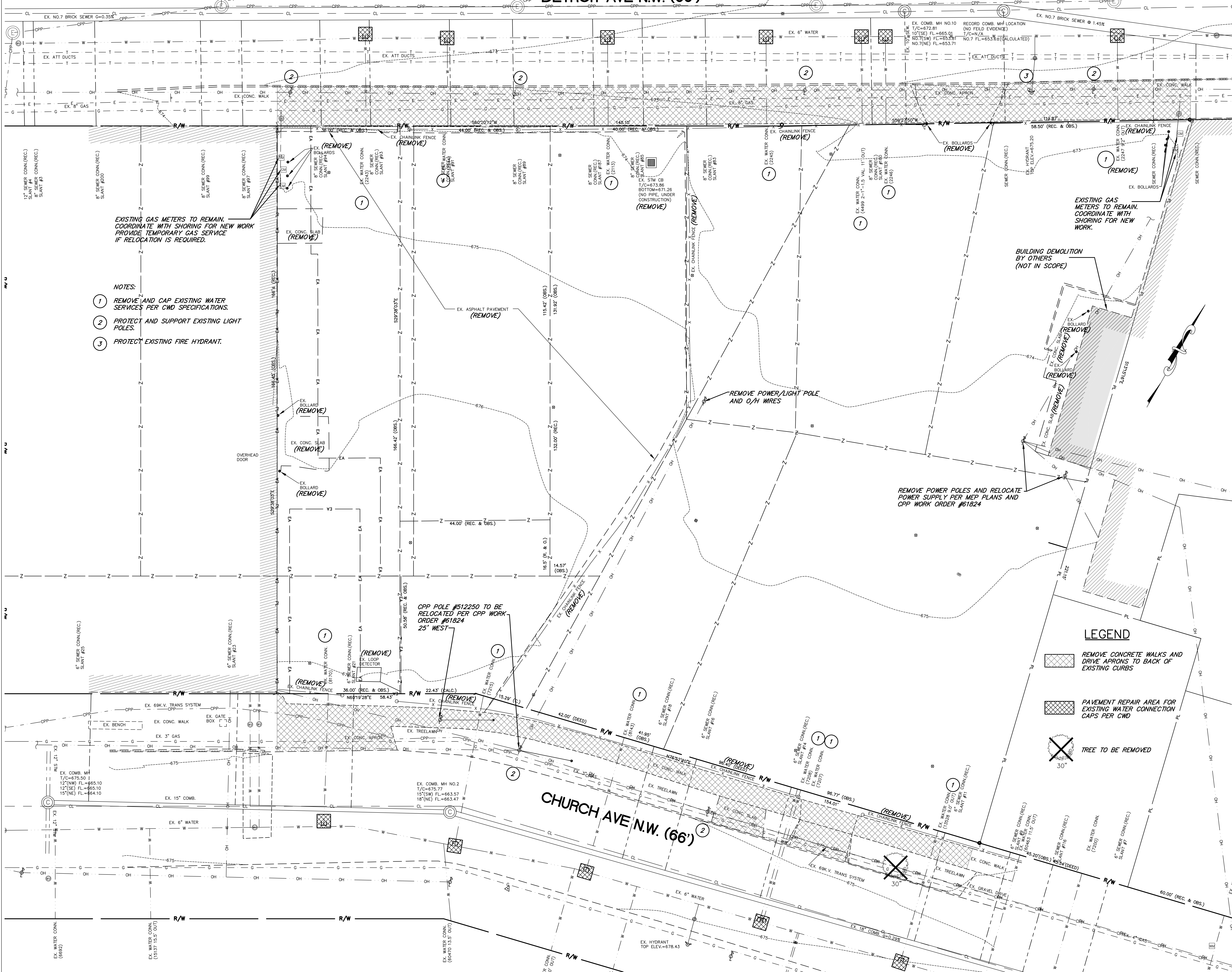




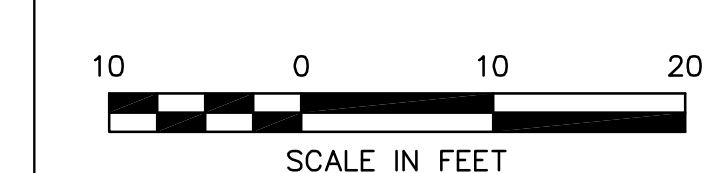


DETROIT AVE N.W. (66')

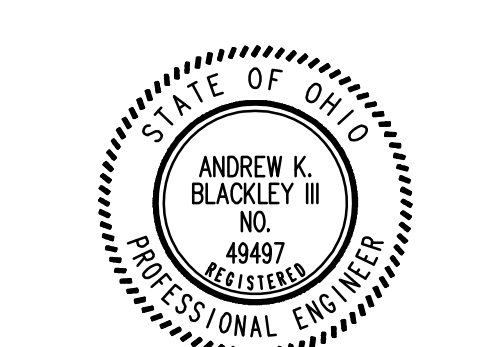
DATE	DESCRIPTION
06.01.2017	82% Issued for Review
06.26.2017	Progress Set
07.28.2017	Issued for Permit



- NOTES:
- 1 REMOVE AND CAP EXISTING WATER SERVICES PER CWD SPECIFICATIONS.
  - 2 PROTECT AND SUPPORT EXISTING LIGHT POLES.
  - 3 PROTECT EXISTING FIRE HYDRANT.



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- LEGEND**
- REMOVE CONCRETE WALKS AND DRIVE APRONS TO BACK OF EXISTING CURBS
  - PAVEMENT REPAIR AREA FOR EXISTING WATER CONNECTION CAPS PER CWD
  - TREE TO BE REMOVED



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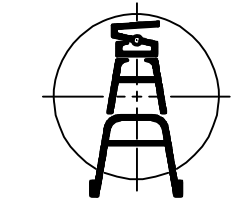
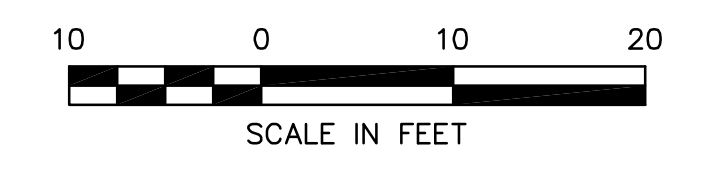
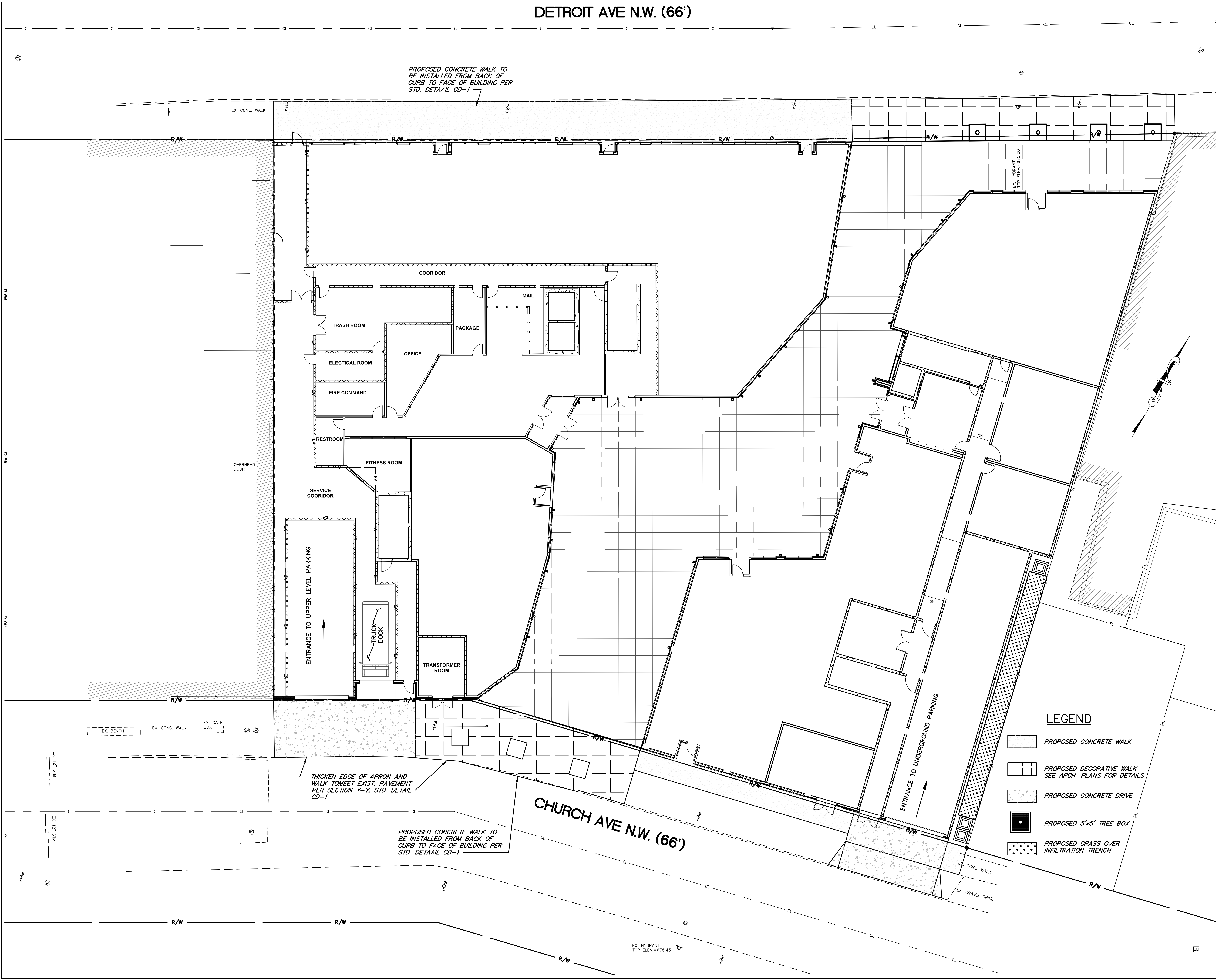
LDA Project No. 2016.45  
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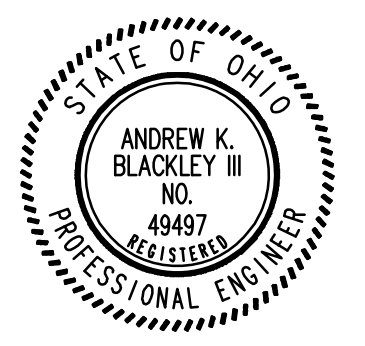


DETROIT AVE N.W. (66')

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- LEGEND**
- PROPOSED CONCRETE WALK
  - PROPOSED DECORATIVE WALK SEE ARCH. PLANS FOR DETAILS
  - PROPOSED CONCRETE DRIVE
  - PROPOSED 5'x5' TREE BOX
  - PROPOSED GRASS OVER INFILTRATION TRENCH

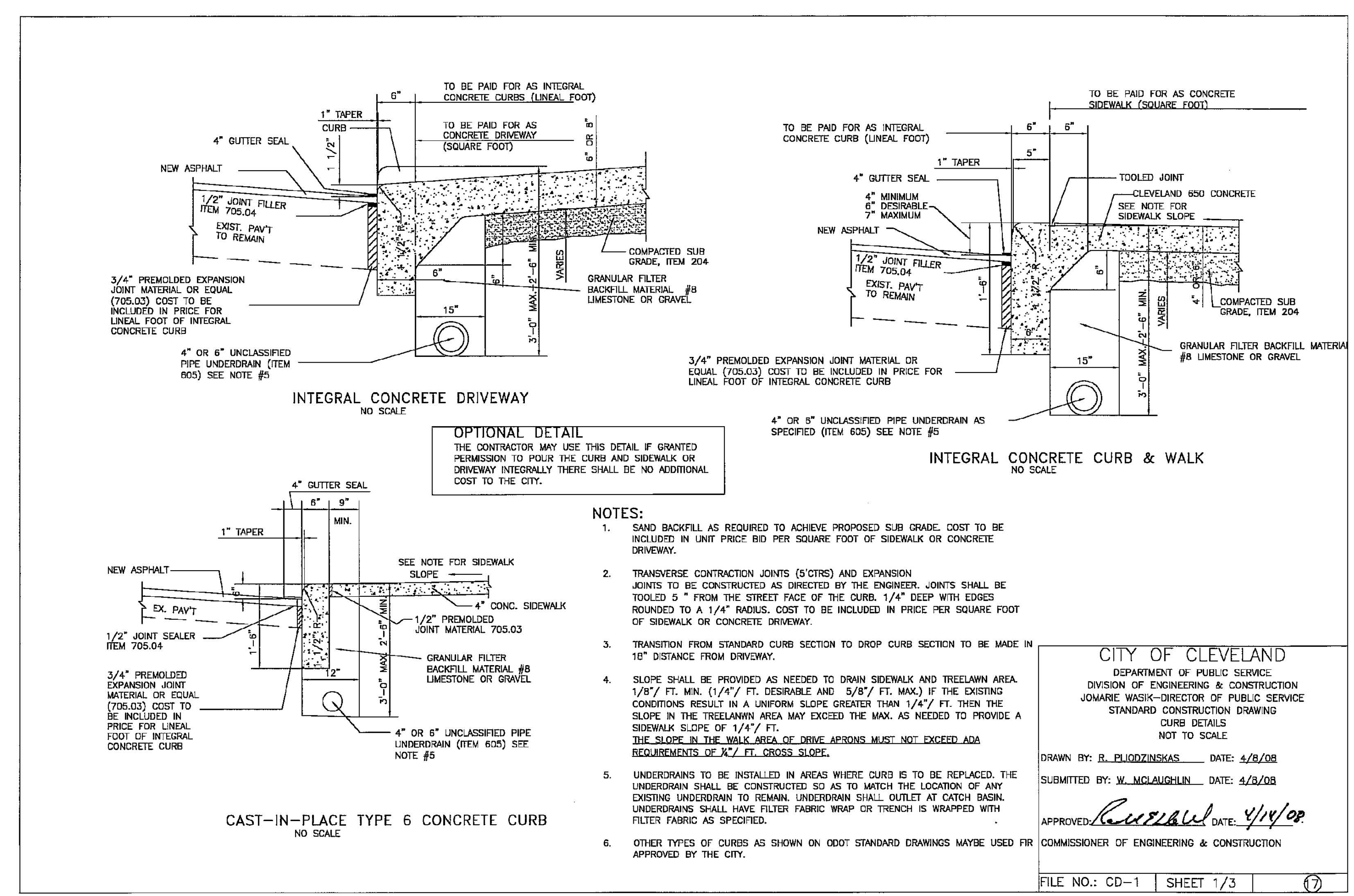


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LDA Project No. 2016.45  
 PROPOSED SITE **C2.0**

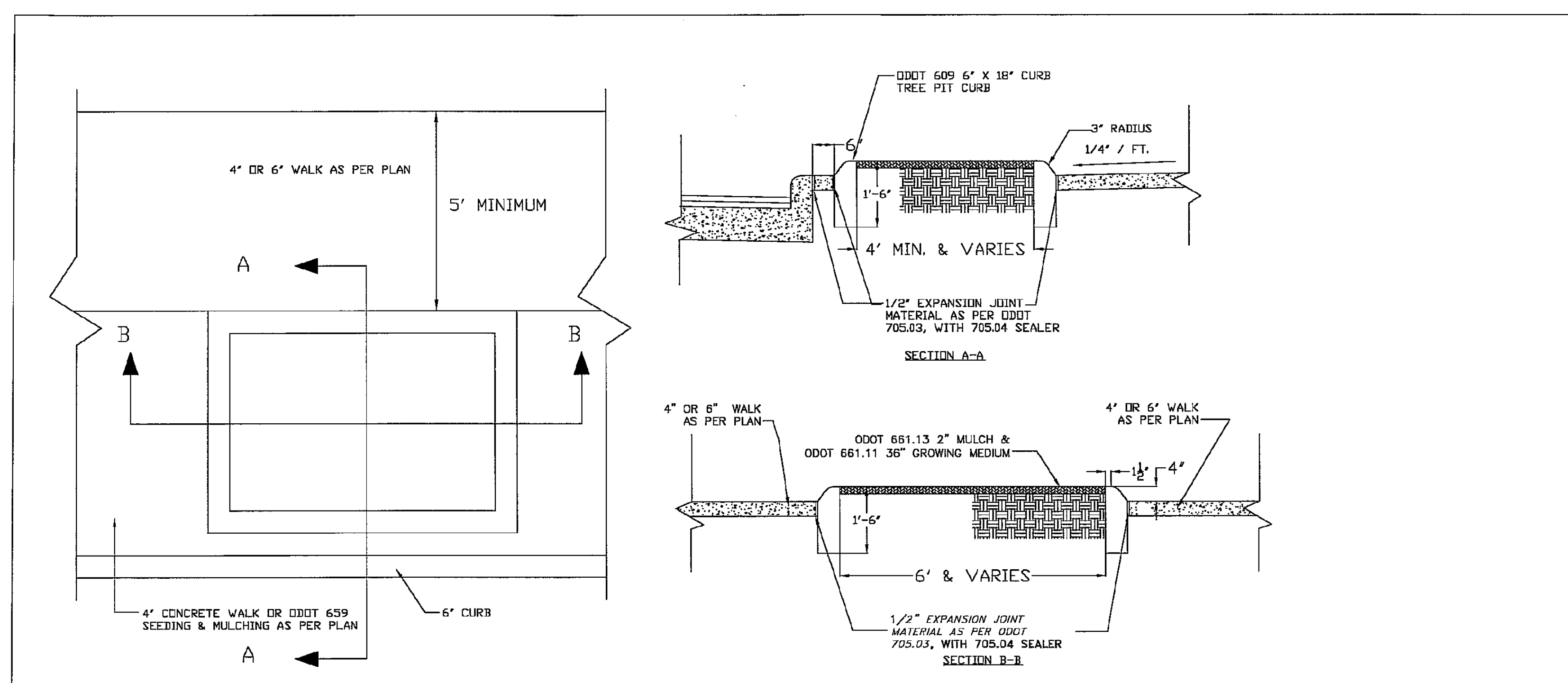
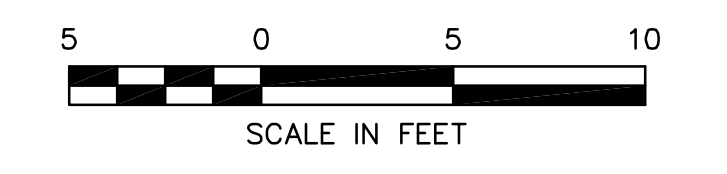
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DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASK—DIRECTOR OF PUBLIC SERVICE  
STANDARD CONSTRUCTION DRAWING  
CURB DETAILS  
NOT TO SCALE

DRAWN BY: R. PLODZINSKAS DATE: 4/8/08  
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08  
APPROVED: *[Signature]* DATE: 4/14/08  
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO.: CD-1 SHEET 1/3

