2555 Hartville Rd., Suite B Rootstown, OH 44272 www.WeberEngineeringServices.com 330-329-2037 matt@webercivil.com



Reg. No.: 61709

#### CLIENT

# CONSTRUCTION

10020 AURORA-HUDSON F STREETSBORO, OHIO PHONE: (216) 218-3507

### OWNER:

# **HEMINGWAY**

6555 CARNEGIE AVE. CLEVELAND, OHIO 44103 JIM DOYLE

PHONE: (216) 650-6419

23. ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE

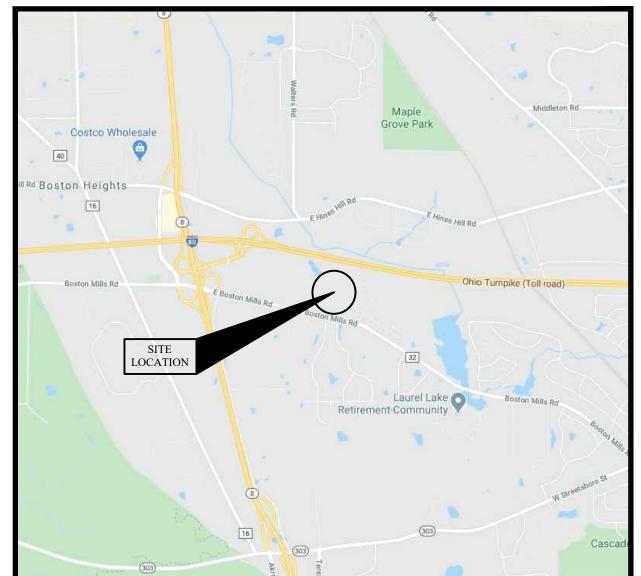
- SANITARY SEWER ARE PROHIBITED.
- 24. ALL CURB CUTS MUST BE PERFORMED WITH A HORIZONTAL CONCRETE CUTTING SAW.
- 25. ELECTRICAL CONDUIT SHALL BE AS REQUIRED BY HUDSON PUBLIC POWER.
- 26. TELEPHONE CONDUIT SHALL BE AS REQUIRED BY LOCAL PHONE COMPANY.
- ALL SANITARY SEWER MATERIAL SHALL CONSIST OF PVC SDR-35 MEETING ASTM D3034 WITH

# JOINTS CONFORMING TO ASTM D3212, UNLESS OTHERWISE NOTED ON THE PLANS.

# CITY OF HUDSON COUNTY OF SUMMIT STATE OF OHIO



Reviewed by Nick Sugar 11/06/2020, 8:07:34 AM







HUDSON ENGINEERING DEPARTMENT 4:27 pm, Nov 04, 2020

- THE CONSTRUCTION OF SANITARY SEWERS. WATER MAINS, LIFT STATIONS AND APPURTENANCES IS PROHIBITED UNTIL ALL PLANS HAVE BEEN APPROVED BY THE OHIO ENVIRONMENTAL PROTECTION
- ALL SANITARY SEWERS CONSTRUCTED IN SUMMIT COUNTY DEPARTMENT OF SANITARY SEWER
- THE OWNER SHALL SUBMIT A NOTICE OF INTENT (N.O.I.) APPLICATION TO THE OHIO ENVIRONMENTAL PROTECTION AGENCY (E.P.A.) AND OBTAIN AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (N.P.D.E.S.) OR THE LATEST FEDERAL, STATE AND/OR LOCAL REGULATIONS THE OWNER SHALL SUBMIT A COPY OF THE N.P.D.E.S. PERMIT TO THE CITY OF HUDSON 48 HOURS (2 WORKING DAYS) PRIOR TO SCHEDULING A PRE-CONSTRUCTION MEETING.
- 40. MAINTENANCE OF TRAFFIC NOTE: EQUIPMENT, MATERIALS AND PERSONAL VEHICLES SHALL NOT BE STAGED ON THE ROADWAY. TWO LANES OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.

NOTE: THESE WATER WORK NOTES APPLY TO AREAS OF HUDSON THAT ARE TO BE

WATERWORK NOTES

CITY OF HUDSON WATER SERVICE AREA

- ALL WATER MAINS AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HUDSON "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION
- CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY AND ALL AREAS ALONG THE ROUTE OF THE WATER MAIN. THIS WILL INCLUDE LAWNS, DRIVES, DITCHES, CULVERTS, LANDSCAPING, ETC, AND ANY OTHER AREAS DISTURBED DURING THE CONSTRUCTION PROCESS
- 3. ALL TESTING SHALL BE IN ACCORDANCE WITH THE CITY OF HUDSON "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION" AND BE COORDINATED WITH THE CITY OF HUDSON. AWWA C-600 PRESSURE TESTING AND C-651 DISINFECTION BY CHLORINATION OF THE WATER MAIN WILL BE REQUIRED.
- 4. ALL PROPOSED TRENCHES LOCATED UNDER EXISTING OR PROPOSED PAVEMENT SHALL BE FILLED WITH LOW STRENGTH MORTAR. THE METHOD OF BACKFILLING AS DIRECTED BY THE ENGINEER, SHALL CONFORM TO ODOT 613 TYPE 1. SLAG OR FLY ASH IS NOT PERMITTED IN MIX. PAVEMENT INCLUDES, BUT IS NOT LIMITED TO, ROADWAY SURFACES, SIDEWALKS BIKE WAYS, DRIVEWAYS, SHOULDERS, ETC. THE LIMITS OF THE LOW STRENGTH MORTAR SHALL INCLUDE 450 ANGLE OF REPOSE FROM ALL EDGES OF PAVEMENT
- FIELD STAKING AND RECORD DRAWINGS SHALL BE PROVIDED TO THE CITY BY THE CONTRACTOR, AS SUPERVISED AND STAMPED BY A LICENSED PROFESSIONAL SURVEYOR. RECORD DRAWINGS (AS-BUILTS) IN BOTH REPRODUCIBLE AND DIGITAL FORMAT COMPATIBLE WITH THE CITY OF HUDSON STANDARDS TO BE SUBMITTED TO AND APPROVED BY THE CITY OF HUDSON PRIOR TO UTILITY SERVICE CONNECTIONS BEING MADE.
- 6. A 4' MINIMUM HORIZONTAL CLEARANCE AND A 12" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED FROM THE EDGE OF THE WATER MAIN PIPE TO THE EDGE OF THE STORM
- 7. A 10' MINIMUM HORIZONTAL CLEARANCE AND AN 18" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED FROM THE EDGE OF THE WATER MAIN PIPE TO THE EDGE OF ALL SANITARY SEWERS AND/OR FORCE MAIN PIPE.
- 8. ALL VALVES, FITTINGS, BENDS, TEES, ETC. SHALL HAVE MEGALUG JOINT RESTRAINTS BY
- 9. ALL WATER MAINS WITHIN LOW STRENGTH MORTAR BACKFILL SHALL BE WRAPPED IN POLYETHYLENE AS PER AWWA C-105. OTHER AREAS TO BE WRAPPED IN POLYETHYLENE SHALL BE AS SHOWN ON THE DRAWINGS, AS DETERMINED FROM DIPRA REPORT OR AS
- 10. WHERE WATER MAINS CROSS SEWER TRENCHES, THE TRENCH IS TO BE BACKFILLED WITH ODOT 304 CRUSHED LIMESTONE
- 11. TAPPING SLEEVES SHALL BE ROMAC TYPE, WRAP AROUND STAINLESS STEEL WITH #316 STAINLESS STEEL BOLTS AND NUTS.
- 12. MANUFACTURER'S AFFIDAVIT: THE MANUFACTURER SHALL FURNISH AN AFFIDAVIT INDICATING THAT ALL PIPE, FITTINGS, VALVES, FIRE HYDRANTS, AND APPURTENANCES HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REFERENCED STANDARDS. A COPY OF EACH AFFIDAVIT, INDICATING THE PROJECT ON WHICH THE MATERIAL IS TO BE USED SHALL BE FORWARDED TO THE CITY OF HUDSON PRIOR TO THE PRECONSTRUCTION MEETING BEING SCHEDULED
- 13. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS. THE CITY MAY GRANT SPECIAL PERMISSION FOR BUILDINGS FOUR STORIES AND HIGHER WITH A FIRE SUPPRESSION
- 14. PROPOSED FACILITIES SHALL BE DESIGNED TO MAINTAIN A MINIMUM OF 35 PSI PRESSURE DELIVERED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS
- 15. ALL WATER MAINS GREATER THAN 12 INCH DIAMETER SHALL BE LAID TO GRADE WITH
- HIGH POINTS AND LOW POINTS HAVING ADEOUATE BLOW-OFFS VIA USE OF HYDRANTS.
- 16. FOR ALL NON-RESIDENTIAL WATER SERVICE, A BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED PER CITY OF HUDSON AND OEPA STANDARDS AND REOUIREMENTS. FOR RESIDENTIAL WATER SERVICE A BACKFLOW PREVENTION DEVICE MAY BE REQUIRED FOR SWIMMING POOLS, IRRIGATION SYSTEMS, ETC. CONTACT THE CITY SERVICE/WATER DISTRIBUTION DEPARTMENT FOR THE REQUIREMENTS AND STANDARDS FOR BACKFLOW
- PREVENTION, THERMAL EXPANSION CONTROL, ETC. 17. ALL WATER METER SETTINGS MUST BE APPROVED BY THE CITY OF HUDSON. METERS SHALI BE MAGNETIC DRIVE, WITH A SCANCODE REMOTE READ, MUST READ IN CUBIC FEET, SET OWNER/CONTRACTOR TO PROVIDE AND RUN A REMOTE WATER METER WIRE FROM THE PROPOSED WATER METER LOCATION TO THE VICINITY OF THE PROPOSED ELECTRIC METER LOCATION. CONTACT THE CITY SERVICE/WATER DISTRIBUTION DEPARTMENT FOR THE
- COMPLETE STANDARDS AND REQUIREMENTS FOR WATER METERS, PRESSURE REGULATORS, 18. FOR NEW WATER MAIN CONSTRUCTION THE DRAWINGS SHALL HAVE BEEN REVIEWED BY

www.ogpups.org

19. ALL WATER MAIN MATERIALS SHALL BE DOMESTIC MAKE MATERIALS ONLY.

THE OHIO EPA AND WRITTEN APPROVAL RECEIVED PRIOR TO THE START OF CONSTRUCTION.

GENERAL NOTES

- 1. ALL ROAD SURFACES, EASEMENTS OR RIGHT OF WAYS DISTURBED BY CONSTRUCTION OF ANY PART OF THIS IMPROVEMENT ARE TO BE RESTORED COMPLETELY TO THE EXISTING CONDITION OR BETTER, WHEN ORDERED BY THE CITY ENGINEER. ALL ITEMS ARE INCLUDED
- 2. PRICES BID PER FOOT FOR ALL PIPE IS COMPLETE IN PLACE REGARDLESS OF SOIL OR ROCK
- THE LOCATIONS OF ALL GAS LINES AND GAS SERVICE LINES TO BE DETERMINED BY THE CONTRACTOR. EXISTING APPURTENANCES SUCH AS UTILITY POLES AND VALVE BOXES, ETC. ARE TO BE HELD BY THE CONTRACTOR DURING CONSTRUCTION.
- THE CONSTRUCTION OF THIS PROJECT SHALL BE GOVERNED BY THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (CURRENT EDITION) SUPPLEMENTED WHERE APPLICABLE BY THE CITY OF HUDSON ENGINEERING STANDARDS AND/OR LAND DEVELOPMENT CODE. CITY OF HUDSON REGULATIONS SHALL TAKE PRECEDENCE WHENEVER IN CONFLICT WITH O.D.O.T.
- NOTIFY THE CITY OF HUDSON ENGINEER AT 330-342-1770, 48 HOURS BEFORE ANY
- 6. FERTILIZING, SEEDING AND MULCHING FOR RESTORATION OF DISTURBED AREAS SHALL CONFORM TO SECTIONS 659.08 AND 659.09 AS SPECIFIED IN O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS (CURRENT EDITION).
- ALL DISTURBED SIGNS, DRIVES AND DRIVE CULVERTS SHALL BE REPAIRED AND/OR REPLACED DURING THE CONSTRUCTION AT NO ADDITIONAL COST UNLESS OTHERWISE
- ALL DISTURBED AND/OR DAMAGED STORM SEWER PIPES, STORM SEWER APPURTENANCES. PAVEMENTS, BERMS AND DITCHES SHALL BE REPAIRED AND/OR REPLACED AS DIRECTED BY
- 9. CALL THE OHIO UTILITIES PROTECTION 48 HOUR'S PRIOR TO START OF CONSTRUCTION AT 1-800-362-2764 OR 8-1-1.
- TEMPORARY WATER POLLUTION, SOIL EROSION AND SILTATION CONTROL SHALL BE REQUIRED IN ACCORDANCE WITH THE APPROVED SWP3 AS DIRECTED BY THE CITY ENGINEER AND SUMMIT SOIL AND WATER CONSERVATION DISTRICT
- 11. STORM SEWER PIPE MATERIALS SHALL CONSIST OF PVC MEETING ASTM D-3034 OR HIGH DENSITY POLYETHYLENE (HDPE) PIPE MEETING AASHTO M294, TYPE S. (PRIVATE PROPERTY ONLY). ALL STORM SEWER PIPE MATERIAL WITHIN THE R/W & STORM WATER MANAGEMENT
- BASIN SHALL BE RCP THE CITY ENGINEER IN APPROVING THESE PLANS AND DEDICATION PLAT THEREOF DOES NOT IN ANY WAY RELIEVE THE DEVELOPER'S ENGINEER OF THEIR RESPONSIBILITY FOR
- ACCURATE AND COMPLETE ENGINEERING DESIGN. THE CITY ENGINEER SHALL NOT BE HELD LIABLE FOR DAMAGES OF ANY TYPE. WHICH OCCUR AS A RESULT OF ERROR AND/OR OMISSIONS IN THE ENGINEERING DESIGN DATA PRESENTED BY THE OWNER'S ENGINEER NEITHER SHALL THE CITY ENGINEER BE LIABLE FOR DAMAGES RESULTING FROM THE DEVELOPER'S CONTRACTORS NOT COMPLYING WITH

APPROVED PLANS OR BY USING CONSTRUCTION METHODS OR MATERIALS NOT APPROVED

14. ALL STORM WATER MANAGEMENT FACILITIES ARE TO BE PRIVATELY OWNED AND

BY THE CITY ENGINEER.

- 15. A 12" MINIMUM VERTICAL CLEARANCE MUST BE MAINTAINED FROM THE EDGE OF ALL WATER MAINS TO THE EDGE OF ALL PROPOSED STORM SEWERS AND/OR INLET LEAD PIPE
- 16. A 10.0' MINIMUM HORIZONTAL CLEARANCE MUST BE MAINTAINED FROM THE EDGE OF THE
- WATER MAIN PIPE TO THE EDGE OF THE STORM SEWER PIPE. 17. A 10.0' MINIMUM HORIZONTAL CLEARANCE MUST BE MAINTAINED FROM THE EDGE OF THE
- WATER MAIN PIPE TO THE EDGE OF THE SANITARY SEWER AND/OR FORCE MAIN PIPE.
- 18. AN 18" MINIMUM VERTICAL CLEARANCE MUST BE MAINTAINED FROM THE EDGE OF ALL
- WATER MAIN PIPES TO THE EDGE OF ALL SANITARY SEWER PIPE WHERE THEY CROSS.
- 19. EARTHWORK AND SITE PREPARATION SHALL BE AS SPECIFIED IN THE SOILS REPORT 20. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS IN THE CITY
- 21. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL SILTATION CONTROL MEASURES
- NECESSARY TO PREVENT SILT FROM LEAVING THE SITE. 22. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF DEMOLITION MATERIAL AND DEBRIS.

DESCRIPTION

**SWP3 DETAILS** 

TITLE SHEET **DEMOLITION PLAN** TREE SURVEY **DEMOLITION & TREE PRESERVATION PLAN** SITE PLAN ASPHALT WALK SITE PLAN SIGHT DISTANCE STUDY UTILITY PLAN STORM PROFILES GRADING PLAN SITE DETAILS

SHEET NO.

C101A C102 C102A C102B-C102C C103A-C103B C105-C105F

S ON M

CONTRACTOR/DEVELOPER SHALL PROVIDE ALL REQUIRED ROADWAY SIGNAGE AS PER ODOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES INCLUDING STREET IDENTIFICATION SIGNAGE PER CITY STANDARDS FOR ALL ASPECTS OF THE IMPROVEMENT . ALL BONDS AND OR LETTERS OF CREDIT SHALL NOT BE RELEASED OR REDUCED AND NO WATER OR SANITARY SEWER CUSTOMERS CAN BE CONNECTED UNTIL ALL RECORD DRAWINGS HAVE BEEN SUBMITTED, REVIEWED AND APPROVED BY THE CITY OF HUDSON

LATEST EDITION PRIOR TO THE START OF CONSTRUCTION.

CITY OF HUDSON GENERAL CONSTRUCTION NOTES

48 HOURS BEFORE ANY EXCAVATION IS TO BEGIN.

WORKING DAYS) PRIOR TO THE START OF CONSTRUCTION.

