM EXISTING BUILDINGS AND WITHIN THE PROJECT LIMITS, INCLUDING BUT NOT LIMITED TO ELECTRICAL/FIBER OPTIC/TELEPHONE/CABLE/GAS/WATER/SANITARY/STORM. DEMOLITION OF THIS UTILITY WORK MUST BE IN ACCORDANCE WITH ALL STATE, FEDERAL, & LOCAL REGULATIONS.

7. FOR ALL WORK, GENERAL CONTRACTOR OR THEIR SUB CONTRACTORS ARE RESPONSIBLE FOR REVIEWING BID DOCUMENTS, VERIFYING THE VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES WITHIN THE PROJECT LIMITS, AND INCLUDE IN THEIR CONTRACT THE RELOCATION OF SAID UTILITIES (NOTED FOR RELOCATION OR NOT ON THE BID DOCUMENTS) AS NECESSARY TO PROVIDE PROPER DEPTH/CLEARANCE PER UTILITY OWNER'S REQUIREMENTS.

N

Scale: 0 15 30 60
Scale: 1" = 30'

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com



City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

REVISION HISTORY - THIS SHEET

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SITE DEMOLITION PLAN

COMM. NO.	1203-005-03
SCALE	
DATE	September 2, 2014
DRAWN	

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C101

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HATCH LEGEND

- AREAS DISTURBED BY CONSTRUCTION (NOT SPECIFICALLY CALLED OUT ON THE LANDSCAPE PLANS) TO BE RESTORED WITH MINIMUM 4" TOPSOIL, SEED, FERTILIZER, AND MULCH (TYP). USE SALVAGED TOPSOIL OR IMPORT TOPSOIL IF REQUIRED.
- NEW ASPHALTIC CONCRETE (LIGHT DUTY) SEE DETAIL 4/C109
- NEW CONCRETE SLAB SEE DETAILS 5 & 6/C109
- NEW HIGH-SIDE CURB & GUTTER SEE DETAIL 7/C109
- NEW LOW-SIDE CURB & GUTTER SEE DETAIL 7/C109
- BIORETENTION SEED MIX: REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- NO MOW FESCUE SEED MIX: REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- NEW FENCE – SEE NOTES & DETAILS 14 & 15/C110

PAVEMENT MARKING LEGEND

- (A) PAVEMENT MARKING ARROWS, EPOXY TYPE 2 OR 3, WHITE (SEE WDOT PAVEMENT MARKING S.D.D.)
- (B) PAVEMENT MARKING WORDS, EPOXY, WHITE (SEE WDOT PAVEMENT MARKING S.D.D.)
- (C) PAVEMENT MARKING STOP LINE, EPOXY, WHITE (SEE WDOT PAVEMENT MARKING S.D.D.)

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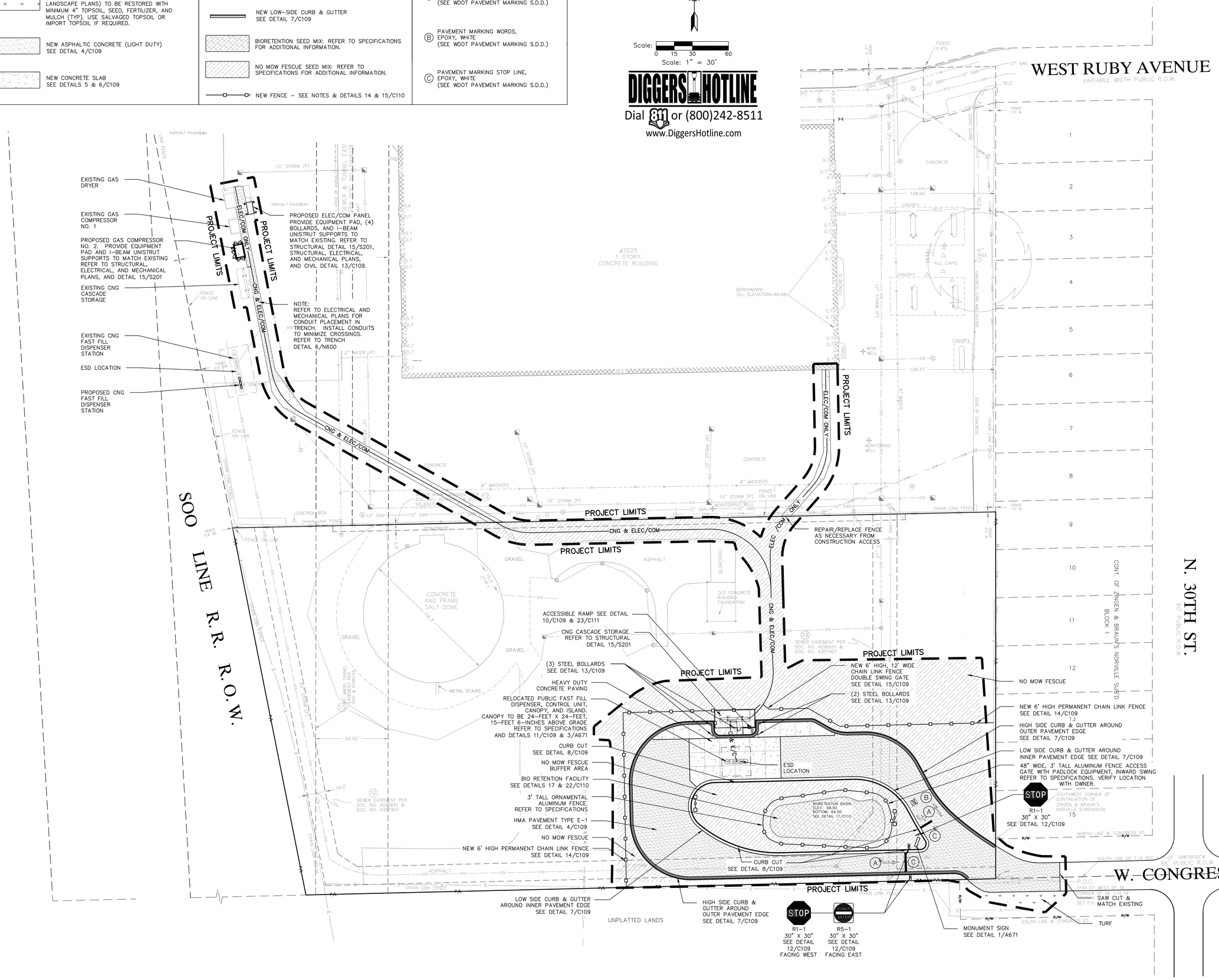

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SITE PLAN

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C102

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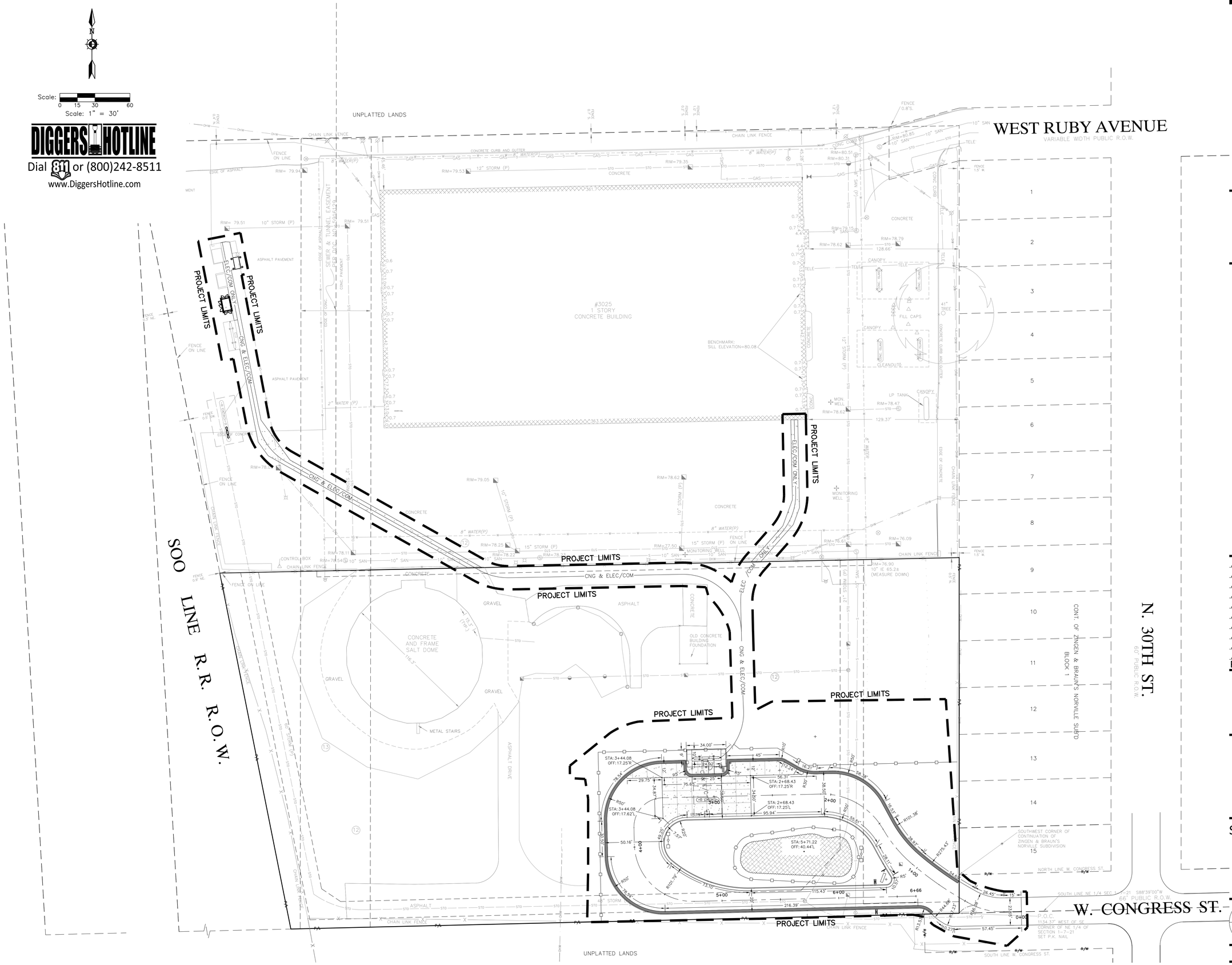

NOTE: REFER TO C107 SITE PLAN AND PROFILE FOR ADDITIONAL STATION AND OFFSET INFORMATION

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

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3025 W RUBY AVENUE
MILWAUKEE COUNTY

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SITE GEOMETRIC PLAN

COMM. NO.	1203-005-03
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GRADING LEGEND

75	PROPOSED CONTOUR LINE – MAJOR
76	PROPOSED CONTOUR LINE – MINOR
75	EXISTING CONTOUR LINE – MAJOR
73	EXISTING CONTOUR LINE – MINOR
71.18	PROPOSED SPOT ELEVATIONS
T68.18 G67.68	PROPOSED TOP OF CURB ELEVATION PROPOSED GUTTER ELEVATION
	NEW CONCRETE SLAB SEE DETAILS
	BIO RETENTION BASIN SEE DETAILS

Scale: 0 15 30 60
Scale: 1" = 30'

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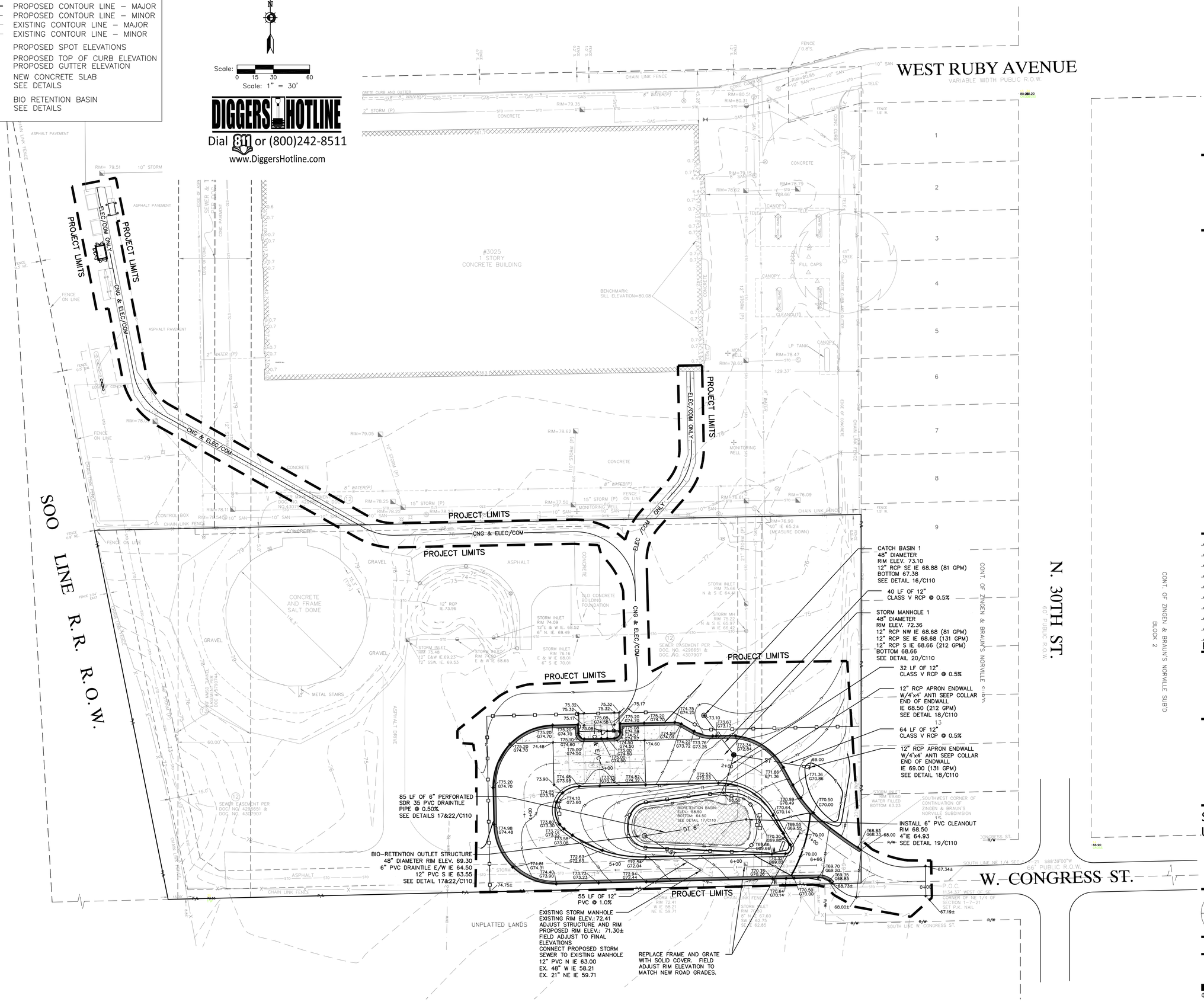

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SITE GRADING & UTILITY PLAN

COMM. NO.	1203-005-03
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C104

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EROSION CONTROL LEGEND

- SILT FENCE SEE DETAIL 1/C108
- DESIGNATES PROPOSED INLETS THAT MUST BE PROTECTED AFTER THEY HAVE BEEN CONSTRUCTED. SEE DETAIL 3/C108
- DESIGNATES EXISTING INLETS THAT MUST BE PROTECTED SEE DETAIL 3/C108
- INSTALL EROSION MAT ON ALL SLOPES GREATER THAN 4:1 AND ALL DRAINAGE SWALES

  USE CLASS I, TYPE A FROM WISDOT PRODUCT APPROVED LIST FOR ALL SIDE SLOPES

  USE CLASS II, TYPE B FOR ALL DRAINAGE SWALES. INSTALL EROSION MAT ON THE BOTTOM OF AND A MINIMUM OF 2 FEET VERTICALLY UP THE SIDE SLOPES OF ALL DRAINAGE SWALES. CLASS I, TYPE A MAY BE USED FOR THE REMAINDER OF THE SIDE SLOPES IN DRAINAGE SWALES EXCEEDING 2 FEET VERTICALLY.
- NEW CONCRETE SLAB SEE DETAILS
- BIO RETENTION BASIN SEE DETAILS

POINTS OF CONTACT

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MECHANICAL ENGINEER IV
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DPW – FACILITIES DEVELOPMENT AND MANAGEMENT SECTION
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C – 414-581-0443

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PHONE: (414) 351-6668

CONSTRUCTION MANAGER:

T.B.A.

INSPECT ALL EROSION CONTROL MEASURES PRIOR TO COMMENCING GRADING, GRUBBING OR OTHER LAND DISTURBING ACTIVITIES. EROSION CONTROL MEASURES MUST BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF EVERY PRECIPITATION EVENT OF 0.50 INCH OR GREATER. IN ADDITION THE CONTRACTOR SHALL CONDUCT DAILY INSPECTIONS AND DOCUMENT CONDITIONS AND REPAIRS MADE ALONG WITH DATE, TIME OF INSPECTION AND WEATHER CONDITIONS IN A DAILY LOG BOOK. THE DAILY LOG BOOK, WEEKLY / 0.50 INCH PRECIPITATION REPORTS, APPROVED PLANS AND WPDES PERMIT SHALL BE KEPT IN AN ACCESSIBLE LOCATION, LIKE A MAILBOX, WITHIN THE STAGING AREA.

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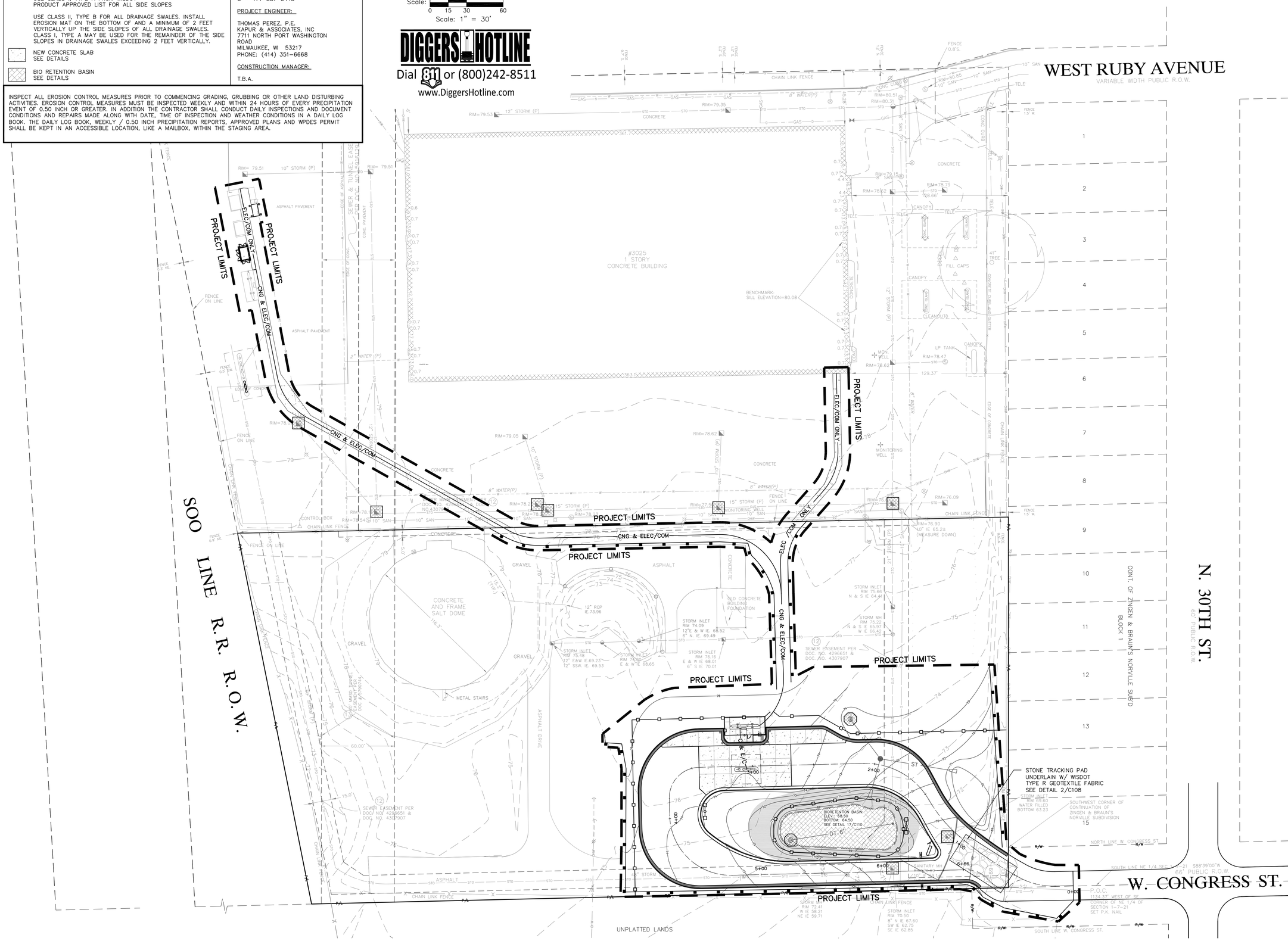

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SITE EROSION CONTROL PLAN

COMM. NO.	1203-005-03
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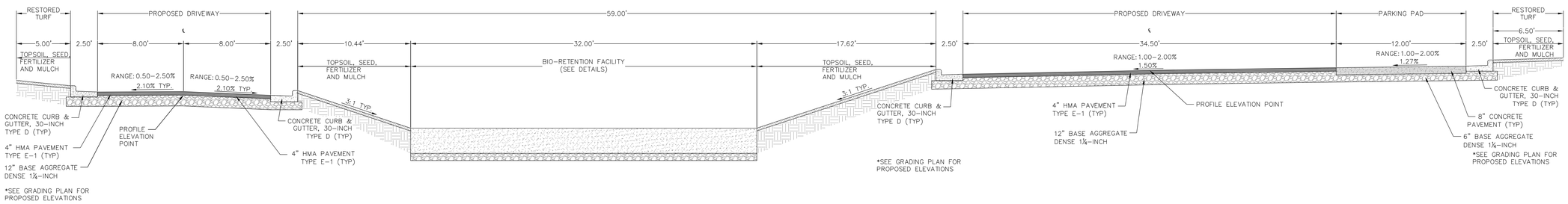

TYPICAL FINISHED SECTION – NORTHWEST GARAGE

NOT TO SCALE

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

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SITE TYPICAL FINISHED SECTION

COMM. NO. 1203–005–03
SCALE
DATE September 2, 2014
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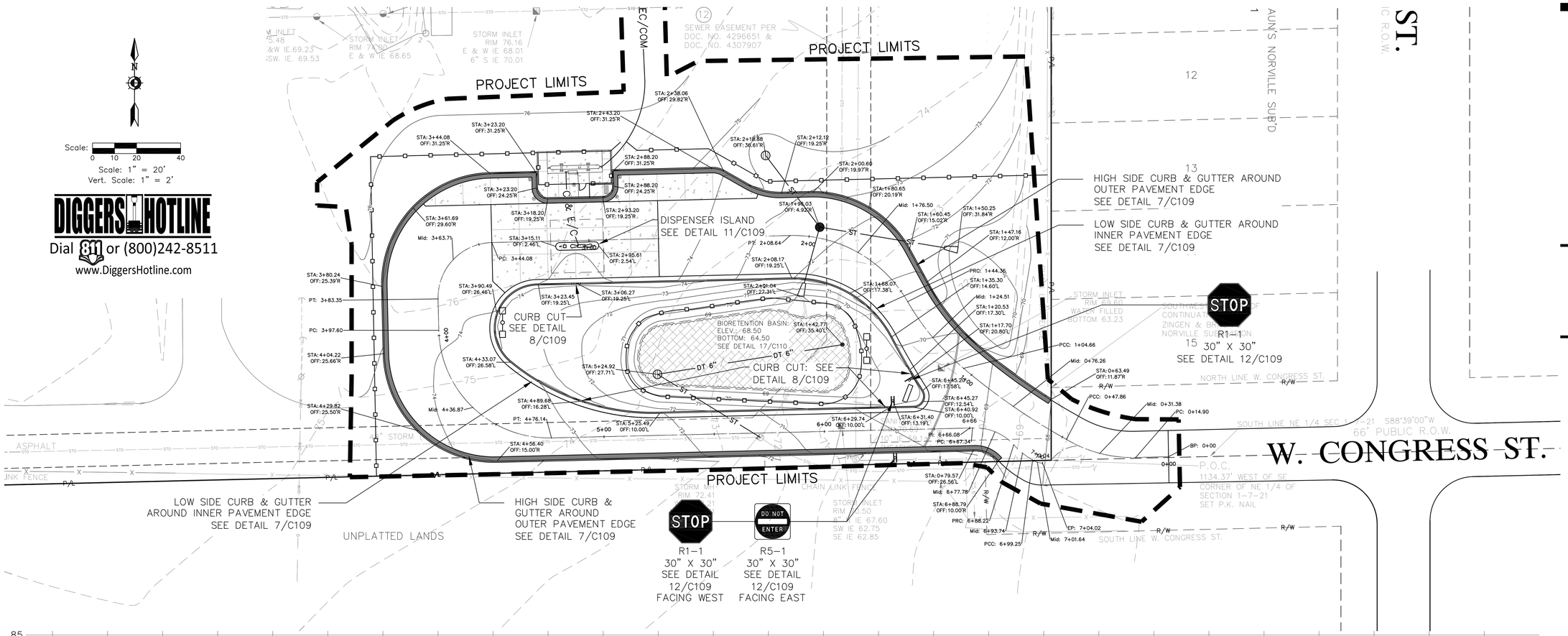

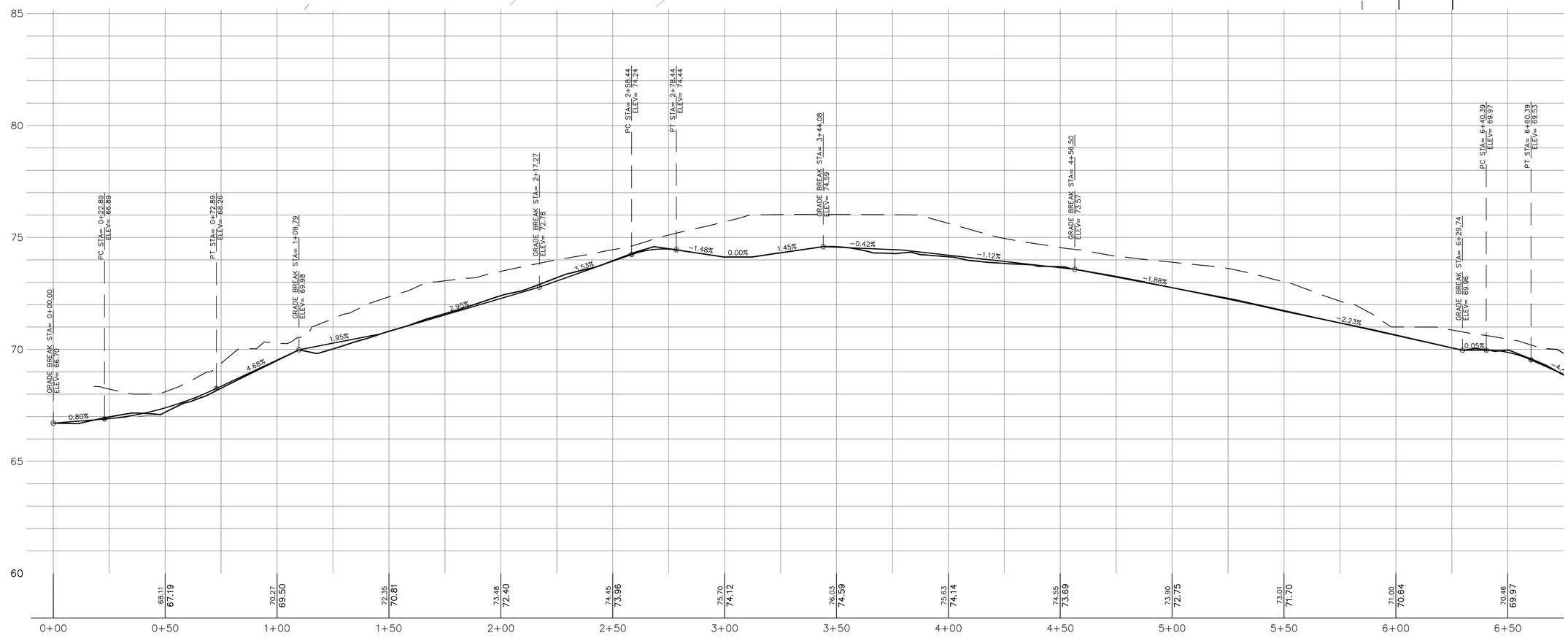

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SITE PLAN & PROFILE

COMM. NO.	1203-005-03
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EROSION CONTROL MEASURES

1. CONTRACTOR TO INSTALL AND MAINTAIN EROSION CONTROL MEASURES AS INDICATED ON THIS PLAN AND PER THE LATEST WDNR TECHNICAL STANDARDS. TECHNICAL STANDARDS MAY BE VIEWED ONLINE AT: http://dnr.wi.gov/runoff/stormwater/techstds.htm

2. INLETS AND CATCH BASINS SHALL BE PROTECTED WITH INLET FILTERS THAT ARE PHASED IN WITH CONSTRUCTION TO REDUCE SEDIMENT FROM ENTERING THESE AREAS PER WDNR TECHNICAL STANDARD 1060 AS FOLLOWS:

   A. ALL FABRIC BARRIERS SELECTED FOR INLET/CATCH BASIN PROTECTION DEVICES SHALL BE SELECTED FROM THE LIST OF APPROVED FABRICS CERTIFIED FOR INLET PROTECTION, GEOTEXTILE FABRIC, TYPE FF IN THE CURRENT EDITION OF THE WDOT PRODUCT ACCEPTABILITY LIST, TO OBTAIN THE PAL, PLEASE REFER TO THIS WEBSITE: http://www.dot.wisconsin.gov/business/engrserv/pal.htm

   B. INLET PROTECTION SHALL BE AT A MINIMUM INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT OF ½ INCH OR GREATER DURING A 24-HOUR PERIOD.

   C. PLACEMENT OF SPOIL MATERIAL, DEBRIS, SOILS, ETC. ON TOP OF INLETS/CATCH BASINS, EVEN IF TEMPORARY, IS STRICTLY DISCOURAGED AND PROHIBITED.

   D. SEDIMENT DEPOSITS SHALL BE REMOVED AND THE INLET PROTECTION DEVICE RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED BETWEEN 1/3 TO ½ THE DESIGN DEPTH OF THE DEVICE, OR WHEN THE DEVICE IS NO LONGER FUNCTIONING PER MANUFACTURER'S SPECIFICATIONS. ALL SEDIMENT COLLECTED SHALL BE PROPERLY DISPOSED OF TO PREVENT DISCHARGE INTO AREA WATERWAYS.

   E. DUE CARE SHALL BE TAKEN TO ENSURE SEDIMENT DOES NOT FALL INTO THE INLETS/CATCH BASINS AND IMPEDE THE INTENDED FUNCTION OF THE DEVICE. ANY MATERIAL FALLING INTO THE INLET/CATCH BASIN SHALL BE REMOVED AND PROPERLY DISPOSED OF PER NOTE D ABOVE.

   F. INLET FILTERS MAY BE REMOVED AND PROPERLY DISPOSED OF UPON COMPLETION OF CONSTRUCTION, HAULING OR MOVEMENT OF CONSTRUCTION EQUIPMENT THROUGHOUT THE SITE, AND ONCE THE SITE IS ADEQUATELY STABILIZED, UNLESS AS OTHERWISE NOTIFIED BY THE WDNR.

3. A TRACKING PAD SHALL BE INSTALLED AS SHOWN ON THE PLAN SHEET PRIOR TO THE START OF CONSTRUCTION TO REDUCE OFF-SITE SEDIMENTATION BY ELIMINATING THE TRACKING OF SEDIMENT FROM THE SITE PER WDNR TECHNICAL STANDARD 1057 AS FOLLOWS:

   A. A WISDOT TYPE R GEOTEXTILE FABRIC SHALL BE USED TO PREVENT MIGRATION OF UNDERLYING SOIL INTO THE STONE.

   B. AGGREGATE USED FOR TRACKING PADS SHALL BE 3 TO 6 INCH CLEAR OR WASHED STONE. ALL MATERIAL TO BE RETAINED BY 3 INCH SIEVE.

   C. THE AGGREGATE SHALL BE PLACED IN A LAYER ON TOP OF THE TYPE R GEOTEXTILE FABRIC AT LEAST 12 INCHES THICK.

   D. THE TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT AND BE AT LEAST 50 FEET LONG.

   E. VEHICLES TRAVELING ACROSS THE TRACKING PAD SHALL MAINTAIN A SLOW CONSTANT SPEED.

   F. ANY SEDIMENT OR ROCK ACCUMULATION ONTO LOCAL ROADWAYS SHALL BE REMOVED BY STREET CLEANING, NOT FLUSHING BEFORE THE END OF EACH WORKING DAY.

   G. THE TRACKING PAD SHALL, AT A MINIMUM BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT OF ½ INCH OF RAIN OR MORE DURING A 24-HOUR PERIOD.

   H. THE TRACKING PAD PERFORMANCE SHALL BE MAINTAINED BY SCRAPING OR TOP-DRESSING WITH ADDITIONAL AGGREGATE.

   I. A MINIMUM 12-INCH THICK PAD SHALL BE MAINTAINED.

4. THE CONSTRUCTION SITE PERIMETER AND TOPSOIL STOCKPILE AREA SHALL BE PROTECTED WITH SILT FENCE AS SHOWN ON THE PLAN SHEET PRIOR TO THE START OF CONSTRUCTION TO INTERCEPT AND REDUCE THE FLOW OF SEDIMENT-LADEN SHEET FLOW RUNOFF FROM THE CONSTRUCTION SITE PER WDNR TECHNICAL STANDARD 1056 AS FOLLOWS:

   A. SILT FENCE ENDS SHALL BE EXTENDED UPSLOPE TO PREVENT WATER FROM FLOWING AROUND THE ENDS OF THE FENCE AS SHOWN ON THE PLAN SHEET.

   B. INSTALLED SILT FENCE SHALL BE A MINIMUM 14 INCHES HIGH AND SHALL NOT EXCEED 28 INCHES IN HEIGHT MEASURED FROM THE INSTALLED GROUND ELEVATION.

   C. SILT FENCE SHALL BE SUPPORTED BY EITHER STEEL OR WOOD SUPPORT POSTS.

   D. THE MAXIMUM SPACING OF POSTS FOR NONWOVEN SILT FENCE SHALL BE 3 FEET OR FOR WOVEN FABRIC 8 FEET.

   E. SILT FENCE SHALL HAVE A SUPPORT CORD AT THE TOP OF THE FENCE.

   F. WHERE JOINTS ARE NEEDED, EACH END OF THE FABRIC SHALL BE SECURELY FASTENED TO A POST. THE POSTS SHALL BE WRAPPED AROUND EACH OTHER TO PRODUCE A STABLE AND SECURE JOINT OR SHALL BE OVERLAPPED THE DISTANCE BETWEEN TWO POSTS.

   G. A MINIMUM OF 20 INCHES OF THE POSTS SHALL EXTEND INTO THE GROUND AFTER INSTALLATION.

   H. SILT FENCE SHALL BE ANCHORED BY SPREADING AT LEAST 8 INCHES OF THE FABRIC IN A 4 INCH WIDE BY 6 INCH DEEP TRENCH, OR 6 INCH DEEP V-TRENCH ON THE UPSLOPE SIDE OF THE FENCE. THE TRENCH SHALL BE BACKFILLED AND COMPACTED. TRENCHES SHALL NOT BE EXCAVATED ANY WIDER OR DEEPER THAN NECESSARY FOR PROPER INSTALLATION.

   I. ON THE TERMINAL ENDS OF THE SILT FENCE THE FABRIC SHALL BE WRAPPED AROUND THE POST SUCH THAT THE STAPLES ARE NOT VISIBLE.

   J. GEOTEXTILE FABRIC SPECIFICATIONS SHALL MEET VALUES ESTABLISHED IN TECHNICAL STANDARD 1056.

   K. SILT FENCE SHALL BE REMOVED ONCE THE SITE IS ADEQUATELY STABILIZED.

   L. WHEN PLACING SILT FENCE NEAR TREES, CARE SHALL BE TAKEN TO MINIMIZE DAMAGE TO THE ROOT SYSTEM BY AVOIDING COMPACTION AND ROOT CUTTING WITHIN 1.5 FEET MULTIPLIED BY THE INCH DIAMETER OF THE TREE.

   M. THE CONTRACTOR MAY FURTHER STRENGTHEN THE SILT FENCE BY USING HAY BALES ON THE DOWN SLOPE SIDE AS NEEDED.

   N. SILT FENCE SHALL AT A MINIMUM BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES ½ INCH OF RAIN OR MORE DURING A 24 HOUR PERIOD.

   O. DAMAGED OR DECOMPOSED SILT FENCE, UNDERCUTTING, OR FLOW CHANNELS AROUND THE END OF BARRIERS SHALL BE REPAIRED OR CORRECTED.

   P. SEDIMENT SHALL BE PROPERLY DISPOSED OF ONCE THE DEPOSITS REACH ½ THE HEIGHT OF THE FENCE TO PREVENT DISCHARGE INTO AREA WATERWAYS.

5. SEEDING AND MULCHING TECHNIQUES SHALL BE USED ON AREAS OF EXPOSED SOIL WHERE THE ESTABLISHMENT OF VEGETATION IS DESIRED. TEMPORARY SEEDING APPLIES TO DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH LAND-DISTURBING ACTIVITIES WILL NOT BE PERFORMED FOR A PERIOD GREATER THAN 14 CALENDAR DAYS, REQUIRING VEGETATIVE COVER FOR LESS THAN ONE YEAR. SEED AND MULCH SHALL BE UTILIZED THROUGHOUT THE DURATION OF CONSTRUCTION TO ESTABLISH TEMPORARY VEGETATION TO HELP REDUCE EROSION PER WDNR TECHNICAL STANDARDS 1059 AND 1058 RESPECTIVELY AS FOLLOWS:

   A. TEMPORARY SEEDING REQUIRES A SEEDBED OF LOOSE SOIL TO A MINIMUM DEPTH OF 2 INCHES.

   B. FERTILIZER APPLICATION IS NOT GENERALLY REQUIRED FOR TEMPORARY SEEDING. HOWEVER, ANY APPLICATION OF FERTILIZER OR LIME SHALL BE BASED ON SOIL TESTING.

   C. THE SOIL SHALL HAVE A PH RANGE OF 5.5 TO 8.0.

   D. ALL SEED SHALL CONFORM TO THE REQUIREMENTS OF THE WISCONSIN STATE STATUTES AND OF THE ADMINISTRATIVE CODE CHAPTER ATCP 20.01 REGARDING NOXIOUS WEED SEED CONTENT AND LABELING.

   E. SEED SHALL NOT BE USED LATER THAN ONE YEAR AFTER THE TEST DATE ON THE LABEL.

   F. IN THE SUMMER-SPRING, CONTRACTOR SHALL USE OATS APPLIED AT 131 LBS/ACRE FOR TEMPORARY SEEDING PURPOSES. IN THE FALL THE CONTRACTOR SHALL USE ANNUAL RYEGRASS APPLIED AT 80 LBS/ACRE OR WINTER WHEAT APPLIED AT 131 LBS/ACRE. THE CONTRACTOR SHALL USE STRAW MULCH APPLIED AT 1.5 TONS/ACRE. DORMANT SEED SHALL BE USED WHEN SOIL TEMPERATURE IS CONSISTENTLY BELOW 53 DEGREES FAHRENHEIT (TYPICALLY NOV. 1 UNTIL SNOW COVER ANNUALLY). NEVER PLACE SEED ON TOP OF SNOW. IF COVER IS NEEDED AFTER SNOW FALL, CONTRACTOR MAY CHOOSE TO USE A DRY, NONTOXIC TYPE B SOIL STABILIZER PER MANUFACTURER'S SPECIFICATIONS AS REQUIRED BY THE WDNR.

   G. SEEDING SHALL NOT TAKE PLACE WHEN THE SOIL IS TOO WET.

   H. CONTRACTOR MAY CONSIDER WATERING TO HELP ESTABLISH THE SEED. WATER APPLICATION RATES SHALL BE CONTROLLED TO HELP PREVENT RUNOFF AND EROSION.

   I. DURING CONSTRUCTION, AREAS THAT HAVE BEEN SEEDED AND MULCHED SHALL AT A MINIMUM BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES ½ INCH OF RAIN OR MORE DURING A 24 HOUR PERIOD. INSPECT WEEKLY DURING THE GROWING SEASON UNTIL VEGETATION IS DENSELY ESTABLISHED OR THE SOD IS LAID. REPAIR AND RESEED AREAS THAT HAVE EROSION DAMAGE AS NECESSARY.

   J. CONTRACTOR IS TO LIMIT VEHICLE TRAFFIC AND OTHER FORMS OF COMPACTION IN AREAS THAT ARE SEEDED AS MUCH AS POSSIBLE. RE-SEED DRIVEN OVER AREAS AS NEEDED.

   K. MULCH SHOULD BE PLACED WITHIN 24 HOURS OF SEEDING.

   L. MULCHING OPERATIONS SHALL NOT TAKE PLACE DURING PERIODS OF EXCESSIVELY HIGH WINDS THAT WOULD PRECLUDE THE PROPER PLACEMENT OF MULCH.

   M. MULCH THAT IS DISPLACED SHALL BE REAPPLIED AND PROPERLY ANCHORED. MAINTENANCE SHALL BE COMPLETED AS SOON AS POSSIBLE WITH CONSIDERATION TO SITE CONDITIONS.

   N. WHEN CHANNEL EROSION MAT IS USED WITHIN CONSTRUCTION SITE DIVERSION AREAS, TECHNICAL STANDARDS 1053 AND 1066 SHALL BE FOLLOWED.

   O. WHEN NON-CHANNEL EROSION MAT IS USED TECHNICAL STANDARD 1052 SHALL BE FOLLOWED.

   P. DEPENDING ON DURATION OF CONSTRUCTION, THE CONTRACTOR MAY NEED TO RE-SEED AND RE-STABILIZE THE TOPSOIL STOCKPILE AS NECESSARY TO DISCOURAGE SEDIMENT AND EROSION.

6. A COPY OF EROSION CONTROL INSPECTION REPORTS AND THE APPROVED EROSION CONTROL PLANS SHALL BE KEPT ON SITE.

7. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL PRACTICES BY THE END OF EACH WORKDAY.

8. LOCAL ROADS SHALL BE CLEAN BY THE END OF EACH WORKDAY. CONTRACTOR SHALL HAVE LOCAL ROADS SWEPT WHERE SEDIMENT ACCUMULATES.

EROSION CONTROL OPERATION SEQUENCE + SCHEDULE

AFTER BIDS ARE RECEIVED AND A MASS GRADING CONTRACTOR IS SELECTED, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE WITH ALL RELEVANT PARTIES IN ATTENDANCE.

THE GENERAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL SILT FENCES, SEEDING, EROSION MATTING, AND OTHER EROSION CONTROL MEASURES. GENERAL CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PRIOR TO COMMENCING GRADING, GRUBBING, OR OTHER LAND DISTURBING ACTIVITIES. EROSION CONTROL MEASURES MUST BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF EVERY PRECIPITATION EVENT OF ½ INCH OR GREATER. IN ADDITION, THE ACTIVE CONTRACTOR SHALL CONDUCT DAILY INSPECTIONS AND DOCUMENT CONDITIONS AND REPAIRS MADE, ALONG WITH DATE, TIME OF INSPECTION, AND WEATHER CONDITIONS IN A DAILY LOG BOOK.

ALL REGULATORY PERMITS, PROJECT PLANS, AND INSPECTION LOGS SHALL BE KEPT ON SITE IN AN ACCESSIBLE LOCATION, SUCH AS A MAILBOX, AVAILABLE TO REGULATORY AGENCIES UPON REQUEST.

CONTRACTORS ARE TO MAINTAIN THE CONSTRUCTION SITE IN A NEAT AND TIDY MANNER FOR THE DURATION OF THE PROJECT.

THE TIMING AND SEQUENCE OF CONSTRUCTION IS SCHEDULED AS FOLLOWS:

1. OBTAIN PLAN APPROVAL FROM THE CITY OF MILWAUKEE, AND ALL APPLICABLE PERMITS, INCLUDING EROSION CONTROL PERMIT.
2. CONSTRUCTION IS SCHEDULED TO BEGIN IN SPRING 2015, DEPENDING ON WEATHER & GROUND CONDITIONS.
3. A GRAVEL TRACKING PAD UNDERLAIN WITH WISDOT TYPE R GEOTEXTILE FABRIC, ALONG WITH A TEMPORARY CULVERT IF NECESSARY, SHALL BE INSTALLED AS SHOWN ON THE PLANS. RE-GRADE EXISTING ROADWAY DITCH AS NECESSARY. IF INSTALLED, THE TEMPORARY CULVERT SHALL BE REMOVED AT END OF CONSTRUCTION ACTIVITIES.
4. SILT FENCE, INLET FILTER PROTECTION, AND TRIANGULAR SILT DIKES SHALL BE INSTALLED AS SHOWN ON THE PLANS, AND INSPECTED PRIOR TO COMMENCING OF ANY LAND DISTURBING ACTIVITIES PER PROJECT PLANS AND DETAILS.
5. IMMEDIATELY CONSTRUCT THE BIO-RETENTION CELL TO SUBGRADE ELEVATIONS (BOTTOM OF STONE LAYER) TO FUNCTION AS A SEDIMENT BASIN DURING CONSTRUCTION. CONTRACTOR SHALL CONSTRUCT POND OUTLET STRUCTURE AS SHOWN ON THE PLANS FOR USE DURING CONSTRUCTION AS A SEDIMENT BASIN OUTLET. CONTRACTOR SHALL IMMEDIATELY STABILIZE THE POND BANKS, INLETS, AND OUTLET STRUCTURE.
6. THE SEDIMENT BASIN SHALL, AT A MINIMUM, BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES ½ INCH OF RAIN OR MORE DURING A 24-HOUR PERIOD. SEDIMENT SHALL BE REMOVED TO MAINTAIN THE 3 FOOT DEPTH OF THE TREATMENT SURFACE AREA AS MEASURED FROM THE INVERT OF THE PRINCIPAL OUTLET. SEDIMENT MAY NEED TO BE REMOVED MORE FREQUENTLY. IF THE OUTLET BECOMES CLOGGED IT SHALL BE CLEANED TO RESTORE FLOW CAPACITY. SEDIMENT TO BE REMOVED AFTER CONSTRUCTION & SITE STABILIZATION IS COMPLETE.
7. SITE DEMOLITION OF PAVEMENT, ETC. WILL OCCUR AFTER ALL EROSION CONTROL MEASURES ARE IN PLACE.
8. CONSTRUCTION OF THE BUILDING, STARTING WITH THE FOUNDATION, WILL BEGIN IMMEDIATELY AFTER THE SITE DEMOLITION IS COMPLETE IN THE BUILDING PAD AREA.
9. TOPSOIL STRIPPING AND ROUGH GRADING WILL FOLLOW. TOPSOIL STOCKPILES WILL BE LOCATED AS SHOWN ON THE PLANS. STOCKPILES WILL BE USED FOR FINAL LANDSCAPING. REMAINING STOCKPILES WILL BE REMOVED FROM THE SITE.
10. UTILITY INSTALLATION WILL OCCUR NEXT AND CONTINUE UNTIL ALL THE UTILITIES ARE INSTALLED.
11. AFTER ROUGH GRADING IS COMPLETE IN AREAS OUTSIDE OF PROPOSED ROADWAYS, PARKING LOTS, BUILDINGS, AND ALL OTHER HARD SURFACE AREAS, THE TOPSOIL WILL BE REAPPLIED AND THE LANDSCAPE CONTRACTOR WILL COMPLETE SEEDING/SODDING/FERTILIZING/MULCHING AND INSTALL EROSION MATTING AS PER APPROVED PLANS AND SPECIFICATIONS.
12. FINAL SITE STABILIZATION IS ANTICIPATED FOLLOWING THE COMPLETION OF GRADING ACTIVITIES. IF SITE STABILIZATION CANNOT BE COMPLETED BY OCTOBER 1, THEN THE USE OF ANIONIC POLYACRYLAMIDE CONFORMING TO WDNR TECHNICAL STANDARD 1050 SHALL BE USED.
13. AFTER ALL TOPSOIL HAS BEEN REAPPLIED AND STABILIZATION IS UNDERWAY, ROADWAY, PARKING LOT, AND SIDEWALK BASE MATERIAL WILL BE APPLIED PER PROJECT SPECIFICATIONS.
14. THE GENERAL CONTRACTOR WILL REQUEST A FINAL INSPECTION BY THE CITY. UPON APPROVAL, ALL SILT FENCES, INLET FILTER PROTECTION, AND OTHER EROSION CONTROL MEASURES INCLUDING ANY ACCUMULATED SEDIMENT SHALL REMOVED AND PROPERLY DISPOSED OF.
15. IF REQUIRED, FINAL "AS-BUILT" SURVEYS ARE TO BE CONDUCTED BY THE OWNER AND FINAL DOCUMENTS FORWARDED TO THE CITY.
16. BARE SOIL LEFT UNDISTURBED FOR 14 CALENDAR DAYS MUST BE TEMPORARILY STABILIZED PER WDNR TECHNICAL STANDARD 1059, OR TEMPORARY GRADING PRACTICES PER WDNR TECHNICAL STANDARD 1067 MAY BE IMPLEMENTED. HOWEVER BY OCTOBER 1, THE SITE SHALL BE STABILIZED PER NOTE 12 ABOVE.
17. WE DO NOT ANTICIPATE THE NEED FOR WATERING WITH THIS CONSTRUCTION SCHEDULE, HOWEVER, IF ADEQUATE RAIN IS NOT EXPERIENCED WITHIN ONE WEEK AFTER INITIAL SEED GERMINATION AT ANY POINT DURING THE CONSTRUCTION PROCESS, WATER SHALL BE TRUCKED IN AND APPLIED ONCE PER WEEK.

IF CONSTRUCTION SCHEDULES SHOULD CHANGE SIGNIFICANTLY, THIS PLAN NARRATIVE WILL BE UPDATED AND RESUBMITTED BY THE GENERAL CONTRACTOR TO THE CITY AND WDNR.

DEWATERING PLAN

TO FACILITATE CONSTRUCTION AT THE PROJECT SITE, DEWATERING MAY TAKE PLACE BY THE SELECTED CONTRACTOR. CONTRACTOR TO FOLLOW THESE INSTRUCTIONS WHILE PERFORMING DEWATERING ACTIVITIES ON-SITE.

NOTE: THESE INSTRUCTIONS DO NOT APPLY TO WATER BEING DISCHARGED DIRECTLY TO GROUNDWATER OR KARST FEATURES OR WELL DEWATERING SYSTEMS. CONTRACTOR SHALL COORDINATE ACCORDINGLY FOR OTHER DEWATERING ACTIVITIES AS DEEMED NECESSARY WITH THE WDNR.