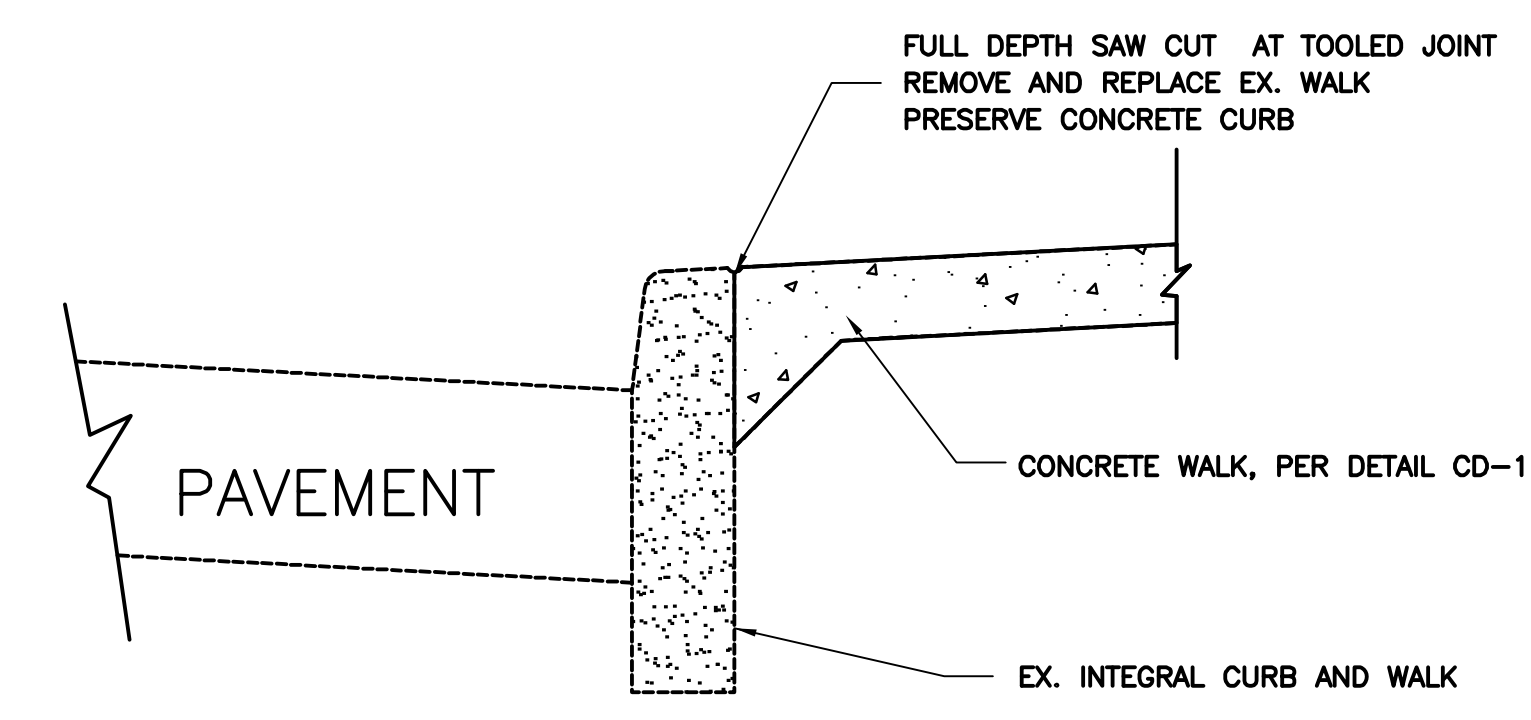


**NOTE:**  
1 - 6" THICK SIDEWALK IN BUSINESS DISTRICTS  
2 - CONTRACTOR SHALL OBTAIN APPROVAL FROM THE DIVISION OF URBAN FORESTRY FOR SPACING REQUIREMENTS AND TREE SPECIES.  
3 -

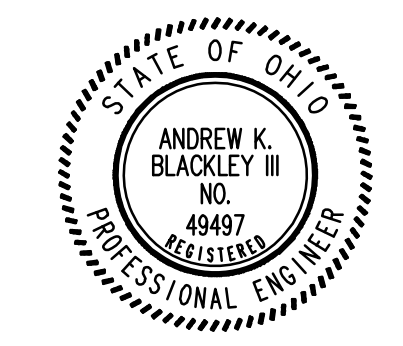
**CITY OF CLEVELAND**  
DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASK—DIRECTOR OF PUBLIC SERVICE  
STANDARD CONSTRUCTION DRAWING  
TREE PIT  
NOT TO SCALE

DRAWN BY: R. PLODZINSKAS DATE: 4/8/08  
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08  
APPROVED: *[Signature]* DATE: 4/14/08  
COMMISSIONER OF ENGINEERING & CONSTRUCTION

FILE NO. TP 1 SHEET 2/2



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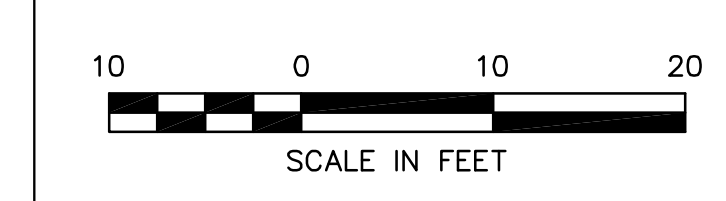
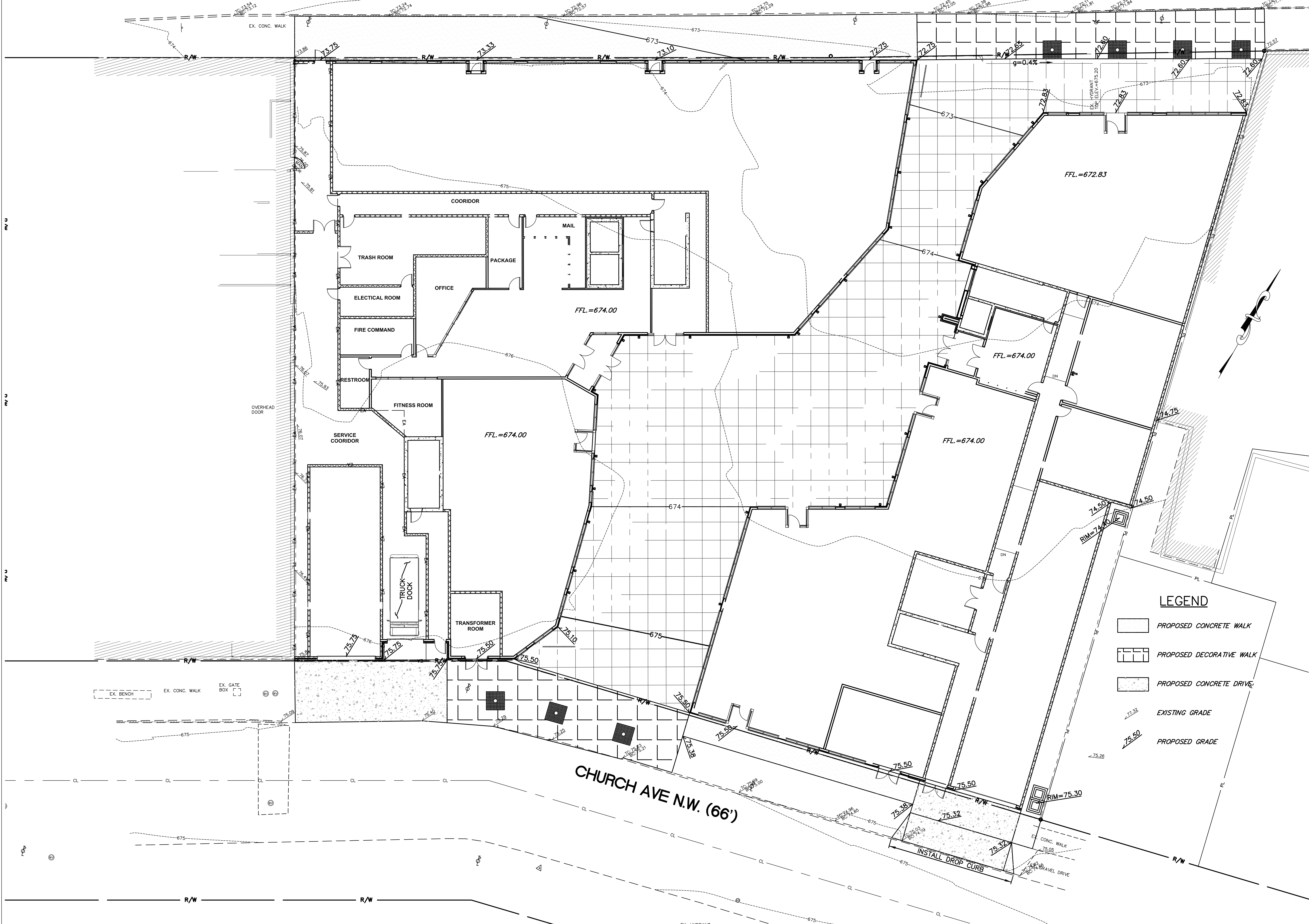
LDA Project No. 2016.45

SITE DETAILS **C.2.1**

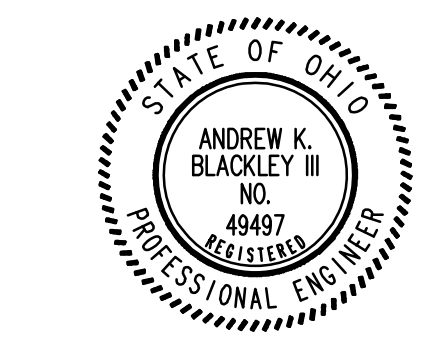


DETROIT AVE N.W. (66')

DATE	DESCRIPTION
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06.26.2017	Progress Set
07.28.2017	Issued for Permit



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- LEGEND**
- PROPOSED CONCRETE WALK
  - PROPOSED DECORATIVE WALK
  - PROPOSED CONCRETE DRIVE
  - EXISTING GRADE
  - PROPOSED GRADE



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GRADING PLAN **C3.0**



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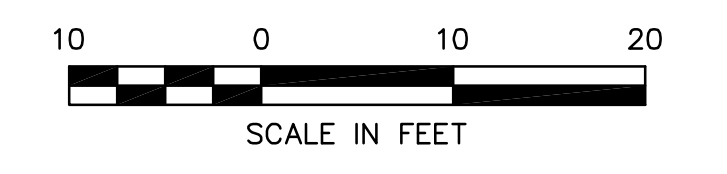
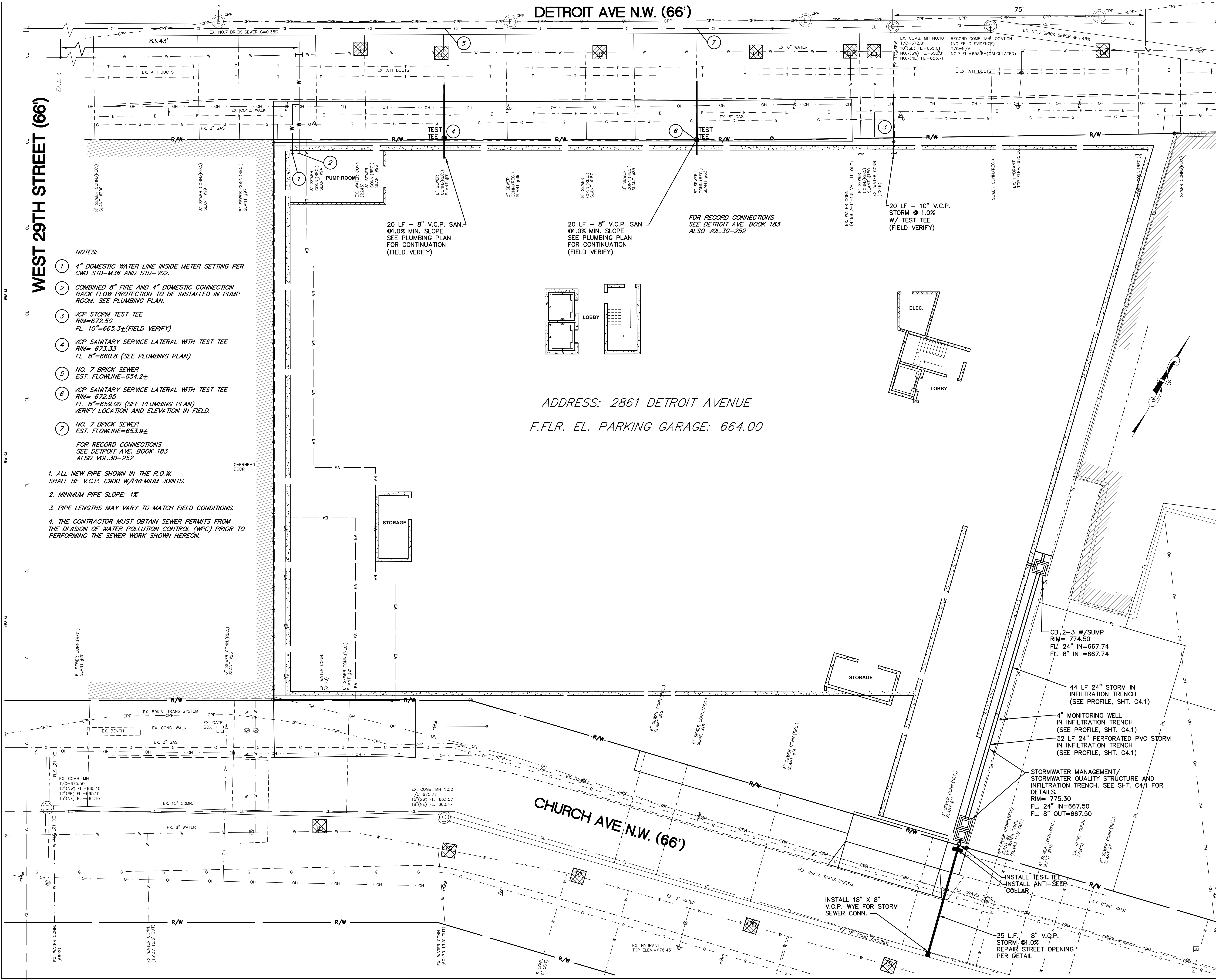
WEST 29TH STREET (66')

ADDRESS: 2861 DETROIT AVENUE  
F.FLR. EL. PARKING GARAGE: 664.00

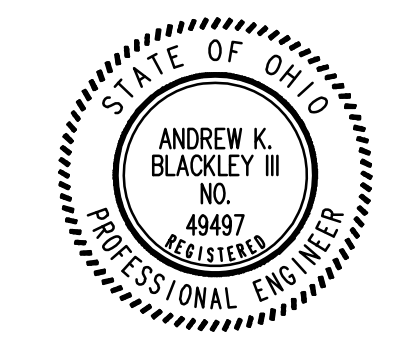
CHURCH AVE N.W. (66')

DATE	DESCRIPTION
06.01.2017	82% Issued for Review
06.26.2017	Progress Set
07.19.2017	Progress Set
07.27.2017	Relocate san. conn.
07.28.2017	Issued for Permit
09.01.2017	NECRSD REVIEW
09.12.2017	Rev. Per WPC COMMENTS
09.12.2017	Rev. Per NECRSD

- NOTES:
- 4" DOMESTIC WATER LINE INSIDE METER SETTING PER CWD STD-M36 AND STD-V02.
  - COMBINED 8" FIRE AND 4" DOMESTIC CONNECTION BACK FLOW PROTECTION TO BE INSTALLED IN PUMP ROOM. SEE PLUMBING PLAN.
  - VCP STORM TEST TEE  
RIM=672.50  
FL. 10"=665.3±(FIELD VERIFY)
  - VCP SANITARY SERVICE LATERAL WITH TEST TEE  
RIM= 673.33  
FL. 8"=660.8 (SEE PLUMBING PLAN)
  - NO. 7 BRICK SEWER  
EST. FLOWLINE=654.2±
  - VCP SANITARY SERVICE LATERAL WITH TEST TEE  
RIM= 672.95  
FL. 8"=659.00 (SEE PLUMBING PLAN)  
VERIFY LOCATION AND ELEVATION IN FIELD.
  - NO. 7 BRICK SEWER  
EST. FLOWLINE=653.9±
- FOR RECORD CONNECTIONS  
SEE DETROIT AVE. BOOK 183  
ALSO VOL.30-252
- ALL NEW PIPE SHOWN IN THE R.O.W. SHALL BE V.C.P. C900 W/PREMIUM JOINTS.
  - MINIMUM PIPE SLOPE: 1%
  - PIPE LENGTHS MAY VARY TO MATCH FIELD CONDITIONS.
  - THE CONTRACTOR MUST OBTAIN SEWER PERMITS FROM THE DIVISION OF WATER POLLUTION CONTROL (WPC) PRIOR TO PERFORMING THE SEWER WORK SHOWN HEREON.



