

# CITY OF LYNCHBURG

## 8TH STREET STAIRS RETAINING WALLS

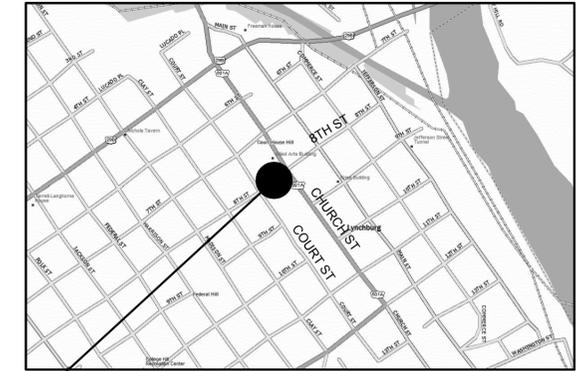
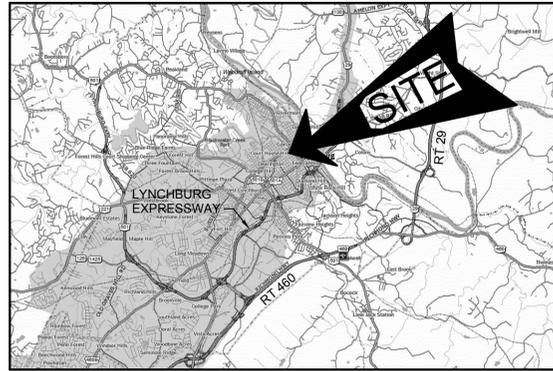
### LYNCHBURG, VIRGINIA

CITY PROJECT NO: T0227

CITY ENGINEERING PROJECT NO: 13019-M

FOR CONSTRUCTION

AUGUST 08, 2014



**GENERAL NOTES:**

1. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED FOR USE AS FABRICATION DRAWINGS. THESE DRAWINGS INDICATE THE GENERAL AND APPROXIMATE SIZE AND LOCATION OF MATERIAL. FIELD VERIFY ALL DIMENSIONS AND LOCATIONS PRIOR TO BEGINNING WORK. ALL UTILITIES NOTED ON PLANS ARE APPROXIMATE AND CONTRACTOR SHALL FIELD VERIFY LOCATION.
2. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, THE 2009 VIRGINIA UNIFORM STATEWIDE BUILDING CODE (MARCH 1, 2011) AND ASSOCIATED CODES OF REFERENCE.
3. CONTRACTOR SHALL OBTAIN ALL BUILDING AND TRADE PERMITS FOR CONSTRUCTION; HOWEVER, THE CITY OF LYNCHBURG SHALL WAIVE ALL FEES REQUIRED FOR PERMITS. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF LYNCHBURG MANUAL OF SPECIFICATIONS AND STANDARD DETAILS, LATEST EDITION.
4. CONTRACTOR SHALL COORDINATE THE WORK WITH EXISTING CONDITIONS, INCLUDING SITE FEATURES AND OTHER OBSTRUCTIONS, WHETHER OR NOT SUCH IS SHOWN ON DRAWINGS.
5. CONTACT MISS UTILITY AT 811, 1-800-552-7001, OR [HTTP://WWW.MISSUTILITYOFVIRGINIA.COM](http://www.missutilityofvirginia.com), NO LESS THAN 72 HOURS PRIOR TO EXCAVATION AND DO NOT DISTURB THE SOIL UNTIL DIG TICKET HAS BEEN PROCESSED.
6. EXISTING MATERIAL TO BE REMOVED SHALL BE REMOVED CAREFULLY TO AVOID DAMAGING MATERIAL TO REMAIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE THAT OCCURS TO EXISTING MATERIAL TO REMAIN OR TO BE RELOCATED DURING DEMOLITION AND CONSTRUCTION.
7. CONTRACTOR SHALL ADVISE THE A/E IMMEDIATELY OF DISCREPANCIES FOUND ON THE DRAWINGS. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHERE MAJOR CONFLICTS ARE ENCOUNTERED, THE AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED. NEITHER THE A/E NOR THE OWNER SHALL BE RESPONSIBLE FOR CONSEQUENCES OF PROCEEDING WITH WORK BASED ON CONTRACTOR INTERPRETATION OR ON DIRECTION FROM OTHER PARTIES, INCLUDING THE OWNER AND INSPECTORS.
8. ALL MATERIAL SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, MAINTAINING ALL REQUIRED CLEARANCES AND WITH ALL COMPONENTS ACCESSIBLE AND SERVICEABLE.
9. CONTRACTOR SHALL PROVIDE MATERIAL DATA SUBMITTALS FOR ALL NEW MATERIAL. REFER TO INDIVIDUAL DRAWINGS FOR ADDITIONAL SUBMITTAL REQUIREMENTS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A SET OF AS-BUILT DRAWINGS ON SITE WHICH INDICATE IN RED ALL DEVIATIONS FROM ORIGINAL CONSTRUCTION DOCUMENTS, INCLUDING APPROVED CONSTRUCTION CHANGE ORDERS. AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE A/E AT THE TIME OF SUBSTANTIAL COMPLETION. AS-BUILT DRAWINGS SHALL BE CLEARLY LEGIBLE AND COMPLETE.
11. CONTRACTOR SHALL KEEP PUBLIC AREAS FREE OF TRASH AND CONSTRUCTION DEBRIS AND CLEAN ENTIRE WORK AREA ON A DAILY BASIS.
12. CONTRACTOR SHALL PROVIDE A TEMPORARY TOILET FACILITY FOR USE BY CONTRACTOR'S PERSONNEL FOR THE DURATION OF THE PROJECT.
13. CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH THE SCOPE OF WORK AND TO VERIFY EXISTING CONDITIONS PRIOR TO BIDDING THIS PROJECT. ANY DISCREPANCIES OR AMBIGUOUS ITEMS MUST BE REPORTED TO THE A/E AND THE OWNER FOR CLARIFICATION PRIOR TO BIDDING.
14. CONTRACTOR IS TYPICALLY PERMITTED TO WORK BETWEEN 7:00 AM AND 6:00 PM MONDAY THRU FRIDAY. WORK OUTSIDE THESE HOURS SHALL BE COORDINATED WITH OWNER'S PROJECT MANAGER DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH OWNER AND ADJACENT PROPERTY OWNER.
15. CONTRACTOR SHALL PROTECT THE AREA'S ADJACENT FEATURES, ROADWAYS, WALKWAYS, SITE IMPROVEMENTS, EXTERIOR PLANTINGS, LANDSCAPING, ETC. AS REQUIRED FROM DAMAGE AND CORRECT DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES TO THE SATISFACTION OF THE OWNER.
16. CONTRACTOR SHALL COLLECT DEMOLISHED MATERIALS AND PLACE IN APPROPRIATE DISPOSAL CONTAINERS. DEMOLISHED MATERIALS SHALL BE PROMPTLY REMOVED FROM THE OWNER'S PROPERTY AND DISPOSED OF LEGALLY.
17. CONTRACTOR SHALL COORDINATE MATERIAL STAGING LOCATION WITH OWNER DURING CONSTRUCTION.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY FOR THE DURATION OF THE PROJECT. CONTRACTOR SHALL PROVIDE ORANGE CONSTRUCTION FENCING AROUND PERIMETER OF WORK AREA. CONTRACTOR SHALL ALSO PROVIDE BARRICADE AND SIGNAGE AT THE TOP AND BOTTOM OF THE 8TH