STOCKPILE OF ANY MATERIALS OR CONSTRUCTION TRAFFIC

DEPTH, AT 6" LIFTS PER ASTM A-1557, 95% MODIFIED.

INFRASTRUCTURE CONSTRUCTION", LATEST EDITION

PRIOR TO START OF ANY CONSTRUCTION.

DISCOVERED ON SITE

CONSTRUCTION OF THE SITE WORK AND UTILITIES SHALL BE GOVERNED BY THE CITY OF HUDSON'S

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS REQUIRED

THE CONTRACTOR MUST ALERT THE OHIO UTILITY PROTECTION SERVICES AT 1-800-362-2764 AT LEAST

ALL EXISTING APPURTENANCES (UTILITY POLES, VALVES, HYDRANTS, MANHOLES, ETC.) ARE TO BE

THE DESIGN ENGINEER CERTIFIES THAT ALL UTILITIES ARE SHOWN AS THEY APPEAR ON EXISTING

CONSTRUCTION OF THE PROJECT WHETHER SHOWN OR NOT ON THE DRAWINGS. THE CONTRACTOR

SHALL BE RESPONSIBLE FOR RESTORING THE SERVICE AS SOON AS POSSIBLE AT THE CONTRACTOR'S

ENGINEERING DEPARTMENT A MINIMUM OF 14 CALENDAR DAYS PRIOR TO START OF CONSTRUCTION

A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED A MINIMUM OF 48 HOURS (2 WORKING DAYS)

CONSTRUCTION FENCING 48 HOURS (2 WORKING DAYS) PRIOR TO THE PRE-CONSTRUCTION MEETING.

AREAS BEYOND THE LIMITS OF CLEARING AND GRADING SHALL NOT BE DISTURBED INCLUDING THE

ALL ROAD SURFACES, EASEMENTS, OR RIGHT-OF-WAY DISTURBED BY THE CONSTRUCTION OF ANY

"ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION" AS DIRECTED BY THE CITY OF

. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CITY OF HUDSON OR ITS REPRESENTATIVE IF

3. ALL DISTURBED STORM SEWERS AND/OR APPURTENANCES, SIGNS, GUARD RAILING, MAIL AND/OR PAPER BOXES, DRIVE CULVERTS, FENCES, TREES, LANDSCAPING, OR OTHER ITEMS DISTURBED BY THE

CONSTRUCTION SHALL BE RESTORED OR REPAIRED TO AT LEAST THE BEFORE-CONSTRUCTION

14. ANY DEFECTS DISCOVERED IN NEW CONSTRUCTION, WORKMANSHIP, EQUIPMENT OR MATERIALS

SHALL BE REPAIRED, OR CORRECTED BY APPROVED METHODS AS DIRECTED BY THE CITY OF

16. APPROVAL BY THE CITY OF HUDSON ENGINEER CONSTITUTES NEITHER EXPRESSED NOR IMPLIED

17. DURING TAPPING OF EXISTING UTILITIES, ANY TRAFFIC CONTROL REQUESTED OR REQUIRED BY THE

19. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY

20. ALL DISTURBED AREAS SHALL RECEIVE 4" OF TOPSOIL AND BE SEEDED AND MULCHED AS PER

SECTION 9 - LANDSCAPING AND STREET TREES OF THE CITY'S "ENGINEERING STANDARDS FOR

IF MUD, SOIL, OR OTHER DEBRIS IS DEPOSITED ON ADJACENT STREETS, ROADS, OR OTHER PROPERTY,

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF SUCH AS DIRECTED BY THE CITY

22. ALL PROPOSED SLOPES 3:1 OR STEEPER AND ALL EARTHEN DRAINAGE WAYS SHALL RECEIVE JUTE OR

23. ALL STORM SEWERS WITHIN PUBLIC RIGHTS-OF-WAY AND CITY OF HUDSON EASEMENTS SHALL BE

24. ALL PIPES SHALL BE PLACED OVER 4" OF BEDDING. BEDDING MATERIAL SHALL BE AS SPECIFIED IN

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PLANT TICKETS FOR ALL MATERIALS

DELIVERED TO THE SITE. PLANT TICKETS MUST SHOW NET QUANTITY OF DELIVERED MATERIAL. MATERIAL DELIVERED OR PLACED WITHOUT PLANT TICKETS SHALL BE REMOVED AND PROPERLY

ALL DELIVERED MATERIALS SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF HUDSON OR OTHER APPLICABLE AGENCIES. THE CITY OF HUDSON, OR ITS REPRESENTATIVE, RESERVES THE RIGHT TO REJECT ANY DELIVERED MATERIAL WHICH DOES NOT CONFORM TO THE

28. THE CITY OF HUDSON OR ITS REPRESENTATIVE, RESERVES, THE RIGHT TO HALT ALL CONSTRUCTION ACTIVITY FOR NONCONFORMANCE OF PLANS, SPECIFICATIONS AND OTHER APPLICABLE STANDARDS

29. ALL CHANGES TO APPROVED DRAWINGS AND/OR SPECIFICATIONS MUST BE RE-APPROVED BY THE

30. ALL PAVING MATERIAL MUST BE PROVIDED BY O.D.O.T. CERTIFIED SUPPLIER. WRITTEN PROOF SHALI BE REQUIRED UPON DELIVERY OF MATERIALS. THE CERTIFIED MIX DESIGN MUST BE SUBMITTED TO,

CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION, FOR

PER SECTION 4 - STORM COLLECTION OF THE CITY'S "ENGINEERING STANDARDS FOR

5. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PROTECTING THE FLOW OF VEHICULAR AND PEDESTRIAN TRAFFIC AROUND THE JOB SITE. TRAFFIC CONTROL SHALL BE

COORDINATED WITH THE CITY OF HUDSON POLICE DEPARTMENT

DISPOSED AT THE EXPENSE OF THE CONTRACTOR.

APPLICABLE STANDARDS AND SPECIFICATIONS.

OF HUDSON OR ITS ENGINEER AT THE END OF EACH WORK DAY, OR AS REQUIRED DURING THE WORK

WARRANTIES AS TO THE FITNESS, ACCURACY, OR SUFFICIENCY OF PLANS, DESIGNS OR

CITY OF HUDSON WILL BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE CITY

18. COMPLIANCE WITH THE OCCUPATIONAL AND SAFETY ACT OF 1970 IS REQUIRED BY ALL

CTION TESTING SHALL BE REQUIRED FOR ALL FILL AREAS OVER TWO FEET (2') IN

SUSPECTED HAZARDOUS MATERIAL OR ANY OTHER MATERIAL THAT MAY CREATE A HEALTH RISK IS

PART OF THESE IMPROVEMENTS ARE TO BE RESTORED ACCORDING TO THE CITY OF HUDSON

NOTIFY THE CITY OF HUDSON ENGINEERING DEPARTMENT A MINIMUM OF FORTY-EIGHT HOURS (2

AFTER SUBMISSION OF A MINIMUM OF 6 APPROVED SETS OF PLANS AND ALL SHOP DRAWINGS

. THE LIMITS OF CLEARING AND GRADING SHALL BE FIELD STAKED AND LINED WITH ORANGE

APPLICABLE TO THE PROPOSED IMPROVEMENTS. A PRE-CONSTRUCTION MEETING MUST BE HELD

ALL KNOWN ABOVE AND UNDERGROUND SERVICES HAVE BEEN NOTED ON THE DRAWINGS. THE

CONTRACTOR ACCEPTS FULL RESPONSIBILITY FOR ANY SERVICES DAMAGED DURING THE

VIDEO TAPING OF PROJECT SHALL BE DELIVERED AND ACCEPTED BY THE CITY OF HUDSON

"ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION". LATEST EDITION.

MAINTAINED BY THE CONTRACTOR UNLESS OTHERWISE SHOWN ON THE PLANS.

COMPLETED WITHIN TWO YEARS OF THE DATE OF APPROVAL BY THE CITY ENGINEER. 34. FAILURE TO COMPLETE THE PROJECT IN ITS ENTIRETY AS APPROVED BY THE PLANNING COMMISSION, INCLUDING PUNCH LIST ITEMS, WILL RESULT IN THE CITY OF HUDSON HOLDING ALL FUTURE ZONING CERTIFICATES UNTIL ALL WORK HAS BEEN COMPLETED AND APPROVED.

MANUFACTURERS OR SUPPLIERS AFFIDAVIT FOR ALL CONSTRUCTION MATERIALS SHALL BE

3. ALL WORK, EXCEPT SIDEWALKS, STREET TREES AND STREET LIGHTS, AS PART OF THESE PLANS SHALL

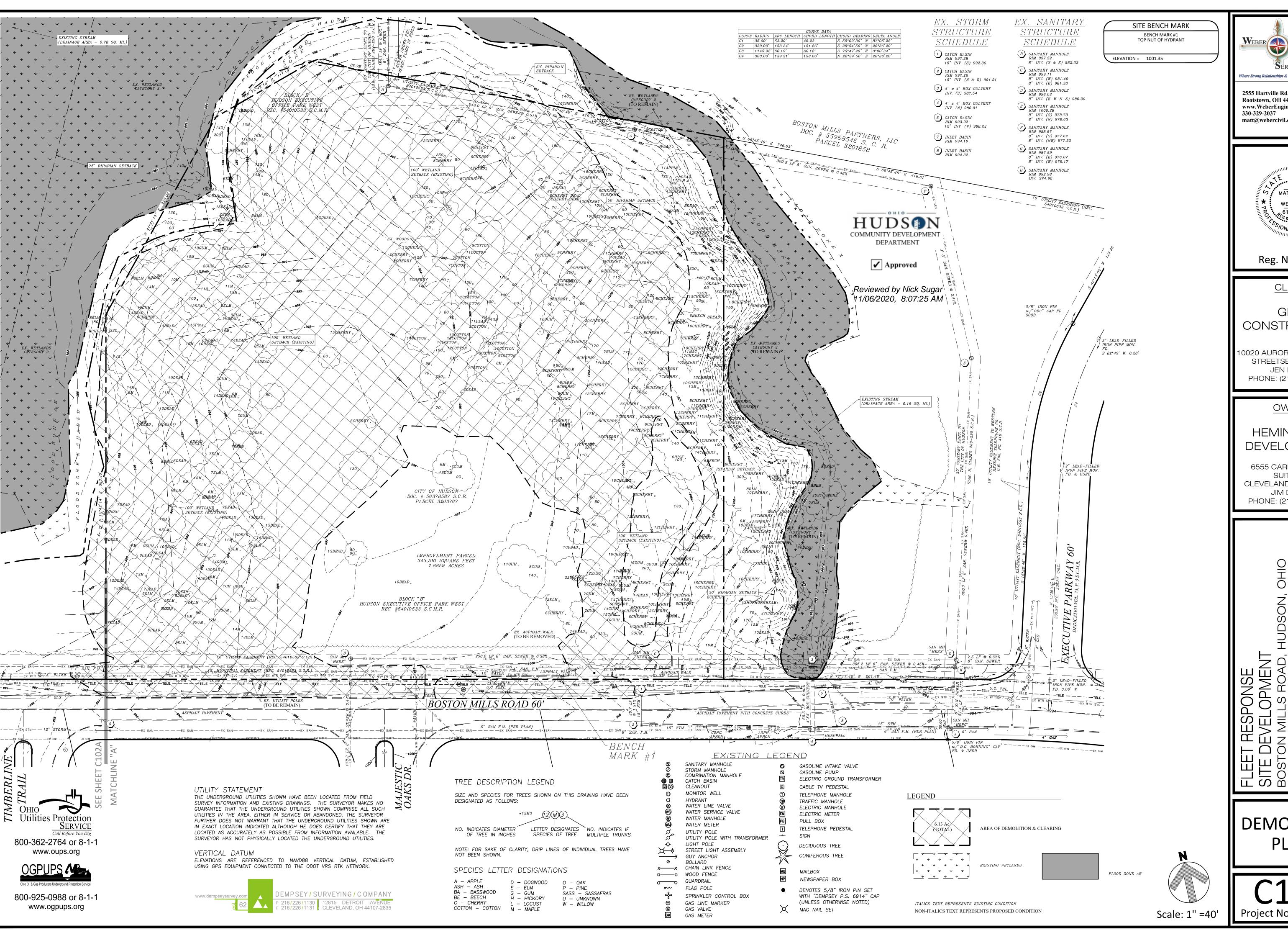
OF APPROVAL BY THE CITY ENGINEER. SIDEWALKS, STREET TREES AND STREET LIGHTS SHALL BE

PROVIDED AS PER THE CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION",

BE COMPLETED, INCLUDING PUNCH LIST ITEMS AND DEFICIENCY WORK WITHIN 1 YEAR OF THE DATE

ALL SANITARY SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SUMMIT COUNTY

SERVICES (D.S.S.S.) SERVICE DISTRICTS AND SERVED BY D.S.S.S. SHALL COMPLY WITH SC-DOES



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GEIS CONSTRUCTION

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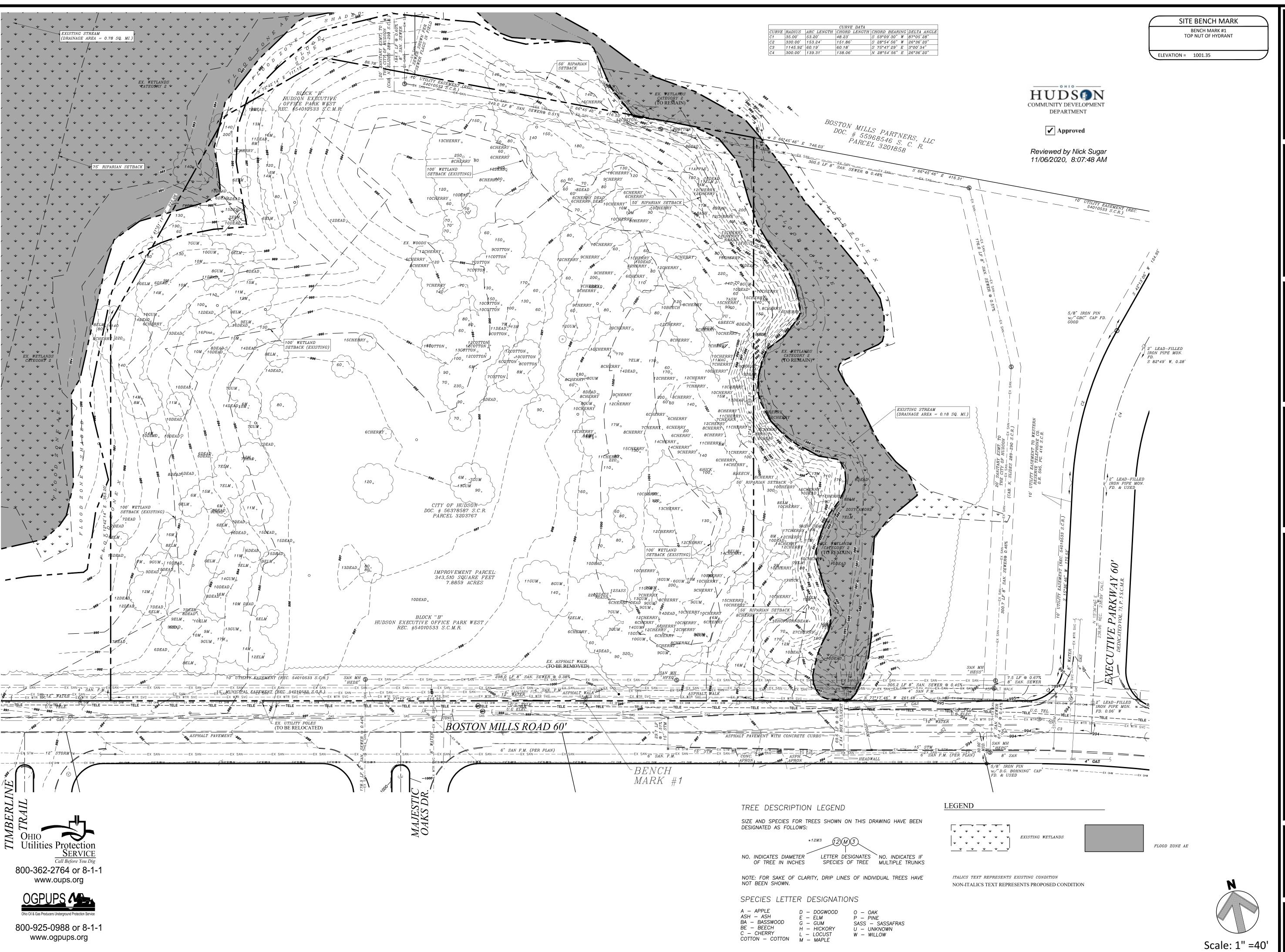
OWNER:

# HEMINGWAY DEVELOPMENT

6555 CARNEGIE AVE., SUITE 301 CLEVELAND, OHIO 44103 JIM DOYLE PHONE: (216) 650-6419

> Issue Date 07-13-2020 08-06-2020 08-24-2020 09-17-2020 09-25-2020

**DEMOLITION** PLAN





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FLEET RESPONSE

SITE DEVELOPMENT

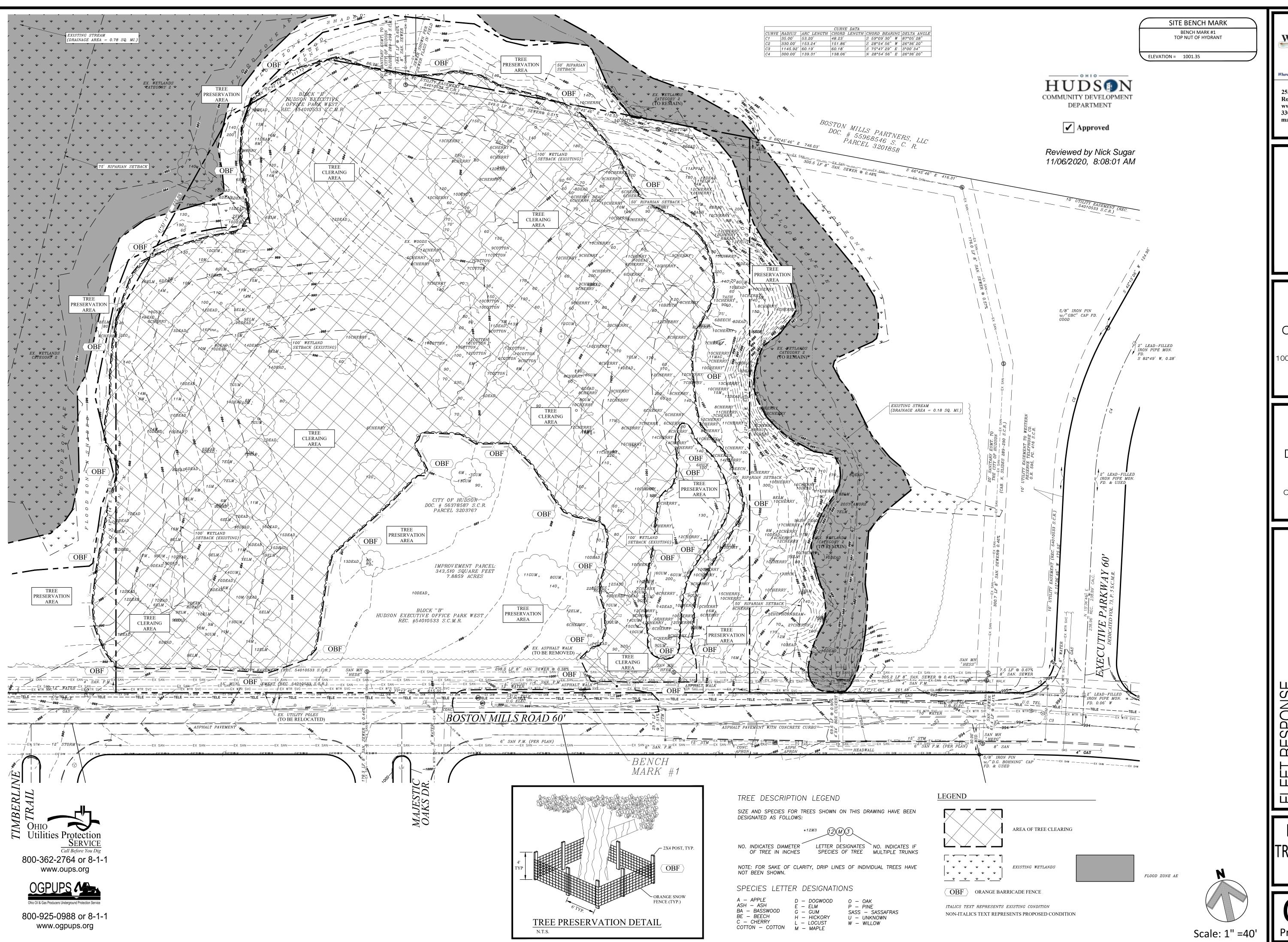
BOSTON MILLS ROAD, HUDSON, OHIO

BOSTON MILLS ROAD, HUDSON, OHIO

BOSTON MILLS ROAD, HUDSON, OHIO

TREE SURVEY

C101A
Project No. 2020-192





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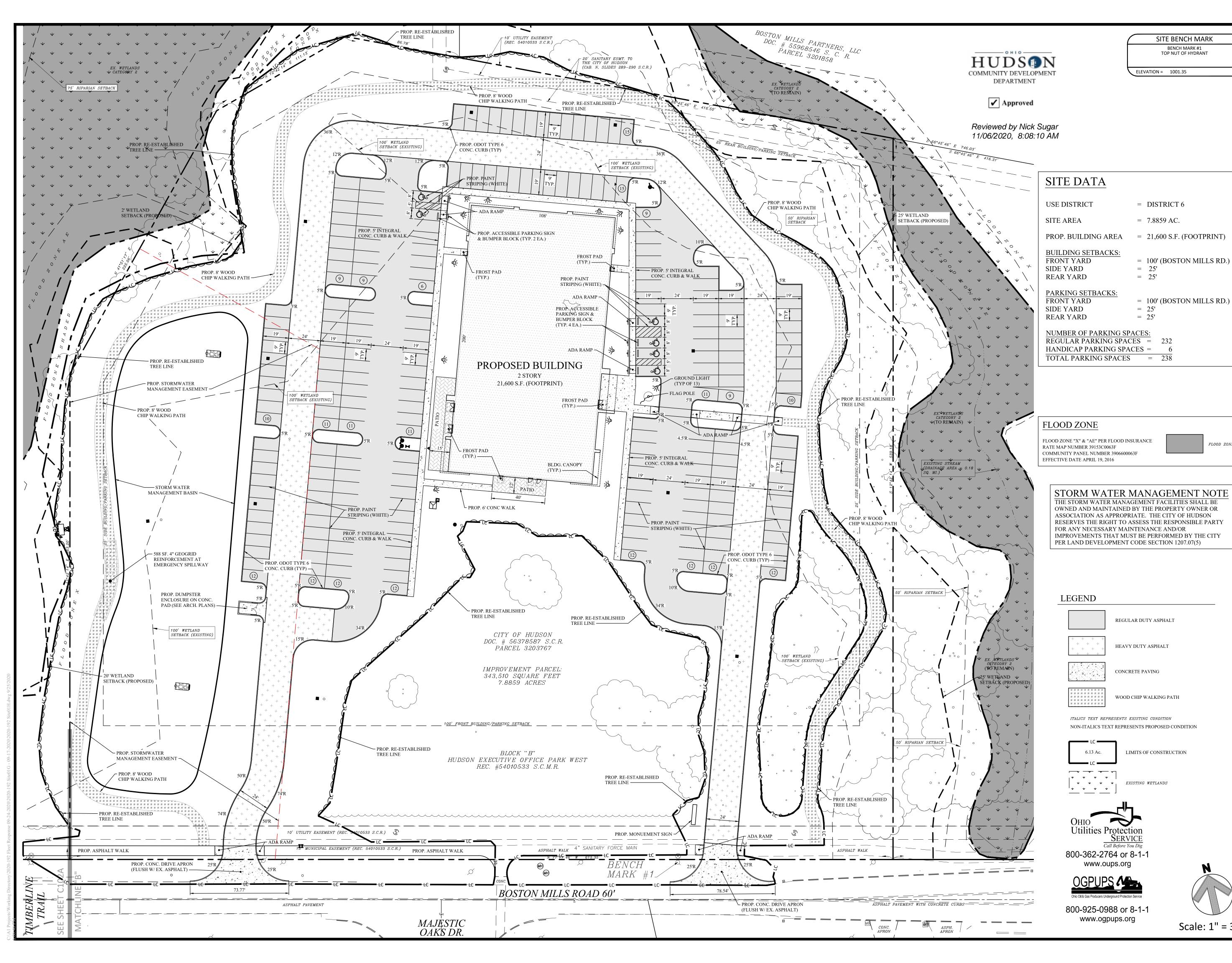
FLEET RESPONSE

SITE DEVELOPMENT

BOSTON MILLS ROAD, HUDSON, OHIO

DEMOLITION & TREE PRESERVATION PLAN

C101B
Project No. 2020-192



SITE BENCH MARK BENCH MARK #1 TOP NUT OF HYDRANT Weber Lugineering ELEVATION = 1001.35

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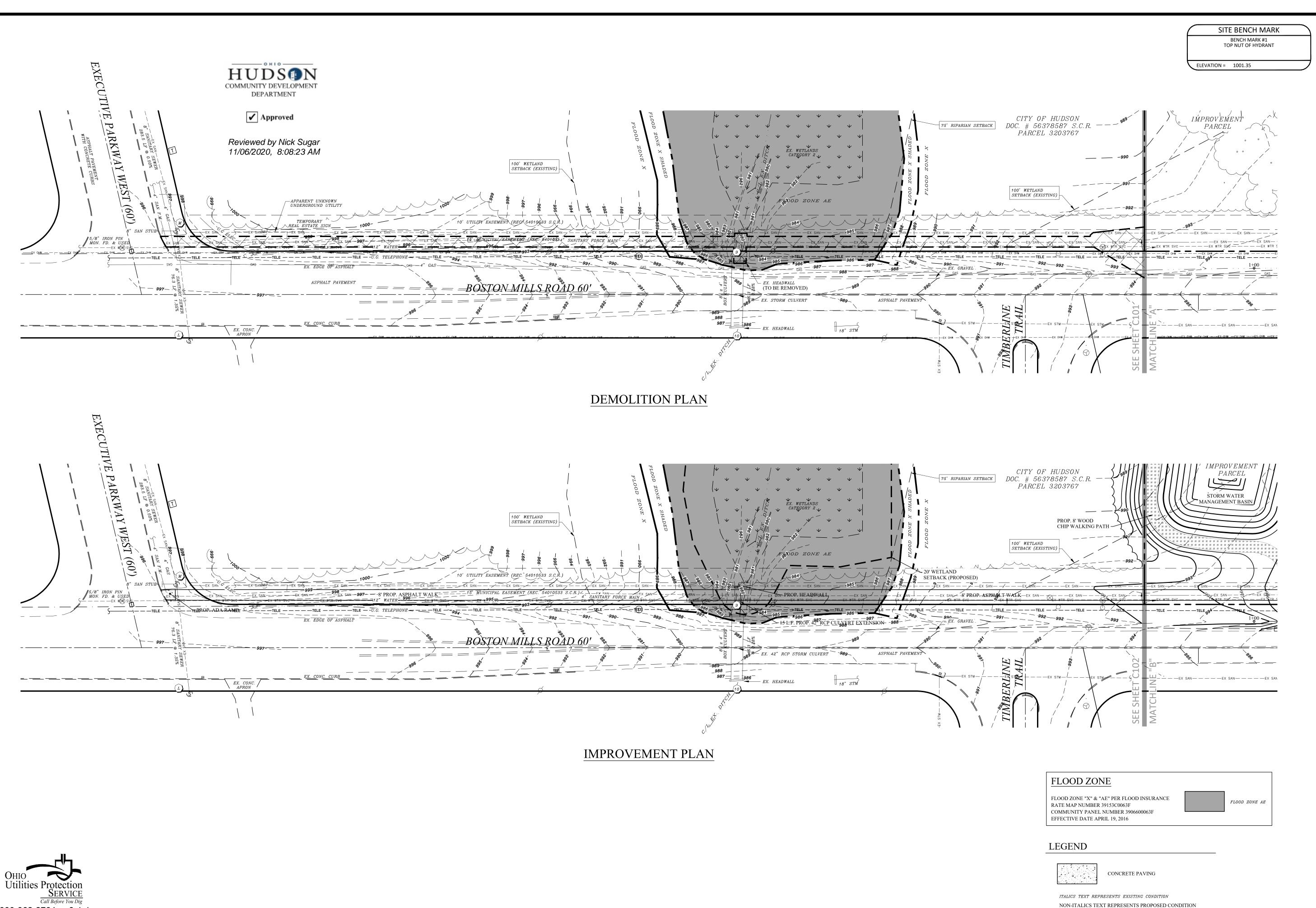
FLOOD ZONE AE

6555 CARNEGIE AVE., SUITE 301 CLEVELAND, OHIO 44103 JIM DOYLE PHONE: (216) 650-6419

> Issue Date 07-13-2020 08-06-2020 08-24-2020 09-17-2020 09-25-2020

SPONSE ELOPMENT ILLS ROAD, FLEE SITE BOST

> SITE PLAN



EX. STORM

STRUCTURE SCHEDULE

9) 8' x 4' BOX CULVERT INV. (S) 979.05

8' x 4' BOX CULVERT INV. (N) 978.92 EX. SANITARY

STRUCTURE SCHEDULE

(L) SANITARY MANHOLE RIM 995.23 8" INV. (N) 987.91

M SANITARY MANHOLE "HERZ" RIM 996.83 8" INV. (N) 986.88 8" INV. (S) 986.88 8" INV. (W) 986.88 (STUB)

800-362-2764 or 8-1-1

www.oups.org

800-925-0988 or 8-1-1

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Weber Engineering Services

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当以 ASPHALT WALK SITE PLAN

Scale: 1" = 30'

C102A

Project No. 2020-192

AREA OF DEMOLITION & CLEARING

EXISTING WETLANDS

\* \* \* \*<sub>1</sub>



Reviewed by Nick Sugar 11/06/2020, 8:08:29 AM SITE BENCH MARK

BENCH MARK #1

TOP NUT OF HYDRANT

ELEVATION = 1001.35

LEGEND

ITALICS TEXT REPRESENTS EXISTING CONDITION
NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

DESIGN SPEED

35 MPH SPEED LIMIT + 5 MPH = 40 MPH DESIGN SPEED

SERVICES
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<u>OWNER:</u>

HEMINGWAY DEVELOPMENT

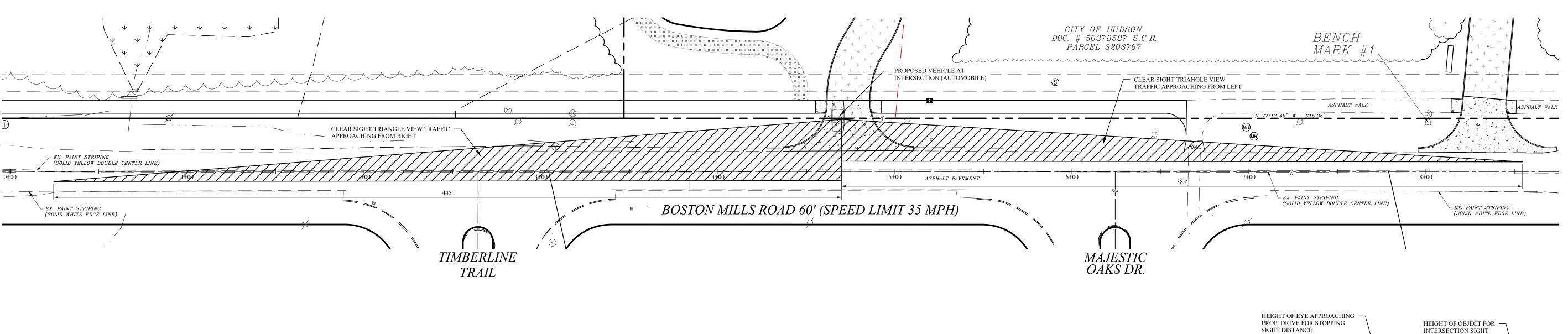
6555 CARNEGIE AVE., SUITE 301 CLEVELAND, OHIO 44103 JIM DOYLE

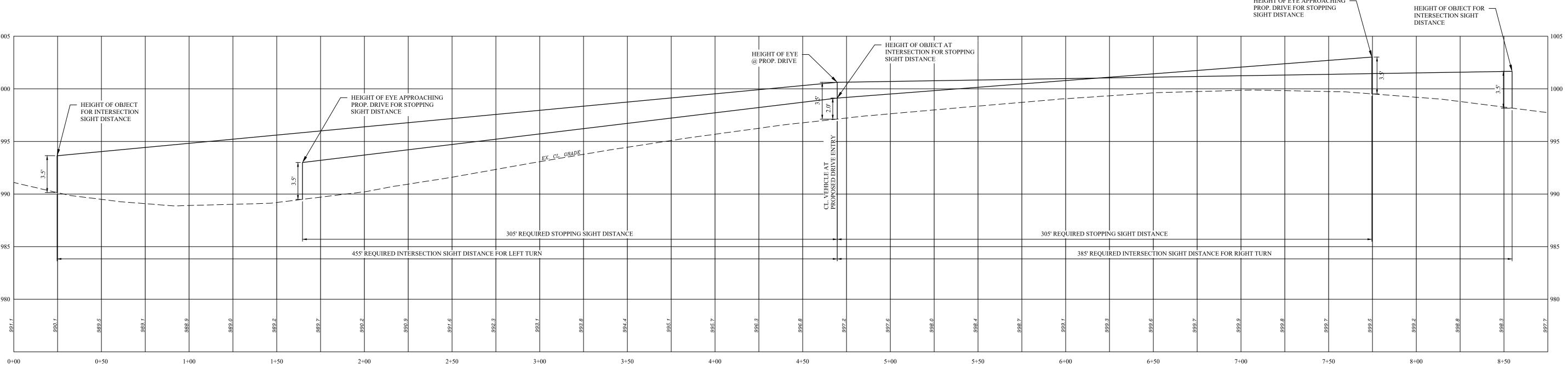
PHONE: (216) 650-6419

FLEET RESPONSE SITE DEVELOPMENT BOSTON MILLS ROAD, HI

> SIGHT DISTANCE STUDY

C10B
Project No. 2020-192





BOSTON MILLS ROAD EXISTING C/L PROFILE

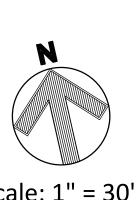
SCALE: HORIZ.: 1" = 30'

