

BURTEN, BELL, CARR DEVELOPMENT, INC. COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS CLEVELAND, OHIO

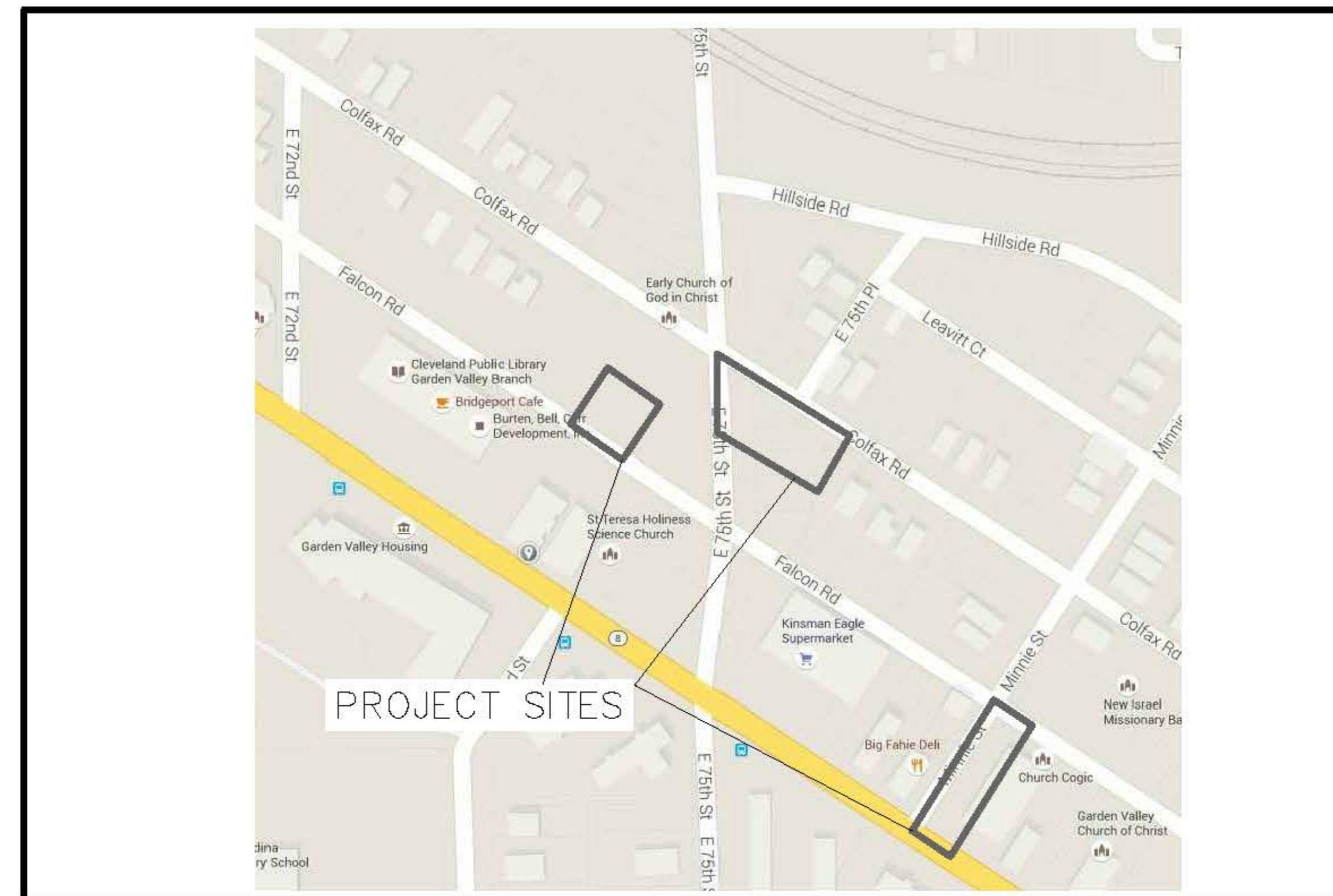


**COLFAX GREEN
LINKS
GREEN
INFRASTRUCTURE
IMPROVEMENTS**

**CITY OF
CLEVELAND**

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VICINITY MAP

NOT TO SCALE

UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
CALL 800-362-2764 (TOLL FREE)
OHIO UTILITIES
PROTECTION SERVICE
NON-MEMBER
MUST BE CALLED DIRECTLY
CALL 614-715-2984
OHIO OIL & GAS PRODUCERS UNDERGROUND
PROTECTION SERVICE (OGPUPS)

TAG	ISSUED	DATE

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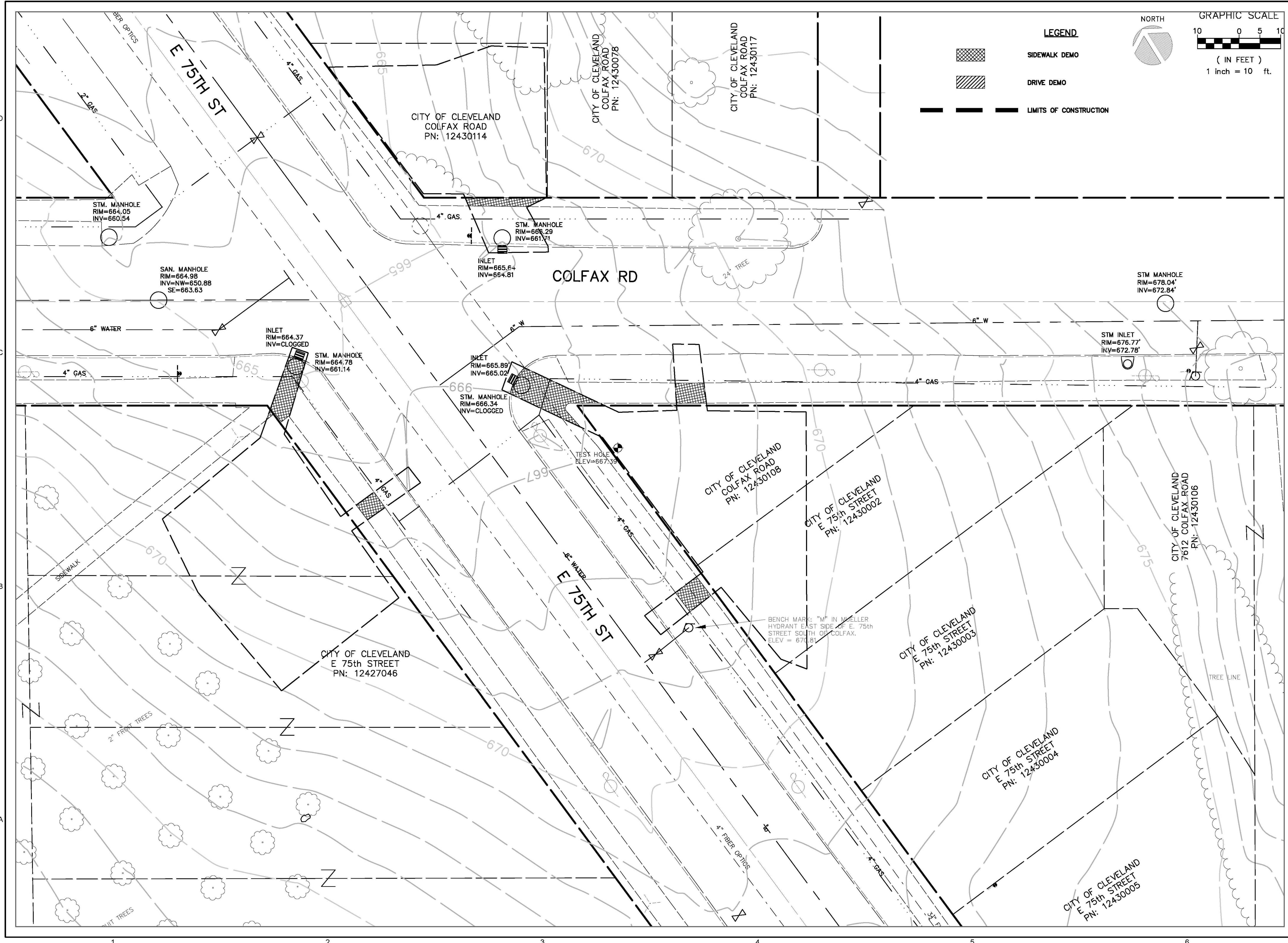
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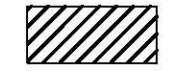

**TITLE
SHEET**

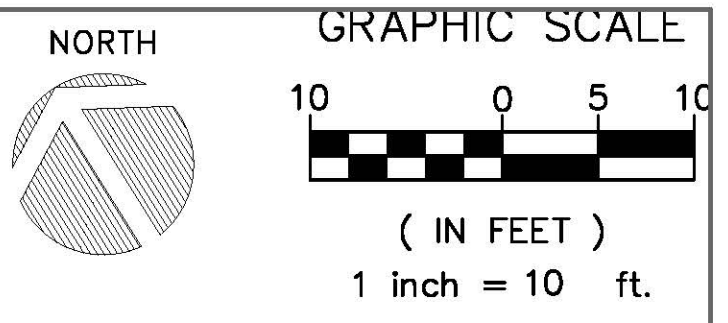
DRAWING NO.

C1-01



LEGEND

-  **SIDEWALK DEMO**
-  **DRIVE DEMO**
-  **LIMITS OF CONSTRUCTION**



COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

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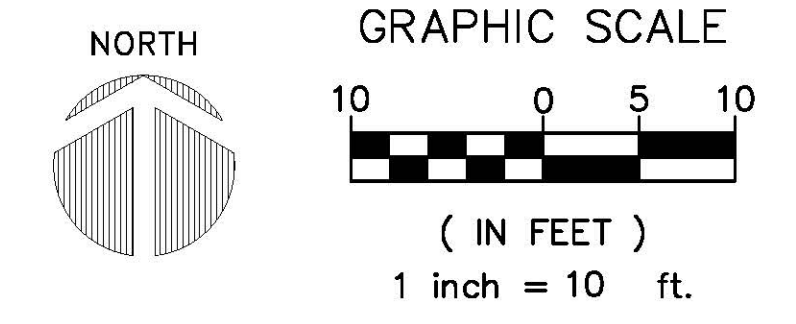
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COLFAX ROAD EXISTING CONDITIONS AND DEMO

DRAWING NO. **C2-01**

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 6/24/2016 11:47:AM Lemmon, Jon-Michael



COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

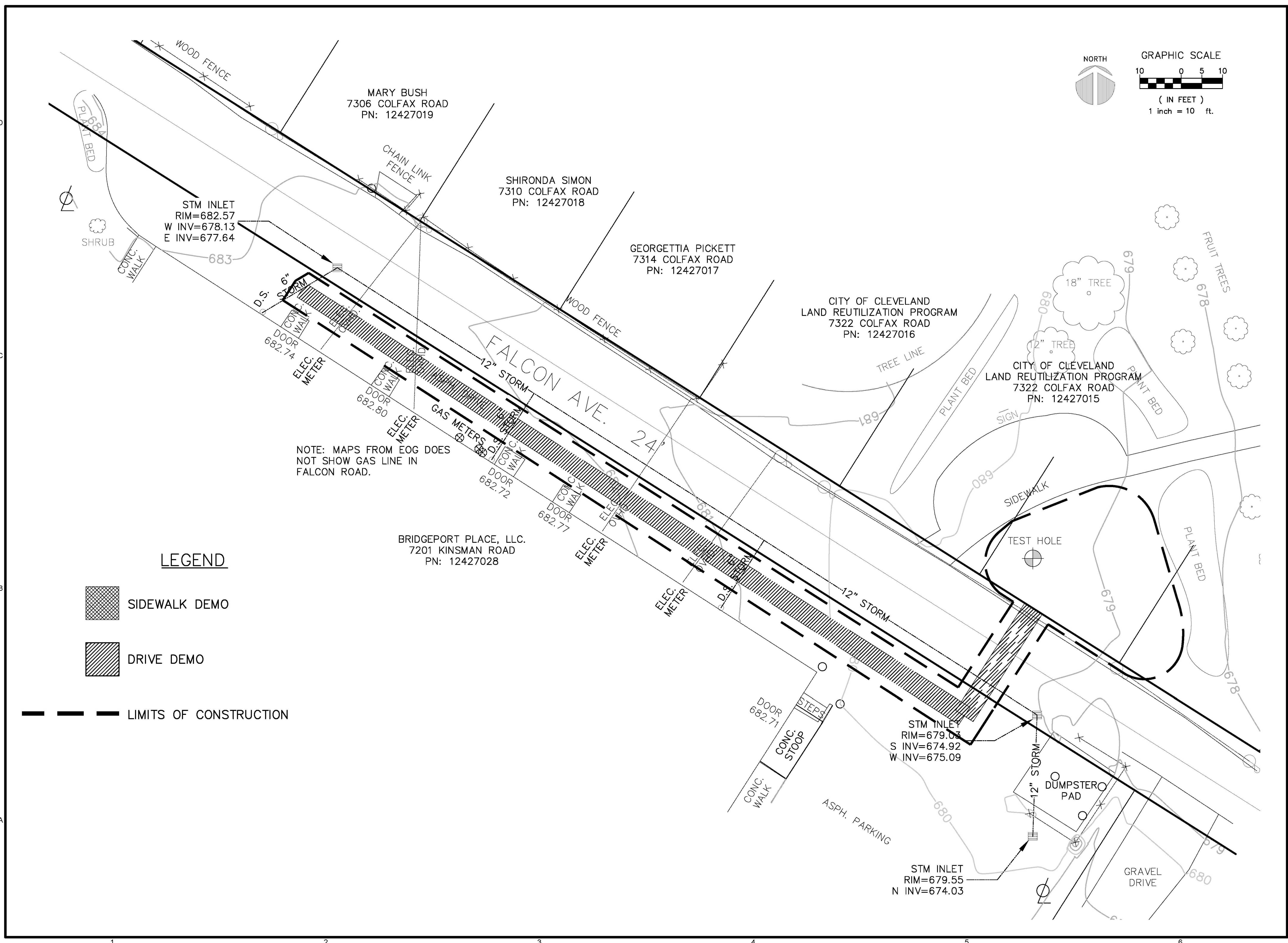
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FALCON AVENUE EXISTING CONDITIONS AND DEMO