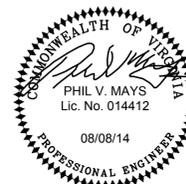
**DRAWING LIST:**

DRAWING NO	TITLE
T1	TITLE SHEET
S1	RETAINING WALL PLAN, SECTIONS, AND DETAILS
S2	GENERAL NOTES

VIRGINIA A&E, PLLC  
1115 VISTA PARK DRIVE  
FOREST, VA 24551  
PHONE: (434) 316-6001



VAE PROJECT NO: 14008



Job No.: 14008

Drawing No.:

**T1**



GENERAL NOTES:

GENERAL:

- 1. SUBMIT SHOP DRAWINGS AND MATERIAL CERTIFICATIONS FOR REVIEW FOR THE FOLLOWING ITEMS: DO NOT FABRICATE MATERIALS UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND ALL EXCEPTIONS HAVE BEEN RESOLVED.
A. CONCRETE MIX DESIGNS, TESTS, AND CERTIFICATES PER ACI 301
B. CONCRETE REINFORCING STEEL SHOP DRAWINGS
C. REBAR PRODUCT DATA
D. ISOLATION JOINT MATERIAL
E. JOINT FILLER
F. MASONRY UNIT TESTS, CERTIFICATES, AND PRODUCT DATA
G. MASONRY REINFORCING STEEL SHOP DRAWINGS
H. MASONRY MORTAR AND GROUT MIX DESIGNS, TESTS, AND CERTIFICATES
2. CONTRACT DRAWINGS SHALL NOT BE MARKED AND SUBMITTED AS SHOP DRAWINGS.
3. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE PROCEEDING WITH CONSTRUCTION. THE EXISTING SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES AND PROTECT FROM DAMAGE DURING EXCAVATION AND BACKFILLING OPERATIONS.
4. SPECIAL INSPECTION REQUIREMENTS:
ALL MATERIALS, COMPONENTS, AND SYSTEMS SHALL BE TESTED AND INSPECTED BY AN INDEPENDENT TESTING AND INSPECTION FIRM PROVIDED BY THE OWNER. TEST FIRM SHALL PROVIDE WRITTEN REPORTS FOR REVIEW BY THE ENGINEER AND OWNER INCLUDING:
A. SUBGRADE COMPACTION
B. REINFORCEMENT PLACEMENT
C. CONCRETE COMPRESSIVE STRENGTH
D. CONCRETE SLUMP
E. CONCRETE AIR CONTENT
F. CONCRETE TEMPERATURE
G. CONCRETE PLACEMENT
H. CONDITION, SIZE, LOCATION, SPACING OF MASONRY REINFORCING STEEL
I. FIELD SAMPLES AND TESTING OF MASONRY MORTAR & GROUT

FOUNDATIONS:

- 1. DESIGN SOIL BEARING CAPACITY: 2,000 PSF (ASSUMED).
2. WHERE FOOTING OR SLAB ON GRADE IS TO BE PLACED ON FILL, ALL TOPSOIL, ROOTS, TRASH, AND OTHER EXTRANEOUS MATERIALS SHALL BE REMOVED AND REPLACED WITH SELECT FILL COMPACTED TO A MINIMUM OF 95% OF ITS MAXIMUM DENSITY AT ITS OPTIMUM MOISTURE CONTENT AS MEASURED BY FREE STANDARD PROCTOR METHOD (ASTM D998). THE TOP 12" SHALL BE COMPACTED TO A MINIMUM DENSITY OF 98%. EACH LAYER OF FILL SHALL BE NO GREATER THAN 6" THICK AND SHALL BE COMPACTED AS SPECIFIED PRIOR TO PLACEMENT OF THE FOLLOWING LAYER.
3. OWNER SHALL ENGAGE A TESTING AND INSPECTION FIRM WITH A QUALIFIED GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINIA TO INSPECT AND APPROVE THE SUBGRADE INCLUDING FILL AND BACKFILL MATERIALS AND OPERATIONS. ALL FOUNDATION BEARING STRATA SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO ANY CONCRETE PLACEMENT. IF UNSUITABLE SOILS ARE ENCOUNTERED, THE GEOTECHNICAL ENGINEER AND THE PROJECT ENGINEER SHALL DETERMINE THE MEANS OF CORRECTIVE ACTION INCLUDING, BUT NOT LIMITED TO, ITEMS NOTED BELOW.
4. FOOTING BEARING ELEVATIONS MAY BE LOWERED WHERE REQUIRED TO OBTAIN THE DESIGN SOIL BEARING CAPACITY SPECIFIED ABOVE.
5. FOOTINGS MAY BE UNDERCUT AND BACKFILLED WITH COMPACTED STONE OR INCREASED IN THICKNESS AS REQUIRED TO OBTAIN THE DESIGN CAPACITY NOTED ABOVE.
6. FOOTING EXCAVATIONS SHALL NOT BE LEFT OPEN OVER NIGHT WHEN RAIN IS FORECAST. OPEN EXCAVATIONS LEFT EXPOSED TO RAIN, SNOW, OR ICE SHALL HAVE A LAYER OF 2" LEAN CONCRETE PLACED AHEAD OF WEATHER CONDITIONS FOR PROTECTION.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WELL-BRACED SHORING AT EXCAVATIONS NEAR EXISTING BUILDINGS AND CONSTRUCTION TO PREVENT SETTLEMENT OR CAVE-INS.
8. WALLS ACTING AS RETAINING WALLS SHALL NOT BE BACKFILLED WITHOUT BRACING UNTIL ALL FOUNDATION DRAINS, SUPPORTING SOILS, AND SLABS ARE IN PLACE.
9. SELECT AND PLACE POROUS BACKFILL AT RETAINING WALLS CAREFULLY WHERE INDICATED ON THE DRAWINGS.
10. ALL FOOTINGS SHALL BE FORMED WITH WOOD OR METAL FORMING MATERIALS TO THE DIMENSIONS SHOWN ON THE DRAWINGS, UNLESS OTHERWISE NOTED.
11. ALL SLABS ON GRADE SHALL BE PLACED OVER 6" BASE OF WELL-COMPACTED STONE. THE STONE SHALL BE PLACED ON ORIGINAL SOIL OR ON COMPACTED EARTH FILL AS DESCRIBED ABOVE.
12. PLACE CONCRETE FOR SLAB ON GRADE IN CONTINUOUS STRIPS AND PROVIDE CRACK CONTROL OR CONSTRUCTION JOINTS AT LOCATIONS INDICATED ON PLAN.

CONCRETE:

- 1. CONCRETE MIXTURES SHALL COMPLY WITH ACI 301. PREPARE NORMAL-WEIGHT CONCRETE (145 PCF) DESIGN MIXES UNLESS OTHERWISE NOTED, PROPORTIONED ACCORDING TO ACI 301, AS FOLLOWS:
FOOTINGS AND OTHER CONCRETE:
A. MINIMUM COMPRESSIVE STRENGTH: 3000 PSI AT 28 DAYS.
B. MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO: 0.45
C. SLUMP LIMIT: 5 INCHES +/- 1 INCH FOR CONCRETE
D. AIR CONTENT: MAINTAIN 3% (+/- 1%)
EXTERIOR CONCRETE (SIDEWALKS, EQUIPMENT PADS, STAIRS, ETC.):
A. MINIMUM COMPRESSIVE STRENGTH: 3500 PSI AT 28 DAYS.
B. MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO: 0.45
C. SLUMP LIMIT: 5 INCHES +/- 1 INCH FOR CONCRETE
D. AIR CONTENT: MAINTAIN 5% (+/- 1%)
2. READY MIXED CONCRETE PRODUCER SHALL CONFORM TO QUALIFICATIONS BY ASTM C94.
3. MEASURE, BATCH, MIX, AND DELIVER CONCRETE ACCORDING TO ASTM C94 AND ASTM C1116. WHEN AIR TEMPERATURE IS ABOVE 90 DEG F, REDUCE MIXING AND DELIVERY TIME TO 60 MINUTES.
4. ALL DETAILING, FABRICATION AND PROCEDURES OF CONCRETE PLACEMENT SHALL CONFORM WITH THE LATEST EDITIONS OF ACI 301 - "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 315 - "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT", AND ACI 318 - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
5. REINFORCING BARS SHALL BE ROLLED FROM NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60 DEFORMED, UNLESS OTHERWISE NOTED.
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR ALL REINFORCEMENT, UNLESS OTHERWISE NOTED:
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
B. CONCRETE EXPOSED TO EARTH OR WEATHER:
#8 THROUGH #18 BARS 2"
#5 BAR AND SMALLER 1 1/2"
C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
SLABS, WALLS, AND JOISTS 3/4"
BEAMS AND COLUMNS 1 1/2"
7. ISOLATION JOINT MATERIAL SHALL BE 1/2" THICK ASPHALT-SATURATED CELLULOSIC FIBER IN ACCORDANCE WITH ASTM D1752, UNLESS

OTHERWISE NOTED.