VERT.: 1" = 5'





800-925-0988 or 8-1-1 www.ogpups.org





HUDS N
COMMUNITY DEVELOPMENT
DEPARTMENT

**✓** Approved

Reviewed by Nick Sugar 11/06/2020, 8:08:34 AM SITE BENCH MARK

BENCH MARK #1

TOP NUT OF HYDRANT

ELEVATION = 1001.35

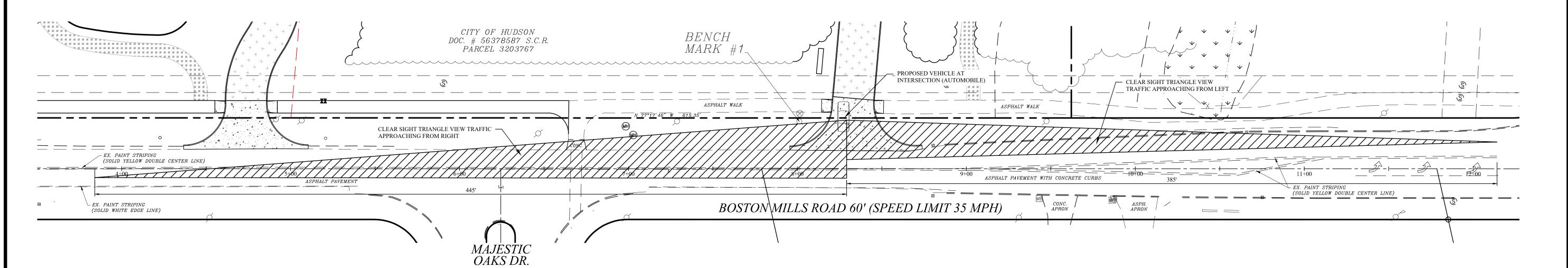
LEGEND

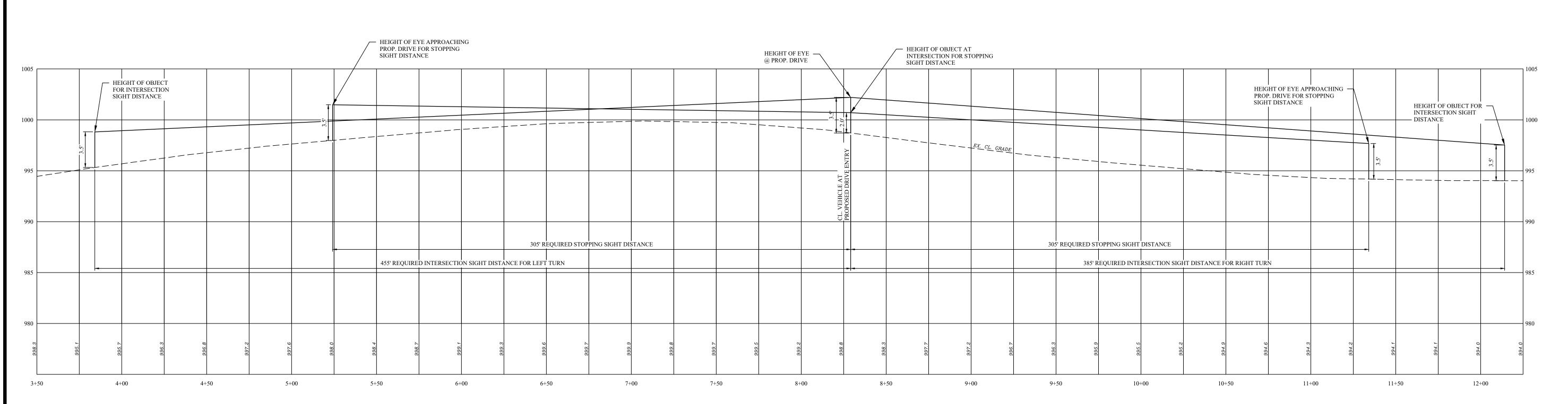
ITALICS TEXT REPRESENTS EXISTING CONDITION

NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

DESIGN SPEED

35 MPH SPEED LIMIT + 5 MPH = 40 MPH DESIGN SPEED





BOSTON MILLS ROAD EXISTING C/L PROFILE

SCALE: HORIZ.: 1" = 30'

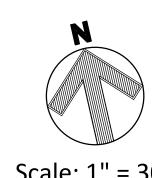
VERT.: 1" = 5'



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OWNER:

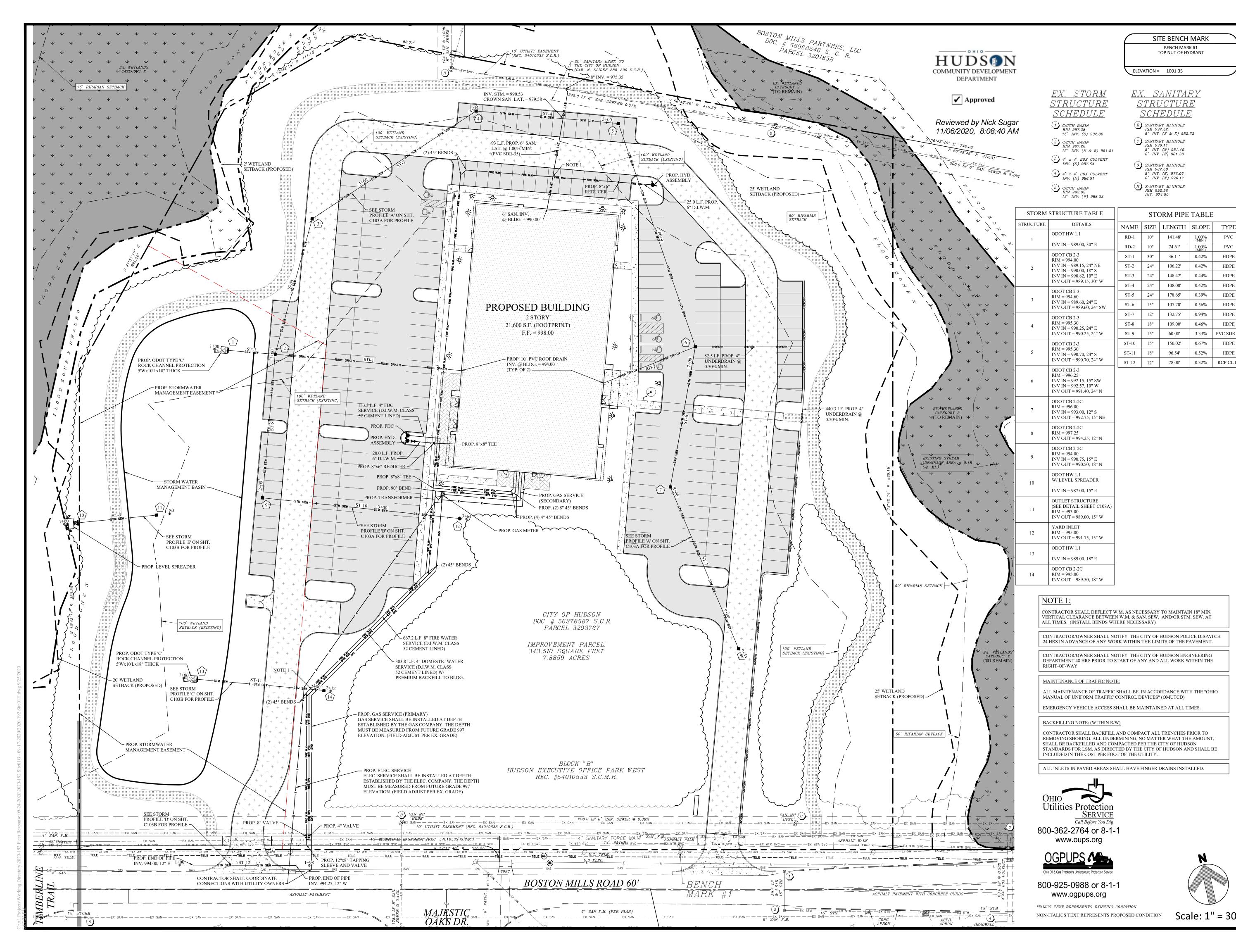
HEMINGWAY
DEVELOPMENT

6555 CARNEGIE AVE., SUITE 301 CLEVELAND, OHIO 44103 JIM DOYLE PHONE: (216) 650-6419

FLEET RESPONSE
SITE DEVELOPMENT
BOSTON MILLS ROAD, HUDSON, OHIO
BOSTON MILLS ROAD, HUDSON, OHIO

SIGHT DISTANCE STUDY

C102C
Project No. 2020-192



SITE BENCH MARK BENCH MARK #1 TOP NUT OF HYDRANT

ELEVATION = 1001.35

EX. SANITARY STRUCTURE <u>SCHEDULE</u>

B SANITARY MANHOLE
RIM 997.52
8" INV. (S & E) 982.52 (C) SANITARY MANHOLE RIM 999.11 8" INV. (W) 981.40 8" INV. (E) 981.38

SANITARY MANHOLE
RIM 987.59 8" INV. (E) 976.07 8" INV. (W) 976.17

SANITARY MANHOLE RIM 992.96 INV. 974.90

STORM PIPE TABLE

141.48'

74.61'

36.11'

106.22'

148.42'

108.00'

178.65'

107.70'

132.75'

109.00'

60.00'

150.02'

96.54'

78.00'

PVC

PVC

**HDPE** 

HDPE

HDPE

HDPE

HDPE

HDPE

HDPE

HDPE

HDPE

1.00%

0.42%

0.42%

0.44%

0.42%

0.39%

0.56%

0.94%

0.46%

0.67%

0.52%

3.33% PVC SDR-3:

0.32% RCP CL IV

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OWNER:

**HEMINGWAY** DEVELOPMENT

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CLEVELAND, OHIO 44103 JIM DOYLE PHONE: (216) 650-6419

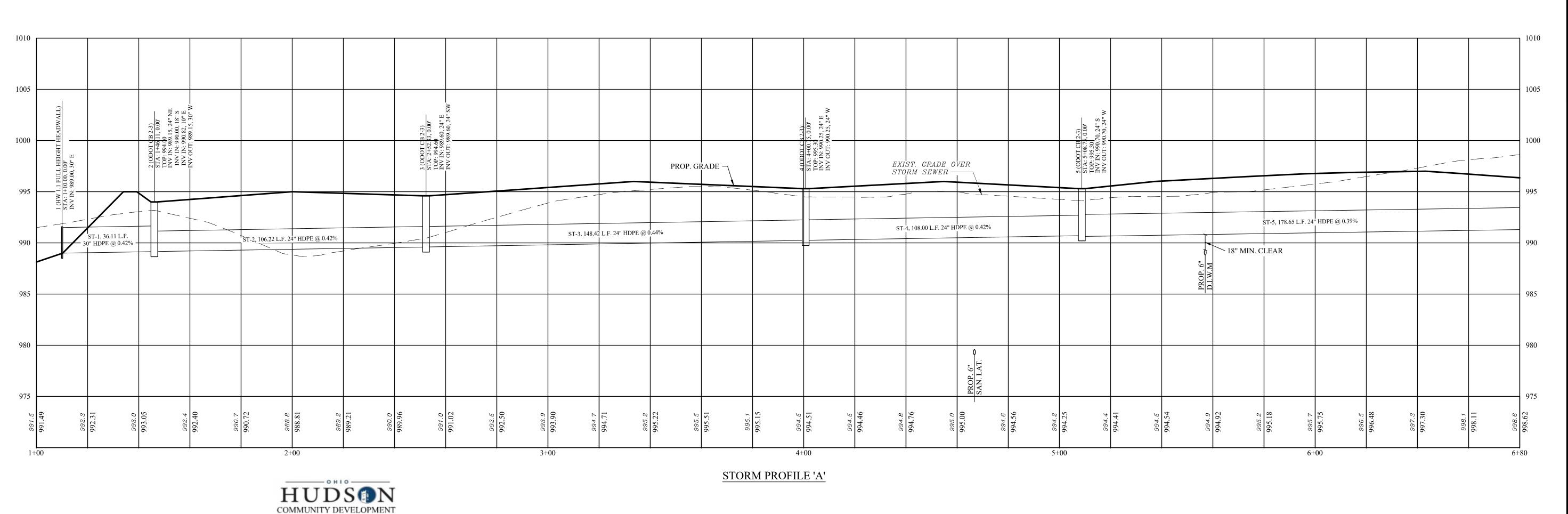
Issue Date

07-13-2020 08-06-2020 08-24-2020 09-17-2020 09-25-2020 SPONSE ELOPMENT ILLS ROAD,

日 い 画 UTILITY PLAN

SESF VEL

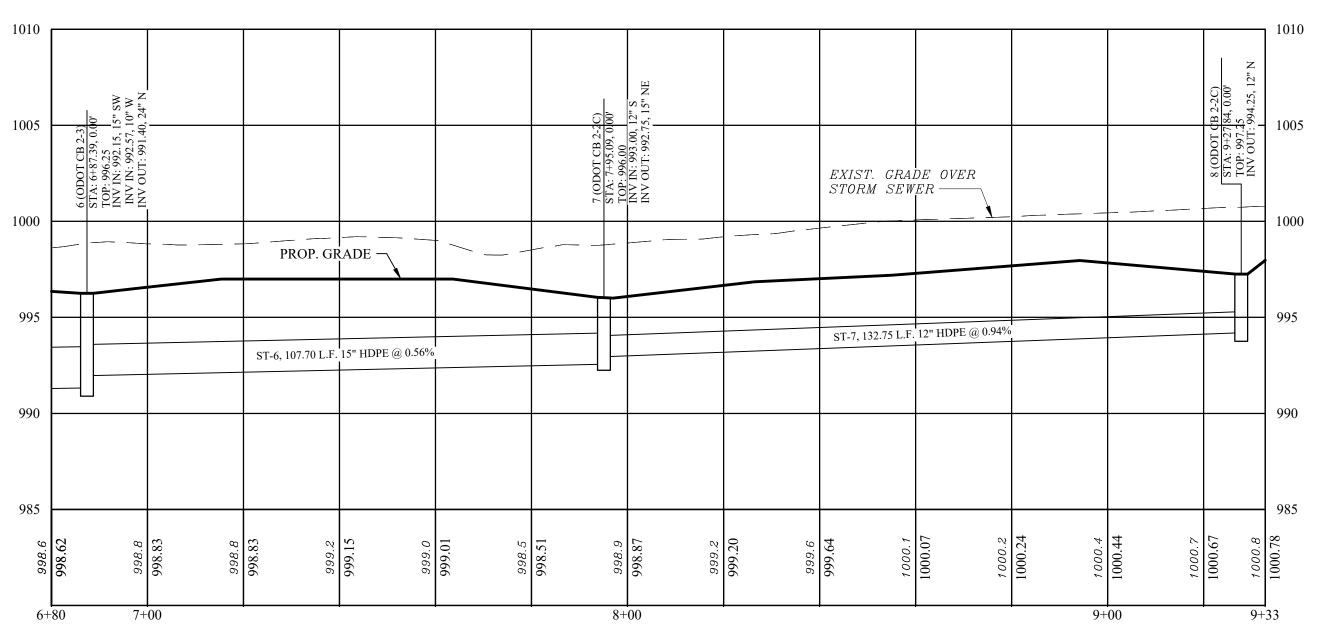
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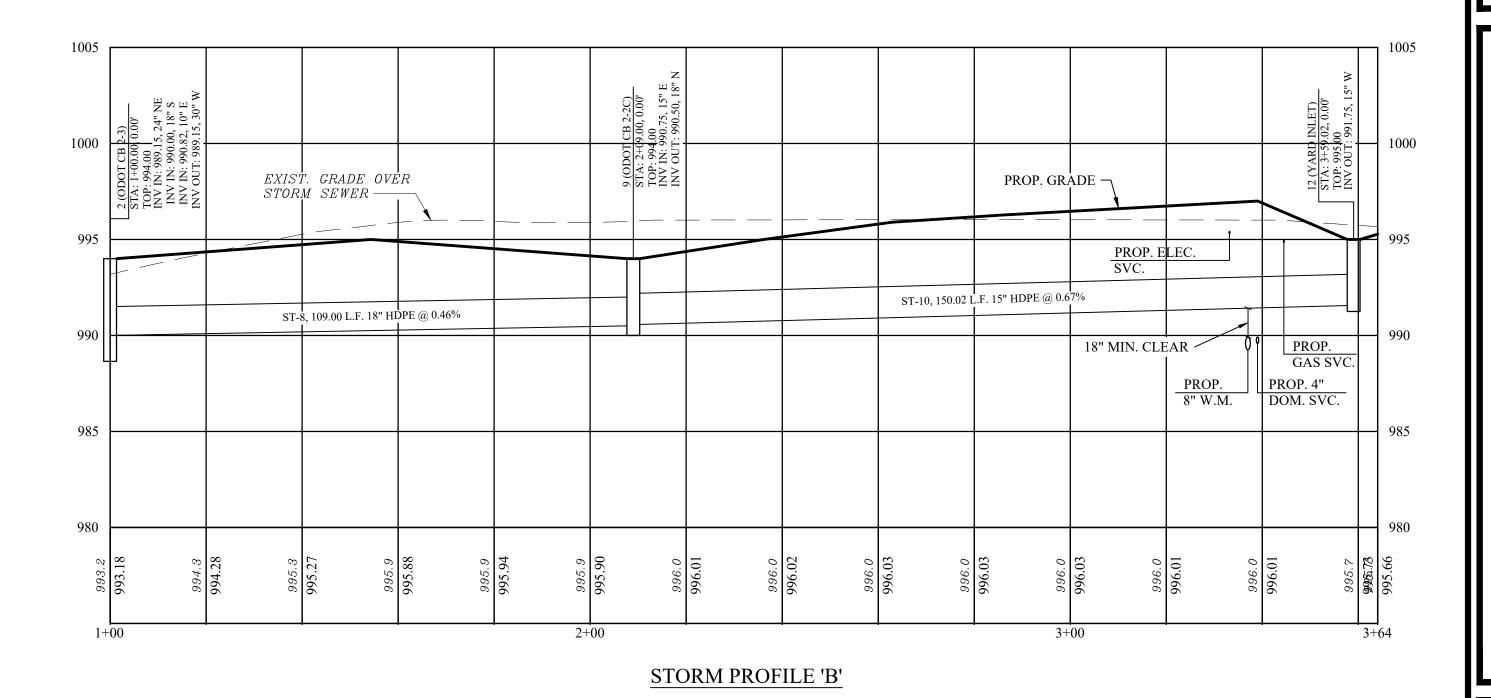
**✓** Approved