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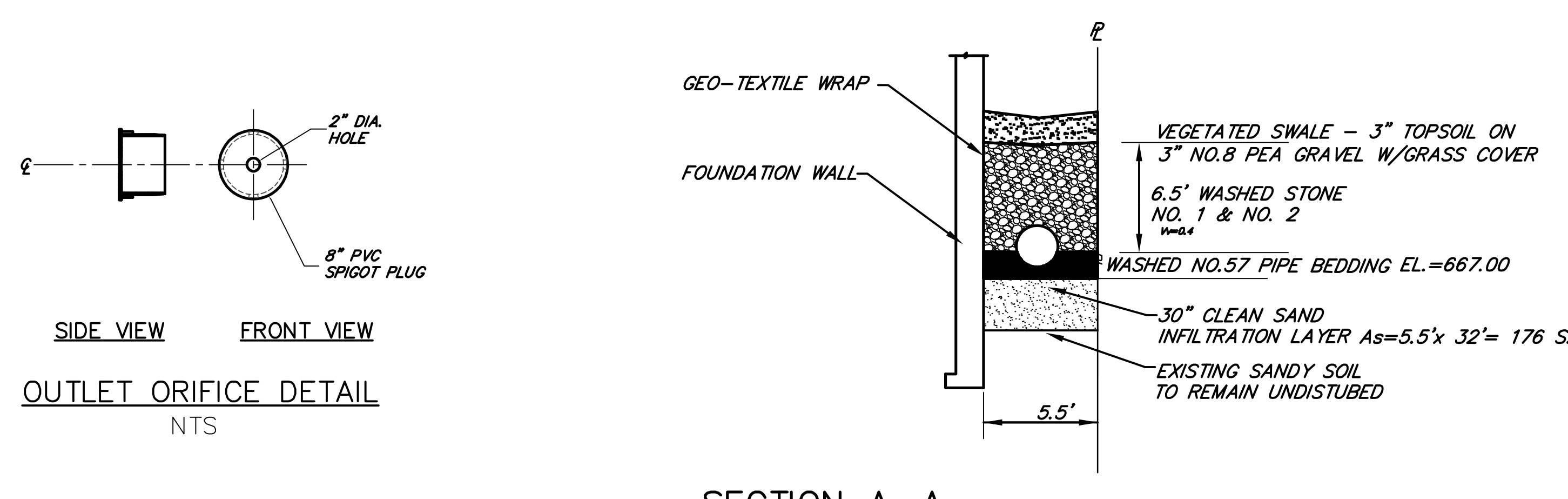
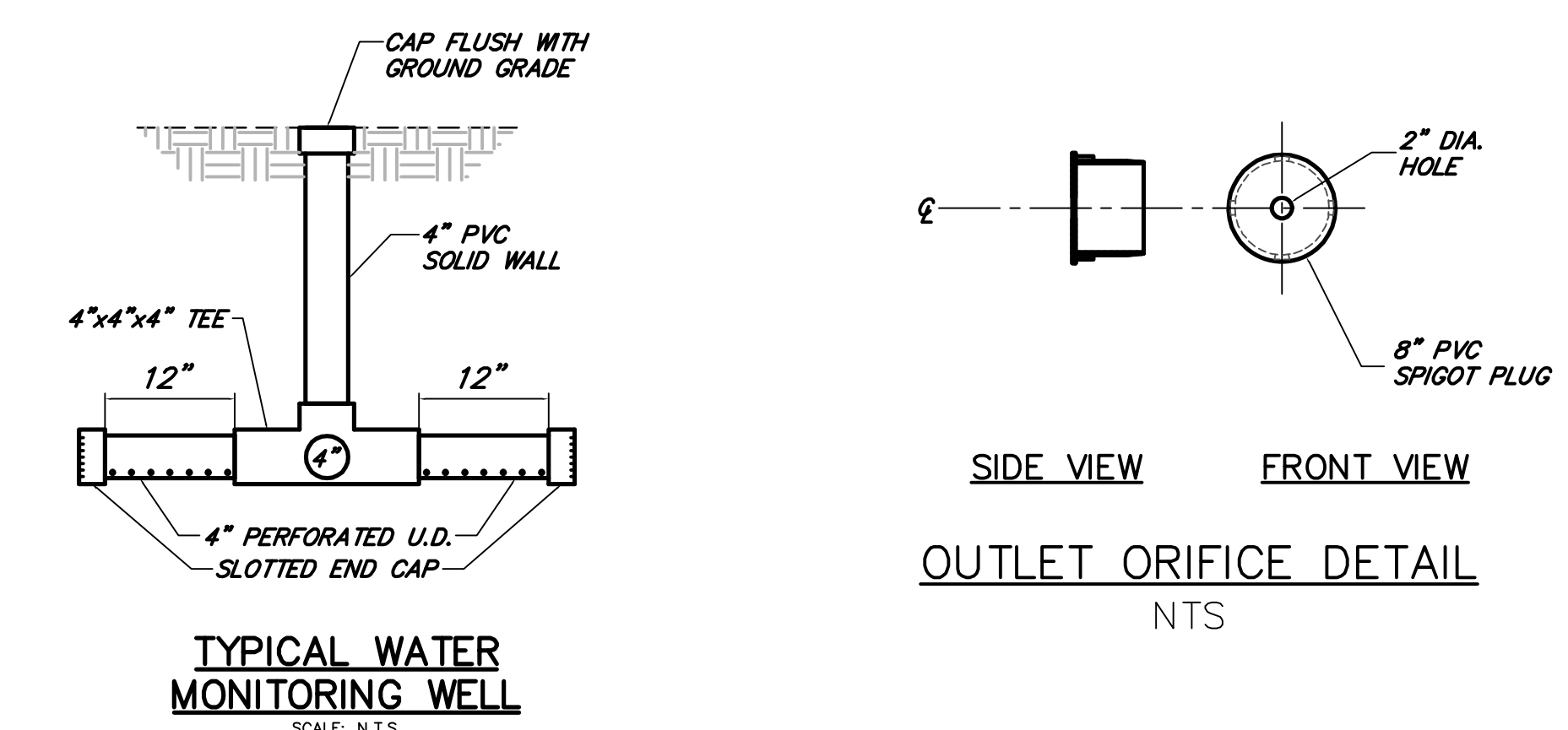
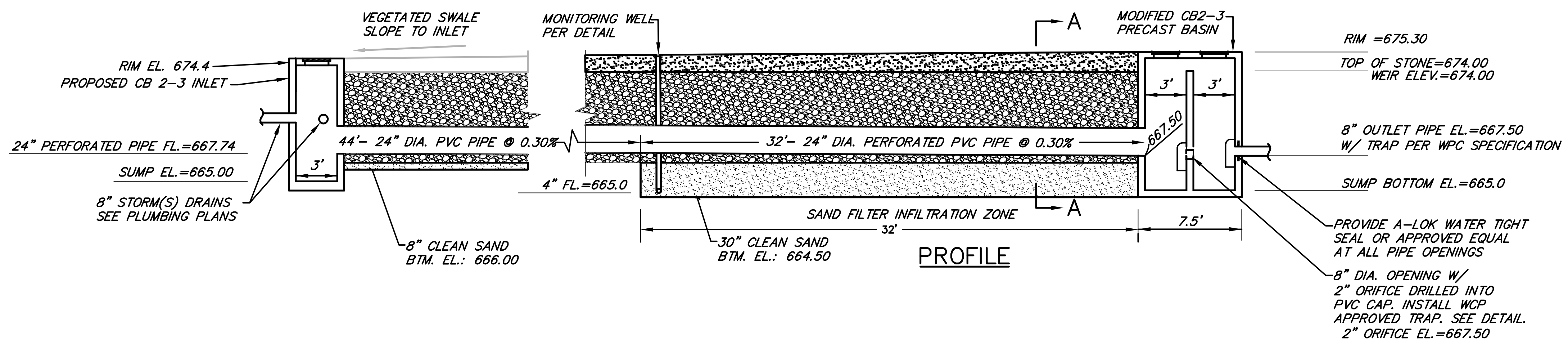
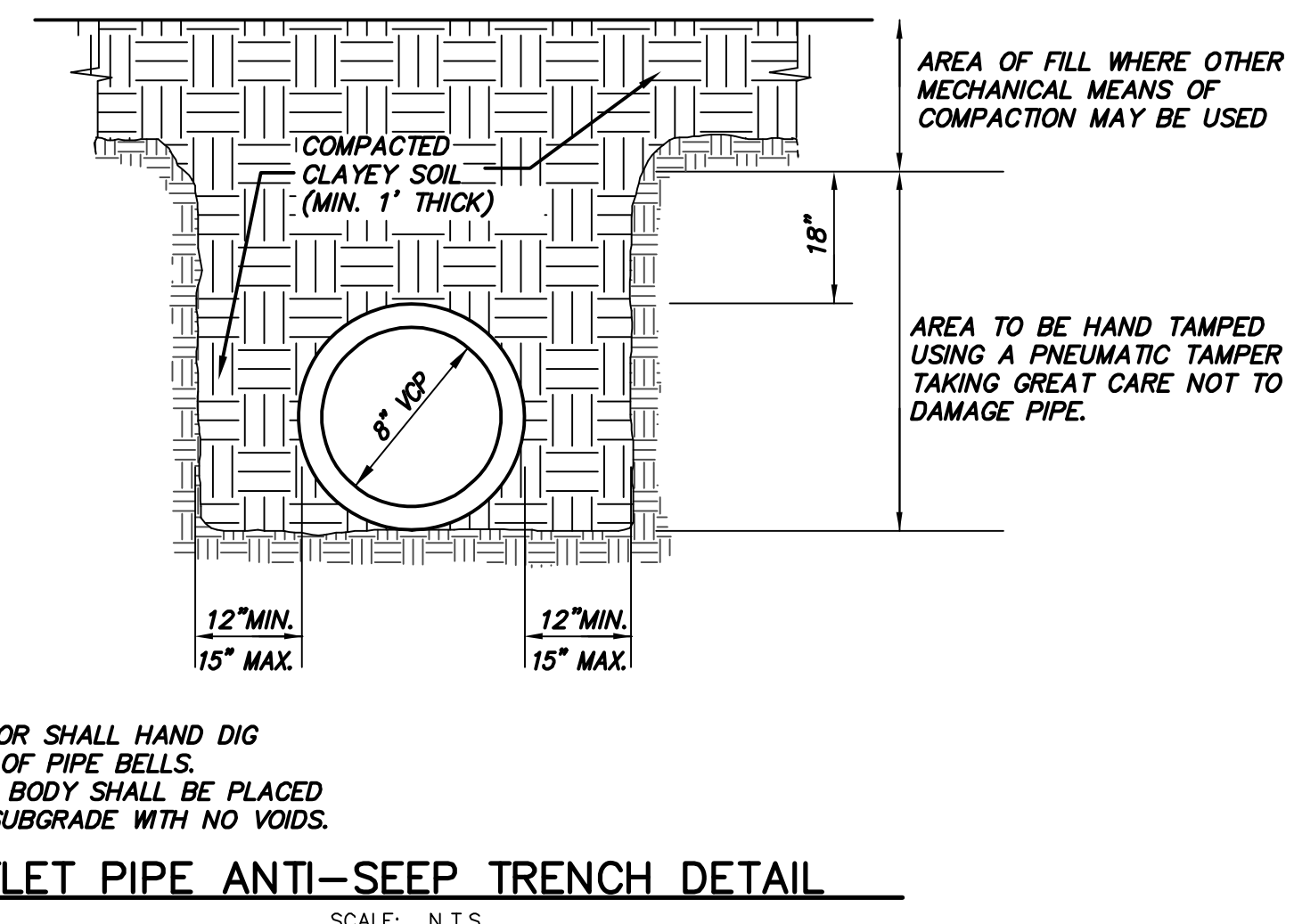
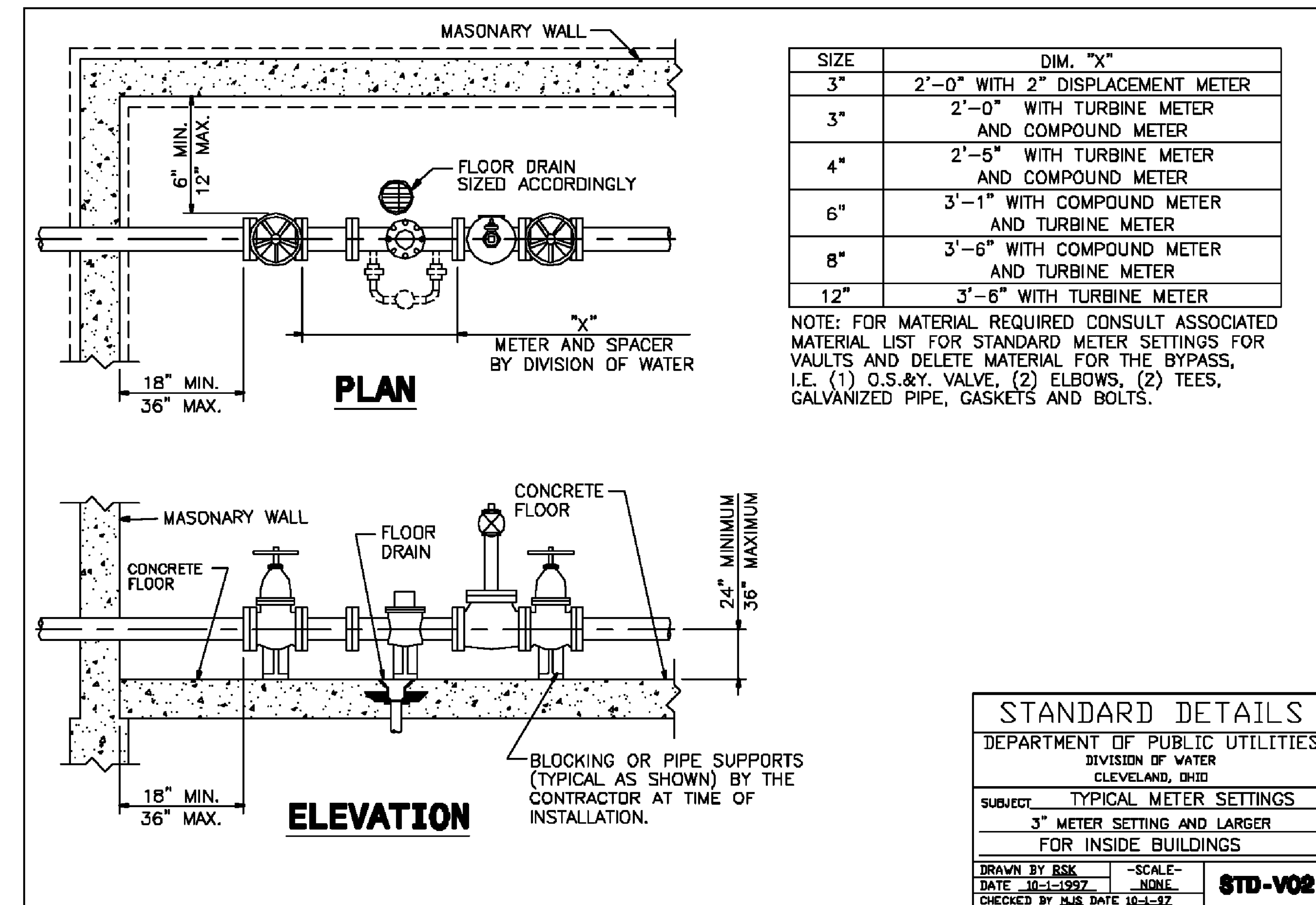
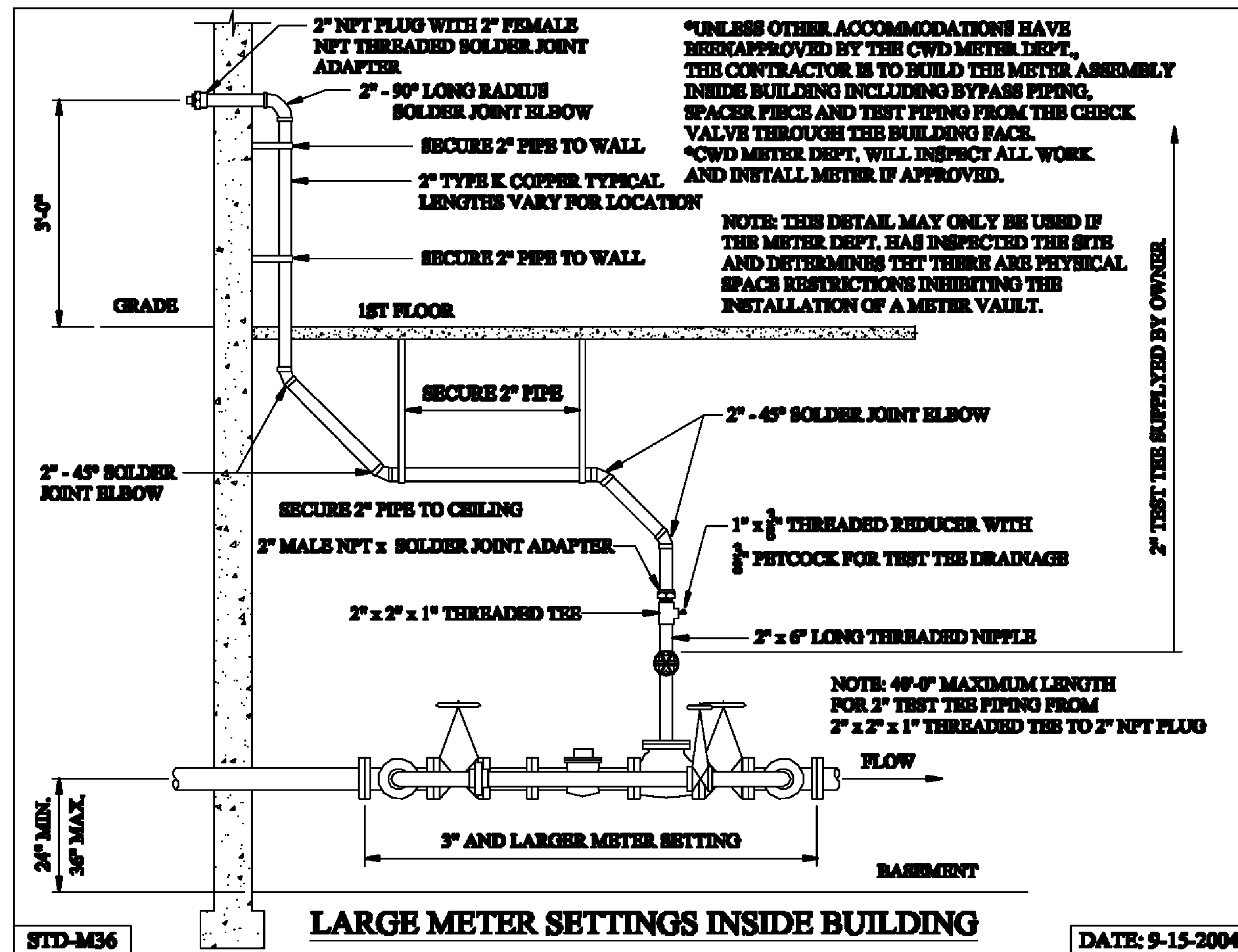
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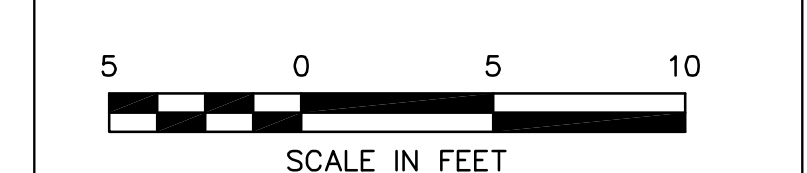
LDA Project No. 2016.45  
SITE UTILITIES **C4.0**

DATE	DESCRIPTION
06.01.2017	82% Issued for Review
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07.28.2017	Issued for Permit
09.01.2017	NECRSD REVIEW
09.12.2017	REV. PER WPC COMMENTS
09.25.2017	REV. PER NECRSD COMMENTS

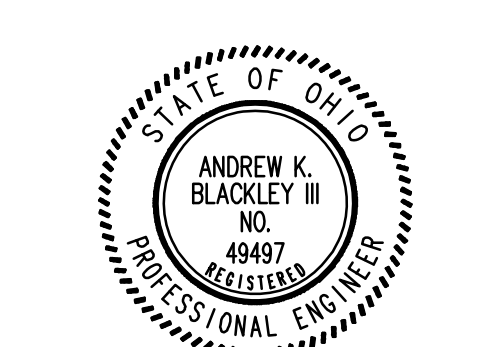


**STORMWATER INFILTRATION TRENCH**

- NOTES:
1. THE INTERIOR WALLS AND JOINTS OF THE PRE-CAST CONCRETE STRUCTURES SHALL BE MADE FULLY WATER TIGHT.
  2. PROVIDE ANTI-SEEP COLLAR ON THE 8" OUTLET PIPE PER THE DETAIL.
  3. A TOOTHED BUCKET SHALL BE USED TO EXCAVATE THE TRENCH IN ORDER TO PREVENT SOIL SMEARING AND TO PRESERVE THE PERMEABILITY OF THE SOIL.