- 8. PROVIDE CORNER BARS AT ALL WALL AND FOOTING STEPS AND CORNERS UNLESS OTHERWISE NOTED. CORNER BARS SHALL BE A MINIMUM OF 2'-6"x2'-6" LONG AND SHALL HAVE THE SAME SIZE AND SPACING AS THE HORIZONTAL REINFORCING.
9. LAP ALL REINFORCING SPLICES AT LEAST 48 BAR DIAMETERS UNLESS OTHERWISE NOTED. SPLICE LOCATIONS SHALL BE STAGGERED FOR PARALLEL BARS.
10. ALL REINFORCING SHALL BE SECURELY WIRED TOGETHER IN FORMS AS CALLED FOR IN "PLACING REINFORCING BARS" BY CRSI.
11. NO TORCH CUTTING, HEAT BENDING, OR WELDING OF REINFORCING SHALL BE DONE UNLESS OTHERWISE NOTED.
12. CHAMFER EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
13. CEMENTITIOUS MATERIAL: USE CEMENTITIOUS MATERIALS, OF THE SAME TYPE, BRAND, AND SOURCE, THROUGHOUT PROJECT. PORTLAND CEMENT SHALL BE ASTM C150, TYPE 1/11. GRAY. SUPPLEMENT WITH FLY ASH IN ACCORDANCE WITH ASTM C518, CLASS F OR C AND GROUND GRANULATED BLAST-FURNE SLAG IN ACCORDANCE WITH ASTM A995, GRADE 100 OR 120. SILICA FUME SHALL BE ASTM C1240, AMORPHOUS SILICA.
14. NORMAL-WEIGHT AGGREGATES: ASTM C33, CLASS SS COARSE AGGREGATE OR BETTER, GRADED. PROVIDE AGGREGATES FROM A SINGLE SOURCE WITH DOCUMENTED SERVICE RECORD DATA OF AT LEAST 10 YEARS' SATISFACTORY SERVICE IN SIMILAR APPLICATIONS AND SERVICE CONDITIONS USING SIMILAR AGGREGATES AND CEMENTITIOUS MATERIALS. MAXIMUM COARSE-AGGREGATE SIZE SHALL BE 1 INCH NOMINAL. FINE AGGREGATES SHALL BE FREE OF MATERIALS WITH DELETERIOUS REACTIVITY TO ALKALI IN CEMENT.
15. WATER SHALL BE ASTM C94 AND POTABLE.
16. AIR-ENTRAINING ADMIXTURE SHALL CONFORM TO ASTM C260.
17. CHEMICAL ADMIXTURES SHALL CONFORM TO ASTM C494 AND BE WATER REDUCING. CONTRACTOR SHALL NOT USE CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE.
18. JOINT FILLER SHALL BE TWO COMPONENT, POLYUREA ELASTOMER, FLEXIBLE, 100 PERCENT SOLIDS FOR EXTERIOR APPLICATION. CONTRACTOR SHALL CONFIRM COMPATIBILITY OF JOINT FILLER/SEALANT WITH FLOORING, SEALING, AND CURING MANUFACTURING.
19. CONSTRUCT FORMWORK ACCORDING TO ACI 301 AND MAINTAIN TOLERANCES AND SURFACE IRREGULARITIES WITHIN ACI 347 R LIMITS OF CLASS C, 1/2 INCH FOR OTHER CONCRETE SURFACES.
20. COMPLY WITH CRSI'S "MANUAL OF STANDARD PRACTICE" FOR FABRICATING, PLACING, AND SUPPORTING REINFORCEMENT.
21. BEFORE PLACING CONCRETE, VERIFY THAT INSTALLATION OF FORMWORK, REINFORCEMENT, AND EMBEDDED ITEMS IS COMPLETE AND THAT ALL REQUIRED INSPECTIONS HAVE BEEN PERFORMED.
22. PLACE CONCRETE IN A CONTINUOUS OPERATION AND CONSOLIDATE USING MECHANICAL VIBRATING EQUIPMENT.
23. PROTECT CONCRETE FROM PHYSICAL DAMAGE, PREMATURE DRYING, AND REDUCED STRENGTH DUE TO HOT OR COLD WEATHER DURING MIXING, PLACING, AND CURING.
24. UNFORMED SURFACES SUCH AS TOPS OF WALLS, HORIZONTAL OFFSETS, AND SIMILAR UNFORMED SURFACES ADJACENT TO FORMED SURFACES SHALL BE FINISHED TO ANY FINISH AND FINISHED WITH A TEXTURED ADJACENT FORMED SURFACES. CONTINUE FINAL SURFACE TREATMENT OF FORMED SURFACES UNIFORMLY ACROSS ADJACENT UNFORMED SURFACES UNLESS OTHERWISE NOTED.
25. SLAB FINISHES SHALL COMPLY WITH ACI 302.1R RECOMMENDATIONS FOR SCREEDING, RESTRAIGHTENING, AND FINISHING OPERATIONS FOR CONCRETE SURFACES. APPLY FINISHES TO FLOORS AND SLABS NOTED BELOW:
A. BROOM FINISH SHALL BE APPLIED TO EXTERIOR CONCRETE PLATFORMS, STEPS, RAMPS, AND AS INDICATED. IMMEDIATELY AFTER FLOAT FINISHING, SLIGHTLY ROUGHEN TRAFFIC SURFACE BY BROOMING WITH FIBER-BRISTLE BROOM PERPENDICULAR TO MAIN TRAFFIC ROUTE. COORDINATE REQUIRED FINAL FINISH WITH OWNER/ENGINEER BEFORE APPLICATION.
26. BEGIN CURING CONCRETE SLABS AFTER FINISHING.
27. PROTECT CONCRETE FROM DAMAGE. REPAIR SURFACE DEFECTS IN FORMED CONCRETE AND SLABS.
28. DO NOT ADD WATER TO CONCRETE DURING DELIVERY, AT PROJECT SITE, OR DURING PLACEMENT UNLESS APPROVED BY ENGINEER.
29. BEFORE TEST SAMPLING AND PLACING CONCRETE, WATER MAY BE ADDED AT PROJECT SITE, SUBJECT TO LIMITATIONS OF ACI 301 AND ENGINEER APPROVAL. DO NOT ADD WATER TO CONCRETE AFTER ADDING HIGH-RANGE WATER-REDUCING ADMIXTURES TO MIXTURE.
30. DEPOSIT CONCRETE CONTINUOUSLY IN ONE LAYER OR IN HORIZONTAL LAYERS OF SUCH THICKNESS THAT NO NEW CONCRETE WILL BE PLACED ON CONCRETE THAT HAS HARDENED ENOUGH TO CAUSE SEAMS OR PLANES OF WEAKNESS. IF A SECTION CANNOT BE PLACED CONTINUOUSLY, PROVIDE CONSTRUCTION JOINTS AS INDICATED. DEPOSIT CONCRETE TO AVOID SEGREGATION. DEPOSIT CONCRETE IN HORIZONTAL LAYERS OF DEPTH TO NOT EXCEED FORMWORK DESIGN PRESSURES AND IN A MANNER TO AVOID INCLINED COJ JOINTS. CONSOLIDATE PLACED CONCRETE WITH MECHANICAL VIBRATING EQUIPMENT ACCORDING TO ACI 301. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE INSIDE FORMS. INSERT AND WITHDRAW VIBRATORS VERTICALLY AT UNIFORMLY SPACED LOCATIONS TO RAPIDLY PENETRATE PLACED LAYER AND TO EXTEND AT LEAST 6 INCHES INTO PRECEDING LAYER. DO NOT INSERT VIBRATORS INTO LOWER LAYERS OF CONCRETE THAT HAVE BEGUN TO LOSE PLASTICITY. AT EACH INSERTION, LIMIT DURATION OF VIBRATION TO TIME NECESSARY TO CONSOLIDATE CONCRETE AND COMPLETE EMBEDMENT OF REINFORCEMENT AND OTHER EMBEDDED ITEMS WITHOUT CAUSING MIXTURE CONSTITUENTS TO SEGREGATE.
31. DEPOSIT AND CONSOLIDATE CONCRETE FOR SLABS IN A CONTINUOUS OPERATION, WITHIN LIMITS OF CONSTRUCTION JOINTS. UNTIL PLACEMENT OF A PANEL OR SECTION IS COMPLETE, CONSOLIDATE CONCRETE DURING PLACEMENT OPERATIONS SO CONCRETE IS THOROUGHLY WORKED AROUND REINFORCEMENT AND OTHER EMBEDDED ITEMS AND INTO CORNERS. MAINTAIN REINFORCEMENT IN POSITION ON CHAIRS DURING CONCRETE PLACEMENT. SCREED SLAB SURFACES WITH A STRAIGHTEDGE AND STRIKE OFF TO CORRECT ELEVATIONS. SLOPE SURFACES UNIFORMLY TO DRAIN WHERE REQUIRED. BEGIN INITIAL FLOATING USING BULL FLOATS OR DARBIES TO FORM A UNIFORM AND OPEN-TEXTURED SURFACE. DO NOT FURTHER DISTURB SLAB SURFACES BEFORE STARTING FINISHING OPERATIONS.
32. COLD-WEATHER PLACEMENT: COMPLY WITH ACI 306.1 AND AS FOLLOWS. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH THAT COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES. WHEN AVERAGE HIGH AND LOW TEMPERATURE IS EXPECTED TO FALL BELOW 40 DEG F FOR THREE SUCCESSIVE DAYS, MAINTAIN DELIVERED CONCRETE MIXTURE TEMPERATURE WITHIN THE TEMPERATURE RANGE REQUIRED BY ACI 301. DO NOT USE FROZEN MATERIALS OR MATERIALS CONTAINING ICE OR SNOW. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE OR ON SUBGRADE CONTAINING FROZEN MATERIALS. DO NOT USE CALCIUM CHLORIDE, SALT, OR OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS UNLESS OTHERWISE SPECIFIED AND APPROVED IN MIXTURE DESIGNS.
33. HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 301. MAINTAIN CONCRETE TEMPERATURE BELOW 90 DEG F AT TIME OF PLACEMENT. CHILLED MIXING WATER OR CHOPPED ICE MAY BE USED TO CONTROL TEMPERATURE, PROVIDED WATER EQUIVALENT OF ICE IS CALCULATED TO TOTAL AMOUNT OF MIXING WATER. USING LIQUID NITROGEN TO COOL CONCRETE IS CONTRACTOR'S OPTION. FOG-SPRAY FORMS, STEEL REINFORCEMENT, AND SUBGRADE JUST BEFORE PLACING CONCRETE. KEEP SUBGRADE UNIFORMLY MOIST WITHOUT STANDING WATER, SOFT SPOTS, OR DRY AREAS.