DRAWING NO.:
C2-02



LEGEND

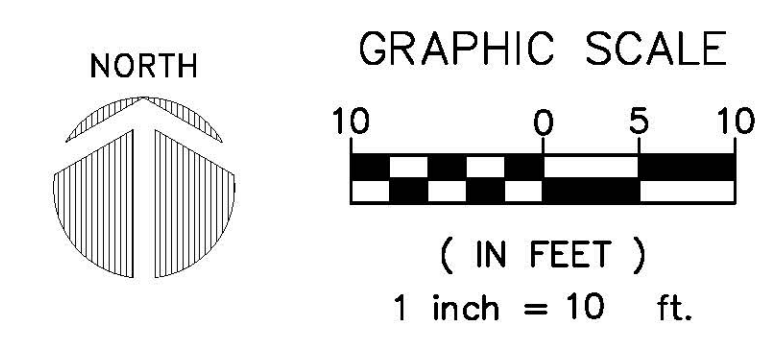
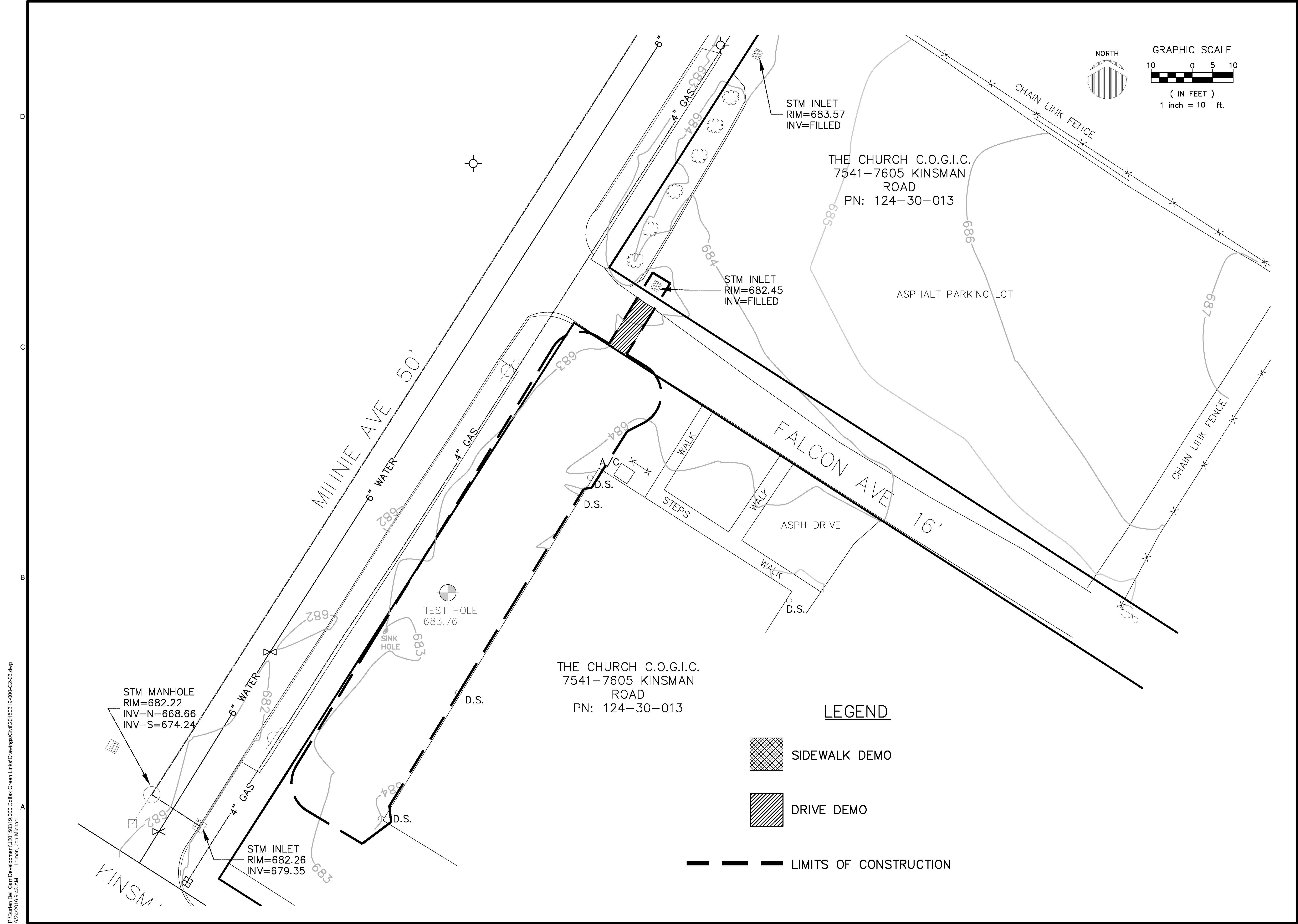
SIDEWALK DEMO

DRIVE DEMO

LIMITS OF CONSTRUCTION

NOTE: MAPS FROM EOG DOES NOT SHOW GAS LINE IN FALCON ROAD.

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CITY OF CLEVELAND

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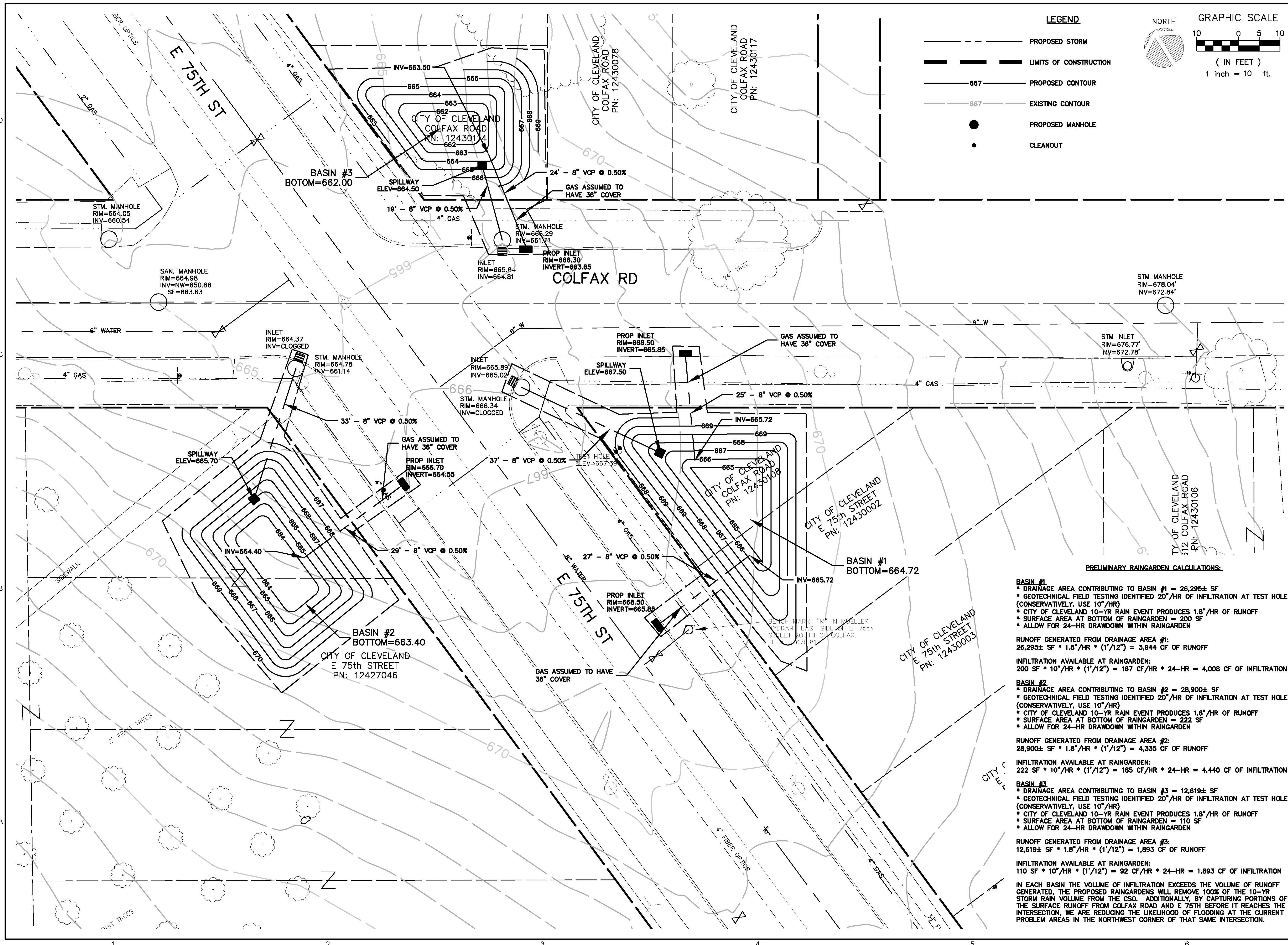
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MINNIE AVENUE EXISTING CONDITIONS AND DEMO

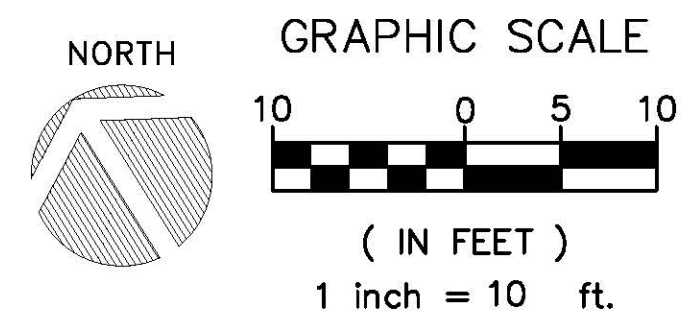
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C2-03

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LEGEND

- PROPOSED STORM
- LIMITS OF CONSTRUCTION
- 667 PROPOSED CONTOUR
- 667 EXISTING CONTOUR
- PROPOSED MANHOLE
- CLEANOUT



COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

PRELIMINARY RAINGARDEN CALCULATIONS:

BASIN #1
 * DRAINAGE AREA CONTRIBUTING TO BASIN #1 = 26,295± SF
 * GEOTECHNICAL FIELD TESTING IDENTIFIED 20"/HR OF INFILTRATION AT TEST HOLE (CONSERVATIVELY, USE 10"/HR)
 * CITY OF CLEVELAND 10-YR RAIN EVENT PRODUCES 1.8"/HR OF RUNOFF
 * SURFACE AREA AT BOTTOM OF RAINGARDEN = 200 SF
 * ALLOW FOR 24-HR DRAWDOWN WITHIN RAINGARDEN

RUNOFF GENERATED FROM DRAINAGE AREA #1:
 26,295± SF * 1.8"/HR * (1'/12") = 3,944 CF OF RUNOFF

INFILTRATION AVAILABLE AT RAINGARDEN:
 200 SF * 10"/HR * (1'/12") = 167 CF/HR * 24-HR = 4,008 CF OF INFILTRATION

BASIN #2
 * DRAINAGE AREA CONTRIBUTING TO BASIN #2 = 28,900± SF
 * GEOTECHNICAL FIELD TESTING IDENTIFIED 20"/HR OF INFILTRATION AT TEST HOLE (CONSERVATIVELY, USE 10"/HR)
 * CITY OF CLEVELAND 10-YR RAIN EVENT PRODUCES 1.8"/HR OF RUNOFF
 * SURFACE AREA AT BOTTOM OF RAINGARDEN = 222 SF
 * ALLOW FOR 24-HR DRAWDOWN WITHIN RAINGARDEN