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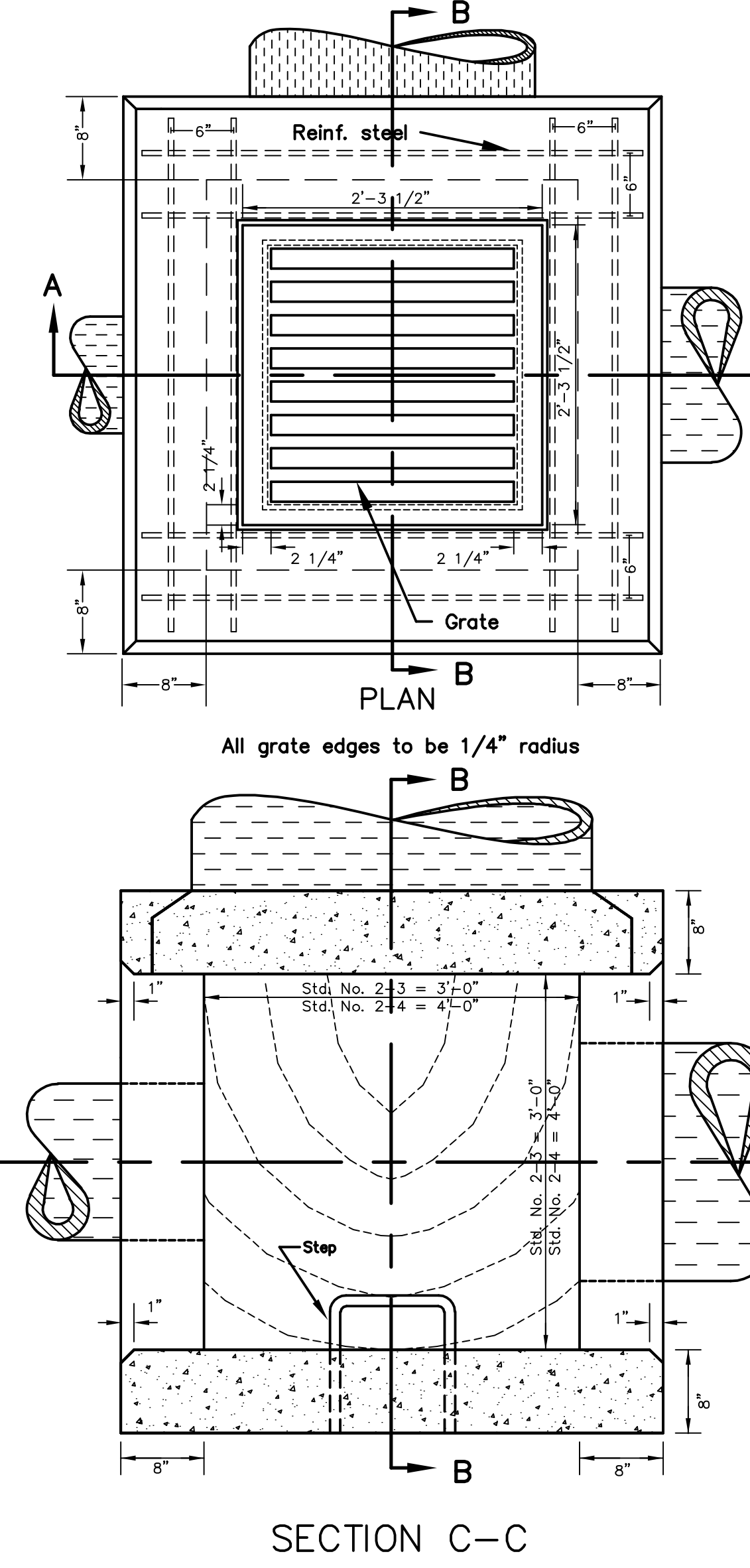
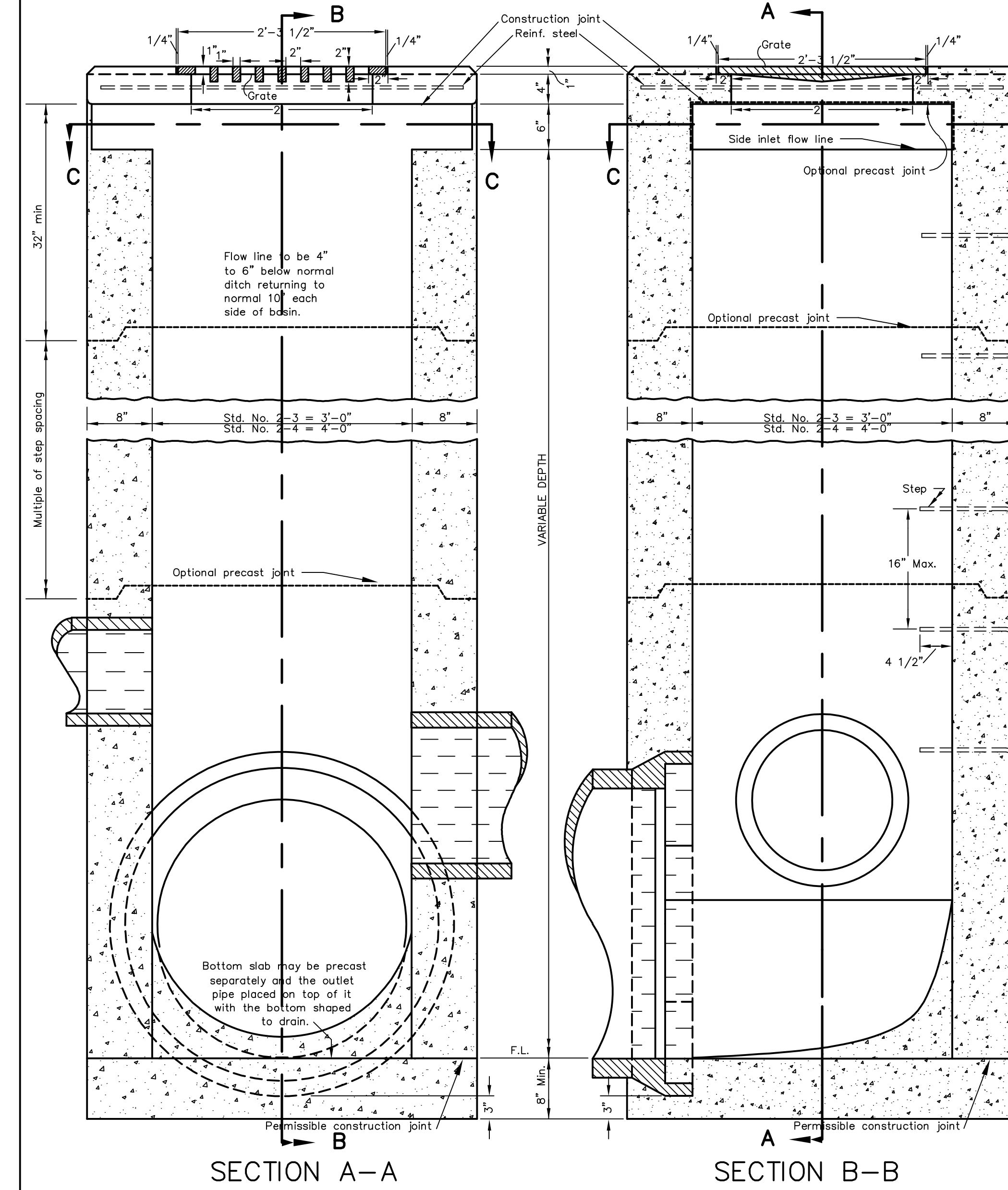
LDA Project No. 2016.45  
 UTILITY DETAILS **C4.1**







# STANDARD NO. 2-3 & NO. 2-4 CATCH BASINS



GRATING -- the design shall be essentially the same and equally as strong as the one shown herein.

Minimum weight 120 pounds.

BRICK, concrete block or cast-in-place walls shall have a nominal thickness of 8 inches. Precast walls shall have a minimum thickness of 6 inches and be reinforced sufficiently to permit shipping and handling without damage.

CONCRETE, cast-in-place, to be class C. All precast concrete shall meet the requirements of 706.13 with 6 ±2% air void content in the hardened concrete and be marked with the catch basin number.

REINFORCING in the top to be No. 4 bars 6" center to center. For Standard No. 2-3 use 8 bars and for Standard No. 2-4 use 12 bars.

OPENINGS for pipes shall be O.D. +2" when prefabricated or field cut.

LOCATION and elevation when given on the plans is top center of the grate. When side openings are provided, elevation shall be the flow line of the side inlet.

SIDE INLETS shall be provided only when specified on the plans.

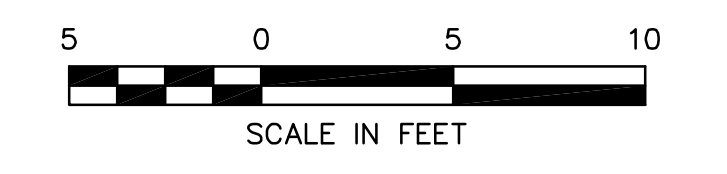
Steps shall be provided where the depth exceeds 72" and shall meet the requirements of MH-1.

CATCH BASIN SIZE	OUTLET PIPE SIZE
2-3	12" to 33"
2-4	36" to 42"

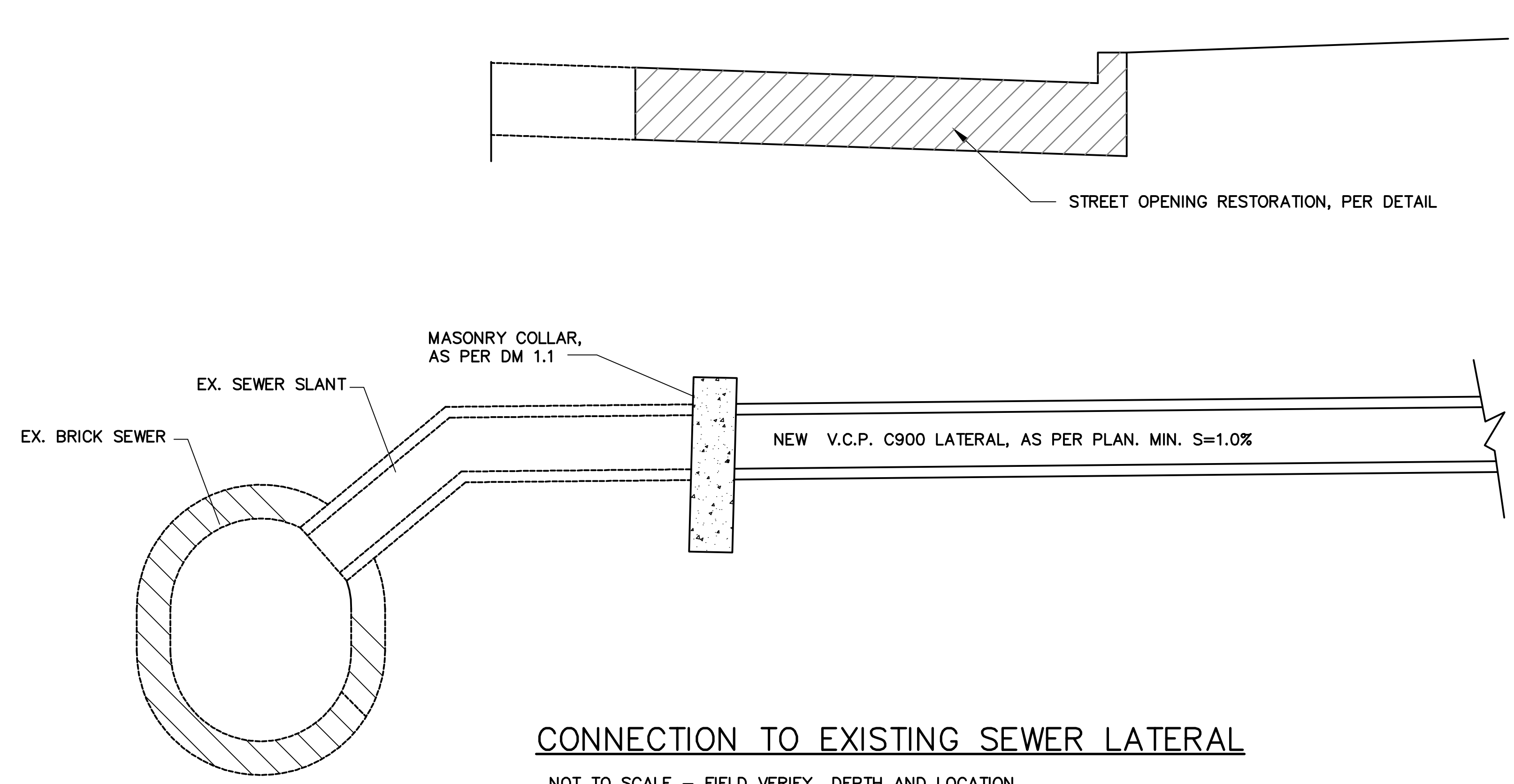
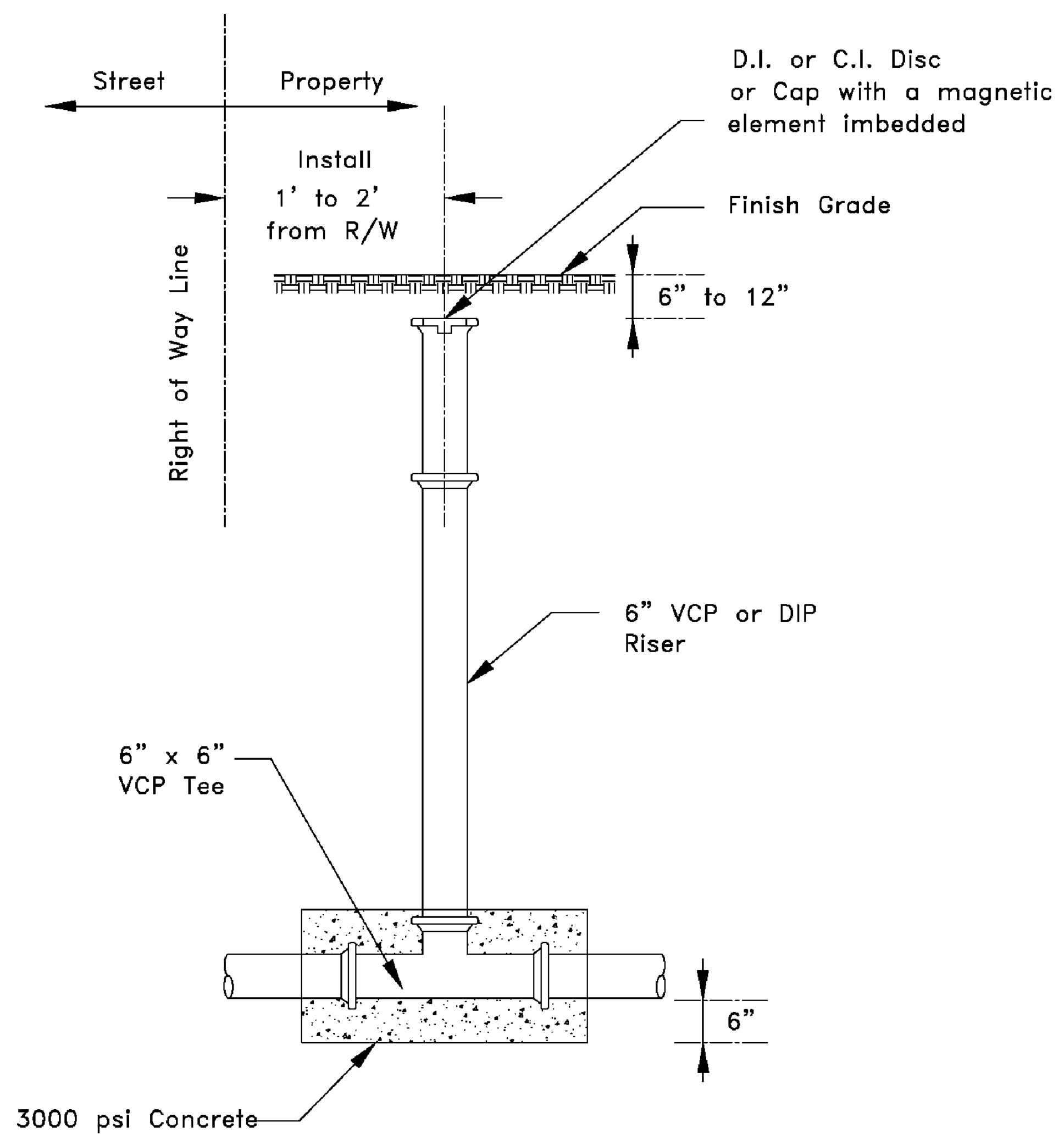
INLETS OVER 12 FEET IN DEPTH shall be precast or cast-in-place concrete; reinforced with No. 4 bars on 12" centers both vertically and horizontally with 2" clearance from inside wall face.

CATCH BASINS	
CB-	
2-3 & 2-4	

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9.25.2017	WPC COMMENTS

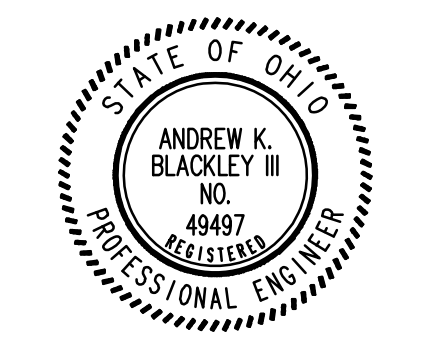


## CITY OF CLEVELAND DIVISION OF WATER POLLUTION CONTROL TEST TEE DETAIL (No scale)



NOT TO SCALE - FIELD VERIFY DEPTH AND LOCATION  
WHEN CONNECTION IS MADE TO AN EXIST. V.C.P. MAIN A MATCHING FACTORY WYE SHALL BE USED.

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LDA Project No. 2016.45

UTILITY DETAILS **C4.3**







**SWP3 DATA**

THE SCOPE OF SITE WORK TO BE PERFORMED IS AS FOLLOWS:

1. THE NEW STORM SEWERS WILL CONNECT INTO THE EXISTING ON SITE STORM SEWER SYSTEM WHICH WILL OUTLET INTO COMBINATION SEWERS ON W. 22ND AND W. 24TH STREETS.

2. ALL STORM WATER GENERATED WITHIN THE PROJECT LIMITS WILL BE DIRECTED TO AN EXISTING COMBINED SEWER SYSTEM WHICH IS CURRENTLY ROUTED TO THE EASTERLY TREATMENT PLANT OWNED AND OPERATED BY THE CITY OF CLEVELAND.

EARTH DISTURBANCE RELATED PARAMETERS ARE AS FOLLOWS:

3. THE TOTAL SITE AREA IS APPROXIMATELY 1.03 ACRES. THE TOTAL DISTURBED SITE AREA DUE TO THIS PROJECT IS APPROXIMATELY 1.03 ACRES. THE DISTURBED AREA IS MADE UP OF THE A NEW APARTMENT BUILDING, UNDERGROUND PARKING LOT, AND COURTYARD.

4. EXISTING ON SITE SOILS CONSIST OF ELENORA URBAN LAND COMPLEX (HYDROLOGIC TYPE B).

5. THE PRE DEVELOPED CURVE NUMBER FOR THE SITE IS 97.

6. THE POST DEVELOPED CURVE NUMBER FOR THE SITE IS 98.

THE POLLUTION CONTROL PROPOSED DURING THE CONSTRUCTION OF THE PROJECT IS AS FOLLOWS:

7. SILT FENCE AND FILTER SOCK SHALL BE INSTALLED AS SHOWN ON THE SWP3 PRIOR TO EARTH DISTURBING ACTIVITY.

8. INLET PROTECTION AT EXISTING STORM SEWER STRUCTURES SHALL BE INSTALLED AS SHOWN ON THE SWP3 PRIOR TO EARTH DISTURBING ACTIVITY.

9. A STONE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SHOWN ON THE SWP3 AND SHALL BE THE ONLY MEANS OF SITE ACCESS FOR CONSTRUCTION VEHICLES DURING THE CONSTRUCTION PROCESS.

10. THE STAGING AREA, CEMENT WASHOUT AREA, AND WASTE CONTAINER AREA SHALL BE INSTALLED AS SHOWN ON THE SWP3.

11. TEMPORARY SEEDING AND MULCHING SHALL BE INSTALLED AS NECESSARY DURING CONSTRUCTION AS SPECIFIED IN THE SWP3. CONSTRUCTION DYNAMICS WILL DETERMINE LOCATION AND EXTENT OF TEMPORARY SEEDING NECESSARY THROUGHOUT THE PROJECT.