- 34. CURE CONCRETE ACCORDING TO ACI 308.1 MOISTURE CURING. KEEP SURFACES CONTINUOUSLY MOIST FOR NOT LESS THAN SEVEN DAYS WITH WATER, CONTINUOUS WATER-FOG SPRAY, ABSORPTIVE COVER, WATER SATURATED, AND KEPT CONTINUOUSLY WET. COVER CONCRETE SURFACES AND EDGES WITH 12 INCH LAP OVER ADJACENT ABSORPTIVE COVERS.
35. OWNER SHALL ENGAGE A TESTING AND INSPECTION FIRM TO PERFORM FIELD TESTS ON CONCRETE AND REBAR AND TO SUBMIT TEST REPORTS FOR VALIDATION WITH DESIGN PARAMETERS NOTED ABOVE.
36. INSPECTIONS SHALL INCLUDE STEEL REINFORCEMENT PLACEMENT, VERIFICATION OF USE OF REQUIRED DESIGN MIXTURE, CONCRETE PLACEMENT, INCLUDING CONVEYING AND DEPOSITING, AND CURING PROCEDURES AND MAINTENANCE OF CURING TEMPERATURE.
37. CONCRETE TESTS: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C172. TESTING FREQUENCY: OBTAIN ONE COMPOSITE SAMPLE FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE EXCEEDING 5 CUBIC YARDS, BUT LESS THAN 25 CUBIC YARDS, PLUS ONE SET FOR EACH ADDITIONAL 50 CUBIC YARDS OR FRACTION THEREOF.
38. SLUMP: ASTM C143; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
39. AIR CONTENT: ASTM C231, PRESSURE METHOD. FOR NORMAL-WEIGHT CONCRETE, ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE.
40. CONCRETE TEMPERATURE: ASTM C1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEG F AND BELOW AND WHEN 80 DEG F AND ABOVE. AND ONE TEST FOR EACH COMPOSITE SAMPLE.
41. COMPRESSION TEST SPECIMENS: ASTM C39; CAST AND FIELD CURE THREE SETS OF TWO STANDARD CYLINDERS FOR EACH COMPOSITE SAMPLE. TEST ONE SET OF TWO LABORATORY-CURED SPECIMENS AT 7 DAYS AND ONE SET OF TWO SPECIMENS FOR 28 DAYS. HOLD OTHER SET IN RESERVE. A COMPRESSIVE-STRENGTH TEST SHALL BE THE AVERAGE COMPRESSIVE STRENGTH FROM A SET OF TWO SPECIMENS OBTAINED FROM SAME COMPOSITE SAMPLE AND TESTED AT AGE INDICATED WHEN STRENGTH OF FIELD-CURED CYLINDERS. CONTRACTOR SHALL EVALUATE OPERATIONS AND PROVIDE CORRECTIVE PROCEDURES FOR PROTECTING AND CURING IN-PLACE CONCRETE.
42. STRENGTH OF EACH CONCRETE MIXTURE WILL BE SATISFACTORY IF EVERY AVERAGE OF ANY THREE CONSECUTIVE COMPRESSIVE-STRENGTH TESTS EQUALS OR EXCEED SPECIFIED COMPRESSIVE STRENGTH AND NO COMPRESSIVE STRENGTH TEST VALUE FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI.
43. TEST RESULTS SHALL BE REPORTED IN WRITING TO OWNER, A/E, AND CONTRACTOR WITHIN 48 HOURS OF TESTING. REPORTS OF COMPRESSIVE-STRENGTH TESTS SHALL CONTAIN PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING AND INSPECTION FIRM, LOCATION OF CONCRETE BATCH IN WORK, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIXTURE PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7- AND 28-DAY TESTS.
44. NONDESTRUCTIVE TESTING: IMPACT HAMMER, SONOSCOPE, OR OTHER NONDESTRUCTIVE DEVICE MAY BE PERMITTED, BUT WILL NOT BE USED AS SOLE BASIS FOR APPROVAL OR REJECTION OF CONCRETE.
45. ADDITIONAL TESTS: TESTING AND INSPECTION FIRM SHALL MAKE ADDITIONAL TESTS OF CONCRETE WHEN TEST RESULTS INDICATE THAT SLUMP, AIR ENTRAINMENT, COMPRESSIVE STRENGTHS, OR OTHER REQUIREMENTS HAVE NOT BEEN MET. TESTING AND INSPECTION FIRM MAY CONDUCT TESTS TO DETERMINE ADEQUACY OF CONCRETE BY CORED CYLINDERS COMPLYING WITH ASTM C42 OR BY OTHER METHODS.
46. ADDITIONAL TESTING AND INSPECTING, AT CONTRACTOR'S EXPENSE, WILL BE PERFORMED TO DETERMINE COMPLIANCE OF REPLACED OR ADDITIONAL WORK WITH SPECIFIED REQUIREMENTS.
47. CORRECT DEFICIENCIES IN THE WORK THAT TEST REPORTS AND INSPECTIONS INDICATE DO NOT COMPLY WITH THE CONTRACT DOCUMENTS.