RUNOFF GENERATED FROM DRAINAGE AREA #2:
 28,900± SF * 1.8"/HR * (1'/12") = 4,335 CF OF RUNOFF

INFILTRATION AVAILABLE AT RAINGARDEN:
 222 SF * 10"/HR * (1'/12") = 185 CF/HR * 24-HR = 4,440 CF OF INFILTRATION

BASIN #3
 * DRAINAGE AREA CONTRIBUTING TO BASIN #3 = 12,619± SF
 * GEOTECHNICAL FIELD TESTING IDENTIFIED 20"/HR OF INFILTRATION AT TEST HOLE (CONSERVATIVELY, USE 10"/HR)
 * CITY OF CLEVELAND 10-YR RAIN EVENT PRODUCES 1.8"/HR OF RUNOFF
 * SURFACE AREA AT BOTTOM OF RAINGARDEN = 110 SF
 * ALLOW FOR 24-HR DRAWDOWN WITHIN RAINGARDEN

RUNOFF GENERATED FROM DRAINAGE AREA #3:
 12,619± SF * 1.8"/HR * (1'/12") = 1,893 CF OF RUNOFF

INFILTRATION AVAILABLE AT RAINGARDEN:
 110 SF * 10"/HR * (1'/12") = 92 CF/HR * 24-HR = 1,893 CF OF INFILTRATION

IN EACH BASIN THE VOLUME OF INFILTRATION EXCEEDS THE VOLUME OF RUNOFF GENERATED. THE PROPOSED RAINGARDENS WILL REMOVE 100% OF THE 10-YR STORM RAIN VOLUME FROM THE CSO. ADDITIONALLY, BY CAPTURING PORTIONS OF THE SURFACE RUNOFF FROM COLFAX ROAD AND E 75th BEFORE IT REACHES THE INTERSECTION, WE ARE REDUCING THE LIKELIHOOD OF FLOODING AT THE CURRENT PROBLEM AREAS IN THE NORTHWEST CORNER OF THAT SAME INTERSECTION.

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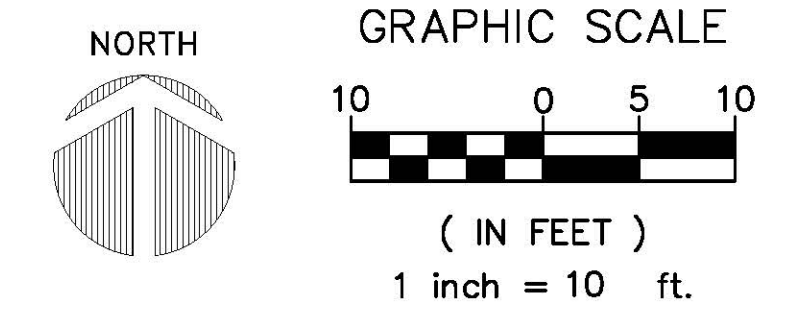
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COLFAX ROAD RAINGARDEN LAYOUT

DRAWING NO.
C3-01

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COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

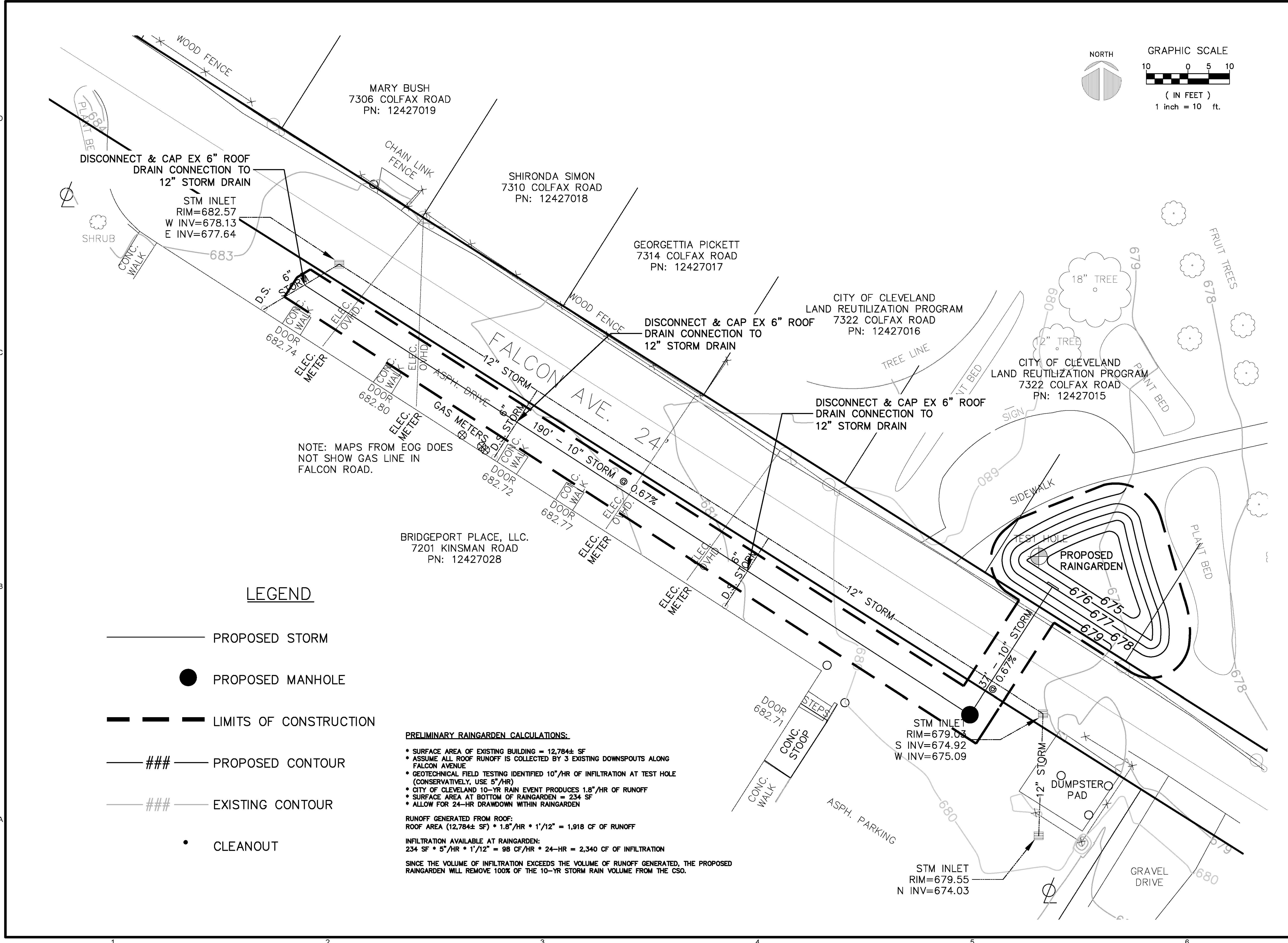
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FALCON AVENUE RAINGARDEN LAYOUT

DRAWING NO. **C3-02**



NOTE: MAPS FROM EOG DOES NOT SHOW GAS LINE IN FALCON ROAD.

LEGEND

- PROPOSED STORM
- PROPOSED MANHOLE
- — — LIMITS OF CONSTRUCTION
- ### PROPOSED CONTOUR
- ### EXISTING CONTOUR
- CLEANOUT

PRELIMINARY RAINGARDEN CALCULATIONS:

- SURFACE AREA OF EXISTING BUILDING = 12,784± SF
- ASSUME ALL ROOF RUNOFF IS COLLECTED BY 3 EXISTING DOWNSPOUTS ALONG FALCON AVENUE
- GEOTECHNICAL FIELD TESTING IDENTIFIED 10"/HR OF INFILTRATION AT TEST HOLE (CONSERVATIVELY, USE 5"/HR)
- CITY OF CLEVELAND 10-YR RAIN EVENT PRODUCES 1.8"/HR OF RUNOFF
- SURFACE AREA AT BOTTOM OF RAINGARDEN = 234 SF
- ALLOW FOR 24-HR DRAWDOWN WITHIN RAINGARDEN

RUNOFF GENERATED FROM ROOF:
 ROOF AREA (12,784± SF) * 1.8"/HR * 1'/12" = 1,918 CF OF RUNOFF

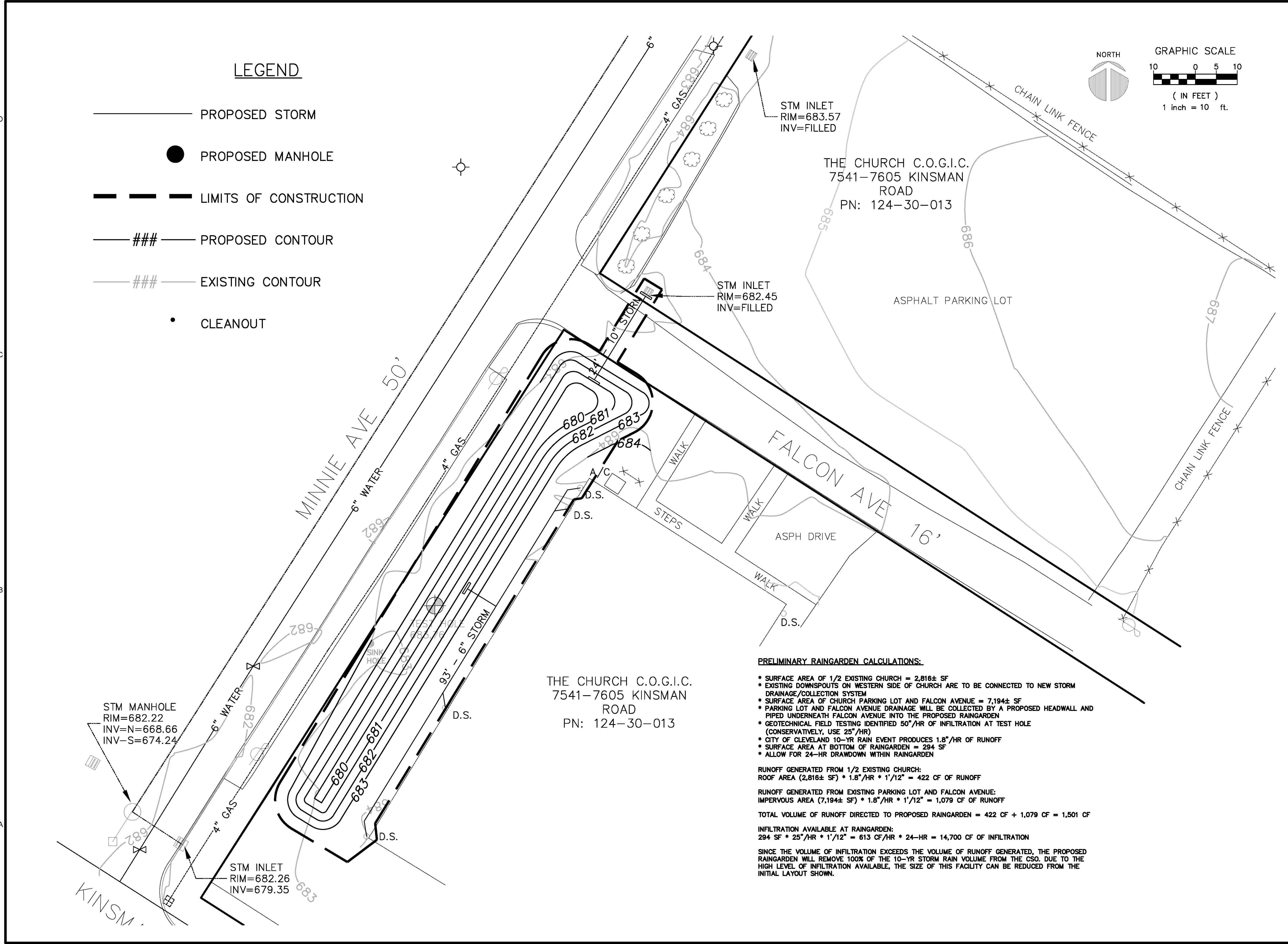
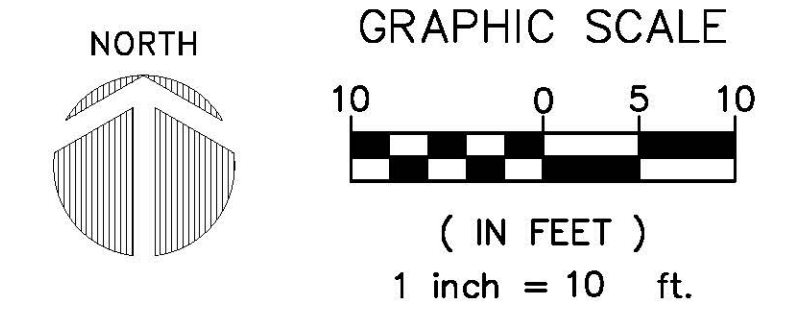
INFILTRATION AVAILABLE AT RAINGARDEN:
 234 SF * 5"/HR * 1'/12" = 98 CF/HR * 24-HR = 2,340 CF OF INFILTRATION

SINCE THE VOLUME OF INFILTRATION EXCEEDS THE VOLUME OF RUNOFF GENERATED, THE PROPOSED RAINGARDEN WILL REMOVE 100% OF THE 10-YR STORM RAIN VOLUME FROM THE CSO.