1. THE CONTRACTOR SHALL ENSURE THAT THE DEWATERING PRACTICES CARRIED OUT MEET OR EXCEED WNDR TECHNICAL STANDARD NUMBER 1061.
2. A PAN OR OTHER CONTAINMENT DEVICE SHALL BE PLACED UNDERNEATH THE PUMP TO CAPTURE ANY SPILLS. OILS, GASOLINE, ETC. SHALL NOT BE STORED WITHIN WETLANDS, NEAR THE STORMWATER POND, OR OTHER ON-SITE WATER AREAS.
3. A TYPE 2 GEOTEXTILE BAG THAT IS NO SMALLER THAN 100 SQUARE FEET; HAS A MAXIMUM APPARENT OPENING SIZE OF 0.212 mm; HAS A GRAB TENSILE STRENGTH OF 300 LBS; MULLEN BURST OF 580 PSI; PERMEABILITY OF 0.2 CM/SEC; FABRIC WEIGHT OF 12 OZ SHALL BE USED. THE GEOTEXTILE BAG AREA AND DOWNGRADE FLOW AREA SHALL CONSIST OF VEGETATED AND UNDISTURBED SOILS.
4. POLYMER APPROVED BY THE WDNR MEETING WDNR TECHNICAL STANDARD 1051 MAY BE USED IN COMBINATION WITH THE DEWATERING BAG IF THE DEWATERING BAG IS NOT DOING AN ADEQUATE JOB ALONE OF FILTERING SEDIMENTS. THE CONTRACTOR SHALL SUPPLY TOXICITY TESTING DATA TO THE WDNR BEFORE USE ON-SITE FOR WDNR APPROVAL. POLYMER SHALL NOT BE DIRECTLY APPLIED TO SURFACE WATER. CONTRACTOR SHALL OBTAIN THE POLYMER MATERIAL SAFETY DATA SHEETS (MSDS) FOR THE SELECTED POLYMER, MANUFACTURER'S INFORMATION AND WDNR USE RESTRICTIONS (SEE TECHNICAL STANDARD 1051) AND KEEP ALL THIS INFORMATION ON-SITE. CONTRACTOR SHALL ADHERE TO MANUFACTURER AND WDNR'S APPLICATION RATES FOR THE POLYMER. THE APPLICATION RATE SHALL NOT EXCEED THE WDNR USE RESTRICTION, EVEN IF THIS IS THE RECOMMENDED RATE BY THE MANUFACTURER. THE CONTRACTOR SHALL TAKE STEPS TO ENSURE THAT THE POLYMER IS NOT SPILLED. THE MANUFACTURER'S RECOMMENDED CLEANUP PROCEDURES SHALL BE FOLLOWED IN THE EVENT OF A SPILL.
5. A TARP MAY BE UTILIZED UNDERNEATH THE TYPE 2 GEOTEXTILE BAG AND JUST DOWN SLOPE OF THE BAG TO DISCOURAGE EROSION AND SCOUR.
6. A FLOATING SUCTION HOSE OR OTHER FLOTATION METHOD SHALL BE UTILIZED WHEN PUMPING FROM AN AREA WITH STANDING WATER TO AVOID SUCKING SEDIMENT FROM GRADE.
7. IF TURBID WATER IS LEAVING THE GEOTEXTILE BAG, THE CONTRACTOR SHALL SHUT OFF THE PUMP TO ALLOW SEDIMENTS TO SETTLE INTO THE BAG. CONTRACTOR SHALL FOLLOW THE MANUFACTURER'S SPECIFICATIONS FOR DETERMINING THE SEDIMENT CAPACITY OF THE GEOTEXTILE BAG USING GOOD COMMON SENSE. SEDIMENT LEVELS CONTAINED IN THE BAG SHALL BE MONITORED TO MEASURE THE LOSS OF STORAGE CAPACITY OVER TIME. THE CONTRACTOR SHALL PROPERLY DISPOSE OF THE GEOTEXTILE BAG IN A WASTE RECEPTACLE ONCE IT IS NO LONGER USED.
8. DURING DEWATERING ACTIVITIES THE CONTRACTOR SHALL MONITOR DEWATERING PRACTICES AND KEEP A LOG OF THE FOLLOWING:
   A. DISCHARGE DURATION AND SPECIFIED PUMPING RATE.
   B. OBSERVED WATER TABLE AT TIME OF DEWATERING.
   C. MAINTENANCE ACTIVITIES
   D. NAME AND QUANTITY OF POLYMER USED. PRODUCT TYPE.
   E. APPLICATION RATE OF POLYMER IN POUNDS/ACRE FEET OF WATER.
   F. DATE AND TIME APPLIED.
   G. WEATHER CONDITIONS DURING APPLICATION.
   H. METHOD OF APPLICATION.

THIS LOG NEEDS TO BE KEPT ON SITE FOR WDNR REGULATORY REVIEW. COPIES OF THIS DOCUMENTATION SHOULD BE KEPT IN THE CONTRACTOR'S MONITORING LOG AND MADE AVAILABLE UPON REQUEST.

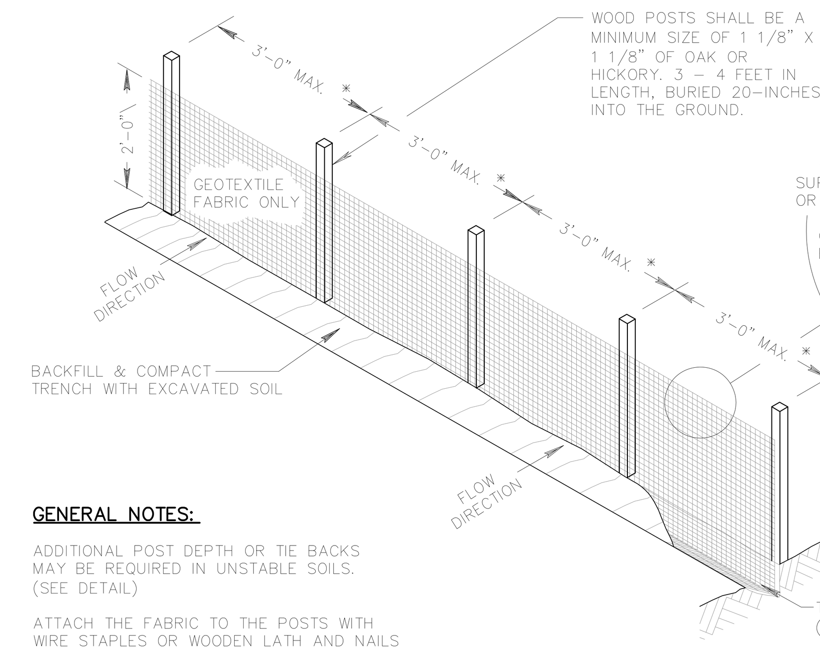
REVIEW THE FOLLOWING FOR MORE INFORMATION:

WDNR TECHNICAL STANDARD 1061 FOR DEWATERING – http://dnr.wi.gov/runoff/pdf/stormwater/techstds/erosion/Dewatering_1061.pdf

WDNR TECHNICAL STANDARD 1051 FOR POLYMER – http://dnr.wi.gov/runoff/pdf/stormwater/techstds/erosion/Dewatering_1061.pdf

INSPECT ALL EROSION CONTROL MEASURES PRIOR TO COMMENCING GRADING, GRUBBING OR OTHER LAND DISTURBING ACTIVITIES. EROSION CONTROL MEASURES MUST BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF EVERY PRECIPITATION EVENT OF 0.50 INCH OR GREATER. IN ADDITION THE CONTRACTOR SHALL CONDUCT DAILY INSPECTIONS AND DOCUMENT CONDITIONS AND REPAIRS MADE, ALONG WITH DATE, TIME OF INSPECTION AND WEATHER CONDITIONS IN A DAILY LOG BOOK. THE DAILY LOG BOOK, WEEKLY / 0.50 INCH PRECIPITATION REPORTS, APPROVED PLANS WPDES PERMIT & CHAPTER 30 PERMIT SHALL BE KEPT IN AN ACCESSIBLE LOCATION, LIKE A MAILBOX, WITHIN THE STAGING AREA.

AT ABSOLUTELY NO TIME MAY CONSTRUCTION EQUIPMENT, DEBRIS, FILL, ETC. BE PLACED WITHIN WATERWAYS OR FLOODPLAINS UNLESS IDENTIFIED IN THE PLANS & APPROVED BY DNR/ USACOE.



GENERAL NOTES:

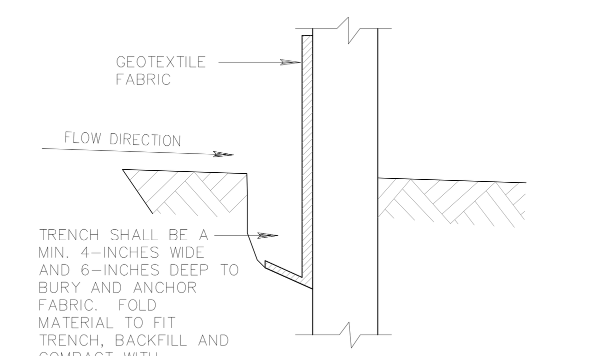
ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS. (SEE DETAIL)

ATTACH THE FABRIC TO THE POSTS WITH WIRE STAPLES OR WOODEN LATH AND NAILS

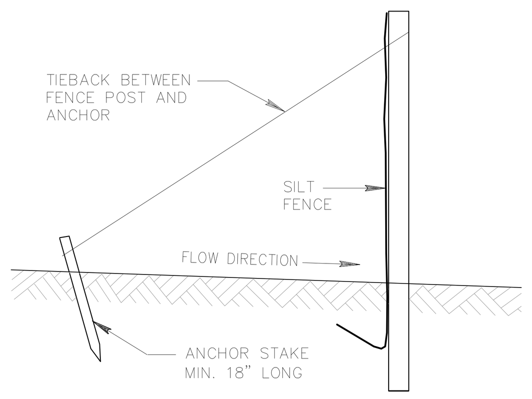
*8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

IF POSSIBLE, CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL TO AVOID JOINTS. IF A JOINT IS NECESSARY, USE ONE OF THE FOLLOWING METHODS:
(1)TWIST METHOD: OVERLAP END POSTS & TWIST AT LEAST 180 DEGREES.
(2)HOOK METHOD: HOOK THE END OF EACH SILT FENCE LENGTH.

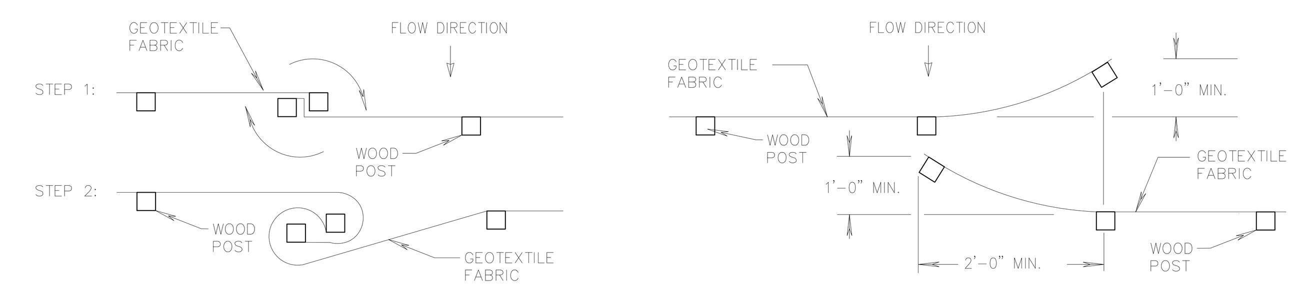
AXONOMETRIC VIEW



TRENCH DETAIL

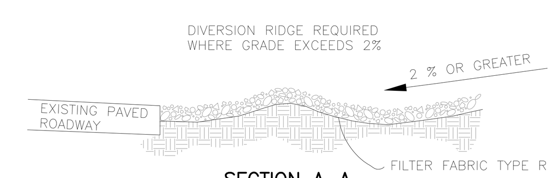


SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT REQUIRED)

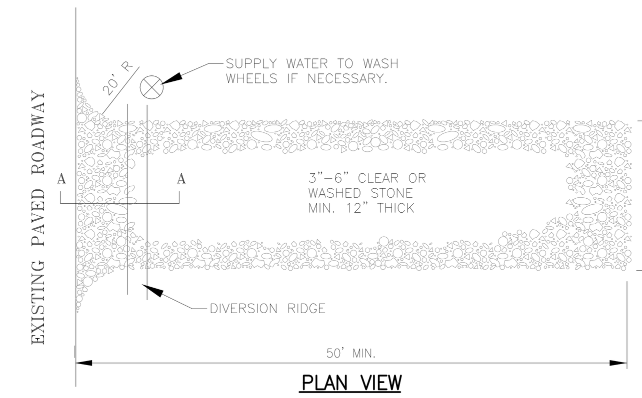


JOINING TWO LENGTHS OF SILT FENCE

(1) FILTER FABRIC SILT FENCE DETAIL
N.T.S.



SECTION A–A



PLAN VIEW

GENERAL NOTES:

THE AGGREGATE SIZE FOR CONSTRUCTION OF THE PAD SHALL BE 3- TO 6-INCH STONE. PLACE THE GRAVEL TO THE SPECIFIC GRADE & DIMENSIONS SHOWN ON THE PLANS & GRADE TO CREATE A SMOOTH SURFACE.

THE THICKNESS OF THE PAD SHALL NOT BE LESS THAN 12 INCHES. USE GEOTEXTILE FABRICS, IF NECESSARY, TO IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE.

THE WIDTH OF THE PAD SHALL NOT BE LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS & IN ANY CASE SHALL NOT BE LESS THAN 15 FEET WIDE.

THE LENGTH OF THE PAD SHALL BE AS REQUIRED, BUT NOT LESS THAN 50 FEET.

LOCATE CONSTRUCTION ENTRANCES & EXITS TO LIMIT SEDIMENT LEAVING THE SITE & TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID ENTRANCES WHICH HAVE STEEP GRADES & ENTRANCES AT CURVES IN PUBLIC ROADS.

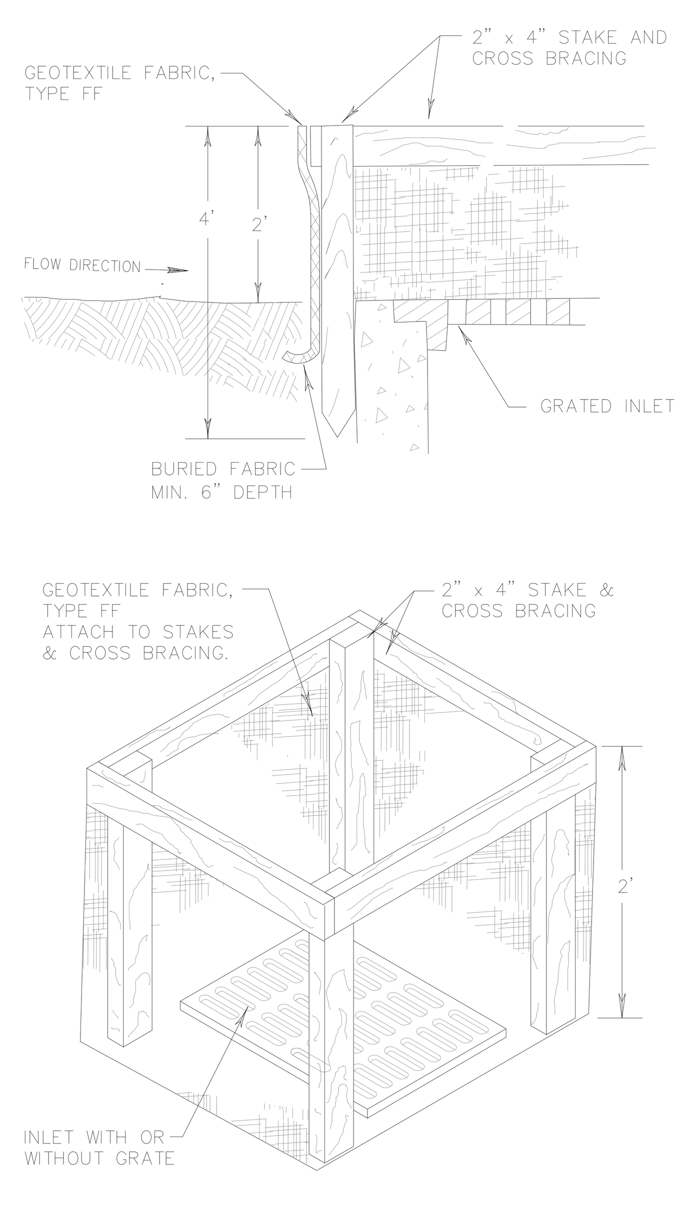
THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, & REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY.

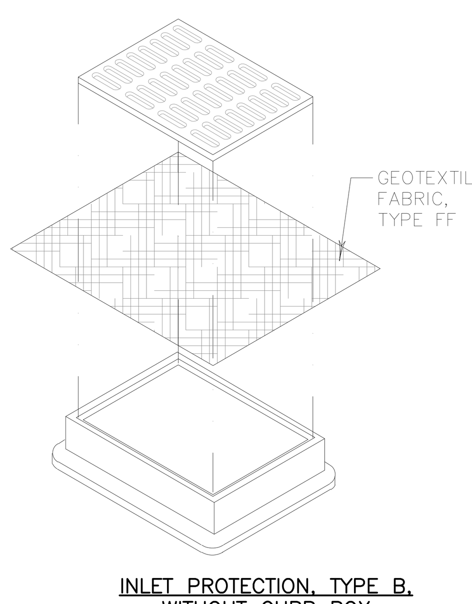
PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OULET.

WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, DESIGNATE AN AREA WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

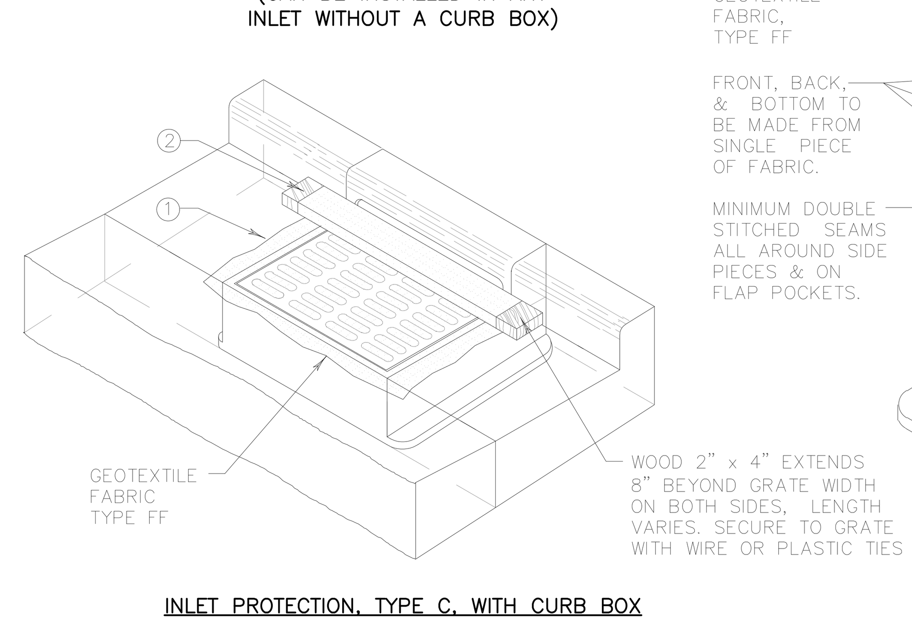
(2) STONE TRACKING CONSTRUCTION ENTRANCE
N.T.S.



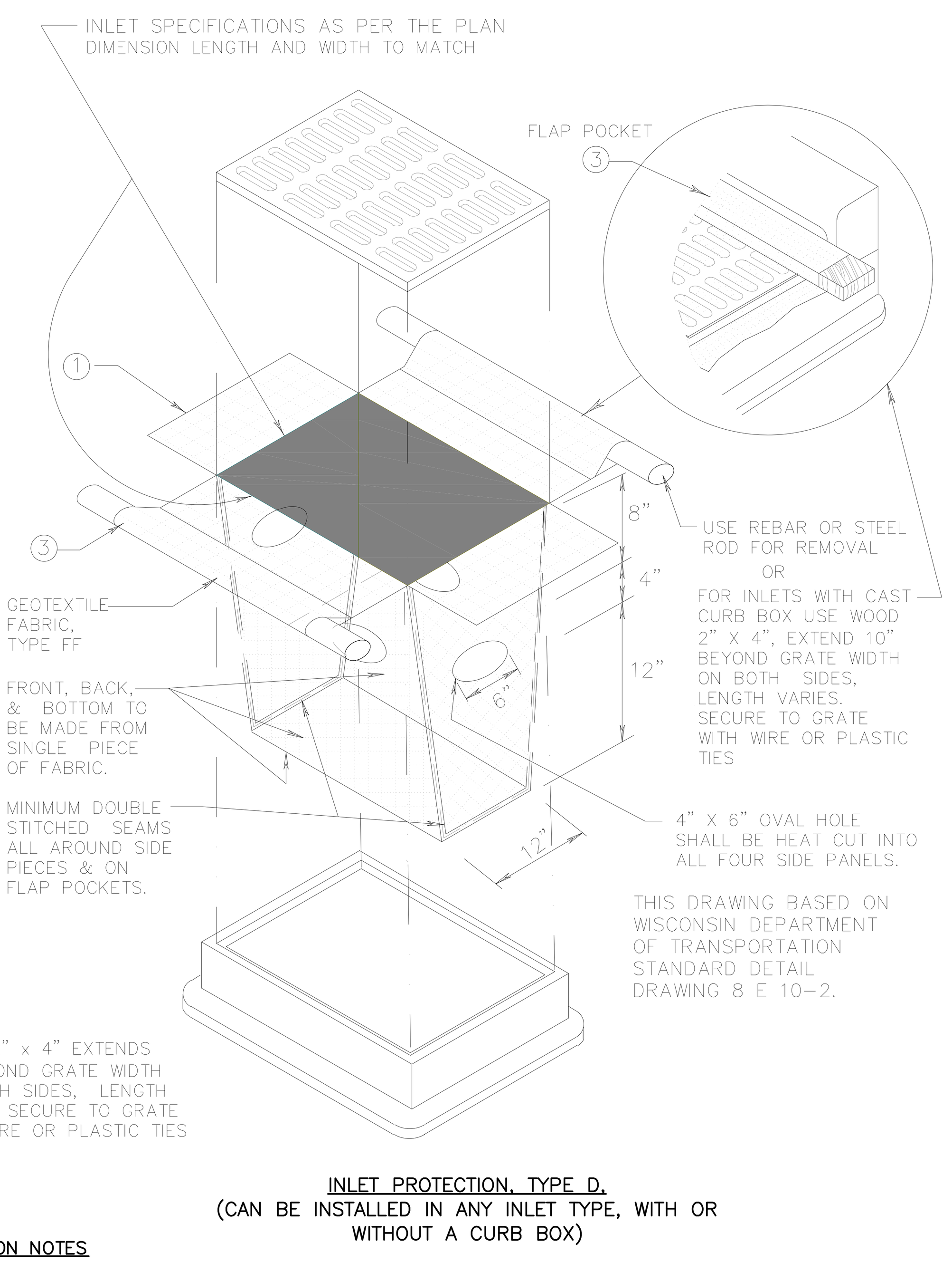
INLET PROTECTION, TYPE A



INLET PROTECTION, TYPE B, WITHOUT CURB BOX
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C, WITH CURB BOX



INLET PROTECTION, TYPE D,
(CAN BE INSTALLED IN ANY INLET TYPE, WITH OR WITHOUT A CURB BOX)

GENERAL NOTES

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

(1) FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

(2) FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

(3) FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D
DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3".
WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

(3) INLET PROTECTION DETAIL
N.T.S.

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

REVISION HISTORY - THIS SHEET

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SITE DETAILS

COMM. NO.	1203-005-03
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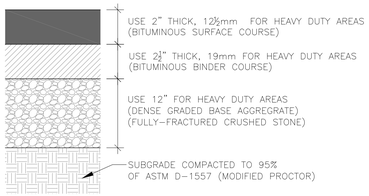
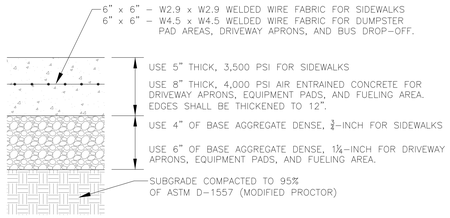
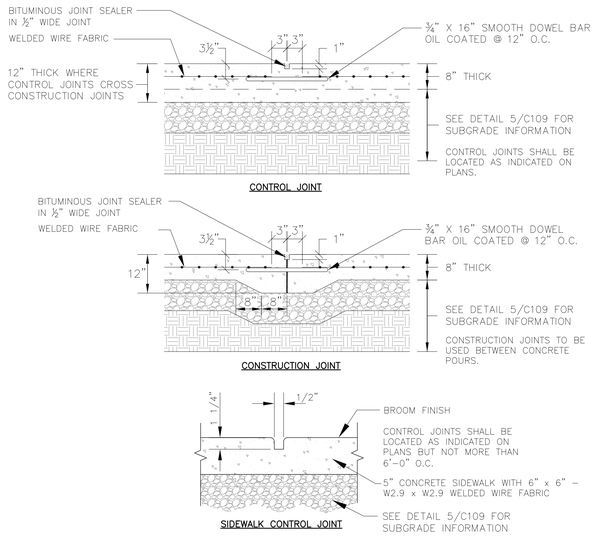


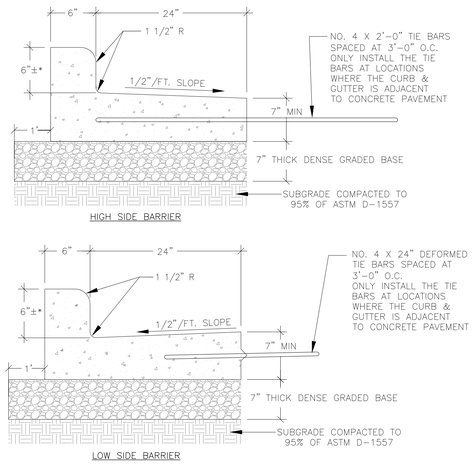
4 ASPHALTIC CONCRETE PAVEMENT
N.T.S. HMA PAVEMENT TYPE E-1



5 CONCRETE SIDEWALK/SLAB
N.T.S.

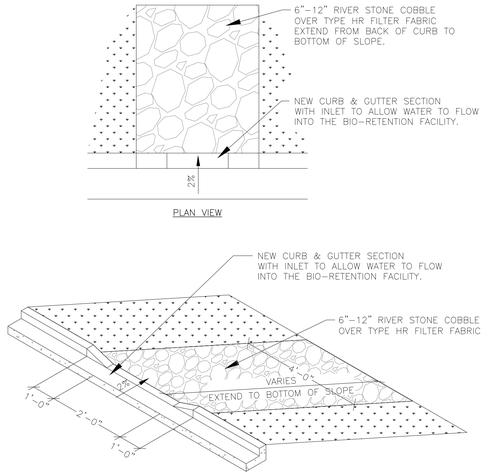


6 CONTROL & CONSTRUCTION JOINT DETAILS (TYP.)
N.T.S.



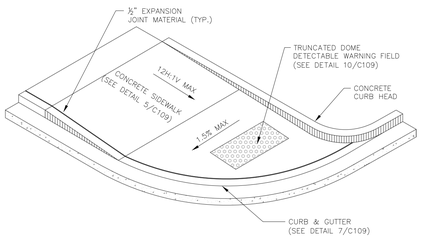
REFER TO C102 SITE PLAN AND C107 SITE PLAN AND PROFILE FOR HIGH SIDE AND LOW SIDE CURB LOCATION.

7 30-INCH CONCRETE CURB & GUTTER
N.T.S.

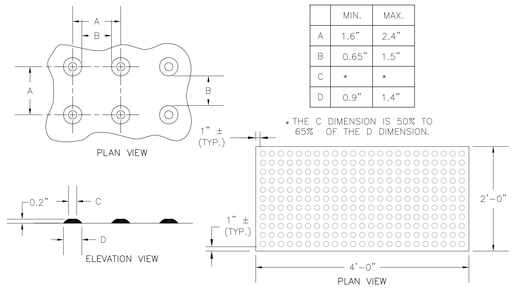


REFER TO C102 SITE PLAN AND C107 SITE PLAN AND PROFILE FOR FLUME LOCATION.

8 STORMWATER CURB CUT INLET WITH COBBLE FLUME
N.T.S.



9 ACCESSIBILITY RAMP DETAIL WITH TRUNCATED DOME DETECTABLE WARNING FIELD
N.T.S.



	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

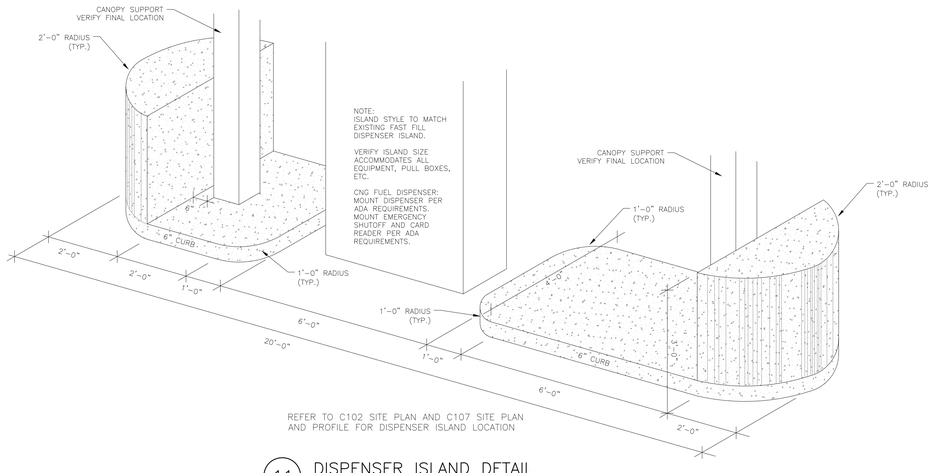
TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

TRUNCATED DOME PANEL
DETECTABLE WARNING FIELD DETAIL

GENERAL NOTES

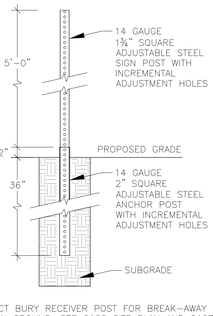
TRUNCATED DOME DETECTABLE WARNING FIELD SHALL CONSIST OF CAST IRON PLATES WITH NO COLOR. PLATES SHOULD WEATHER TO A RUST COLOR OVER TIME. IF 24"x48" PLATES ARE NOT AVAILABLE, TWO 24"x24" PLATES SHALL BE USED. THE DETECTABLE WARNING FIELD SHALL BE LOCATED SO THAT IT IS CENTERED IN THE CURB RAMP WITH THE EDGE NEAREST THE BACK OF CURB A MINIMUM OF 6" AND A MAXIMUM OF 8" AWAY FROM THE BACK OF CURB. IN LOCATIONS WHERE THE RAMP IS SKEWED TO THE CURB, THE DETECTABLE WARNING FIELD IS TO RUN PERPENDICULAR TO THE DIRECTION OF TRAVEL, WITH THE EDGE NEAREST THE BACK OF CURB 4" AWAY FROM THE BACK OF CURB.

10 TRUNCATED DOME DETECTABLE WARNING FIELD
N.T.S.



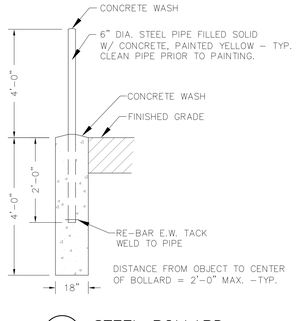
REFER TO C102 SITE PLAN AND C107 SITE PLAN AND PROFILE FOR DISPENSER ISLAND LOCATION

11 DISPENSER ISLAND DETAIL
N.T.S.



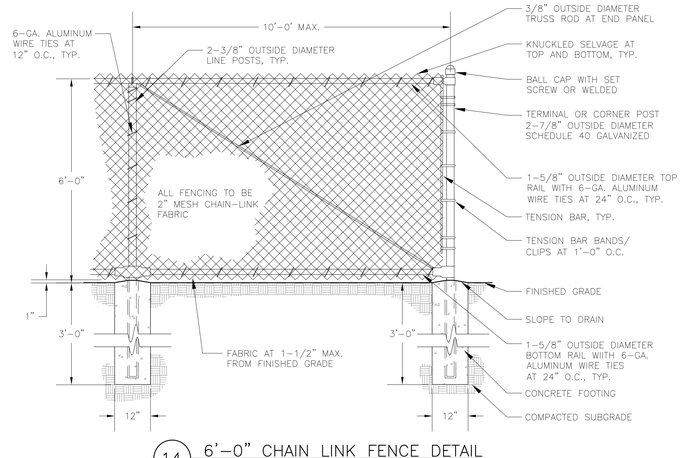
DIRECT BURY RECEIVER POST FOR BREAK-AWAY SIGN IN GROUND. SEE C102 SITE PLAN AND C107 SITE PLAN AND PROFILE FOR SIGN LOCATIONS.

12 SIGN POST DETAIL
N.T.S.

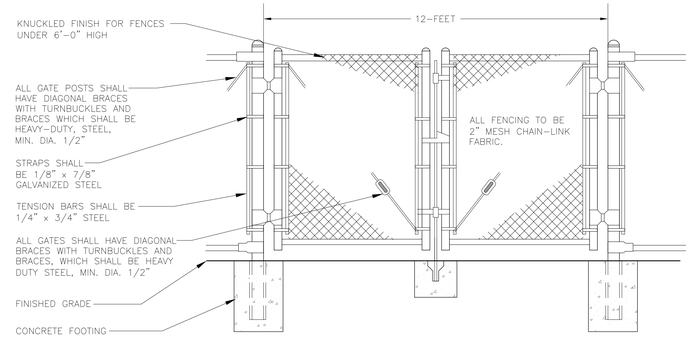


DISTANCE FROM OBJECT TO CENTER OF BOLLARD = 2'-0" MAX. – TYP.

13 STEEL BOLLARD
N.T.S.



14 6'-0" CHAIN LINK FENCE DETAIL
N.T.S.



GATES SHALL BE FRAMED ON FOUR SIDES WITH 2 INCH DIA. STANDARD WEIGHT STEEL PIPE. THE GATE FRAMES SHALL BE OF ALL SHOP WELDED CONSTRUCTION WITH COMPLETE FULL WELDS GROUND SMOOTH. THEY SHALL BE THOROUGHLY CLEANED AND HOT DIPPED GALVANIZED IN ACCORD WITH A.S.T.M. SPECIFICATION A-123 AFTER FABRICATION.

GATE HINGES SHALL BE HEAVY DUTY MALLEABLE IRON FULL BACK TYPE, ALLOWING FOR 180 DEGREE SWING. GATE LOCKING DEVICE SHALL BE HEAVY DUTY EXTERNAL TYPE WITH LATCH, KEEPER AND ALL APPURTENANCES.

ALL GATES OVER 6 FEET HIGH SHALL HAVE AN INTERMEDIATE RAIL. WHEREVER A DIAGONAL BRACE CROSSES AN INTERMEDIATE RAIL THE BRACE SHALL PASS BETWEEN THE RAIL AND THE MESH.

15 DOUBLE GATE FOR 6'-0" CHAIN LINK FENCE
N.T.S.

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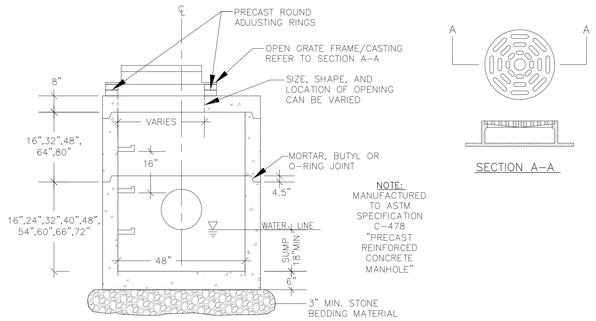
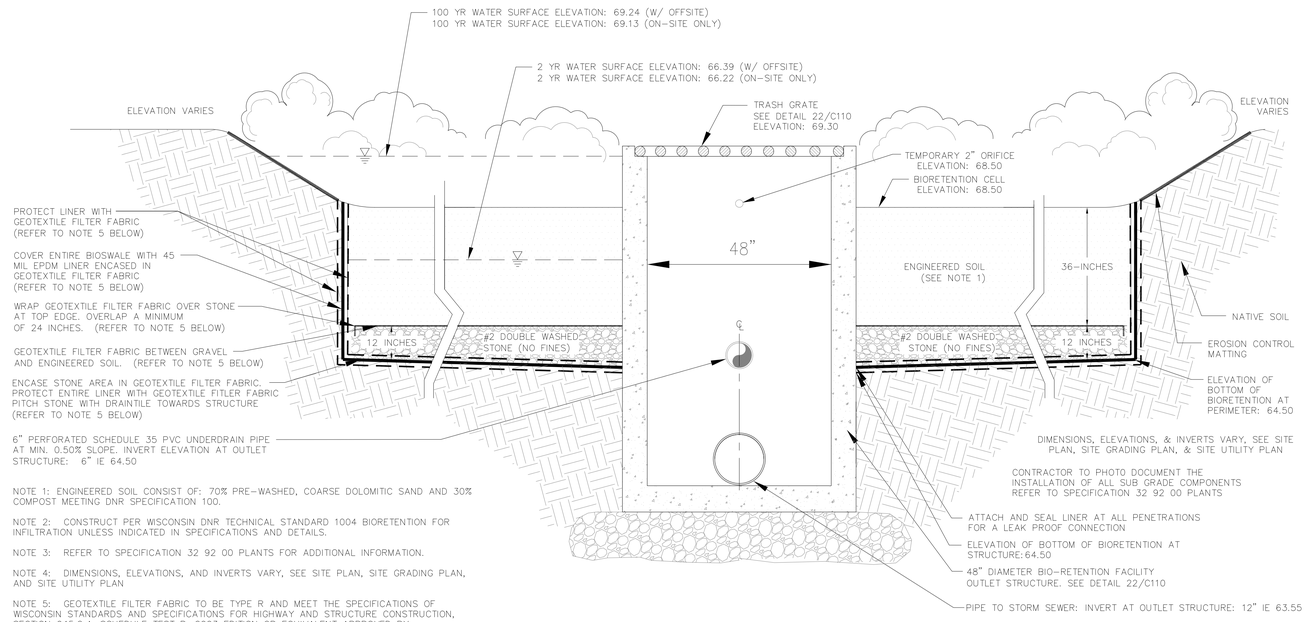


NOTE:
REFER TO SITE UTILITY PLAN FOR INFORMATION REGARDING PIPE DIAMETERS, PIPE PENETRATIONS, INVERTS, RIM ELEVATIONS, AND FRAMES & GRATES.

16 48–INCH DIAMETER STORM CATCH BASIN WITH ROUND FRAME & GRATE
N.T.S.



NOTE 1: ENGINEERED SOIL CONSIST OF: 70% PRE–WASHED, COARSE DOLOMITIC SAND AND 30% COMPOST MEETING DNR SPECIFICATION 100.

NOTE 2: CONSTRUCT PER WISCONSIN DNR TECHNICAL STANDARD 1004 BIORETENTION FOR INFILTRATION UNLESS INDICATED IN SPECIFICATIONS AND DETAILS.

NOTE 3: REFER TO SPECIFICATION 32 92 00 PLANTS FOR ADDITIONAL INFORMATION.

NOTE 4: DIMENSIONS, ELEVATIONS, AND INVERTS VARY, SEE SITE PLAN, SITE GRADING PLAN, AND SITE UTILITY PLAN

NOTE 5: GEOTEXTILE FILTER FABRIC TO BE TYPE R AND MEET THE SPECIFICATIONS OF WISCONSIN STANDARDS AND SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, SECTION 645.2.4, SCHEDULE TEST B, 2003 EDITION OR EQUIVALENT APPROVED BY ADMINISTERING AUTHORITY.

17 TYPICAL BIO–RETENTION FACILITY/SEDIMENTATION BASIN DETAIL
N.T.S.

NOTES:
1.) STANDARD SPECIFICATION SHALL APPLY TO ALL INSTALLATIONS.

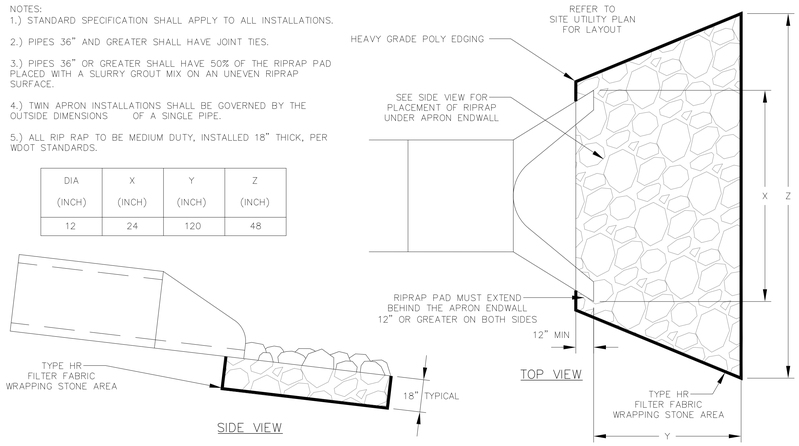
2.) PIPES 36" AND GREATER SHALL HAVE JOINT TIES.

3.) PIPES 36" OR GREATER SHALL HAVE 50% OF THE RIPRAP PAD PLACED WITH A SLURRY GROUT MIX ON AN UNEVEN RIPRAP SURFACE.

4.) TWIN APRON INSTALLATIONS SHALL BE GOVERNED BY THE OUTSIDE DIMENSIONS OF A SINGLE PIPE.

5.) ALL RIP RAP TO BE MEDIUM DUTY, INSTALLED 18" THICK, PER WDOT STANDARDS.

DIA (INCH)	X (INCH)	Y (INCH)	Z (INCH)
12	24	120	48



18 TYPICAL PLACEMENT OF RIPRAP AT APRON ENDWALLS
N.T.S.

STORM MANHOLE NOTES:

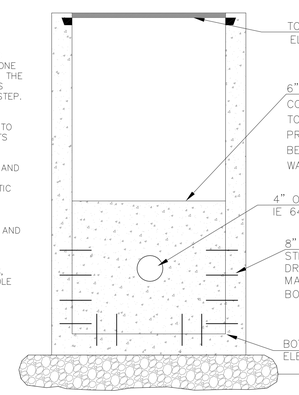
1. PRECAST CONCRETE ADJUSTING RINGS TO BE REINFORCED WITH ONE HOOP OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY, RINGS SHALL BE GROOVED TO RECEIVE STEP.

2. CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C–478 REQUIREMENTS OF ASTM SPECIFICATIONS.

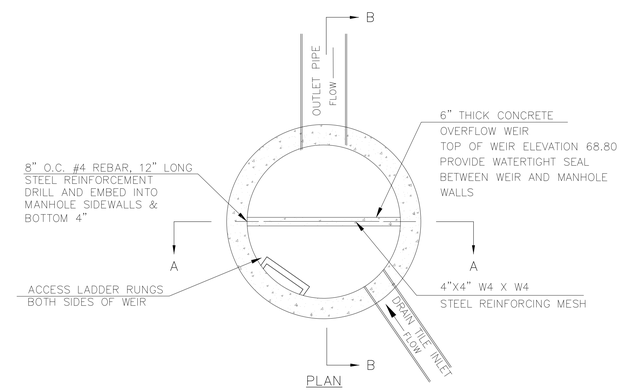
3. JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING RUBBER GASKETS OR BUTYL RUBBER MASTIC MATERIAL.

4. 3" MIN. BEDDING MATERIAL REQUIRED UNDER MANHOLE BASE AND BACKFILLED STRUCTURE WITH GRANULAR BACKFILL MATERIAL.

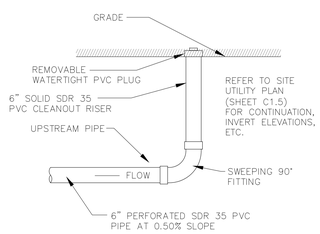
5. SEE STANDARD SPECIFICATIONS, FILE NO. 12 FOR PRECAST MANHOLE AND FILE NO. 13 FOR MANHOLE INVERTS, INCLUDING INVERTS OF LATERAL SEWERS THAT CONNECT DIRECTLY TO MANHOLES.



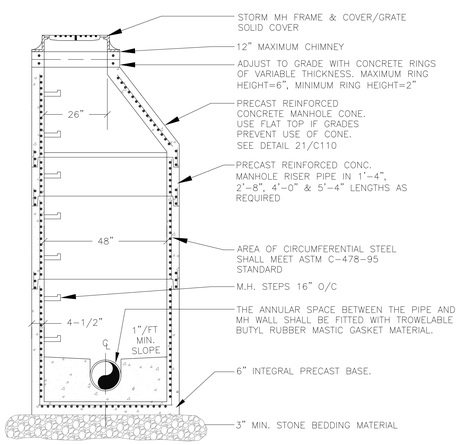
SECTION A–A



PLAN



19 STORM SEWER ENDRUN 6" CLEANOUT
N.T.S.



STORM MANHOLE NOTES:

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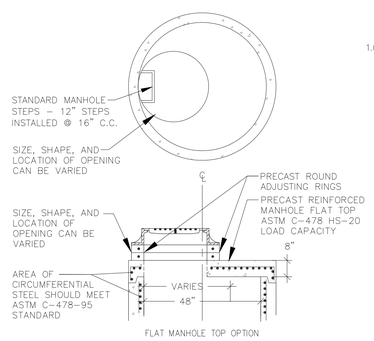
2.) CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C–478 REQUIREMENTS OF ASTM SPECIFICATIONS.

3.) JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING RUBBER GASKETS OR BUTYL RUBBER MASTIC MATERIAL.

4.) 3" MIN. BEDDING MATERIAL REQUIRED UNDER MANHOLE BASE AND BACKFILLED STRUCTURE WITH GRANULAR BACKFILL MATERIAL.

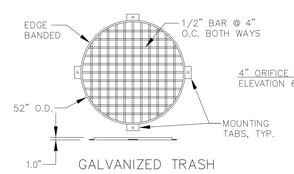
5.) SEE STANDARD SPECIFICATIONS, FILE NO. 12 FOR PRECAST MANHOLE AND FILE NO. 13 FOR MANHOLE INVERTS, INCLUDING INVERTS OF LATERAL SEWERS THAT CONNECT DIRECTLY TO MANHOLES.

20 STORM MANHOLE DETAIL
N.T.S.

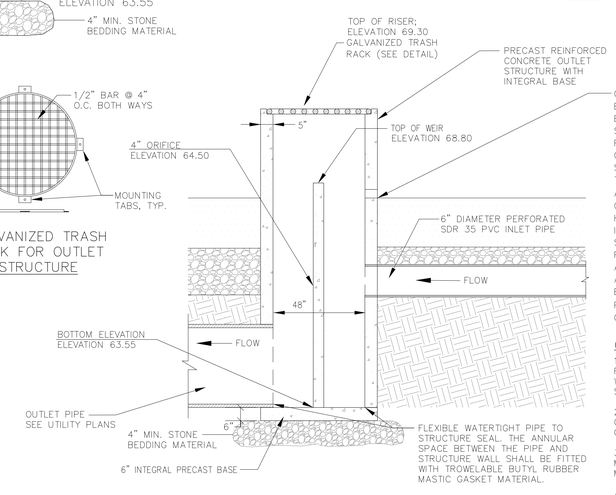


NOTE: USE ONLY WHEN LACK OF COVER PREVENTS USE OF CONE MANHOLE

21 OPTIONAL FLAT TOP MANHOLE WITH ROUND FRAME & COVER
N.T.S.



GALVANIZED TRASH RACK FOR OUTLET STRUCTURE



SECTION B–B

ONE (1) 2.00" ORIFICE AT TOP OF THE ENGINEERED SOIL ELEVATION. SINCE THE BIO–RETENTION FACILITY WILL ACT AS A SEDIMENT BASIN DURING CONSTRUCTION, THE FOOTPRINT OF THE FACILITY SHALL INITIALLY ONLY BE EXCAVATED TO THE BOTTOM OF THE STONE ELEVATION. FOLLOWING THIS EXCAVATION, THE OUTLET STRUCTURE SHALL BE INSTALLED AT ITS FINAL LOCATION, AND ONE 2.00" ORIFICE CORED INTO THE SIDE OF IT. AFTER THE SITE HAS BEEN STABILIZED AND THE SEDIMENT BASIN IS NO LONGER NEEDED, THE ACCUMULATED SEDIMENT SHALL BE DREDGED OUT OF THE FOOTPRINT OF THE BIO–RETENTION FACILITY AND DISPOSED OF. FOLLOWING DREDGING ACTIVITIES, FULL CONSTRUCTION OF THE BIO–RETENTION FACILITY SHALL BE COMPLETED PER THE PLANS AND DETAILS, AND THE 2.00" ORIFICE SHALL BE PLUGGED.

OUTLET STRUCTURE NOTES:

1. PRECAST CONCRETE ADJUSTING RINGS TO BE REINFORCED WITH ONE HOOP OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY, RINGS SHALL BE GROOVED TO RECEIVE STEP.

2. CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C–478 REQUIREMENTS OF ASTM SPECIFICATIONS.

3. JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING RUBBER GASKETS OR BUTYL RUBBER MASTIC MATERIAL.

4. 3" MIN. BEDDING MATERIAL REQUIRED UNDER MANHOLE BASE. BACKFILL STRUCTURE WITH GRANULAR BACKFILL MATERIAL.

22 48–INCH DIAMETER BIO–RETENTION FACILITY OUTLET STRUCTURE
N.T.S.