CONCRETE MASONRY:

- 1. ALL DETAILING, FABRICATION, AND PROCEDURES OF CONCRETE MASONRY SHALL CONFORM TO THE LATEST EDITIONS OF ACI 530.1 - "SPECIFICATIONS FOR MASONRY STRUCTURES" AND ACI 530 - "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES".
2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N-1 UNLESS OTHERWISE NOTED. COMPRESSIVE STRENGTH ON NET CROSS SECTIONAL AREA OF INDIVIDUAL MASONRY UNIT SHALL BE 1900 PSI. NET AREA COMPRESSIVE STRENGTH OF MASONRY (FM) SHALL BE 1500 PSI.
3. MASONRY SHALL BE LAID IN ASTM C270, TYPE "S" MORTAR, UNLESS NOTED AND SHALL HAVE FULL MORTAR COVERAGE OF THE FACE SHELLS IN BOTH HORIZONTAL AND VERTICAL JOISTS.
4. GROUT FOR REINFORCED MASONRY SHALL CONFORM TO ASTM C476 AND HAVE A COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS AND A SLUMP OF 8" TO 11". MAXIMUM HEIGHT TO WHICH MASONRY SHALL BE LAID BEFORE FILLING IS 3 FEET FOR PEA GRAVEL CONCRETE AND 6 FEET FOR FINE GROUT. GROUT ALL CMU VOIDS FULL HEIGHT.
5. REINFORCING GRADE AND DETAILS SHALL BE THE SAME AS FOR CONCRETE. TIE IN POSITION AND PLACE CONCRETE AROUND REINFORCING DURING CONSTRUCTION OF MASONRY. DO NOT PUSH REINFORCING DOWN INTO PREVIOUSLY PLACED GROUT FILL. SET BOLT SIMILARLY.
6. PROVIDE CLEANOUT OPENINGS AT THE BOTTOM OF EACH GROUT LIFT. CLEANOUT OPENINGS SHALL BE PROVIDED AT EACH CELL TO BE FILLED WITH GROUT. GROUT POURS SHALL BE TERMINATED 1 1/2" BELOW THE TOP OF CMU COURSE TO FORM A KEY AT THIS JOINT.
7. HORIZONTAL BARS MAY BE SPLICED WITH A MINIMUM LAP OF 48 TIMES THE BAR DIAMETER, UNLESS OTHERWISE NOTED.
8. PROVIDE HORIZONTAL REINFORCING AT 16" ON VERTICAL CENTER. HORIZONTAL JOIST REINFORCING SHALL BE LAPPED A MINIMUM OF 8". HORIZONTAL REINFORCING SHALL BE GALVANIZED LADDER TYPE JOIST REINFORCEMENT WITH (2) 9 GAGE (W1.7) RODS AND 9 GAGE CROSS RODS, HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A153 - CLASS B-2. DO NOT SPLICE VERTICAL BARS EXCEPT AS DETAILED.
9. VERTICAL SPLICED REINFORCING BARS SHALL OCCUPY THE SAME CELL. VERTICAL REINFORCEMENT IN WALLS SHALL BE SUPPORTED AND SECURED AGAINST DISPLACEMENT AT 4 FOOT MAXIMUM INTERVALS. MINIMUM LAP SPLICE SHALL BE 24" FOR #3 AND #4 BARS AND 36" FOR #5 AND #6 BARS. SPLICED BARS SHALL BE TIED TOGETHER.
11. IN ADDITION TO VERTICAL REINFORCING DETAILED ON THE DRAWINGS, PROVIDE VERTICAL REINFORCING TO MATCH SIZE DETAILED AT THE FOLLOWING LOCATIONS:
A. CELL AT END OF A WALL.
B. THREE BARS EACH CORNER (CORNER CELL AND ADJACENT CELLS IN EACH DIRECTION).
12. THE MASONRY CONTRACTOR SHALL PROVIDE AND PLACE SUCH SPECIAL UNITS AS MAY BE REQUIRED TO FORM ALL CORNERS, RETURNS, AND OFFSETS WHILE MAINTAINING THE PROPER BOND.
13. FACE SHELL BEDDING SHALL BE USED WITH COMPLETE COVERAGE OF FACE SHELLS. FURROWING OF THE MORTAR SHALL NOT BE PERMITTED.
14. MORTAR JOINTS SHALL BE 3/8" THICK WITH FULL MORTAR COVERAGE ON VERTICAL AND HORIZONTAL FACE SHELLS.