**PERMANENT BMP RATIONALE**

THE BEST MANAGEMENT PRACTICES (BMP'S) TO BE IMPLEMENTED FOR PERMANENT WATER QUALITY CONTROL ARE AS FOLLOWS:

12. STRUCTURAL: THE ROOF DRAINS OF THE NEW BUILDING WILL DRAIN INTO AN EXFILTRATION TRENCH CONTAINING A MIN. 72" THICK BED OF FREE DRAINING COMPACTED STONE (EST. 40% POROSITY) IN COMBINATION WITH PERFORATED PIPE. STORM WATER WILL COLLECT AT THE BOTTOM OF THE STONE LAYER AND OUTLET TO THE EXISTING STORM SEWERS ON SITE. THE GRAVEL LAYER WILL FUNCTION AS A METHOD OF SEDIMENT REMOVAL FROM STORM WATER GENERATED ON SITE. APPROXIMATELY 23,723 CUBIC FEET OF WATER QUALITY VOLUME WILL BE POSITIONED IN THE POROSITY OF THE FREE DRAINING STONE BASE OF THE TRENCH. THE SURFACE STORM WATER COLLECTED BY EACH AREA BE PERMITTED TO EXFILTRATE INTO THE TYPE B SOILS WITH NO APPARENT HIGH WATER TABLE. WATER NOT EXFILTRATING INTO THE SOIL WILL OUTLET TO THE COMBINED SEWER CONNECTION TO W. 22ND AND W. 24TH STREETS. APPROXIMATE WATER QUALITY VOLUME PROVIDED IN THE 6" DEEP AREA BENEATH THE FLOW LINE OF THE PERFORATED PIPE IS APPROXIMATELY 6,414 CUBIC FEET.

1. POST CONSTRUCTION DRAINAGE AREA DATA

TOTAL DRAINAGE AREA = 1.03 ACRES,

IMPERVIOUS AREA: 1.03 (CN=98)

**SEDIMENT POLLUTANT CONTROLS (GENERAL NOTES):**

1. PERIMETER SEDIMENT CONTROLS (I.E. SEDIMENT TRAPS, SILT FENCE, COMPOST SOCKS, COMPOST BERMS, ETC...) SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING AND WITHIN SEVEN DAYS FROM THE START OF GRUBBING AND SHALL CONTINUE TO FUNCTION UNTIL UPSLOPE AREAS DRAINING TO THEM ARE PERMANENTLY STABILIZED, OR AS DIRECTED BY THE CITY/VILLAGE ENGINEER, OR DESIGNATED REPRESENTATIVE.

2. NO EROSION AND SEDIMENT CONTROL BMP'S SHALL BE REMOVED FROM THE SITE PRIOR TO ADEQUATE PERMANENT STABILIZATION OF THE ASSOCIATED UPLAND DRAINAGE AREAS AND WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CITY/VILLAGE ENGINEER, OR HIS DESIGNATED REPRESENTATIVE, UNLESS THEIR REMOVAL IS SPECIFICALLY PROVIDED FOR WITHIN THE SITE'S APPROVED PLAN.

3. THERE SHALL BE NO SEDIMENT-LADEN OR TURBID DISCHARGES TO WATER RESOURCES OR WETLANDS RESULTING FROM DEWATERING ACTIVITIES. IF TRENCH OR GROUNDWATER CONTAINS SEDIMENT, IT MUST PASS THROUGH A SEDIMENT TRAP OR OTHER EQUALLY EFFECTIVE SEDIMENT CONTROL DEVICE, PRIOR TO BEING DISCHARGED FROM THE CONSTRUCTION SITE. ALTERNATIVELY, SEDIMENT MAY BE REMOVED BY SETTLING IN PLACE OR BY DEWATERING INTO A SUMP PIT, FILTER BAG OR COMPARABLE PRACTICE. GROUND WATER DEWATERING WHICH DOES NOT CONTAIN SEDIMENT OR OTHER POLLUTANTS IS NOT REQUIRED TO BE TREATED PRIOR TO DISCHARGE. HOWEVER, CARE MUST BE TAKEN WHEN DISCHARGING GROUND WATER TO ENSURE THAT IT DOES NOT BECOME POLLUTANT-LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES.

4. STREETS DIRECTLY ADJACENT TO CONSTRUCTION ENTRANCES AND RECEIVING TRAFFIC FROM THE DEVELOPMENT AREA, SHALL BE CLEANED DAILY TO REMOVE SEDIMENT TRACKED OFF-SITE. IF APPLICABLE, THE CATCH BASINS ON THESE STREETS NEAREST TO THE CONSTRUCTION ENTRANCES SHALL ALSO BE CLEANED WEEKLY, BASED ON SITE CONDITIONS, THE CITY/VILLAGE ENGINEER, OR HIS DESIGNATED REPRESENTATIVE, MAY REQUIRE ADDITIONAL BEST MANAGEMENT PRACTICES TO CONTROL OFF-SITE TRACKING OF DUST.

5. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, OR REPRESENTATIVE, TO HAVE ALL CONTROLS ON THE SITE INSPECTED BY QUALIFIED INSPECTION PERSONNEL AT LEAST ONCE EVERY SEVEN CALENDAR DAYS, AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN ONE-HALF INCH OF RAIN PER 24 HOUR PERIOD. ALL INSPECTIONS REPORTS SHALL BE SIGNED AND DATED BY THE INSPECTOR. WHEN INSPECTIONS REVEAL THE NEED FOR REPAIR, REPLACEMENT, OR INSTALLATION OF EROSION AND SEDIMENT CONTROL BMP'S, THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:

- A. WHEN PRACTICES REQUIRE REPAIR OR MAINTENANCE: THE BMP SHALL BE REPAIRED WITHIN 3 DAYS OF INSPECTION, EXCEPTION: SEDIMENT PONDS SHALL BE REPAIRED OR MAINTAINED WITH 10 DAYS OF INSPECTION.
B. WHEN PRACTICES FAIL TO PROVIDE THEIR INTENDED FUNCTION: A MORE APPROPRIATE BMP SHALL BE SELECTED AND IMPLEMENTED WITHIN 10 DAYS OF THE INSPECTION.
C. WHEN PRACTICES DEPICTED IN THE SWP3 ARE NOT INSTALLED: THE BMP SHALL BE INSTALLED WITHIN 10 DAYS OF THE INSPECTION. IF THE INSPECTION REVEALS THAT THE BMP IS NOT NECESSARY, THE RECORD MUST CONTAIN AN EXPLANATION FOR THE DECISION.

6. THE APPLICANT SHALL MAINTAIN FOR 3 YEARS FOLLOWING FINAL STABILIZATION, THE RESULTS OF THESE INSPECTIONS, THE NAMES AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTIONS, THE DATES OF INSPECTIONS, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE SWP3, A CERTIFICATION AS TO WHETHER THE FACILITY IS IN COMPLIANCE WITH THE SWP3, AND INFORMATION ON ANY INCIDENTS OF NONCOMPLIANCE DETERMINED BY THESE INSPECTIONS.

7. ALL EROSION AND SEDIMENT CONTROL PRACTICES SPECIFIED ON THIS PLAN SHALL CONFORM WITH THE DETAILS AND SPECIFICATIONS OUTLINED IN THE CURRENT VERSION OF THE OHIO DEPARTMENT OF NATURAL RESOURCES, "RAINWATER AND LAND DEVELOPMENT" MANUAL, OR AS SPECIFIED BY THE CITY/VILLAGE ENGINEER, OR DESIGNATED REPRESENTATIVE.

8. EROSION AND SEDIMENT CONTROL PRACTICES NOT ALREADY SPECIFIED ON THIS PLAN MAY BE NECESSARY DUE TO UNFORESEEN ENVIRONMENTAL CONDITIONS AND/OR CHANGES IN DRAINAGE PATTERNS CAUSED BY EARTH-MOVING ACTIVITY. ADDITIONAL PRACTICES SHALL BE IMPLEMENTED AT THE DEVELOPER'S EXPENSE AS DIRECTED BY THE CITY/VILLAGE ENGINEER, OR DESIGNATED REPRESENTATIVE.

9. NO STRUCTURAL SEDIMENT CONTROLS (SILT FENCE, SEDIMENT TRAPS, ETC.) SHALL BE USED IN A WATER RESOURCE OR WETLAND, UNLESS THEIR USE IS SPECIFICALLY PROVIDED FOR WITHIN THE SITE'S APPROVED PLAN.

10. SOIL STOCKPILES, TOPSOIL OR OTHERWISE, SHALL BE SITUATED AWAY FROM STREETS, SWALES, OR OTHER WATERWAYS AND SHALL BE SEEDED AND/OR MULCHED IMMEDIATELY.

11. ON-SITE PERSONNEL SHALL TAKE ALL NECESSARY MEASURES TO COMPLY WITH APPLICABLE REGULATIONS REGARDING FUGITIVE DUST EMISSIONS, INCLUDING OBTAINING NECESSARY PERMITS FOR SUCH EMISSIONS. THE CITY/VILLAGE ENGINEER, OR DESIGNATED REPRESENTATIVE, MAY REQUIRE DUST CONTROLS INCLUDING, BUT NOT LIMITED TO, THE USE OF WATER TRUCKS TO WET DISTURBED AREAS, TAPPING STOCKPILES, TEMPORARY STABILIZATION OF DISTURBED AREAS, AND REGULATION OF THE SPEED OF VEHICLES ON THE SITE.

12. ANY DISTURBED AREA NOT PAVED, SODDED, OR BUILT UPON SHALL HAVE A MINIMUM OF 80% UNIFORM VEGETATIVE COVER PRIOR TO FINAL INSPECTION AND, IN THE OPINION OF THE CITY/VILLAGE ENGINEER OR DESIGNATED REPRESENTATIVE, WILL BE MATURE ENOUGH TO CONTROL EROSION SATISFACTORILY AND SURVIVE SEVERE WEATHER.

**NON-SEDIMENT POLLUTANT CONTROLS (GENERAL NOTES):**

1. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. THE INDIVIDUAL WHO MANAGES THE DAY-TO-DAY SITE OPERATIONS WILL BE RESPONSIBLE FOR ENSURING ALL FORMS OF WASTE ARE PROPERLY DISPOSED OF.

2. CONTAMINATED SOILS FROM REDEVELOPMENT SITES SHALL BE DISPOSED OF PROPERLY. RUNOFF FROM CONTAMINATED SOILS SHALL NOT BE DISCHARGED FROM THE SITE. PROPER PERMITS SHALL BE OBTAINED FROM DEVELOPMENT PROJECTS ON SOLID WASTE LANDFILL SITES OR REDEVELOPMENT SITES.

3. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SURFSURFACE DRAINAGE STRUCTURES WITHIN 10 FEET OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED AWAY FROM ANY WATER CONVEYANCES.

4. NO SOLID OR LIQUID WASTE SHALL BE DISCHARGED INTO STORM WATER RUNOFF. ANY AND ALL WASTE MATERIALS (SOLID, HAZARDOUS, CONSTRUCTION & DEMOLITION, SANITARY, TOXIC, CONTAMINATED SOILS, ETC.) GENERATED AT THE SITE SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL RULES/REGULATIONS. ON-SITE STORAGE CONTAINERS SHALL BE COVERED AND NOT LEAKING. IT IS PROHIBITED TO BURN, BUY OR POUR OUT ONTO THE GROUND OR INTO THE STORM SEWERS ANY SOLVENTS, PAINTS, GASOLINE, DIESEL FUEL, USED MOTOR OIL, HYDRAULIC FLUID, ANTIFREEZE, CEMENT CURING COMPOUNDS AND ANY OTHER SUCH TOXIC OR HAZARDOUS MATERIALS OR WASTES.

5. HANDLING CONSTRUCTION CHEMICALS, MIXING, PUMPING, TRANSFERRING OR OTHER HANDLING OF CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIM, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY STORM DRAIN.

6. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED AWAY FROM STORM DRAINS, IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS. SECONDARY CONTAINMENT WITH A MINIMUM CAPACITY EQUAL TO 110% OF THE VOLUME OF ALL CONTAINERS IN A STORAGE AREA SHALL BE PROVIDED FOR ALL FUEL LIQUID STORAGE TANKS AND DRUMS.

7. ALL SANITARY WASTE SHALL BE COLLECTED FROM PORTABLE UNITS A MINIMUM OF THREE TIMES PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR, AS REQUIRED BY LOCAL REGULATION.

8. THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:

- A. AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.
B. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR APPROPRIATE CONTAINERS, AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
C. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE MANUFACTURER'S LABEL SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
D. WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
E. THE MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
F. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON SITE.

9. IN ADDITION TO PREVIOUS NOTES, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

- A. CONTRACTOR MUST CONTACT OHIO EPA AT 1-800-282-9378, THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE (LEPC) WITHIN 30 MINUTES OF A SPILL 25 GALLONS OR GREATER.
B. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE POSTED AND SITE PERSONNEL MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
C. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE, BUT NOT LIMITED TO: BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY DESIGNATED FOR THIS PURPOSE.
D. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
E. THE SPILL AREA WILL BE KEPT WELL-VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
F. SPILLS OF TOXIC OR HAZARDOUS MATERIALS WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
G. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
H. THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR THEY WILL DESIGNATE SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ON SITE.
I. DUST CONTROL OR DUST SUPPRESSANTS SHALL BE USED TO PREVENT NUISANCE CONDITIONS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND IN A MANNER WHICH PREVENT A DISCHARGE TO WATERS OF THE STATE. SUFFICIENT DISTANCE MUST BE PROVIDED BETWEEN APPLICATIONS AND NEARBY BRIDGES, CATCH BASINS, AND OTHER WATERWAYS. APPLICATION (EXCLUDING WATER) MAY NOT OCCUR WHEN RAIN IS IMMINENT AS NOTED IN THE SHORT TERM FORECAST. USED OIL MAY NOT BE APPLIED FOR DUST CONTROL.

**SOIL STABILIZATION REQUIREMENTS:**

**TEMPORARY STABILIZATION**

Table with 3 columns: AREA TO BE STABILIZED, TIME FRAME TO BE STABILIZED, and specific requirements for disturbed areas.

**PERMANENT STABILIZATION**

Table with 3 columns: AREA TO BE STABILIZED, TIME FRAME TO BE STABILIZED, and specific requirements for permanent stabilization.

**SOIL STABILIZATION TECHNIQUES**

Table with 3 columns: TYPE OF STABILIZATION, ACCEPTABLE USAGE, and specific techniques like seeding & mulching.

**TEMPORARY SEEDING REQUIREMENTS (PER ODOT 207)**

Table with 3 columns: CONSTRUCTION SEEDING, SEEDS, RATE, and ANNUAL RYEGRASS requirements.

**PERMANENT SEEDING REQUIREMENTS (PER ODOT 659)**

Table with 3 columns: LAWN MIXTURE (RESIDENTIAL & COMMERCIAL AREAS), SEEDS, RATE, and various grass types like Kentucky Bluegrass.

Table with 3 columns: ROADSIDE MIXTURE (RURAL ROADS, AREAS BEYOND R/W), SEEDS, RATE, and various grass types like Kentucky Bluegrass and Fescue.

**SODDING (PER ODOT 660)**

SEE MATERIAL AND CONSTRUCTION SPECIFICATIONS

**EROSION CONTROL MATTING (PER ODOT 670)**

SEE MATERIAL AND CONSTRUCTION SPECIFICATIONS

**ROCK CHANNEL PROTECTION (PER ODOT 601)**

SEE MATERIAL AND CONSTRUCTION SPECIFICATIONS

**SOIL STABILIZATION TIME TABLE**

Table with 3 columns: TYPE OF STABILIZATION, MONTHS OF THE YEAR, and specific timing for temporary and permanent seeding.

**IMPLEMENTATION SCHEDULE & SEQUENCE OF MAJOR CONSTRUCTION OPERATIONS:**

- A. BEFORE ANY GRADING ACTIVITIES BEGIN: 1. CONSTRUCT CONSTRUCTION FENCE AS NECESSARY TO ENCLOSE SITE, 2. INSTALL PERIMETER SILT FENCE PER DETAIL, 3. PROVIDE PROTECTION FOR AREAS TO REMAIN UNDISTURBED, 4. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
B. CLEARING AND GRUBBING: 1. INSTALL REMAINING SILT FENCE, PER PLAN REQUIREMENTS, 2. CLEAR AND GRUB REMAINING AREAS DESIGNATED ON THE PLAN, 3. CONSTRUCT CONCRETE WASHOUT AREA, VEHICLE FUELING AREA, CONSTRUCTION DUMPSTER AREA, AND SOLID, SANITARY, AND TOXIC WASTE AREA.
C. STRIPPING AND STOCKPIILING OF TOPSOIL: 1. STRIP TOPSOIL WHERE APPLICABLE AND PLACE IN DESIGNATED STOCKPILE AREA, 2. CONSTRUCT SILT FENCE AROUND STOCKPILE, 3. INSTALL SOIL STABILIZATION MEASURES AS NEEDED, 4. DISTURBED AREAS WHERE CONSTRUCTION WILL CEASE FOR MORE THAN 14 DAYS WILL BE STABILIZED.
D. MASS GRADING OPERATIONS: 1. BEGIN MASS GRADING OF SITE PER PLAN, 2. INSTALL EROSION CONTROLS MEASURES (EROSION CONTROL MATTING, ETC.), PER PLAN REQUIREMENTS AS NEEDED, 3. DISTURBED AREAS WHERE CONSTRUCTION WILL CEASE FOR MORE THAN 14 DAYS WILL BE STABILIZED.
E. UTILITY CONSTRUCTION: 1. CONSTRUCT SANITARY, WATER, AND GAS SERVICE, PER PLAN, 2. CONSTRUCT STORM SEWER SYSTEM DRAINAGE SYSTEM, INCLUDING OUTLET STRUCTURES, DRAINAGE LATERALS, AND COLLECTORS, 3. INSTALL INLET PROTECTION AT INLETS, 4. INSTALL SOIL STABILIZATION MEASURES AS NEEDED.
F. PAVING OPERATIONS: 1. CONSTRUCT CONCRETE PAVING, SIDEWALK, AND CURB ADJUSTMENTS WHERE SPECIFIED, 2. CLEAN AND RESET ALL UTILITY STRUCTURES TO FINAL GRADE.
G. FINAL GRADING OPERATIONS: 1. REMOVE BMPs FROM STORM INLETS AND FINALIZE PAVEMENT ACTIVITIES, 2. REMOVE TEMPORARY CONCRETE WASHOUT AREA, 3. REMOVE ALL TEMPORARY BMPs AND STABILIZE ANY AREAS DISTURBED BY THERE REMOVAL WITH EROSION CONTROLS, 4. PREPARE FINAL SEEDING AND LANDSCAPING.
H. POST-GRADING OPERATIONS: 1. MONITOR PROGRESS OF SITE STABILIZATION, 2. RE-SEED AND REPAIR DAMAGED AREAS, 3. MAINTAIN AND INSPECT ALL PERMANENT BMPs.

**STRUCTURAL BMP LONG-TERM MAINTENANCE (GENERAL NOTES):**

- 1. THE OWNER AGREES TO MAINTAIN IN PERPETUITY THE STORM WATER MANAGEMENT PRACTICES IN ACCORDANCE WITH APPROVED MAINTENANCE PLANS A MANNER THAT WILL PERMIT THE STORM WATER MANAGEMENT PRACTICES TO PERFORM THE PURPOSES FOR WHICH THEY WERE DESIGNED AND CONSTRUCTED. THIS INCLUDES ALL PIPES, STRUCTURES, IMPROVEMENTS, AND VEGETATION PROVIDED TO CONTROL THE QUANTITY AND QUALITY OF THE STORM WATER. COPIES OF THE MAINTENANCE AGREEMENT SHALL BE PROVIDED TO THE DESIGN ENGINEER AND/OR LOCAL AUTHORITIES.
2. NO ALTERATION TO THE UNDERGROUND DETENTION AND OUTLET STRUCTURES WITHOUT APPROVAL FROM THE DESIGN ENGINEER.
3. THE OWNER SHALL PROVIDE A MAINTENANCE PLAN FOR EACH STORM WATER MANAGEMENT PRACTICE. THE MAINTENANCE PLANS SHALL INCLUDE A SCHEDULE FOR MONTHLY AND ANNUAL MAINTENANCE. THE OWNER SHALL MAINTAIN, UPDATE, AND STORE THE MAINTENANCE RECORDS FOR THE STORM WATER MANAGEMENT PRACTICES. THE SPECIFIC MAINTENANCE PLANS FOR EACH STORM WATER MANAGEMENT PRACTICE ARE AS FOLLOWS:

**A. EXFILTRATION TRENCH**

- MAINTENANCE TO BE COMPLETED EVERY 3 MONTHS: - REMOVE OBSTRUCTIONS IN ORIFICES AND/OR OUTLETS; - REMOVE DEBRIS AND SEDIMENT FROM STONE SURFACE BY SWEEPING AND VACUUMING.