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
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MILWAUKEE COUNTY

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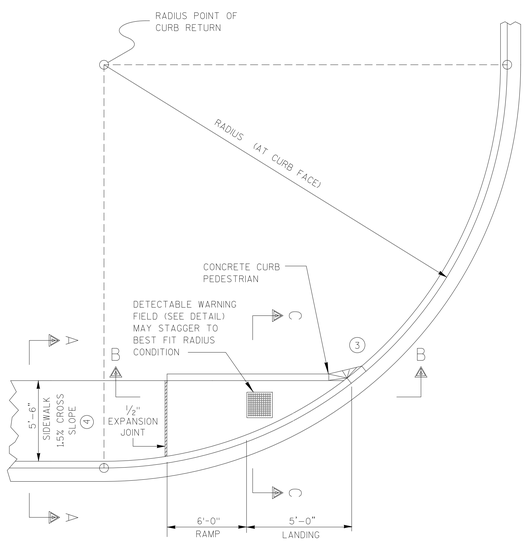
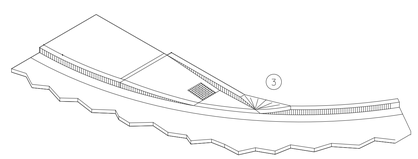


CURB RAMP
PLAN VIEW



ISOMETRIC VIEW

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

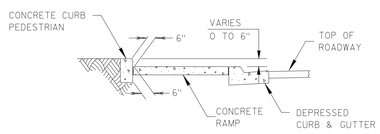
3 INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