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LEGEND

- PROPOSED STORM
- PROPOSED MANHOLE
- — — LIMITS OF CONSTRUCTION
- ### PROPOSED CONTOUR
- ### EXISTING CONTOUR
- CLEANOUT



PRELIMINARY RAINGARDEN CALCULATIONS:

- SURFACE AREA OF 1/2 EXISTING CHURCH = 2,816± SF
- EXISTING DOWNSPOUTS ON WESTERN SIDE OF CHURCH ARE TO BE CONNECTED TO NEW STORM DRAINAGE/COLLECTION SYSTEM
- SURFACE AREA OF CHURCH PARKING LOT AND FALCON AVENUE = 7,194± SF
- PARKING LOT AND FALCON AVENUE DRAINAGE WILL BE COLLECTED BY A PROPOSED HEADWALL AND PIPED UNDERNEATH FALCON AVENUE INTO THE PROPOSED RAINGARDEN
- GEOTECHNICAL FIELD TESTING IDENTIFIED 50"/HR OF INFILTRATION AT TEST HOLE (CONSERVATIVELY, USE 25"/HR)
- CITY OF CLEVELAND 10-YR RAIN EVENT PRODUCES 1.8"/HR OF RUNOFF
- SURFACE AREA AT BOTTOM OF RAINGARDEN = 294 SF
- ALLOW FOR 24-HR DRAWDOWN WITHIN RAINGARDEN

RUNOFF GENERATED FROM 1/2 EXISTING CHURCH:
 ROOF AREA (2,816± SF) * 1.8"/HR * 1'/12" = 422 CF OF RUNOFF

RUNOFF GENERATED FROM EXISTING PARKING LOT AND FALCON AVENUE:
 IMPERVIOUS AREA (7,194± SF) * 1.8"/HR * 1'/12" = 1,079 CF OF RUNOFF

TOTAL VOLUME OF RUNOFF DIRECTED TO PROPOSED RAINGARDEN = 422 CF + 1,079 CF = 1,501 CF

INFILTRATION AVAILABLE AT RAINGARDEN:
 294 SF * 25"/HR * 1'/12" = 613 CF/HR * 24-HR = 14,700 CF OF INFILTRATION

SINCE THE VOLUME OF INFILTRATION EXCEEDS THE VOLUME OF RUNOFF GENERATED, THE PROPOSED RAINGARDEN WILL REMOVE 100% OF THE 10-YR STORM RAIN VOLUME FROM THE CSO. DUE TO THE HIGH LEVEL OF INFILTRATION AVAILABLE, THE SIZE OF THIS FACILITY CAN BE REDUCED FROM THE INITIAL LAYOUT SHOWN.



COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

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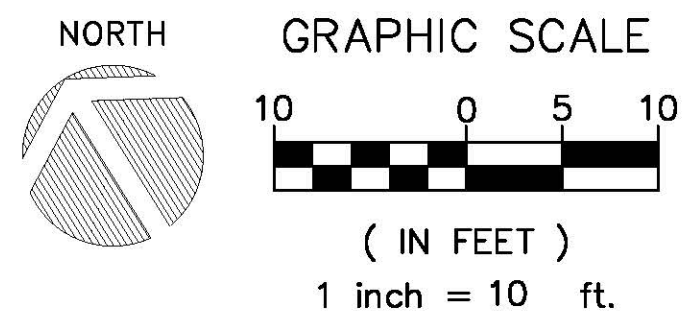
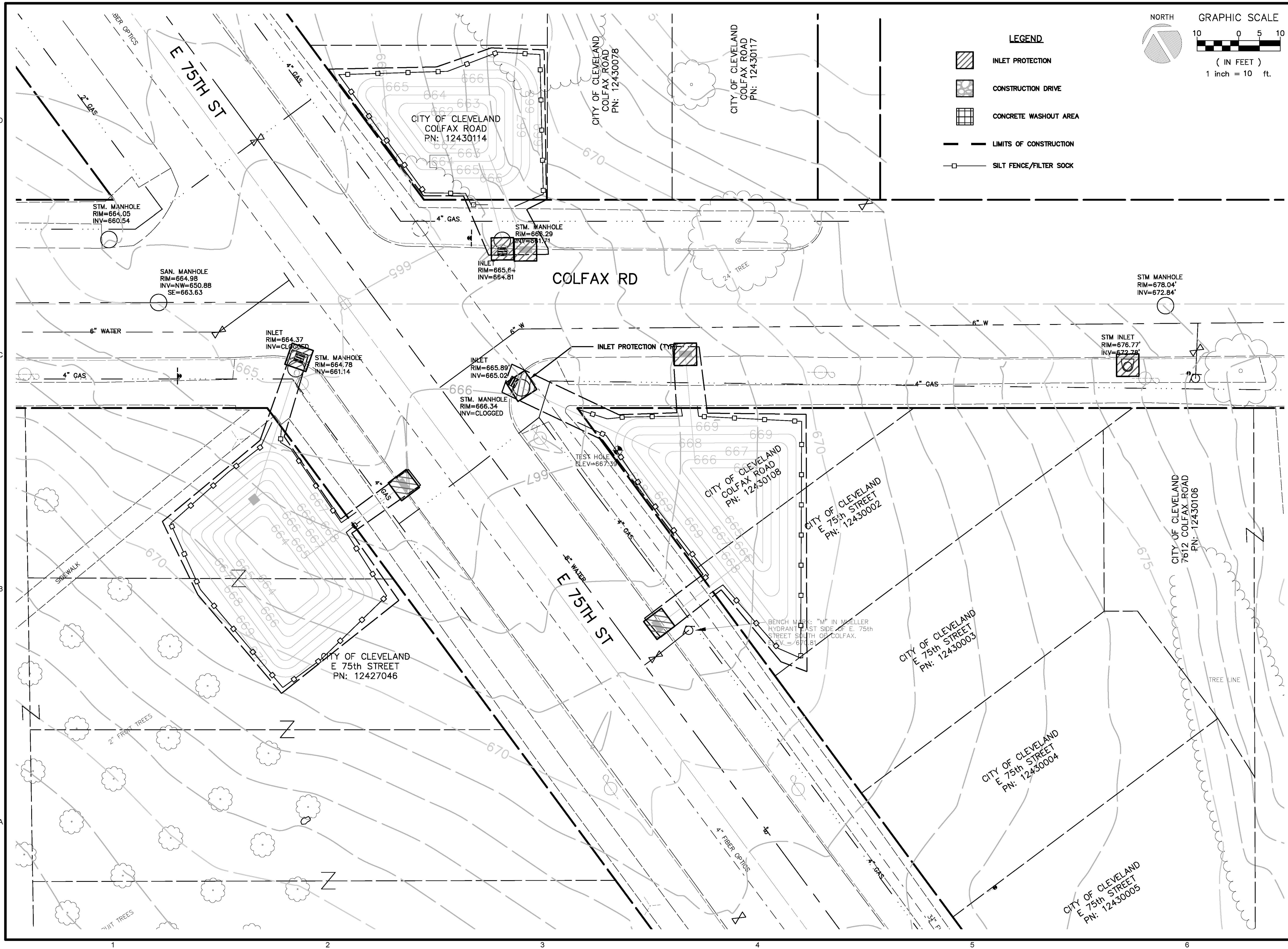
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MINNIE AVENUE RAINGARDEN LAYOUT

DRAWING NO. **C3-03**

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- LEGEND**
- INLET PROTECTION
 - CONSTRUCTION DRIVE
 - CONCRETE WASHOUT AREA
 - LIMITS OF CONSTRUCTION
 - SILT FENCE/FILTER SOCK



COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

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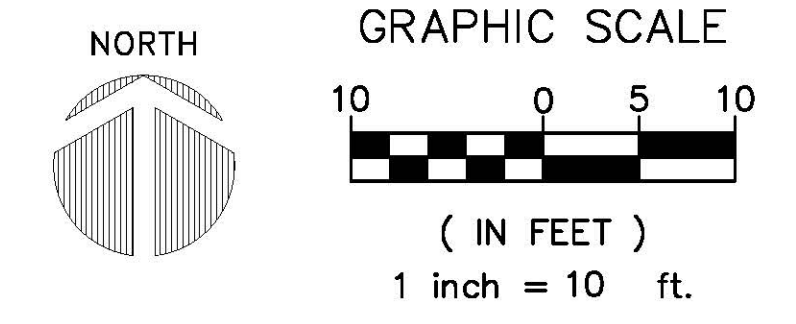
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COLFAX ROAD SWPPP PLAN

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C4-01

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COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

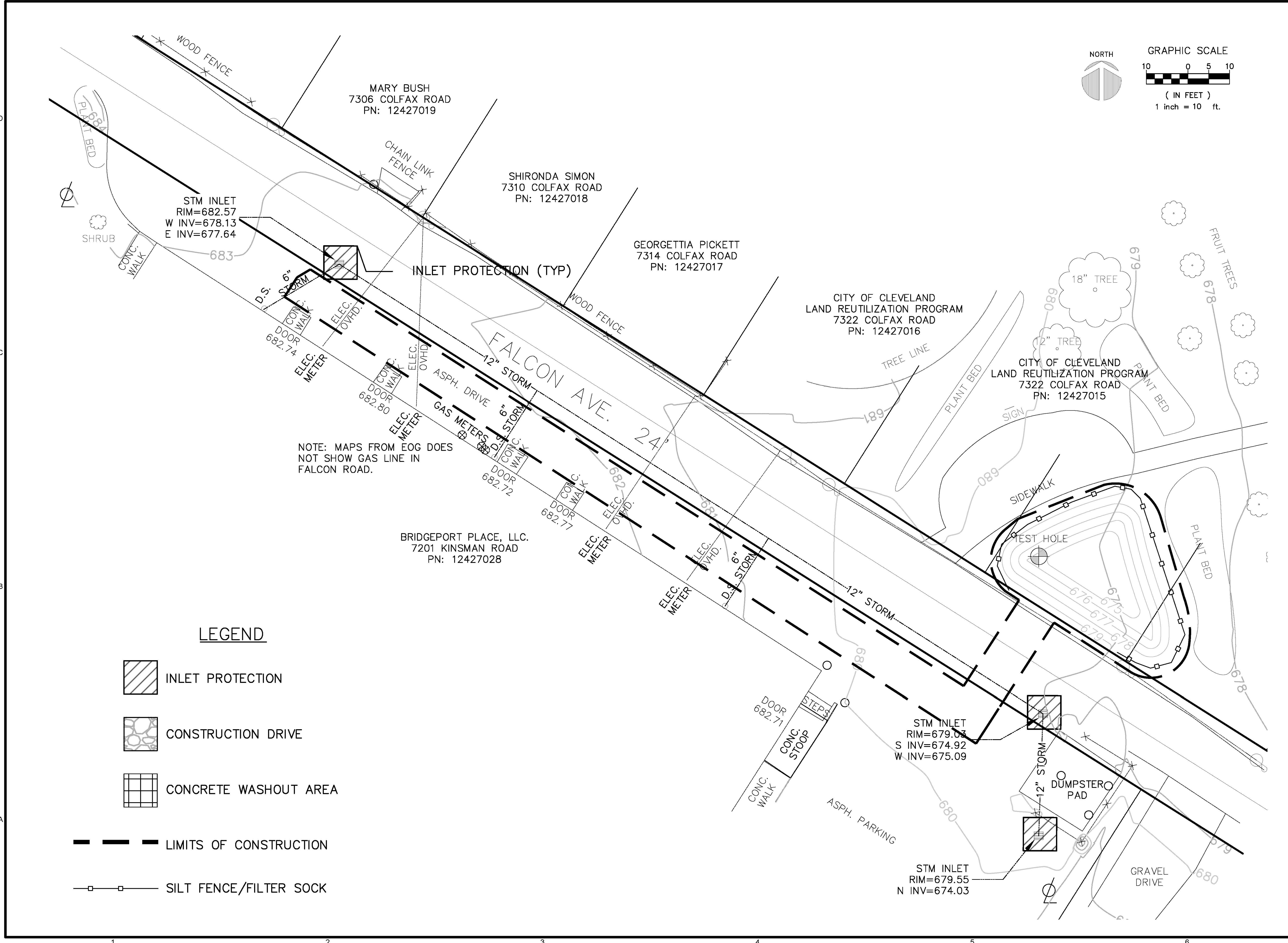
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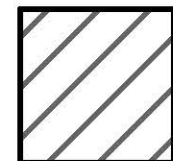
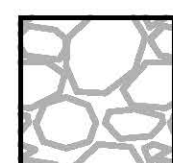
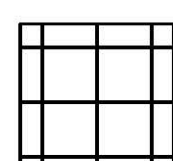