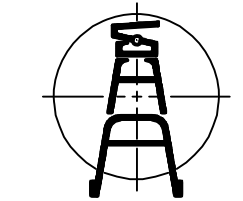
**MAINTENANCE TO BE COMPLETED YEARLY:**

- REPAIR AND/OR REPLACE DAMAGED PAVERS; - INSPECT AND REMOVE CLOGS CAUSED BY SEDIMENT, DEBRIS, AND ORGANIC MATERIAL; - INSPECT AND CLEAN UNDERDRAINS.

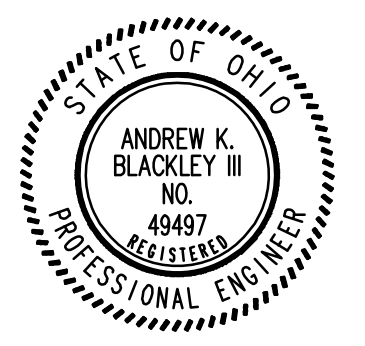
**YEARLY REPORT REQUIREMENTS:**

SKETCH SHOWING GENERAL AREA OF BMP'S, SUMMARY OF ALL MAINTENANCE ACTIVITIES SINCE LAST ANNUAL INSPECTION, PHOTOS AND DESCRIPTION OF ALL BMP DESIGN FEATURES, INDICATION OF ANY DEVIATION FROM APPROVED PLAN FOR BMP, IDENTIFICATION OF IMPROVEMENTS NECESSARY TO RESTORE ORIGINAL DESIGN FUNCTION, MAINTENANCE ACTIVITIES REQUIRED IN THE NEXT 6 MONTHS, IDENTIFICATION AND CONTACT INFORMATION OF ENTITY RESPONSIBLE FOR BMP, AND IDENTIFICATION AND CONTACT INFORMATION FOR ENGINEER PREPARING THE REPORT, INCLUDING SIGNATURE AND SEAL.

Table with 2 columns: DATE and DESCRIPTION. Includes dates 06.01.2017, 06.26.2017, 07.28.2017 and descriptions like 82% issued for Review, Progress Set, issued for Permit.



PREPARED BY STEPHEN HOWANSEK & ASSOC., INC. TWO MERIT DRIVE RICHMOND HEIGHTS, OHIO 44143 (216) 731-8255 FAX NO. (216) 731-4483



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LDA Project No. 2016.45

SWP3 GENERAL NOTES C5.1

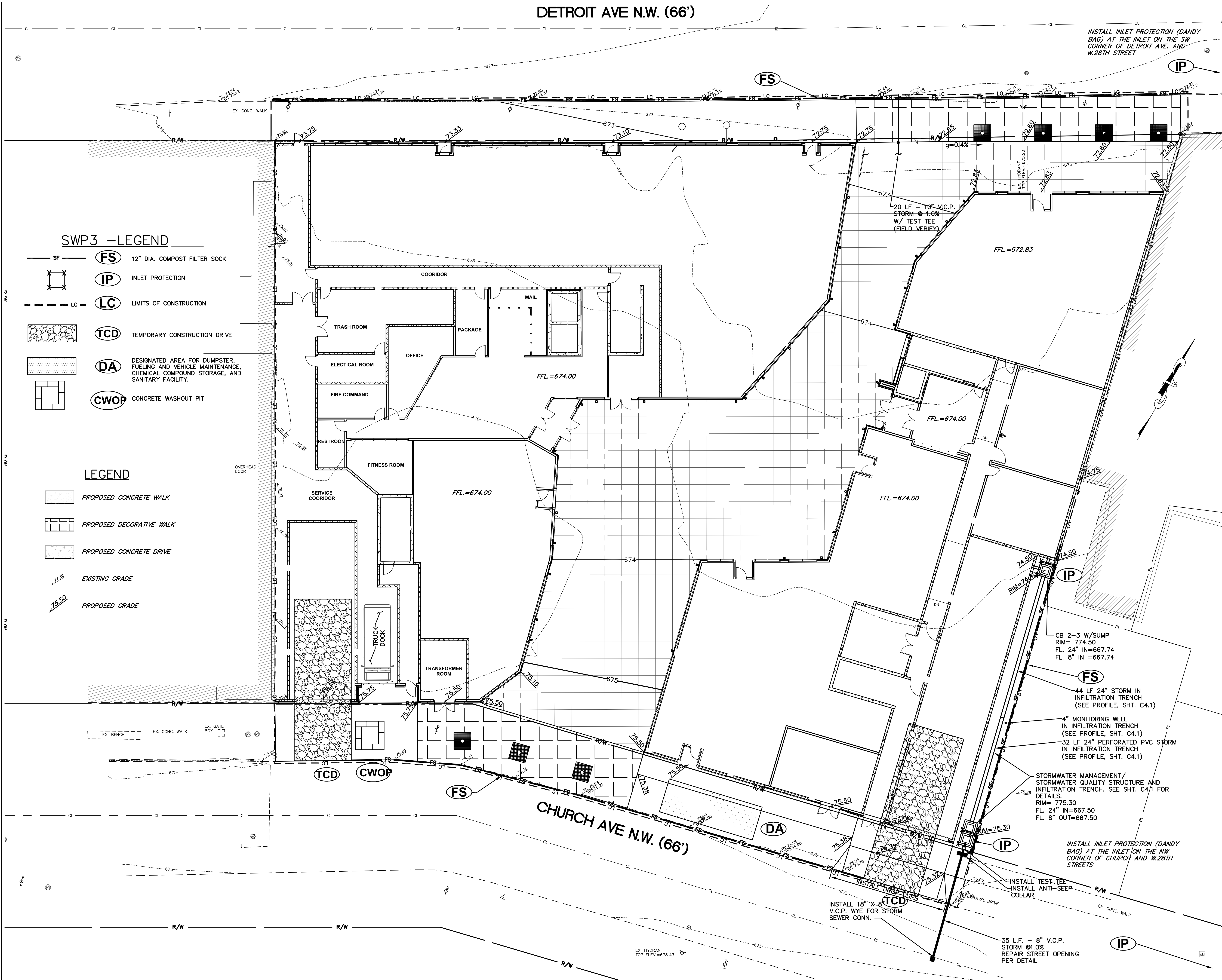


DETROIT AVE N.W. (66')

DATE DESCRIPTION

06.01.2017	82% Issued for Review
06.26.2017	Progress Set
07.28.2017	Issued for Permit
09.25.2017	REV. PER CUY. SWCD

INSTALL INLET PROTECTION (DANDY BAG) AT THE INLET ON THE SW CORNER OF DETROIT AVE. AND W.28TH STREET

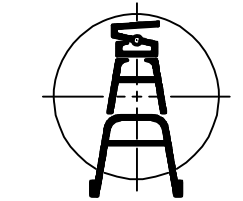
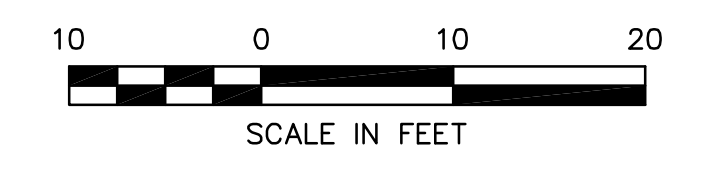


SWP3 -LEGEND

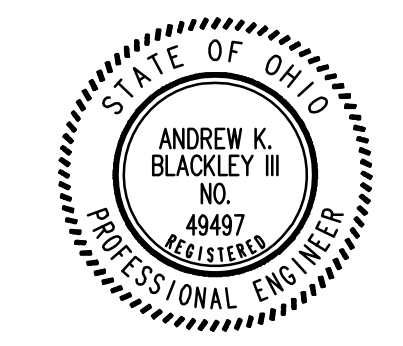
- FS** 12" DIA. COMPOST FILTER SOCK
- IP** INLET PROTECTION
- LC** LIMITS OF CONSTRUCTION
- TCD** TEMPORARY CONSTRUCTION DRIVE
- DA** DESIGNATED AREA FOR DUMPSTER, FUELING AND VEHICLE MAINTENANCE, CHEMICAL COMPOUND STORAGE, AND SANITARY FACILITY.
- CWOP** CONCRETE WASHOUT PIT

LEGEND

- PROPOSED CONCRETE WALK
- PROPOSED DECORATIVE WALK
- PROPOSED CONCRETE DRIVE
- EXISTING GRADE
- PROPOSED GRADE



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CB 2-3 W/SUMP  
 RIM= 774.50  
 FL. 24" IN=667.74  
 FL. 8" IN =667.74

**FS**  
 44 LF 24" STORM IN INFILTRATION TRENCH (SEE PROFILE, SHT. C4.1)

4" MONITORING WELL IN INFILTRATION TRENCH (SEE PROFILE, SHT. C4.1)

32 LF 24" PERFORATED PVC STORM IN INFILTRATION TRENCH (SEE PROFILE, SHT. C4.1)

STORMWATER MANAGEMENT/ STORMWATER QUALITY STRUCTURE AND INFILTRATION TRENCH. SEE SHT. C4.1 FOR DETAILS.  
 RIM= 775.30  
 FL. 24" IN=667.50  
 FL. 8" OUT=667.50

INSTALL INLET PROTECTION (DANDY BAG) AT THE INLET ON THE NW CORNER OF CHURCH AND W.28TH STREETS

INSTALL TEST-TEE  
 INSTALL ANTI-SEEP COLLAR

INSTALL 18" X 8" V.C.P. WYE FOR STORM SEWER CONN.

35 L.F. - 8" V.C.P. STORM @1.0% REPAIR STREET OPENING PER DETAIL



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LDA Project No. 2016.45

SWP3 SITE PLAN **C5.2**



Specifications for  
**Additional Construction Site Pollution Controls**

- Construction personnel, including subcontractors who may use or handle hazardous or toxic materials, shall be made aware of the following general guidelines regarding disposal and handling of hazardous and construction wastes:
  - Prevent spills
  - Use products up
  - Follow label directions for disposal
  - Remove lids from empty bottles and cans when disposing in trash
  - Recycle wastes whenever possible
  - Don't pour into waterways, storm drains or onto the ground
  - Don't pour down the sink, floor drain or septic tanks
  - Don't bury chemicals or containers
  - Don't burn chemicals or containers
  - Don't mix chemicals together
- Containers shall be provided for the proper collection of all waste material including construction debris, trash, petroleum products and any hazardous materials used on-site. Containers shall be covered and not leaking. All waste material shall be disposed of at facilities approved for that material. Construction Demolition and Debris (CD&D) waste must be disposed of at an Ohio EPA approved CD&D landfill.
- No construction related waste materials are to be buried on-site. By exception, clean fill (bricks, hardened concrete, soil) may be utilized in a way which does not encroach upon natural wetlands, streams or floodplains or result in the contamination of waters of the state.
- Handling Construction Chemicals. Mixing, pumping, transferring or other handling of construction chemicals such as fertilizer, lime, asphalt, concrete drying compounds, and all other potentially hazardous materials shall be performed in an area away from any watercourse, ditch or storm drain.
- Equipment Fueling and Maintenance, oil changing, etc., shall be performed away from watercourses, ditches or storm drains, in an area designated for that purpose. The designated area shall be equipped for recycling oil and catching spills. Secondary containment shall be provided for all fuel oil storage tanks. These areas must be inspected every seven days and within 24 hrs. of a 0.5 inch or greater rain event to ensure there are no exposed materials which would contaminate storm water. Site operators must be aware that Spill Prevention Control and Countermeasures (SPCC) requirements may apply. An SPCC plan is required for sites with one single above ground tank of 660

gallons or more, accumulative above ground storage of 1330 gallons or more, or 42,000 gallons of underground storage. Contaminated soils must be disposed of in accordance with Item 8.

- Concrete Wash Water shall not be allowed to flow to streams, ditches, storm drains, or any other water conveyance. A sump or pit with no potential for discharge shall be constructed if needed to contain concrete wash water. Field tile or other subsurface drainage structures within 10 ft. of the sump shall be cut and plugged. For small projects, truck chutes may be rinsed away from any water conveyances.
- Spill Reporting Requirements: Spills on pavement shall be absorbed with sawdust or kitty litter and disposed of with the trash at a licensed sanitary landfill. Hazardous or industrial wastes such as most solvents, gasoline, oil-based paints, and cement curing compounds require special handling. Spills shall be reported to Ohio EPA (1-800-282-9378). Spills of 25 gallons or more of petroleum products shall be reported to Ohio EPA, the local fire department, and the Local Emergency Planning Committee within 30 min. of the discovery of the release. All spills which contact waters of the state must be reported to Ohio EPA.
- Contaminated Soils. If substances such as oil, diesel fuel, hydraulic fluid, antifreeze, etc. are spilled, leaked, or released onto the soil, the soil should be dug up and disposed of at licensed sanitary landfill or other approved petroleum contaminated soil remediation facility. (not a construction/demolition debris landfill). Note that storm water runoff associated with contaminated soils are not be authorized under Ohio EPA's General Storm Water Permit associated with Construction Activities.
- Open Burning. No materials containing rubber, grease, asphalt, or petroleum products, such as tires, autoparts, plastics or plastic containers, may be burned (OAC 3745-19). Open burning is not allowed in restricted areas, which are defined as: 1) within corporation limits; 2) within 1000 feet outside a municipal corporation having a population of 1,000 to 10,000; and 3) a one mile zone outside of a corporation of 10,000 or more. Outside of restricted areas, no open burning is allowed within a 1000 feet of an inhabited building on another property. Open burning is permissible in a restricted area for: heating tar, welding, smudge pots and similar occupational needs, and heating for warmth or outdoor barbecues. Outside of restricted areas, open burning is permissible for landscape or land-clearing wastes (plant material, with prior written permission from Ohio EPA), and agricultural wastes, excluding buildings.
- Dust Control or dust suppressants shall be used to prevent nuisance conditions, in accordance with the manufacturer's specifications and in a manner, which prevent a discharge to waters of the state. Sufficient distance must be provided between applications and nearby bridges, catch basins, and other waterways. Application (excluding water) may not occur when rain is imminent as noted in the short term forecast. Used oil may not be applied for dust control.
- Other Air Permitting Requirements: Certain activities associated with construction will require air permits including but not limited to: mobile concrete batch plants, mobile asphalt plants, concrete crushers, large generators, etc. These activities will require specific Ohio EPA Air Permits for installation and operation. Operators must seek authorization from the corresponding district of Ohio EPA. For demolition of all

commercial sites, a Notification for Restoration and Demolition must be submitted to Ohio EPA to determine if asbestos corrective actions are required.

- Process Waste Water/Leachate Management. Ohio EPA's Construction General Permit only allows the discharge of storm water and does not include other waste streams/discharges such as vehicle and/or equipment washing, on-site septic leachate concrete wash outs, which are considered process wastewaters. All process wastewaters must be collected and properly disposed at an approved disposal facility. In the event, leachate or septage is discharged; it must be isolated for collection and proper disposal and corrective actions taken to eliminate the source of waste water.
- A Permit To Install (PTI) is required prior to the construction of all centralized sanitary systems, including sewer extensions, and sewerage systems (except those serving one, two, and three family dwellings) and potable water lines. Plans must be submitted and approved by Ohio EPA. Issuance of an Ohio EPA Construction General Storm Water Permit does not authorize the installation of any sewerage system where Ohio EPA has not approved a PTI.

Specifications for  
**Construction Entrance**

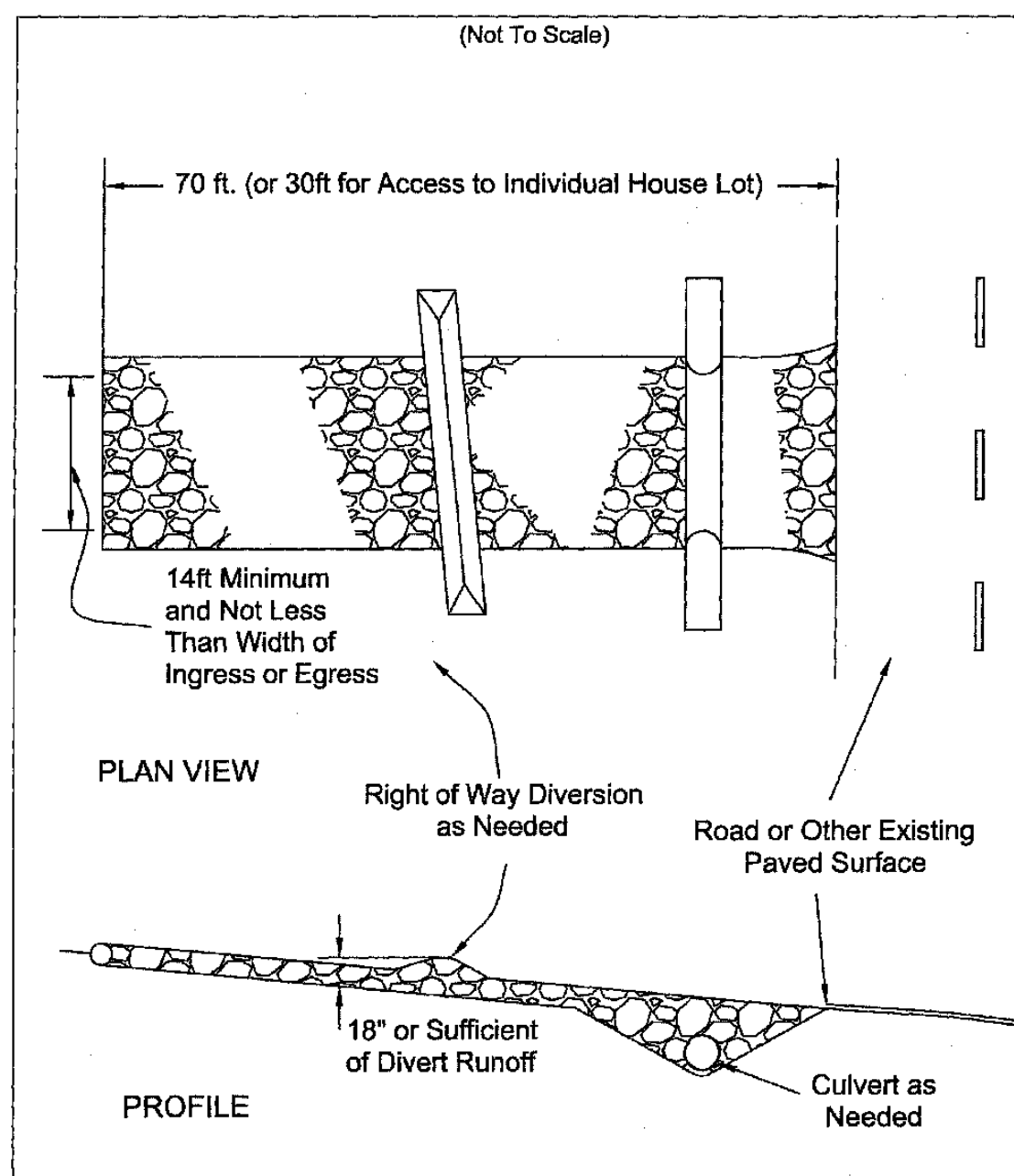
- Stone Size—000T # 2 (1.5-2.5 inch) stone shall be used, or recycled concrete equivalent.
- Length—The Construction entrance shall be as long as required to stabilize high traffic areas but not less than 70 ft. (exception: apply 30 ft. minimum to single residence lots).
- Thickness -The stone layer shall be at least 18 inches thick for light duty entrances or at least 10 inches for heavy duty use.
- Width -The entrance shall be at least 14 feet wide, but not less than the full width at points where ingress or egress occurs.
- Geotextile -A geotextile shall be laid over the entire area prior to placing stone. It shall be composed of strong rot-proof polymeric fibers and meet the following specifications:

Figure 7.4.1  
Geotextile Specification for Construction Entrance

Minimum Tensile Strength	200 lb.
Minimum Puncture Strength	80 psi.
Minimum Tear Strength	80 psi.
Minimum Burst Strength	320 psi.
Minimum Elongation	20%
Equivalent Opening Size	EOS < 0.6 mm.
Permeability	1x10-3 cm/sec.