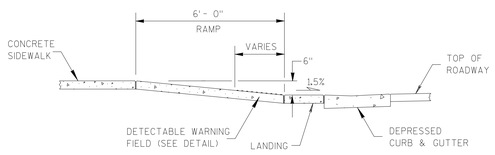
LEGEND

~~~~~~~~~~~~~~ 1/2" EXPANSION JOINT-SIDEWALK

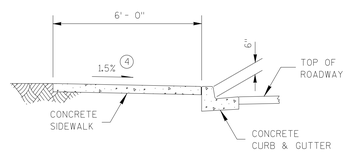
- - - - - - - CONTRACTION JOINT FIELD LOCATE



SECTION C-C



SECTION B-B



SECTION A-A

23 ACCESSIBILITY RAMP DETAIL WITH TRUNCATED DOME DETACTABLE WARNING FIELD
N.T.S.

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ACS	A	AUTOMATIC CONTROL SYSTEM
AFF		ABOVE FINISHED FLOOR
AFMS		AIRFLOW MEASURING STATION
AG		AIR GAP FITTING
AHU		AIR HANDLING UNIT
ALT		ALTERNATE
AP		ACCESS PANEL(S)
APD		AIR PRESSURE DROP
ARCH		ARCHITECT(URAL)
ATU		AIR TERMINAL UNIT
BHP	B	BRAKE HORSE POWER
BLDG		BUILDING
BSMT		BASEMENT
BTUH		BRITISH THERMAL UNIT PER HOUR
BWV		BACK WATER VALVE
CFH	C	CUBIC FOOT PER HOUR
CFM		CUBIC FOOT PER MINUTE
CIP		CAST IRON PIPE
CLG		CEILING
CO		CLEAN OUT
COMB		COMBINATION
CONC		CONCRETE
COND		CONDENS(ATE) (ER)
CONN		CONNECTION
CONT		CONTINU(E) (OUS) (ATION)
CONTR		CONTRACT(OR)
CORR		CORRIDOR
DA	D	DIALYSIS ACID
DDC		DIRECT DIGITAL CONTROL (PANEL)
DEG		DEGREE(S)
DET		DETAIL
DI		DEIONIZED WATER
DIFF		DIFFUSER
DMPR		DAMPER
DN		DOWN
DW		DIALYSIS WATER
DWG(S)		DRAWING(S)
EA	E	EACH
EA		EXHAUST AIR
ELEC		ELECTRIC(AL)
EMER		EMERGENCY
EXG		EXISTING
EXH		EXHAUST
EJ		EXPANSION JOINT
EXT		EXTERIOR
F	F	FAHRENHEIT
FDV		FIRE DEPARTMENT VALVE
FFD		FUNNEL FLOOR DRAIN
FFE		FINISHED FLOOR ELEVATION
FLR		FLOOR
FLEX		FLEXIBLE
FPM		FEET PER MINUTE
F&T		FLOAT AND THERMOSTATIC (TRAP)
FT		FOOT, FEET
FTG		FOOTING
FTR		FINNED TUBE RADIATION
GA	G	GAUGE
GAL		GALLON
GALV		GALVANIZED
GEN		GENERATOR
GENL		GENERAL
GPH		GALLON(S) PER HOUR
GPM		GALLON(S) PER MINUTE
GRL		GRILLE
HB	H	HOSE BIB
HP		HIGH PRESSURE
HP		HORSEPOWER
HTG		HEATING
HTR		HEATER
HV		HOSE VALVE
HVAC		HEATING, VENTILATION AND AIR CONDITIONING
ID	I	INSIDE DIAMETER/DIMENSION
IN		INCH(ES)
INSUL		INSULATION
INV		INVERT
LBS/HR	L	POUNDS PER HOUR
LF		LINEAL FOOT, FEET
LVR		LOUVER
MAX	M	MAXIMUM
MBH		1000 BTUH
MCC		MOTOR CONTROL CENTER
MECH		MECHANICAL(LY)
MEZZ		MEZZANINE
MFR		MANUFACTURER
MIN		MINIMUM
MIN		MINUTE
MISC		MISCELLANEOUS
NIC	N	NOT IN CONTRACT
NO		NUMBER
NTS		NOT TO SCALE
OA	O	OUTSIDE AIR
OD		OUTSIDE DIAMETER/DIMENSION
PD	P	PRESSURE DROP
PLBG		PLUMBING
PRES		PRESSURE
PSI		POUNDS PER SQUARE INCH
PVC		POLYVINYL CHLORIDE
R	R	RADIUS
RA		RETURN AIR
REG		REGISTER
REQD		REQUIRED
RH		RELATIVE HUMIDITY
RM		ROOM
RO		REVERSE OSMOSIS
RPM		REVOLUTIONS PER MINUTE
RPZ		REDUCED PRESSURE BACKFLOW PREVENTER
RTU		ROOFTOP UNIT
SA	S	SUPPLY AIR
SHT		SHEET
SP		STATIC PRESSURE
SPEC(S)		SPECIFICATION(S)
SQ		SQUARE
SS		STAINLESS STEEL
STRUC		STRUCTUR(E) (AL)
T	T	THERMOSTAT
TEMP		TEMPERATURE
TMV		THERMOSTATIC MIXING VALVE
TYP		TYPICAL
VAV	V	VARIABLE AIR VOLUME
VENT		VENTILATION OR VENTILATOR
VERT		VERTICAL
VIB SOL		VIBRATION ISOLATION
VOL		VOLUME
VS		VENT STACK
VSD		VARIABLE SPEED DRIVE (MOTOR CONTROLLER)
VTR		VENT THROUGH ROOF
W	W	WASTE
W/		WITH
W/O		WITHOUT
WH		WALL HYDRANT
WS		WASTE STACK
WTR		WATER

REFER TO PIPING, FIRE PROTECTION AND MEDICAL GAS DESIGNATIONS AND EQUIPMENT SCHEDULES FOR ADDITIONAL ABBREVIATIONS.

1 ABBREVIATIONS
NO SCALE

- 24x12 — RECTANGULAR SIZE FIRST DIMENSION SIDE SHOWN
- 24x12Ø — FLAT OVAL SIZE FIRST DIMENSION SIDE SHOWN
- 12Ø — ROUND SIZE
- CONCENTRIC TRANSITION RECTANGULAR, ROUND OR OVAL
- ECCENTRIC TRANSITION RECTANGULAR, ROUND OR OVAL
- UP — INCLINED RISE WITH RESPECT TO AIRFLOW RECTANGULAR, ROUND OR OVAL
- DN — INCLINED DROP WITH RESPECT TO AIRFLOW RECTANGULAR, ROUND OR OVAL
- ELBOW UP, RECTANGULAR SUPPLY OR OUTSIDE AIR
- ELBOW DOWN, RECTANGULAR SUPPLY OR OUTSIDE AIR
- ELBOW UP, RECTANGULAR RETURN, RELIEF OR EXHAUST
- ELBOW DOWN, RECTANGULAR RETURN, RELIEF OR EXHAUST
- ELBOW UP, ROUND (FLAT OVAL SIMILAR)
- ELBOW DOWN, ROUND (FLAT OVAL SIMILAR)
- SQUARE ELBOW W/ TURNING VANES, RECTANGULAR
- SMOOTH RADIUS ELBOW RECTANGULAR, ROUND OR FLAT OVAL
- DIVIDED FLOW FITTING, RECTANGULAR BRANCH AIRFLOW AT LEAST 25% OF MAIN
- TAP-IN BRANCH W/ VOLUME DAMPER RECTANGULAR MAIN AND BRANCH
- SPIN-IN STRAIGHT TAP W/ VOLUME DAMPER RECTANGULAR MAIN, ROUND OR FLAT OVAL BRANCH
- SPIN-IN CONICAL TAP W/ VOLUME DAMPER RECTANGULAR MAIN, ROUND OR FLAT OVAL BRANCH
- BRANCH, CONICAL LATERAL FITTING W/ VOLUME DAMPER ROUND OR FLAT OVAL MAIN AND BRANCH
- BRANCH, CONICAL TEE FITTING WITH VOLUME DAMPER ROUND OR FLAT OVAL MAIN AND BRANCH
- FLEXIBLE CONNECTION TO EQUIPMENT
- ROUND FLEXIBLE DUCT
- DUCT WITH LINER
- DUCT WITH FIRE WRAP
- VOLUME DAMPER
- B — BACKDRAFT DAMPER
- M — MOTORIZED DAMPER
- S — SMOKE DAMPER
- F — FIRE DAMPER
- S F — SMOKE/FIRE DAMPER

2 DUCTWORK DESIGNATIONS AND SYMBOLS
NO SCALE

- 24x12 — RECTANGULAR SIZE FIRST DIMENSION SIDE SHOWN
- 24x12Ø — FLAT OVAL SIZE FIRST DIMENSION SIDE SHOWN
- 12Ø — ROUND SIZE
- CONCENTRIC TRANSITION RECTANGULAR, ROUND OR OVAL
- ECCENTRIC TRANSITION RECTANGULAR, ROUND OR OVAL
- TRANSITION, RECTANGULAR TO ROUND OR OVAL
- UP — INCLINED RISE WITH RESPECT TO AIRFLOW RECTANGULAR, ROUND OR OVAL
- DN — INCLINED DROP WITH RESPECT TO AIRFLOW RECTANGULAR, ROUND OR OVAL
- ELBOW UP, RECTANGULAR SUPPLY OR OUTSIDE AIR
- ELBOW DOWN, RECTANGULAR SUPPLY OR OUTSIDE AIR
- ELBOW UP, RECTANGULAR RETURN, RELIEF OR EXHAUST
- ELBOW DOWN, RECTANGULAR RETURN, RELIEF OR EXHAUST
- ELBOW UP, ROUND (FLAT OVAL SIMILAR)
- ELBOW DOWN, ROUND (FLAT OVAL SIMILAR)
- SQUARE ELBOW W/ TURNING VANES, RECTANGULAR
- ELBOW, RECTANGULAR W/O TURNING VANES
- SMOOTH RADIUS ELBOW WITH SPLITTER VANES RECTANGULAR
- SMOOTH RADIUS ELBOW, RECTANGULAR
- ELBOW, ROUND OR FLAT OVAL
- DIVIDED FLOW FITTING, RECTANGULAR BRANCH AIRFLOW AT LEAST 25% OF MAIN
- TAP-IN BRANCH W/ VOLUME DAMPER RECTANGULAR MAIN AND BRANCH
- SPIN-IN STRAIGHT TAP W/ VOLUME DAMPER RECTANGULAR MAIN, ROUND OR FLAT OVAL BRANCH
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- DUCT WITH LINER
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- VOLUME DAMPER
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- M — MOTORIZED DAMPER
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- F — FIRE DAMPER
- S F — SMOKE/FIRE DAMPER

3 DOUBLELINE DUCTWORK SYMBOLS
NO SCALE

- CONNECT TO EXISTING
- 1 — KEY NOTE
- REVISION TRIANGLE
- 5 — DATUM
- BREAK SYMBOL
- W 1 — DOMESTIC WATER RISER
- P 1 — WASTE RISER
- VARIABLE AIR VOLUME TERMINAL UNIT SHOWN WITH REQUIRED 3 DIAMETERS OF INLET DUCT
- VARIABLE AIR VOLUME TERMINAL UNIT WITH HEATING COIL SHOWN WITH REQUIRED 3 DIAMETERS OF INLET DUCT
- FAN-POWERED VARIABLE AIR VOLUME TERMINAL UNIT SHOWN WITH REQUIRED 3 DIAMETERS OF INLET DUCT AND LINED PLENUM RETURN DUCT
- FAN-POWERED VARIABLE AIR VOLUME TERMINAL UNIT WITH HEATING COIL SHOWN WITH REQUIRED 3 DIAMETERS OF INLET DUCT AND LINED PLENUM RETURN DUCT
- DUCT-MOUNTED COIL
- CEILING SUPPLY AIR DIFFUSER WITH BLANK OFF
- ROUND SUPPLY AIR DIFFUSER WITH ROUND NECK
- CEILING RETURN OR EXHAUST AIR GRILLE/REGISTER
- LINEAR SLOT SUPPLY AIR DIFFUSER OR RETURN AIR GRILLE/REGISTER
- SIDEWALL SUPPLY AIR OR RETURN AIR GRILLE/REGISTER
- SUPPLY OR OUTSIDE AIRFLOW DIRECTION ARROW
- RETURN, RELIEF OR TRANSFER AIRFLOW DIRECTION ARROW
- DEMOLISH EXISTING DUCT, PIPE OR EQUIPMENT INCLUDING SUPPORTS, ACCESSORIES AND RELATED CONTROLS AND COMPONENTS
- EXHAUST AIR DUCT UP TO EXHAUST FAN ON ROOF
- RELIEF AIR OR EXHAUST AIR DUCT UP TO ROOF VENT
- OUTSIDE AIR OR SUPPLY AIR DUCT UP TO ROOF VENT
- T — THERMOSTAT
- S — TEMPERATURE SENSOR
- H — HUMIDISTAT / HUMIDITY SENSOR
- UNIT HEATER (VERTICAL)
- UNIT HEATER (HORIZONTAL)
- UNIT HEATER (CABINET)
- FAN COIL UNIT (HORIZONTAL)
- FAN COIL UNIT (VERTICAL)
- FTR A 12.0 MBH — FINNED TUBE RADIATION OR CONVECTOR TYPE OF RADIATION AS SHOWN ON THE SCHEDULE CAPACITY OF ACTIVE LENGTH OF RADIATION
- PUMP
- FAN
- (2)R1:24x12 400 CFM — DIFFUSER, REGISTER AND GRILLE IDENTIFICATION
  - QUANTITY (IF MORE THAN ONE)
  - TYPE
  - NECK OR CONNECTION SIZE
  - AIR VOLUME (EACH)
- AIR TERMINAL UNIT
  - FLOOR/AREA
  - UNIT NUMBER
- DET SHT — SECTION SYMBOL
  - SECTION NUMBER
  - SHEET LOCATION

4 GENERAL SYMBOLS
NO SCALE

- COLD WATER (CW)
- HOT WATER (HW)
- RECIRCULATING HOT WATER (RHW) TEMPERATURE INDICATED AS NEEDED
- NP — NON-POTABLE WATER
- S — SOFT WATER
- DW — DIALYSIS WATER
- DA — DIALYSIS ACID
- DE — DISTILLED WATER
- DI — DEIONIZED WATER
- RO — REVERSE OSMOSIS
- SW — SANITARY WASTE
- SW — SPECIAL WASTE
- AW — ACID WASTE
- IW — INFLAMMABLE WASTE
- PW — PUMPED WASTE (SEWAGE FORCED MAIN)
- V — SANITARY VENT
- SV — SPECIAL VENT
- AV — ACID VENT
- IV — INFLAMMABLE VENT
- RW — STORM WATER / RAIN WATER
- ORW — OVERFLOW STORM WATER / RAIN WATER
- PS — PUMPED STORM (SEWAGE FORCED MAIN)
- D — DRAIN
- CD — CONDENSATE DRAIN
- G — NATURAL GAS
- IG — INTERRUPTIBLE GAS
- PGA — PROPANE GAS AIR (PROPANE/AIR MIXTURE)
- LPG — LIQUEFIED PROPANE GAS
- LP — LIQUID PROPANE
- A — COMPRESSED AIR
- CDA — CLEAN DRY COMPRESSED AIR
- LA — LABORATORY COMPRESSED AIR
- LV — LABORATORY VACUUM
- H_2 — HYDROGEN
- LO_2 — LIQUID OXYGEN
- LN_2 — LIQUID NITROGEN
- LH_2 — LIQUID HYDROGEN
- HPO_2 — HIGH PURITY OXYGEN
- HPN_2 — HIGH PURITY NITROGEN
- HPH_2 — HIGH PURITY HYDROGEN
- HWS — HEATING WATER SUPPLY
- HWR — HEATING WATER RETURN
- HHWS — HIGH TEMPERATURE HEATING WATER SUPPLY
- HHWR — HIGH TEMPERATURE HEATING WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- CHWR — CHILLED WATER RETURN
- CWS — CONDENSER WATER SUPPLY
- CWR — CONDENSER WATER RETURN
- LPS — LOW PRESSURE STEAM (15 PSIG AND BELOW)
- LPR — LOW PRESSURE RETURN
- HPS — HIGH PRESSURE STEAM (16 PSIG AND HIGHER)
- HPR — HIGH PRESSURE RETURN
- SV — STEAM VENT
- PC — PUMPED CONDENSATE
- GS — GLYCOL SUPPLY
- GR — GLYCOL RETURN
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- HG — REFRIGERANT HOT GAS
- FOF — FUEL OIL FILL
- FOV — FUEL OIL VENT
- FOS — FUEL OIL SUPPLY
- FOR — FUEL OIL RETURN
- FOT — FUEL OIL TRANSFER
- GA — GAUGE LINE
- HT — HEAT TRACING

5 PIPING DESIGNATIONS
NO SCALE

- F — FIRE PROTECTION PIPING
- D — DRAIN PIPING
- UPRIGHT SPRINKLERS
- PENDANT SPRINKLERS
- RECESSED SPRINKLERS
- FLUSH CONCEALED SPRINKLERS
- SIDEWALL SPRINKLERS
- FDV — FIRE DEPARTMENT VALVE
- F — FLOW SWITCH
- STANDPIPE
- INSPECTOR'S VALVE
- SUPERVISED VALVE
- DOUBLE DETECTOR CHECK VALVE
- CHECK VALVE W/ BALL DRIP
- FIRE DEPARTMENT CONNECTION
- FIRE PUMP TEST CONNECTION
- DRY PIPE VALVE
- PREACTION VALVE
- FLOW SWITCH

FIRE PROTECTION
7 DESIGNATIONS AND SYMBOLS
NO SCALE

- ELBOW DOWN
- ELBOW UP
- TEE DOWN
- TEE UP
- FLOW DIRECTION
- SHUT-OFF VALVE
- BALANCING VALVE
- AUTOMATIC FLOW CONTROL VALVE
- VALVE IN VERTICAL PIPE
- CHECK VALVE (FLOW DIRECTION INDICATED)
- 2-WAY MODULATING CONTROL VALVE
- 3-WAY MODULATING CONTROL VALVE
- 2-WAY, 2-POSITION CONTROL VALVE
- 3-WAY, 2-POSITION CONTROL VALVE
- PRESSURE REDUCING VALVE
- REDUCED PRESSURE ZONE BACKFLOW PREVENTER
- RELIEF VALVE (ELEVATION)
- RELIEF VALVE (PLAN VIEW)
- FLOW MEASURING DEVICE
- STRAINER
- STRAINER W/ BLOWDOWN VALVE
- EXPANSION JOINT
- FLEXIBLE CONNECTION
- UNION
- PIPE ANCHOR
- PIPE GUIDE
- MANUAL AIR VENT
- ECCENTRIC REDUCER
- CONCENTRIC REDUCER
- SENSOR WELL
- TEST PLUG
- THERMOMETER
- P — PRESSURE GAUGE
- P — TEMPERATURE GAUGE
- CONNECTION
- CONNECTION (TOP)
- CONNECTION (BOTTOM)
- CLEANOUT
- HOSE BIBB (HB) OR WALL HYDRANT (WH)
- PITCH PIPE DOWN
- STEAM TRAP
- FLOOR DRAIN (FD)
- ROOF DRAIN (RD)
- AREA DRAIN (AD)
- FLOOR SINK (FS)
- TRENCH DRAIN (TD)

6 PIPING SYMBOLS
NO SCALE

- MV — MEDICAL VACUUM
- MA — MEDICAL COMPRESSED AIR
- O2 — OXYGEN
- N2 — NITROGEN
- N2O — NITROUS OXIDE
- WAGD — WASTE ANESTHETIC GAS DISPOSAL
- CO — CARBON DIOXIDE
- > — MEDICAL VACUUM OUTLET
- < — MEDICAL COMPRESSED AIR OUTLET
- O — OXYGEN OUTLET
- N — NITROGEN
- NO — NITROUS OXIDE
- WG — WASTE GAS
- CO — CARBON DIOXIDE
- ZVB — ZONE VALVE BOX
- AAP — AREA ALARM PANEL
- MAP — MASTER ALARM PANEL

MEDICAL GAS
8 DESIGNATIONS AND SYMBOLS
NO SCALE

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

REVISION HISTORY - THIS SHEET

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MECHANICAL SYMBOLS & ABBREVIATIONS

COMM. NO.	1203–005–03
SCALE	NO SCALE
DATE	September 2, 2014
DRAWN	J. LEFFINGWELL

Final RTA

M001

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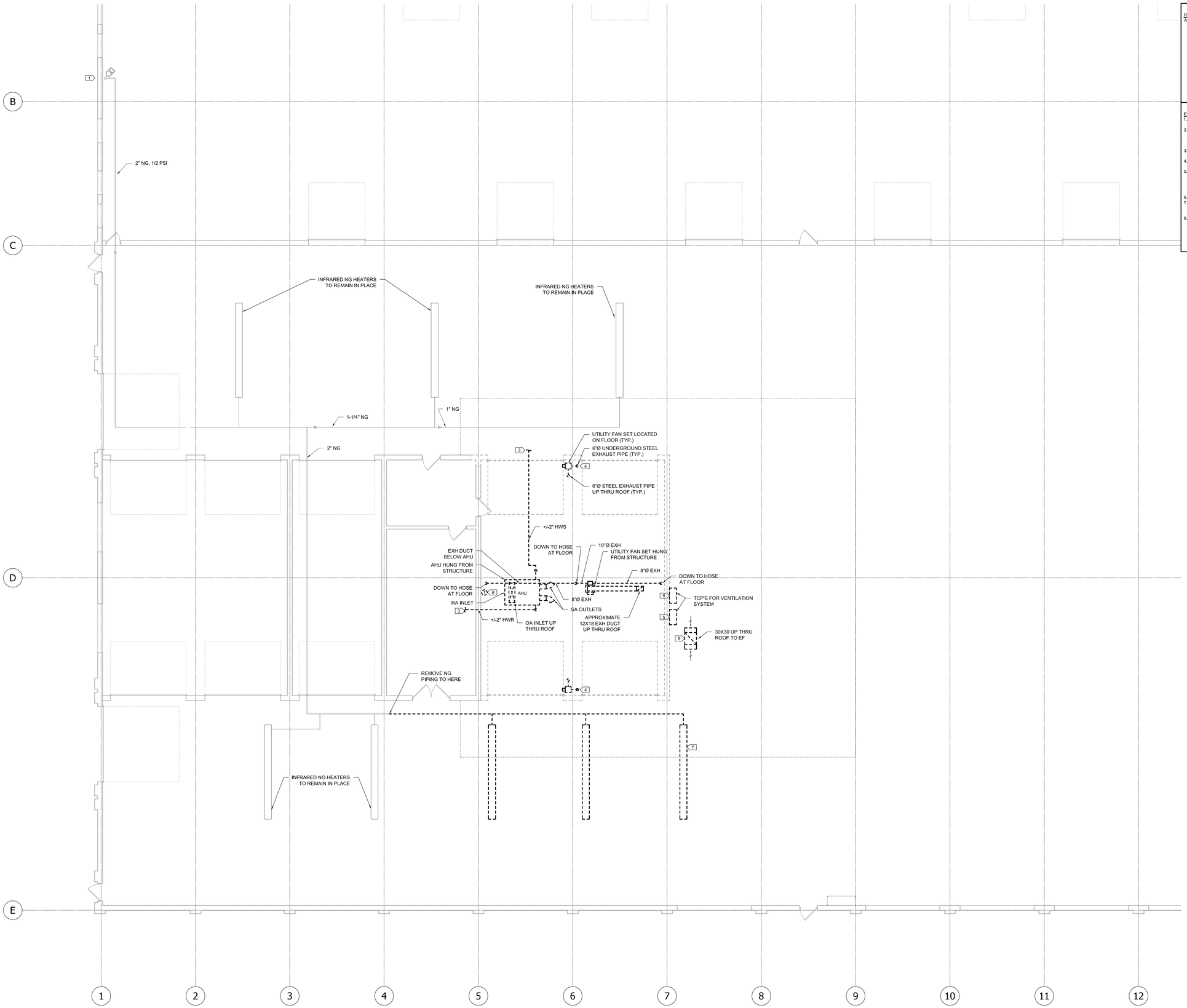

1 MECHANICAL FLOOR PLAN
1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES
A. XXXX

FLOOR PLAN KEYNOTES: XX

1. INCOMING NG PRESSURE BETWEEN 2-5 PSI.
2. EXISTING PRV IN VERTICAL PIPE RISE. PRV TO BE RELOCATED. CONTRACTOR TO REPLACE SECTION OF NG PIPING.
3. CONTRACTOR TO CUT AND CAP HWS/R PIPING BACK TO MAINS.
4. CONTRACTOR TO REMOVE ALL UNDERGROUND EXHAUST PIPING.
5. TEMPERATURE CONTROL PANELS (TCP) TO BE RELOCATED, ALONG WITH ALL CONTROL WIRING. PROVIDE NEW WIRING AS NEEDED.
6. THERMOSTAT TO BE REMOVED.
7. INFRARED NG HEATERS TO BE REMOVED AND RE-INSTALLED (TYP. OF 3).
8. EXISTING EXHAUST FAN AND DUCTWORK TO BE RELOCATED, INCLUDING ALL CONTROL WIRING. PROVIDE NEW WIRING AS NEEDED.

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FIRST FLOOR
MECHANICAL DEMO PLAN

COMM. NO.	1203–005–03
SCALE	AS NOTED
DATE	September 2, 2014
DRAWN	J.LEFFINGWELL

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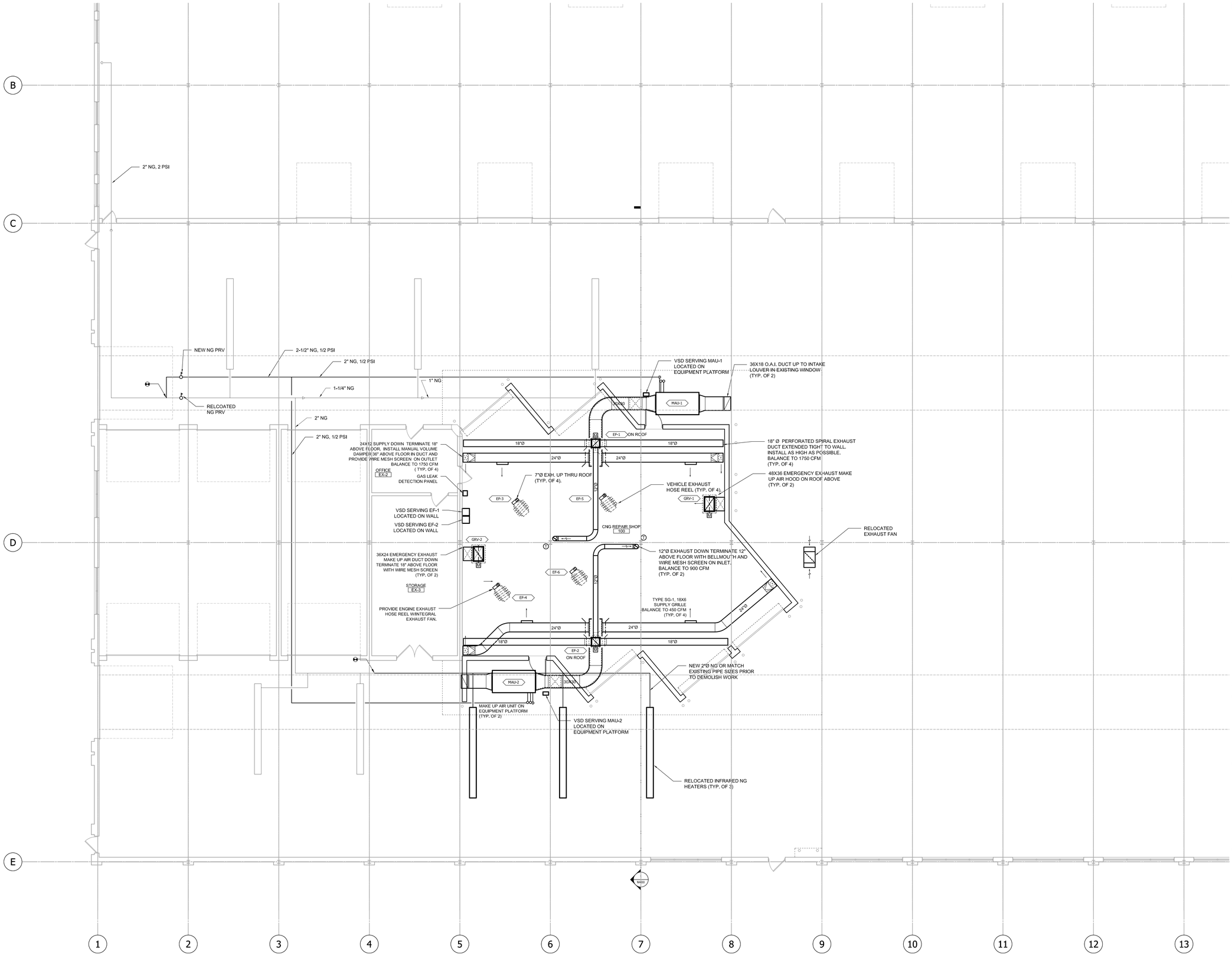

1 MECHANICAL FLOOR PLAN
1/8" = 1'-0"

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

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FIRST FLOOR MECHANICAL PLAN

COMM. NO.	1203–005–03
SCALE	AS NOTED
DATE	September 2, 2014
DRAWN	K.POPE

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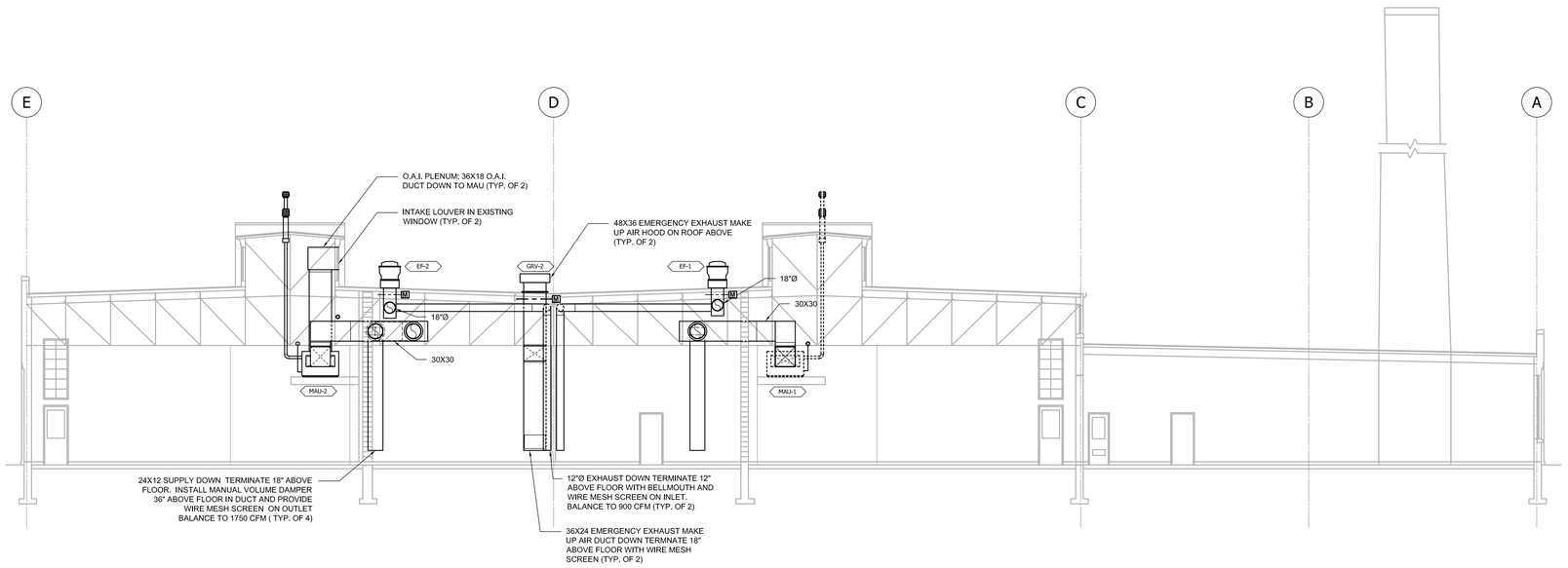

1 FIRST FLOOR SECTION
1/8" = 1'-0"

City of Milwaukee

Department of Public Works

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FIRST FLOOR SECTION

COMM. NO.	1203–005–03
SCALE	AS NOTED
DATE	September 2, 2014
DRAWN	J.LEFFINGWELL

Final RTA

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PLOT OK

DIFFUSERS, REGISTERS, AND GRILLES SCHEDULE

TYPE	USAGE	MATERIAL/ FINISH	REMARKS
SG1	SUPPLY DRUM LOUVER	4	TITUS MODEL "DL", SINGLE VANE DRUM LOUVER
			1-1/4" BORDER FOR SURFACE MOUNTING
			HEAVY DUTY EXTRUDED ALUMINUM CONSTRUCTION
			MINIMUM 25 DEGREE DRUM ROTATION UP AND DOWN

NOTES:

A. GRILLE AND REGISTER SIZES ARE NOTED ON THE HVAC FLOOR PLANS AND VENTILATION SCHEDULES.

B. PROVIDE APPROPRIATE FRAME/BORDER/FLANGE FOR PROPER MOUNTING.

C. MATL/FINISH KEY (FOR SPECIFIC SPECIAL AREAS, SEE SPECIFICATIONS)
1. ALUMINUM WITH STANDARD FACTORY WHITE ENAMEL FINISH.
2. STEEL WITH STANDARD FACTORY WHITE ENAMEL FINISH.
3. POLISHED STAINLESS STEEL.
4. NATURAL ALUMINUM
5. ANODIZED ALUMINUM; COLOR SELECTION BY ARCHITECT

EXHAUST FAN SCHEDULE (EF)

TAG	LOCATION	SERVICE	CAPACITY (CFM)	ESP (IN WG)	MOTOR HP	FAN RPM	FAN TYPE	MANUFACTURER	MODEL	NOTES
EF-1	ROOF	GENERAL EXHAUST	4,400	0.5	0.75	860	CENTRIFUGAL ROOF UPBLAST	GREENHECK	CUE-200-C	1,2,3,4
EF-2	ROOF	GENERAL EXHAUST	4,400	0.5	0.75	860	CENTRIFUGAL ROOF UPBLAST	GREENHECK	CUE-200-C	1,2,3,4
EF-3	ROOM 100	HOSE REEL EXHAUST	900	-	3	-	CENTRIFUGAL UTILITY	CAR-MON	Dxi-12A0	1,3
EF-4	ROOM 100	HOSE REEL EXHAUST	900	-	3	-	CENTRIFUGAL UTILITY	CAR-MON	Dxi-12A0	1,3
EF-5	ROOM 100	HOSE REEL EXHAUST	900	-	3	-	CENTRIFUGAL UTILITY	CAR-MON	Dxi-12A0	1,3
EF-6	ROOM 100	HOSE REEL EXHAUST	900	-	3	-	CENTRIFUGAL UTILITY	CAR-MON	Dxi-12A0	1,3

NOTES:
1. SEE ELECTRICAL MOTOR SCHEDULES OR PLANS FOR VOLTAGE AND PHASING INFORMATION.
2. PROVIDE ALUMINUM SPARK PROOF CONSTRUCTION.
3. PROVIDE EXPLOSION PROOF MOTOR.
4. UNIT FAN MOTOR TO OPERATE FROM VARIABLE SPEED CONTROLLER

GAS FIRED MAKE-UP AIR UNIT SCHEDULE (MAU)

		SUPPLY FAN DATA						MIN.	INPUT	OUTPUT	FILTER					
TAG	LOCATION	CFM	ESP (IN WG)	TSP (IN WG)	HP	RPM	EAT (DEG. F)	LAT (DEG. F)	GAS (MBH)	GAS (MBH)	QTY	SIZE (INxIN)	TYPE	MANUFACTURER	MODEL	NOTES
MAU-1	GARAGE MEZZANINE	6,000	0.5	1.8	5.00	972	-10.0	80.0		480.0				REZNOR	SSCBL-600	1,2,3,4
MAU-2	GARAGE MEZZANINE	6,000	0.5	1.8	5.00	972	-10.0	80.0		480.0				REZNOR	SSCBL-600	1,2,3,4

NOTES:
1. SEE ELECTRICAL MOTOR SCHEDULES OR PLANS FOR VOLTAGE AND PHASE INFORMATION.
2. ESP ONLY INCLUDES DUCTWORK EXTERNAL TO UNIT, MANUFACTURER TO DETERMINE TOTAL STATIC PRESSURE DROP FOR FAN SELECTION.
3. TSP TO INCLUDE ESP + STATIC PRESSURE DROP OF ALL COMPONENTS INTERNAL TO UNIT, MANUFACTURER TO DETERMINE TOTAL STATIC PRESSURE DROP FOR FAN SELECTION.
4. UNIT FAN MOTOR TO OPERATE FROM VARIABLE SPEED CONTROLLER.

GRAVITY ROOF VENTILATOR SCHEDULE (GRV)

TAG	LOCATION	SERVICE	AIR FLOW (CFM)	THROAT LENGTH (IN)	THROAT WIDTH (IN)	OUTLET AREA (SQ FT)	MAX. APD (IN WG)	MANUFACTURER	MODEL	NOTES
GRV-1	ROOF	EMERGENCY EXHAUST MAKE UP	4,400	36	24	2.75	0.10	GREENHECK	FGR	
GRV-2	ROOF	EMERGENCY EXHAUST MAKE UP	4,400	36	24	2.75	0.10	GREENHECK	FGR	

NOTES:

EQUIPMENT SOUND POWER LEVEL SCHEDULE

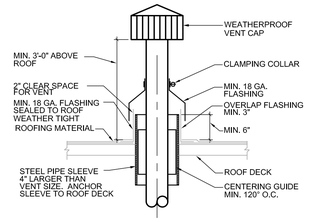
	MAX INLET LEVELS BY OCTAVE BAND (dB)							MAX DISCH LEVELS BY OCTAVE BAND (dB)							
TAG	63	125	250	500	1K	2K	4K	63	125	250	500	1K	2K	4K	NOTES
MAU-1															1
MAU-2															1
EF-1	76	84	81	74	64	66	60	-	-	-	-	-	-	-	1
EF-2	76	84	81	74	64	66	60	-	-	-	-	-	-	-	1

NOTES:
1. EQUIPMENT SOUND POWER LEVELS SHALL NOT EXCEED VALUES LISTED FOR EACH OCTAVE BAND.

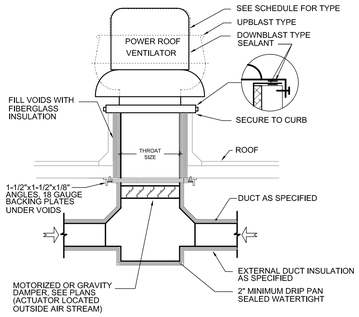
VENTILATION CALCULATION SCHEDULE

Space	Net	Room Height	Room Volume	Gasoline/Diesel Repair CFM/SQ.FT.Calc CFM/SQ.FT.	Gasoline/Diesel Repair CFM/SQ.FT.Calc Minimum	CNG Repair AC/HR Calc AC/HR	CNG Repair AC/HR Calc Minimum	Combined Gasoline/Diesel/CNG Repair Minimum
Served	SQ. FT.	FT.	CU.FT.	Required	CFM	Required	CFM	CFM
Service Garage	3582	23.5	84177	0.5	1791	5	7015	8,806

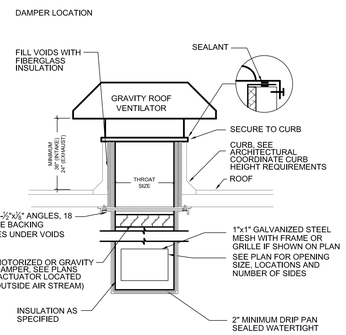
NOTE: CODE REQUIREMENT FOR 1 CU.FT. OF AIR CHANGE FOR EVERY 12 CU.FT. OF ROOM VOLUME EQUALS 5 AIR CHANGES.



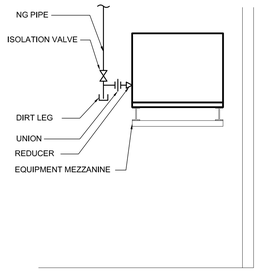
1 MAU GAS VENT UP THRU ROOF
NOT TO SCALE



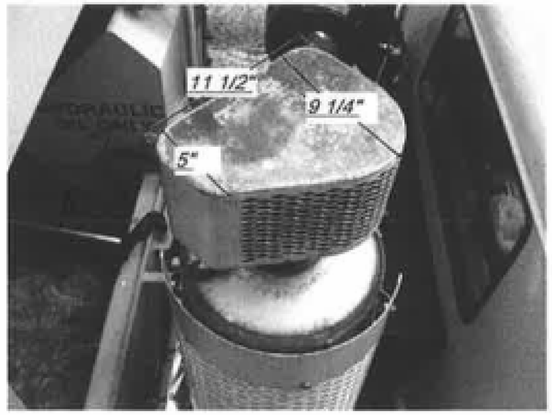
2 POWER ROOF VENTILATOR
NOT TO SCALE



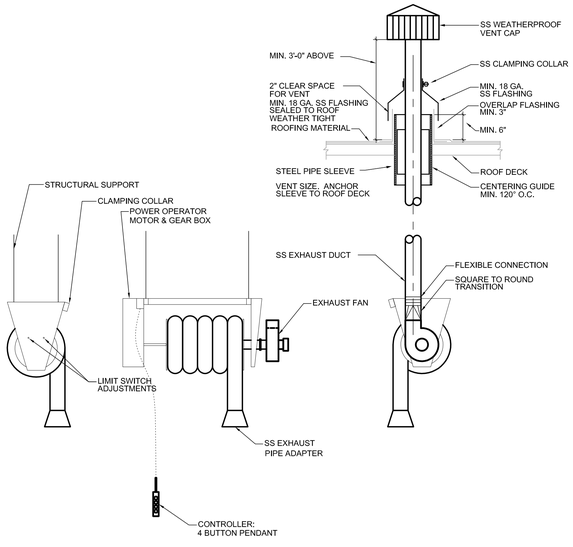
3 GRAVITY ROOF VENTILATOR (NON-DUCTED)
NOT TO SCALE



4 NG PIPING TO MAKE-UP AIR UNIT
NOT TO SCALE



6 MACK TRUCK EXHAUST DIFFUSER DETAIL
NOT TO SCALE



5 NG PIPING TO MAKE-UP AIR UNIT
NOT TO SCALE

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Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

REVISION HISTORY - THIS SHEET

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EQUIPMENT SCHEDULES

COMM. NO.	1203-005-03
SCALE	NONE
DATE	September 2, 2014
DRAWN	J.LEFFINGWELL

Final RTA

M800

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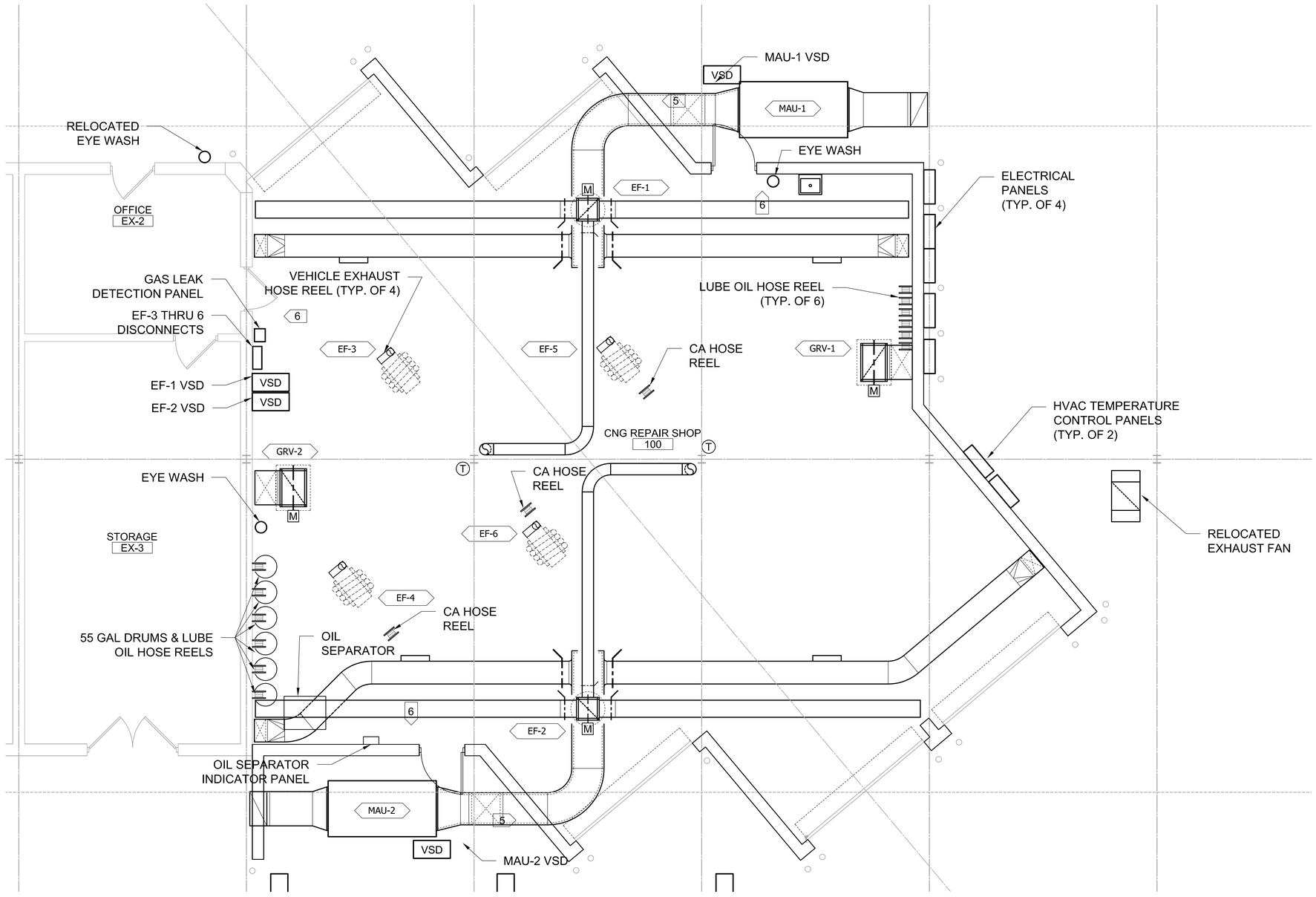
PLOT OK



1 EQUIPMENT FLOOR PLAN
1/4" = 1'-0"

City of Milwaukee

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Facilities Development & Management Section

CNG FUELING STATION
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MILWAUKEE COUNTY

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FIRST FLOOR
MEP EQUIPMENT PLAN

COMM. NO.	1203–005–03
SCALE	AS NOTED
DATE	September 2, 2014
DRAWN	J.LEFFINGWELL

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MEP200

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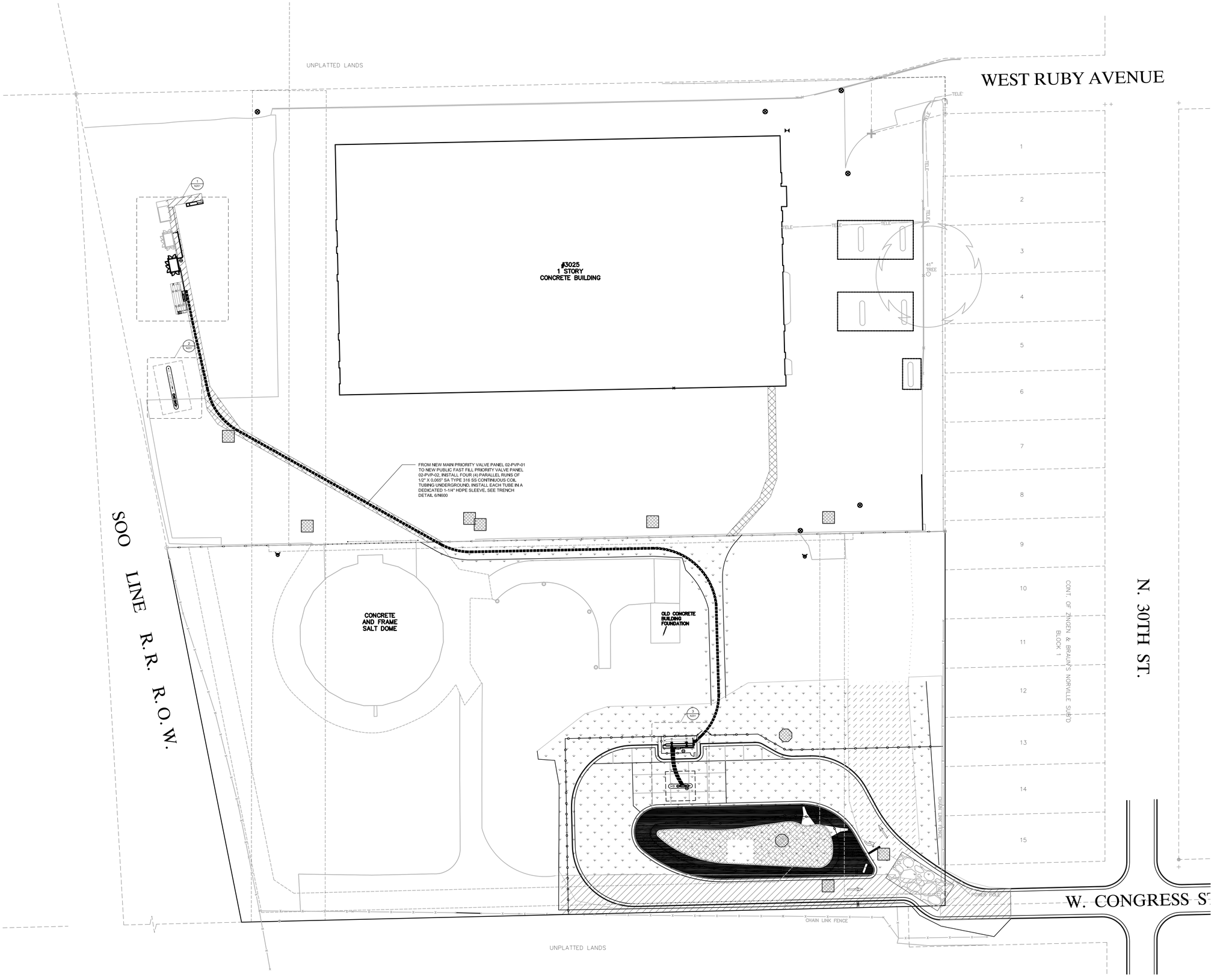

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SITE PLAN

COMM. NO.	1203–005–03
SCALE	1"=30'–0"
DATE	September 2, 2014
DRAWN	J.LEFFINGWELL

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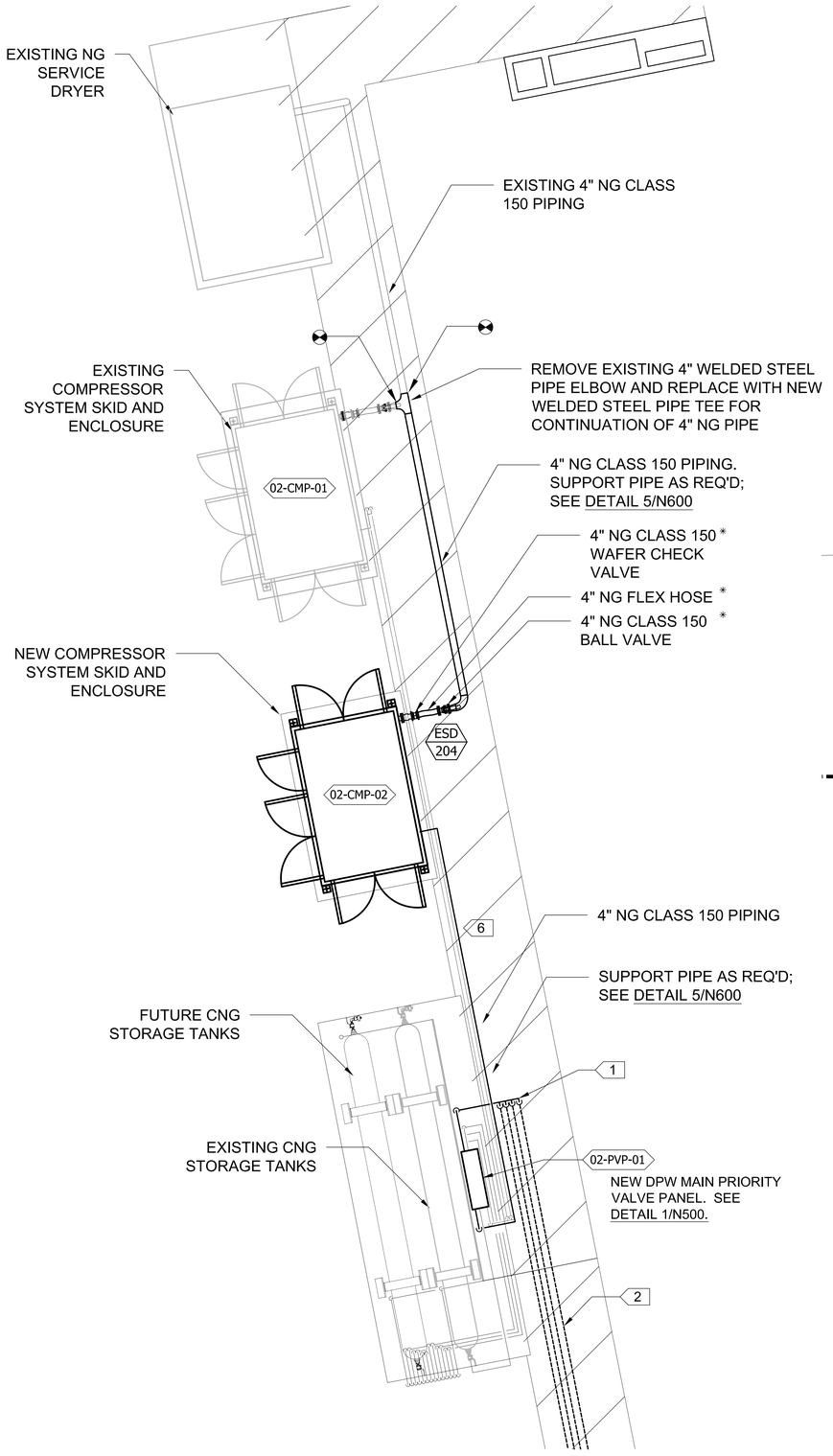
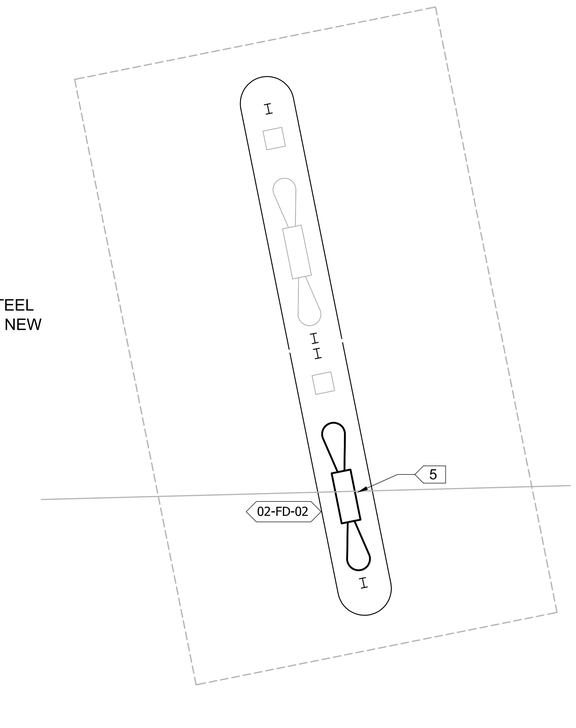
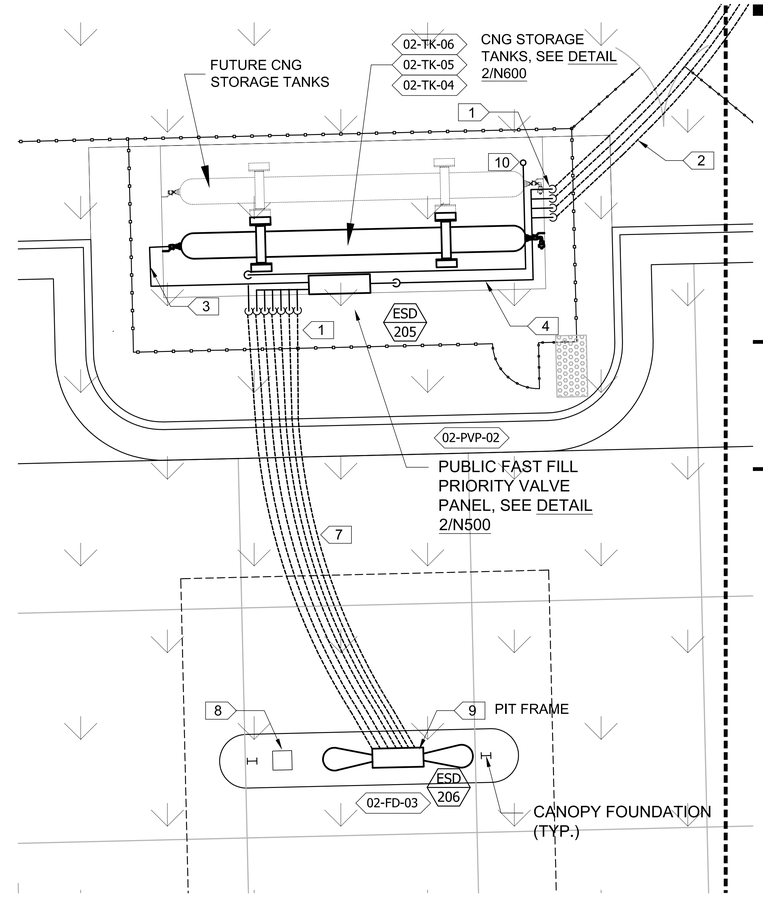


1 CNG STATION
1/4" = 1'-0"



2 DPW FAST FILL AREA
1/4" = 1'-0"



3 PUBLIC CNG STORAGE AND DISPENSER AREA
1/4" = 1'-0"

FLOOR PLAN GENERAL NOTES

A. LOCATE ALL EXISTING UNDERGROUND PIPING, CONDUIT, AND INFRASTRUCTURE PRIOR TO TRENCH EXCAVATION.
B. ✳ INDICATES FURNISHED BY EQUIPMENT MANUFACTURERI, SHIPPED LOOSE.
C. TAGGED EQUIPMENT FURNISHED BY OWNER PER DIVISION 40 SPECIFICATIONS.

FLOOR PLAN KEYNOTES: XX

1. PROVIDE UNDERGROUND RISER PER DETAIL 4/N600.
2. PROVIDE FOUR (4) PARALLEL RUNS OF 1/2" X 0.065" SA TYPE 316SS CONTINUOUS COIL TUBING. INSTALL EACH TUBE INSIDE A DEDICATED 1-1/4" HDPE SLEEVE. SEE TRENCH DETAIL 6/N600.
3. PROVIDE THREE (3) 3/4" X 0.109" SA 213 TYPE 316SS (WITH REDUCERS AT VALVES) FROM PRIORITY VALVE PANEL TO CNG VESSELS.
4. SEE VENT MANIFOLD DETAIL 2/N600.
5. REMOVE EXISTING DPW FAST FILL DISPENSER 02-FD-02 AND PROTECT FOR REINSTALLATION IN PUBLIC FAST FILL DISPENSING ISLAND. INSTALL NEW DPW FAST FILL DISPENSER 02-FD-02. RECONNECT EXISTING PIPING TO NEW DISPENSER. SEE DETAIL 1/N600.
6. PROVIDE 3/4" X 0.109" SA 213 TYPE 316 SS TUBING (STRAIGHT). ROUTE AT ELEVATION X'-Y" ABOVE GRADE FROM 02-CMP-02 DISCHARGE TO 02-PVP-01.
7. PROVIDE SEVEN (7) PARALLEL RUNS OF 1/2" X 0.065" SA TYPE 316SS CONTINUOUS COIL TUBING. INSTALL EACH TUBE INSIDE A DEDICATED SINGLE 1-1/4" HDPE SLEEVE TO DISPENSER. SEE TRENCH DETAIL 6/N600.
8. INSTALL NEW "ASSET WORKS" FUEL FOCUS ISLAND CONTROL UNIT (ICU), 02-FM-03. FURNISHED BY OWNER.
9. INSTALL EXISTING RELOCATED DPW FAST FILL DISPENSER 02-FD-02 AND RE-LABEL 02-FD-03. SEE DETAIL 1/N600 AND 3/N600.
10. 2" SCH. 80 CARBON STEEL VENT.

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

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PROCESS AREAS AND DETAILS