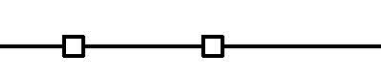
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FALCON AVENUE SWPPP PLAN

DRAWING NO.:
C4-02

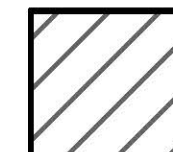
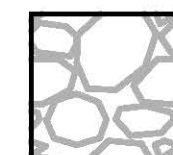
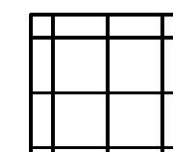


LEGEND

-  INLET PROTECTION
-  CONSTRUCTION DRIVE
-  CONCRETE WASHOUT AREA
-  LIMITS OF CONSTRUCTION
-  SILT FENCE/FILTER SOCK

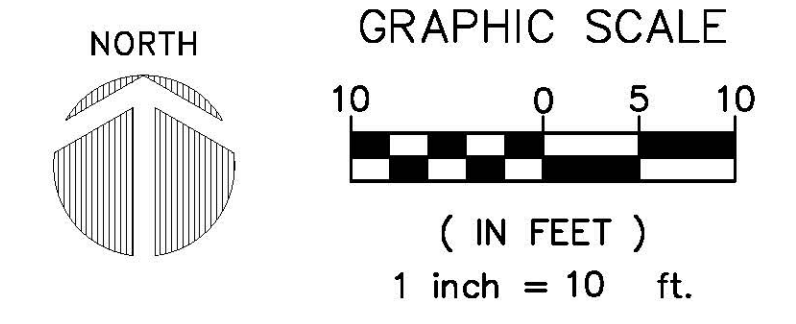
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LEGEND

-  INLET PROTECTION
-  CONSTRUCTION DRIVE
-  CONCRETE WASHOUT AREA

 LIMITS OF CONSTRUCTION

 SILT FENCE/FILTER SOCK



COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

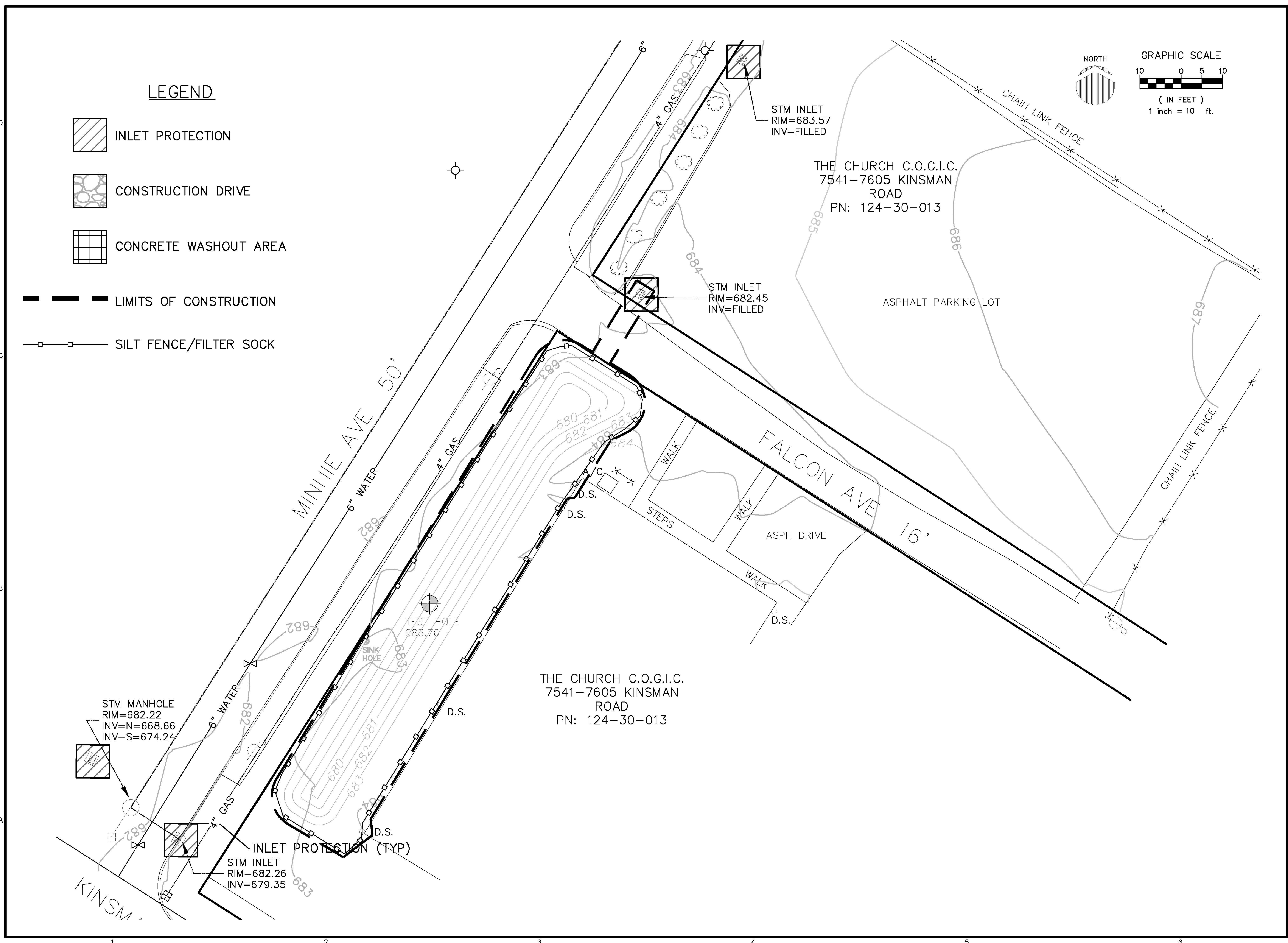
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MINNIE AVENUE SWPPP PLAN

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C4-03



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SITE EROSION AND SEDIMENT CONTROL INFORMATION

THE PROJECT INVOLVES THREE (3) SEPARATE AREAS THAT WILL BE IMPROVED TO REMOVE SURFACE AND ROOF RUNOFF FROM THE CITY STORM SEWER SYSTEM AND INFILTRATE IT INTO THE GROUND. THIS PRACTICE WILL REDUCE INFLOW TO THE CSO, RECHARGE THE REGIONAL GROUNDWATER TABLE AND WILL ALLOW FOR AREAS OF BEAUTIFICATION IN OPEN SPACE FOR NEIGHBORHOOD RESIDENTS TO ENJOY.

	COLFAX SITE	UNITS	FALCON SITE	UNITS	MINNIE SITE	UNITS
TOTAL AREA OF SITE	0.32	ACRES	0.08	ACRES	0.08	ACRES
TOTAL AREA DISTURBED	0.32	ACRES	0.08	ACRES	0.08	ACRES
EXISTING IMPERVIOUS AREA	0.13	ACRES	0.01	ACRES	0.010	ACRES
EXISTING PERVIOUS AREA	0.19	ACRES	0.08	ACRES	0.07	ACRES
PROPOSED IMPERVIOUS AREA	0.13	ACRES	0.01	ACRES	0.01	ACRES
PROPOSED PERVIOUS AREA	0.19	ACRES	0.08	ACRES	0.07	ACRES
RUNOFF CALCULATIONS						
PRE-CONSTRUCTION RUNOFF COEFFICIENTS						
IMPERVIOUS AREA	0.13	ACRES	0.01	ACRES	0.01	ACRES
PERVIOUS AREA	0.19	ACRES	0.08	ACRES	0.07	ACRES
TOTAL AREA	0.32	ACRES	0.08	ACRES	0.08	ACRES
WEIGHTED "C"	0.56		0.34		0.38	
POST-CONSTRUCTION RUNOFF COEFFICIENTS						
IMPERVIOUS AREA	0.13	ACRES	0.01	ACRES	0.01	ACRES
PERVIOUS AREA	0.19	ACRES	0.08	ACRES	0.07	ACRES

- THE EXISTING SOILS FOR THE PROJECT SITE ARE "SP - FILL AND GRAVELLY SAND".
- THE EXISTING SITES CONTAIN AN EXISTING STRIP-OFFICE BUILDING WITH PARKING LOT, 3 EXISTING HOMES AND AN OPEN GREEN SPACE AREA & AN EXISTING CHURCH WITH PARKING LOT.
- CONSTRUCTION SEQUENCE**
 - INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES.
 - CONSTRUCT NEW RAINGARDEN AREAS FOR INFILTRATION AND GROUNDWATER RECHARGE.
 - INSTALL NEW CURB INLETS AND STORM PIPES.
 - REPAIR CURBS AND SIDEWALKS WHERE UTILITIES WERE INSTALLED.
 - REMOVE TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES UPON FULL ESTABLISHMENT OF FINAL VEGETATION.
- PROPOSED STORM WATER COLLECTED IS TO BE DISCHARGED INTO EXISTING ON-SITE COMBINED SEWERS WHICH DISCHARGE INTO THE NORTHEAST OHIO REGIONAL SEWER DISTRICT (NEORS) SYSTEM.
- THERE ARE NO SURFACE WATER LOCATIONS WITHIN 200 FEET OF THE PROJECT SITE.
- ALL STORM WATER COLLECTED IS TO BE DISCHARGED INTO ON-SITE STORM SEWERS WHICH OUTLET INTO CITY OF CLEVELAND COMBINED SEWER OR THE NEORS SYSTEM.
- SWPPP CONTACT: JON-MICHAEL C. LEMON, PE, PROJECT MANAGER (216) 861-2020.
- THE POST-CONSTRUCTION BMP WILL BE PROVIDED IN THE GRASSED AREAS OF THE PROJECT. ALL LAWN AREAS WILL BE ATOP A MINIMUM OF 12" PLANTING SOIL.
- THE CONTRACTOR MUST USE TEMPORARY SEEDING MEASURES ON ANY CLEARED AND/OR STOCKPILED AREAS THAT ARE UNDISTURBED FOR MORE THAN 14 DAYS. ANY AREAS THAT WILL REMAIN UNDISTURBED FOR MORE THAN ONE YEAR MUST BE PERMANENTLY SEEDDED.

POST CONSTRUCTION BMP RATIONALE STATEMENT

BASED UPON THE AVAILABLE INFILTRATION RATES AT EACH OF THE 3 PROJECT SITES, RUNOFF FROM SURROUNDING IMPERVIOUS AREAS WILL BE ABLE TO BE REMOVED FROM THE NEORS CSO. BY REMOVING SURFACE AND ROOFTOP RUNOFF FROM THE LOCAL NEORS SYSTEM, LOCAL ROADWAY PONDING WILL BE ALLEVIATED AND THE LIKELIHOOD OF LOCAL FLOODING WILL BE DECREASED.

PROJECT SITE INFORMATION

ADDRESS: BURTON, BELL & CARR DEVELOPMENT, INC.
7201 KINSMAN ROAD, SUITE 104
CLEVELAND, OHIO 44104

CONTACT: ERICK RODRIGUEZ
(818) 257-1691

CONTRACTOR: T.B.D

SWP3 CONTACT (OSBORN): JON-MICHAEL C. LEMON, PE
(216) 861-2020

PROPOSED PROJECT START DATE: AUGUST 1, 2016
ESTIMATED COMPLETION DATE: OCTOBER 1, 2016

STORMWATER CONTROL MEASURES

PROPOSED STORMWATER MEASURES CONSIST OF A SERIES OF INFILTRATION BASINS OR RAINGARDENS THAT INTRODUCE CURRENT SURFACE AND ROOFTOP RUNOFF INTO THE GROUNDWATER.