- Timing—The construction entrance shall be installed as soon as is practicable before major grading activities.
- Culvert -A pipe or culvert shall be constructed under the entrance if needed to prevent surface water from flowing across the entrance or to prevent runoff from being directed out onto paved surfaces.
- Water Bar -A water bar shall be constructed as part of the construction entrance if needed to prevent surface runoff from flowing the length of the construction entrance and out onto paved surfaces.
- Maintenance -Top dressing of additional stone shall be applied as conditions demand. Mud spilled, dropped, washed or tracked onto public roads, or any surface where runoff is not checked by sediment controls, shall be removed immediately. Removal shall be accomplished by scraping or sweeping.
- Construction entrances shall not be relied upon to remove mud from vehicles and prevent off-site tracking. Vehicles that enter and leave the construction-site shall be restricted from muddy areas.
- Removal—the entrance shall remain in place until the disturbed area is stabilized or replaced with a permanent roadway or entrance.

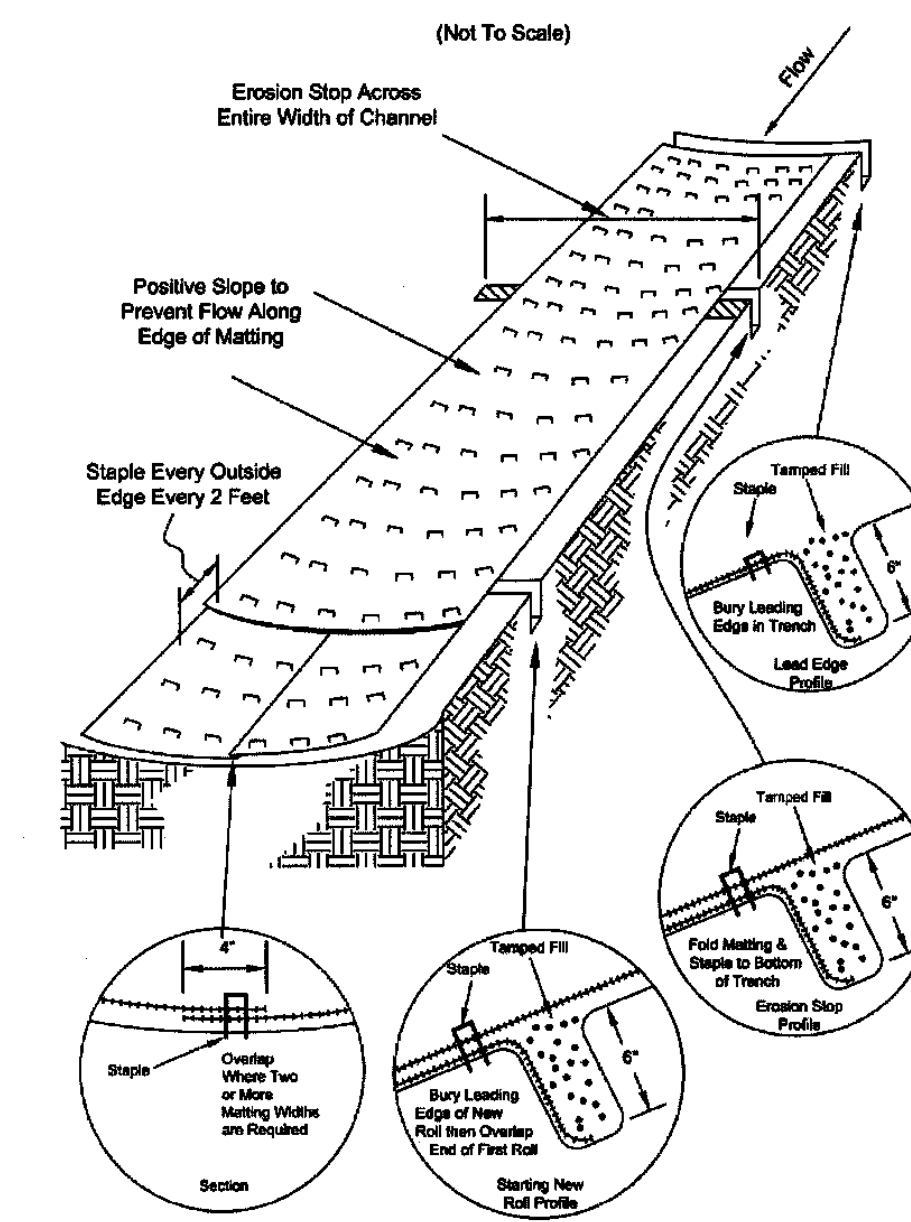
Specifications for  
**Construction Entrance**



Specifications for  
**Temporary Rolled Erosion Control Product**

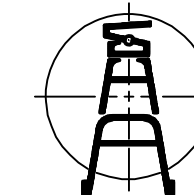
- Channel/Slope Soil Preparation Grade and compact area of installation, preparing seedbed by loosening 2"-3" of topsoil above final grade. Incorporate amendments such as lime and fertilizer into soil. Remove all rocks, clods, vegetation or other debris so that installed RECP will have direct contact with the soil surface.
- Channel/Slope Seeding Apply seed to soil surface prior to installation. All check slots, anchor trenches, and other disturbed areas must be reseeded. Refer to the Permanent Seeding specification for seeding recommendations.
- Stake Installation Excavate top and bottom trenches (12"x6"). Intermittent erosion check slots (6"x6") may be required based on slope length. Excavate top anchor trench 2' x 5' over crest of the slope.
- If intermittent erosion check slots are required, install RECP in 6"x6" slot at a maximum of 30' centers or the mid point of the slope. RECP should be stapled into trench on 12" centers.
- Install RECP in top anchor trench, anchor on 12" spacing, backfill and compact soil.
- Unroll RECP down slope with adjacent rolls overlapped a minimum of 2". Anchor the seam every 18". Lay the RECP loose to maintain direct soil contact, do not pull taut.
- Overlap roll ends a minimum of 12" with adjacent RECP on top for a shingling effect. Begin all new rolls in an erosion check slot if required, double anchor across roll every 12".
- Install RECP in bottom anchor trench (12"x6"), anchor every 12". Place all other staples throughout slope at 1 to 2.5 per square yard dependent on slope. Refer to manufacturer's anchor guide.
- Excavate middle anchor trench (12"x6") across the lower end of the project area.
- Excavate intermittent check slots (6"x6") along the channel at 30' intervals along the channel.
- Excavate longitudinal channel anchor slots (4"x4") along both sides of the channel to bury the edges. Whenever possible extend the RECP 2'-3' above the crest of channel side slopes.
- Install RECP in initial anchor trench (downstream) anchor every 12", backfill and compact soil.
- Roll out RECP beginning in the center of the channel toward the intermittent check slot. Do not pull taut. Unroll adjacent rolls upstream with a 3" minimum overlap (anchor every 12") and up each channel side slope.
- At top of channel side slopes install RECP in longitudinal anchor slots, anchor every 18".
- Install RECP in intermittent check slots. Lay into trench and secure with anchors every 12", backfill with soil and compact.
- Install RECP in top anchor trench, anchor on 12" spacing, backfill and compact soil.
- Unroll RECP down slope with adjacent rolls overlapped a minimum of 2". Anchor the seam every 18". Lay the RECP loose to maintain direct soil contact, do not pull taut.
- Overlap roll ends a minimum of 12" with adjacent RECP on top for a shingling effect. Begin all new rolls in an erosion check slot if required, double anchor across roll every 12".
- Install RECP in bottom anchor trench (12"x6"), anchor every 12". Place all other staples throughout slope at 1 to 2.5 per square yard dependent on slope. Refer to manufacturer's anchor guide.

Specifications for  
**Temporary Rolled Erosion Control Product**

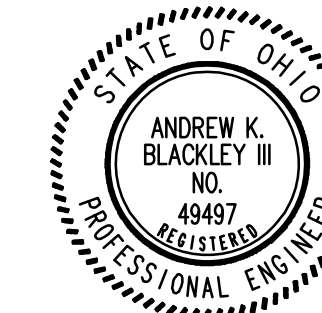


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PROJECT 29 PARTNERS, LLC  
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CLEVELAND, OHIO 44113

LDA Project No. 2016.45

SWPPP DETAILS **C5.3**



## Specifications for Temporary Seeding

Table 7.6.1 Temporary Seeding Species Selection

Seeding Date	Species	Lb./1000 ft <sup>2</sup>	Lb./Acres
March 1 to August 15	Oats	3	128 (3 bushels)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Perennial Ryegrass	1	40
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1.25	55
	Perennial Ryegrass	3.25	142
	Crested Red Fescue	0.4	17
	Kentucky Bluegrass	0.4	17
August 15th to November	Oats	3	128 (3 bushels)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Tall Fescue	3	112 (2 bushels)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1.25	40
	Annual Ryegrass	3.25	40
November 1 to Feb. 29	Oats	3	120 (2 bushels)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1.25	40
	Annual Ryegrass	3.25	40
	Annual Ryegrass	0.4	40
	Annual Ryegrass	0.4	40
	Annual Ryegrass	0.4	40

Use much any or dormant seeding

Note: Other approved species may be substituted.

- Structural erosion and sediment control practices such as diversions and sediment traps shall be established and stabilized with temporary seeding prior to grading the rest of the construction site.
- Temporary seed shall be applied between construction operations on soil that will not be graded or reworked for 21 days or greater. These idle areas shall be seeded within 7 days after grading.
- The seedbed should be pulverized and loose to ensure the success of establishing vegetation. Temporary seeding should not be postponed if ideal seedbed preparation is not possible.
- Soil Amendments—Temporary vegetation seeding rates shall establish adequate status of vegetation, which may require the use of soil amendments. Base rates for lime and fertilizer shall be used.
- Seeding Method—Seed shall be applied uniformly with a cyclone spreader, drill, cultipacker seeder, or hydroseeder. When feasible, seed that has been broadcast shall be covered by raking or drimaging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used, the seed and fertilizer will be mixed on-site and the seeding shall be done immediately and without interruption.

## Specifications for Temporary Seeding

### Mulching Temporary Seeding

- Applications of temporary seeding shall include mulch, which shall be applied during or immediately after seeding. Seedlings made during optimum seeding dates on favorable, very flat soil conditions may not need mulch to achieve adequate stabilization.
- Materials:
  - Straw—If straw is used, it shall be unrotted small-grain straw applied at a rate of 2 tons per acre or 90 lbs./1,000 sq. ft. (2-3 bales).
  - Hydroseeder—If wood cellulose fiber is used, it shall be used at 2000 lbs./ac. or 46 lb./1,000-sq.-ft.
  - Other—Other acceptable mulches include mulch matings applied according to manufacturer's recommendations or wood chips applied at 6 ton/ac.
- Straw Mulch shall be anchored immediately to minimize loss by wind or water. Anchoring methods:
  - Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but left to a length of approximately 6 inches.
  - Mulch Netting—Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
  - Synthetic Binders—Synthetic binders such as Acrylic CLR (Aqui-Tac), DGA-70, Petrosol, Terra Trac or equivalent may be placed perpendicular to prevailing air currents at intervals of about 15 times the barrier height to control air currents and blowing soil.
  - Calcium Chloride—This chemical may be applied by mechanical spreader as loose, dry granules or flakes at a rate that keeps the surface moist but not so high as to cause water pollution or plant damage. Application rates should be strictly in accordance with supplier's specified rates.

## Specifications for Dust Control

- Vegetative Cover and Mulch—Apply temporary or permanent seeding and mulch to areas that will remain idle for over 21 days. Seeding seedlings and mulch should be applied as soon as practical after reaching an interim or final grade. Graded stone or coarse gravel can be used as a permanent cover to provide control of soil emissions.
- Watering—Spray site with water until the surface is wet before and during grading and moist as needed, especially on haul roads and other heavy traffic routes. Watering shall be done at a rate that prevents dust but does not cause soil erosion. Watering agents shall be utilized according to manufacturer's instructions.
- Spray-On Adhesives—Apply adhesives according to the following table or manufacturer's instructions.

Table 7.6.1 Adhesives for Dust Control

Adhesive	Water Solution (Minimum Volume)	Spay Type	Application Rate (Gal./Ac.)
Latex Emulsion	12.5:1	Fine	205
Resin in Water	4:1	Fine	300
Acrylic Emulsion (No-Salt)	7:1	Coarse	450
Acrylic Emulsion (Traffic)	3.5:1	Coarse	350

- Operation and Maintenance—When Temporary Dust Control measures are used, repetitive treatment should be applied as needed to accomplish control.
- Street Cleaning—Paved areas that have accumulated sediment from construction should be cleaned daily, or as needed, utilizing a street sweeper or bucket-type end-loader or scraper.

## Specifications for Permanent Seeding

- Subsoil, plow, or other implement shall be used to reduce soil compaction and allow maximum infiltration. Maximum infiltration will help control both runoff rates and water quality. Subsoiling should be done when the soil moisture is low enough to allow the soil to crack or fracture. Subsoiling shall not be done on rip-rap areas where soil preparation should be limited to what is necessary for establishing vegetation.
- The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation and seeding.
- Topsoil shall be applied where needed to establish vegetation.

- Lime—Agricultural ground limestone shall be applied to acid soil as recommended by a soil test. In lieu of a soil test, lime shall be applied at the rate of 100 pounds per 1,000-sq. ft. or 2 tons per acre.
- Fertilizer—Fertilizer shall be applied as recommended by a soil test. In lieu of a soil test, fertilizer shall be applied at a rate of 25 pounds per 1,000-sq. ft. or 1000 pounds per acre of a 10-10-10 or 12-12-12 analysis.
- The lime and fertilizer shall be worked into the soil with a disk harrow, spring-bow harrow, or other suitable field implement to a depth of 3 inches. On sloping land, the soil shall be worked on the contour.

- Seeding Dates and Soil Conditions—Seeding shall be done March 1 to May 31 or August 1 to September 30. If seeding occurs outside of the above-specified dates, additional mulch and irrigation may be required to ensure a minimum of 80% germination. Plans for seedbed preparation should be done when the soil is dry enough to crumble and not form ribbons when compressed by hand. For winter seeding, see the following section on dormant seeding.
- Dormant Seeding
  - Seeding should not be made from October 1 through November 20. During this period, the seeds are likely to germinate but probably will not be able to survive the winter.

DATE	DESCRIPTION
06.01.2017	82% issued for Review
06.26.2017	Progress Set
07.28.2017	Issued for Permit
09.25.2017	REV. PER CuySWCD

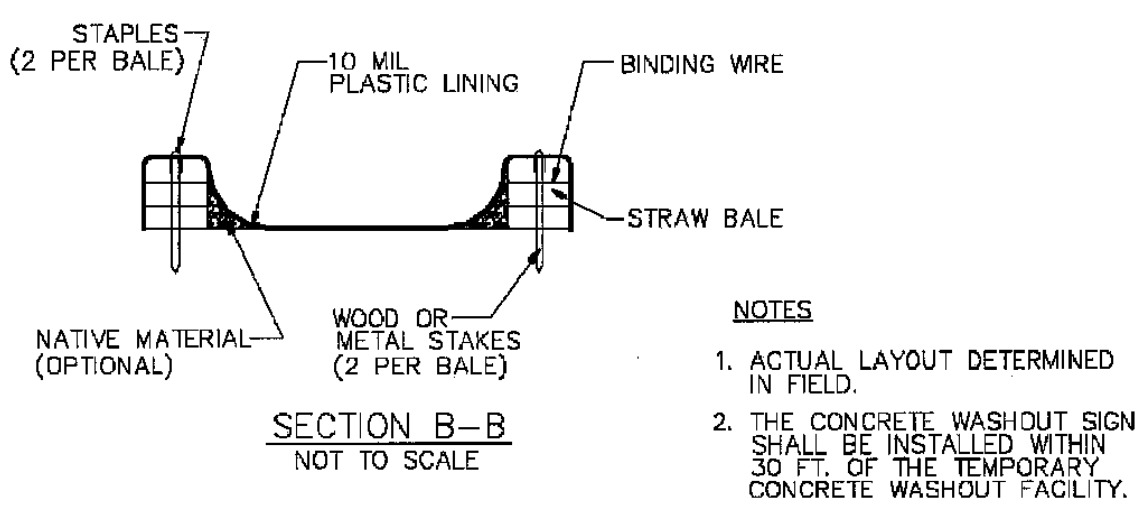
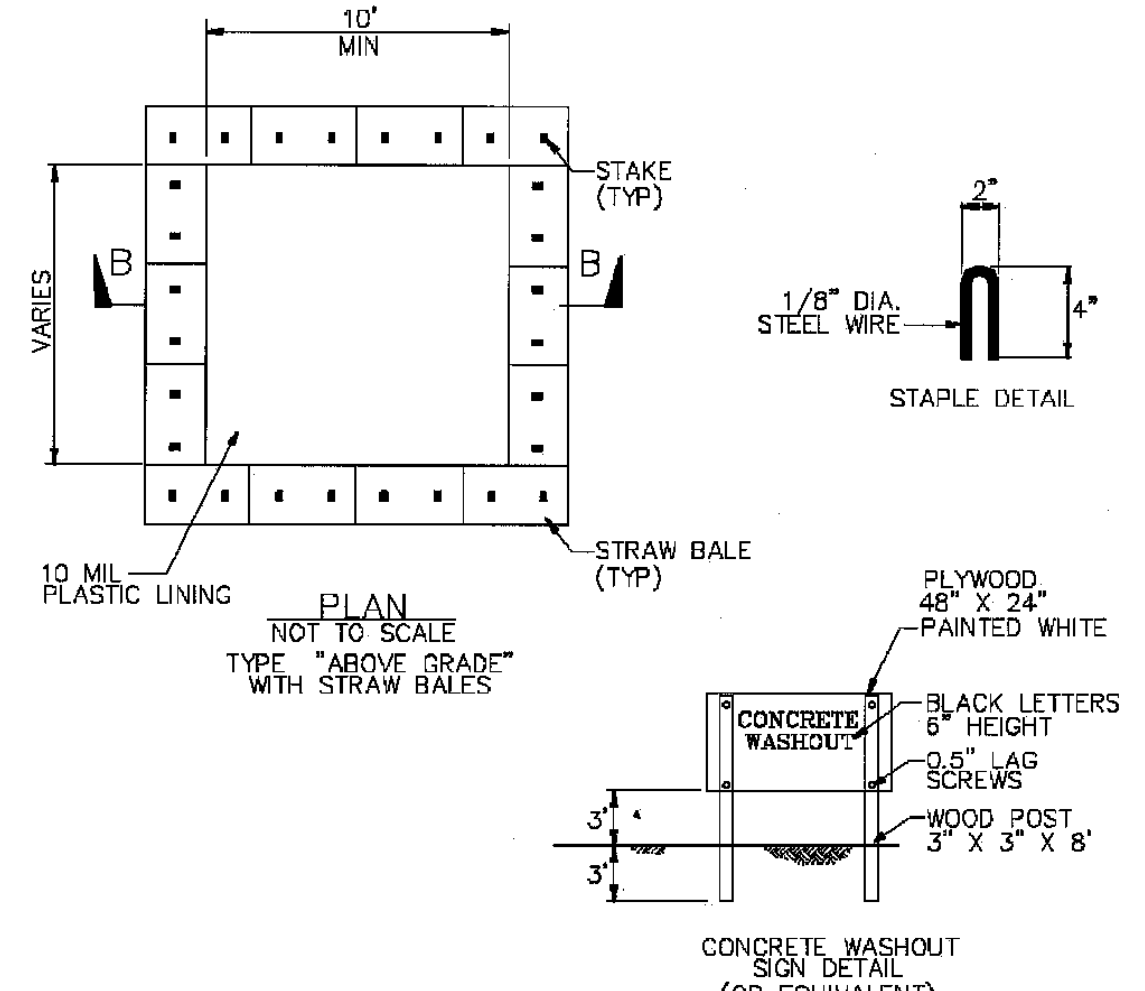
- Straw and Mulch Anchoring Methods
  - Straw mulch shall be anchored immediately to minimize loss by wind or water.
  - Mechanical—A disk, crimper or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but, generally, be left longer than 6 inches.
  - Mulch Netting—Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
  - Asphalt Emulsion—Asphalt shall be applied as recommended by the manufacturer or at the rate of 100 gallons per acre.
- Synthetic Binders—Synthetic binders such as Acrylic CLR (Aqui-Tac), DGA-70, Petrosol, Terra Trac or equivalent may be used at rates specified by the manufacturer.
- Wood Cellulose Fiber—Wood cellulose fiber shall be applied at a net dry weight of 250 pounds per acre. The wood cellulose fiber shall be mixed with water with the mixture containing a maximum of 50 pounds cellulose per 100 gallons of water.