COMM. NO.	1203–005–03
SCALE	VARIES
DATE	September 2, 2014
DRAWN	J.LEFFINGWELL

Final RTA

N201

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PLOT OK

P&ID GENERAL NOTES

A. THIS DRAWING IS NOT A PIPING DIAGRAM.
B. SEE N500 THRU N600 SERIES FOR PIPING CONFIGURATIONS.
C. ✳ = OWNER FURNISHED EQUIPMENT TO BE INSTALLED AND WIRED ACCORDING TO DIVISION 26 AND 40.
D. ESD WIRING IS 2# 14 AWG.

P&ID PLAN KEYNOTES : XX

1. NEW MAIN PRIORITY VALVE PANEL. OLD PRIORITY VALVE PANEL TO BE RELOCATED TO PUBLIC FILL STATION.
2. NEW FAST FILL DISPENSER. OLD TO BE RELOCATED TO PUBLIC FAST FILL STATION.
3. RELOCATED DISPENSER FROM DPW FAST FILL STATION.
4. RELOCATED PRIORITY VALVE PANEL DPW TANK STORAGE.

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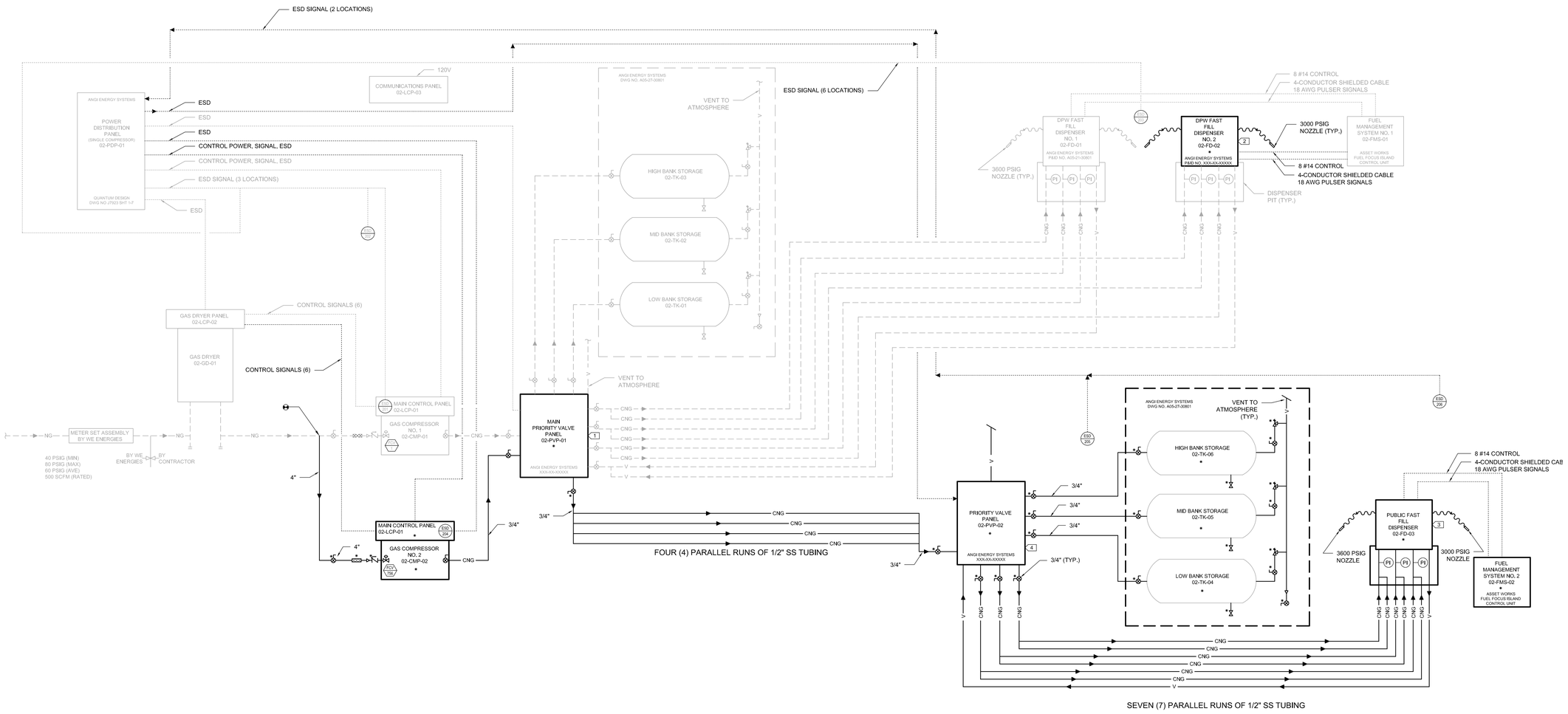
CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY



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COMPRESSED NG P&ID DIAGRAM

COMM. NO.	1203–005–03
SCALE	NONE
DATE	September 2, 2014
DRAWN	J.LEFFINGWELL

Final RTA

N400

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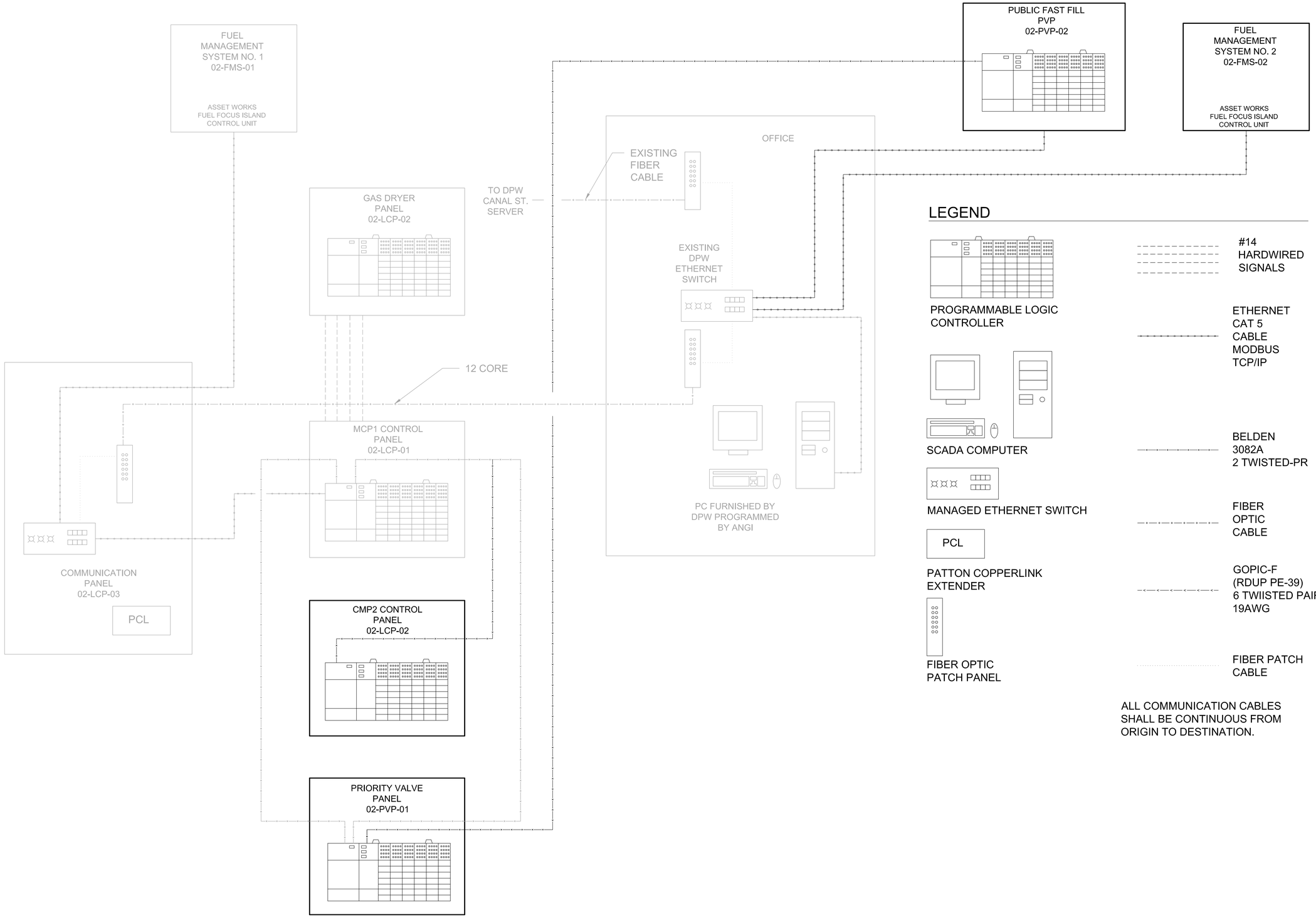

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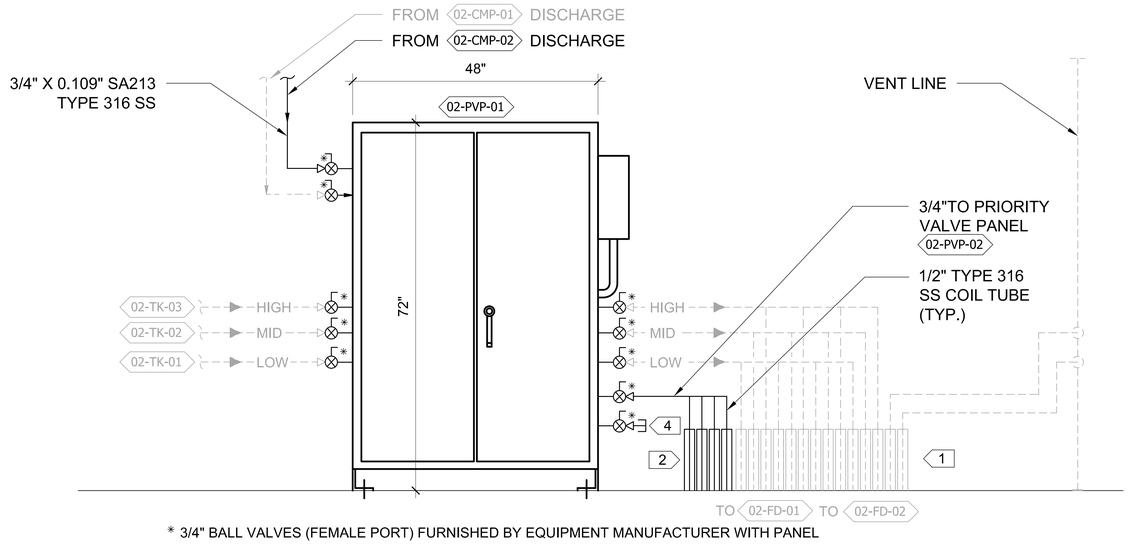
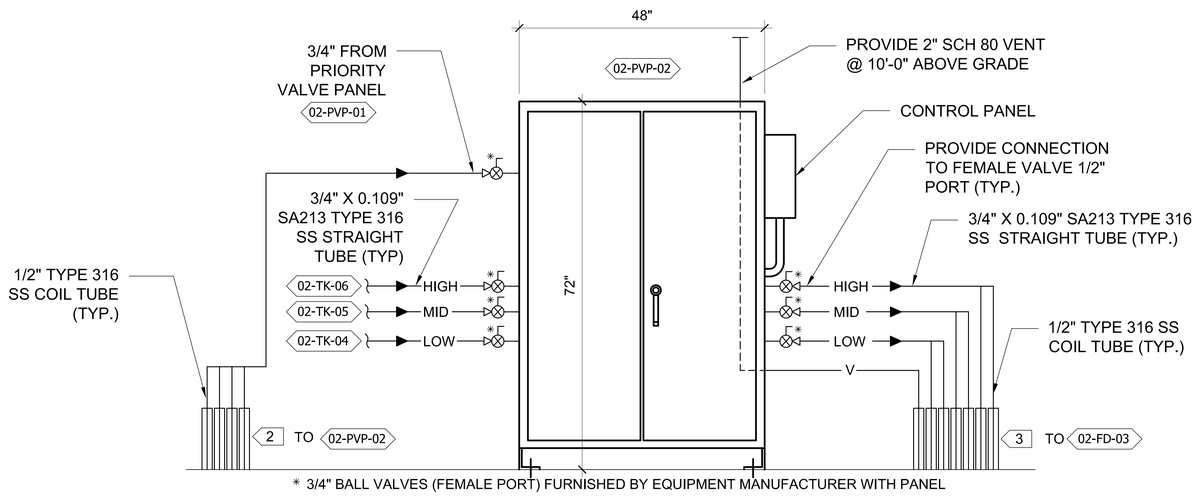


* 3/4" BALL VALVES (FEMALE PORT) FURNISHED BY EQUIPMENT MANUFACTURER WITH PANEL

1 / N500 MAIN PRIORITY VALVE PANEL
NTS



* 3/4" BALL VALVES (FEMALE PORT) FURNISHED BY EQUIPMENT MANUFACTURER WITH PANEL

2 / N500 PUBLIC FAST FILL PRIORITY VALVE PANEL
NTS

PLAN KEYNOTES: XX

1. EXISTING PARALLEL RUNS OF 1/2" X 0.065" SA TYPE 316 SS CONTINUOUS COIL TUBING INSIDE DEDICATED 1-1/4" HDPE SLEEVES.
2. PROVIDE FOUR (4) PARALLEL RUNS OF 1/2" X 0.065" SA TYPE 316 SS CONTINUOUS COIL TUBING. INSTALL EACH TUBE INSIDE DEDICATED 1-1/4" HDPE SLEEVE. SEE DETAIL 4 / N600
3. PROVIDE SEVEN (7) PARALLEL RUNS OF 1/2" X 0.065" SA TYPE 316 SS CONTINUOUS COIL TUBING. INSTALL EACH TUBE INSIDE DEDICATED 1-1/ 4" HDPE SLEEVE. SEE DETAIL 4 / N600
4. 3/4" CAPPED FOR FUTURE

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Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
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PROCESS NG
TIME FILL AREA

COMM. NO.	1203–005–03
SCALE	NONE
DATE	September 2, 2014
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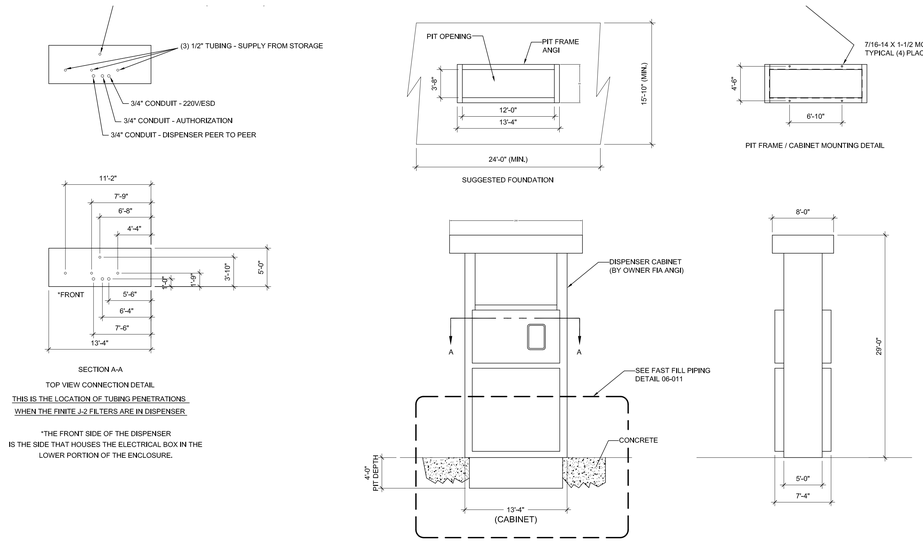
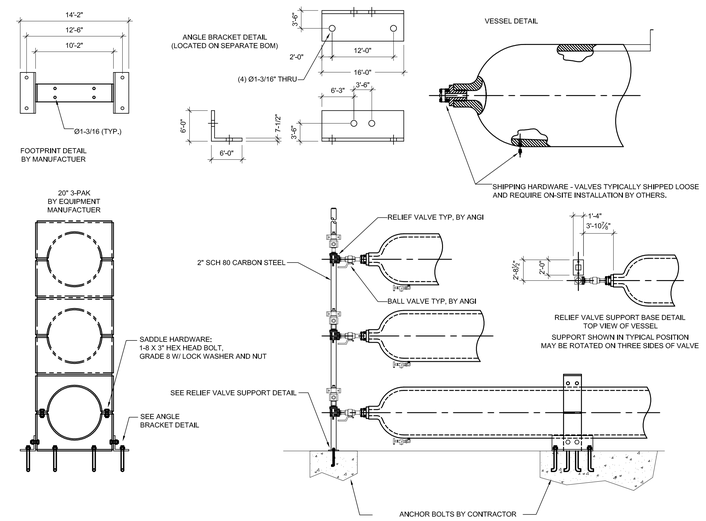
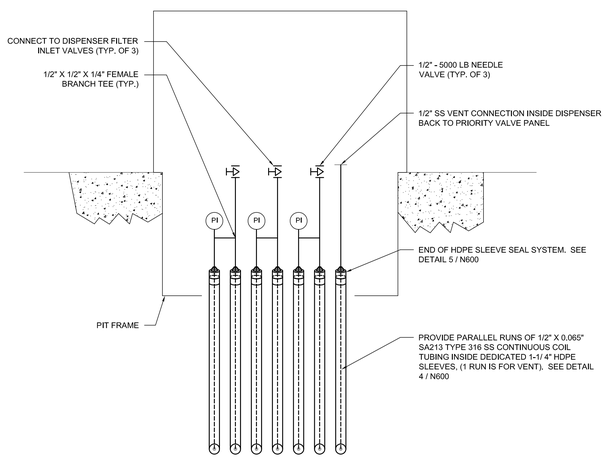


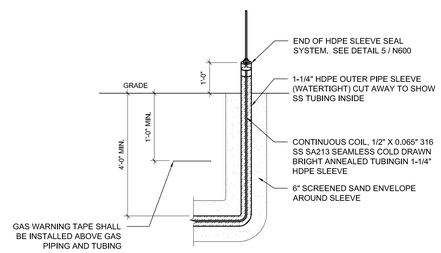
1 FAST FILL DISPENSER INSTALLATION DETAIL
NTS



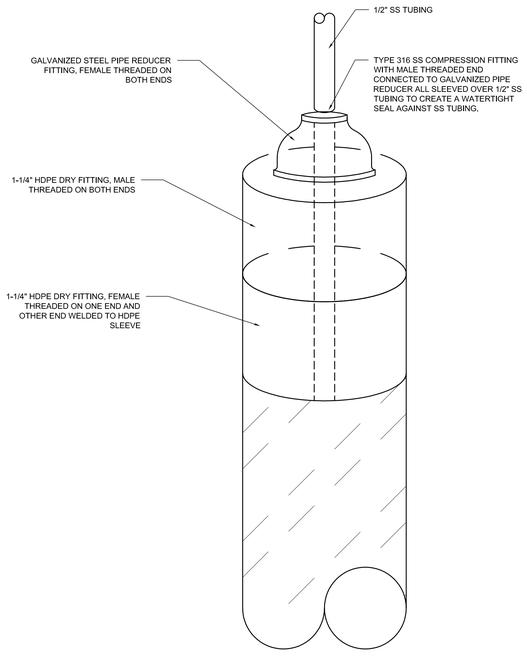
2 STORAGE CYLINDER ASSEMBLY INSTALLATION DETAIL
NTS



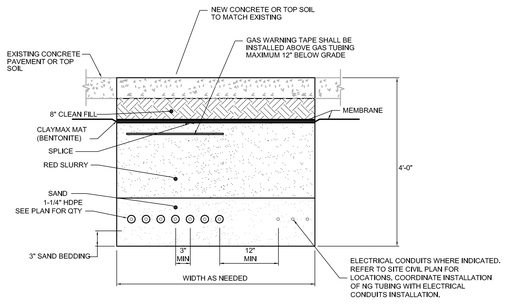
3 FAST FILL PIPING DETAIL
NTS



4 UNDERGROUND TUBING SLEEVE RISER DETAIL
NTS



5 HDPE PIPE END SYSTEM DETAIL
NTS



6 PIPING TRENCH DETAIL
NTS

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Facilities Development & Management Section

CNG FUELING STATION
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STRUCTURAL AND PROCESS STANDARD DETAILS

COMM. NO.	1203-005-03
SCALE	NONE
DATE	September 2, 2014
DRAWN	J.LEFFINGWELL

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N600

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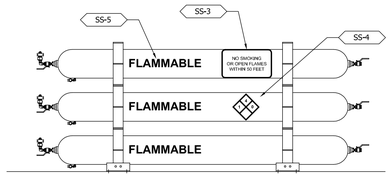
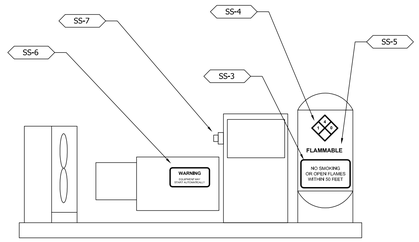
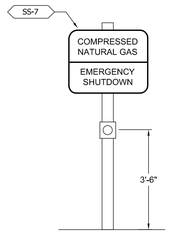


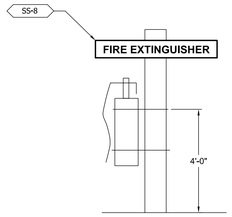
TYPICAL AT CNG ASME STORAGE VESSELS (VERTICAL CONFIGURATION)



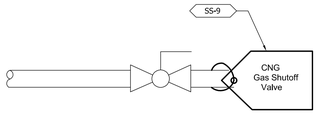
TYPICAL AT COMPRESSOR SKID



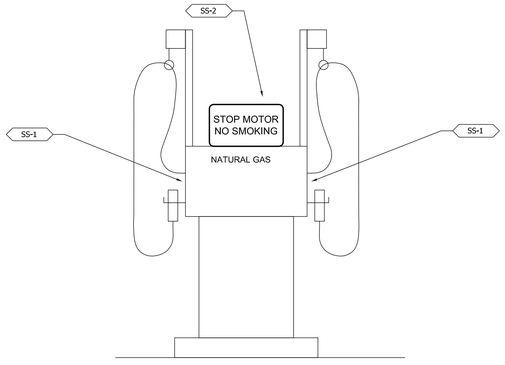
TYPICAL AT EMERGENCY SHUTDOWN DEVICE



TYPICAL AT FIRE EXTINGUISHERS



TYPICAL AT METER SET ASSEMBLY



TYPICAL AT DUAL FAST-FILL DISPENSER

SIGN TAG	SYMBOL	SIGN SPECIFICATIONS
SS-1	EMERGENCY SHUTOFF	SIGN NEEDED: EMERGENCY SHUTOFF MATERIAL: RED BACKGROUND WITH WHITE LETTERING 4" X 6" LOCATION: MOUNTED AT SHUTOFF VALVE STEM ON THE SIDE OF DISPENSER, TYPICAL ON BOTH SIDES
SS-2	STOP MOTOR NO SMOKING	SIGN NEEDED: STOP MOTOR; NO SMOKING (TYP BOTH SIDES) MATERIAL: 20" X 10" X .08" THK ALUMINUM SHEET, ROUNDED CORNERS FASTENED WITH ADHESIVE OR STRAPS. 3" HIGH RED LETTERS W/ WHITE BACKGROUND LOCATION: NEW FUELING ISLAND (SEE NOTE 3)
SS-3	NO SMOKING OR OPEN FLAMES WITHIN 50 FEET	SIGN NEEDED: NO SMOKING OR OPEN FLAMES WITHIN 50 FEET MATERIAL: 12" X 8" X .08" THK ALUMINUM SHEET, ROUNDED CORNERS FASTENED W/SCREWS OR STRAPS. 1.5" HIGH RED LETTERS W/ WHITE BACKGROUND LOCATION: AT PRESSURE VESSELS
SS-4	4 / 1 / 0	SIGN NEEDED: NFPA HAZARD PLACARD MATERIAL: 15" X 15" X .08" THK ALUMINUM SHEET, 3" HIGH NUMERALS LOCATION: ALONG SIDE OF CNG PRESSURE VESSELS
SS-5	FLAMMABLE	SIGN NEEDED: FLAMMABLE MATERIAL: 4" HIGH RED LETTERS PAINTED OR STENCILED LOCATION: ON SURFACE OF PRESSURE VESSELS
SS-6	WARNING EQUIPMENT MAY START AUTOMATICALLY	SIGN NEEDED: WARNING EQUIPMENT MAY START AUTOMATICALLY AT ANY TIME MATERIAL: 12" X 3" X .08" THK ALUMINUM SHEET, ROUNDED CORNERS FASTENED W/SCREWS OR STRAPS. BACKGROUND IS YELLOW W/1" BLACK LETTERING LOCATION: MOUNTED ON RECIPROCATING LONG PUMPS SKIDS, SIDE FACING APPROACHING PERSONNEL, 3' FROM GRADE
SS-7	COMPRESSED NATURAL GAS EMERGENCY SHUTDOWN	SIGN NEEDED: COMPRESSED NATURAL GAS EMERGENCY SHUTDOWN MATERIAL: 12" X 12" X .08" THK ALUMINUM SHEET, ROUNDED CORNERS FASTENED W/SCREWS OR STRAPS. BACKGROUND IS WHITE/RED W/2.5" RED/WHITE LETTERING LOCATION: MOUNTED ON EMERGENCY SHUTDOWN BUTTONS (ESD)
SS-8	FIRE EXTINGUISHER FIRE EXTINGUISHER SEE NOTE	SIGN NEEDED: FIRE EXTINGUISHER MATERIAL: 12" X 3" X .08" THK ALUMINUM SHEET, ROUNDED CORNERS FASTENED W/SCREWS OR STRAPS. BACKGROUND IS RED W/2" WHITE LETTERING LOCATION: MOUNTED ON FIRE EXTINGUISHER NOTE: USE IF FIRE EXTINGUISHER IS NOT IMMEDIATELY VISIBLE
SS-9	CNG Gas Shutoff Valve	SIGN TEXT: CNG GAS SHUTOFF VALVE MATERIAL: METAL TAG WITH RED BACKGROUND AND 1" WHITE LETTERING LOCATION: TIED TO BODY OF BLOCK VALVE IMMEDIATELY DOWNSTREAM OF METER SET ASSEMBLY-(MSA)
SS-10	IN CASE OF LEAK OR RELEASE 1. Use Emergency Shutdown Button 2. Report the accident Fire Department Telephone No. (XXX) XXX-XXXX XXXX XXXX XXXX Milwaukee, WI	SIGN NEEDED: IN CASE OF LEAK OR RELEASE ..... MATERIAL: 18" X 12" X .08" THK ALUMINUM SHEET, ROUNDED CORNERS, REFLECTORIZED MATERIAL LOCATION: ON EXTERIOR WALL OF CNG COMPRESSOR ENCLOSURE AND AT EACH DISPENSER ISLAND

NOTES

1. SIGNS SHALL BE VISIBLE AND CONSPICUOUS SO THEY IMMEDIATELY COME INTO VIEW TO PERSONNEL APPROACHING THE EQUIPMENT AND THAT THE MESSAGE IS APPARENT FROM ANY VANTAGE POINT WITHIN THE SURROUNDING AREA.
2. DEPICTION OF EQUIPMENT AND COMPONENTS SHOWN ON THIS DRAWING ARE FOR SCHEMATIC PURPOSES ONLY AND MAY DIFFER FROM THE ACTUAL COMPONENTS THEY REPRESENT.
3. SIGNS TO BE MOUNTED ON SIDE FACING APPROACHING PERSONNEL, 4 FEET (MIN) FROM GRADE.
4. CONTRACTOR TO INSTALL 20LB 20-A:120-B:C FIRE EXTINGUISHERS MOUNTED 4 FEET ABOVE GRADE.
5. ALL SIGNS AND LETTERING SHALL BE CONSTRUCTED OF UV RESISTANT, EXTERIOR-GRADE MATERIALS.
6. PROVIDE ID TAGS FOR ALL INLET AND OUTLET VALVES SUPPLYING AND BETWEEN PACKAGED EQUIPMENT, INCLUDING MANUAL, AUTOMATIC AND RELIEF VALVES, AND SUPPLY VALVES FOR TIME-FILL AND FAST-FILL SYSTEMS.

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

REVISION HISTORY - THIS SHEET

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PROCESS SAFETY SIGN DETAILS

COMM. NO.	1203–005–03
SCALE	NONE
DATE	September 2, 2014
DRAWN	J.LEFFINGWELL

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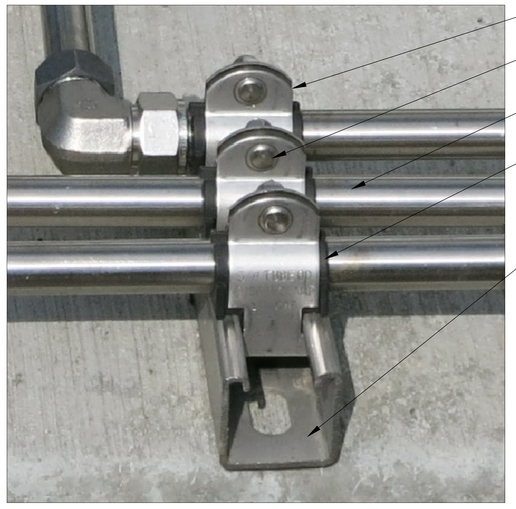
R.01 OK

1 CONCRETE PAD FOR SS VERTICAL SUPPORT
NTS

2 SS TUBING CLAMP WITH NYLON INSERT
NTS



3 SS TUBING HORIZONTAL SUPPORTS
NTS

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Department of Public Works
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Facilities Development & Management Section

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STRUCTURAL AND PROCESS STANDARD DETAILS

COMM. NO.	1203–005–03
SCALE	NONE
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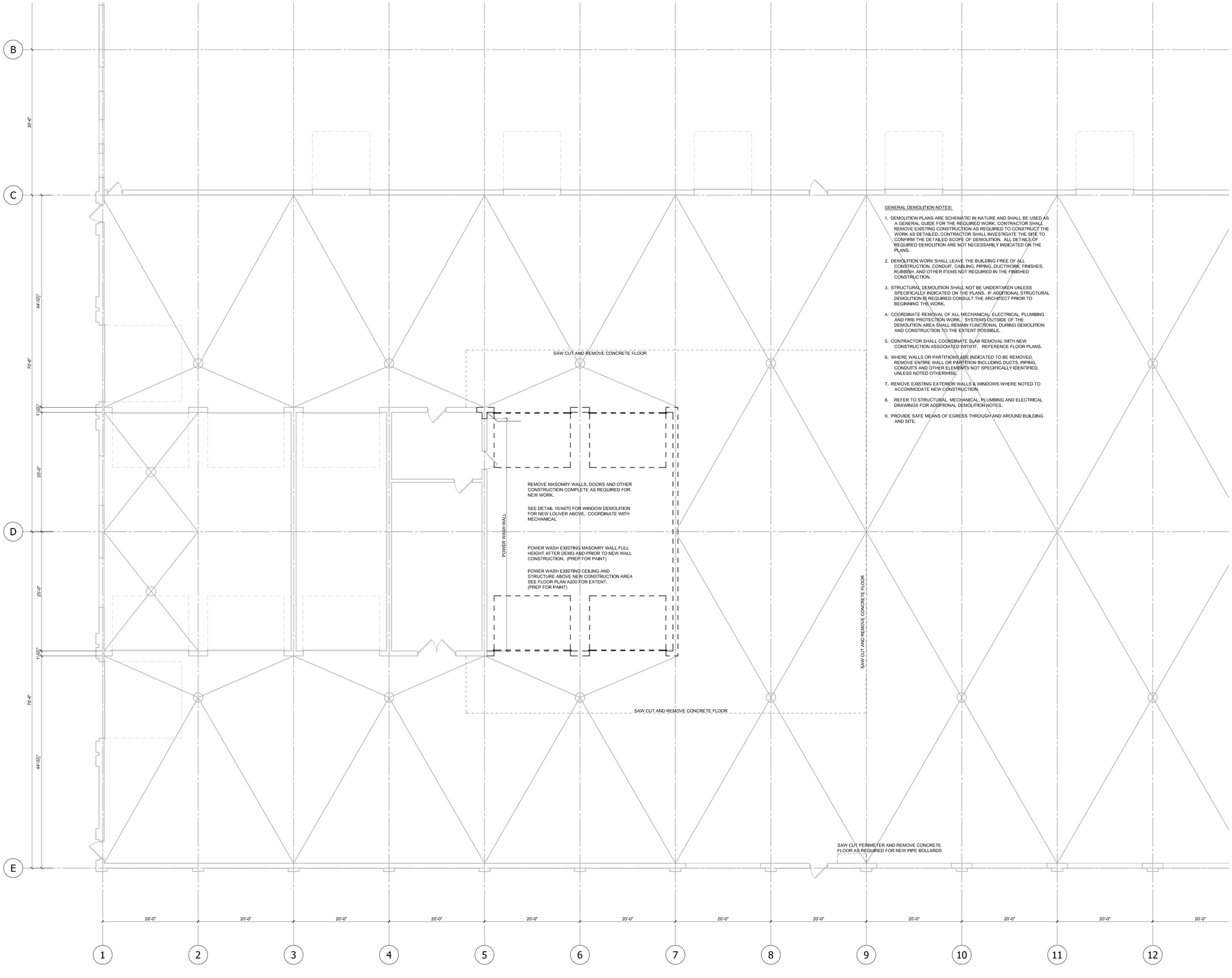
PLOT OK



GENERAL DEMOLITION NOTES:

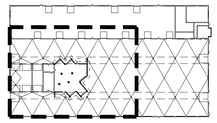
1. DEMOLITION PLANS ARE SCHEMATIC IN NATURE AND SHALL BE USED AS A GENERAL GUIDE FOR THE REQUIRED WORK. CONTRACTOR SHALL REMOVE EXISTING CONSTRUCTION AS REQUIRED TO CONSTRUCT THE WORK AS DETAILED. CONTRACTOR SHALL INVESTIGATE THE SITE TO CONFIRM THE DETAILED SCOPE OF DEMOLITION. ALL DETAILS OF REQUIRED DEMOLITION ARE NOT NECESSARILY INDICATED ON THE PLANS.
2. DEMOLITION WORK SHALL LEAVE THE BUILDING FREE OF ALL CONSTRUCTION, CONDUIT, CABLING, PIPING, DUCTWORK, FINISHES, RUBBISH, AND OTHER ITEMS NOT REQUIRED IN THE FINISHED CONSTRUCTION.
3. STRUCTURAL DEMOLITION SHALL NOT BE UNDERTAKEN UNLESS SPECIFICALLY INDICATED ON THE PLANS. IF ADDITIONAL STRUCTURAL DEMOLITION IS REQUIRED CONSULT THE ARCHITECT PRIOR TO BEGINNING THE WORK.
4. COORDINATE REMOVAL OF ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION WORK. SYSTEMS OUTSIDE OF THE DEMOLITION AREA SHALL REMAIN FUNCTIONAL DURING DEMOLITION AND CONSTRUCTION TO THE EXTENT POSSIBLE.
5. CONTRACTOR SHALL COORDINATE SLAB REMOVAL WITH NEW CONSTRUCTION ASSOCIATED WITH IT. REFERENCE FLOOR PLANS.
6. WHERE WALLS OR PARTITIONS ARE INDICATED TO BE REMOVED, REMOVE ENTIRE WALL OR PARTITION INCLUDING DUCTS, PIPING, CONDUITS AND OTHER ELEMENTS NOT SPECIFICALLY IDENTIFIED, UNLESS NOTED OTHERWISE.
7. REMOVE EXISTING EXTERIOR WALLS & WINDOWS WHERE NOTED TO ACCOMMODATE NEW CONSTRUCTION.
8. REFER TO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION NOTES.
9. PROVIDE SAFE MEANS OF EGRESS THROUGH AND AROUND BUILDING AND SITE.

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

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

KEYPLAN



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DEMOLITION FLOOR PLAN

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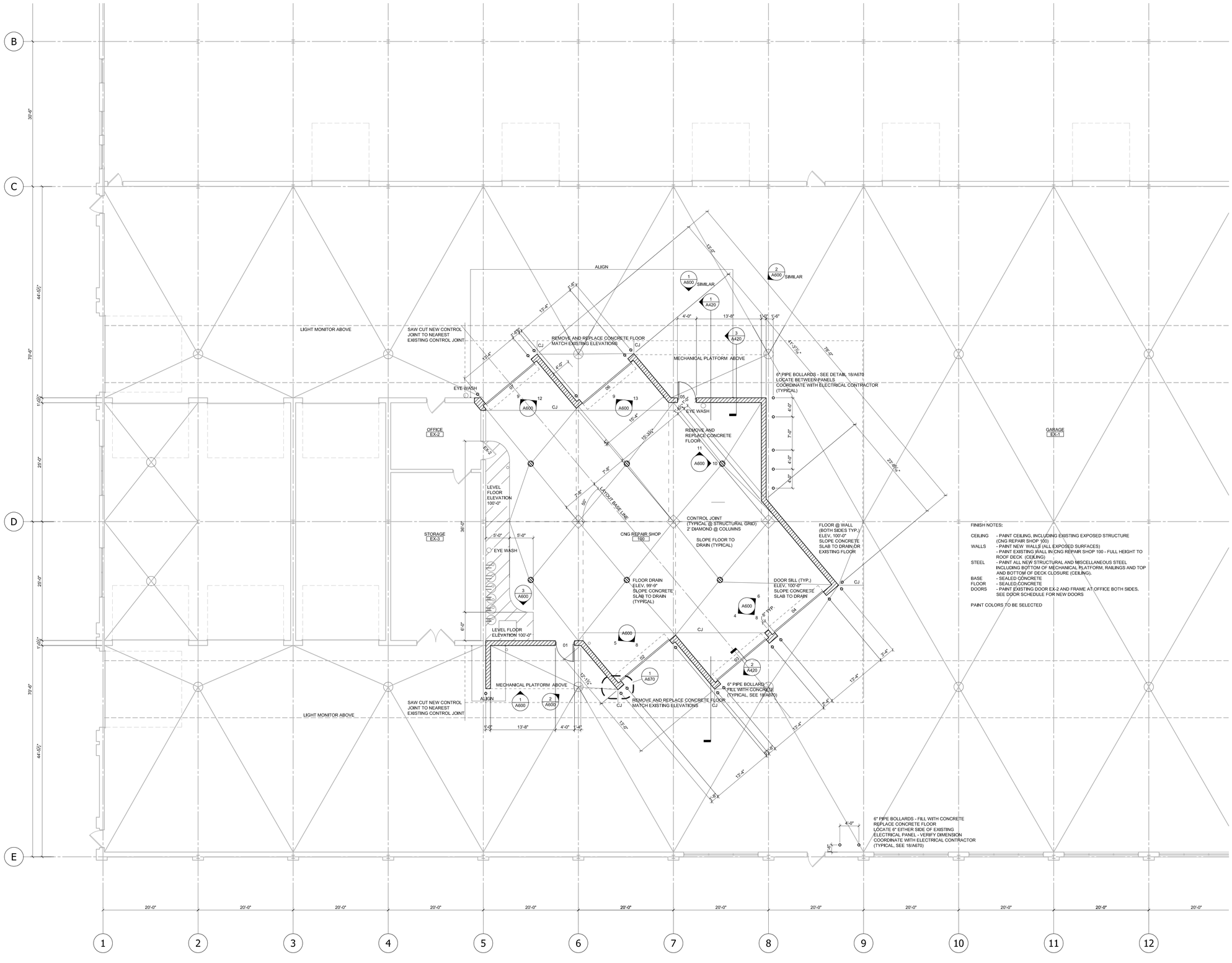

FINISH NOTES:

CEILING	- PAINT CEILING, INCLUDING EXISTING EXPOSED STRUCTURE (CNG REPAIR SHOP 100)
WALLS	- PAINT NEW WALLS (ALL EXPOSED SURFACES) - PAINT EXISTING WALL IN CNG REPAIR SHOP 100 - FULL HEIGHT TO ROOF DECK (CEILING)
STEEL	- PAINT ALL NEW STRUCTURAL AND MISCELLANEOUS STEEL INCLUDING BOTTOM OF MECHANICAL PLATFORM, RAILINGS AND TOP AND BOTTOM OF DECK CLOSURE (CEILING).
BASE	- SEALED CONCRETE
FLOOR	- SEALED CONCRETE
DOORS	- PAINT EXISTING DOOR EX-2 AND FRAME AT OFFICE BOTH SIDES. SEE DOOR SCHEDULE FOR NEW DOORS

PAINT COLORS TO BE SELECTED

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

City of Milwaukee

Department of Public Works

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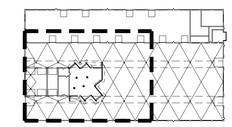
CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

KEYPLAN



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FLOOR PLAN

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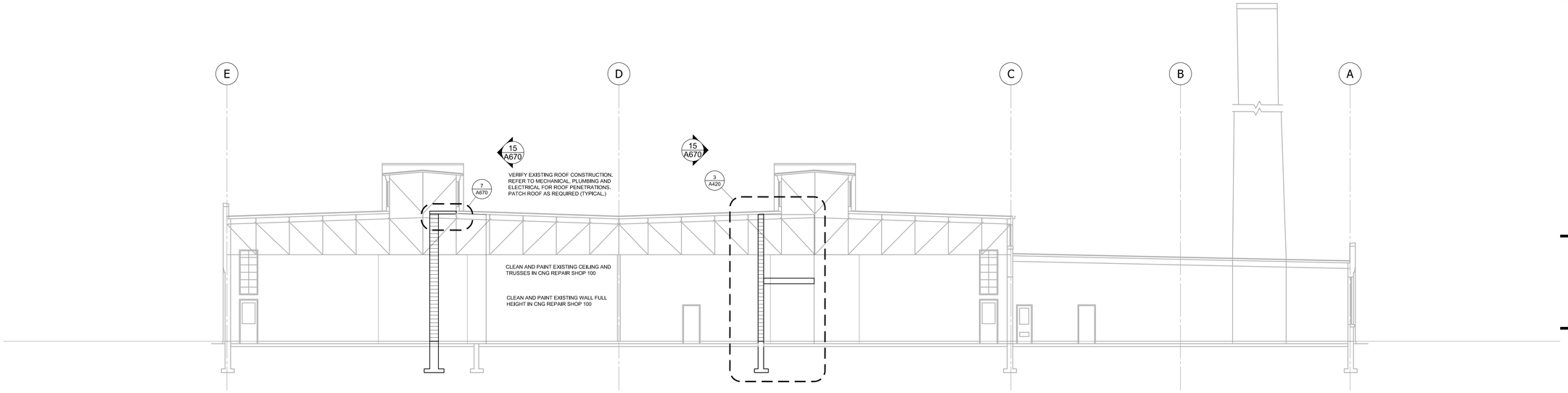
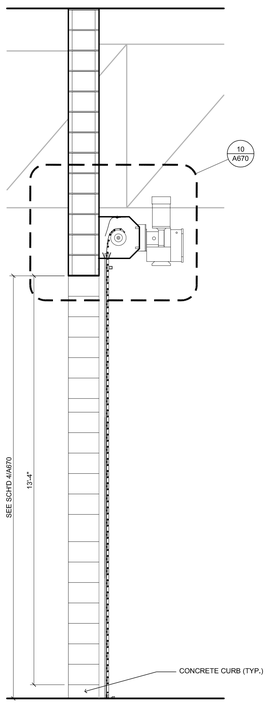
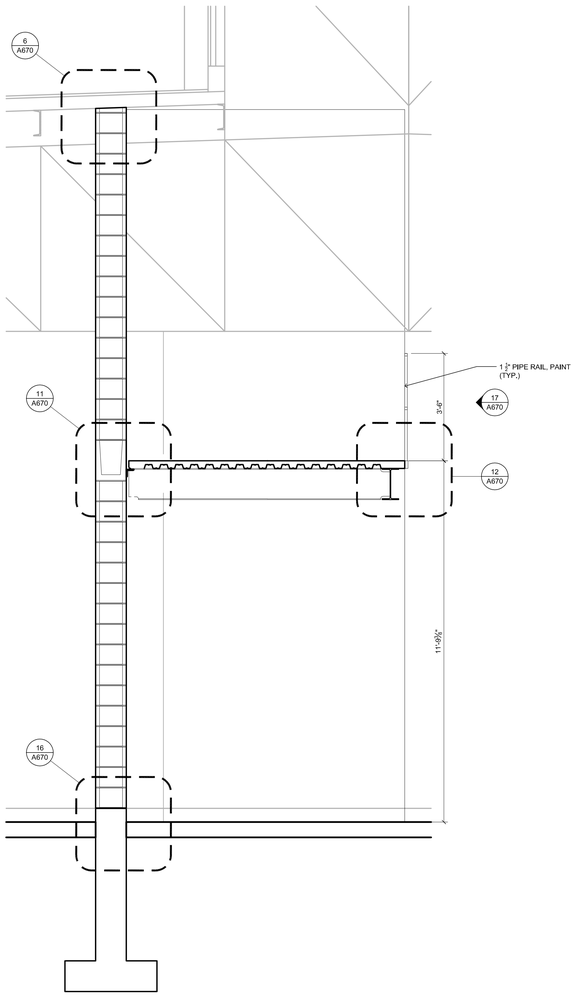


1 BUILDING SECTION
1/8" = 1'-0"



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



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

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Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
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BUILDING SECTION & WALL SECTIONS

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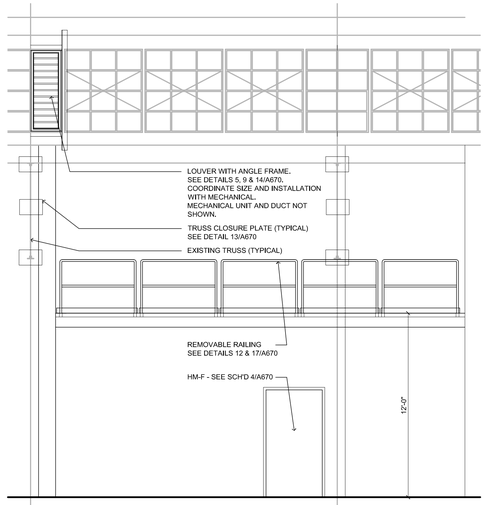
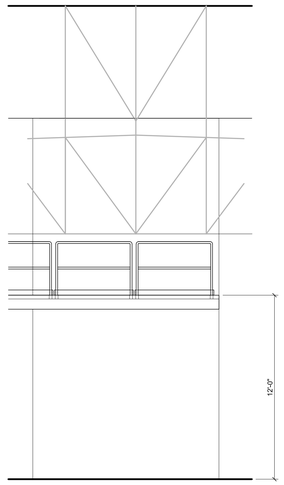
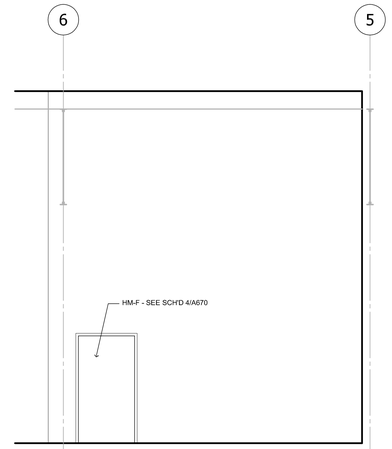


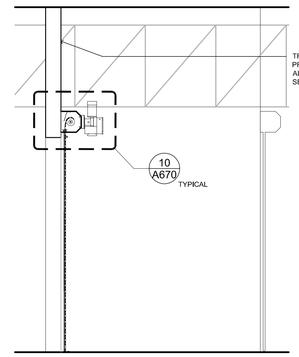
1 INTERIOR ELEVATION
1/4" = 1'-0"



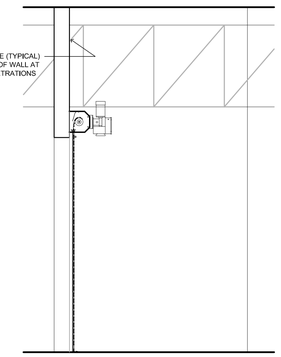
2 INTERIOR ELEVATION
1/4" = 1'-0"



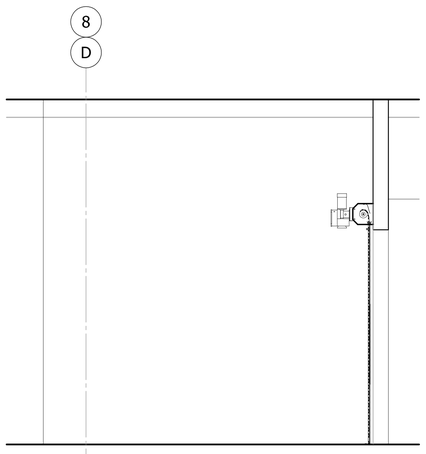
3 INTERIOR ELEVATION
1/4" = 1'-0"



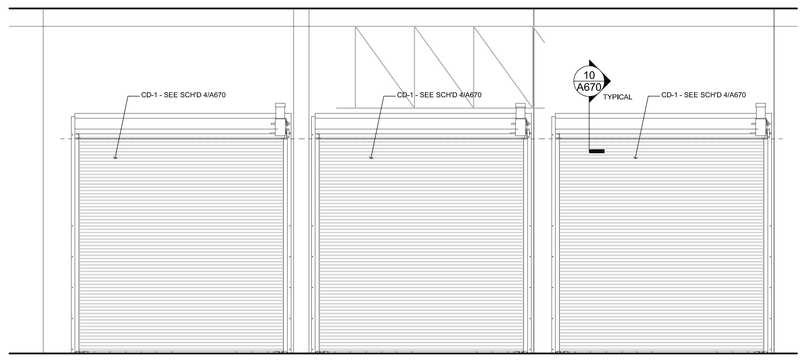
4 INTERIOR ELEVATION
1/4" = 1'-0"



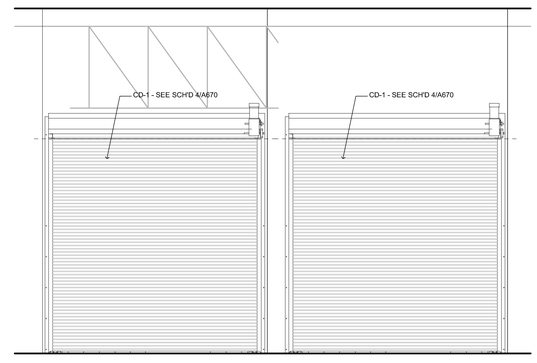
5 INTERIOR ELEVATION
1/4" = 1'-0"



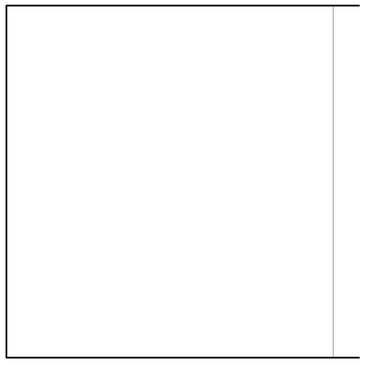
6 INTERIOR ELEVATION
1/4" = 1'-0"



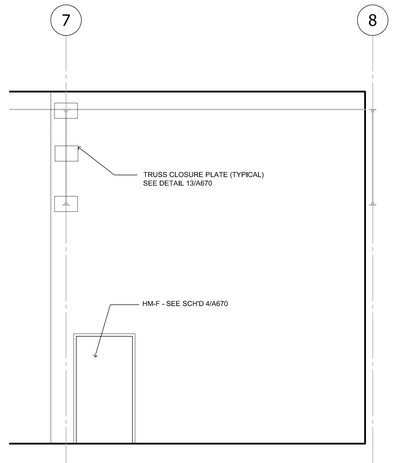
8 INTERIOR ELEVATION
1/4" = 1'-0"



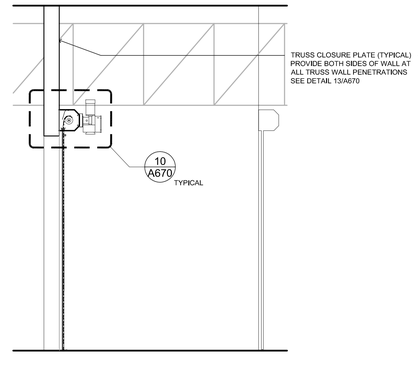
9 INTERIOR ELEVATION
1/4" = 1'-0"



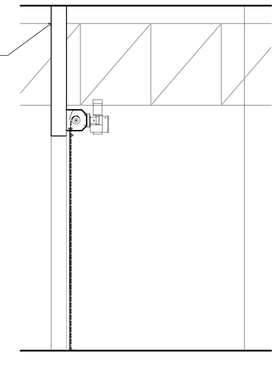
10 INTERIOR ELEVATION
1/4" = 1'-0"



11 INTERIOR ELEVATION
1/4" = 1'-0"



12 INTERIOR ELEVATION
1/4" = 1'-0"



13 INTERIOR ELEVATION
1/4" = 1'-0"

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

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INTERIOR ELEVATIONS

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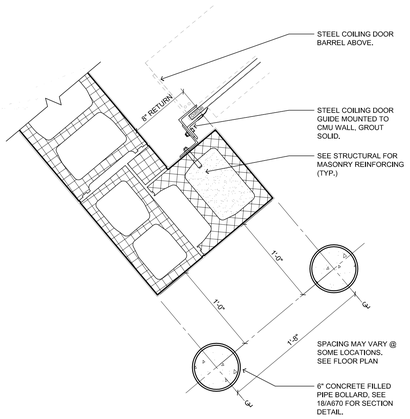
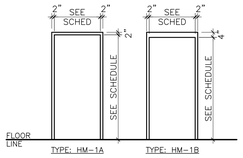
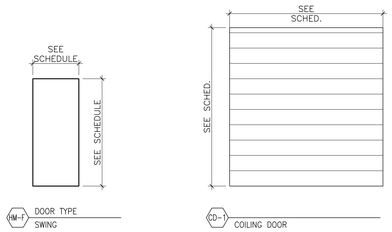


1 TYPICAL DETAIL @ COILING DOOR JAMB & BOLLARD
1 1/2" = 1'-0"



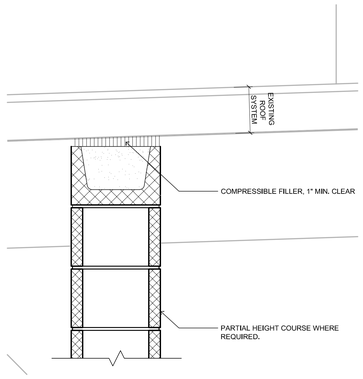
2 HM FRAME TYPES - DOORS
1/4" = 1'-0"



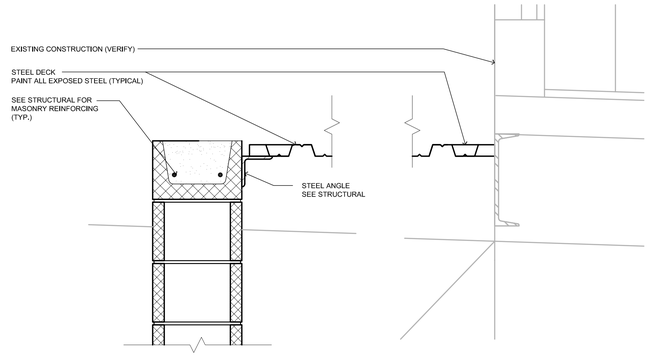
3 DOOR TYPE
1/4" = 1'-0"

4 OPENING SCHEDULE
N.T.S.

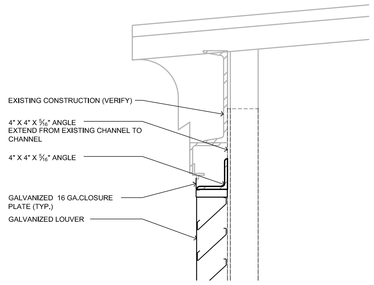
	IDENTIFICATION			SIZE		DOOR			FRAME			FIRE RTG	HARDWARE	NOTES	
REV. NO.	SHEET NO.	OPENING NO.	ROOM NAME	WIDTH	HEIGHT	TYPE\ MATL	GLAZING TYPE	FINISH	TYPE\ MATL	GLAZING TYPE	FINISH	(MIN)	HARDWARE GROUP		ELEC (DD ONLY)
	A200	01	100	3'-8"	7'-2"	HM-F		PTD	HM-1A		PTD		36		
	A200	02	100	13'-4"	14'-0"	CD-1		PTD			PTD		1		
	A200	03	100	13'-4"	14'-0"	CD-1		PTD			PTD		1		
	A200	04	100	13'-4"	14'-0"	CD-1		PTD			PTD		1		
	A200	05	100	3'-8"	7'-2"	HM-F		PTD	HM-1A		PTD		36		
	A200	06	100	13'-4"	14'-0"	CD-1		PTD			PTD		1		
	A200	07	100	13'-4"	14'-0"	CD-1		PTD			PTD		1		



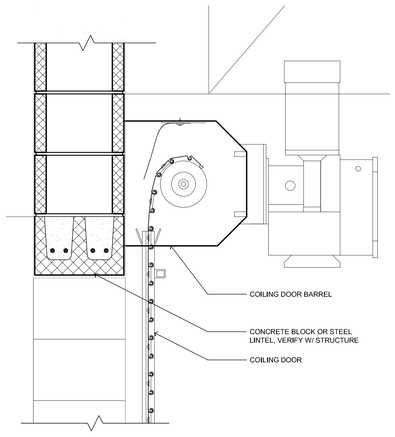
6 TYP. TOP BRACE DETAIL @ INTERIOR CMU WALL
1 1/2" = 1'-0"



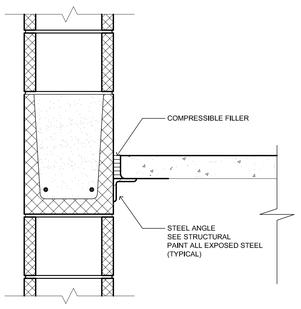
7 STEEL DECK TO CMU WALL CONNECTION
1 1/2" = 1'-0"



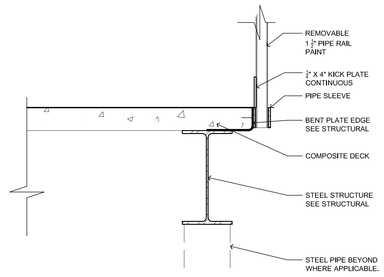
5 SECTION @ LOUVER HEAD
1 1/2" = 1'-0"



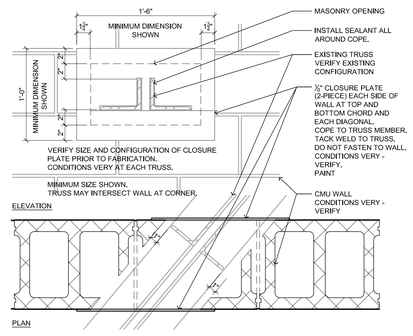
10 SECTION @ COILING DOOR HEAD & CMU LINTEL
1 1/2" = 1'-0"



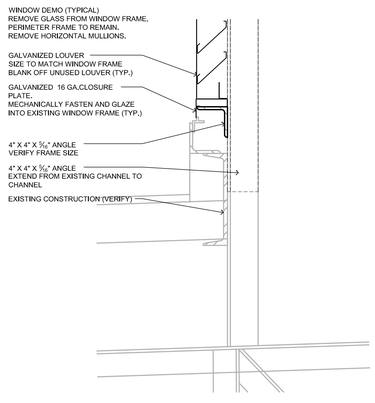
11 CMU MID-WALL CONNECTION @ MECH. PLATFORM
1 1/2" = 1'-0"



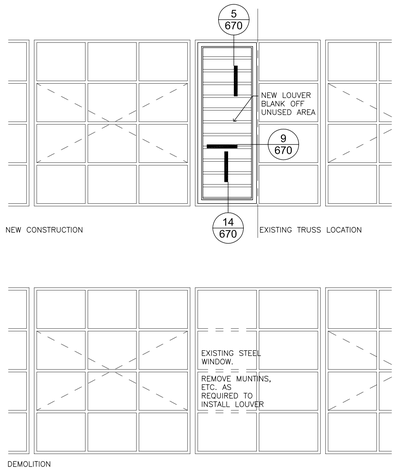
12 EDGE @ MECH. PLATFORM
1 1/2" = 1'-0"



13 TRUSS WALL PENETRATION (TYPICAL)
1 1/2" = 1'-0"

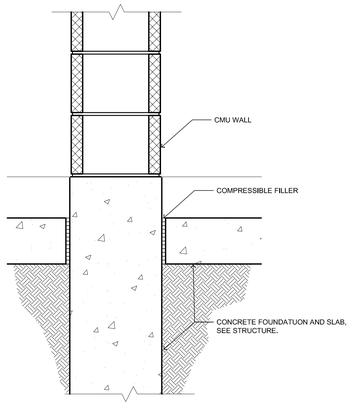


9 LOUVER JAMB DETAIL
1 1/2" = 1'-0"

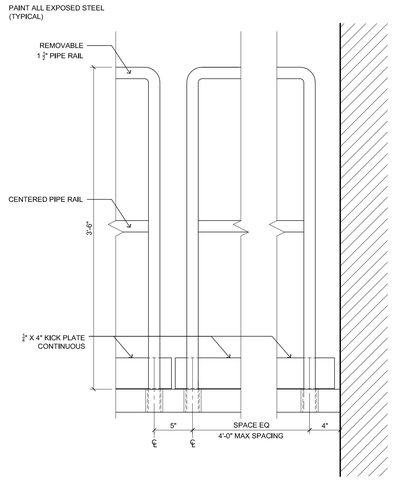


14 SECTION @ LOUVER SILL
1 1/2" = 1'-0"

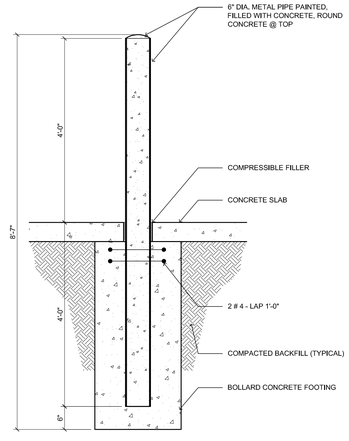
15 EXISTING CLEARSTORY PARTIAL WINDOW ELEV.
1/2" = 1'-0"



16 CMU WALL @ BASE
1 1/2" = 1'-0"



17 ELEVATION OF REMOVABLE PIPE RAILING
1 1/2" = 1'-0"



18 SECTION DETAIL @ PIPE BOLLARD
3/4" = 1'-0"

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

REVISION HISTORY - THIS SHEET

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333 East Erie Street
Milwaukee, Wisconsin USA 53202-6005
Telephone 414.278.8200 Facsimile 414.278.7734

KAPUR & ASSOCIATES, INC.
CONSULTING ENGINEERS
7711 N. PORT WASHINGTON ROAD
MILWAUKEE, WISCONSIN 53217
Phone: 414.351.5858 Fax: 414.351.4117
www.kapurengineers.com

INTERIOR DETAILS, DOOR TYPE & DOOR SCHEDULE

COMM. NO.	1203-005-03
SCALE	AS NOTED
DATE	September 2, 2014
DRAWN	HGA

Final RTA

A670

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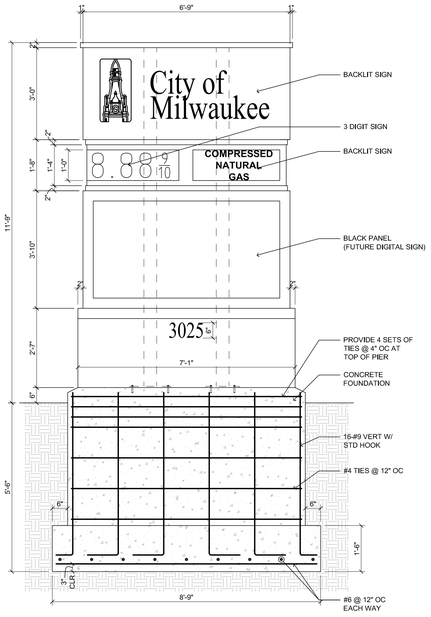
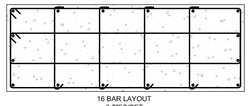
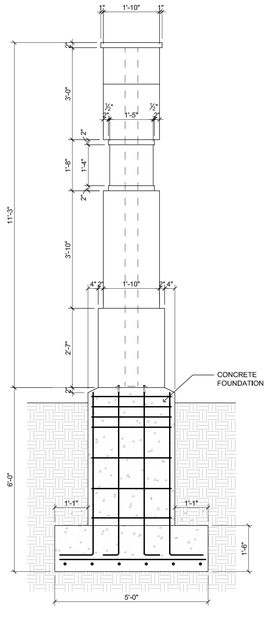




16 BAR LAYOUT
6 TIES/SET

NOTE:
AT SINGLE LEG TIES, ALTERNATE LOCATIONS OF 135° ENDS

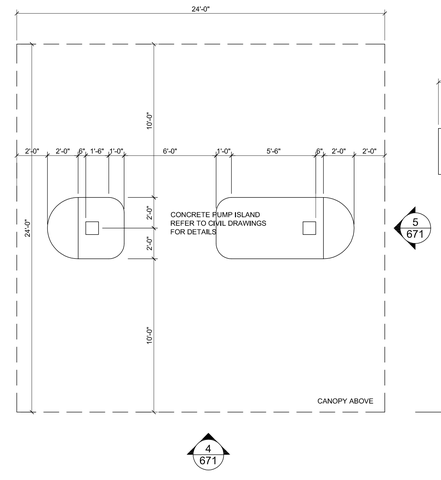
1 SIGN - FRONT ELEVATION
1/2" = 1'-0"



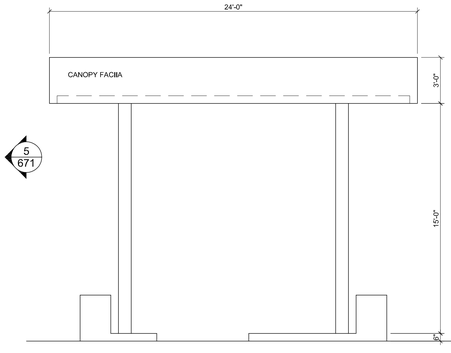
NOTE:
SEE 1/A671 FOR INFO NOT SHOWN

SIGN COLORS TO MATCH SIGN AT
CITY OF MILWAUKEE CNG GARAGE
3921 W. LINCLON AVENUE

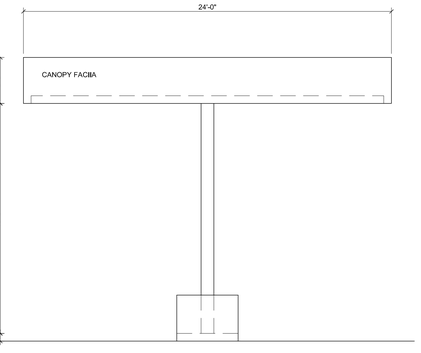
2 SIGN - SIDE ELEVATION
1/2" = 1'-0"



3 Canopy Plan
1/4" = 1'-0"



4 Canopy Elevation
1/4" = 1'-0"



5 Canopy Elevation
1/4" = 1'-0"

City of Milwaukee
Department of Public Works
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CANOPY DETAILS & SIGN ELEVATIONS

COMM. NO.	1203-005-03
SCALE	AS NOTED
DATE	September 2, 2014
DRAWN	HGA

Final RTA

A671

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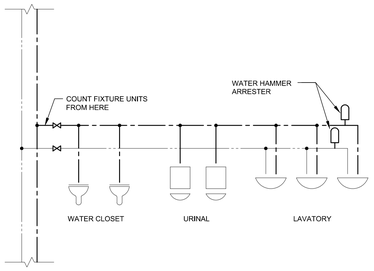
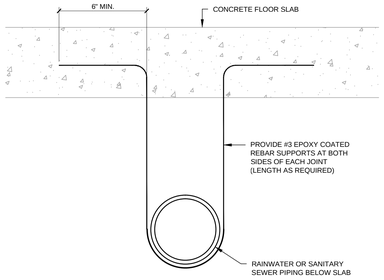
SIZING CHART

PLUMBING AND DRAINAGE INSTITUTE (P.D.I.) ARRESTER SYMBOL	A	B	C	D	E	F
FIXTURE UNIT RATING	1-11	12-32	33-60	61-113	114-154	155-330

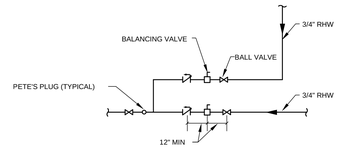


NOTE:
INSTALL WATER HAMMER ARRESTERS PER PDI-WH201, IN THE FOLLOWING LOCATIONS: PLUMBING FIXTURE GROUPS CONTAINING FLUSHOMETER VALVES, EQUIPMENT WITH AUTOMATIC FILL VALVES (DISHWASHERS, CLOTHES WASHERS, HUMIDIFIERS, ETC.) SEE PLUMBING SPECIALTIES SPECIFICATION.

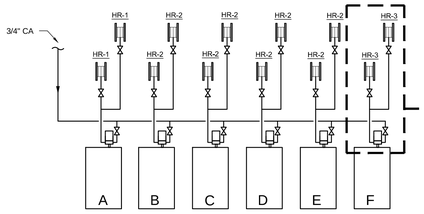
1 WATER HAMMER ARRESTOR LOCATIONS
NO SCALE



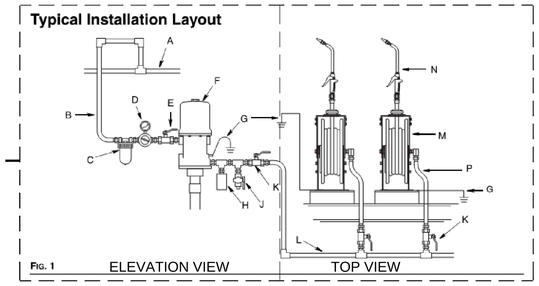
2 UNDERGROUND PIPE SUPPORT
NO SCALE



3 RHW BALANCING VALVE INSTALLATION
NO SCALE



A. HYDRAULIC OIL ISO GRADE 32
B. TRANSMISSION OIL
C. CHASSIS LUBE GREASE
D. DIESEL COOLANT
E. CNG MOTOR OIL
F. 5W-40 SYNTHETIC DIESEL MOTOR OIL



A. MAIN AIR SUPPLY
B. PUMP AIR SUPPLY
C. AIR FILTER
D. AIR REGULATOR
E. BLEED-TYPE MASTER AIR VALVE
F. PUMP
G. GROUNDING WIRE
H. THERMAL RELIEF VALVE
J. FLUID DRAIN VALVE
K. FLUID SHUT-OFF VALVE
L. FLUID LINE
M. HOSE REEL
N. DISPENSING VALVE
P. FLEXIBLE INLET HOSE

4 LUBE SYSTEM SCHEMATIC
NO SCALE

DOMESTIC COLD WATER (CW)
DOMESTIC HOT WATER (HW)
RECIRCULATING DOMESTIC HOT WATER (RHW)
NP — NON-POTABLE WATER
S — SOFT WATER
DW — DIALYSIS WATER
DA — DIALYSIS ACID
DE — DISTILLED WATER
DI — DEIONIZED WATER
RO — REVERSE OSMOSIS WATER
W — SANITARY WASTE ABOVE OR BELOW GROUND/FLOOR
SW — SPECIAL WASTE
AW — ACID WASTE
IW — INFLAMMABLE WASTE
PW — PUMPED WASTE (SEWAGE FORCED MAIN)
CWW — CLEARWATER WASTE
SANITARY VENT
SV — SPECIAL VENT
AV — ACID VENT
IV — INFLAMMABLE VENT
CWV — CLEARWATER VENT
RW — RAIN WATER / STORM WATER
ORW — OVERFLOW RAIN WATER / STORM WATER
PS — PUMPED RAIN WATER/STORM WATER (FORCED MAIN)
D — DRAIN
CD — CONDENSATE DRAIN
G — NATURAL GAS
IG — INTERRUPTIBLE GAS
PGA — PROPANE GAS AIR (PROPANE/AIR MIXTURE)
LPG — LIQUEFIED PROPANE GAS
LP — LIQUID PROPANE
CA — COMPRESSED AIR
CDA — CLEAN DRY COMPRESSED AIR
LA — LABORATORY COMPRESSED AIR
LV — LABORATORY VACUUM
H2 — HYDROGEN
LO2 — LIQUID OXYGEN
LN2 — LIQUID NITROGEN
LH2 — LIQUID HYDROGEN
HPO2 — HIGH PURITY OXYGEN
HPN2 — HIGH PURITY NITROGEN
HPH2 — HIGH PURITY HYDROGEN
HT — HEAT TRACING

1 PIPING DESIGNATIONS
NO SCALE

ELBOW DOWN
ELBOW UP
TEE DOWN
TEE UP
FLOW DIRECTION
SHUT-OFF VALVE
BALANCING VALVE
AUTOMATIC FLOW CONTROL VALVE
VALVE IN VERTICAL PIPE
CHECK VALVE (FLOW DIRECTION INDICATED)
2-WAY MODULATING CONTROL VALVE
3-WAY MODULATING CONTROL VALVE
2-WAY, 2-POSITION CONTROL VALVE
3-WAY, 2-POSITION CONTROL VALVE
PRESSURE REDUCING VALVE
REDUCED PRESSURE ZONE BACKFLOW PREVENTER
RELIEF VALVE (ELEVATION)
RELIEF VALVE (PLAN VIEW)
FLOW MEASURING DEVICE
STRAINER
STRAINER W/ BLOWDOWN VALVE
EXPANSION JOINT
FLEXIBLE CONNECTION
UNION
PIPE ANCHOR
PIPE GUIDE
MANUAL AIR VENT
TEST PLUG
THERMOMETER
PRESSURE GAUGE
TEMPERATURE GAUGE
CONNECTION
CONNECTION (TOP)
CONNECTION (BOTTOM)
CLEANOUT
HOSE BIBB (HB) OR WALL HYDRANT (WH)
FLOOR DRAIN (FD)
FLOOR SINK (FS)
TRENCH DRAIN (TD)
HUB DRAIN (HD)
PIPE END CAP
CONNECT TO EXISTING
DEMOLISHED PIPING
FLOOR CLEANOUT

2 PIPING SYMBOLS
NO SCALE

A
AAP — AIR ADMITTANCE VALVE
AFF — ABOVE FINISHED FLOOR
AG — AIR GAP FITTING
ALT — ALTERNATE
AP — ACCESS PANEL(S)
APD — AIR PRESSURE DROP
ARCH — ARCHITECT(URAL)

B
BFP — BACK FLOW PREVENTOR
BTUH — BRITISH THERMAL UNIT PER HOUR
BWV — BACK WATER VALVE

C
CFH — CUBIC FOOT PER HOUR
CFM — CUBIC FOOT PER MINUTE
CI — CAST IRON
CO — CLEAN OUT
CONC — CONCRETE
COND — CONDENS(ATE) (ER)
CONN — CONNECTION
CONT — CONTINU(E) (OUS) (ATION)
CONTR — CONTRACT(OR)
CW — DOMESTIC COLD WATER
CWE — COLD WATER EXPRESS
CWV — CLEARWATER VENT
CWW — CLEARWATER WASTE

D
DEG — DEGREE(S)
DET — DETAIL
DF — DRINKING FOUNTAIN
DFU — DRAINAGE FIXTURE UNIT
DWG(S) — DRAWING(S)
DWV — DRAIN, WASTE, VENT

E
EA — EACH
ELEC — ELECTRIC(AL)
EMER — EMERGENCY
EXIST — EXISTING
EJ — EXPANSION JOINT
EXT — EXTERIOR

F
F — FAHRENHEIT
FCO — FLOOR CLEANOUT
FD — FLOOR DRAIN
FFE — FINISHED FLOOR ELEVATION
FLR — FLOOR
FLEX — FLEXIBLE
FPM — FEET PER MINUTE
FT — FOOT, FEET
FTG — FOOTING
FWCO — FINISHED WALL CLEANOUT
F-XXX — PLUMBING FIXTURE

G
GA — GAUGE
GAL — GALLON
GALV — GALVANIZED
GEN — GENERAL
GPH — GALLON(S) PER HOUR
GPM — GALLON(S) PER MINUTE

H
HB — HOSE BIB
HD — HUB DRAIN (RIM 1" AFF)
HP — HORSEPOWER
HTG — HOSE VALVE
HVAC — HEATING, VENTILATION AND AIR CONDITIONING
HW — DOMESTIC HOT WATER

I
ID — INSIDE DIAMETER/DIMENSION
IE — INVERT ELEVATION
IN — INCH(ES)
INSUL — INSULATION

L
LBS/HR — POUNDS PER HOUR
LF — LINEAL FOOT, FEET

M
MAX — MAXIMUM
MBH — 1000 BTUH
MECH — MECHANICAL(LY)
MEZZ — MEZZANINE
MFR — MANUFACTURER
MIN — MINIMUM
MIN — MINUTE
MISC — MISCELLANEOUS
MP — MATCH POINT

N
NG — NATURAL GAS
NIC — NOT IN CONTRACT
NO — NUMBER
NTS — NOT TO SCALE

O
OD — OUTSIDE DIAMETER/DIMENSION

P
PD — PRESSURE DROP
PLBG — PLUMBING