SOIL TYPE

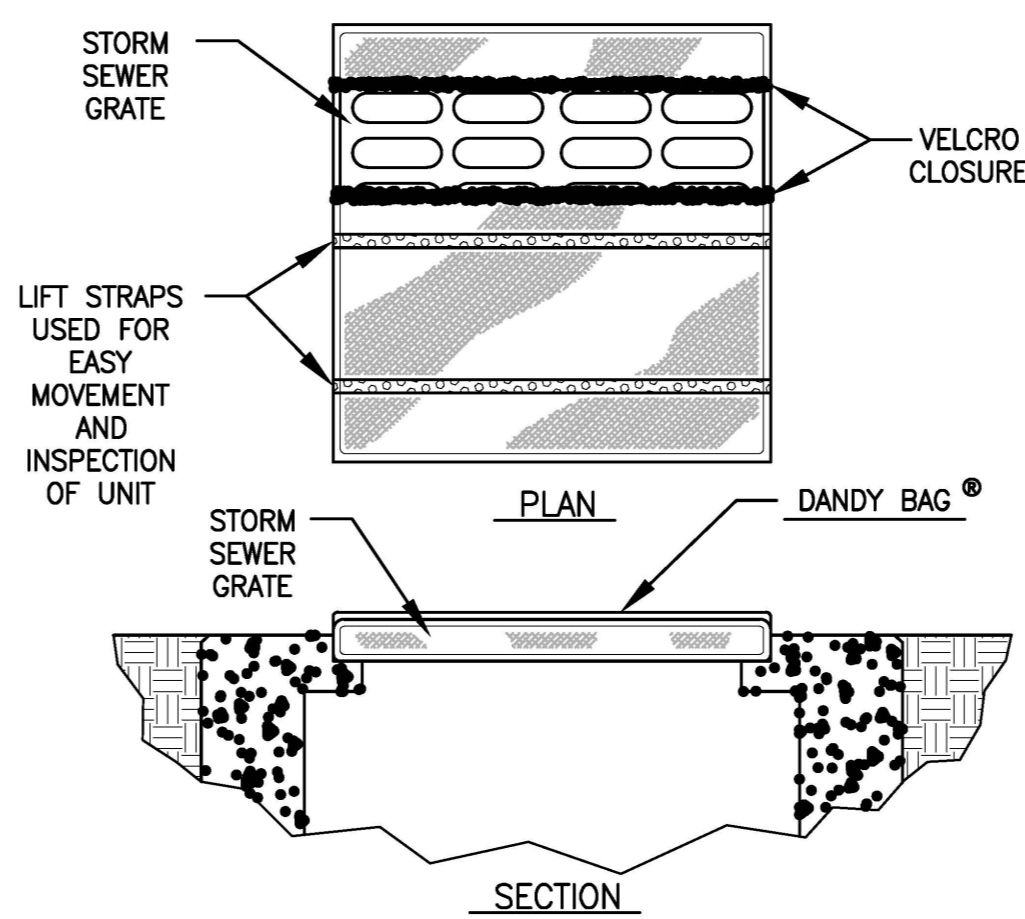
THE PREDOMINANT SOIL TYPES FOUND ON SITE WERE FILL AND GRAVELLY SAND (SP).

REQUIRED LONG TERM MAINTENANCE

- THE OWNER SHALL MAINTAIN A STAND-ALONE DOCUMENT WHICH SHALL INCLUDE THE SWPPP AND THE FOLLOWING:
 - THE DESIGNATED ENTITY FOR STORM WATER INSPECTION AND MAINTENANCE RESPONSIBILITIES.
 - ROUTINE AND NON-ROUTINE MAINTENANCE TASKS.
 - SCHEDULE FOR INSPECTION AND MAINTENANCE.
 - ANY NECESSARY LEGALLY BINDING MAINTENANCE EASEMENTS AND AGREEMENTS.
 - MAP SHOWING ALL ACCESS AND MAINTENANCE EASEMENTS.
- THE OWNER SHALL MAINTAIN A STAND-ALONE INSPECTION AND MAINTENANCE DOCUMENT. THESE RECORDS MAY BE REQUESTED AND REVIEWED BY THE CITY OR THE OHIO EPA AND THEY MAY INSPECT THE PROPERTY AT ANY TIME. THE FOLLOWING ITEMS SHALL BE INCLUDED ON THE STORM WATER SITE INSPECTION FORM:
 - PROJECT NAME AND LOCATION.
 - DATE OF INSPECTION, INSPECTOR'S NAME, AFFILIATION, CONTACT INFORMATION AND QUALIFICATIONS.
 - WEATHER CONDITIONS AT THE TIME OF THE INSPECTION INCLUDING PRECIPITATION, TEMPERATURE, ETC.
 - IS THERE DEBRIS IN THE AREA?
 - ARE THE STORM INLETS FREE OF DEBRIS?
 - DO THE PLANTS APPEAR HEALTHY?
 - IS MULCH IN GOOD STANDING OR DOES IT NEED REDRESSING?
 - ARE UPSTREAM DRAINAGEWAYS IN GOOD STANDING AND FREE OF DEBRIS?
 - IS MAINTENANCE REQUIRED?
 - DATE AND DETAILED DESCRIPTION OF MAINTENANCE PERFORMED.
- GRASS AND LANDSCAPED AREAS:** THE OWNER SHALL INSPECT ALL GRASS AREAS TO ENSURE GOOD STANDING AS THE SEEDDED/SODDED AREAS ARE A BMP. THE RECOMMENDED OPERATION AND MAINTENANCE SCHEDULE IS AS FOLLOWS:
 - FERTILIZER:** APPLY A BALANCED COMMERCIAL GRADE FERTILIZER A MINIMUM OF FOUR (4) TIMES ANNUALLY. ADJUST TYPE, FREQUENCY AND QUANTITY OF FERTILIZER TO PROVIDE LUSH AND HEALTHY TURF AT ALL TIMES. SPILLED OR EXCESS FERTILIZER SHALL BE SWEEPED AND PROPERLY DISPOSED OF. FLUSHING INTO STORM INLET BASINS IS PROHIBITED.
 - HERBICIDE:** DEVELOP AND MAINTAIN A BROADLEAF WEED AND FOREIGN GRASS CONTROL PROGRAM CONSISTING OF BOTH POST AND PRE-EMERGENT CHEMICAL CONTROL. MAINTAIN TURF IN A WEED-FREE CONDITION.
 - MOWING:** MOW TURF GRASS AREAS AT REGULAR INTERVALS TO KEEP TURF HEIGHT FROM EXCEEDING THREE (3) INCHES. MAINTAIN TURF GRASS HEIGHT AT 2 1/2 TO 3 1/2 INCHES AT SUBSEQUENT CUTTINGS DEPENDING ON THE TIME OF YEAR. REMOVE NO MORE THAN ONE-THIRD (1/3) OF THE GRASS LEAF AT ANY CUTTING. MOW TURF GRASS AT INTERVALS OF NOT MORE THAN TEN (10) DAYS DURING THE GROWING SEASON. MOW IN SUCH A MANNER AS TO PREVENT CLIPPINGS FROM BLOWING ONTO SIDEWALKS AND OTHER PAVED AREAS. CLEANUP AFTER MOWING SHALL INCLUDE SWEEPING OR BLOWING TO CLEAR WALKS AND PAVEMENT OF MOWING DEBRIS. FLUSHING CLIPPINGS INTO STORM INLET BASINS IS PROHIBITED. MOW NATIVE GRASS AREAS NO MORE THAN THREE (3) TIMES PER YEAR TO A HEIGHT OF NO LESS THAN FOUR (4) INCHES.
 - TRIMMING:** TRIM GRASSES AROUND VALVE BOXES, POLES AND OTHER STRUCTURES WITH STRING TYPE TRIMMERS. DO NOT TRIM GRASS AROUND TREE TRUNKS WITH MECHANICAL TRIMMERS. REMOVE GRASS ADJACENT TO TREE TRUNKS BY METHODS THAT WILL NOT CAUSE DAMAGE TO THE TREES.
 - WATER:** MAINTAIN AND OPERATE THE IRRIGATION SYSTEM IN SUCH A MANNER AS TO PROVIDE SUFFICIENT WATER TO PENETRATE SOIL TO A MINIMUM DEPTH OF EIGHT (8) INCHES IN SHRUB AND/OR TREE BEDS AND SIX (6) INCHES IN TURF AREAS. WATER AT A RATE THAT WILL PREVENT SATURATION OF THE SOIL.
- MISCELLANEOUS ITEMS:** THE RECOMMENDED INSPECTION AND MAINTENANCE SCHEDULE IS AS FOLLOWS:
 - STORM INLET BASINS AND MANHOLES SHALL BE INSPECTED AT LEAST EVERY SIX (6) MONTHS FOR SEDIMENT AND DEBRIS AND CLEANED AS NECESSARY.

Date Grading Activity Initiated	Description of Grading Activity	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures are Initiated	Description of Stabilization Measure and Location

GRADING AND STABILIZATION ACTIVITIES LOG EXAMPLE



SPECIFICATIONS

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

NOTES:
THE DANDY BAG WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE INCLUDED SPECIFICATIONS.

ALL DANDY BAGS CAN BE ORDERED WITH OPTIONAL OIL ABSORBENT PILLOWS

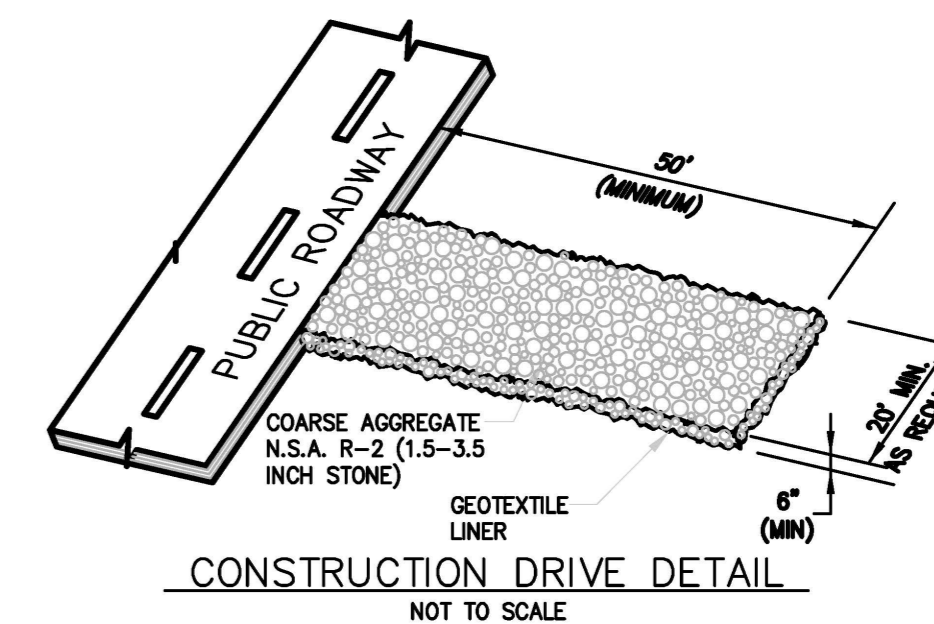
DANDY BAG INLET PROTECTION
NOT TO SCALE

Amendment Number	Description of Amendment	Date of Amendment	Amendment Prepared By (Name & Title)

SWPPP AMENDMENT LOG EXAMPLE

NOTES

- LOCATE STONE PAD AT ANY POINT WHERE VEHICULAR TRAFFIC WILL BE LEAVING THE SITE ONTO A PUBLIC RIGHT-OF-WAY STREET, ROADWAY, OR PARKING AREA.
- PAD WIDTH - 20'-0" MINIMUM BUT NOT LESS THAN FULL WIDTH OF ALL POINTS OF VEHICULAR EGRESS. PAD LENGTH - 50'-0" MINIMUM.
- MAINTAIN THE EXIT TO PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. PROVIDE PERIODIC TOP DRESSING WITH 1.5-3.5" STONE, AS CONDITIONS DEMAND. IMMEDIATELY REMOVE ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE OR SITE ONTO ROADWAY, INTO STORM DRAINS OR DITCHES.
- CLEAN WHEELS TO REMOVE MUD PRIOR TO EXITING CONSTRUCTION SITE. WHEN WASHING IS REQUIRED, DO SO ON AREAS STABILIZED WITH CRUSHED STONE DRAINING INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.