DEPARTMENT

Reviewed by Nick Sugar 11/06/2020, 8:09:02 AM



STORM PROFILE 'A'



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ITALICS TEXT REPRESENTS EXISTING CONDITION

NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

Scale: 1" = 20' Vertical Scale: 1" = 5' Project No. 2020-192

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FLEET RESPONSE SITE DEVELOPMENT BOSTON MILLS ROAD, HU

STORM PROFILES

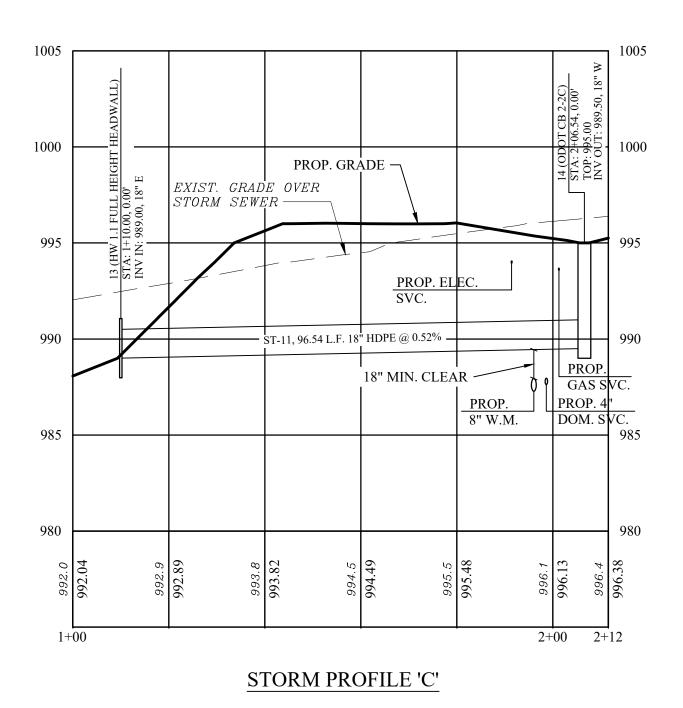
C103A

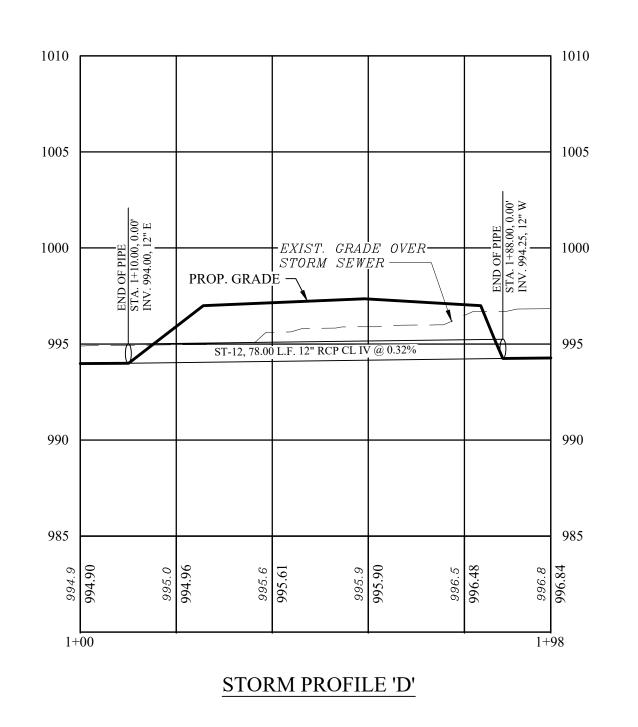
Project No. 2020-192

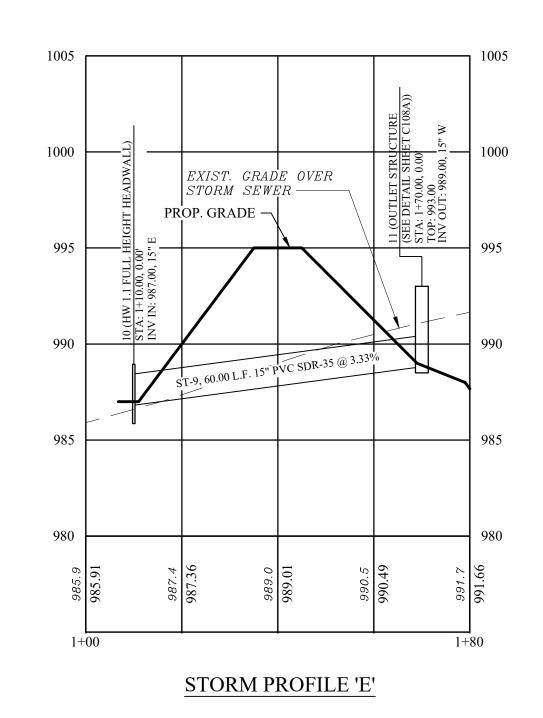


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ITALICS TEXT REPRESENTS EXISTING CONDITION

NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

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Vertical Scale: 1" = 5'

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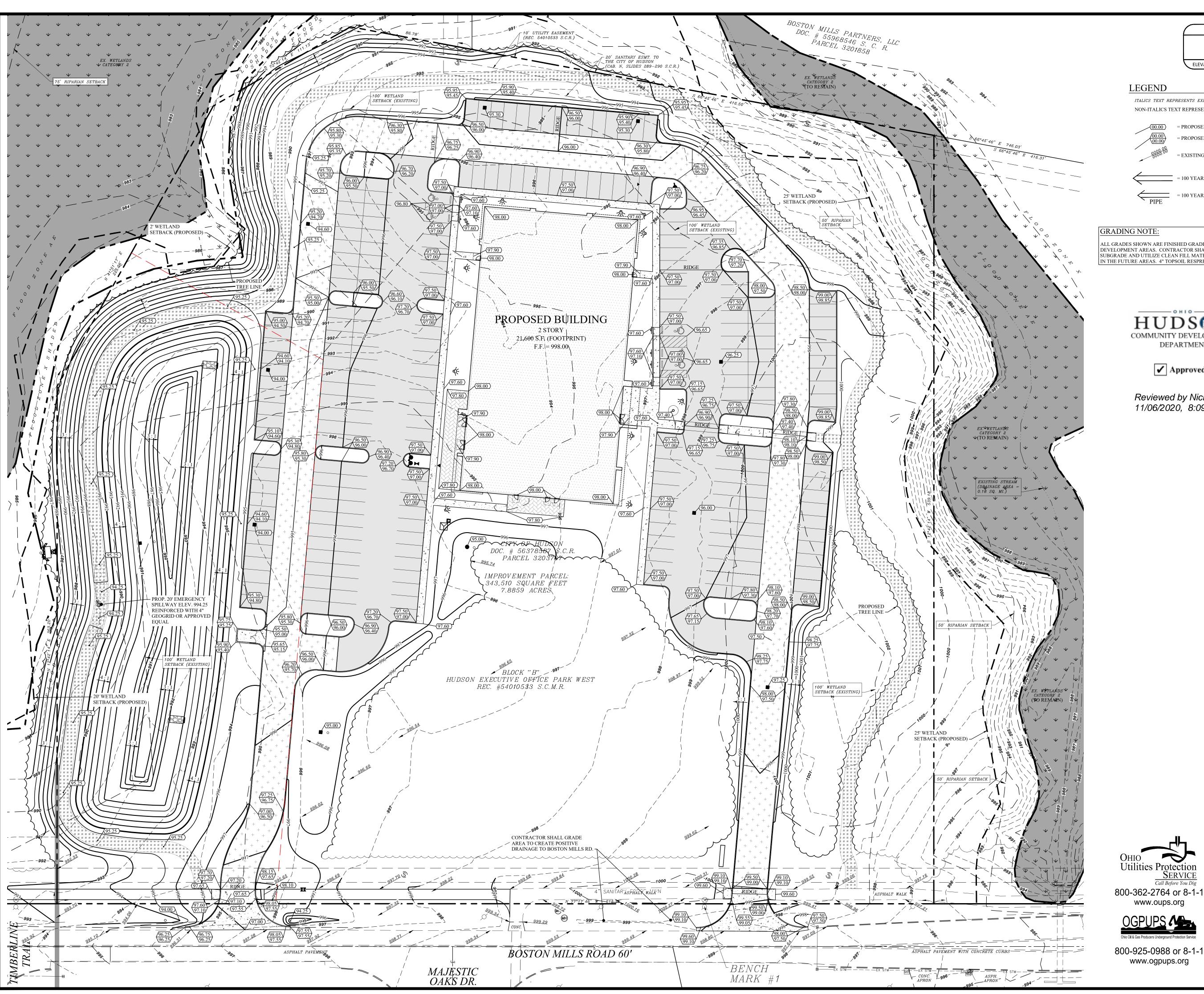
6555 CARNEGIE AVE., SUITE 301 CLEVELAND, OHIO 44103 JIM DOYLE PHONE: (216) 650-6419

Issue Date
07-13-2020
08-06-2020
08-24-2020
09-17-2020
09-25-2020

FLEET RESPONSE
SITE DEVELOPMENT
BOSTON MILLS ROAD, HUDSON, OHI

STORM PROFILES

C103B
Project No. 2020-192

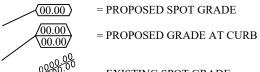


SITE BENCH MARK BENCH MARK #1 TOP NUT OF HYDRANT

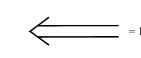
ELEVATION = 1001.35

#### LEGEND

ITALICS TEXT REPRESENTS EXISTING CONDITION NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION



= EXISTING SPOT GRADE



= 100 YEAR FLOOD PATH (OVERLAND)



#### **GRADING NOTE**

ALL GRADES SHOWN ARE FINISHED GRADES FOR PROPOSED AND FUTURE DEVELOPMENT AREAS. CONTRACTOR SHALL ACCOUNT FOR FUTURE

SUBGRADE AND UTILIZE CLEAN FILL MATERIAL FOR FUTRE DISTRIBUTION IN THE FUTURE AREAS. 4" TOPSOIL RESPREAD MAX.



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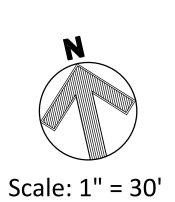
> Issue Date 07-13-2020 08-06-2020