PRES — PRESSURE
PSI — POUNDS PER SQUARE INCH
PVC — POLYVINYL CHLORIDE

R
R — RADIUS
REG — REGISTER
REQD — REQUIRED
RD — ROOF DRAIN
RHW — RECIRCULATING DOMESTIC HOT WATER
RM — ROOM
RW — RAIN WATER/STORM WATER

S
SF — SQUARE FEET
SFU — SUPPLY FIXTURE UNIT
SHT — SHEET
SK — SINK
SP — STANDPIPE
SPEC(S) — SPECIFICATION(S)
SS — STAINLESS STEEL
STRUC — STRUCTUR(E) (AL)

T
TEMP — TEMPERATURE
TD — TRENCH DRAIN
TMV — THERMOSTATIC MIXING VALVE
TW — TEMPERED WATER/TEPID WATER
TYP — TYPICAL

V
VERT — VERTICAL
VOL — VOLUME
VS — VENT STACK
VTR — VENT THROUGH ROOF

W
W, SAN — SANITARY WASTE
WC — WATER CLOSET
WH — WALL HYDRANT
WS — WASTE STACK
WTR — WATER

3 ABBREVIATIONS
NO SCALE

CONTROL HANDLE SCHEDULE

MARK	APPLICATION	ACCURACY BY VOLUME	FLOW RATE (GPM)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES:
CH-1	LIGHT LUBRICANTS	±0.5%	5	GRACO	GRACO 255-200	1
CH-2	GREASE	Non-Metered	1kg/min	GRACO	GRACO 242-058	2.3
CH-3	COOLANT	±0.5%	5	GRACO	GRACO 255-356	

NOTES:
1. LIGHT LUBRICANTS INCLUDE: HYDRAULIC, TRANSMISSION, ENGINE MOTOR, & SYNTHETIC OILS.
2. GREASE INCLUDES: CHASSIS LUBE GREASE.
3. MAXIMUM WORKING PRESSURE IS 8000 P.S.I.

FLOOR DRAIN SCHEDULE (FD)

MARK	BODY MATERIAL	BODY SHAPE	BODY OUTLET	BODY OUTLET SIZE	BODY FLASHING CLAMP	GRATE SIZE	GRATE MATERIAL	GRATE FINISH	SEDIMENT BUCKET	BWV	MANUFACTURER	MODEL	REMARKS
FD-A	DURA-COATED CAST IRON	ROUND	BOTTOM	4"	YES	12"	CAST IRON	NO	YES	NO	ZURN	Z-541-TG-YC	HEEL PROOF, TRACTOR GRATE

NOTES:

PLUMBING FIXTURE AND CONNECTION SCHEDULE (F)

FIXTURE NO.	FIXTURE TYPE	FIXTURE DESCRIPTION	NOTE NUMBER	RIM MOUNTING HEIGHT	WASTE	VENT	SUPPLY CW	SUPPLY HW
F-6	SINK	FIXTURE: ELKAY MODEL ELV2219SACMC 18 GAUGE, TYPE 304 STAINLESS STEEL SINK, SINGLE BOWL, WALL MOUNTED, 22" L x 19" W x 5-1/2" D, SINGLE HOLE. FAUCET: ELKAY LKB721C DECK-MOUNTED SINGLE HOLE FAUCET, ELECTRONIC BATTERY OPERATED, 11.61" RIGID SPOUT, E12 SOFTFLO AERATOR, 2.0 GPM, LAMINAR FLOW, CHROME PLATED, MECHANICAL MIXING VALVE. STRAINER: ELKAY LK18 DRAIN OUTLET FITTING WITH 3" PERFORATED GRID STRAINER AND 1-1/2" CHROME PLATED TAILPIECE.	1,2,& 3	-	1-1/2"	1-1/2"	1/2"	1/2"
F-8	HOSE BIBB	FIXTURE: WOODFORD 21 WALL FAUCET, ANIT-SIPHON VACUUM BREAKER, POLYCARBONATE WHEEL HANDLE AND LOOSE TEE KEY, CHROME PLATED. ACCESSORIES: A.M. LEGEND MODEL HCWM1, WALL MOUNT HOSE HANGER. HANGER MUST HOLD 150 FEET OF 3/4" RUBBER HOSE FILLED WITH WATER.	1	-	-	-	3/4"	
F-10	EMERGENCY EYE/FACEWASH	FIXTURE: BRADLEY MODEL NO. S19224OD2HHBA00, 5.1 GPM, WALL MOUNTED, TYPE 316 STAINLESS STEEL PUSH HANDLE, PERFORATED SPRAY HEAD. ACCESSORIES: BRADLEY NO. S19-2000 THERMOSTATIC MIXING VALVE, 7.3 GPM AT 30 PSIG DOP, 1.5 GPM MINIMUM FLOW, 3.2 GPM COLD BYPASS AT 10 PSIG DROP, ANSI Z358.1-2004 COMPLIANT, LIQUID FILLED THERMOSTAT, DIAL THERMOMETER, INTEGRAL CHECK STOPS ON INLETS UNION CONNECTIONS, FACTORY SET TO 85 DEF F.	1	-	-	-	1/2"	1/2"

NOTES:
1. VERY MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
2. COORDINATE ELCTRICAL CONNECTIONS WITH CONTRACTOR PRIOR TO INSTALLTION.
3. ADA SINKHEIGHT/CLEARANCE REQUIREMENTS: FIXTURE RIM OR COUNTER SURFACE (THE HIGHER OF THE TWO) AT 34" AFF MAXIMUM, DEPTH OF LAV TO BE 6-1/2" MAXIMUM.

HOSE REEL SCHEDULE

MARK	APPLICATION	MOUNTING POSITION	BASE	HOSE WITH BALL STOP DIA (INCHES)	HOSE WITH BALL STOP LENGTH (FT)	MAX PRESSURE (PSI)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES:
HR-1	LIGHT LUBRICANTS	WALL	1/4" STEEL	1/2	75	1500	GRACO	HSM-C8B XD SERIES SIZE 30 OPEN STYLE OIL REEL	1
HR-2	GREASE	WALL	1/4" STEEL	1/2	50	5000	GRACO	HSH-C5BXD SERIES SIZE 30 OPEN STYLE GREASE REEL.	2
HR-3	COOLANT	WALL	1/4" STEEL	1/2	75	300	GRACO	GRACO HSL-C8B XD SERIES SIZE 30 OPEN STYLE WATER REEL.	
HR-4	AIR	OVERHEAD	1/4" STEEL	1/2	75	300	GRACO	GRACO HSL-C8B XD SERIES SIZE 30 OPEN STYLE WATER REEL.	

NOTES:
1. LIGHT LUBRICANTS INCLUDE: HYDRAULIC, TRANSMISSION, ENGINE MOTOR, & SYNTHETIC OILS.
2. GREASE INCLUDES: CHASSIS LUBE GREASE.

PNEUMATIC PUMP SCHEDULE

MARK	PUMP RATIO	PUMP FLUID FLOW	PUMP FLUID HEAD (PSIG)	PUMP LENGTH	PUMP AIR CFM/GAL	PUMP AIR PSI	PUMP MAX dBa	FLUID	LIFTING HOOK	MANUFACTURER	MODEL	REMARKS
PP-1	5:1	2.8 GPM @ 80 CYLCES PER MINUTE	900	55 GAL DRUM	7.5	40-180 PSI	85.6	LIGHT LUBRICANTS	YES, GRACO MODEL164-704	GRACO	225-640	1
PP-2	50:1	1.19 POUNDS PER MINUTE	8,400	55 GAL DRUM	3	8000	85.6	GREASE	YES, GRACO MODEL164-704	GRACO	225-016	2
PP-3	1:1	50 GPM	125	55 GAL DRUM	1.25	20-125	90	DIESEL COOLANT	NO	GRACO	244-680	WALL MOUNTED DIAPHRAGM PUMP

NOTES:
1. LIGHT LUBRICANTS INCLUDE: HYDRAULIC, TRANSMISSION, ENGINE MOTOR, & SYNTHETIC OILS.
2. GREASE INCLUDES: CHASSIS LUBE GREASE.

OIL INTERCEPTOR SCHEDULE (OS)

MARK	MOUNTING	BODY MATERIAL	BODY COATING	DIMENSIONS LENGTH (IN)	DIMENSIONS WIDTH (IN)	DIMENSIONS HEIGHT (IN)	CAPACITY FLOW (GPM)	CAPACITY LIQUID (GAL)	CAPACITY SEDIMENT (CU FT)	CAPACITY MAX OIL (GAL)	INTEGRAL STORAGE TANK (GAL)	CONNECTIONS WASTE (IN)	CONNECTIONS VENT (IN)	MANUFACTURER	MODEL	REMARKS
OS-1	BELOW SLAB	1/4" STEEL	EPOXY	44	35	23	25	30	0.75	70	55	4	3	SCHIER	SIT-25-1	SEE NOTES.

NOTES:
1. REINFORCED TOP FLUSH WITH GRADE, OD HEIGHT IS APPROX, SEALED AND PAINTED.
2. ANCHOR FLANGE, CLAMPING RING, SEDIMENT BASKET.
3. 1/2" STEEL TREADPLATE COVER FOR HEAVY VEHICULAR TRAFFIC
4. PROVIDE EXTENSION HEIGHT AS REQUIRED DUE TO DRAIN CONNECTION. CONTRACTOR TO CALCULATE PRIOR TO PURCHASE ORDER.
5. PROVIDE LEFT-HAND, RIGHT-HAND OR STRAIGHT-THROUGH MODEL PER DRAWINGS.
6. PROVIDE SINGLE LEVEL MONITOR WITH REMOTE AUDIO/VISUAL ALARM PANEL WITH EXPLOSION PROOF STAINLESS STEEL FLOAT SWITCH FOR OIL STORAGE TANK. SEE SHEET P201 FOR ALARM PANEL LOCATION. SCHIER MODEL NO. AVA-3 OR EQUAL

City of Milwaukee
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Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

REVISION HISTORY - THIS SHEET

HGA
Architecture | Engineering | Planning
HGA Architects and Engineers, LLC.
333 East Erie Street
Milwaukee, Wisconsin USA 53202-6005
Telephone 414.278.8200 Facsimile 414.278.7734

PLUMBING SYMBOLS, ABBREVIATIONS, DETAILS & SCHEDULES

COMM. NO. 1203-005-03
SCALE AS NOTED
DATE September 2, 2014
DRAWN C.POWERS

Final RTA

P001

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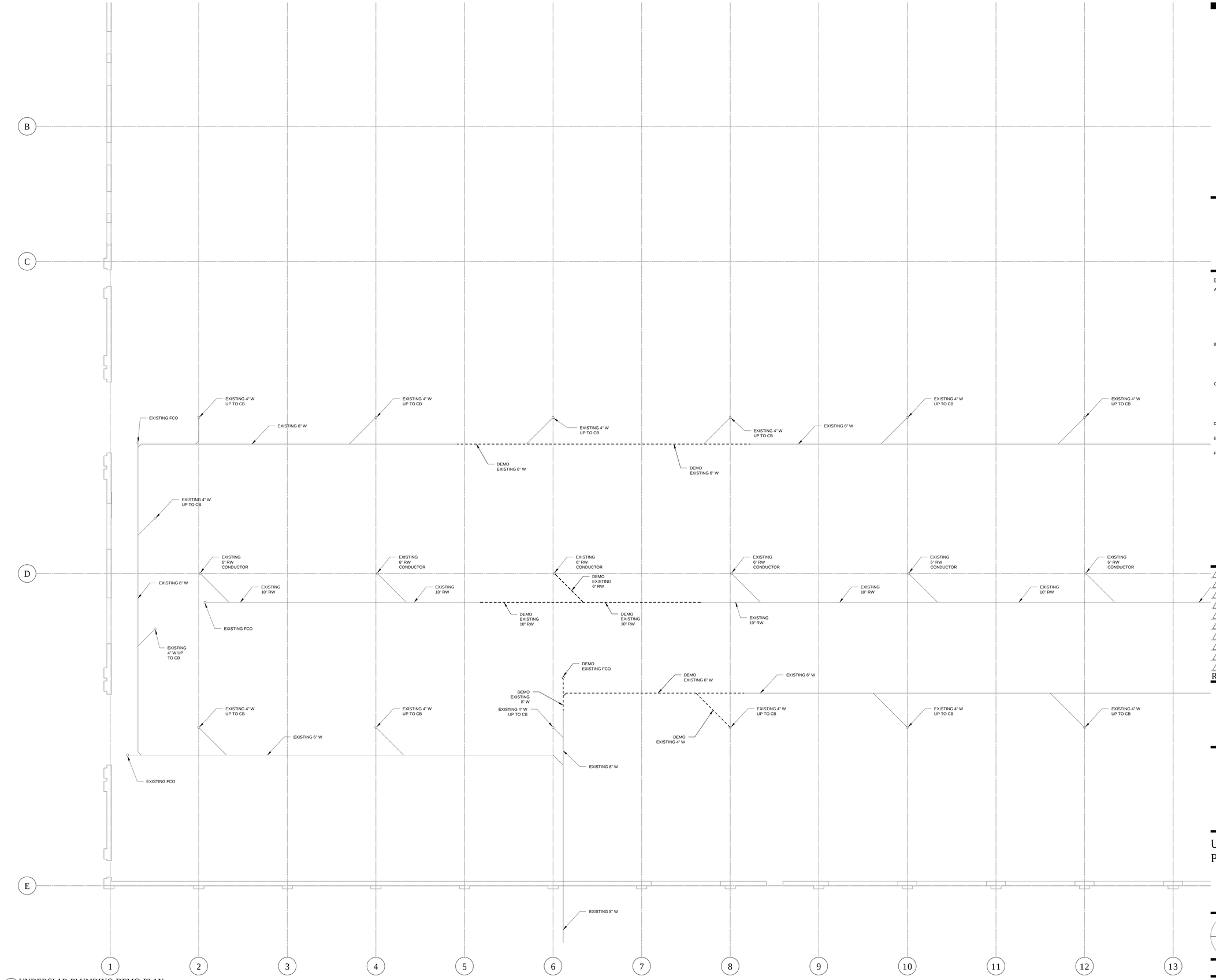

1 UNDERSLAB PLUMBING DEMO PLAN
1/8" = 1'-0"

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CNG FUELING STATION

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MILWAUKEE COUNTY

GENERAL DEMOLITION NOTES

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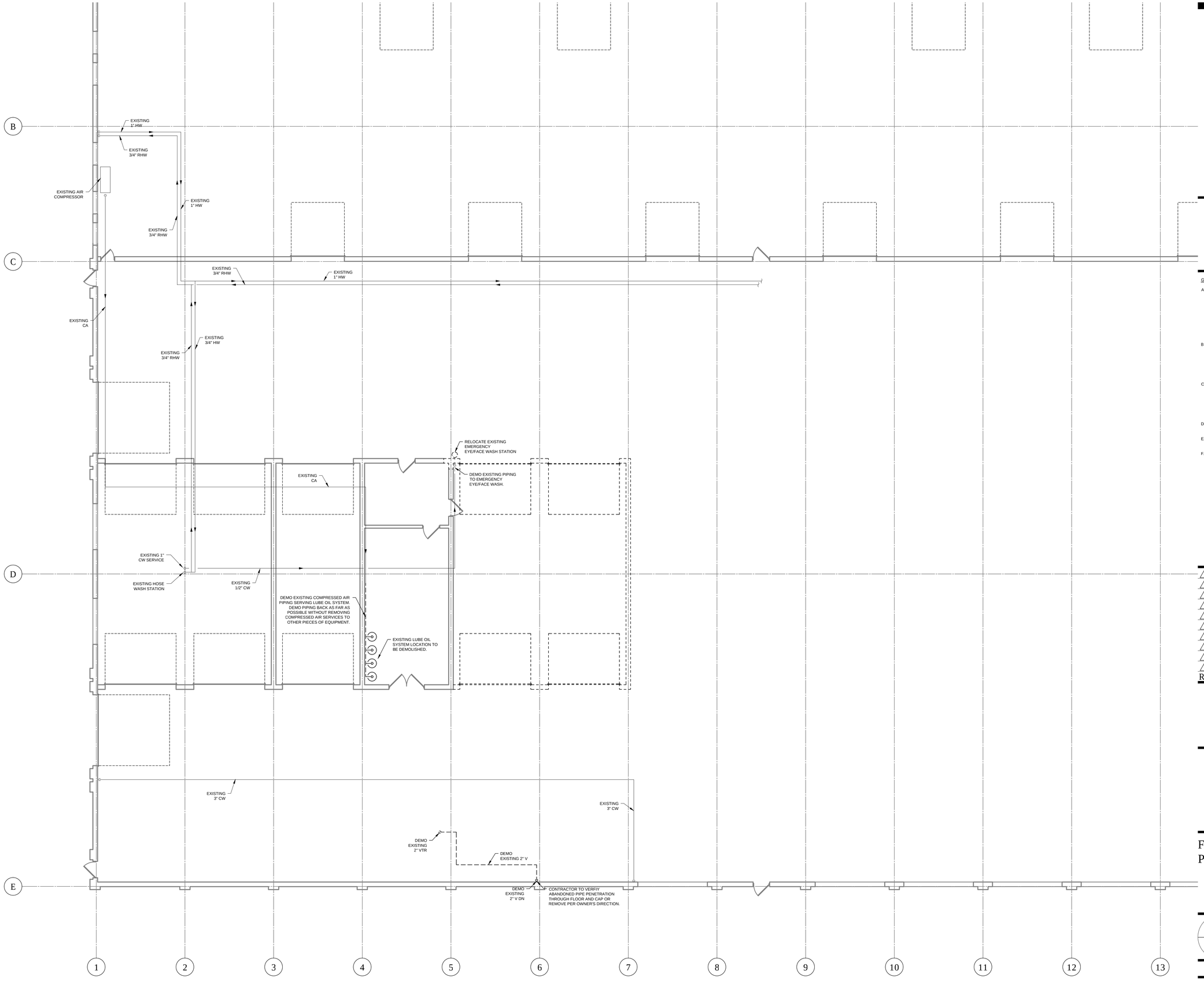

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FIRST FLOOR PLUMBING DEMO PLAN

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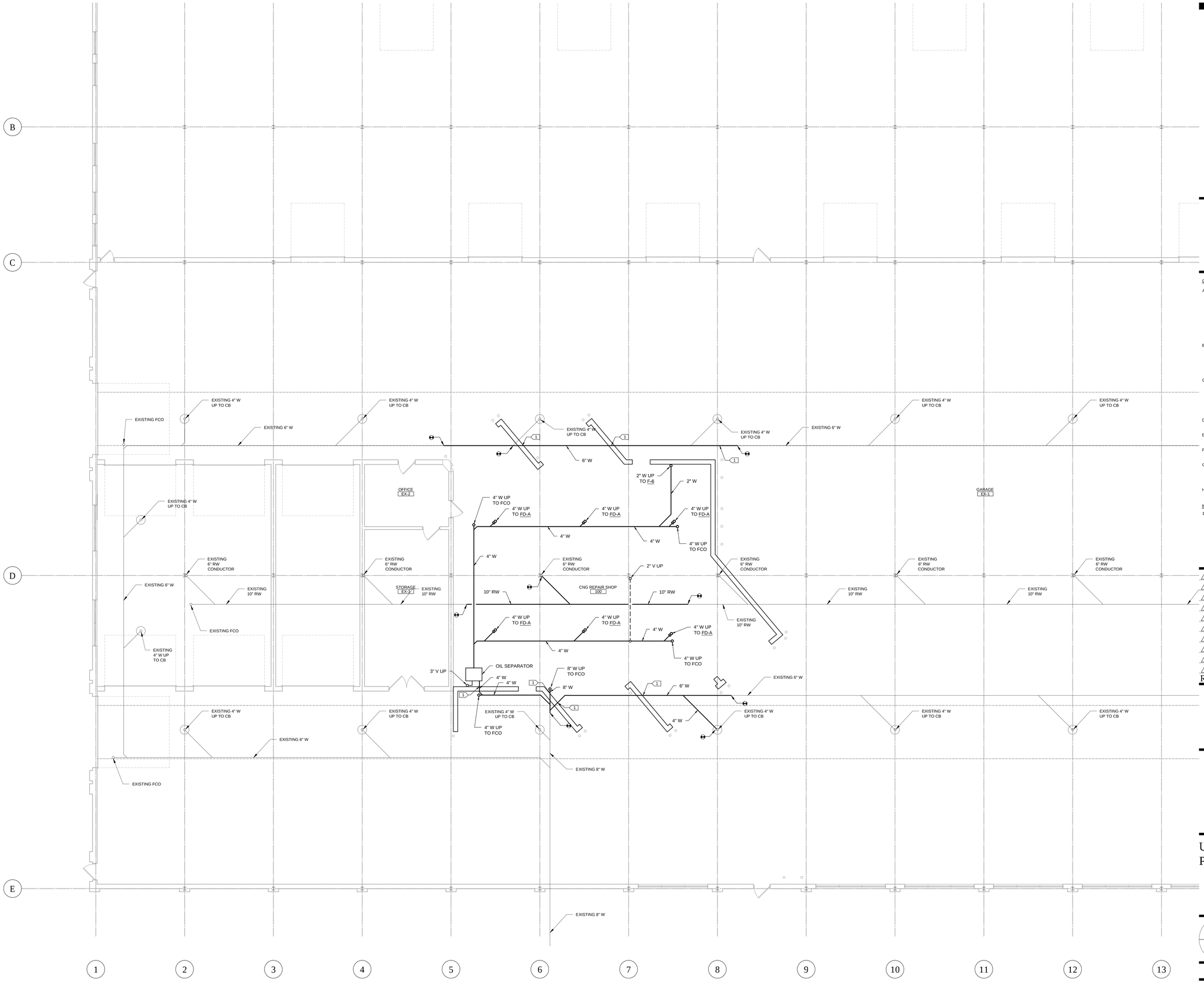

1 UNDERSLAB PLUMBING PLAN
1/8" = 1'-0"

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KEY NOTES: XX

1. PIPE THROUGH FOUNDATION WALL. SEE STRUCTURAL DRAWINGS FOR SLEEVE INFORMATION.

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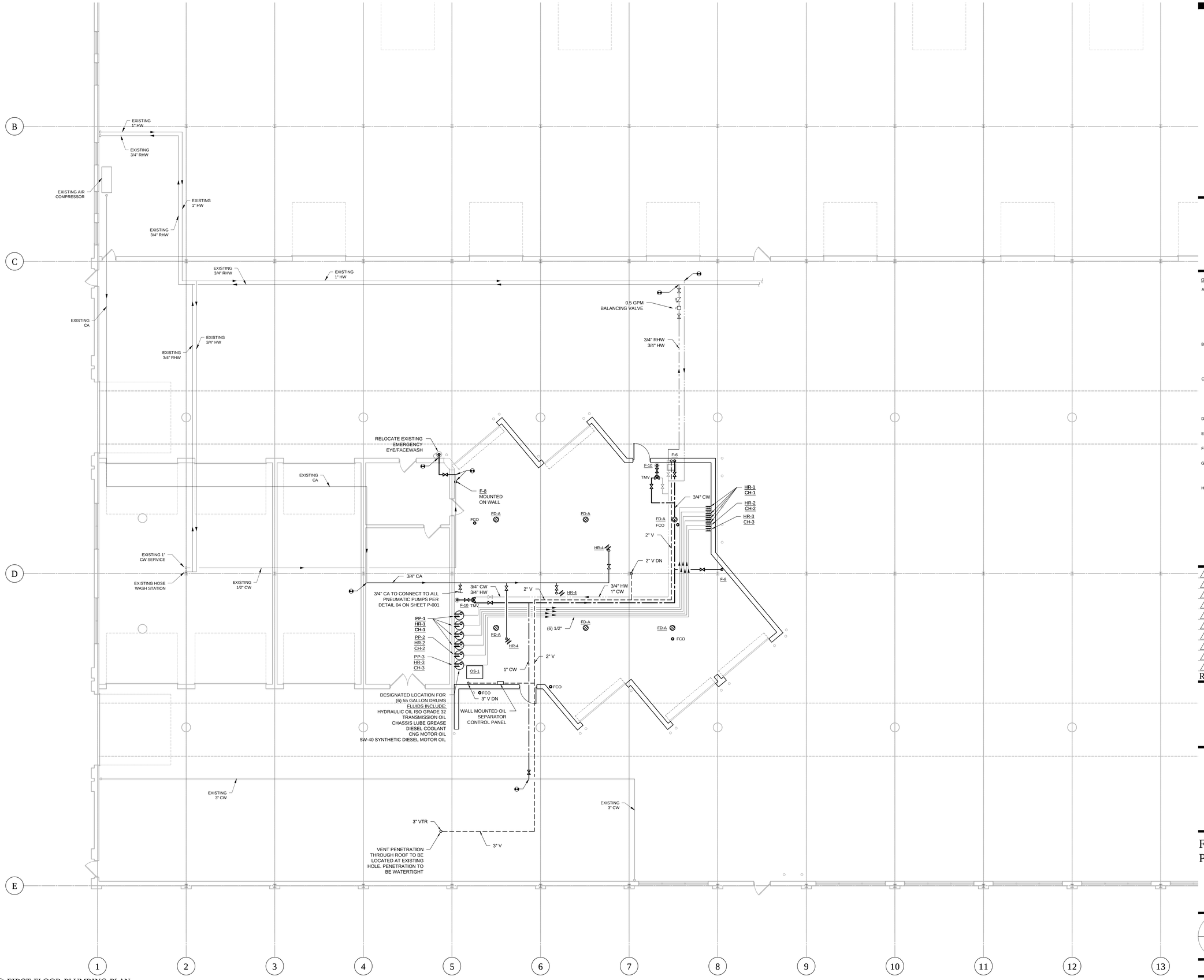

1 FIRST FLOOR PLUMBING PLAN
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CNG FUELING STATION

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FIRST FLOOR PLUMBING PLAN

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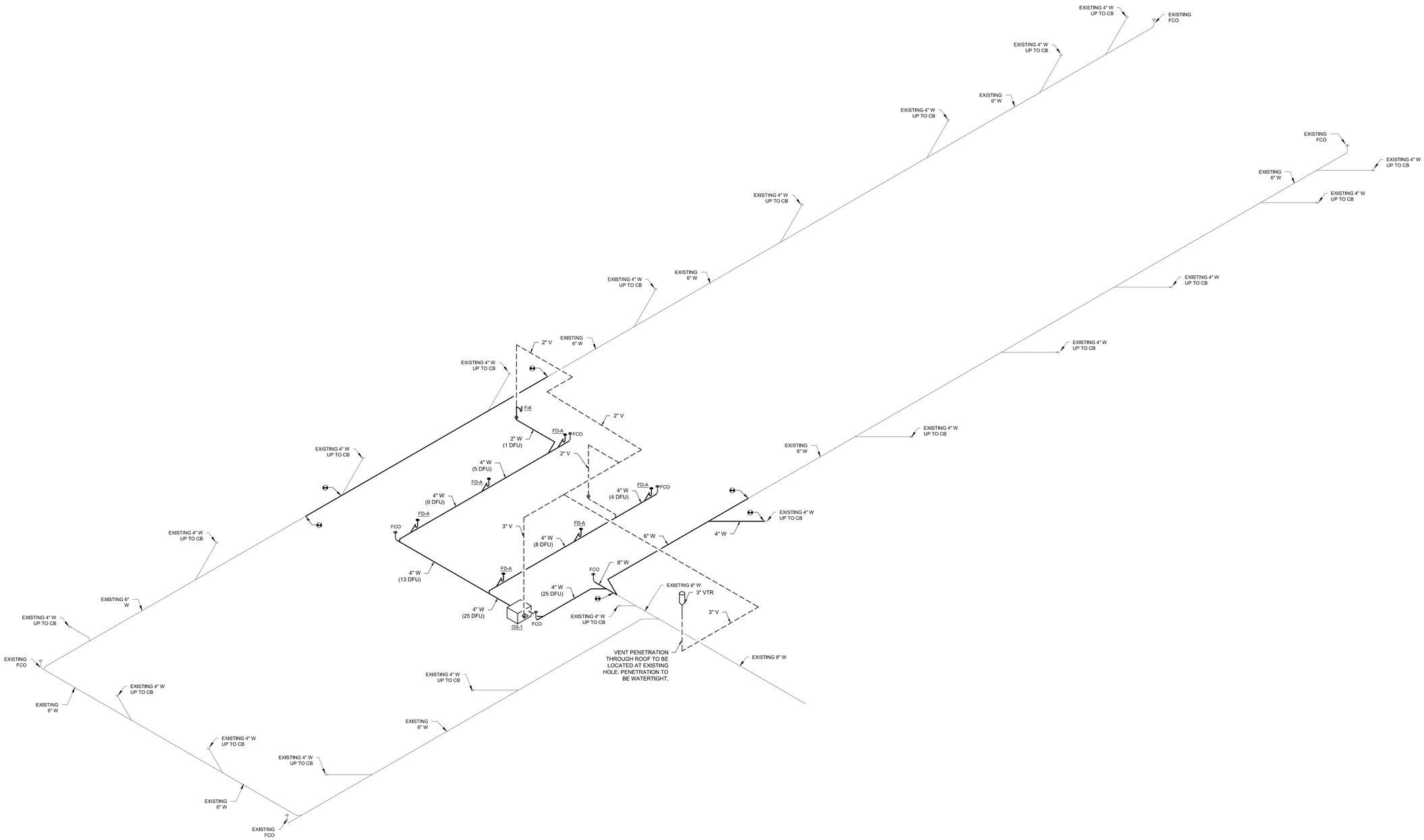

1 SANITARY WASTE & VENT ISOMETRIC DIAGRAM
1/8" = 1'-0"

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SANITARY WASTE & VENT ISOMETRIC DIAGRAM

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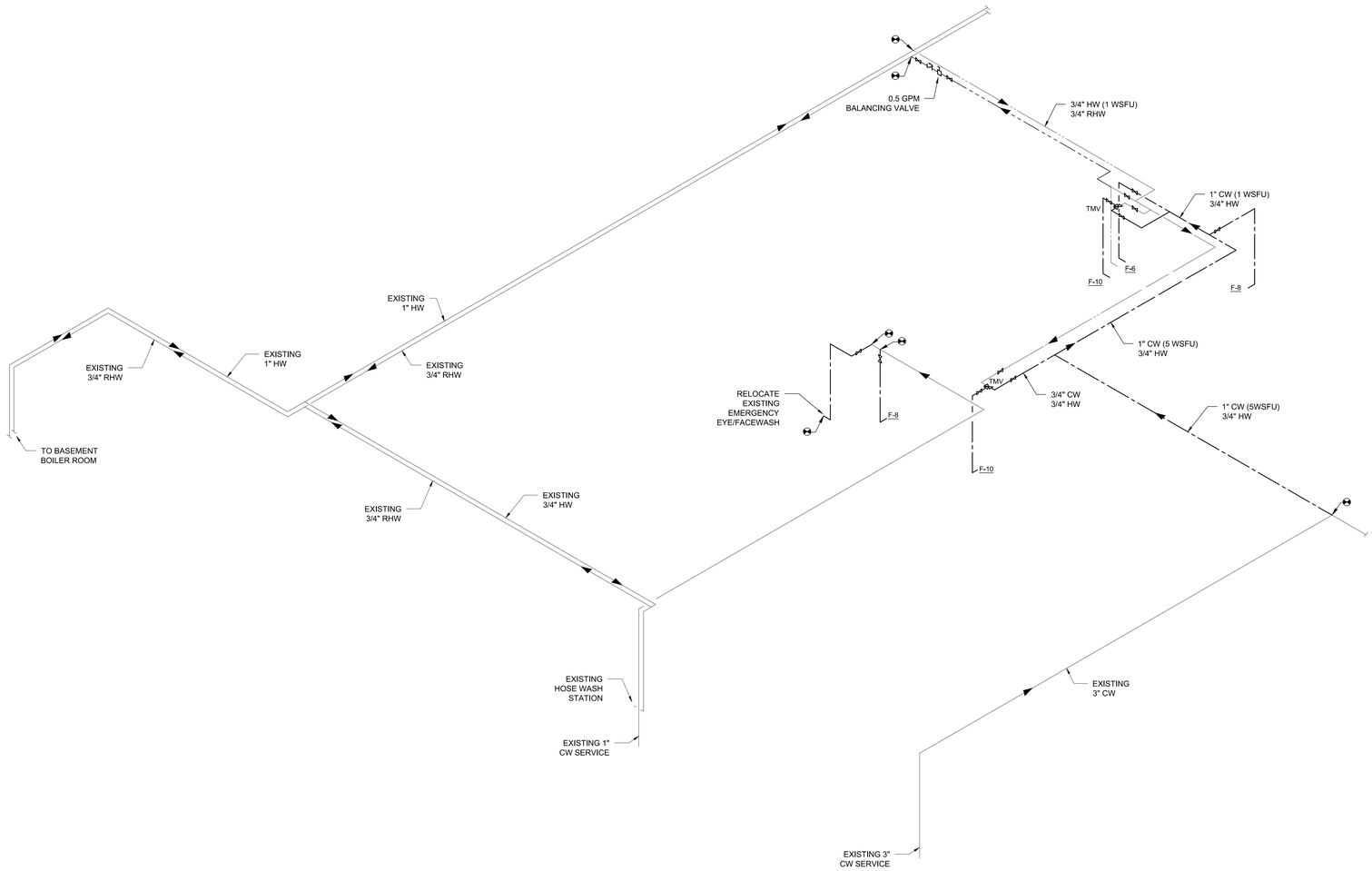

1 FIRST FLOOR PLUMBING PLAN
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DOMESTIC WATER
ISOMETRIC DIAGRAM

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GENERAL STRUCTURAL NOTES

APPLY UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS OR SPECIFICATIONS.

DESIGN CODE

2009 INTERNATIONAL BUILDING CODE WITH WISCONSIN AMENDMENTS

DESIGN LOADS

FLOOR LIVE LOADS

FLOOR LOCATION	LIVE LOAD	REDUCED	PARTITIONS
MEZZANINE FLOOR	125 PSF	NO	NA

SNOW LOAD

GROUND SNOW LOAD, Pg.. 30 PSF
FLAT ROOF SNOW LOAD, Pf.. 21 PSF
SNOW IMPORTANCE FACTOR...1.0
SNOW EXPOSURE FACTOR, Ce....................................... 1.0
THERMAL FACTOR, Ct.. 1.0

SEISMIC DESIGN DATA

OCCUPANCY CATEGORY.. II
SPECTRAL RESPONSE COEFFICIENT, Sds.................... 0.090
SPECTRAL RESPONSE COEFFICIENT, Sd1..................... 0.073
SITE CLASS.. D
SEISMIC IMPORTANCE FACTOR..................................... 1.0
SEISMIC DESIGN CATEGORY... A

MATERIALS

CAST-IN-PLACE CONCRETE

F'c=4000 PSI AT 28 DAYS

CONCRETE MASONRY

CONCRETE MASONRY UNITS..ASTM C90 TYPE "N-1"
MASONRY GROUT..F'c=3000 PSI AT 28 DAYS
MASONRY MORTAR..ASTM C270 (TYPE S UNO)

STEEL REINFORCING

REINFORCING BARS...ASTM A615 (GRADE 60)
DEFORMED BAR ANCHORS...ASTM A496
WELDED WIRE FABRIC..ASTM A185
EPOXY COATED REINFORCING BARS..........................ASTM A775 OR ASTM A934

STRUCTURAL STEEL

W SHAPES.. ASTM A992 (Fy=50 KSI)
PLATES AND SHAPES OTHER THAN W........................ASTM A36 (Fy=36 KSI)
RECTANGULAR HSS..ASTM A500, GRADE B (Fy=46 KSI)
BOLTS.. ASTM A325/ASTM A490
ANCHOR RODS... ASTM F1554 (Fy=36 KSI)
PIPES...ASTM A53, TYPE E OR S GRADE B = 35 KSI

ANCHORS TO CONCRETE GROUTED MASONRY (BASIS OF DESIGN)

EXPANSION ANCHORS...HILTI KWIK BOLT 3
ADHESIVE ANCHORS..HILTI HIT-HY 20

FOUNDATIONS

FOUNDATION DESIGN PARAMETERS ARE BASED ON RECOMMENDATIONS FROM THE "GEOTECHNICAL ENGINEERING REPORT, NW GARAGE COMPRESSED NATURAL GAS FUELING STATION, MILWAUKEE, WISCONSIN" PREPARED BY GESTRA, DATED MARCH 25, 2013 (GESTRA PROJECT NO. 13012-10).

REFER TO THE GEOTECHNICAL REPORT FOR SOIL CLASSIFICATION.

FOOTINGS HAVE BEEN DESIGNED FOR A MAXIMUM NET SOIL BEARING PRESSURE OF 3000 PSF.

IF THE SOIL AT THE FOUNDATION OR SLAB-ON-GRADE ELEVATIONS SHOWN IS OF QUESTIONABLE BEARING VALUE, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED AT ONCE FOR RESOLUTION.

ALL FOUNDATIONS SHALL BE CENTERED ON WALLS OR COLUMNS UNO.

WHERE FILL MATERIAL IS PLACED ON BOTH SIDES OF WALLS, IT SHALL BE PLACED IN LAYERS ALTERNATELY ON OPPOSITE SIDES TO MAINTAIN LEVELS THAT WILL AVOID DISPLACEMENT OF, OR DAMAGE TO, THE WALLS.

CONTINUOUS FOOTINGS SHALL BE STEPPED AT A SLOPE OF ONE VERTICAL TO TWO HORIZONTAL.

PROTECT IN-PLACE FOUNDATIONS AND SLABS ON GRADE FROM FROST PENETRATION UNTIL PROJECT COMPLETION.

SLOPE BETWEEN ADJACENT FOOTINGS OR EXCAVATIONS SHALL NOT EXCEED ONE VERTICAL TO TWO HORIZONTAL. STEP FOOTINGS DOWN AS NECESSARY TO MAINTAIN THIS SLOPE.

CAST-IN-PLACE CONCRETE

CODE FOR REINFORCED CONCRETE DESIGN AND CONSTRUCTION - ACI 318.

ARRANGEMENT AND BENDING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ACI DETAILING MANUAL, LATEST EDITION.

REINFORCING STEEL SHALL BE NEW DEFORMED BARS.

CLEAR COVER REQUIREMENTS:

CONCRETE COVER TO REINFORCING STEEL, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:

SURFACES CAST AGAINST EARTH..3"

FORMED SURFACES IN CONTACT WITH EARTH OR EXPOSED TO WEATHER:
#6 OR LARGER...2"
#5 OR SMALLER..1 1/2"

FORMED SURFACES NOT IN CONTACT WITH EARTH OR EXPOSED TO WEATHER:
WALLS, SLABS...1"
PIERS...1 1/2"

WHERE REINFORCING BARS ARE SHOWN CONTINUOUS, PROVIDE CLASS B TENSION LAP SPLICES (12" MINIMUM) EXCEPT WHERE NOTED OR DETAILED OTHERWISE. LAP WWF WIRE SPACING PLUS 2" (6" MINIMUM).

DETAIL AND PROVIDE SUITABLE WIRE SPACERS, CHAIRS, TIES, ETC., FOR SUPPORTING REINFORCING STEEL IN THE PROPER POSITION WHILE PLACING CONCRETE.

ALL CHAIRS SUPPORTED BY GRADE SHALL INCLUDE SAND PLATES.

BAR SUPPORTS WHICH COME IN CONTACT WITH EXPOSED SURFACES SHALL HAVE PLASTIC OR RUBBER TIPS OR BE STAINLESS STEEL.

PROVIDE DOWELS OF SAME SIZE AND SPACING AS VERTICAL WALL OR COLUMN PIER REINFORCING AT THE FOUNDATION, UNLESS NOTED OTHERWISE. DOWELS SHALL BE TIED IN PLACE PRIOR TO CONCRETE PLACEMENT.

PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF WALLS AND FOOTINGS.

DRAWINGS SHOWING LOCATION OF CONSTRUCTION AND CONTROL JOINTS AND PLACING SEQUENCE SHALL BE SUBMITTED FOR ENGINEER'S REVIEW PRIOR TO PREPARATION OF THE REINFORCING STEEL SHOP DRAWINGS.

HORIZONTAL CONSTRUCTION JOINTS ARE NOT PERMITTED IN CONCRETE MEMBERS UNLESS SHOWN ON THE DRAWINGS OR APPROVED IN ADVANCE. VERTICAL CONSTRUCTION JOINTS OR BULKHEADS SHALL BE MADE AT MIDSPAN OR POINTS OF MINIMUM SHEAR.

SIZE OF CONCRETE POURS BETWEEN CONSTRUCTION JOINTS SHALL BE LIMITED TO:

WALLS................................MAXIMUM LENGTH 100 FT WITH INTERMEDIATE CONTROL JOINTS AT APPROXIMATELY 30 FT. DO NOT LOCATE WITHIN 5 FT OF A CORNER OR COLUMN. COORDINATE LOCATIONS WITH VENEER JOINTS.

SLABS ON GRADE.............3600 SQUARE FT WITH MAXIMUM DIMENSION OF 60 FT; PLACE IN LANE OR STRIP FASHION WITH INTERMEDIATE CONTROL JOINTS AT APPROXIMATELY 20 FT OR 15 FT FOR EXPOSED CONCRETE SURFACES. COORDINATE LOCATIONS WITH FLOOR FINISHES.

CONCRETE ON..................10000 SQUARE FT WITH MAXIMUM
METAL DECK DIMENSION OF 100 FT.

VERIFY LOCATION OF OPENINGS SHOWN THROUGH CONCRETE SLABS OR WALLS AND COORDINATE ANY ADDITIONAL REQUIRED OPENINGS WITH OTHER TRADES AND THE ARCHITECT/ENGINEER.

CONCRETE EXPOSED TO FREEZING AND THAWING SHALL CONTAIN 6% (PLUS OR MINUS 1.5%) ENTRAINED AIR.

ALUMINUM CONDUIT OR PIPING MAY NOT BE EMBEDDED IN ANY CONCRETE.

CALCIUM CHLORIDE IS NOT PERMITTED AS A CONCRETE ADDITIVE.

SLEEVES FOR ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ITEMS ARE NOT SHOWN ON THE STRUCTURAL FRAMING PLANS. EXAMINE ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS TO DETERMINE SIZE AND LOCATION OF REQUIRED SLEEVES.

STRUCTURAL STEEL

LATEST A.I.S.C. MANUAL AND SPECIFICATIONS APPLY.

WELDING ELECTRODES SHALL BE 70 KSI.

ALL WELDING AND TESTING OF WELDS SHALL BE IN ACCORDANCE WITH AMERICAN WELDING SOCIETY CODES AND RECOMMENDATIONS.

ALL WELDING SHALL BE BY WELDERS HOLDING CURRENT VALID CERTIFICATES IN THE TYPE OF WELD REQUIRED.

CONTRACTOR SHALL PROVIDE THE NECESSARY BRACING DURING ERECTION AND UNTIL ALL STEEL IS PLUMB AND SECURED.

FIELD CUTTING OR OTHER FIELD MODIFICATIONS TO STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT SPECIFIC PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.

ALL BEAM COPES MUST BE MADE TO A RADIUS (1/2" MINIMUM).

STRUCTURAL STEEL FRAMING SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.

INSTALL EXPANSION ANCHORS IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS.

STEEL FABRICATOR SHALL COMPLY WITH OSHA STANDARDS IN DETAILING AND FABRICATING STEEL FOR ERECTION.

STEEL DECKING

STEEL DECK INSTITUTE SPECIFICATIONS AND RECOMMENDATIONS APPLY.

SEE PLANS FOR DECK INFORMATION.

PROVIDE CLOSURE PLATES AND ACCESSORIES AS REQUIRED.

FORM DECK IS DESIGNED AS UNSHORED.

FORM DECK SHALL BE ERECTED AND WELDED TO SUPPORTING STEEL AND HAVE SIDE LAPS CONNECTED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

LAP FORM DECK SHEETS ONE-HALF FLUTE AT SIDE LAPS.

MASONRY

PROVIDE REINFORCING BARS AT LOCATIONS INDICATED ON THE DRAWINGS. LAP 48 BAR DIAMETERS AT SPLICES UNLESS NOTED OTHERWISE.

GROUT CORES WITH MASONRY GROUT IN 5'-0" MAXIMUM LIFTS. GROUT LIFT SHALL TERMINATE 1 1/2" BELOW BED JOINT IN WALL. LIFTS SHALL BE CONSOLIDATED USING MECHANICAL VIBRATION.

PROVIDE BAR POSITIONERS AT OR NEAR TOP AND BOTTOM OF LIFT TO MAINTAIN BAR POSITION WHILE GROUTING. BARS MUST BE IN PLACE PRIOR TO GROUTING. PLACEMENT OF STEEL REINFORCEMENT INTO WET GROUT WILL NOT BE PERMITTED.

PROVIDE (2)-#6 VERTICAL BELOW BEAM AND LINTEL BEARINGS AND GROUT CORE FULL HEIGHT UNO. BEARING DISTANCE SHALL BE A MINIMUM OF 8".

PLACE CONSTRUCTION JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF MASONRY EXCEEDS 40'-0", UNLESS NOTED OTHERWISE.

CORES CONTAINING VERTICAL REINFORCING SHALL BE GROUTED SOLID WITH MASONRY GROUT. FILLING CORES WITH MORTAR IS NOT ACCEPTABLE.

PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF WALLS AND BOND BEAMS.

MASONRY STRENGTH NOTES:

F'm = 1500 PSI, EXCEPT WHERE NOTED OTHERWISE ON DRAWINGS.

THE REQUIRED STRENGTH SHALL BE VERIFIED BY THE UNIT STRENGTH METHOD PER IBC 2105.2.2.1. COMPRESSIVE STRENGTH OF MASONRY UNITS SHALL BE AS REQUIRED PER IBC TABLE 2105.2.2.1.2 FOR TYPE 'M' OR 'S' MORTAR.

IF THE MASONRY DOES NOT MEET THE REQUIREMENTS FOR APPLICATION OF THE UNIT STRENGTH METHOD, PRISM TESTING PER IBC 2105.2.2.2 AND ASTM C1314 SHALL BE USED. THE COMPRESSIVE STRENGTH OF THE MASONRY SHALL BE TAKEN AS THE AVERAGE STRENGTH OF THREE PRISMS.

ANCHORAGE TO CONCRETE AND MASONRY

EXPANSION ANCHORS TO CONCRETE SHALL HAVE CURRENT ICC-ES REPORT APPROVAL FOR USE WITH CRACKED CONCRETE IN ACCORDANCE WITH ACCEPTANCE CRITERIA AC193 AND ACI 355.2.

EXPANSION ANCHORS TO GROUTED MASONRY SHALL HAVE CURRENT ICC-ES REPORT APPROVAL FOR USE WITH GROUTED MASONRY IN ACCORDANCE WITH ACCEPTANCE CRITERIA AC01.

ADHESIVE ANCHORS TO MASONRY SHALL HAVE CURRENT ICC-ES REPORT APPROVAL FOR USE WITH GROUTED MASONRY IN ACCORDANCE WITH ACCEPTANCE CRITERIA AC58, INCLUDING CREEP TESTING.

CURRENT ICC-ES REPORTS SHALL BE SUBMITTED UPON REQUEST.

ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII).

ALL PERSONNEL INSTALLING SPECIFIED ANCHORING PRODUCTS SHALL BE TRAINED ONSITE BY THE MANUFACTURER ON PROPER INSTALLATION TECHNIQUE. CERTIFICATION FROM THE MANUFACTURER SHALL BE AVAILABLE UPON REQUEST. SEE ADHESIVE ANCHOR NOTES FOR ADDITIONAL INSTALLER CERTIFICATION REQUIREMENTS.

ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

COORDINATE CONSTRUCTION SUCH THAT INTERFERENCE OF REINFORCING STEEL WITH CONCRETE ANCHOR PLACEMENT DOES NOT OCCUR. IF REINFORCING STEEL IS ENCOUNTERED DURING DRILLING, ADJUST THE ANCHOR LOCATION IF POSSIBLE AND NOTIFY THE STRUCTURAL ENGINEER. DO NOT CUT OR DAMAGE REINFORCING STEEL DURING DRILLING, UNLESS EXPLICITLY PERMITTED BY THE STRUCTURAL ENGINEER OF RECORD.

EXPANSION ANCHORS TO CONCRETE

EXPANSION ANCHORS INDICATED IN THE DRAWINGS ARE BASED UPON DESIGN VALUES (BASIS OF DESIGN) FOR CARBON STEEL HILTI KWIK BOLT 3 EXPANSION ANCHORS WITH THE FOLLOWING MINIMUM EFFECTIVE EMBEDMENTS UNO:

3/4" DIA...................4 3/4"
5/8" DIA...................4"
1/2" DIA...................3 1/4"
3/8" DIA...................2"

EXPANSION ANCHORS TO GROUTED MASONRY

EXPANSION ANCHORS INDICATED IN THE DRAWINGS ARE BASED UPON DESIGN VALUES (BASIS OF DESIGN) FOR CARBON STEEL HILTI KWIK BOLT 3 EXPANSION ANCHORS WITH THE FOLLOWING MINIMUM EFFECTIVE EMBEDMENTS UNO:

3/4" DIA...................5"
5/8" DIA...................4"
1/2" DIA...................3 1/4"
3/8" DIA...................2"

ADHESIVE ANCHORS TO MASONRY

ADHESIVE ANCHORS INDICATED IN THE DRAWINGS ARE BASED UPON DESIGN VALUES (BASIS OF DESIGN) FOR HILTI HIT-HY 20 ADHESIVE AND HILTI STANDARD HAS THREADED RODS INSTALLED IN MASONRY WITH MINIMUM EFFECTIVE EMBEDMENTS AS INDICATED IN THE DRAWINGS.

IF TEMPERATURE IS EXPECTED TO DROP BELOW 14°F, PROVIDE ENVIRONMENTAL ENCLOSURE WITH SUPPLEMENTAL HEAT TO ENSURE THE INTERNAL TEMPERATURE OF THE CONCRETE SUBSTRATE DOES NOT FALL BELOW 14°F UNTIL FULLY CURED IN ACCORDANCE WITH THE MPII.

INSTALLED ANCHORS SHALL BE SECURELY FIXED IN-PLACE TO PREVENT DISPLACEMENT WHILE THE ADHESIVE CURES. UNLESS INDICATED OTHERWISE IN THE DRAWINGS, ANCHORS SHALL BE INSTALLED PERPENDICULAR TO THE MASONRY SURFACE. ANCHORS DISPLACED BEFORE FULL ADHESIVE CURE SHALL BE CONSIDERED DAMAGED AND REPLACED AT THE CONTRACTORS EXPENSE.

ANCHORS OTHER THAN THOSE LISTED AS BASIS OF DESIGN OR AS DETAILED IN THE STRUCTURAL CONSTRUCTION DOCUMENTS MUST PROVIDE EQUAL OR GREATER CAPACITY. SUBMIT A SUBSTITUTION REQUEST WITH A CURRENT ICC-ES REPORT AND SIGNED STRUCTURAL CALCULATIONS PERFORMED BY AN ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED INDICATING THAT THE ALTERNATE ANCHOR TYPE, SPACING, AND EMBEDMENT PROVIDE EQUAL OR GREATER CAPACITY THAN THE BASIS OF DESIGN INCLUDED IN THE CONSTRUCTION DOCUMENTS.

MASONRY WALL LINTEL SCHEDULE

TYPE	DESCRIPTION	REMARKS
L1	12" WIDE x 8" HIGH CMU LINTEL W/ 2-#5 CONT 8" BEARING EACH END	CORE FILL (2) #6 VERT @ JAMBS
L2	W16x36 W/ 5/16"x11" BOTTOM PLATE	SEE 11/S201

ABBREVIATIONS

A	
AB	ANCHOR BOLT
ABV	ABOVE
ADDL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE
ADJC	ADJACENT
AES	ARCHITECTURALLY EXPOSED FABRICATIONS STEEL
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISHED FLOOR
ANC	ANCHOR(AGE)
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECT(URAL)
B	
BFE	BOTTOM OF FOOTING ELEVATION
BM	BEAM
BOT	BOTTOM
BRDG	BRIDGING
BRG	BEARING
BTWN	BETWEEN
C	
C	AMERICAN STANDARD CHANNEL
CANT	CANTILEVER
CIP	CAST IN PLACE
CJ	CONTROL/CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTER LINE
CLR	CLEAR(ANCE)
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPOSITE
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINU(E)(OUS)(ATION)
D	
D&E	DRILL AND EPOXY GROUT
DBA	DEFORMED BAR ANCHOR
DBE	DECK BEARING ELEVATION
DET	DETAIL
DIA	DIAMETER
DL	DEAD LOAD
DO	DITTO
DWG(S)	DRAWING(S)
DWL	DOWEL (REBAR)
E	
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT (W/O COVER ASSEMBLY)
EL	ELEVATION
ELEV	ELEVATOR
EQ	EQUAL
ES	EACH SIDE
EW	EACH WAY
EXG	EXISTING
F	
FD	FLOOR DRAIN
FDN	FOUNDATION
FFE	FINISH FLOOR ELEVATION
FLG	FLANGE