CONSTRUCTION DRIVE DETAIL
NOT TO SCALE

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COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

TAG	ISSUED	DATE

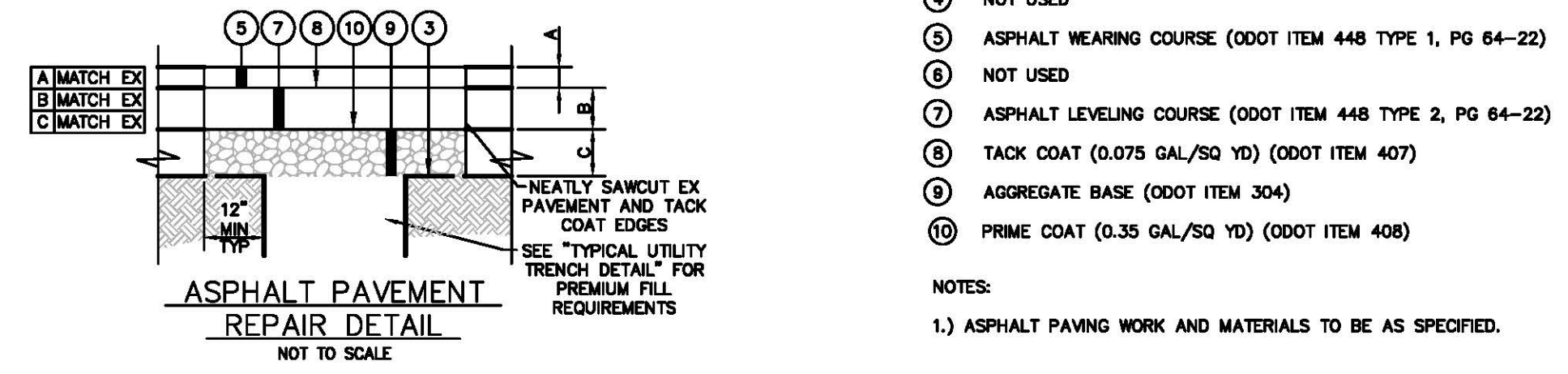
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CLIENT PROJ. NO.: OSBORN PROJ. NO. J20150319.000

SWPPP DETAILS

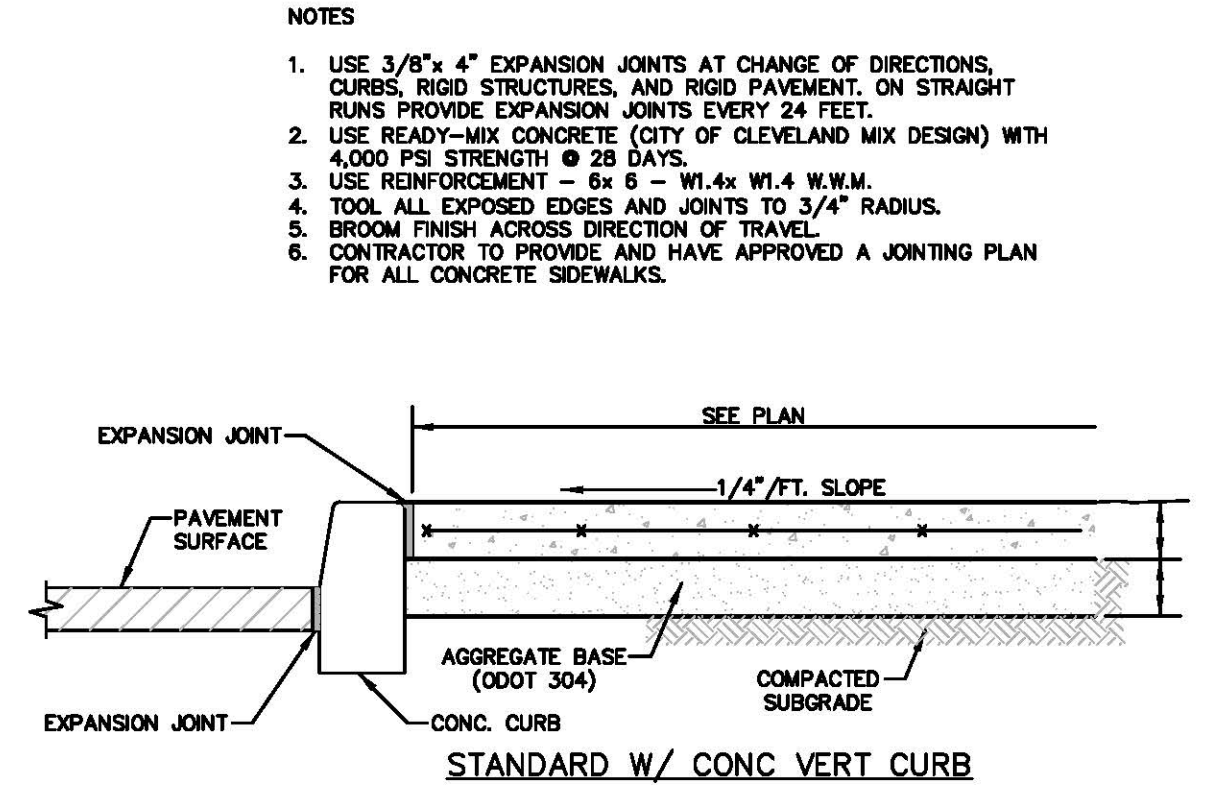
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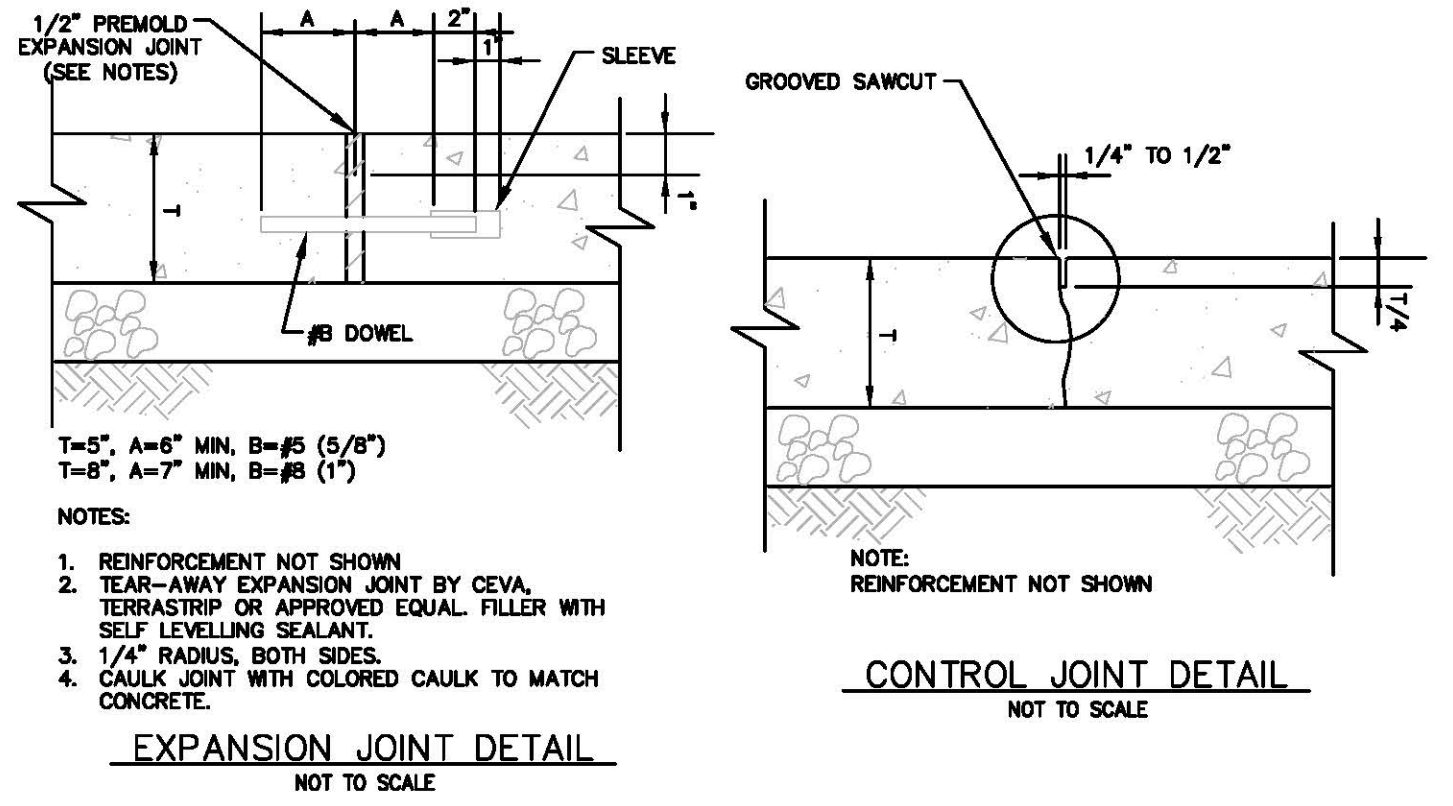


- LEGEND**
- ① NOT USED
 - ② NOT USED
 - ③ SUBGRADE COMPACTION (ODOT ITEM 203)
 - ④ NOT USED
 - ⑤ ASPHALT WEARING COURSE (ODOT ITEM 448 TYPE 1, PG 64-22)
 - ⑥ NOT USED
 - ⑦ ASPHALT LEVELING COURSE (ODOT ITEM 448 TYPE 2, PG 64-22)
 - ⑧ TACK COAT (0.075 GAL/SQ YD) (ODOT ITEM 407)
 - ⑨ AGGREGATE BASE (ODOT ITEM 304)
 - ⑩ PRIME COAT (0.35 GAL/SQ YD) (ODOT ITEM 408)

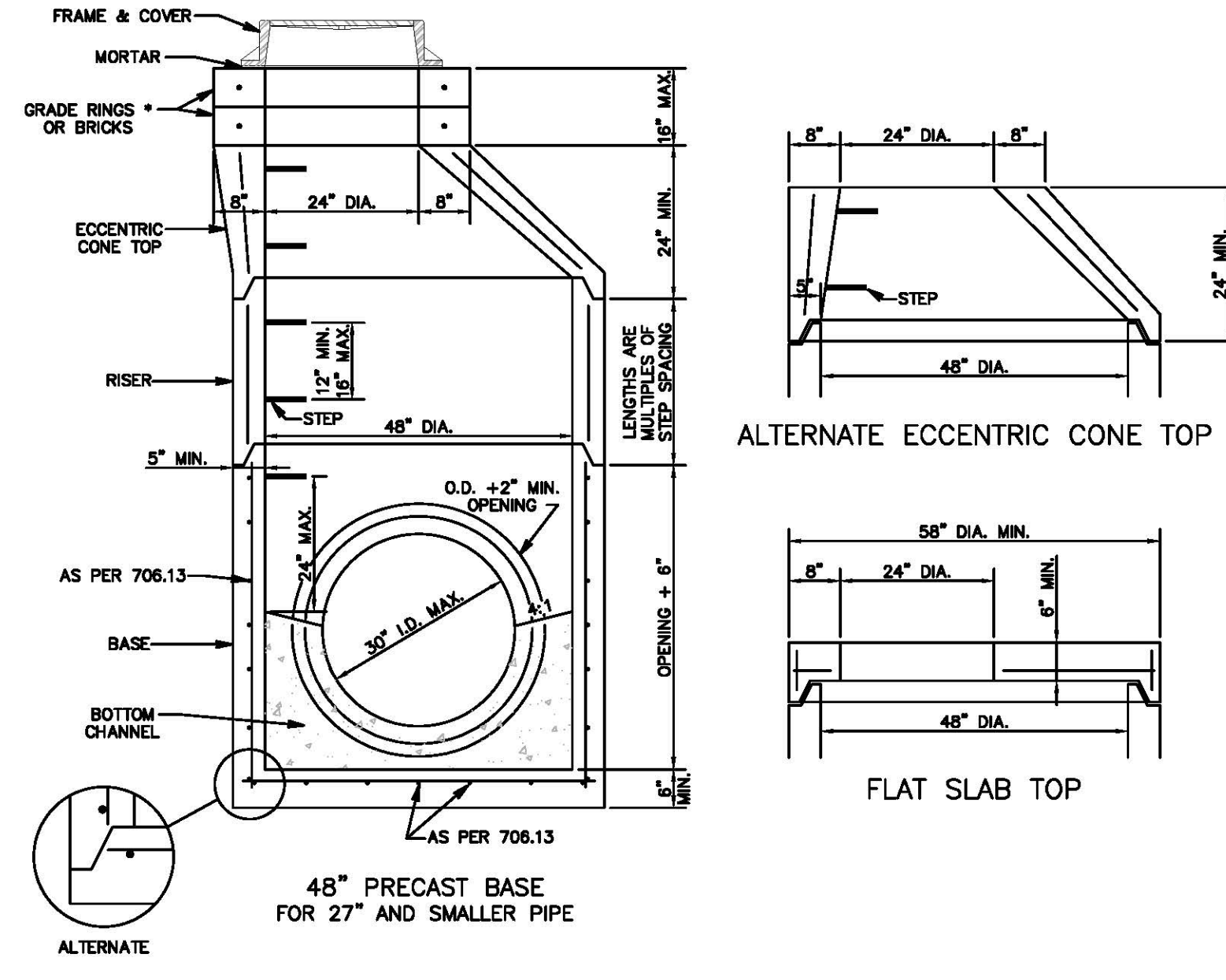
NOTES:
1.) ASPHALT PAVING WORK AND MATERIALS TO BE AS SPECIFIED.



- NOTES**
- USE 3/8" x 4" EXPANSION JOINTS AT CHANGE OF DIRECTIONS, CURBS, RIGID STRUCTURES, AND RIGID PAVEMENT. ON STRAIGHT RUNS PROVIDE EXPANSION JOINTS EVERY 24 FEET.
 - USE READY-MIX CONCRETE (CITY OF CLEVELAND MIX DESIGN) WITH 4,000 PSI STRENGTH @ 28 DAYS.
 - USE REINFORCEMENT - 6x6 - W1.4x W1.4 W.W.M.
 - TOOL ALL EXPOSED EDGES AND JOINTS TO 3/4" RADIUS.
 - BROOM FINISH ACROSS DIRECTION OF TRAVEL.
 - CONTRACTOR TO PROVIDE AND HAVE APPROVED A JOINTING PLAN FOR ALL CONCRETE SIDEWALKS.