09-25-2020

FLEE SITE BOST

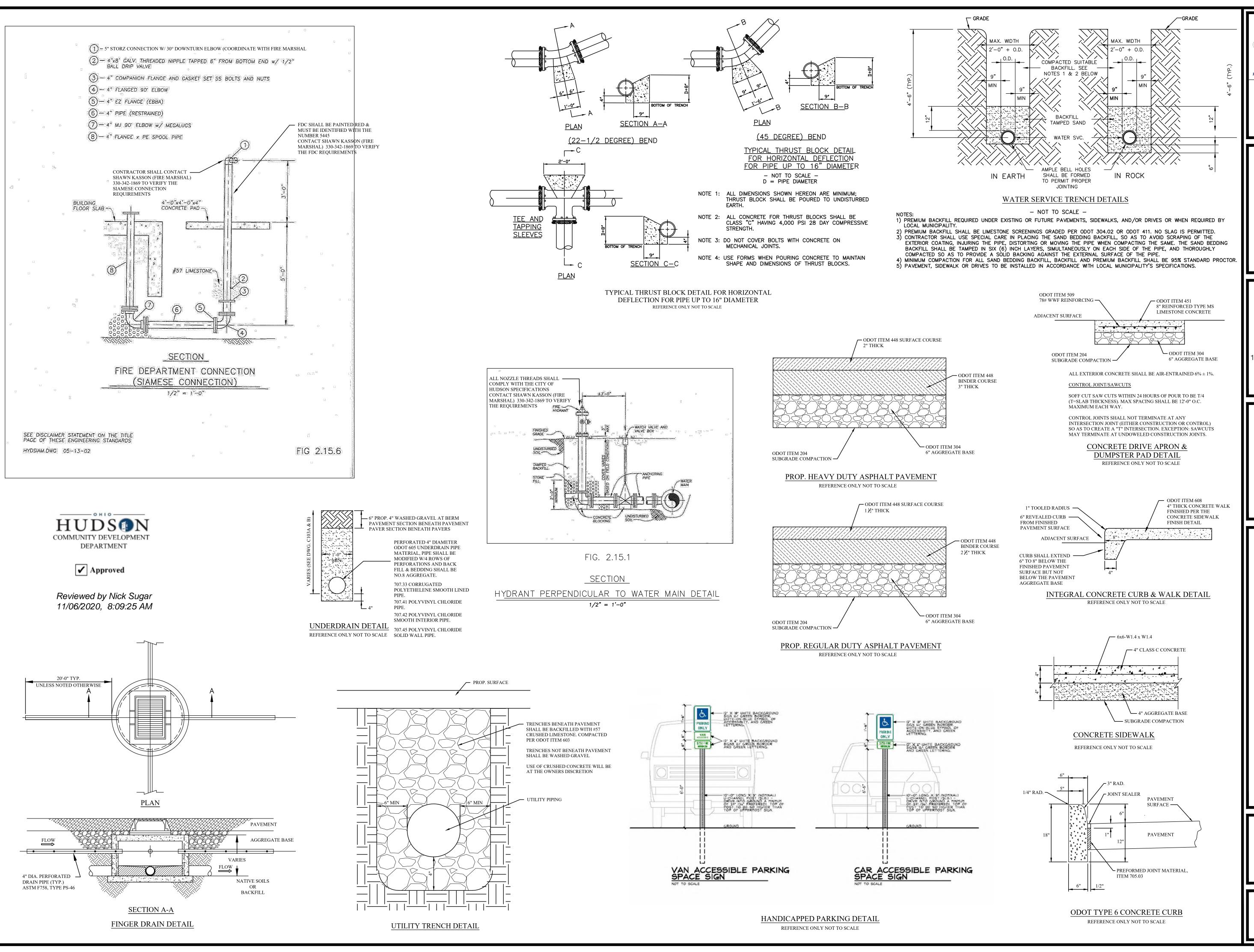
GRADING PLAN

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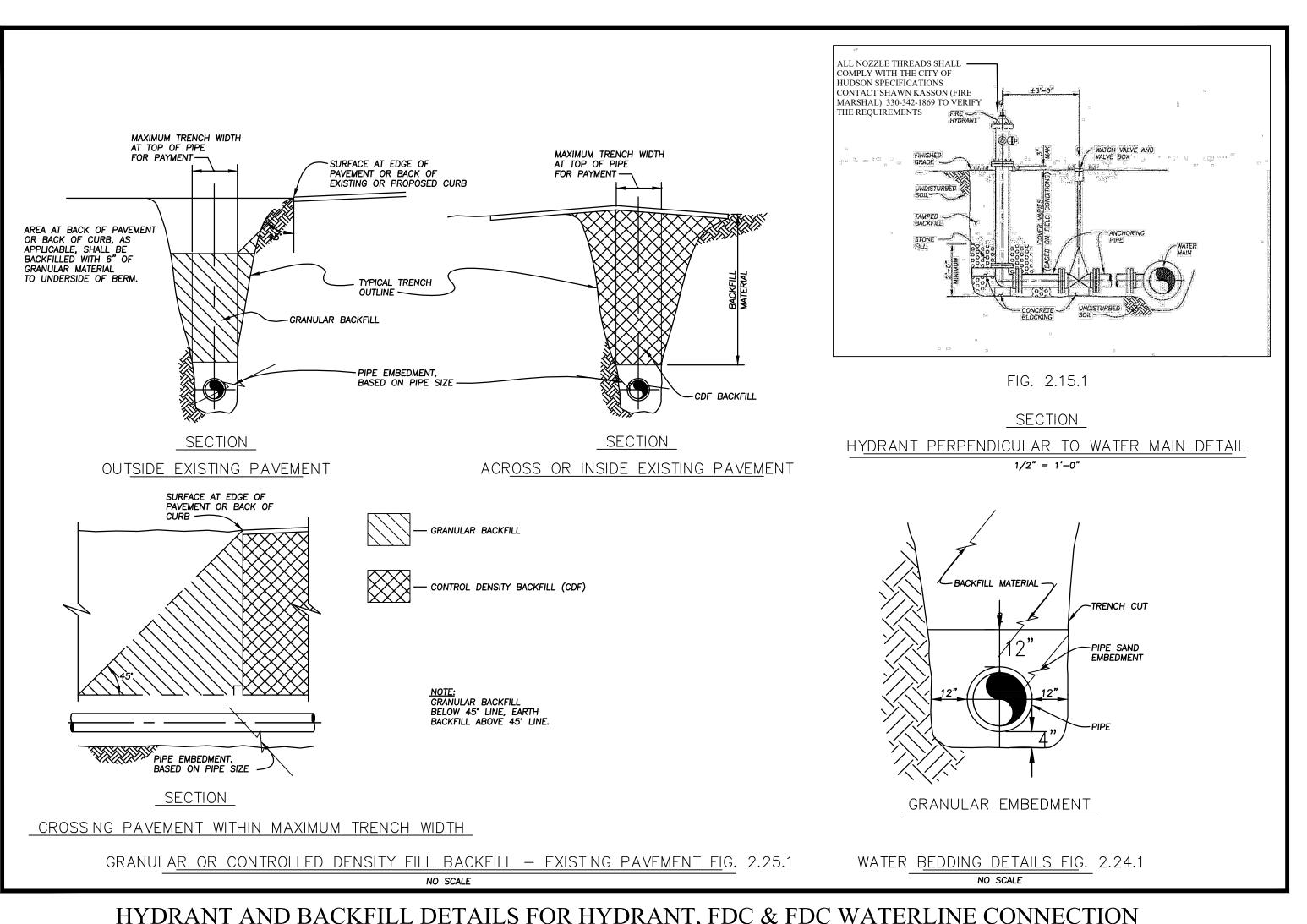
Issue Date

OHO NOSQUH (1975)

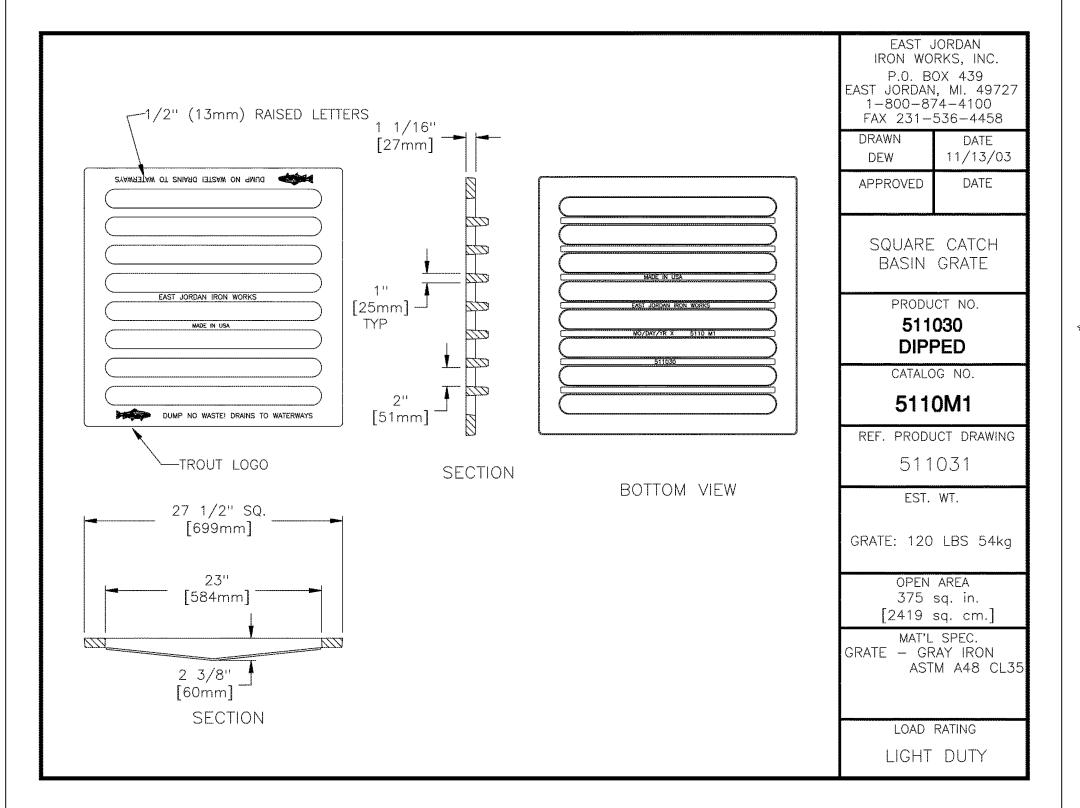
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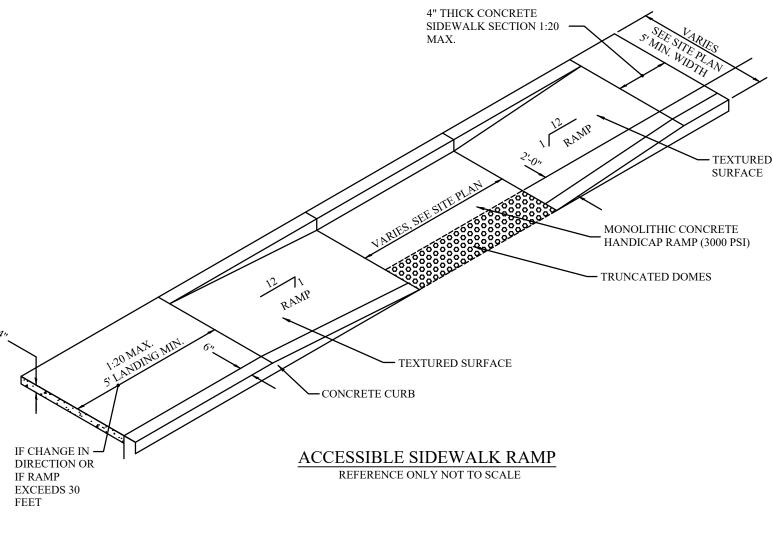
SITE DETAILS

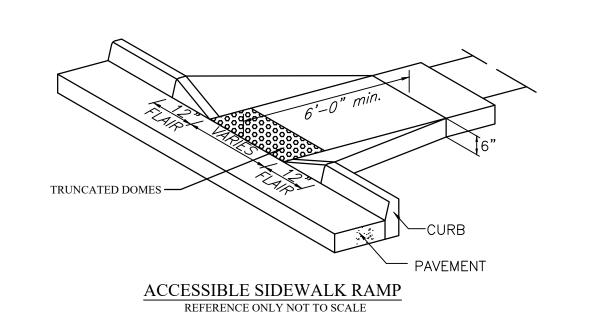
C105
Project No. 2020-192



# HYDRANT AND BACKFILL DETAILS FOR HYDRANT, FDC & FDC WATERLINE CONNECTION

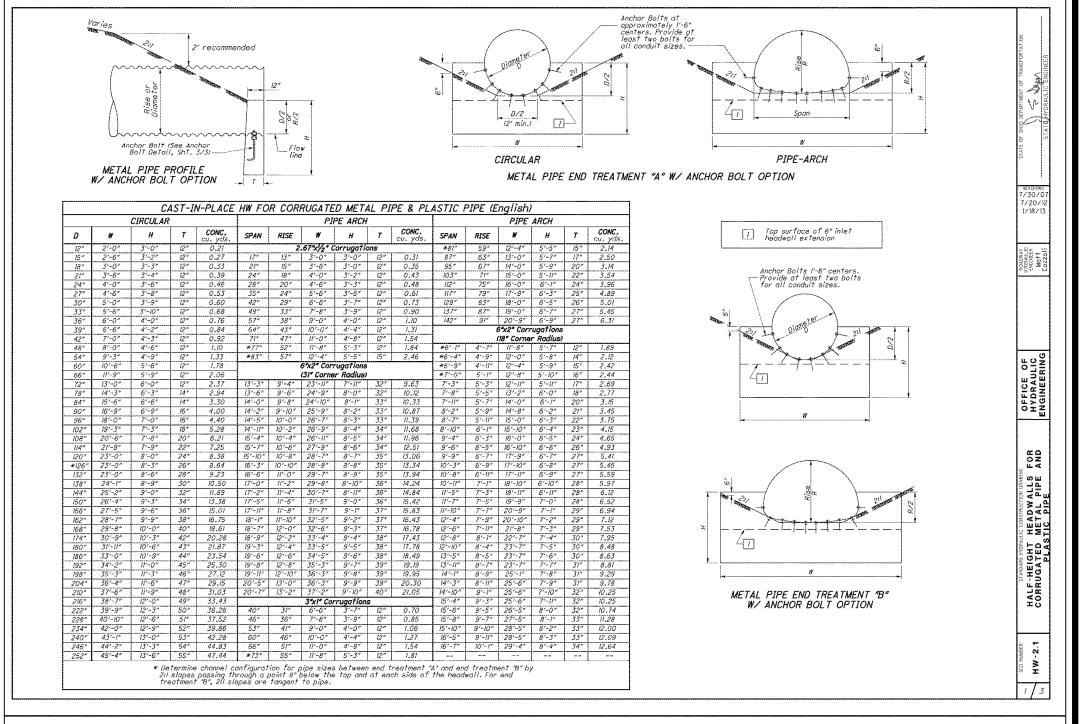


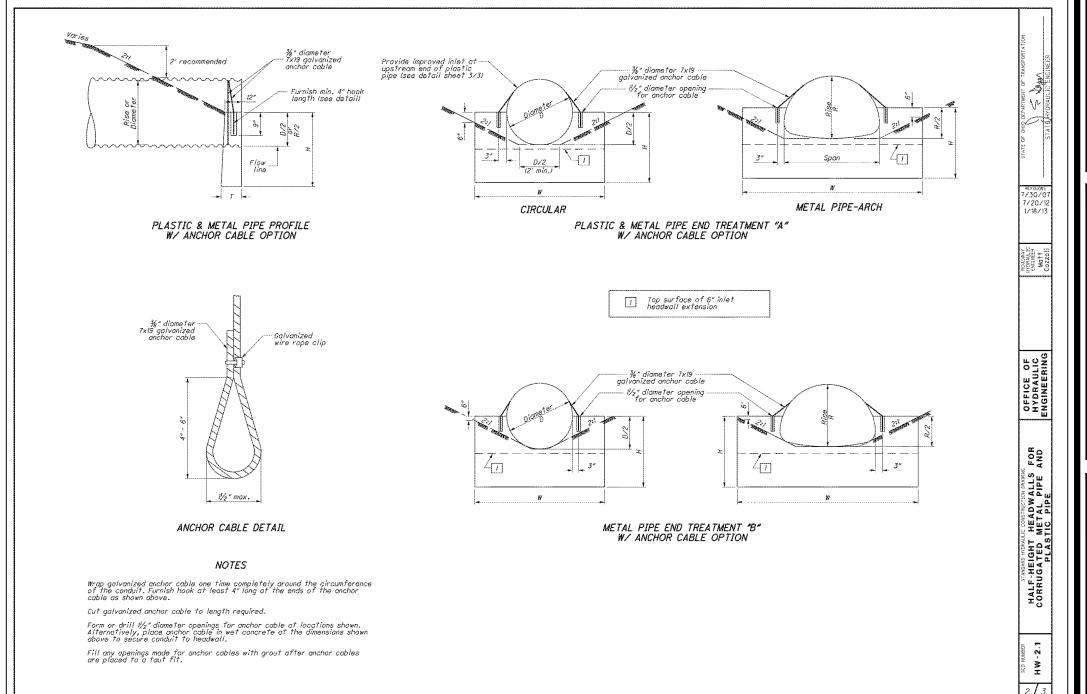


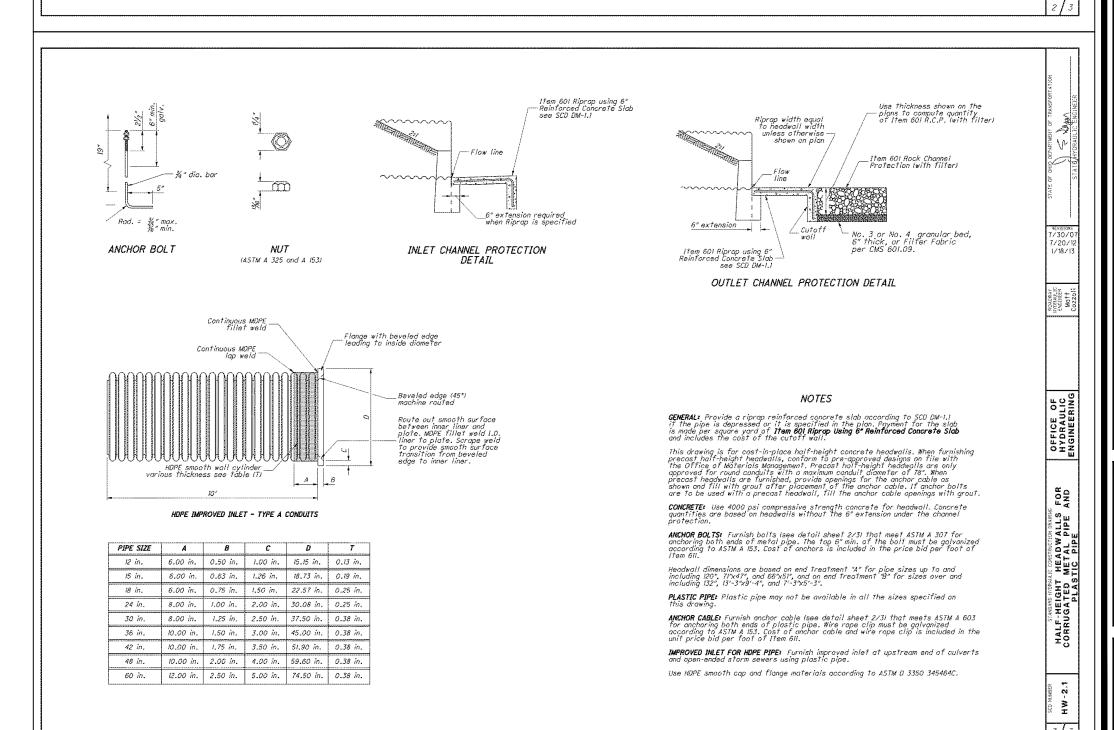




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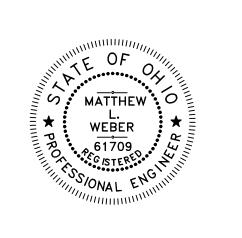