FS	FAR SIDE/FOOTING STEP
FTG	FOOTING
G	
GA	GAUGE
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
H	
HORIZ	HORIZONTAL
HPT	HIGH POINT
HSS	HOLLOW STRUCTURAL SECTION
I	
IF	INSIDE FACE
INFO	INFORMATION
J	
JBE	JOIST BEARING ELEVATION
JST	JOIST
JT	JOINT
K	
K	KIP (1000 POUNDS)
L	
L	ANGLE
LB	POUND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCAT(E)(ION)
LONG	LONGITUDINAL(LY)
LPT	LOW POINT
LTL	LINTEL
LW	LIGHTWEIGHT
M	
MAS	MASONRY
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MFR	MANUFACTURER
MIN	MINIMUM
N	
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NSG	NON-SHRINK GROUT
NTS	NOT TO SCALE
NW	NORMAL WEIGHT
O	
OC	ON CENTER
OF	OUTSIDE FACE
OPG	OPENING
OPP	OPPOSITE
P	
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECT(ION)(OR)
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST TENSION(ED)(ING)
PTD	PAINTED
R	
R	RADIUS/RADII
RD	ROOF DRAIN
REF	REFER(ENCE)
REINF	REINFORC(E)(ED)(ING)(EMENT)
REQD	REQUIRED
S	
S	S SHAPE
SCHED	SCHEDULE
SIM	SIMILAR
SOG	SLAB ON GRADE
SPEC(S)	SPECIFICATION(S)
SRCJ	SPECIALLY ROUGHENED CONSTRUCTION JOINT
SS	STAINLESS STEEL
STD	STANDARD
STIF	STIFFENER
STL	STEEL
STRUC	STRUCTUR(E)(AL)
SYM	SYMMETR(Y)(ICAL)
T	
T&B	TOP AND BOTTOM
TBE	TOP OF BEAM ELEVATION
TCE	TOP OF PILE CAP (DRILLED PIER CAP) ELEVATION
TDE	TOP OF DECK ELEVATION
TEMP	TEMPERATURE/TEMPORARY
TFE	TOP OF FOOTING ELEVATION
TJE	TOP OF JOIST ELEVATION
TLE	TOP OF LEDGE ELEVATION
TME	TOP OF MASONRY ELEVATION
TPE	TOP OF PIER ELEVATION
TRANSV	TRANSVERSE
TSE	TOP OF SLAB ELEVATION
TWE	TOP OF WALL ELEVATION
TYP	TYPICAL
U	
UNO	UNLESS NOTED OTHERWISE
V	
VERT	VERTICAL
VIF	VERIFY IN FIELD
VR	VAPOR RETARDER
W	
W	W SHAPE
W/	WITH
W/O	WITHOUT
WD	WOOD
WL	WIND LOAD
WPT	WORKPOINT
WT	WEIGHT/STRUCTURAL TEE
WWF	WELDED WIRE FABRIC
X	
XP(D)	EXPOSE(D)

SPECIAL SYMBOLS

@	AT	/	PER
Ø	DIAMETER	⊥	PERPENDICULAR

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City of Milwaukee Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

REVISION HISTORY - THIS SHEET

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GENERAL STRUCTURAL NOTES AND ABBREVIATIONS

COMM. NO.	1203-005-03
SCALE	1" = 1'-0"
DATE	September 2, 2014
DRAWN	EMOORE

Final RTA

S001

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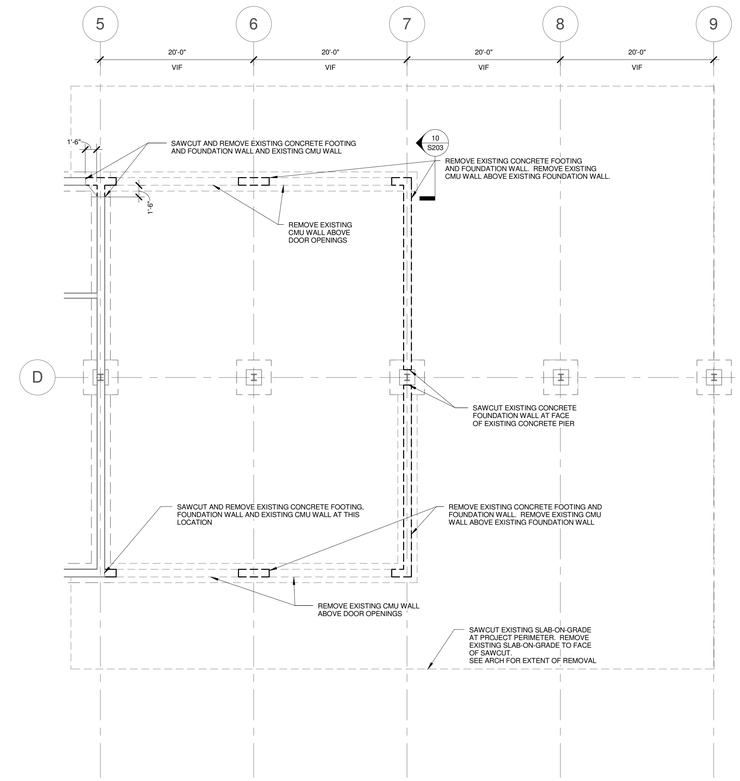


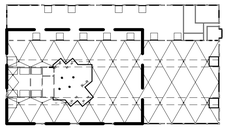
1 PARTIAL DEMO PLAN
1/8" = 1'-0"

City of Milwaukee Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

KEYPLAN



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PARTIAL DEMO PLAN

COMM. NO.	1203-005-03
SCALE	1/8" = 1'-0"
DATE	September 2, 2014
DRAWN	EMOORE

Final RTA

S100

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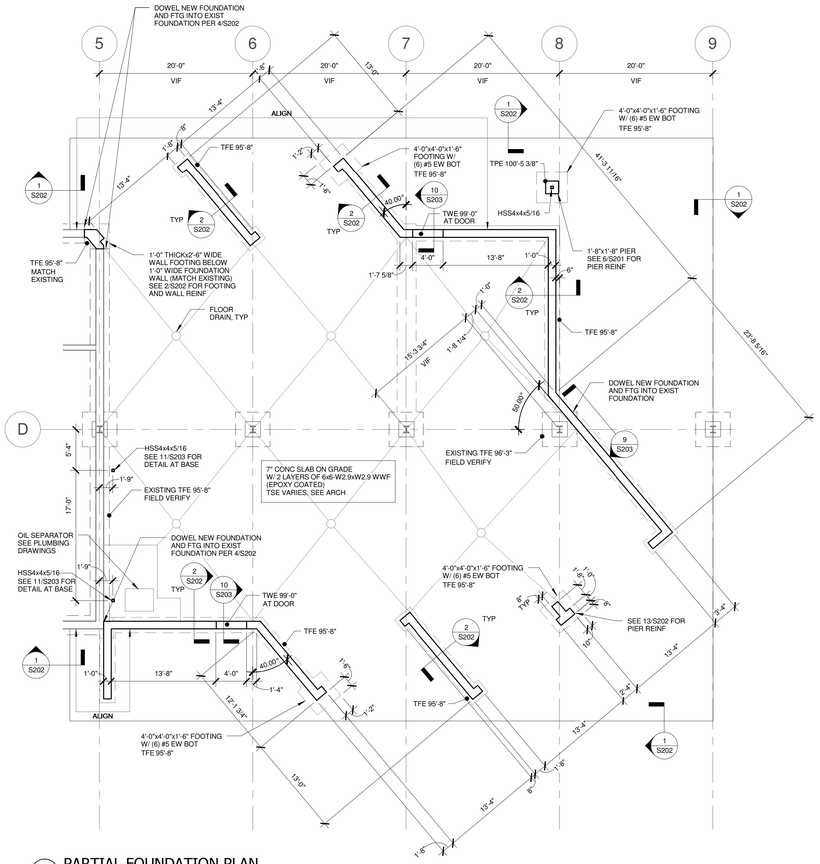
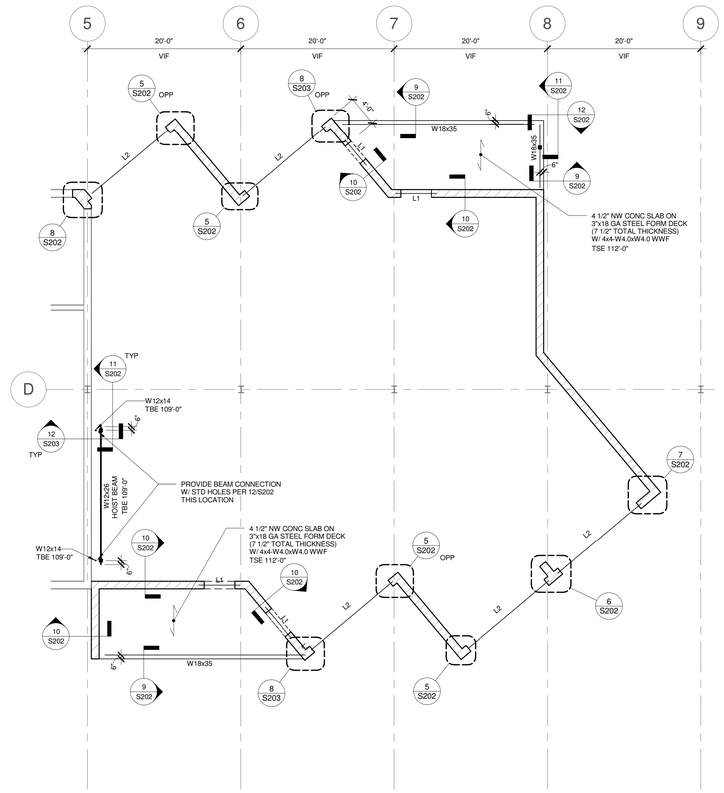
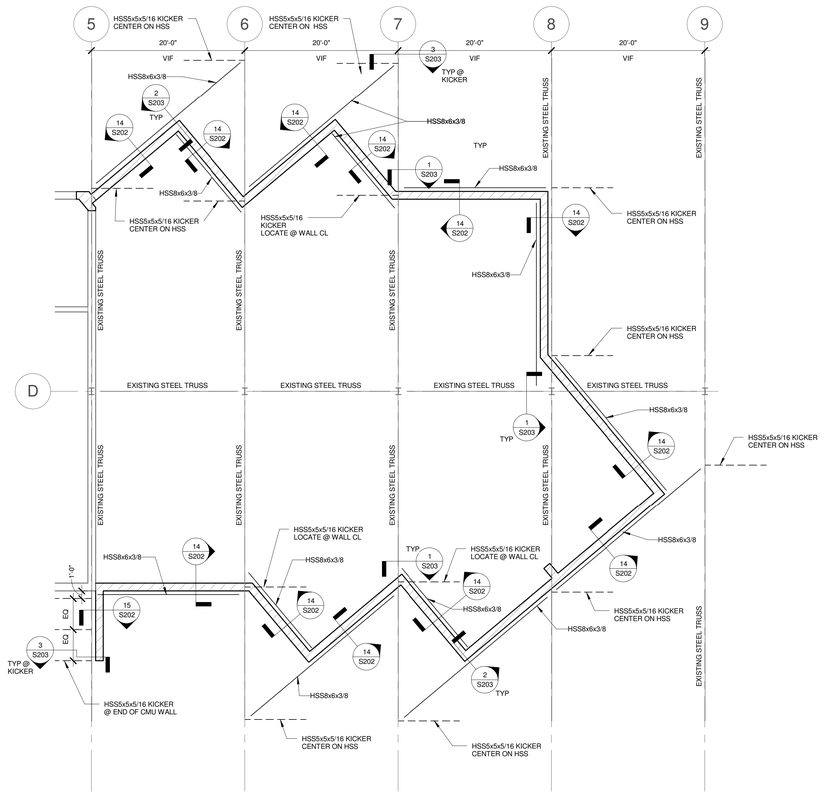


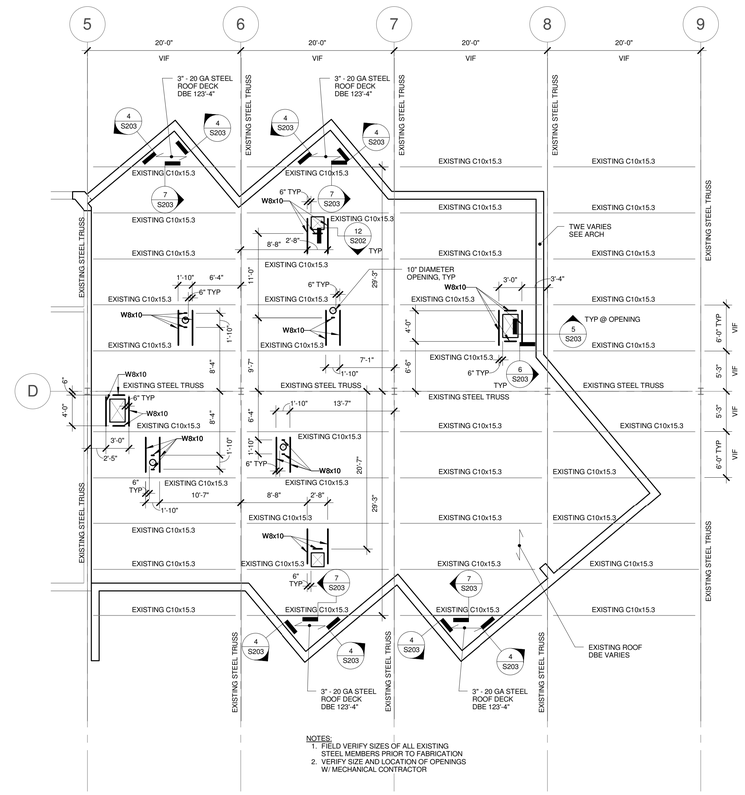
1 PARTIAL FOUNDATION PLAN
1/8" = 1'-0"



2 PARTIAL PLAN AT MEZZANINE ELEVATION
1/8" = 1'-0"



3 PARTIAL PLAN AT BOTTOM CHORD OF EXISTING STEEL TRUSSES
1/8" = 1'-0"



NOTES:
1. FIELD VERIFY SIZES OF ALL EXISTING STEEL MEMBERS PRIOR TO FABRICATION
2. VERIFY SIZE AND LOCATION OF OPENINGS W/ MECHANICAL CONTRACTOR

4 PARTIAL PLAN AT TOP OF CMU WALLS
1/8" = 1'-0"

City of Milwaukee Department of Public Works

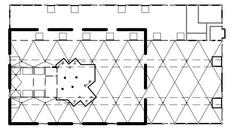
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

SHEET NOTES

1. REFER TO GENERAL STRUCTURAL NOTES ON SHEET S001
2. REFER TO S201 FOR TYPICAL SECTIONS AND DETAILS
3. ALL FOOTINGS ARE CENTERED UNDER COLUMNS AND WALLS, UNO
4. FOR DIMENSIONS NOT SHOWN ON STRUCTURAL PLANS REFER TO ARCHITECTURE
5. ⟷ INDICATES SPAN DIRECTION OF DECK
6. VERIFY SIZE AND LOCATION OF OPENINGS WITH RESPECTIVE CONTRACTORS

KEYPLAN



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PARTIAL PLANS

COMM. NO.	1203-005-03
SCALE	1/8" = 1'-0"
DATE	September 2, 2014
DRAWN	EMOORE

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S200

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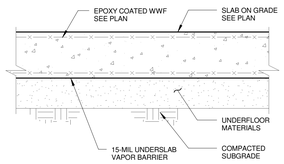
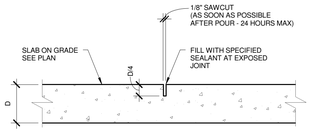
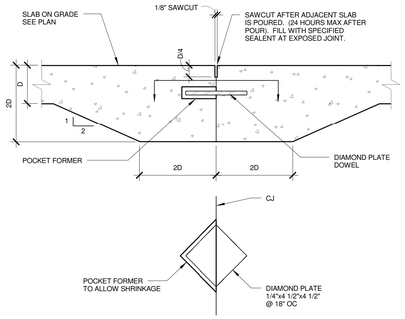


NOTE:
MATERIALS, PLACEMENT AND COMPACTION SHALL COMPLY WITH CIVIL SPECIFICATIONS

1 TYPICAL SLAB ON GRADE
NTS

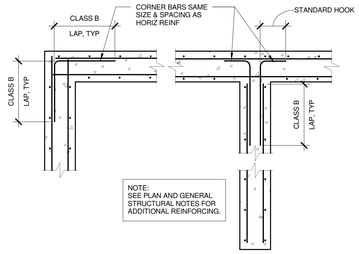


2 TYPICAL SAW CUT
CONTROL JOINT - SLAB ON GRADE
NTS

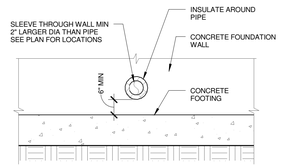


PLAN VIEW OF PLATE DOWEL

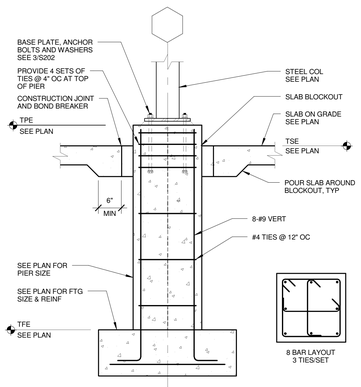
3 TYPICAL CONSTRUCTION JOINT - SLAB ON GRADE
NTS



4 TYPICAL CONCRETE WALL INTERSECTIONS
NTS

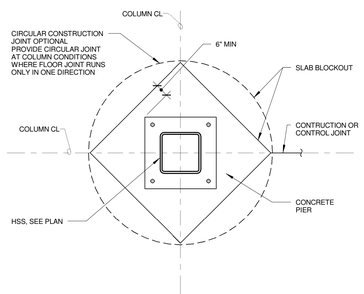


5 TYPICAL UTILITY OPENING
THROUGH FOUNDATION WALL
NTS



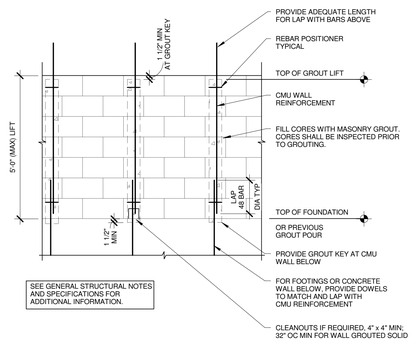
NOTES:
1. PROVIDE DOWELS FROM PIER TO FOOTING THAT LAP AND ARE THE SAME SIZE AND NUMBER AS VERTICAL BARS.
2. AT SINGLE LEG TIES, ALTERNATE LOCATIONS OF 135° HOOKED ENDS.

6 TYPICAL INTERIOR COLUMN PIER AND FOOTING
NTS

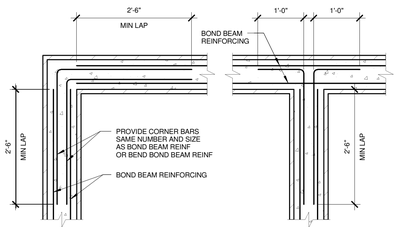


TYPICAL SLAB ON GRADE

7 BLOCKOUT AT STEEL COLUMNS
NTS



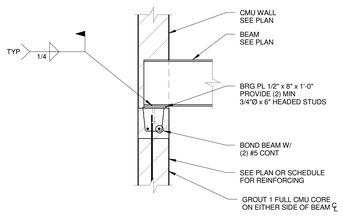
8 TYPICAL GROUTING AT CMU WALLS
NTS



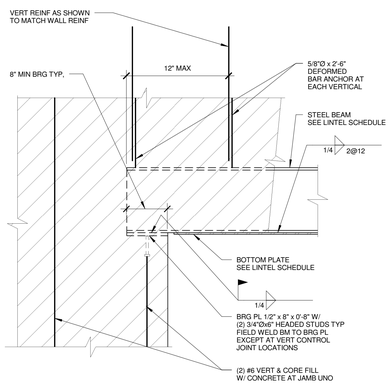
A WALL CORNER

B WALL INTERSECTION

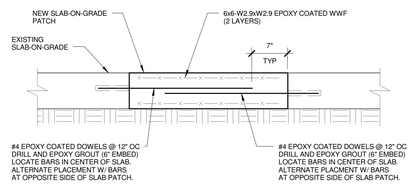
9 TYPICAL CMU BOND BEAM REINFORCEMENT PLACEMENT
NTS



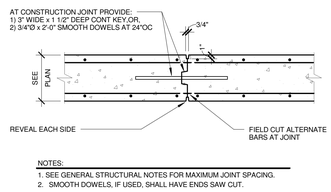
10 TYPICAL BEAM BEARING ON CMU WALL
NTS



11 TYPICAL LINTEL BEARING DETAIL IN CMU WALL
NTS

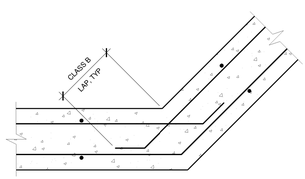


12 TYPICAL SLAB PATCH AT PIPE TRENCH
1" = 1'-0"

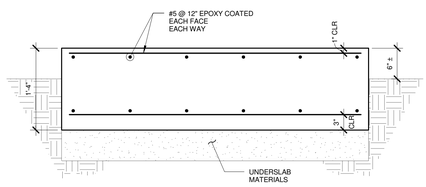


NOTES:
1. SEE GENERAL STRUCTURAL NOTES FOR MAXIMUM JOINT SPACING.
2. SMOOTH DOWELS, IF USED, SHALL HAVE ENDS SAW CUT.

13 CONTROL JOINT IN WALL
3/4" = 1'-0"



14 CONCRETE WALL INTERSECTION BEND IN WALL
1" = 1'-0"



NOTE:
1. MATERIALS, PLACEMENT AND COMPACTION SHALL COMPLY WITH CIVIL SPECIFICATIONS
2. PROVIDE VERTICAL STEEL CHANNELS EMBEDDED IN EQUIPMENT PAD TO SUPPORT CNG POWER DISTRIBUTION CABINET WHERE REQUIRED. COORDINATE CHANNEL SIZE AND LOCATION WITH EQUIPMENT SUPPLIER PRIOR TO PLACING EQUIPMENT PAD.
3. TYPICAL EQUIPMENT PAD SHALL BE LOCATED BENEATH GAS COMPRESSOR NO. 2, CNG STORAGE TANKS, AND CNG POWER DISTRIBUTION CABINET.

15 TYPICAL EQUIPMENT PAD
1" = 1'-0"

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

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TYPICAL SECTIONS AND DETAILS

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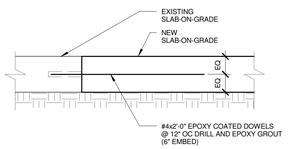
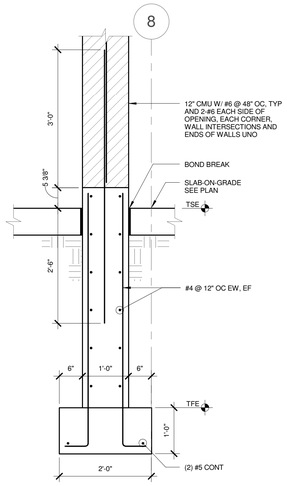
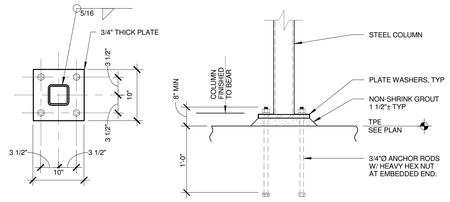


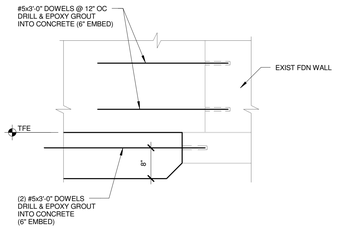
1 SECTION
1" = 1'-0"



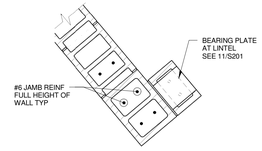
2 SECTION
3/4" = 1'-0"



3 DETAIL
1" = 1'-0"

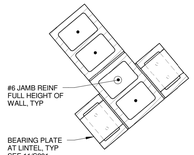


4 SECTION
3/4" = 1'-0"



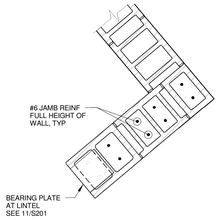
NOTE:
SEE 2/S202 FOR TYPICAL WALL REINF

5 DETAIL
3/4" = 1'-0"



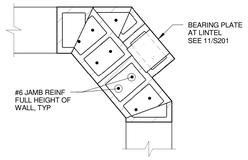
NOTE:
PROVIDE DOWELS MATCHING CMU REINFORCEMENT
BETWEEN CMU AND CONCRETE PIER.
SEE 2/S202 FOR DOWEL LENGTH.

6 DETAIL
3/4" = 1'-0"



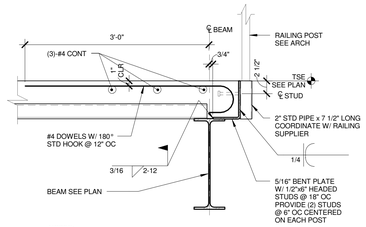
NOTE:
SEE 2/S202 FOR TYPICAL WALL REINF

7 DETAIL
3/4" = 1'-0"



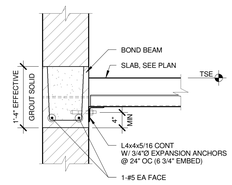
NOTES:
1. PROVIDE MINIMUM OF 4 CORES W/ 2-#6 FULL HEIGHT BARS PER CORE AS SHOWN.
2. FULLY GROUT ALL CORES AND PROVIDE 1-#6 BAR IN EACH CORE EXCEPT AS INDICATED IN NOTE 1.

8 DETAIL
3/4" = 1'-0"



NOTES:
1. WELD DECK TO SUPPORTS W/ 5/8" PUDDLE WELDS @ 12" OC
2. PROVIDE #12 GALVANIZED SCREWS AT 24" OC AT SIDE LAP ATTACHMENT
3. DECK ORIENTATION VARIES, SEE PLAN.

9 SECTION
1" = 1'-0"



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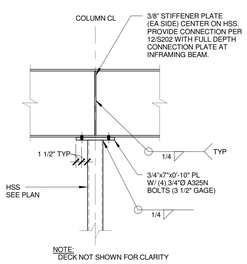
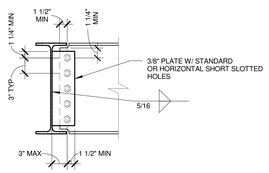


NOTE:
DECK NOT SHOWN FOR CLARITY

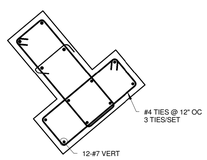
11 SECTION
3/4" = 1'-0"



CONNECTION SCHEDULE	
BEAM SIZE	NUMBER OF 3/4"Ø A325-N BOLTS
W8	2
W12	3
W18	5

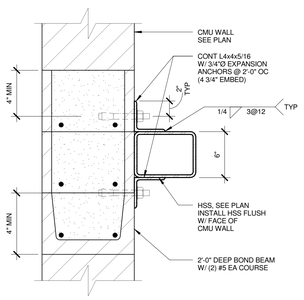
NOTE:
FOLLOW AISC CRITERIA FOR FRAMED BEAM CONNECTIONS

12 SECTION
1" = 1'-0"

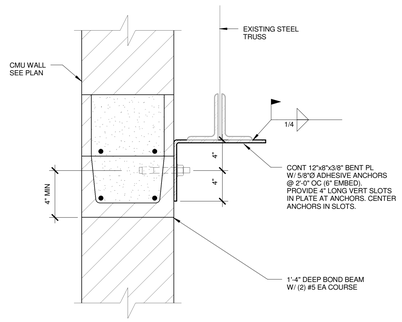


NOTES:
1. PROVIDE DOWELS FROM PIER TO FOOTING THAT LAP AND ARE THE SAME SIZE AND NUMBER AS VERTICAL BARS.
2. AT SINGLE LEG TIES, ALTERNATE LOCATIONS OF 135° HOOKED ENDS.
3. PROVIDE 4 SETS OF TIES @ 4" OC AT TOP OF PIER

13 DETAIL
3/4" = 1'-0"



14 SECTION
1 1/2" = 1'-0"



15 SECTION
1 1/2" = 1'-0"

City of Milwaukee
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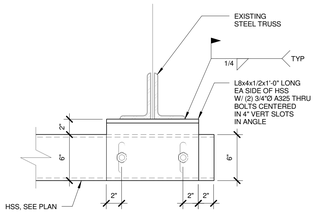
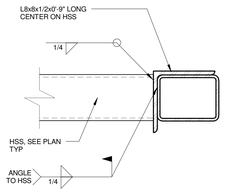
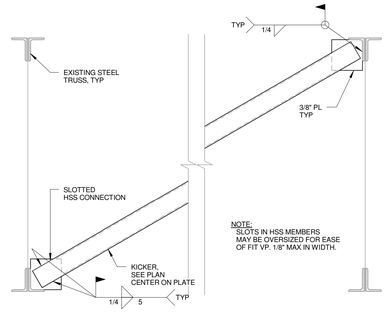


1 SECTION
1 1/2" = 1'-0"



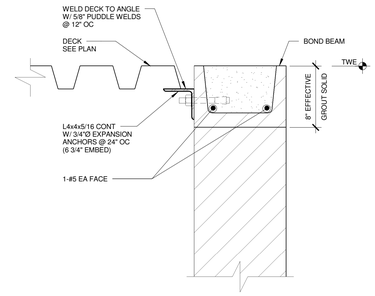
NOTE:
BUILD CMU WALLS AROUND HSS MEMBERS AS REQ'D

2 SECTION
1 1/2" = 1'-0"



NOTE:
SLOTS IN HSS MEMBERS
MAY BE OVERSIZED FOR EASE
OF FIT VP- 1/8" MAX IN WIDTH.

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



4 SECTION
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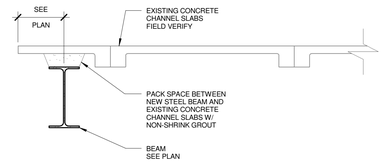

5 SECTION
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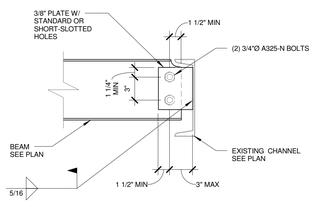
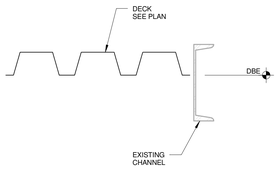


NOTE:
EXISTING ROOF NOT SHOWN FOR CLARITY

6 SECTION
1 1/2" = 1'-0"



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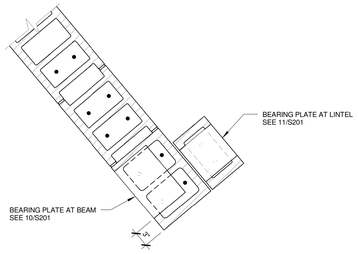
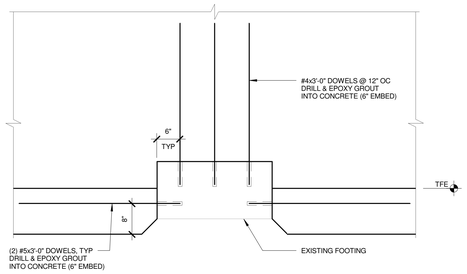
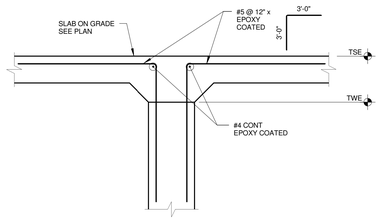


NOTE:
SEE 2/S202 FOR TYPICAL WALL REINF

8 SECTION
1" = 1'-0"



9 SECTION
3/4" = 1'-0"



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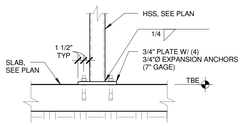

11 SECTION
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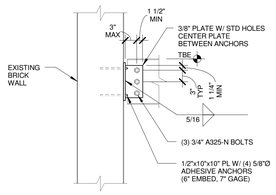

12 SECTION
3/4" = 1'-0"

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GENERAL NOTES

A. FOR SPECIFICATION INFORMATION, REFER TO THE APPLICABLE DOCUMENTS IN THE ORIGINAL BUILDING RECORD PROJECT MANUAL (HGA COMMISSION NUMBER 2882-002-00) ENTITLED "KERRY AMERICAS KERRY CENTRE" AND DATED MARCH 30, 2009. ELECTRICAL CONTRACTOR SHALL REFER TO ELECTRICAL SPECIFICATION FOR MATERIAL AND INSTALLATION METHODS.

B. MOUNT EQUIPMENT AT NOMINAL MOUNTING HEIGHT INDICATED IN ELECTRICAL SYMBOL SCHEDULE UNLESS NOTED ON THE FLOOR PLANS OR DETAILED ON ARCHITECTURAL ELEVATIONS. DIMENSION SHOWN IS TO CENTER LINE OF BOX.

C. INSTALL INSULATED GREEN GROUND CONDUCTOR WITH ALL BRANCH CIRCUIT AND FEEDER CONDUCTORS, SIZED PER NEC 250-95.

D. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO REVIEW ALL OF THE CONSTRUCTION DOCUMENTS FOR THIS PROJECT.

E. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SLEEVES AND/OR OPENINGS WHERE REQUIRED TO RUN CONDUITS THROUGH FLOOR SLABS, WALLS AND BRIDGING, EXCEPT WHERE OTHERWISE NOTED.

F. ELECTRICAL CONTRACTOR IS TO COOPERATE WITH ALL OTHER TRADES OR CONTRACTORS TO RESOLVE ANY CONFLICTS.

G. ALL SERVICES, DEVICES, EQUIPMENT, ETC. SHOWN IN BOLD ARE NEW AND SHALL BE FURNISHED UNDER THIS CONTRACT UNLESS OTHERWISE NOTED.

H. ELECTRICAL CONTRACTOR SHALL VERIFY ALL SIZES AND LOCATIONS OF ALL EXISTING SERVICES.

I. SECURITY EQUIPMENT, DEVICES AND WIRING TO BE PROVIDED AND INSTALLED BY THE OWNER. E.C. SHALL PROVIDE ROUGH-IN ONLY FOR THE SECURITY SYSTEM. COORDINATE ALL REQUIREMENTS WITH OWNER. REFER TO SPECIFICATIONS FOR ROUGH-IN REQUIREMENTS.

J. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PERFORM ALL WORK SHOWN ON THESE CONTRACT DOCUMENTS UNLESS SHOWN OR NOTED OTHERWISE.

K. VOICE/DATA SYSTEM EQUIPMENT, DEVICES AND WIRING TO BE PROVIDED AND INSTALLED BY THE OWNER. E.C. SHALL PROVIDE ROUGH-IN ONLY FOR THE VOICE/DATA SYSTEM. COORDINATE ALL REQUIREMENTS WITH OWNER. REFER TO SPECIFICATIONS FOR ROUGH-IN REQUIREMENTS.

L. TYPICAL HOMERUNS: FOR 120/208V PANELS FED FROM K-RATED TRANSFORMERS, EACH HOMERUN SHALL CONSIST OF A SEPARATE NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR (MAXIMUM OF 3 CIRCUITS PER HOMERUN). 277/480V LIGHTING HOMERUNS SHALL CONSIST OF ONE COMMON NEUTRAL CONDUCTOR ALONG WITH THREE (A,B,C) PHASE CONDUCTORS (MAXIMUM OF 3 CIRCUITS PER HOMERUN). FOR 120/208V PANELS FED FROM NON K-RATED TRANSFORMERS, HOMERUNS SHALL CONSIST OF ONE COMMON NEUTRAL CONDUCTOR ALONG WITH THREE (A,B,C,) PHASE CONDUCTORS (MAXIMUM OF 3 CIRCUITS PER HOMERUN). FOR 20 AMP CIRCUITS, WIRE SIZE SHALL BE 12 AWG., UNLESS INDICATED OTHERWISE ADJACENT TO HOMERUN. WIRE SIZE FOR LARGER CIRCUITS SHALL BE AS REQUIRED BY CODE.

SYMBOL EXPLANATION

DEVICES SHOWN IN THIS MANNER INDICATE THE GANGING TOGETHER OF THE DEVICES UNDER COMMON COVER PLATE.

UPPER CASE LETTER INDICATES LIGHT FIXTURE TYPE. LOWER CASE INDICATES CONTROL. NUMBER INDICATES CIRCUIT CONNECTION. (SEE LUMINAIRE SCHEDULE)

ARROWS CONNECTED TO A DEVICE INDICATE AIMING DIRECTION. ARROWS NEAR ALL EXIT SIGNS IDENTIFY DIRECTION OF ARROW ON FACE PLATE. SHADED PORTION OF EXIT SIGN INDICATES FACE(S) TO BE ILLUMINATED.

THE CIRCUIT DESIGNATION IS SHOWN BY NUMBER FOR ADJACENT EQUIPMENT. EXAMPLE: DUPLEX OUTLET IS ON CIRCUIT NUMBER 2.

THE SYMBOL INDICATES TYPE OF DEVICE TO BE INSTALLED IN THE FLOOR BOX. EXAMPLE: A FLOOR BOX WITH A DUPLEX RECEPTACLE AND A DUPLEX TELEPHONE/DATA OUTLET.

SYMBOL WITH EQUIPMENT IDENTIFICATION. SEE MOTOR OR EQUIPMENT SCHEDULE FOR COMPLETE ELECTRICAL INFORMATION UNLESS NOTED OTHERWISE. EXAMPLE: MOTOR #1.

PLAN KEYED NOTE. SEE KEYED NOTE SCHEDULE ON THAT SHEET. ARROW POINTS TO THE ITEM TO WHICH THE NOTE APPLIES.

LUMINAIRE CONTROL LEGEND

CONTROLLED VIA LCP

LF1 —— LUMINAIRE TYPE
C1-1 —— LCP RELAY
a,b —— ZONE(S) OF CONTROL

CONTROLLED VIA LINE VOLAGE SWITCHES

LF1 —— LUMINAIRE TYPE
26 —— BRANCH CIRCUIT #
a,b —— ZONE(S) OF CONTROL

2-LAMP LUMINAIRES SHOWN IN THIS MANNER INDICATE THAT THE ONE LAMP IS CONTROLLED BY SWITCH (a) AND THE OTHER LAMPS IS CONTROLLED BY SWITCH (b).

3-LAMP LUMINAIRES SHOWN IN THIS MANNER INDICATE THAT THE MIDDLE LAMP IS CONTROLLED BY SWITCH (a) AND THE TWO OUTER LAMPS ARE CONTROLLED BY SWITCH (b).

4-LAMP LUMINAIRES SHOWN IN THIS MANNER INDICATE THAT THE FIRST AND THIRD LAMP ARE CONTROLLED BY SWITCH (a) AND THE SECOND AND FOURTH LAMP ARE CONTROLLED BY SWITCH (b). IN GENERAL, EVERY OTHER LAMP IS CONTROLLED BY THE SAME DESIGNATED SWITCH IN EACH FIXTURE.

4-LAMP LUMINAIRES SHOWN IN THIS MANNER INDICATE THAT PARALLEL LAMPS ARE BOTH CONTROLLED BY SWITCH (a) AND THAT OPPOSITE PARALLEL LAMPS ARE CONTROLLED BY SWITCH (b).

MF3
XX
o,b

BRANCH CIRCUITING EXPLANATION

PANEL BOUNDARY LINE DEFINES AREA SERVED BY LOCAL PANELBOARD.

LINETYPE EXPLANATION

DEMOLITION PLANS (E100 SERIES).
DEVICES, LUMINAIRES, AND EQUIPMENT SHOWN WITH A SOLID LINETYPE ARE EXISTING AND SHALL REMAIN IN PLACE.

DEVICES, LUMINAIRES, AND EQUIPMENT SHOWN WITH A DARK LINETYPE ARE NEW EQUIPMENT BEING INSTALLED AS PART OF THIS WORK.

NEW PLAN (OTHER FLOOR PLANS).
DEVICES, LUMINAIRES, AND EQUIPMENT SHOWN WITH A LIGHT LINETYPE ARE EXISTING AND SHALL REMAIN IN PLACE.

DEVICES, LUMINAIRES, AND EQUIPMENT SHOWN WITH A DARK LINETYPE ARE NEW EQUIPMENT BEING INSTALLED AS PART OF THIS WORK.

ELECTRICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
A,AMP	AMPERE
A/C	AIR CONDITIONING
AFF	ABOVE FINISH FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
APPROX	APPROXIMATELY
ARCH	ARCHITECT, ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AV	AUDIO VISUAL
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
COMB	COMBINATION STARTER
CONN	CONNECTION
CONT	CONTINUOUS OR CONTINUATION
CRT	CATHODE-RAY TUBE
CT	CURRENT TRANSFORMER
CTR	CENTER
CU	COPPER
DC	DIRECT CURRENT
DISC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
EM	EMERGENCY
EP	ELECTRIC PNEUMATIC
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EX	EXISTING
EXH	EXHAUST
XP	EXPLOSION PROOF
F	FUSE
FA	FIRE ALARM
FEC	FOOD EQUIPMENT CONTRACTOR
FL	FLOOR
GALV	GALVANIZED
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTED
GND	GROUND
GYP	GYPSUM
HOA	HAND-OFF-AUTOMATIC SWITCH
HORIZ	HORIZONTAL
HP	HORSEPOWER
HT	HEIGHT
HV	HIGH VOLTAGE
IG	ISOLATED GROUND
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
LV	LOW VOLTAGE
MB	MAIN BREAKER
MC	MECHANICAL (HVAC) CONTRACTOR
MLO	MAIN LUG ONLY
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MMS	MANUAL MOTOR STARTER
MOA	MULTI-OUTLET ASSEMBLY
MTR	MOTOR
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC.
NFSS	NON-FUSED SAFETY SWITCH
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NL	NIGHT LIGHT (24 HOUR LIFE SAFETY)
NTS	NOT TO SCALE
NU	NEAR UNIT
OU	ON UNIT
OL	OVERLOADS
P	POLE
PA	PUBLIC ADDRESS
PC	PLUMBING CONTRACTOR
PE	PNEUMATIC ELECTRIC
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
PP	POWER POLE
PR	PAIR
PRI	PRIMARY
PROJ	PROJECTION
PRV	POWER ROOF VENTILATOR
P/T	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RE	RELOCATED FROM EXISTING
REL	RELOCATE
REQ'D	REQUIRED
SHT	SHEET
S/N	SOLID NEUTRAL
SPEC	SPECIFICATION
SPKR	SPEAKER
SP	SPARE
STD	STANDARD
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYS	SYSTEM
T	TAMPER RESISTANT
TCP	TEMP. CONTROL PANEL
TDD	PAY TEXT TELEPHONE
TEL	TELEPHONE
TERM	TERMINAL
XFMR	TRANSFORMER
TV	TELEVISION
TYP	TYPICAL
UE	UNDERGROUND ELECTRICAL
UG	UNDERGROUND
UH	UNIT HEATER
UT	UNDERGROUND TELEPHONE
V	VOLT
VA	VOLT AMPERES
VBRI	VIEW BOX ROUGH-IN (X-RAY)
VDT	VIDEO DISPLAY TERMINAL
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VSD	VARIABLE SPEED DRIVE
W	WATT
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF

SWITCH DEVICE SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	SINGLE POLE SWITCH	48"
2	2 POLE SWITCH	48"
3	3-WAY SWITCH	48"
4	4-WAY SWITCH	48"
K	KEY OPERATED SWITCH	48"
T	TIMER SWITCH	48"
D	DIMMER/DIMMER CONTROL SWITCH	48"
OSC	OPEN/STOP/CLOSE SWITCH	48"
P	SINGLE POLE PILOT LIGHT SWITCH	48"
	PHOTOCELL	ROOF
M	MOTION OCCUPANCY SENSOR SWITCH	48"
MC	MOMENTARY CONTACT SWITCH	48"
	LINE VOLTAGE CEILING MOUNTED OCCUPANCY SENSOR DUAL TECHNOLOGY	--
LS	LOW VOLTAGE LIMIT SWITCH (SUB DIVIDED ROOMS)	--
LCP-XX-X OR	MASTER OVERRIDE SWITCH - PUSH BUTTON WITH ASSOCIATED TOGGLE SWITCHES	--
	AUTOMATIC DOOR OPENER WITH PUSH-PLATE. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECUTRAL DRAWINGS.	--
	MOTOR	

FIRE ALARM DEVICE SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
S	SMOKE DETECTOR	--
H	HEAT DETECTOR	--
DA	SMOKE DAMPER ACTUATOR	--
S	DUCT SMOKE DETECTOR	--
FS	SPRINKLER FLOW SWITCH	--
TS	TAMPER SWITCH (GATE VALVE SWITCH)	--
CM	ADDRESSABLE CONTROL MODULE (RELAY IAM)	--
MM	ADDRESSABLE MONITOR MODULE (IAM)	--
RTS/I	REMOTE TEST SWITCH	--
ISO	ISOLATION MODULE	
	FIRE ALARM MANUAL PULL STATION	48"
F	FIRE ALARM AUDIO-VISUAL ALARM UNIT (CEILING)	80"
F	FIRE ALARM VISUAL ALARM UNIT (CEILING)	80"
F	FIRE ALARM AUDIO-VISUAL ALARM UNIT (WALL)	
F	FIRE ALARM VISUAL ALARM UNIT (WALL)	
FACP	FIRE ALARM CONTROL PANEL	--
FAAP	FIRE ALARM ANNUCIATOR PANEL	--
NAC	FIRE ALARM NAC POWER EXTENDER	--

LIGHTING SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	CEILING MOUNTED RECESSED DOWNLIGHT	--
	CEILING MOUNTED SURFACE LUMINAIRE	--
	CEILING MOUNTED RECESSED WALL WASHING DOWNLIGHT	--
	CEILING MOUNTED RECESSED INDIRECT LUMINAIRE-CENTER LINE INDICATES ORIENTATION OF DIFFUSER	--
	CEILING MOUNTED RECESSED FLUORESCENT LUMINAIRE	--
	CEILING MOUNTED SURFACE FLUORESCENT LUMINAIRE	--
	WALL MOUNTED RECESSED LUMINAIRE	--
	WALL MOUNTED SURFACE LUMINAIRE	--
	WALL MOUNTED FLUORESCENT LUMINAIRE	--
	UNDERCABINET LUMINAIRE	--
	TRACK MOUNTED LUMINAIRE	--
	FULL SHADING INDICATES LUMINAIRE ON CRITICAL BRANCH	--
	HALF SHADING INDICATES LUMINAIRE ON LIFE SAFETY BRANCH	--
	CEILING MOUNTED EXIT SIGN	--
	WALL MOUNTED EXIT SIGN	--
	WALL MOUNTED DIRECTION HEAD EMERGENCY LIGHT	--
	EXTERIOR POLE MOUNTED LUMINAIRE	--
	EXTERIOR POST TOP MOUNTED LUMINAIRE	--
	BOLLARD	--
	LINEAR INDUSTRIAL LED	--

RECEPTACLE DEVICE SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	SINGLE 120V RECEPTACLE, NORMAL POWER	18"
	DUPLEX 120V RECEPTACLE, NORMAL POWER	18"
	DOUBLE DUPLEX 120V RECEPTACLE, NORMAL POWER	18"
	EMERGENCY DUPLEX 120V RECEPTACLE	18"
	EMERGENCY DOUBLE DUPLEX 120V RECEPTACLE	18"
T	TAMPERPROOF DUPLEX 120V RECEPTACLE	18"
	DUPLEX 125V RECEPTACLE (GROUND FAULT INTERRUPTING)	48"
	DOUBLE DUPLEX 125V RECEPTACLE (GROUND FAULT INTERRUPTING)	48"
	FLOOR MOUNTED DUPLEX 120V RECEPTACLE DEVICE SPECIFIED ON E620.	--
	FLOOR MOUNTED DOUBLE DUPLEX 120V RECEPTACLE DEVICE SPECIFIED ON E620.	--
P	FLUSH MOUNTED POKE-THRU DEVICE DEVICE SPECIFIED ON E620.	--
F	FLUSH MOUNTED FLOOR BOX DEVICE SPECIFIED ON E620.	--
GFI	DUPLEX 120V RECEPTACLE (GROUND FAULT INTERRUPTING)	18"
	SURFACE RACEWAY - DUPLEX DEVICES AS SHOWN	--
PP	POWER POLE - OUTLET DEVICES AS SHOWN	--
	SPECIAL PURPOSE RECEPTACLE	18"
E	SPECIAL PURPOSE RECEPTACLE ON EMERGENCY POWER	18"

POWER DISTRIBUTION SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	MOTOR	--
	SAFETY DISCONNECT SWITCH	--
	MAGNETIC STARTER	--
J	COMBINATION STARTER	--
	MANUAL MOTOR STARTER	--
VSD	VARIABLE-SPEED DRIVE	--
R	RELAY OR CONTACTOR	--
	CONTROL STATION	--
T	TRANSFORMER	--
	POWER DISTRIBUTION PANELBOARD	--
K	KEY INTERLOCK	--

COMMUNICATION DEVICE SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	DATA OUTLET	18"
WM	DATA DEVICE IN SURFACE-MOUNT RACEWAY	--
W	WALL MOUNTED TELEPHONE OUTLET	48"