Table 7.10.2 Permanent Seeding

Seed Mix	Seeding Rate		Notes
	Lb./Acres	Lb./1,000 Sq. Feet	
Crested Red Fescue	20-40	10-1	For close mowing & for wetlands with <2.0 ft/sec velocity
Dormant Ryegrass	10-20	1/2-1	
Kentucky Bluegrass	20-40	1/2-1	
Tall Fescue	40-50	1-1.4	For close mowing & for wetlands with <2.0 ft/sec velocity
Turf-Type (Dwarf) Fescue	80	2-1.4	
Tall Fescue	40-50	1-1.4	Slope Stakes or Cut Slopes
Downy Wood Pecker Fescue	10-20	1/2-1	
Tall Fescue	20-30	1/2-3/4	Do not seed later than August
Tall Fescue	20-30	1/2-3/4	
Tall Fescue	20-30	1/2-3/4	Do not seed later than August
Tall Fescue	20-30	1/2-3/4	
Tall Fescue	40-50	1-1.4	Road Cutbanks and Ditches
Turf-Type (Dwarf) Fescue	80	2-1.4	
Kentucky Bluegrass	100-120	2	For shaded areas
Crested Red Fescue	100-120	2	

Note: Other approved seed species may be substituted.

## Concrete Waste Management WM-8



January 2003 California Stormwater BMP Handbook Construction 7 of 7  
www.cabphandbook.com

## Dandy Bag® Plan Insert

The patented Dandy Bag® is designed for use with flat grates (including round) and mountable curbs to detain sediment-laden storm water. The suspended solids are allowed to settle out of the slowed flow prior to entering the Dandy Bag®.

### Installation

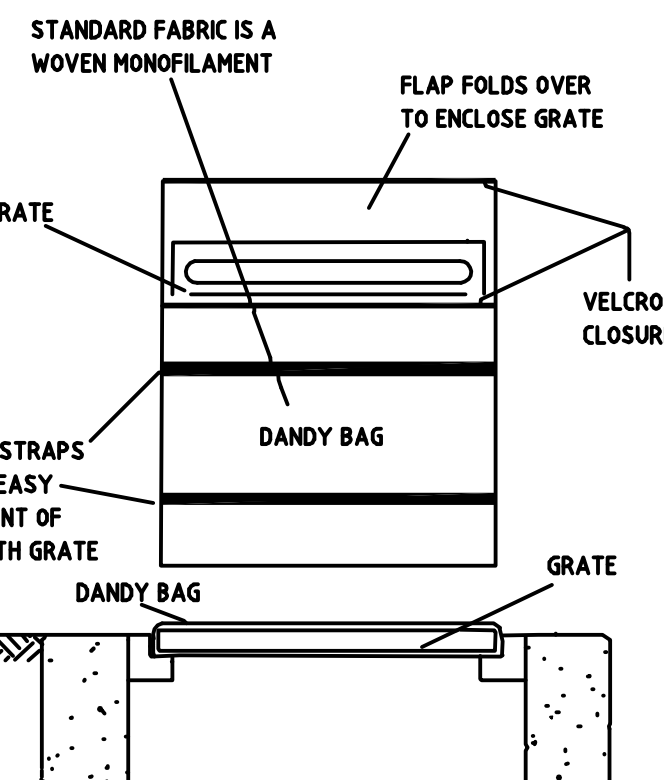
- Stand the grate on end
- Place the Dandy Bag® over the grate
- Roll the grate over so that the open end is up
- Pull up the stake
- Tuck the flap in
- Press the velcro strips together
- Be sure that the end of the grate is completely covered by the flap or the Dandy Bag® will not work properly
- Holding the handles, carefully place the Dandy Bag® with the grate inserted into the catch basin frame

### Maintenance

To insure proper operation remove silt, sediment, and debris from the surface and the vicinity of the unit with a square point shovel or stiff bristle broom away from environmentally sensitive areas and waterways in manner satisfactory to the engineer/inspector. Remove the material from inside Dandy Bag® as needed. Dispose of Dandy Bag® no longer in use at an appropriate recycling or solid waste facility.

### Inlet Inspection

To inspect inlet, remove Dandy Bag® with grate inside. Inspect catch basin and replace Dandy Bag® back into grate frame.

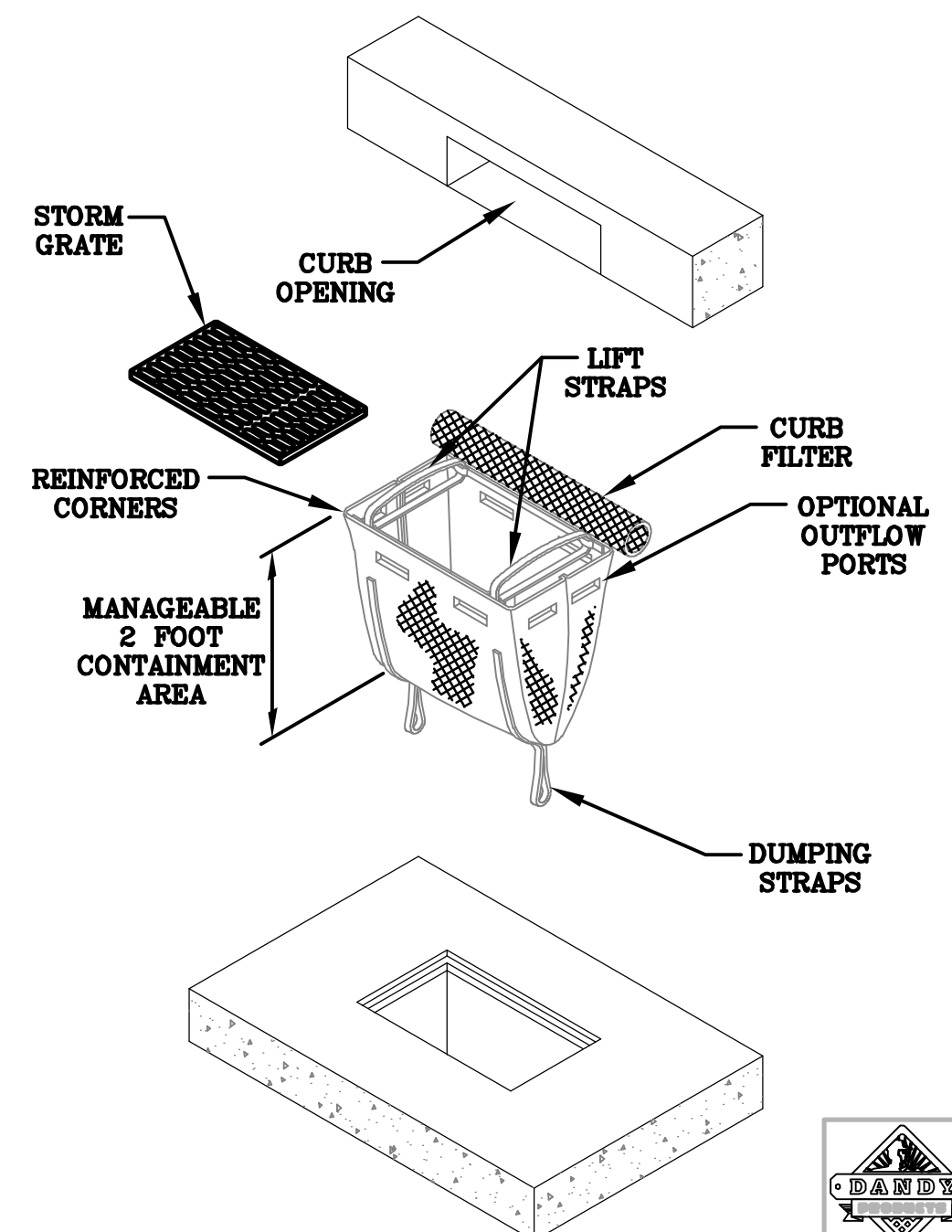


Pooling of likely silt sediment is not removed regularly. The Dandy Bag® must never be used where overflow may endanger an exposed slope. The Dandy Bag® is not intended for any other use and should not be used for any other purpose.



DANDY PRODUCTS, INC.  
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www.dandyproducts.com

## DANDY CURB SACK™



PROJECT: \_\_\_\_\_ DATE: \_\_\_\_\_ DR. BY: \_\_\_\_\_  
CITY/STATE: \_\_\_\_\_ DR. NO: \_\_\_\_\_

DANDY CURB SACK® SPECIFICATIONS

NOTE: THE DANDY CURB SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
Grid Tensile Strength	ASTM D 4832	kN (lbs)	1.78 (400) x 1.40 (315)
Grid Tensile Elongation	ASTM D 4832	%	24 x 15
Puncture Strength	ASTM D 4832	kN (lbs)	0.87 (190)
Mullen Burst Strength	ASTM D 3786	psi (kPa)	3097 (215)
Triplicate Tear Strength	ASTM D 4913	lb (kg)	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 (10)
Flow Rate	ASTM D 4491	1/min/ft² (gal/min/ft²)	3802 (1145)
Permeability	ASTM D 4491	Sec	2.1

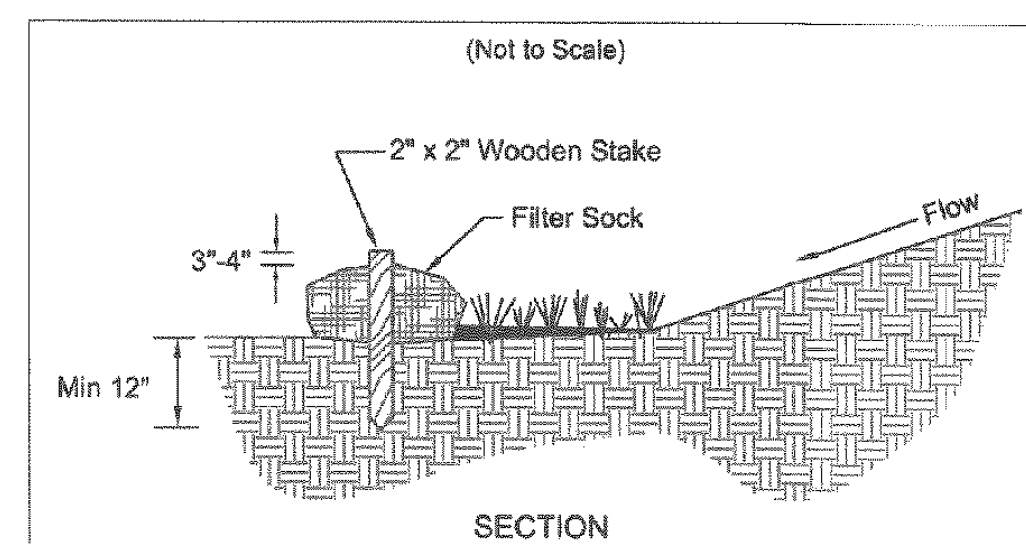
REGULAR FLOW DANDY CURB SACK™ (BLACK)

MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
Grid Tensile Strength	ASTM D 4832	kN (lbs)	1.62 (365) x 0.89 (200)
Grid Tensile Elongation	ASTM D 4832	%	24 x 10
Puncture Strength	ASTM D 4832	kN (lbs)	0.87 (190)
Mullen Burst Strength	ASTM D 3786	psi (kPa)	3097 (215)
Triplicate Tear Strength	ASTM D 4913	lb (kg)	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 (10)
Flow Rate	ASTM D 4491	1/min/ft² (gal/min/ft²)	3802 (1145)
Permeability	ASTM D 4491	Sec	2.1

HI-FLow DANDY CURB SACK™ (SAFETY ORANGE)

\*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

## Specifications for Filter Sock



- Materials—Compost used for filter socks shall be weed, pathogen and insect free and free of any refuse, contaminants or other materials toxic to plant growth. They shall be derived from a well decomposed source of organic matter and consist of a particles ranging from 3/8" to 2".
- Filter Socks shall be 3 or 5 mil continuous, tubular, HDPE 3/8" knitted mesh netting material, filled with compost passing the above specifications for compost products.
- Filter socks will be placed on a level line across slopes, generally parallel to the base of the slope or other affected area. On slopes approaching 2:1, additional socks shall be provided at the top and as needed mid-slope.
- Filter socks intended to be left as a permanent filter or part of the natural landscape, shall be installed at the time of installation for establishment of permanent vegetation.
- Filter Socks are not to be used in concentrated flow situations or in runoff channels.

### MAINTENANCE:

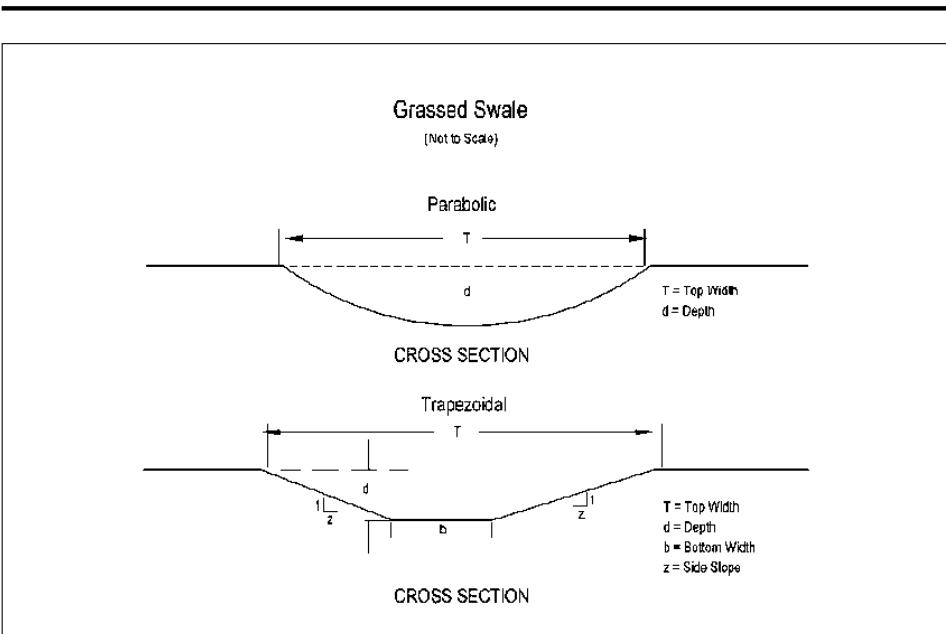
- Routinely inspect filter socks after each significant rain, maintaining filter socks in a functional condition at all times.
- Remove sediments collected at the base of the filter socks when they reach 1/3 of the exposed height of the grate.
- Where the filter sock deteriorates or fails, it will be repaired or replaced with a more effective alternative.
- Remove—Filter socks will be dispersed on site when no longer required in such as way as to facilitate and not obstruct seedings.

## Maintenance

A maintenance program shall be established to maintain capacity, vegetative cover, and associated structural components such as inlets, outlets, and tile lines. Items to consider in the maintenance program include:

- Determine responsible party to inspect and maintain the channel after construction
- Protect the channel from damage by equipment and traffic
- Fertilize annually to and maintain a vigorous stand of grass
- Mow the channel regularly to maintain a healthy and vigorous stand of grass
- Inspect grassed swales regularly, especially following heavy rains
- Repair damage to channels immediately. Damaged areas will be filled, compacted, and seeded immediately. All broken subsurface drains should be repaired
- Remove sediment deposits to maintain capacity of grassed swale. Seed and mulch any bare areas that develop. Note: excessive deposition or erosion of the swale may indicate the need to consider changes to the current design that will be appropriate to the water and sediment transport.
- Easements should be obtained to ensure the channel is maintained as constructed.

## Specifications for Grassed Swale



- All trees, brush, stumps, and other removable material shall be removed from the site.
- The channel shall be excavated and shaped to the proper grade and cross section.
- All grades shall be established on the construction of the channel shall be well compacted in uniform layers not exceeding 6 inches using the sheet piling or blade of the construction equipment to prevent uneven settlement.
- Excavated earth shall be graded or disposed of so that it will not contribute to the channel or interfere with its functioning.
- Stabilization shall be done according to the appropriate specification for permanent control, vegetative practices, seeding, and mulch.
- Construction shall be organized so that newly constructed channels are established prior to becoming operational. To aid in the establishment of vegetation, surface water may be prevented from entering the newly constructed channel through the establishment period.
- Grades that may form in the channel or other erosion damage that occurs before the grass has become established shall be repaired without delay.

NOTE: ONLY 12" DIA. COMPOST FILTER SOCK SHALL BE USED.

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREA THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE
ANY AREA WITHIN 50 FEET OF A WATERCOURSE AND AT FINAL GRADE	WITHIN 2 DAYS OF REACHING FINAL GRADE
ANY AREA AT FINAL GRADE	WITHIN 7 DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREA WITHIN 50 FEET OF A WATERCOURSE AND NOT AT FINAL GRADE	WITHIN 2 DAYS OF MOST RECENT DISTURBANCE, IF THAT AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS.
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREA, INCLUDING SOIL STOCKPILES, THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A WATERCOURSE.	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA.

DISTURBED AREA THAT WILL BE IDLE OVER THE WINTER. PRIOR TO NOVEMBER 1

NOTE: WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. THESE TECHNIQUES MAY INCLUDE MULCHING, EROSION MATTING, OR PLACEMENT ON STONE.



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LDA Project No. 2016.45

SWPPP DETAILS C5.4