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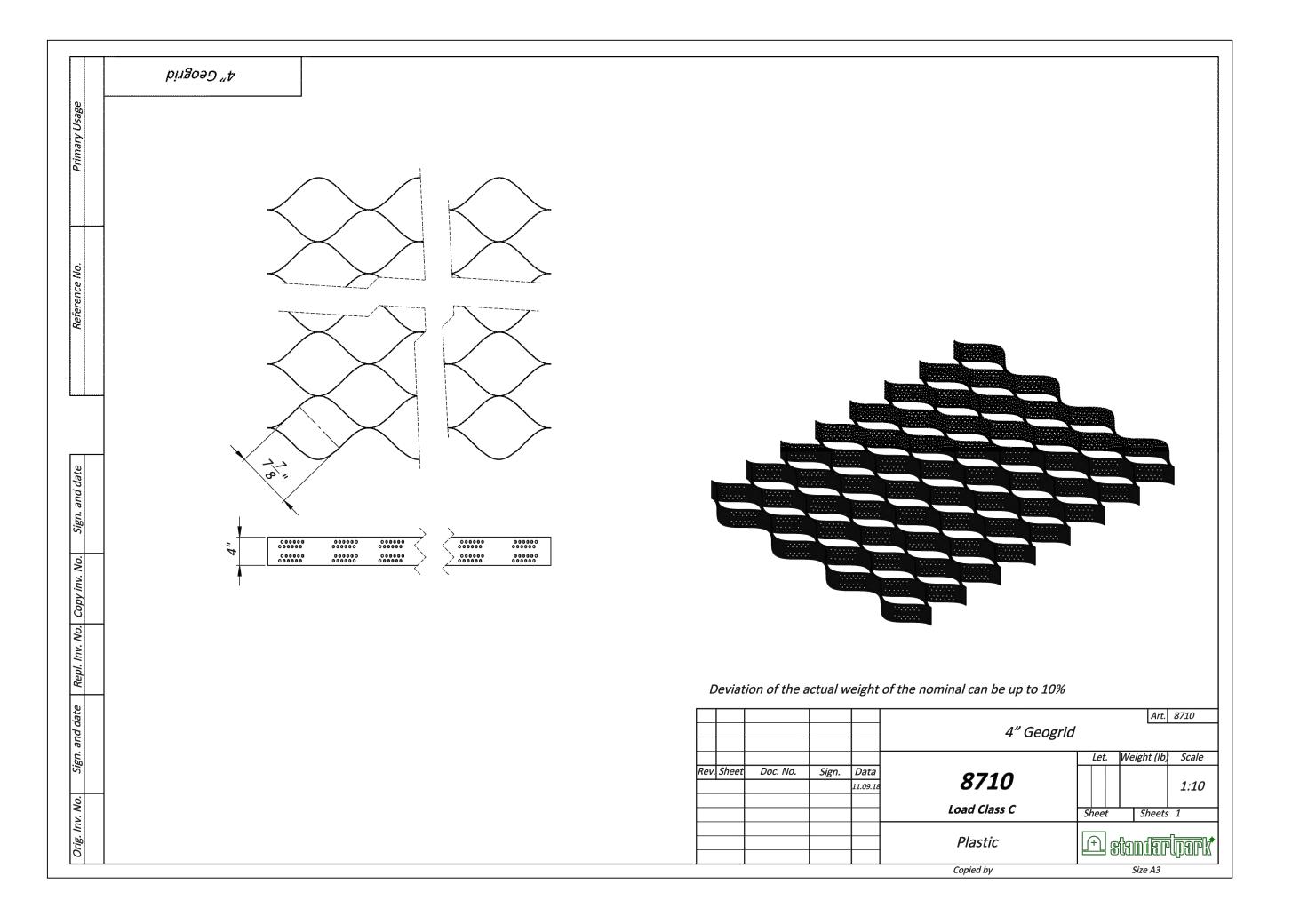
08-06-2020 08-24-2020 09-17-2020 09-25-2020

SPONSE ELOPMENT AILLS ROAD, I ITE OST 日 S M



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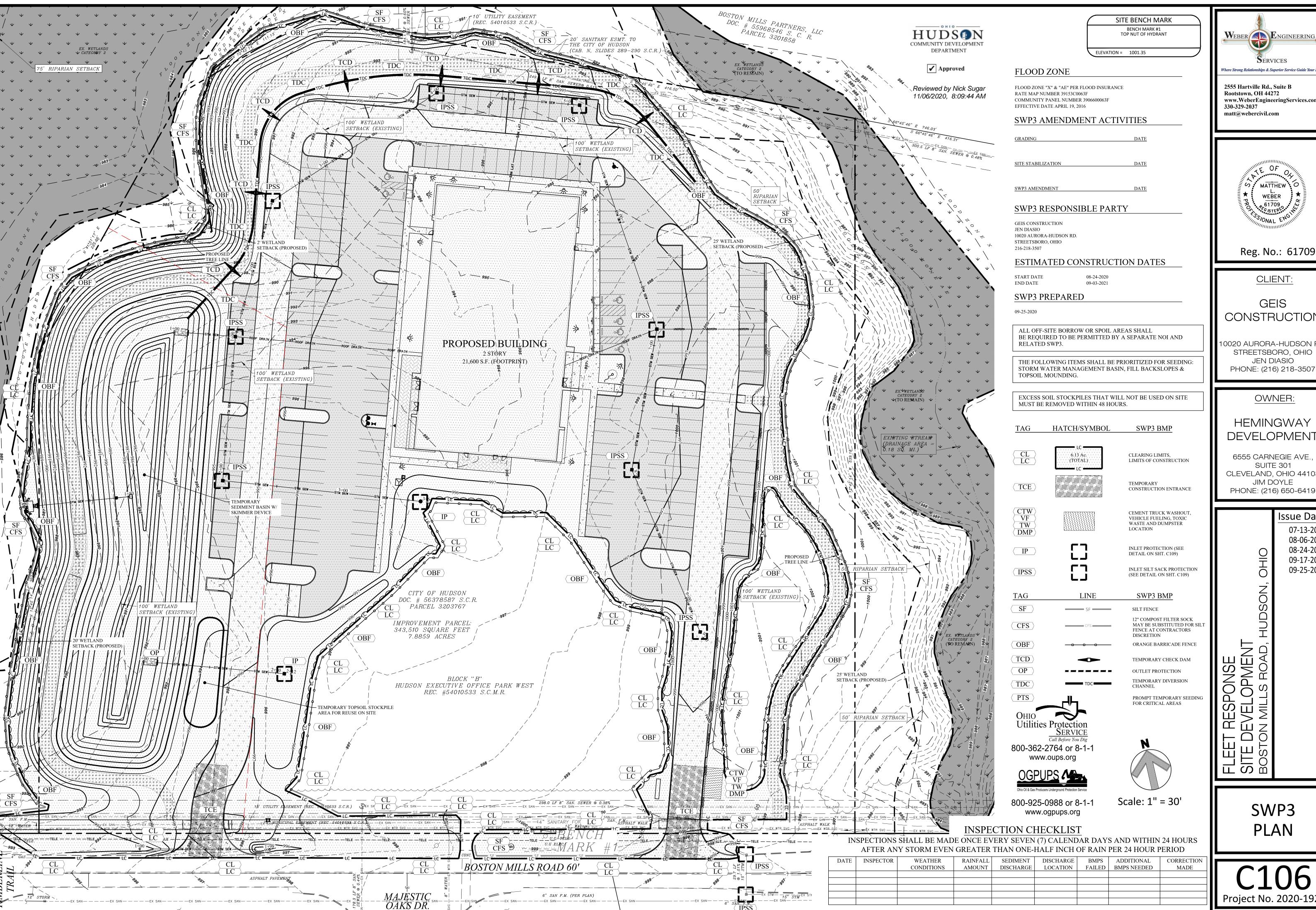
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Issue Date
07-13-2020
08-06-2020
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FLEET RESPONSE SITE DEVELOPMENT BOSTON MILLS ROAD, HUDSO

> SITE DETAILS

C105B



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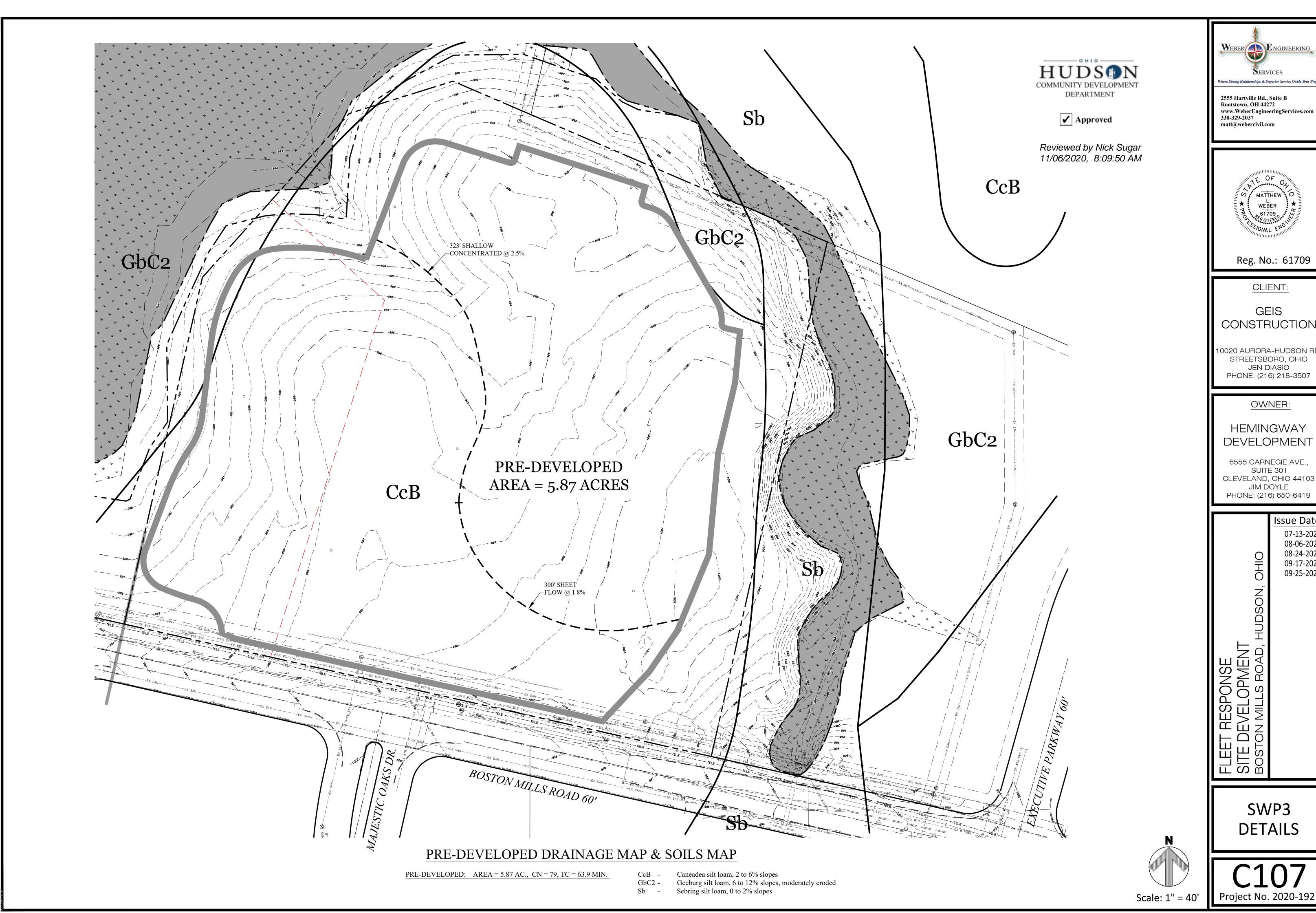
JIM DOYLE

Issue Date 07-13-2020

08-06-2020 09-25-2020

FLEE SITE BOST

SWP3 PLAN





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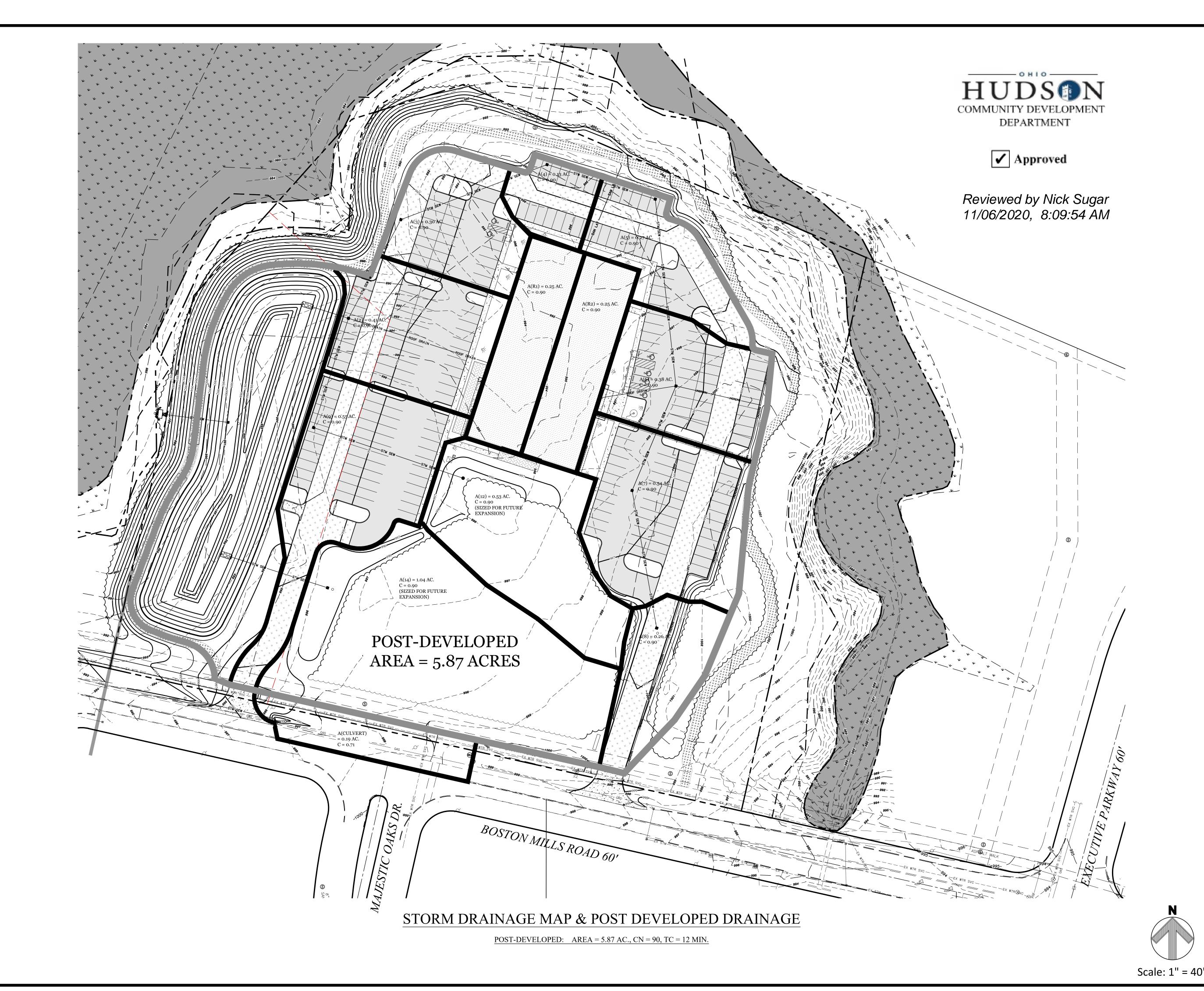
# HEMINGWAY DEVELOPMENT

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> Issue Date 07-13-2020 08-06-2020 08-24-2020 09-17-2020 09-25-2020

SWP3 **DETAILS** 

FLEE SITE BOST



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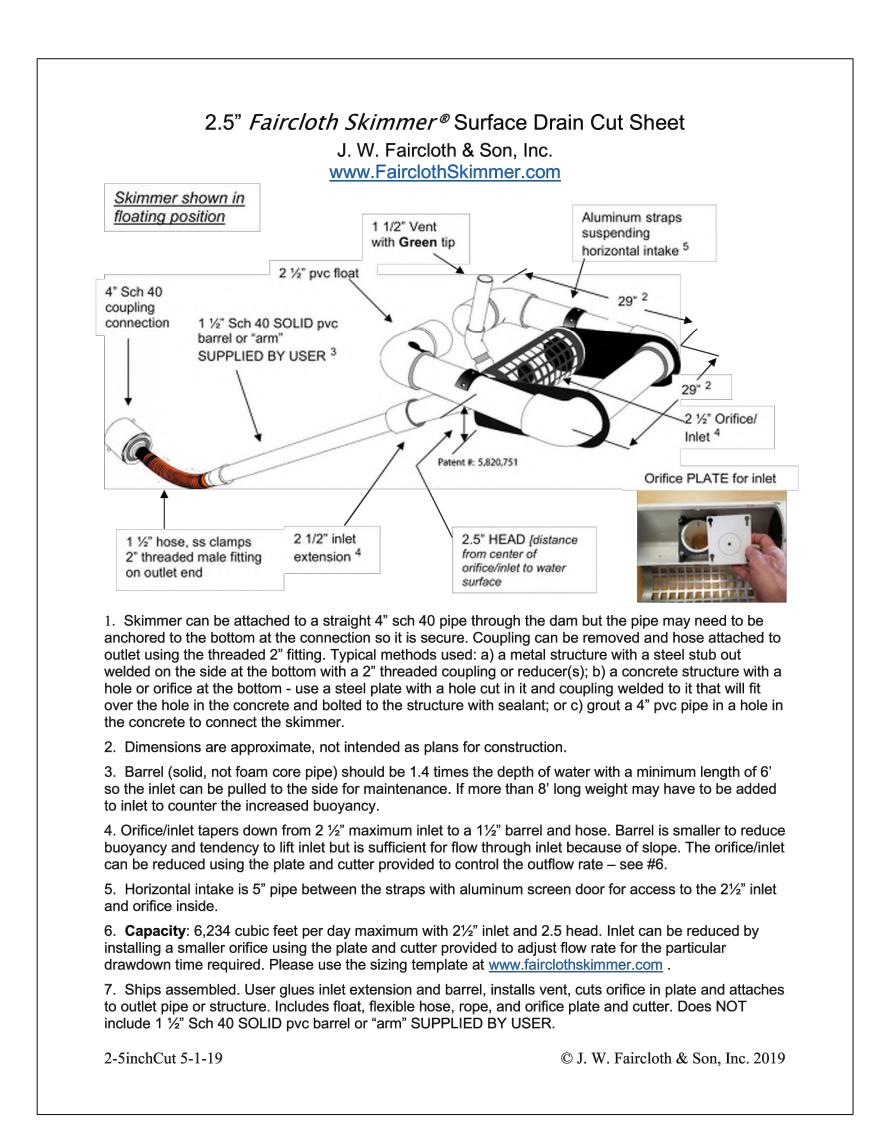
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SITE DEVELOPMENT
SITE DEVELOPMENT
BOSTON MILLS ROAD, HUDSON, OHO
BOSTON MILLS ROAD, HUDSON MILLS ROAD, HUDSO