- NOTES:**
- REINFORCEMENT NOT SHOWN
 - TEAR-AWAY EXPANSION JOINT BY CEVA, TERRASTRIP OR APPROVED EQUAL. FILLER WITH SELF-LEVELLING SEALANT.
 - 1/4" RADIUS, BOTH SIDES.
 - CAULK JOINT WITH COLORED CAULK TO MATCH CONCRETE.



GENERAL:
WITH NORMAL SOIL AND SITE CONDITIONS THIS STANDARD PRECAST MANHOLE MAY BE USED FOR ANY REQUIRED MANHOLE DEPTH.

SECTIONS OF THE PRECAST MANHOLE SHALL BE CAST AND ASSEMBLED WITH EITHER ALL TONGUE OR ALL GROOVE ENDS UP. LIFT HOLES MAY BE PROVIDED IN EACH SECTION FOR HANDLING.

TOP AND TRANSITION (OR REDUCER):
SECTIONS MAY BE EITHER ECCENTRIC CONE OR FLAT SLAB.

BASIS:
FOR MANHOLES ARE SHOWN WITH MONOLITHIC FLOOR AND RISER WHICH MAY BE CAST IN ONE OR TWO OPERATIONS. A PERMISSIBLE ALTERNATE IS TO CAST AND SHIP THE FLOOR AND BARREL SEPARATELY. OPENINGS FOR INLET AND OUTLET PIPES SHALL BE PROVIDED, EITHER WHEN THE UNIT IS CAST OR LATER, TO MEET PROJECT REQUIREMENTS. BOTTOM CHANNELS MAY BE FORMED OF CONCRETE PRECAST IN THE BASE OR BY FIELD CONSTRUCTION AS SHOWN ON THE DRAWINGS.

OPENINGS IN RISER SECTIONS:
FOR 18" AND SMALLER INLET PIPES MAY BE PREFABRICATED OR CORE DRILLED IN THE FIELD PROVIDED THE SIDES OF THE PIPE AT THE SPRINGLINE DO NOT PROJECT INTO THE MANHOLE.

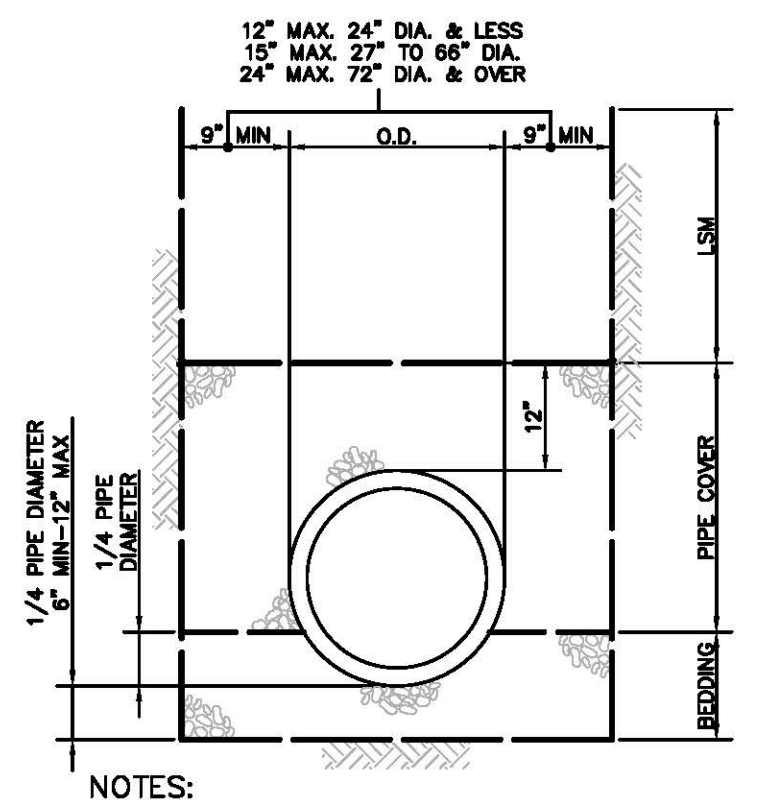
CONNECTIONS:
BETWEEN PRECAST MANHOLE SECTIONS AND PIPES ON SANITARY SEWERS MAY BE SEALED WITH RESILIENT CONNECTORS CONFORMING TO ASTM C923.

JOINT SEAL:
BETWEEN PRECAST MANHOLE SECTIONS ON SANITARY SEWERS SHALL BE RESILIENT AND FLEXIBLE GASKET JOINTS PER CMS 604.06

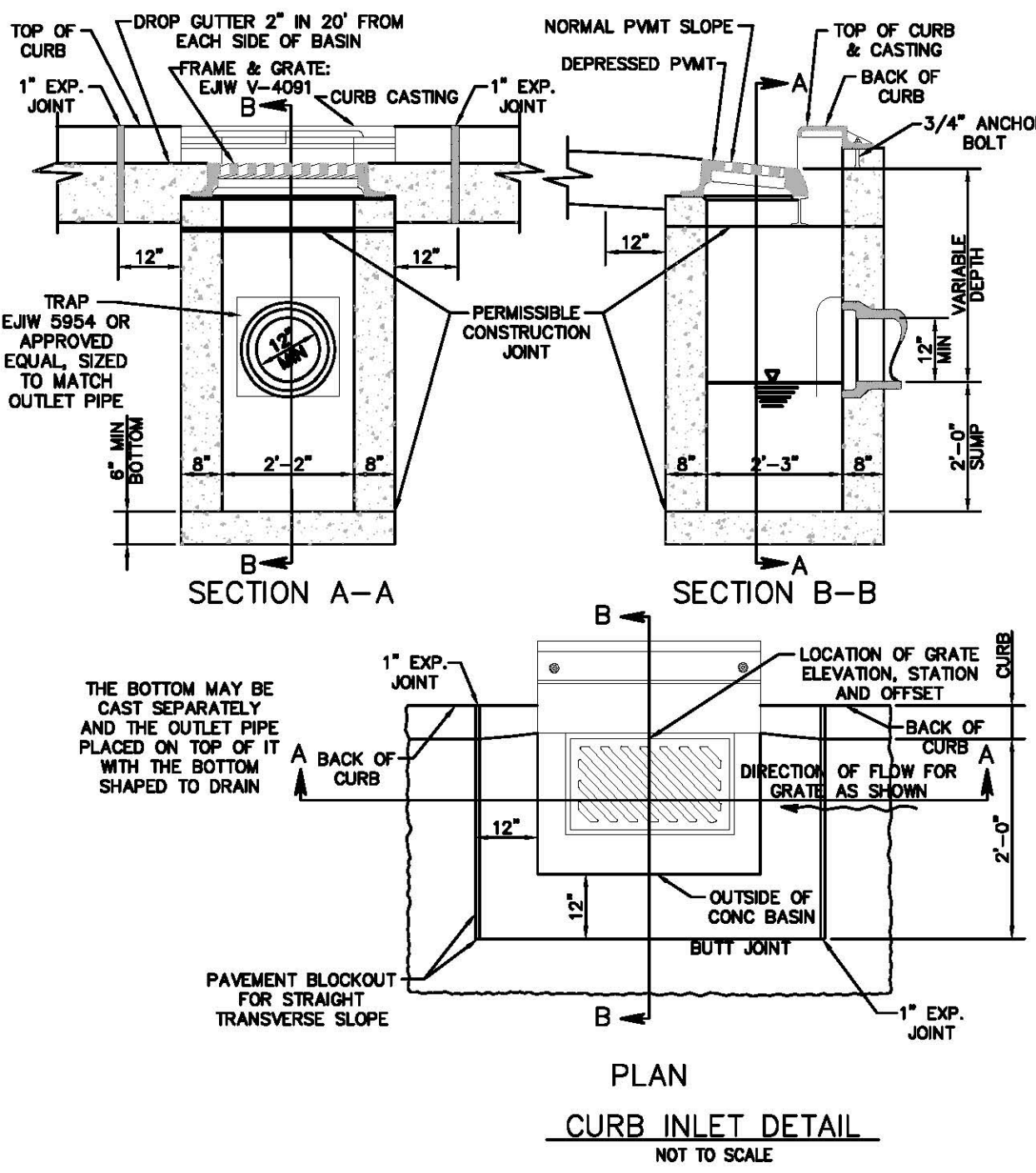
MATERIALS:
FOR BASES AND OTHER PRECAST SECTIONS, INCLUDING REINFORCEMENT NOT SPECIFIED HEREON, SHALL COMPLY WITH THE REQUIREMENTS OF CMS 706.13

STEPS:
SHALL BE POLYPROPYLENE AND CONFORM TO THE MATERIAL REQUIREMENTS OF CMS 711.13. ALL STEPS SHALL HAVE DEPRESSED TREAD OR A 1/2" MINIMUM CLEAT HEIGHT AT ENDS.

FRAME AND COVER:
STORM MANHOLE: EAW 1040 TYPE B OR APPROVED EQUAL
INLET MANHOLE: EAW 1040 TYPE M1 OR APPROVED EQUAL.



- NOTES:**
- LOW STRENGTH MORTAR (LSM) BACKFILL (FLOWABLE FILL) SHALL MEET THE SPECIFICATIONS OF ODOT CMS ITEM 613 (TYPE 1) AND SHALL BE PLACED IN ALL LOCATIONS UNDER OR WITHIN TWO (2) FEET OF PAVEMENT AND WITHIN TWENTY (20) FEET OF BUILDINGS.
 - COMMON FILL MATERIAL MAY BE USED IN OTHER AREAS.
 - PIPE COVER SHALL CONSIST OF COARSE INTERLOCKING AGGREGATE No. 6, 67, 7, 78 OR 8.
 - BEDDING SHALL CONSIST OF COARSE INTERLOCKING AGGREGATE No. 6, 67, 68, 7, 78 OR 8.



NOTES:

GRATE: THE "V" GRATE SHALL BE PROVIDED UNLESS THE PLANS SPECIFICALLY REQUIRE THE DIAGONAL GRATE. IF THE DIAGONAL GRATE IS SPECIFIED, IT SHALL BE PLACED SO THAT THE DIAGONAL BARS DIRECT DRAINAGE FLOW TOWARD THE CURB.

CASTINGS: THE DESIGN SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN. MINIMUM MASS: CURB CASTING 170 lbs., STANDARD GRATE 125 lbs., FRAME 320 lbs., AND "V" GRATE 104 lbs.

BEARING AREAS: THE FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTIONS SHALL EXIST ON BEARING OR SEAT OF EITHER CASTING AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING.

WALLS: WHEN USED IN PLACE OF CONCRETE, BRICK SIDE WALLS SHALL BE 8" NOMINAL THICKNESS.

PRECAST CONSTRUCTION: PERMITTED, EXCEPT FOR THE APRON. CONCRETE SHALL MEET THE REQUIREMENTS OF CMS 706.13 WITH A MINIMUM OF 2% AIR IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 8" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

MINIMUM DEPTH: THE MINIMUM DEPTH SHALL BE THE OUTSIDE DIAMETER (O.D.) OF THE OUTLET PIPE PLUS 12".

OPENINGS: PIPE OPENINGS SHALL BE THE O.D. OF THE PIPE BEING SUPPLIED PLUS 2" WHEN FABRICATED OR FIELD CUT. THE INTERSTITIAL SPACE SHALL BE FILLED WITH GROUT PER CMS 601.

DOWELS: FOUR 1" x 18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT. SEE STD. CONST. DWG. BR-2.2 FOR DOWEL DETAILS.

BLOCKOUT: BLOCKOUTS SHALL BE PAVED WITH CLASS C CONCRETE IN PCC PAVEMENT OR GUTTER AND PAID FOR AS PART OF THE PAVEMENT OR GUTTER WITH NO DEDUCTION IN PAVEMENT, CURB OR GUTTER QUANTITIES BECAUSE OF THE CASTINGS. A CLASS C CONCRETE APRON THE SIZE OF THE 2'-0" GUTTER SHALL BE CAST IN PLACE IN ASPHALT PAVEMENT (NO DOWELS REQUIRED) WITH THE COST INCLUDED IN THE CATCH BASIN BID PRICE. NO DEDUCTION TO BE MADE IN CURB QUANTITIES.

LOCATION: T.B.D.



COLFAX GREEN LINKS GREEN INFRASTRUCTURE IMPROVEMENTS

CITY OF CLEVELAND

TAG	ISSUED	DATE

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