TV	TELEVISION OUTLET	84"
	INTERCOM OUTLET	48"
M	INTERCOM MASTER STATION	--
	BELL	80"
CP	COMMUNICATION POLE - OUTLET DEVICES AS SHOWN	--
	FLOOR MOUNTED DATA OUTLET DEVICE SPECIFIED ON E620.	--

SECURITY DEVICE SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	CODE CARD READER	48"
EL	DOOR LOCK - ELECTRIC LATCH	--
ES	DOOR LOCK - ELECTRIC STRIKE	--
F	SECURITY CAMERA - FIXED	--
PTZ	SECURITY CAMERA - PAN/TILT/ZOOM	--
D	DURESS ALARM	48"
	DOOR CONTACT	--

MISCELLANEOUS SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	KEYED NOTE	--
J	JUNCTION BOX	--
J E	JUNCTION BOX, EMERGENCY POWER	--
	FLOOR BOX	--
P	COMBINATION TELE-POWER POLE	--

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

REVISION HISTORY - THIS SHEET

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ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES

COMM. NO.	1203-005-03
SCALE	NO SCALE
DATE	September 2, 2014
DRAWN	SW

Final RTA

E000

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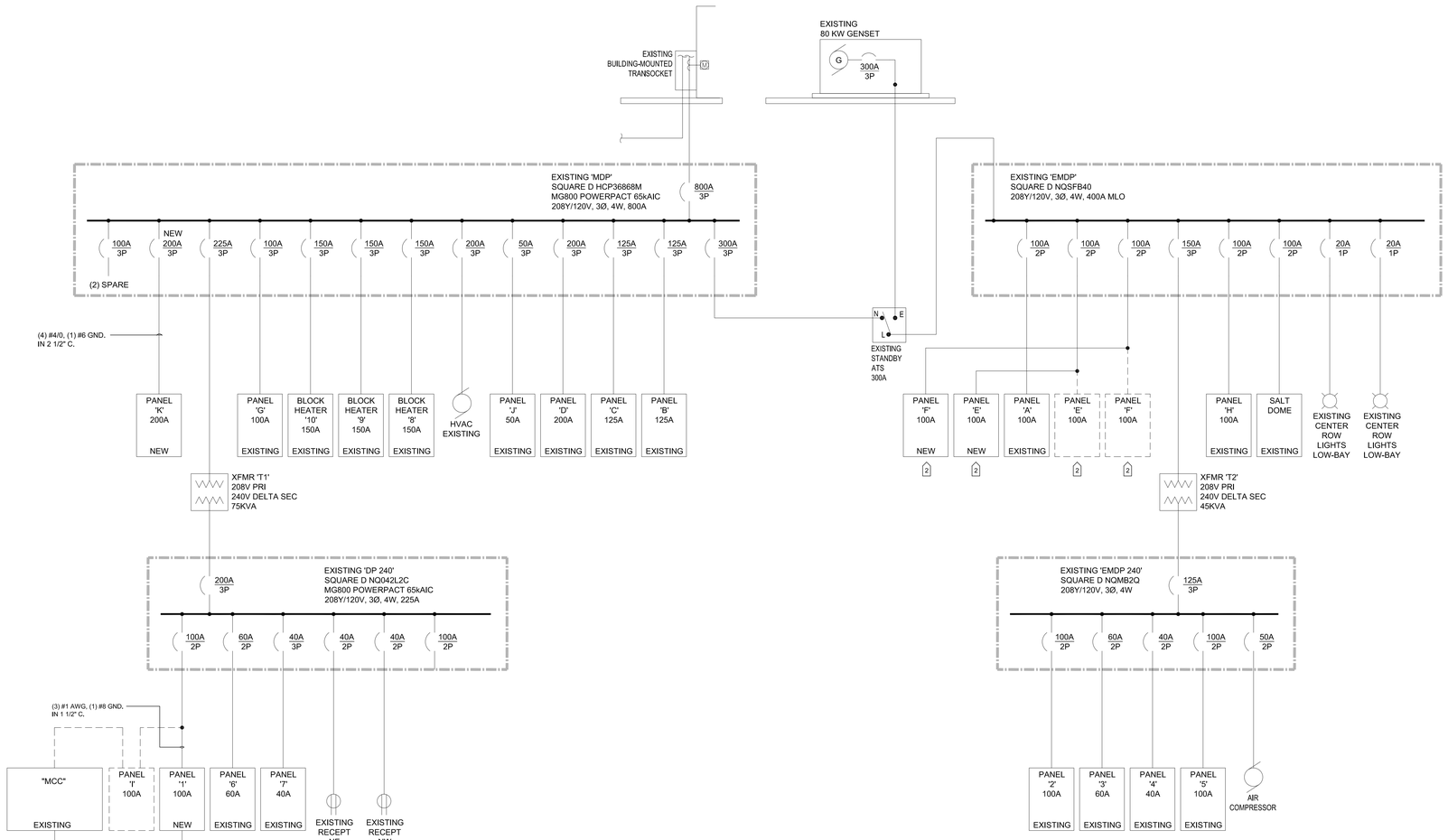
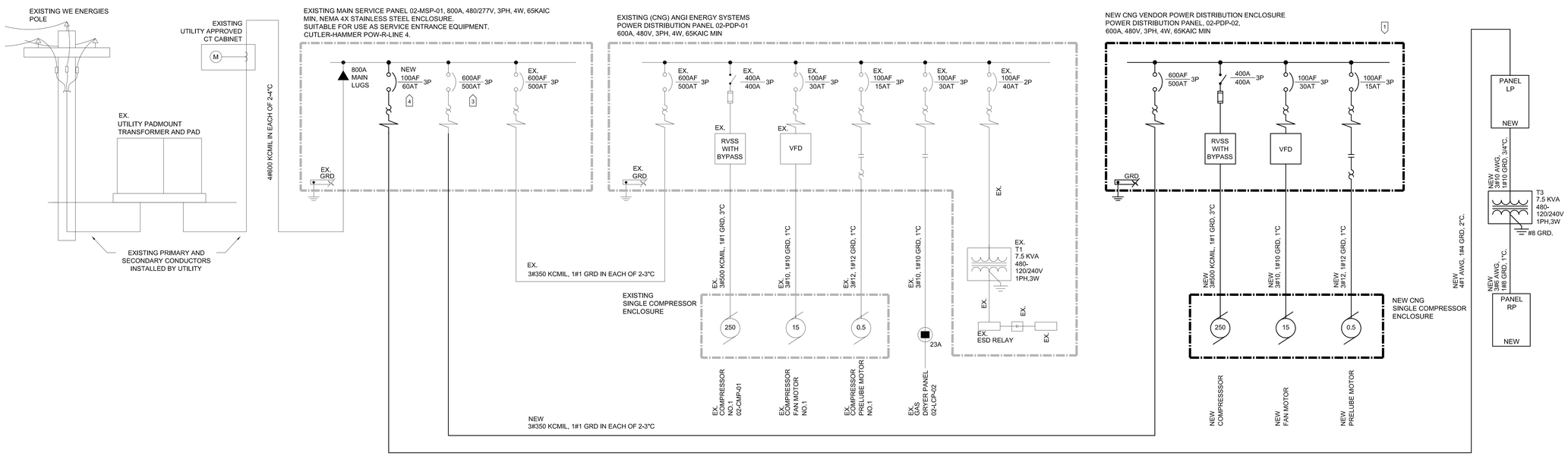


1 NW GARAGE 208Y/120V ELECTRICAL DISTRIBUTION SYSTEM

NO SCALE



2 NW GARAGE 480Y/277V ELECTRICAL DISTRIBUTION SYSTEM

NO SCALE

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION

3025 W RUBY AVENUE

MILWAUKEE COUNTY

GENERAL NOTES:

1. REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

X KEYNOTES:

1. CNG VENDOR POWER DISTRIBUTION PANEL FURNISHED BY VENDOR, INSTALLED AND WIRED BY CONTRACTOR.

2. DISCONNECT AND REMOVE EXISTING PANELBOARD. TRANSFER / EXTEND EXISTING BRANCH CIRCUITS TO REMAIN TO NEW / REPLACEMENT PANELBOARD.

3. REUSE EXISTING SPARE 600A/3P FRAME BREAKER WITH 500A TRIP SETTING.

4. PROVIDE NEW 100A-FRAME SERVICE RATED CIRCUIT BREAKER. MATCH EXISTING MANUFACTURER.

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ELECTRICAL ONE-LINE DIAGRAM

COMM. NO.	1203–005–03
SCALE	NO SCALE
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DRAWN	SW

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E010

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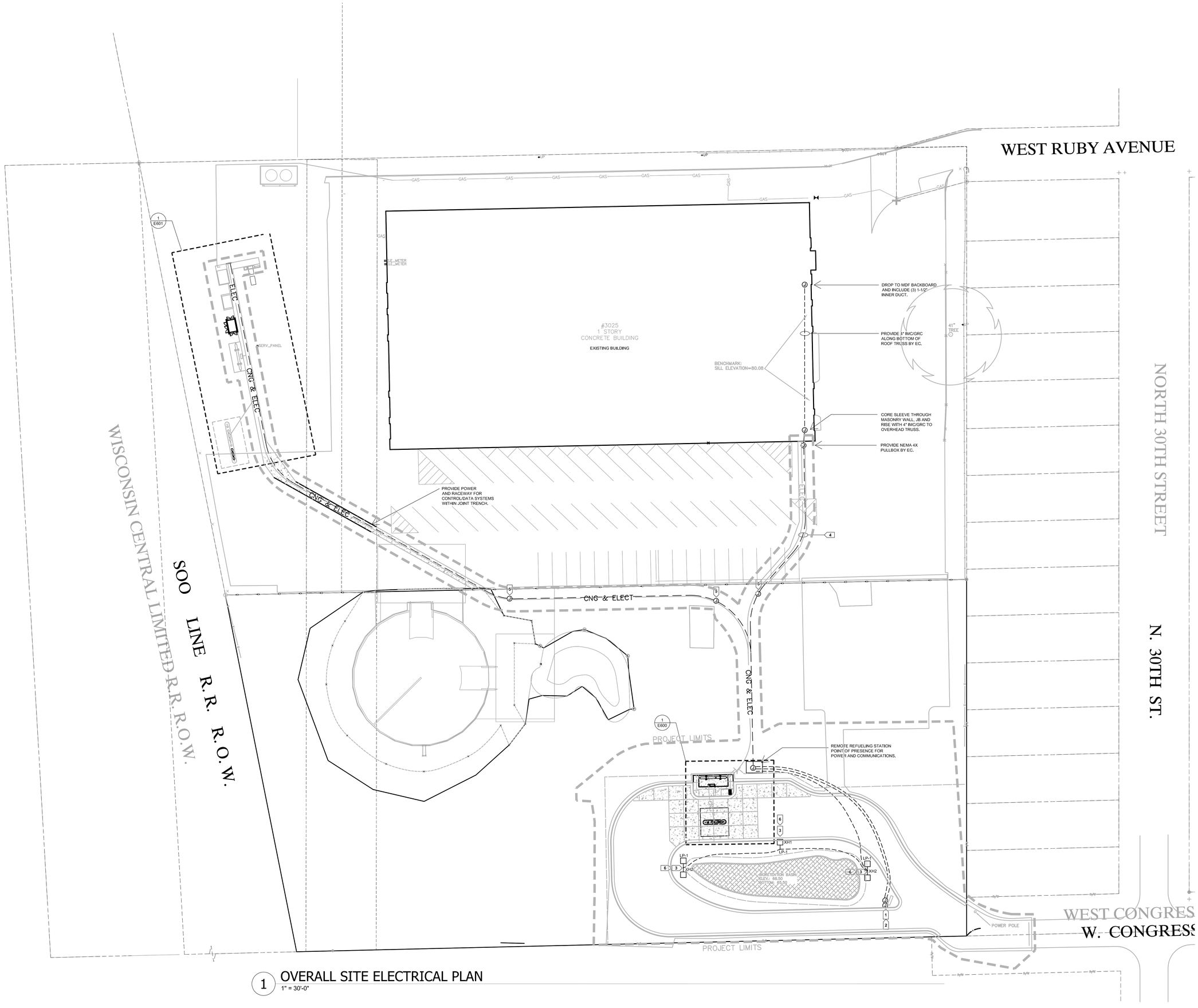

1 OVERALL SITE ELECTRICAL PLAN
1" = 30'-0"

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

GENERAL NOTES:

A. TRANSITION FLOOR SCHEDULE 80 PVC UNDERGROUND CONDUIT TO PVC COATED GALVANIZED RIGID STEEL CONDUIT BELOW GRADE WHEN RACEWAY IS ROUTED ABOVE GRADE TO EQUIPMENT.

B. MAINTAIN MIN. 12" SEPARATION FROM NATURAL GAS PIPING AND ELECTRICAL SYSTEM RACEWAYS BOTH VERTICALLY AND HORIZONTALLY. SEE ALSO TRENCH DETAIL SHEET E602.

X KEYED NOTES:

1. SIGN CIRCUITS
   LIGHTING CIRCUITS 3 #12, 1 #12 GND: RP-1
   1 - PRICING FEATURE CIRCUIT, 2 #12, 1 #12 GND: RP-3
   1 - 1" C. SCHED. 80 PVC FOR POWER.
   1 - 1" C. SCHED. 80 PVC FOR DATA.
   ROUTE UP INTO SIGN BASE PER SIGN SUPPLIER REQUIREMENT

2. TERMINATE SIGN CIRCUITS ON SAFETY SWITCHES FURNISHED BY SIGN SUPPLIER.

3. PROVIDE POURED CONCRETE POLE BASE, SET BACK FROM CURB 24" AND PROVIDE 277V-20A/1P UNDERGROUND BRANCH CIRCUIT 30" BFG (2 #12, 1 #12 GND, 1" SCHED. 80 PVC) FROM PANELBOARD "LP".

4. PROVIDE U.G. (1) 4" 3-CELL MULTI-CELL EMPTY RACEWAY 30" BFG FOR SECURITY DATA/CCTV. CABLING BY OWNER'S VENDOR.

5. PROVIDE 30x42 MIN. BOTTOMLESS QUAZITE PULLBOX.

6. PROVIDE 24" DIA. x 72" DEEP POURED CONCRETE POLE BASE.

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OVERALL ELECTRICAL SITE PLAN

COMM. NO.	1203–005–03
SCALE	1" = 30'-0"
DATE	September 2, 2014
DRAWN	SW

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E020

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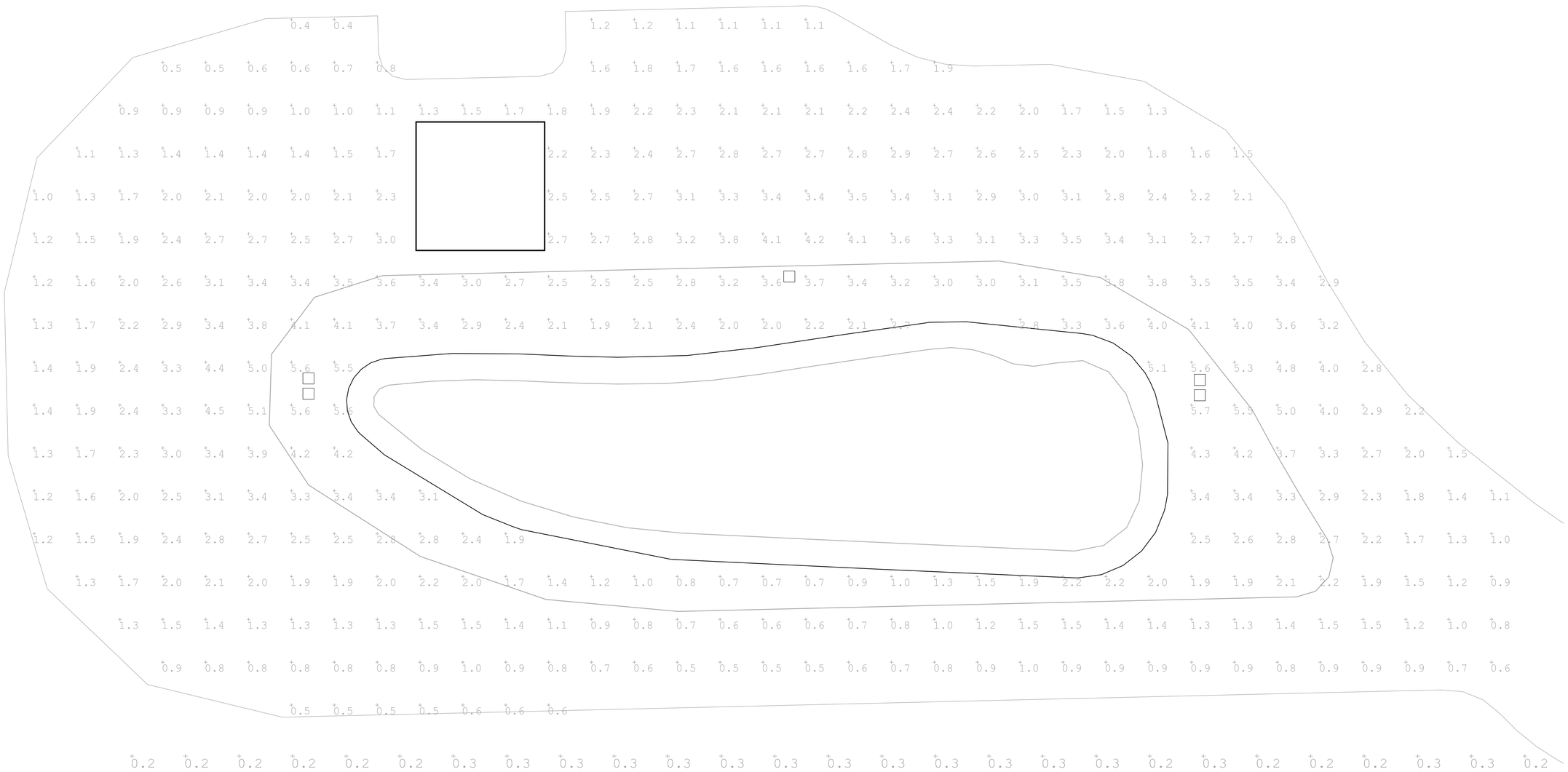

1 AVERAGE MAINTAINED HORIZONTAL ILLUMINANCE POINT BY POINT CALCULATIONS
NTS

CALCULATION RESULTS:

AVERAGE MAINTAINED HORIZONTAL ILLUMINANCE AT TASK PLANE:	2.2 FC
AVERAGE/MIN FOR MAINTAINED HORIZONTAL ILLUMINANCE AT TASK PLANE:	5.4
AVERAGE MAINTAINED HORIZONTAL ILLUMINANCE AT PROPERTY BOUNDARY:	0.3 FC
AVERAGE MAINTAINED VERTICAL ILLUMINANCE AT 5' ABOVE TASK PLANE:	3.5 FC
AVERAGE MAINTAINED VERTICAL ILLUMINANCE AT 5' ABOVE PROPERTY BOUNDARY:	0.4 FC

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

GENERAL NOTES:

A. REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

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SITE LIGHTING CALCULATIONS

COMM. NO.	1203–005–03
SCALE	NO SCALE
DATE	September 2, 2014
DRAWN	SW

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E030

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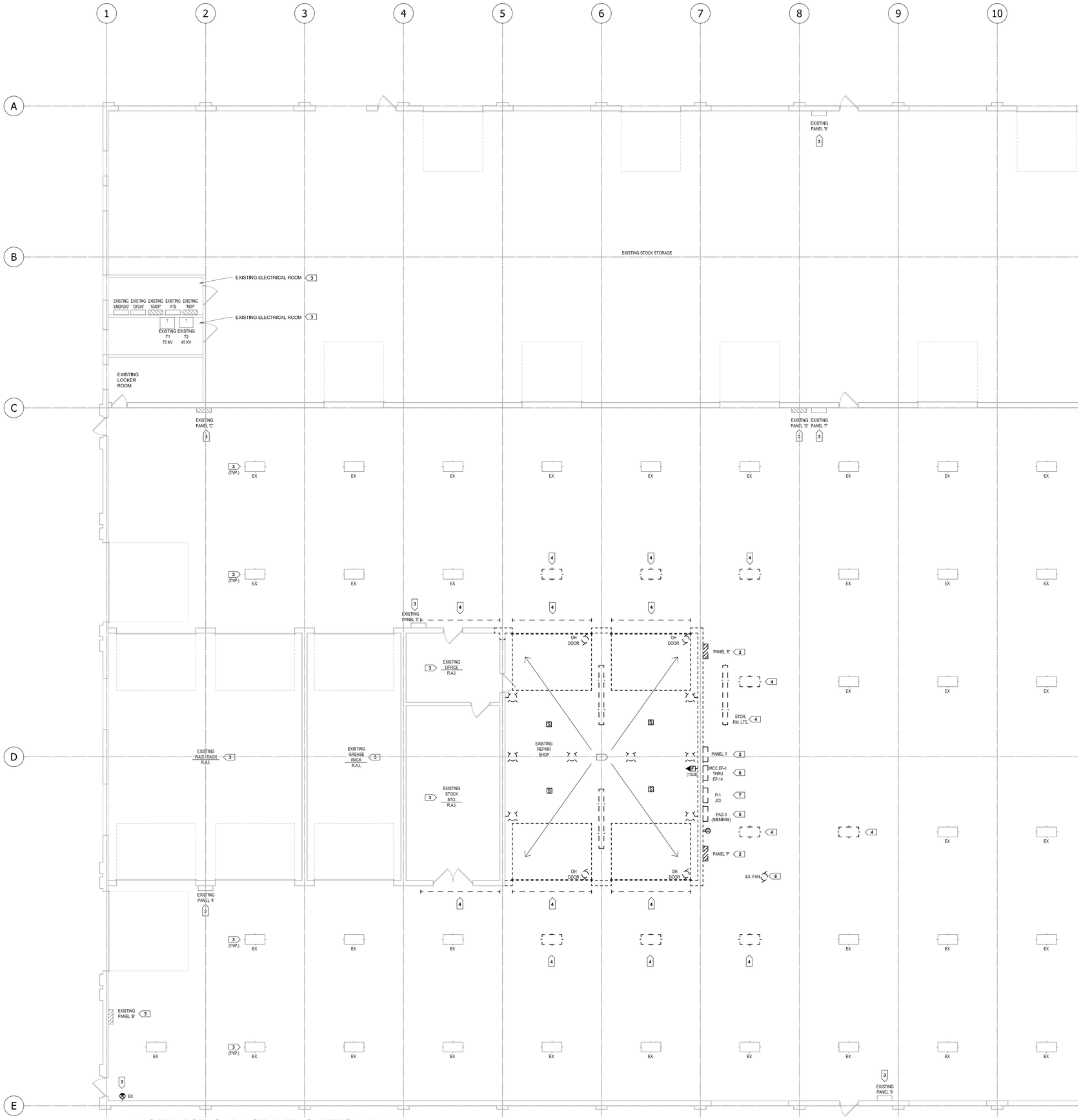


1 SERVICE GARAGE DEMOLITION PLAN
1/8" = 1'-0"

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

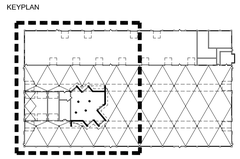
GENERAL NOTES:

A. REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

X KEYED NOTES:

1. DISCONNECT AND REMOVE EXISTING ELECTRICAL DEVICES, BRANCH CIRCUITS IN AREA OF DEMOLITION. REROUTE EXISTING BRANCH CIRCUITS AND MAINTAIN CIRCUIT CONTINUITY TO EXISTING TO REMAIN ELECTRICAL SYSTEMS OUTSIDE PROJECT DEMOLITION AREA.
2. DISCONNECT AND EXTEND EXISTING TO REMAIN BRANCH CIRCUITS TO REPLACEMENT BRANCH PANELBOARD.
3. MAINTAIN EXISTING ELECTRICAL EQUIPMENT IN SERVICE.
4. DISCONNECT AND REMOVE.
5. EXISTING SIEMENS FA PANEL RELOCATION BY OWNER'S VENDOR.
6. DISCONNECT 70A/2P - 240V, GND, B-PHASE, 3-PHASE FEEDER FROM EXISTING "PANEL 1" TO MCC AND REPLACE FEEDER TO MATCH FROM REPLACEMENT "PANEL 1". DISCONNECT, EXTEND AND RECONNECT EXISTING EF-1 THRU EF-14 BRANCH CIRCUITS FROM EXISTING HVAC MCC FROM EXISTING LOCATION AT NEW WALL LOCATION.
7. DISCONNECT BRANCH CIRCUITS FROM EXISTING JCI VENTILATION CONTROL PANEL P-1 AND EXTEND AND/OR PROVIDE NEW TO MATCH EXISTING AT NEW LOCATION TO MAINTAIN IN SERVICE.
8. DISCONNECT EXISTING BRANCH CIRCUIT TO EXHAUST FAN AND EXTEND AND/OR PROVIDE NEW TO MATCH BRANCH CIRCUIT AND RECONNECT AT NEW LOCATION.

KEYPLAN



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SERVICE GARAGE ELECTRICAL DEMOLITION PLAN

COMM. NO.	1203-005-03
SCALE	1/8" = 1'-0"
DATE	September 2, 2014
DRAWN	SW

Final RTA

E100

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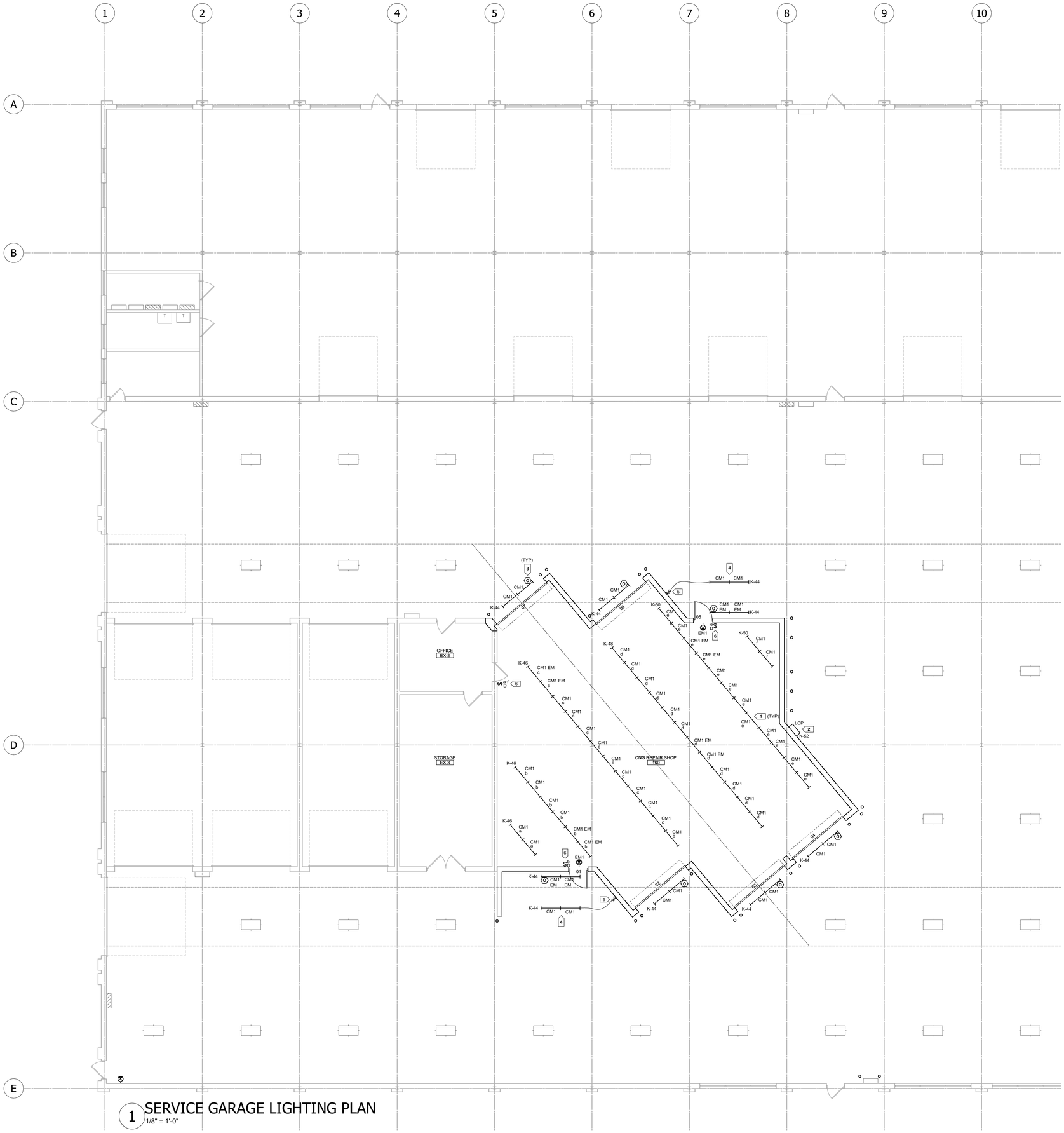


1 SERVICE GARAGE LIGHTING PLAN
1/8" = 1'-0"

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

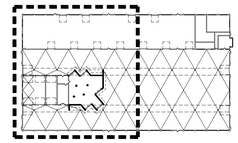
GENERAL NOTES:

A. REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

X KEYED NOTES:

1. PROVIDE CONTINUOUS ROW MOUNTING TO UNDERSIDE OF ROOF JOISTS VIA UNISTRUT CHANNEL.
2. PROVIDE NEW 8-ZONE MINIMUM NLIGHT LOW VOLTAGE LIGHTING CONTROL POWER WITH 0-10V CONTROLLER FOR EACH ZONE SHOWN AS MANUFACTURED BY SENSOR SWITCH OR APPROVED EQUIVALENT BY WATT STOPPER DLS.
3. PROVIDE FACTORY OR FIELD INSTALLED OCCUPANCY SENSOR AT LUMINAIRE.
4. LOCATE ABOVE MECHANICAL PLATFORM.
5. LOCATE TOGGLE SWITCH AT MECHANICAL PLATFORM.
6. PROVIDE LOW VOLTAGE LIGHTING CONTROL STATION WITH 4 - PRESET / ON-OFF / RAISE-LOWER CONTROLS.

KEYPLAN



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SERVICE GARAGE LIGHTING PLAN

COMM. NO.	1203-005-03
SCALE	1/8" = 1'-0"
DATE	September 2, 2014
DRAWN	SW

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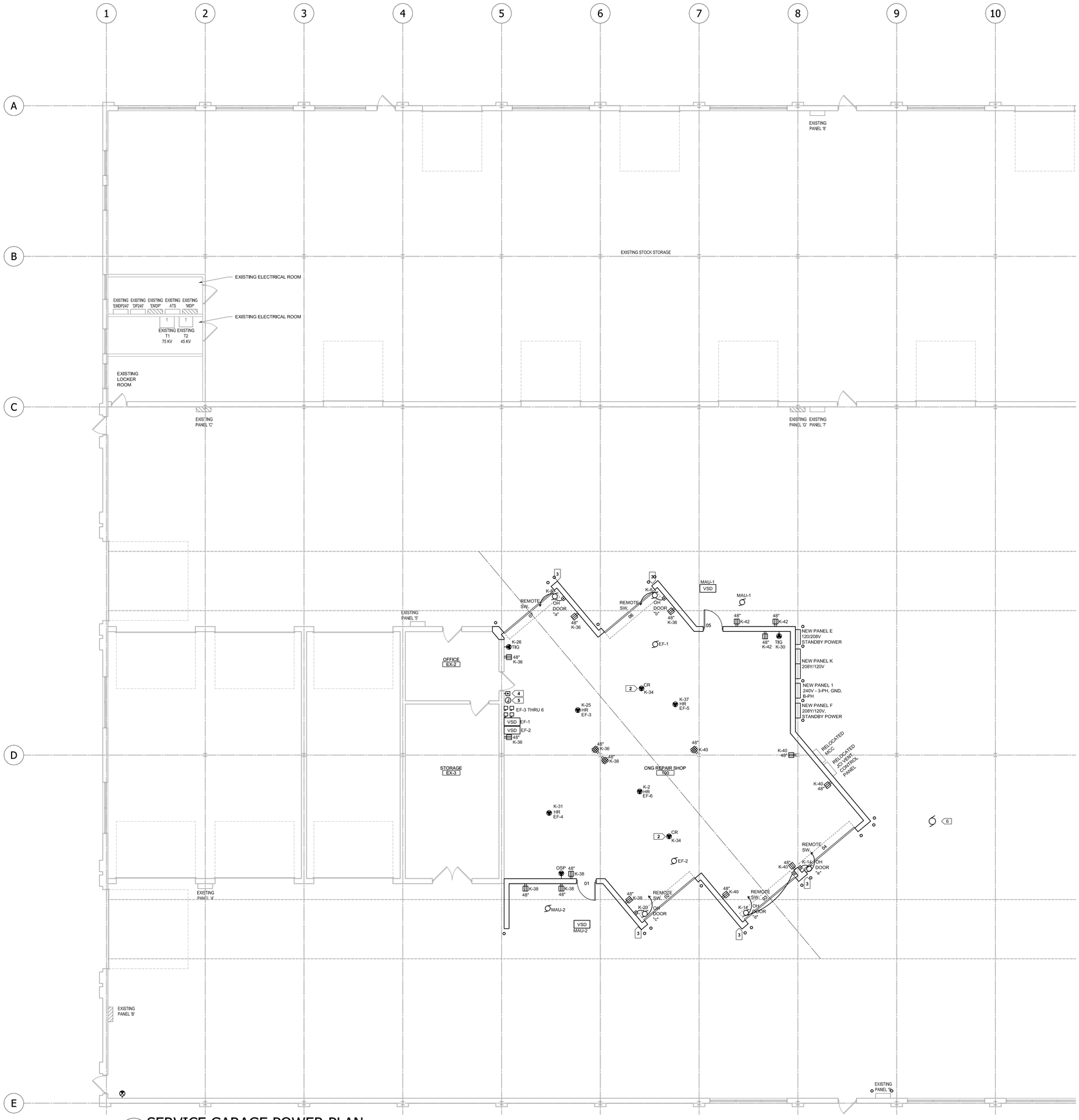


1 SERVICE GARAGE POWER PLAN
1/8" = 1'-0"

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

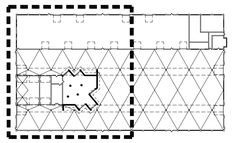
GENERAL NOTES:

A. REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

X KEYED NOTES:

1. PROVIDE AT 48" AFF.
2. SUSPEND ELECTRIC CORD REEL WITH GFIC/WP WATERTIGHT DUPLEX RECEPTACLE DOWN TO 10' AFF. SECURE/FASTEN CORD REEL TO ROOF STRUCTURE.
3. PROVIDE DIRECT CONNECT TO OVERHEAD COILING DOOR DRIVE MOTOR VIA NEMA 4X FUSED DISCONNECT SWITCH.
4. PROVIDE REMOTE O.H. DOOR OPERATOR STATION AT OFFICE DOOR FOR DOORS "a" THRU "d".
5. PROVIDE 20A/1P 120V TO LEAK DETECTION PANEL, CKT. K-45.
6. RECONNECT EXISTING EXHAUST FAN AT NEW LOCATION.

KEYPLAN



REVISION HISTORY - THIS SHEET

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SERVICE GARAGE POWER PLAN

COMM. NO.	1203–005–03
SCALE	1/8" = 1'-0"
DATE	September 2, 2014
DRAWN	SW

Final RTA

E301

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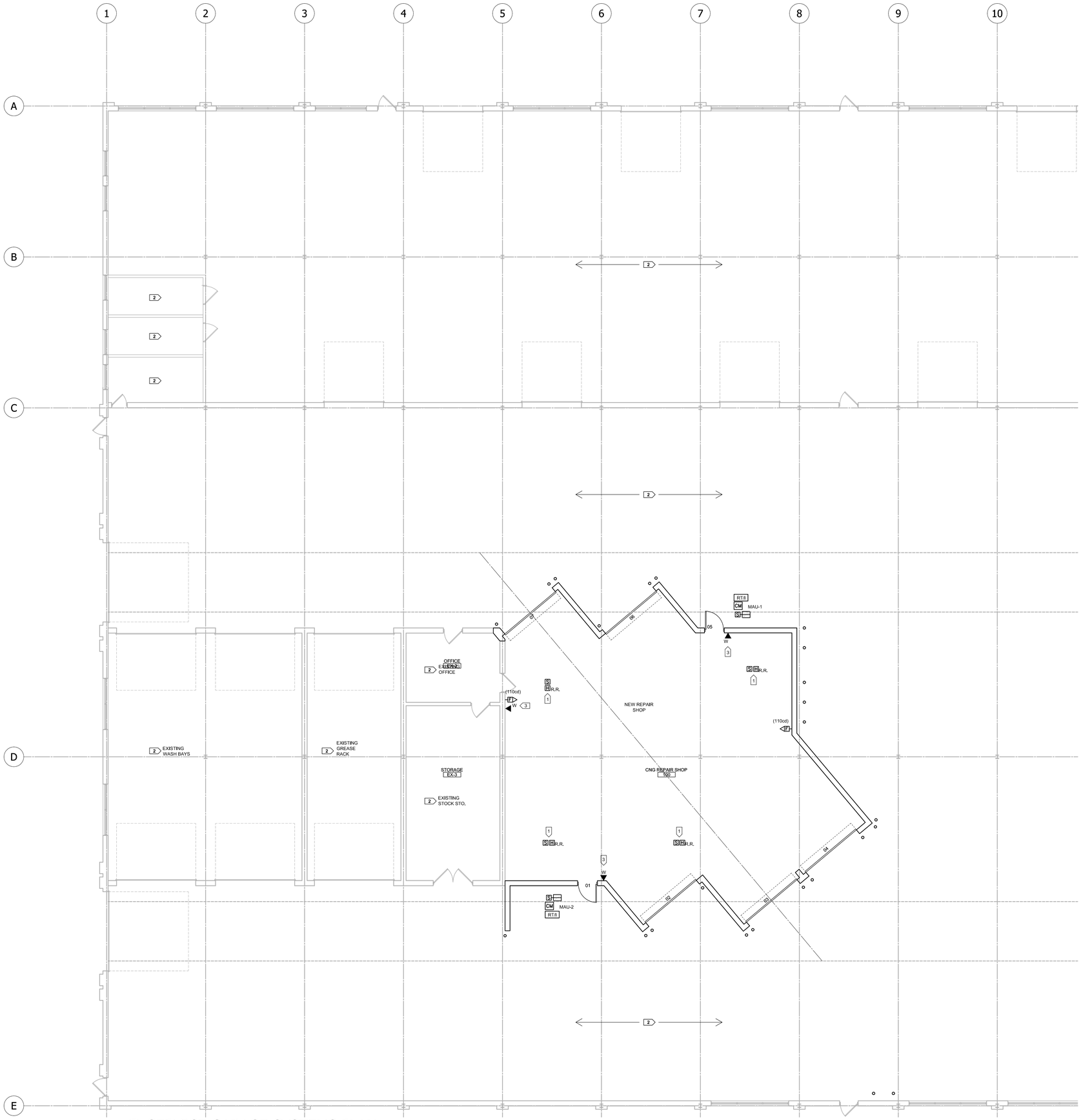


1 SERVICE GARAGE SYSTEMS PLAN
1/8" = 1'-0"

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

GENERAL NOTES:

A. REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

B. PROVIDE 120V - 20A/1P BRANCH CIRCUIT TO NEW / RELOCATED SIEMENS PAD UNIT. PAD UNIT RELOCATED BY OWNER'S VENDOR.

C. EXISTING FIRE ALARM SYSTEM IS A SIEMENS MXL-IQ FIRE ALARM CONTROL PANEL.

X

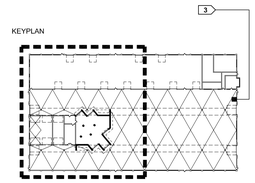
KEYED NOTES:

1. PROVIDE ALL ELECTRICAL DEVICES AND WIRING METHODS SUITABLE FOR CLASS I, DIV. 2 WITHIN THE REPAIR GARAGE HAZARDOUS ZONES.

2. MAINTAIN EXISTING F.A. SYSTEM CONTINUITY TO SURROUNDING SYSTEM DEVICES AFFECTED BY DEMOLITION AND NEW WORK.

3. PROVIDE COMPLETE CONDUIT SYSTEM FROM OUTLET TO EXISTING COMMUNICATIONS BACKBOARD IN EXISTING OFFICE.

KEYPLAN



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SERVICE GARAGE SYSTEMS PLAN

COMM. NO.	1203-005-03
SCALE	1/8" = 1'-0"
DATE	September 2, 2014
DRAWN	SW

Final RTA

E401

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LUMINAIRE SCHEDULE

HGA #1203-005-03

REVISION HISTORY	TYPE	DESCRIPTION	LIGHTING FIXTURE MANF.	LIGHTING FIXTURE SERIES	FIXTURE OPTIONS	LAMP QTY & TYPE	WATT	VOLT	MOUNTING	NOTES
	CM1	4' LED CLASS 1, DIV, 2 LINEAR INDUSTRIAL	LITHONIA	VAP-79LED-35-SYM-120	DIM	LED 4000K/80CRI	79W	120V	SURFACE MOUNTED	-
	CM1 EM	4' LED CLASS 1, DIV, 2 LINEAR INDUSTRIAL - EMERGENCY	LITHONIA	VAP-79LED-35-SYM-120	DIM - BSL722	LED 4000K/80CRI	79W	120V	SURFACE MOUNTED	-
	EM1	HAZARDOUS LOCATION, CLASS 1, DIV. 2 EXIT - UNIT COMBO	LITHONIA	LHZ-636-S-1-R-H1206-S D-SRS	-	(2) 12W/6V PAR 36 HALOGEN	27W	120V	WALL MOUNTED	-
	XH1	40" x 15" LED AREA LIGHTING LUMINAIRE	LITHONIA	DSX2-LED-80C-1000 40K-T3M-277-RPA-PIRH	DM19AS SINGLE HEAD	LED 4000K	275W	277V	POLE MOUNTED 25 FEET	-
	XH2	40" x 15" LED AREA LIGHTING LUMINAIRE	LITHONIA	DSX2-LED-80C-1000 40K-T3M-277-RPA-PIRH	DM28AS DOUBLE HEAD	LED 4000K	550W	277V	POLE MOUNTED 25 FEET	-

1 LUMINAIRE SCHEDULE
NO SCALE

PANEL SUMMARY

MOUNTING TYPE: F FLUSH; S SURFACE; BREAKERS: S SPARE; P INCLUDE PROVISIONS

ABBREVIATION: LOC. LOCATION; MTG MOUNTING; MLO MAIN LUGS ONLY; MCS MOLDED CASE SWITCH; MCB MAIN CIRCUIT BREAKER

VOLTAGE: V1 120/208V-1PH,3W; V2 208Y/120V - 3PH, 4W; V3 240V - 3PH, GND, B-PH; V4 480Y/277V - 3PH, 4W

NAME	ACTIVE BREAKERS QTY.	P	AMP	SPARE BREAKERS QTY.	P	AMP	SPACE PROVISIONS	RM. # / LOC	MTG. TYPE	BUS AMPS MAINS	VOLTS PH, W	# OF TUBS	30 CIRCUITS EACH	42 CIRCUITS EACH	AIC RATING	SEE NOTE
K	2	3	40	10	1	20	(24) 1-POLE	EX. GARAGE	S	200A MCB	V2	2		X	25K	3
	4	3	30													
	6	3	20													
	12	1	20													
	2	2	50			-										
LP	1	1	20	8	1	20	(8) 1-POLE	SITE	SEE NOTE	60A MCB	V4	1	X		42K	2
	1	3	30	-	-	-										
	-	-	-	-	-	-										
RP	7	1	20	5	1	20	(8) 1-POLE	SITE	SEE NOTE	60A MCB	V1	1	X		25K	2
	-	-	-	-	-	-										
	-	-	-	-	-	-										
1	3	2	15				(3) 2-POLE	EX. GARAGE	S	100A MCB	V3	1		X	25K	1, 3
	3	2	20													
	1	2	40													
	1	2	70													
	4	2	30													
E	16	1	20	12	1	20	(12) 1-POLE	EX. GARAGE	S	100A MCB	V1	1		X	25K	1, 3
	1	2	20													
	-	-	-													
F	22	1	20	10	1	20	(8) 1-POLE	EX. GARAGE	S	100A MCB	V1	1		X	25K	1, 3
	1	2	60													
	-	-	-													

NOTES:
1. MATCH EXISTING TRANSFERRED BRANCH CIRCUIT BREAKER SIZES FROM REPLACED PANELBOARD. FIELD VERIFY EXACT AMPACITY/POLE CONFIGURATION.
2. PROVIDE NEMA 4X ENCLOSURE, MOUNT TO STAINLESS STEEL UNISTRUT CROSS MEMBERS TO SUPPORT STRUCTURES AT OUTDOOR CONC. PAD. SEE DETAILS SHEET E602.
3. PROVIDE NEMA 1 ENCLOSURE WITHIN NON-CLASSIFIED ZONE. PROVIDE KEYED LOCKING CYLINDER LOCKS.

2 PANEL SUMMARY SCHEDULE
NO SCALE

MOTOR SCHEDULE

REVISION HISTORY	NO.	DESCRIPTION	LOCATION	VOLTS/ PHASE	HP	KW	FLA	CRCT. NO.	CB / FUSE AMPS	CB / FUSE POLE	BRANCH WIRING NO.	BRANCH WIRING SIZE (AWG)	BRANCH WIRING GND.	BRANCH WIRING COND.	STARTER TYPE	STARTER BY	STARTER LOC.	TYPE	REMOTE DISCONNECT BY	REMOTE DISCONNECT LOC.	REMARKS OR NOTE NO.
	MAU-1	MAKE-UP AIR UNIT	MEZZ.	208	5			K-1	40	3	3	8	(1) 10	1"	VSD	MC	AT UNIT				2
	MAU-2	MAKE-UP AIR UNIT	MEZZ.	208	5			K-7	40	3	3	8	(1) 10	1"	VSD	MC	AT UNIT				2
	EF-1	EXHAUST FAN	ROOF	208	3/4			K-13	20	3	3	10	(1) 10	3/4"	VSD	MC	SEE PLAN	FSS	DIV 26	NU	1, 2
	EF-2	EXHAUST FAN	ROOF	208	3/4			K-19	20	3	3	10	(1) 10	3/4"	VSD	MC	SEE PLAN	FSS	DIV 26	NU	1, 2
	OH DOOR	MOTORIZED DOOR OPERATOR	100	208	1		4.8	SEE PLAN	20	3	3	10	(1) 10	3/4"	MAG	UM	OU	FSS	DIV 26	NU	1, 3

NOTES:
1. PROVIDE NEMA 4X, CLASS 1, DIVISION 2, FUSED SAFETY SWITCH AT UNIT.
2. INSTALL AND WIRE VSD WITH INTEGRAL DISCONNECT FURNISHED BY MC.
3. INSTALL AND WIRE WITHIN COMPLETE CONDUIT SYSTEM 24 VOLT, 3-BUTTON (OPEN-CLOSE-STOP) CONTROL STATIONS (1 - AT DOOR, 1 - AT REMOTE LOC.) FURNISHED BY DIVISION 8. COORDINATE AVAILABLE VOLTAGE AND PLACE WITH SUPPLIER.

3 MOTOR SCHEDULE
NO SCALE

SPECIAL PURPOSE OUTLET SCHEDULE

REVISION HISTORY	NO.	DESCRIPTION	LOCATION	VOLTS/ PHASE	HP	KW	FLA	CRCT. NO.	CB / FUSE AMPS	CB / FUSE POLE	BRANCH WIRING NO.	BRANCH WIRING SIZE (AWG)	BRANCH WIRING GND.	BRANCH WIRING COND.	RECEPTACLE	DISCONNECT	REMARKS OR NOTE NO.
	TIG	NEMA 6-50R RECEPTACLE	100	208		6		SEE PLAN	50	2	2	6	(1) 10	3/4"	250V NEMA 6-50R		2, 4
	CR	PENDANT CORD REEL W/ GFIC DUP. REC.	100	120			3	SEE PLAN	20	1	2	12	(1) 12	3/4"	125V NEMA 5-20R		1, 4
	HR	POWERED HOSE REEL W/ 3HP EXHAUST	100	208			11.5	SEE PLAN	30	3	3	10	(1) 10	3/4"		X	3, 4
	OSP	OIL SEPARATOR PANEL	100	120			1	K-43	20	1	2	12	(1) 12	3/4"			4

NOTES:
1. PROVIDE NEMA 4X CABLE REEL (HBL501232W SERIES OR APPROVED EQUIVALENT) WITH 12/3, 600V -SEOOW (BLACK) POWER CORD, BALL STOP AND WIRED GFIC PROTECTED PENDANT BOX WITH WATERTIGHT DUPLEX RECEPACLE. SECURELY MOUNT WITH ANGLE IRON/STEEL CHANNEL TO STRUCTURE AND MOUNT CORD REEL EVEN WITH THE BOTTOM CORD OF STEEL ROOF TRUSS, NOT WITHIN CLASSIFIED ZONE (CLASS 1, DIV. 2). PROVIDE MAX. CORD LENGTH SO WIRING DEVICE DOES NOT TO EXTEND FURTHER THAN 24" AFF, FROM PLUMB VERTICAL CORD DROP.
2. PROVIDE NEMA 4X COMBINATION N.F.S.S AND INTERLOCKED NEMA 6-50R WIRING DEVICE 48" AFF. AS MANUFACTURED BY MENNEKES, HUBBELL OR APPROVED EQUIVALENT.
3. PROVIDE NEMA 4X PAD LOCKING F.S.S., WALL MOUNTED 54" AFF TO TOP OF HANDLE IN "ON" POSITION. GROUP TOGETHER IN SIGHT OF EQUIPMENT.
4. PROVIDE ALL BRANCH CIRCUIT WIRING WITH PVC COATED GRS METALLIC CONDUIT AND JUNCTION BOXES ON 2" STAND-OFFS AND RATED SEAL-OFF FITTINGS WITHIN BOTH FLOOR (AND BELOW) AND CEILING CLASSIFIED ZONES (CLASS 1, DIV. 2.)

4 SPECIAL PURPOSE OUTLET SCHEDULE
NO SCALE

City of Milwaukee
Department of Public Works
Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

GENERAL NOTES:
1. REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

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ELECTRICAL SCHEDULES

COMM. NO. 1203-005-03
SCALE NO SCALE
DATE September 2, 2014
DRAWN SW

Final RTA

E500

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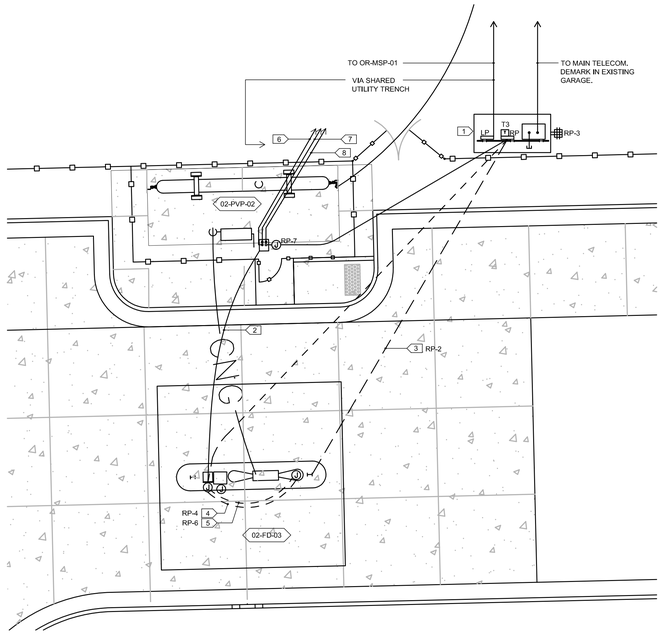
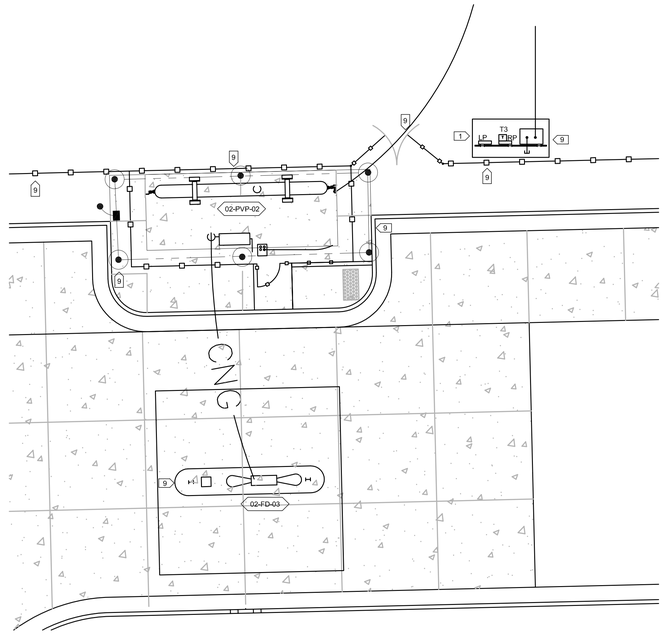
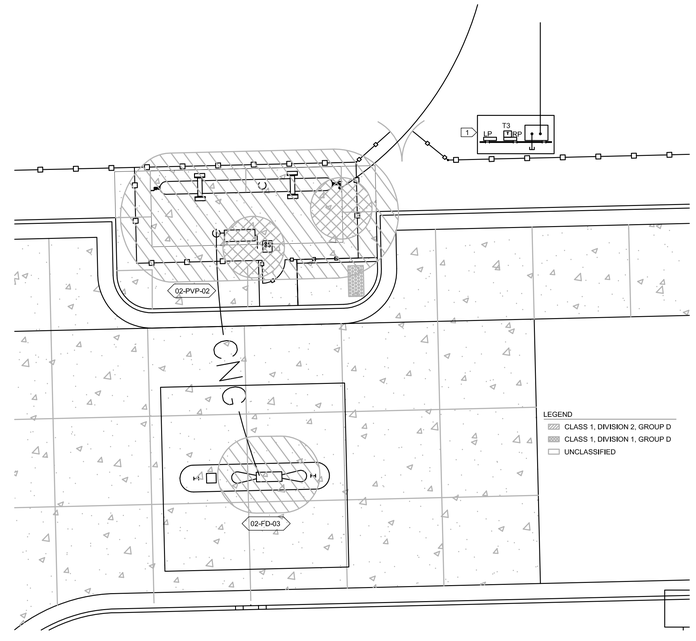


1 PUBLIC CNG AREA ELECTRICAL DETAIL
1/8" = 1'-0"



2 PUBLIC CNG AREA GROUNDING DETAIL
1/8" = 1'-0"



3 PUBLIC CNG AREA HAZARDOUS LOCATIONS
1/8" = 1'-0"

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

GENERAL NOTES:

A. TRANSITION FROM SCHEDULE 80 PVC CONDUIT TO PVC COATED GALVANIZED RIGID STEEL CONDUIT BELOW GRADE WHEN RACEWAY IS ROUTED ABOVE GRADE TO EQUIPMENT.

B. CANOPY LIGHTS - DUSK TO DAWN ON PHOTOCELL CONTROL.

C. SIGN LIGHTS - DUSK TO DAWN ON PHOTOCELL CONTROL.

D. POLE LIGHTS - DUSK TO DAWN ON PHOTOCELL WITH HI/LO MOTION SENSOR.

E. OWNER TO PROVIDE CAMERAS, WIRE, AND TERMINATIONS FOR SECURITY SYSTEM.

X KEYED NOTES:

1. PROVIDE NEMA 4X, PAD MOUNT HOFFMAN ENCLOSURE WITH 60A-480Y/277V PANELBOARD "LP" AND 60A-208Y/120 PANELBOARD "PP" VIA T3 7.5kVA TRANSFORMER.

2. PROVIDE 1" CONDUIT FOR OWNER'S 3-CAT5 CABLES FOR CAMERAS ON CANOPY. ROUTE TO ETHERNET JUNCTION BOX PROVIDED UNDER CNG FUEL SYSTEM AND EXTEND UP CANOPY SUPPORT AND TERMINATE RACEWAY WITHIN CANOPY 12", PROVIDE PLASTIC BUSHINGS.

3. PROVIDE 1" CONDUIT FOR CANOPY DOWNLIGHTING (120V) CIRCUIT FROM PANELBOARD "PP" (2 #12, 1 #12 GND - 1"C).

4. PROVIDE (1) 3/4" C. WITH SEAL OFF FITTING FROM CARD READER PEDESTAL TO THE PULSER JUNCTION BOX IN THE DISPENSER FOR COMMUNICATION.

5. PROVIDE (1) 3/4" C. WITH SEAL OFF FITTING FROM CARD READER PEDESTAL TO PEDESTAL IN THE DISPENSER FOR POWER.

6. 02-LCP-03 TO 02-PVP-02:
   1 - BELDEN 3082A – 1" C.

7. 02-LCP-03 TO 02-PVP-02:
   6 #12, 1 #12 GND - 1" C.

8. 02-PDP-01 TO 02-PVP-02:
   2 #8, 1 #8 GND – 1" C.

9. PROVIDE #4/0 GROUNDING ELECTRODE SYSTEM 30" BFG AND BOND ALL EQUIPMENT AND FENCE. SEE ALSO SHEET E602.

REVISION HISTORY - THIS SHEET

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PUBLIC CNG AREA DETAILS

COMM. NO.	1203–005–03
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DRAWN	SW

Final RTA

E600

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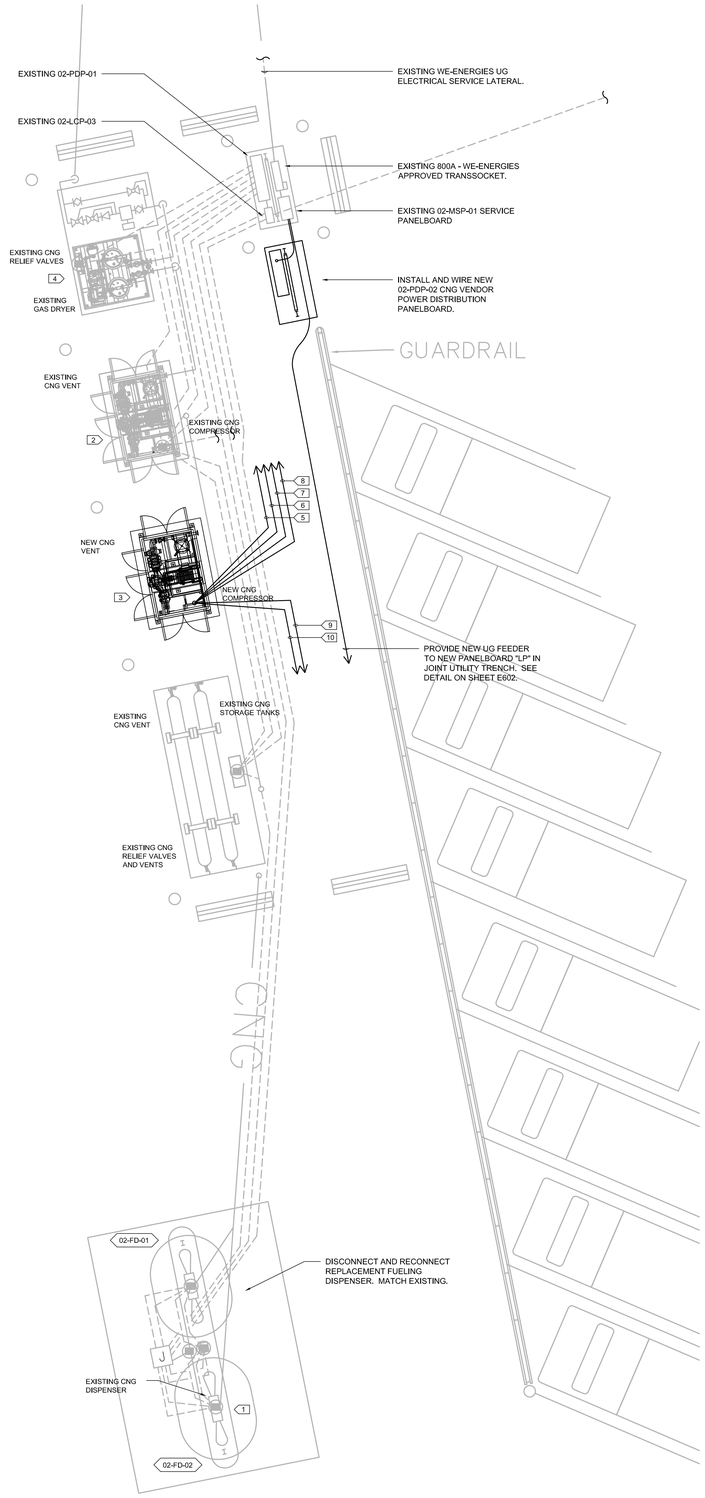
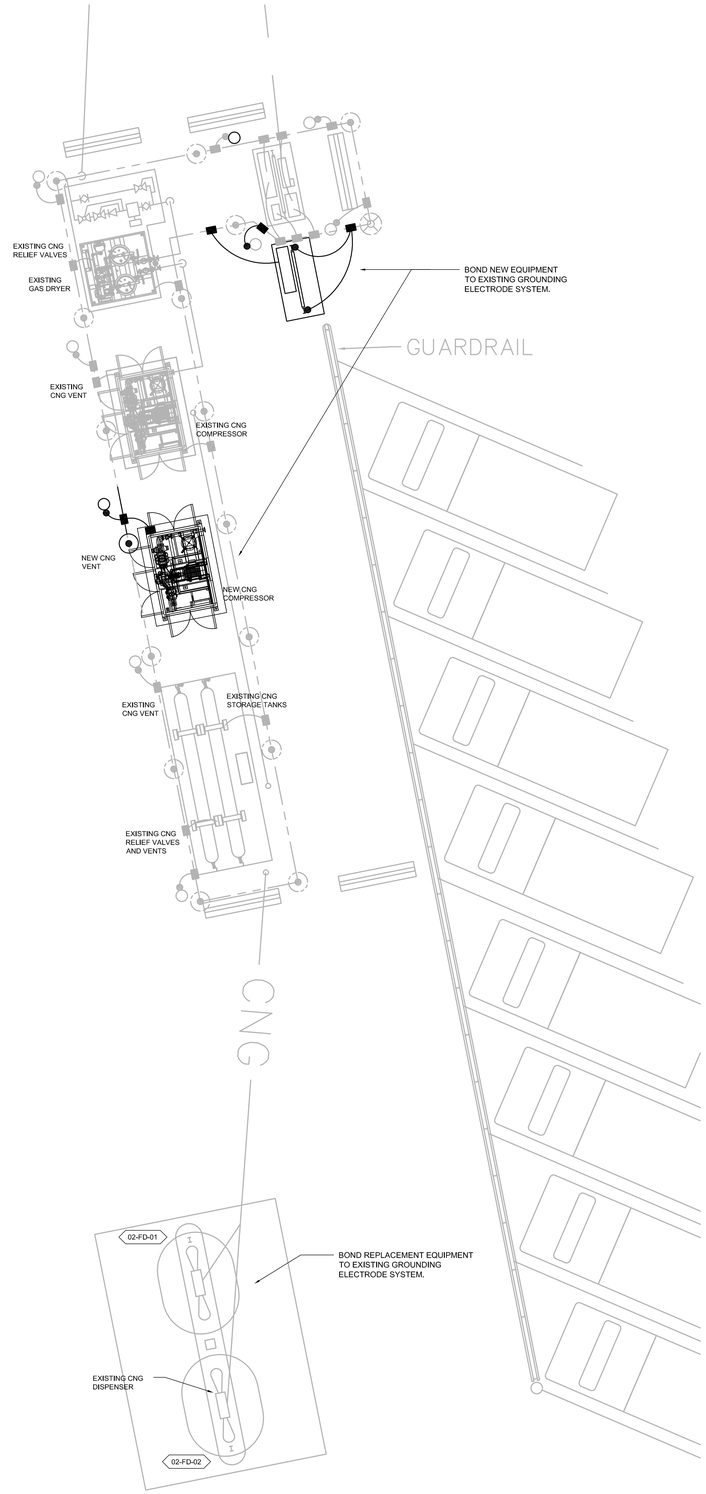
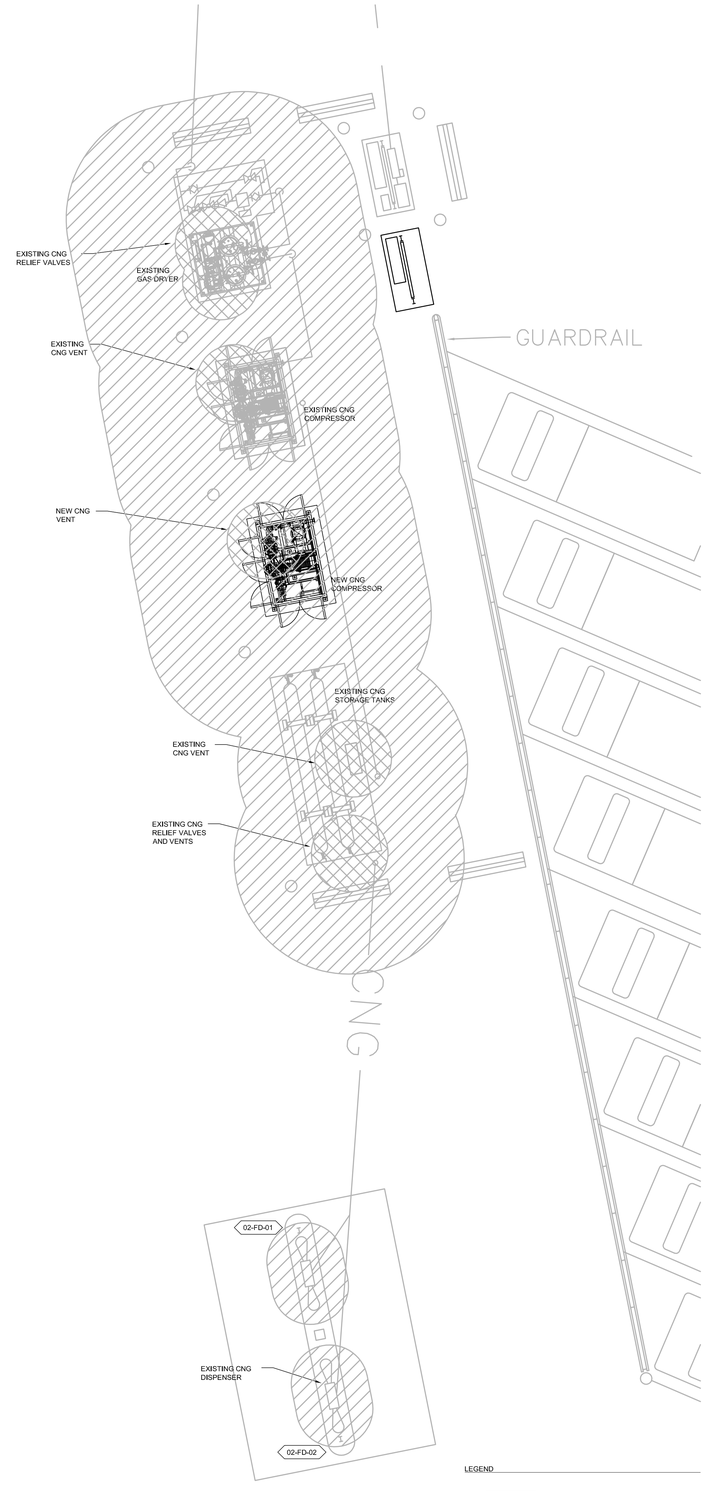


1 CNG AREA ELECTRICAL DETAIL
1/8" = 1'-0"



2 CNG AREA GROUNDING DETAIL
1/8" = 1'-0"



LEGEND

CLASS 1, DIVISION 2, GROUP D

CLASS 1, DIVISION 1, GROUP D

UNCLASSIFIED

3 CNG AREA HAZARDOUS LOCATIONS
1/8" = 1'-0"

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

GENERAL NOTES:

A. SEE SHEET E602 FOR GROUND ROD CONNECTIONS.

B. SEE SHEET E602 FOR GROUND CABLE STUB-UP DETAILS.

C. SEE SHEET E602 FOR LINE POST GROUNDING DETAIL.

D. SEE SHEET E602 FOR STEEL AND METAL SUPPORT STRUCTURE GROUND CONNECTION DETAIL.

X KEYED NOTES:

1. REPLACEMENT FAST FILL DISPENSER 02-FD-2 FURNISHED BY OTHERS. RECONNECT EXISTING CONDUIT AND CIRCUIT TERMINATIONS TO NEW DISPENSER.
2. EXISTING CNG COMPRESSION MAINTAIN IN SERVICE.
3. NEW CNG COMPRESSION 02-CMP-02.
4. EXISTING 02-LCP-02.
5. 02-LCP-03 TO 02-LCP-02:
   2 #12, 1 #12 GND } 1" C.
   2 #12, 1 #12 GND
6. 02-PDP-01 TO 02-LCR-03:
   3 #12 } 1" C.
   3 #10, 1 #10 GND
   4 #12, 1 #12 GND - 1" C.
   02-PDP-01 TO 02-CMP-02:
   3 #500 KCMIL, 1 #1 GND - 3" C.
7. 02-PDP-01 TO 02-LCP-03:
   1 - TSP } 1" C.
   6 #12, 1 #12 GND
8. 02-PDP-01 TO 02-LCP-03:
   2 #12, 1 #12 GND } 1" C.
   12 #14
9. 02-LCP-03 TO 02-PVP-02:
   1 - BELDEN 3082A - 1" C.
10. 02-LCP-03 TO 02-PVP-02:
   6 #12, 1 #12 GND - 1" C.

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CNG AREA DETAILS

COMM. NO.	1203-005-03
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E601

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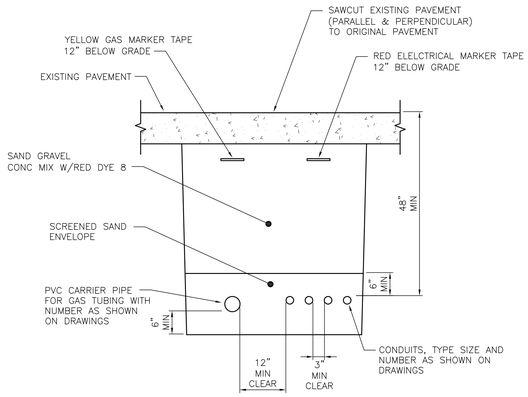
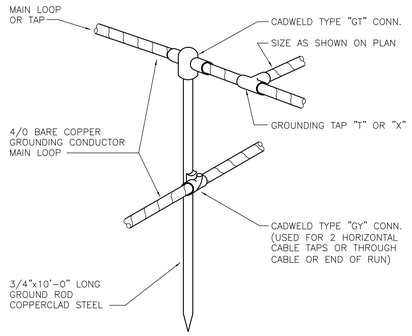


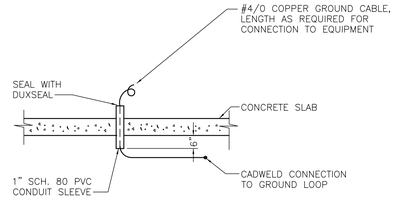
1 TYPICAL DETAIL FOR GAS PIPING/ELECTRICAL CONDUIT SIDE-BY-SIDE

NO SCALE



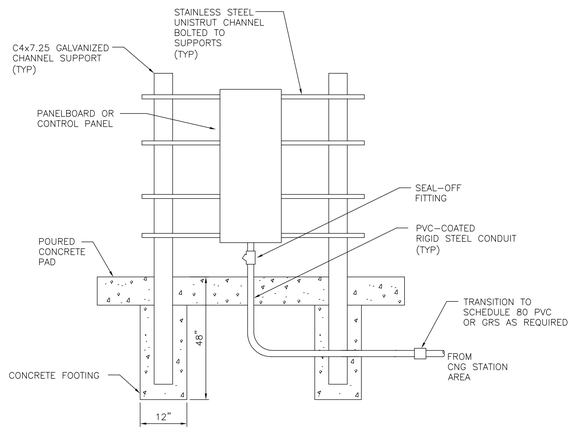
2 CONDUCTOR TO GROUND ROD CONNECTION DETAIL

NO SCALE



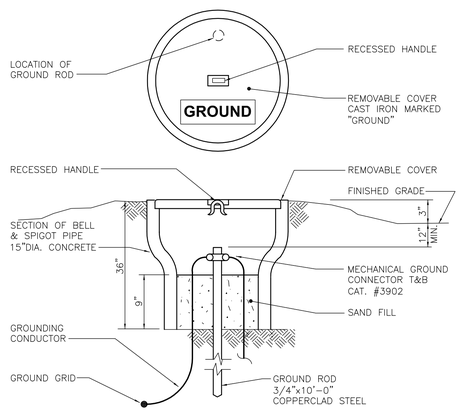
3 EQUIPMENT GROUND CABLE STUB-UP

NO SCALE



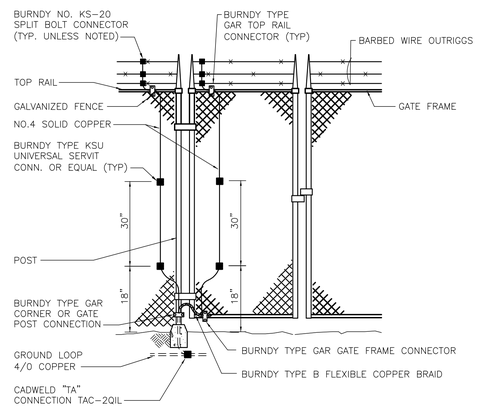
4 PANELBOARD AND CONTROL PANEL MOUNTING DETAIL

NO SCALE
NOTE: SEE STRUCTURAL DETAIL FOR EXACT REQUIREMENTS.



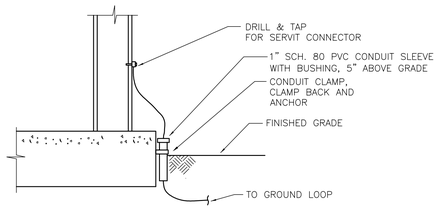
5 GROUNDING TEST STATION DETAIL

NO SCALE



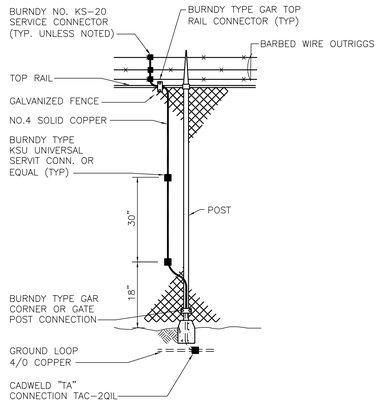
6 GATE AND HINGE POST GROUNDING

NO SCALE



7 STEEL OR METAL STRUCTURE GROUND CONNECTION

NO SCALE



8 LINE POST GROUNDING

NO SCALE

City of Milwaukee

Department of Public Works

Infrastructure Services Division
Facilities Development & Management Section

CNG FUELING STATION
3025 W RUBY AVENUE
MILWAUKEE COUNTY

GENERAL NOTES:

1. REFER TO SHEET E000 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

REVISION HISTORY - THIS SHEET

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Telephone 414.278.8200 Facsimile 414.278.7734

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ELECTRICAL DETAILS

COMM. NO.	1203-005-03
SCALE	NO SCALE
DATE	September 2, 2014
DRAWN	SW

Final RTA

E602

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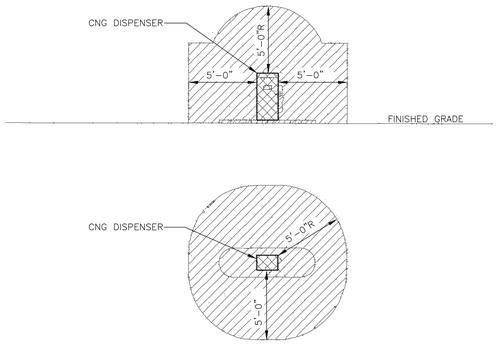
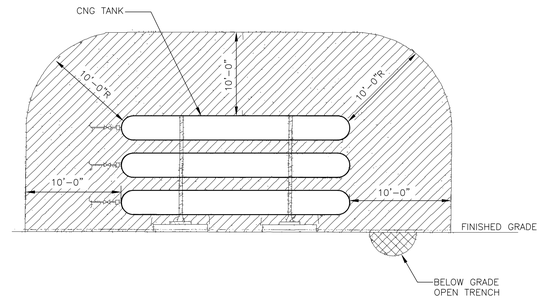
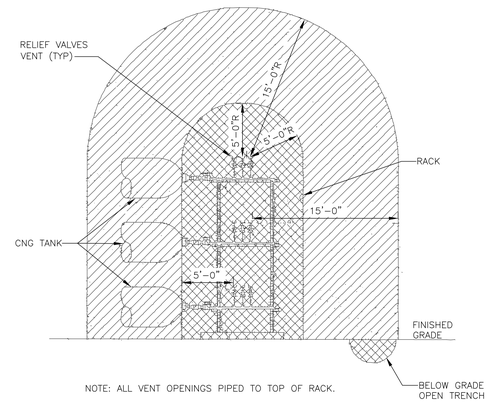


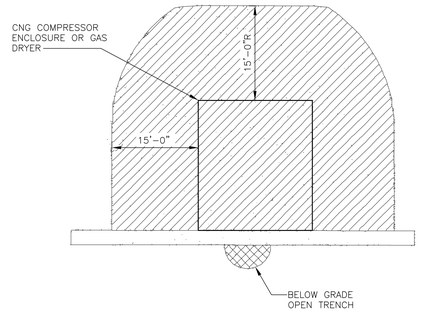
1 AREA CLASSIFICATION CNG DISPENSER DETAIL
NO SCALE



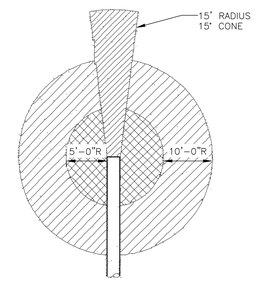
2 AREA CLASSIFICATION CNG TANKS DETAIL
NO SCALE



3 AREA CLASSIFICATION CNG RELIEF VALVES DETAIL
NO SCALE



4 AREA CLASSIFICATION CNG COMPRESSOR AND GAS DRYER DETAIL
NO SCALE



5 AREA CLASSIFICATION TYPICAL CNG VENT DETAIL
NO SCALE

LEGEND

- CLASS 1, DIVISION 2, GROUP D
- CLASS 1, DIVISION 1, GROUP D
- UNCLASSIFIED

City of Milwaukee
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Infrastructure Services Division
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ELECTRICAL DETAILS

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DRAWN	SW

Final RTA

E603

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