BRICK MASONRY:

- 1. SUBMITTALS: PROVIDE SAMPLES FOR BRICK AND COLORED MORTAR AND

- MATERIAL CERTIFICATES FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE STATEMENTS OF MATERIAL PROPERTIES INDICATING COMPLIANCE WITH REQUIREMENTS.
2. SAMPLE PANELS: CONSTRUCT A SAMPLE WALL PANEL APPROXIMATELY 48 INCHES LONG BY 48 INCHES HIGH TO DEMONSTRATE AESTHETIC EFFECTS AND SET QUALITY STANDARDS FOR MATERIALS AND EXECUTION.
3. BRICK SHALL COMPLY WITH ASTM C216. GRADE AND SIZE TO MATCH EXISTING. SOLID BRICK WITH EXPOSED SURFACES FINISHED FOR ENDS OF SILLS AND CAPS. SPECIAL SHAPES FOR APPLICATIONS WHERE SHAPES PRODUCED BY SAWING WOULD RESULT IN SAWED SURFACES BEING EXPOSED TO VIEW.
4. MORTAR SHALL COMPLY WITH ASTM C270. PROPORTION SPECIFICATION TO MATCH EXISTING. DO NOT USE CALCIUM CHLORIDE IN MORTAR.
5. CUT MASONRY UNITS WITH SAW. INSTALL WITH CUT SURFACES AND, WHERE POSSIBLE, CUT EDGES CONCEALED. MIX UNITS FOR EXPOSED UNIT MASONRY FROM SEVERAL PALLETS OR CUBES AS THEY ARE PLACED TO PRODUCE UNIFORM BLEND OF COLORS AND TEXTURES.
6. FINISH EXPOSED JOINTS TO MATCH EXISTING. KEEP CAVITIES CLEAN OF MORTAR DROPPINGS AND OTHER MATERIALS DURING CONSTRUCTION.
7. CLEAN MASONRY AS WORK PROGRESSES. REMOVE MORTAR FINIS AND SMEARS BEFORE TOOLING JOINTS. AFTER MORTAR IS THOROUGHLY CURED, CLEAN EXPOSED MASONRY. CLEAN MASONRY WITH A PROPRIETARY ACIDIC CLEANER APPLIED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. WET WALL SURFACES WITH WATER BEFORE APPLYING ACIDIC CLEANER. THEN REMOVE CLEANER PROMPTLY BY RINSING THOROUGHLY WITH CLEAR WATER.

CHAIN LINK FENCE:

- 1. PROVIDE PRODUCT DATA, SHOP DRAWINGS, PRODUCT CERTIFICATES AND PRODUCT TEST REPORTS FOR EACH TYPE OF PRODUCT AND FENCE ASSEMBLY. INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES FOR FENCE POSTS, CHAIN-LINK FABRIC, REINFORCEMENTS, ATTACHMENTS, RAILS, AND FITTINGS. PRODUCT TEST REPORTS FOR FRAMEWORK STRENGTH SHALL COMPLY WITH ASTM F1043, FOR TESTS PERFORMED BY A QUALIFIED TESTING AGENCY.
2. FIELD VERIFY LAYOUT AND DIMENSIONS OF CHAIN-LINK FENCE SHOWN ON DRAWINGS IN RELATION EXISTING STRUCTURES.
3. FENCING MANUFACTURER SHALL PROVIDE A WARRANTY THAT AGREES TO REPAIR OR REPLACE DEFECTIVE CHAIN-LINK FENCING THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION. FAILURES INCLUDE, BUT ARE NOT LIMITED TO, FAILURE TO COMPLY WITH PERFORMANCE REQUIREMENTS AND/OR DETERIORATION OF METALS, METAL FINISHES, AND OTHER MATERIALS BEYOND NORMAL WEATHERING.
4. CHAIN-LINK FENCE FABRIC SHALL BE IN ONE-PIECE HEIGHTS MEASURED BETWEEN TOP AND BOTTOM OF OUTER EDGE OF SELVAGE KNUCKLE OR TWIST ACCORDING TO "CLFMI PRODUCT MANUAL". FABRIC SHALL BE BLACK POLYMER-COATED FABRIC COMPLYING WITH ASTM F934 AND ASTM F668, CLASS 1 OVER ZINC-COATED STEEL WIRE WITH A WIRE DIAMETER OF 0.148 INCHES.
5. POSTS AND RAILS SHALL BE COLOR COATED TO MATCH FENCE FABRIC AND COMPLY WITH ASTM F1043 FOR FRAMEWORK, INCLUDING RAILS, BRACES, AND LINE. TERMINAL, AND CORNER POSTS. PROVIDE MEMBERS WITH MINIMUM DIMENSIONS AND WALL THICKNESS ACCORDING TO ASTM F1043. LINE POSTS SHALL BE LIGHT-INDUSTRIAL-STRENGTH COMPLYING WITH GROUP I-C-L, ROUND STEEL PIPE. ELECTRIC-RESISTANCE-WELDED PIPE, 1.9 INCHES IN DIAMETER.
6. END, CORNER, AND PULL POSTS SHALL BE 2.375 INCHES.
7. PROVIDE FITTINGS FOR POST CAPS, RAIL AND BRACE ENDS ACCORDING TO ASTM F626. IF APPLICABLE, PROVIDE LINE POST CAPS WITH LOOP TO RECEIVE TENSION WIRE OR TOP RAIL. TOP RAIL SLEEVES SHALL BE PRESSED-STEEL OR ROUND-STEEL TUBING NOT LESS THAN 6 INCHES LONG. PROVIDE LINE AND CORNER BULLWARD CLAMPS FOR CONNECTING INTERMEDIATE RAILS TO POSTS. TENSION AND BRACE BANDS SHALL BE PRESSED STEEL. TENSION BARS SHALL BE STEEL WITH A LENGTH NOT LESS THAN 2 INCHES SHORTER THAN FULL HEIGHT OF CHAIN-LINK FABRIC. PROVIDE ONE BAR FOR EACH GATE AND END POST, AND TWO FOR EACH CORNER AND PULL POST, UNLESS FABRIC IS INTEGRALLY WOVEN INTO POST.
8. TIE WIRES, CLIPS, AND FASTENERS SHALL FOLLOW ASTM F626 AND COLOR COATED TO MATCH FENCE FABRIC. STANDARD ROUND WIRE TIES SHALL BE USED FOR ATTACHING CHAIN-LINK FABRIC TO POSTS, RAILS, AND FRAMES. THESE ITEMS SHALL BE HOT-DIP GALVANIZED STEEL AND GALVANIZED COATING THICKNESS MATCHING COATING THICKNESS OF CHAIN-LINK FENCE FABRIC.
9. ANCHORING CEMENT SHALL BE FACTORY-PACKAGED, NONSHRINK, NONSTAINING, HYDRAULIC-CONTROLLED EXPANSION CEMENT FORMULATION FOR MIXING WITH WATER AT PROJECT SITE TO CREATE POURABLE ANCHORING, PATCHING, AND GROUTING COMPOUND. PROVIDE FORMULATION THAT IS RESISTANT TO EROSION FROM WATER EXPOSURE WITHOUT NEEDING PROTECTION BY A SEALER OR WATERPROOF COATING, AND THAT IS RECOMMENDED IN WRITING BY MANUFACTURER FOR EXTERIOR APPLICATIONS.
10. CONTRACTOR SHALL NOT BEGIN INSTALLATION BEFORE FINAL GRADING IS COMPLETED. INSTALL CHAIN-LINK FENCING ACCORDING TO ASTM F67 AND MORE STRINGENT REQUIREMENTS SPECIFIED. INSTALL FENCING ON ESTABLISHED BOUNDARY LINES INSIDE PROPERTY LINE. DRILL OR HAND-EXCAVATE HOLES FOR POSTS TO DIAMETERS AND SPACINGS INDICATED. VERIFY THAT POSTS ARE SET PLUMB, ALIGNED, AND AT CORRECT HEIGHT AND SPACING, AND HOLD IN POSITION DURING SETTING WITH CONCRETE OR MECHANICAL DEVICES. PLACE CONCRETE AROUND POSTS TO DIMENSIONS INDICATED AND VIBRATE OR TAMP FOR CONSOLIDATION. PROTECT ABOVEGROUND PORTION OF POSTS FROM CONCRETE SPLATTER.
11. INSTALL FENCE ACCORDING TO ASTM F567. MAINTAINING PLUMB POSITION AND ALIGNMENT OF FENCE POSTS. DIAGONALLY BRACE TERMINAL POSTS TO ADJACENT LINE POSTS WITH TRUSS RODS AND TURNBUCKLES. INSTALL BRACES AT END AND GATE POSTS AND AT BOTH SIDES OF CORNER AND PULL POSTS.
12. USE TIE WIRE OF PROPER LENGTH TO FIRMLY SECURE FABRIC TO LINE POSTS AND RAILS. ATTACH WIRE AT ONE END TO CHAIN-LINK FABRIC, WRAP WIRE AROUND POST A MINIMUM OF 180 DEGREES, AND ATTACH OTHER END TO CHAIN-LINK FABRIC ACCORDING TO ASTM F626. BEND ENDS OF WIRE TO MINIMIZE HAZARD TO INDIVIDUALS AND CLOTHING. TIE FABRIC TO LINE POSTS AT MAXIMUM SPACING 12 INCHES OC AND TO BRACES AT MAXIMUM SPACING 24 INCHES OC. INSTALL NUTS FOR TENSION BANDS AND CARRIAGE BOLTS ON THE SIDE OF FENCE OPPOSITE THE FABRIC SIDE.

Table with columns for NO., BY, REVISIONS, and DATE.



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CITY OF LYNCHBURG
8TH STREET STAIRS RETAINING WALLS
CITY PROJECT NO: T0227
CITY ENGINEERING PROJECT NO: 13019-M
LYNCHBURG, VIRGINIA

GENERAL NOTES
DATE: 08 AUG. 14
PROJECT NO: 14008

Full Scale Verification
0" 1"
Drawing No.: S2