SWP3 DETAILS

C107A
Project No. 2020-192

Sediment	Basin Data	
Basin Number		
	5.87	
A. Total Contributing Watershed (ac.)  B. Disturbed Area (ac.)		
	5.87	
C. Req. Dewatering Volume (A x 1,800 cu. ft/ac.)	10,566	
D. Req. Sediment Storage Zone Vol. (B* 1000)	5,870	
E. Total Required Capacity (C+D in cu ft)	16,436	
F. Dewatering Volume Provided (cu. ft/ac.)	85,051	
G. Sediment Storage Provided (cu. ft/ac.)	26,916	
H. Total Storage Provided in Crest of Riser (cu. ft/ac.)	111,967	
Principal Spillway		
Req. Principal Spillway Capacity (10 yr-24hr storm) (cfs)	20.23	
Principal Spillway Capacity Provided (cfs)	38.17	
Principal Spillway Elevation	993.00	
Riser (inches)	24" SQ	
Diameter of Barrel (inches)	15"	
Volume of Concrete to Prevent Riser Flotation (cu. ft.)	9	
Outlet Type	70	
Drawdown Time (Hours must exceed 48 hr drawdown)	72	
Mark selected outlet type (X)		
A. Non-perforated Riser with Stub & Faircloth Skimmer	X	
(Orifice size in inches)	1.9	
Stone pad provided at top of Sediment storage	X	
B. Protected Single Onfice		
(Orifice size in inches)		
C. Perforated Riser		
Hole size (inches)		
Number of Holes		
Protection of Perforations - sm holes (<3/4") typ need anti-clogging		
measure - aggregate > than hole size or wire cloth/fence & geotextile		
Bottom Elevation	985.00	
Sediment Storage Zone Elevation	989.00	
Crest of Principal Spillway Elevation (Min. 1 ft. below crest E. S.)	993.00	
Pool Depth at Riser (ft., ideally 3-5')	8.00	
Top of Embankment Elevation	995.25	
Embankment Side Slopes (Max 2:1, combined 5:1)	4:1 - 3:1	
Embankment Top Width (ft.)	10	
Req. Emergency Spillway Capacity (25 yr-24hr storm) (cfs)	25.50	
Req. Emergency Spillway Discharge (25 yr-24 hr storm less Principal S.)	-12.67	
Emergency Spillway Capacity Provided (cfs)	56.00	
Emergency Spillway Elevation	994.25	
Emergency Spillway Bottom Width	20.00	
Emergency Spillway Lining	Vegetative	
Rock Outlet Protection (Size, gradation and quality of rock)		
Length	5.00	
Width	5.00	
Depth	1.50	
Gradation - O.D.O.T. unless specified otherwise	C C	



#### TEMPORARY SEDIMENT CONTROL CALCULATIONS

Use a Temporary Skimmer		
Total Drainage Area:	5.87	A
Disturbed Earth Area:	5.87	A
Sediment Storage Volume Required (1,000 C.F./Ac.):	5,870	C
Sediment Storage Volume Provided Below Skimmer Orifice:	26,916	C
Dewatering Volume Required (1,800 C.F./Ac.)	10,566	C
Dewatering Volume Provided Below Principal Spillway:	85,051	C
Design Detention Volume:	155,273	C
Bottom of Temporary Sediment Basin:	985.00	
Invert of Skimmer device:	989.00	
Normal Water Level:	989.00	
Cleanout Elevation:	986.60	
Set Crest of Principal Spillway at:	993.00	
Set Crest of Emergency Spillway at:	994.25	
Top of Bank:	995.25	

#### TEMPORARY SEDIMENT CONTROL VOLUME CALCULATIONS

				Volume Sum		
_	Elevation	Area, S.F.	Volume (C.F.)	(C.F.)	Spill	way Design
					34.62	100-yr Peak Flow, C.F.S
					1.00	Spillway Height, Ft.
					20.00	Spillway Width, Ft.
BOT	985.00	2,460	0	0		
	986.00	4,227	3,343	3,343		
	987.00	6,066	5,146	8,489		
	988.00	7,976	7,021	15,510		
DEW	989.00	14,839	11,406	26,916		
	990.00	17,782	16,310	43,226		
	991.00	20,825	19,303	62,529		
	992.00	23,969	22,397	84,926		
	993.00	27,213	25,591	110,517		
	994.00	30,558	28,885	139,402		
	995.00	34,003	32,280	171,683		
TB	995.25	38,451	9.057	180,739		

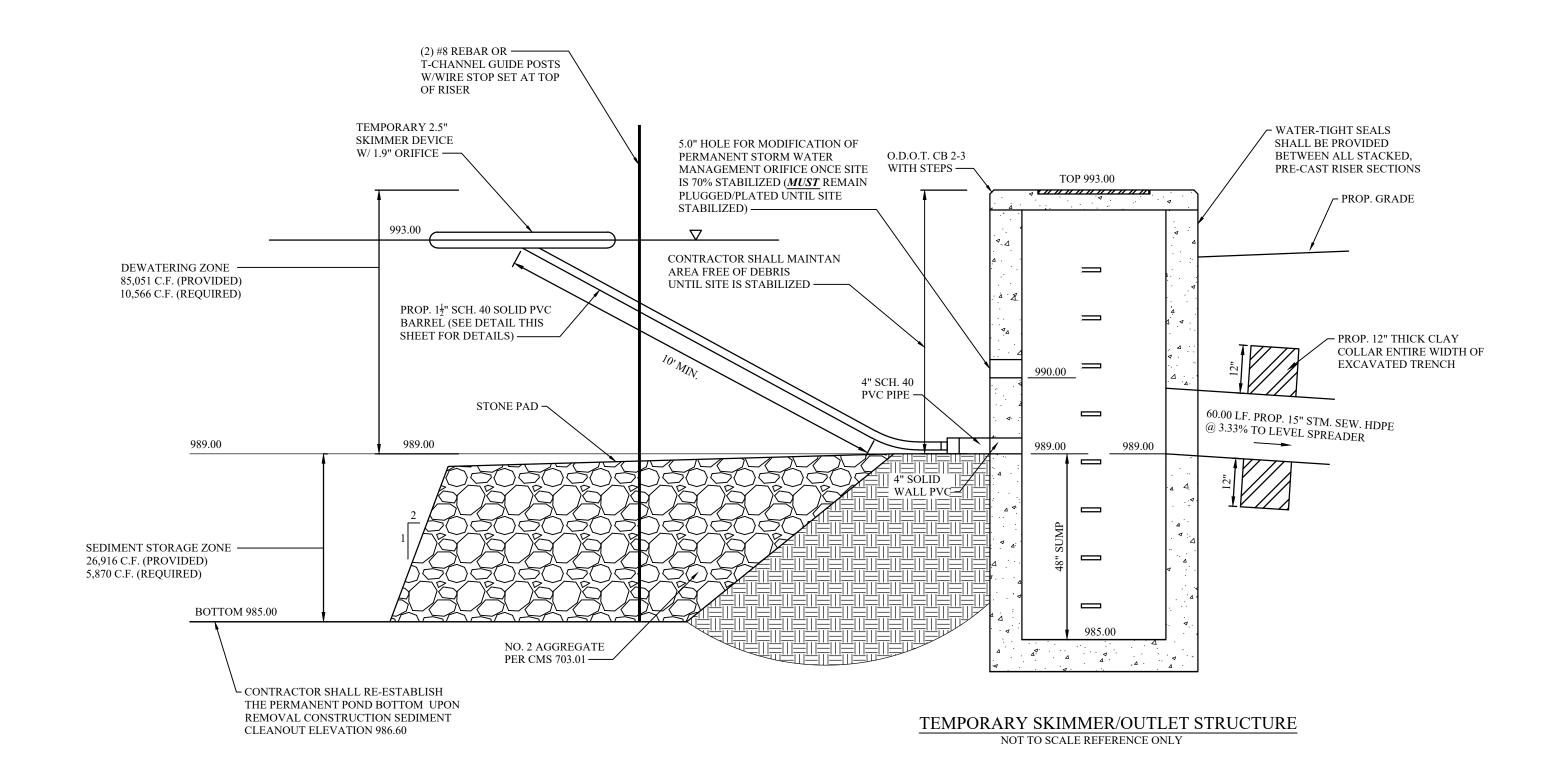
#### TEMPORARY SKIMMER DEVICE

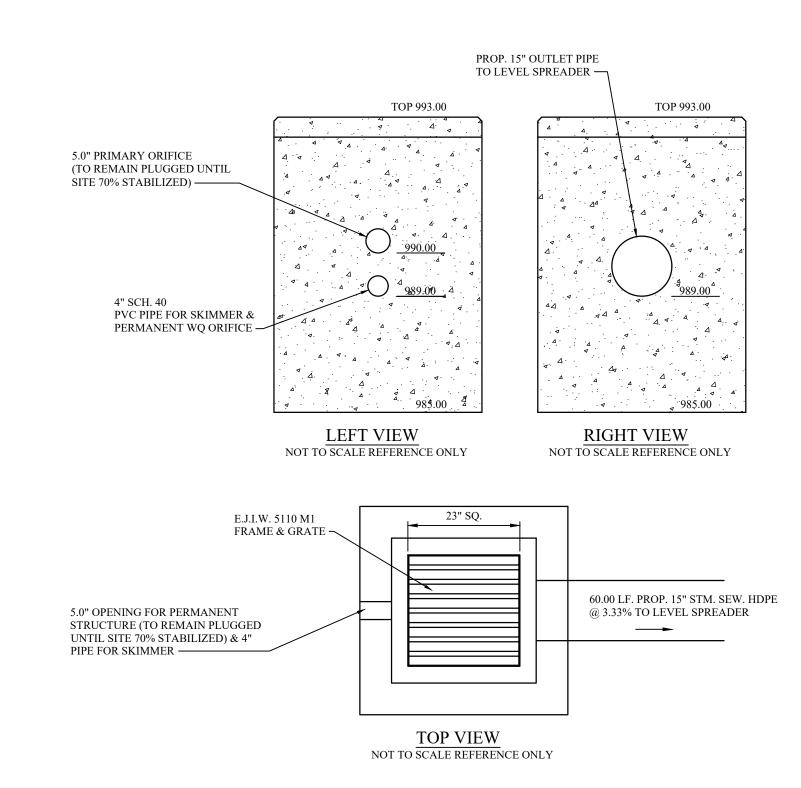
Calculate Skimmer Size			
Basin Volume in Cubic Feet	10,556 Cu.Ft	Skimmer Size	2.5 Inch
Days to Drain*	3 Days	Orifice Radius	0.9 Inch(es)
		Orifice Diameter	1.9 Inch[es]
To MC assume 3 days to drain			





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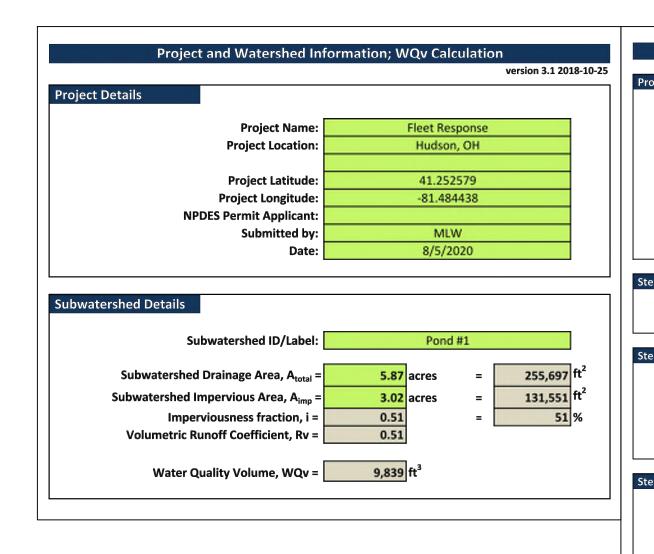
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SITE DEVELOPMENT
SITE DEVELOPMENT
BOSTON MILLS ROAD, HUDSON, OALO
BOSTON MILLS ROAD, HUDSON, O

SWP3 DETAILS

C108



#### Wet Extended Detention Basin WQv Compliance Tool Step 4 - Outlet Elevations and Storage Volumes **OKAY** Secondary Outlet Invert Elevation = Subwatershed ID/Label: Pond #1 WQ Treatment Volume Provided, V<sub>treatment</sub> = Submitted by: MLW = 166% \OKAK\ Date: 8/5/2020 Permanent Pool Volume Provided, PPv = = 226% OKAY Ratio PPv Provided to PPv Required = 255,697 ft2 = 131,551 ft2 51 % = 0.23 ac-ft Imperviousness fraction, i = Water Quality Volume, WQv = 9,839 ft<sup>3</sup> Maximum Hydraulic Head, Hmax = Orifice Coefficient, C = Step 1 - Soil Suitability Farget (Minimum) Draw-down Time, T<sub>d</sub> = Target Average Discharge, Q<sub>avg</sub> = Soil Series Caneadea HSG D 0.31 ft 6.07 in Average Hydraulic Head, H<sub>avg</sub> = Estimated Orifice Area, A<sub>orifice</sub> = 0.042 ft<sup>2</sup> 0.23 ft Step 2 - Wet ED Basin Volume Requirements Estimated Orifice Diameter, Dorifice = 0.28 ft 0.059 ft<sup>2</sup> Design Orifice Diameter, D<sub>orifice</sub> = Extended Detention Volume, EDv = Minimum Sediment Storage Volume, V<sub>sediment</sub> : must be ≥ 24 hr OKAY Time to Completely Drain EDv, T<sub>d</sub> = Volume Drained in First 8 hr = must be ≤ 50% % of EDv = Step 3 - Basin Stage-Storage Relationship Wet Basin - EDv Drawdown vs Time Volume Volume The drawdown curve must be to the 6,999 15,422 11,231 26,653 16,288 42,942 19,283 62,225 22,379 84,604 25,574 110,178 28,869 139,047 32,265 171,312 9,051 180,363 right of the markers (\*) to: (1) meet a

6000

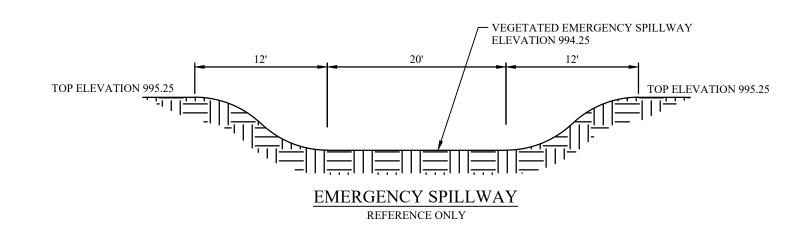
COMMUNITY DEVELOPMENT DEPARTMENT

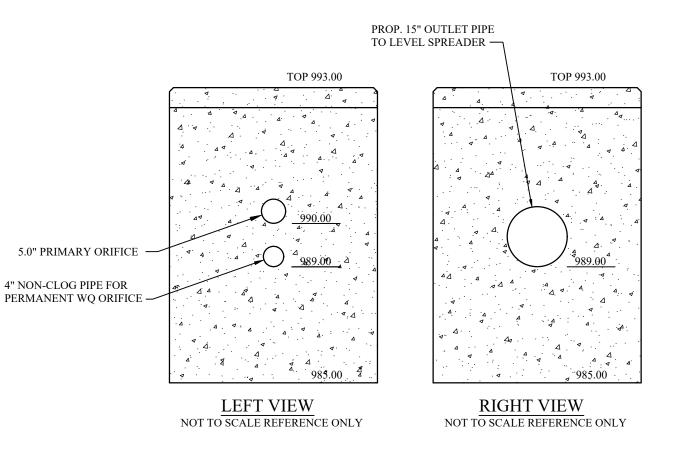
**✓** Approved

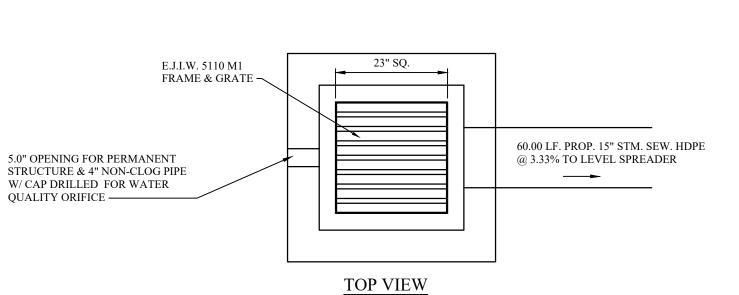
Reviewed by Nick Sugar 11/06/2020, 8:10:13 AM

minimum drain time of 24 hours; and (2) show the outlet is draining no more than 0.5\*EDv in the first 8 hr.

**-**







NOT TO SCALE REFERENCE ONLY

# STORM SEWER CALCULATIONS (10-YR)

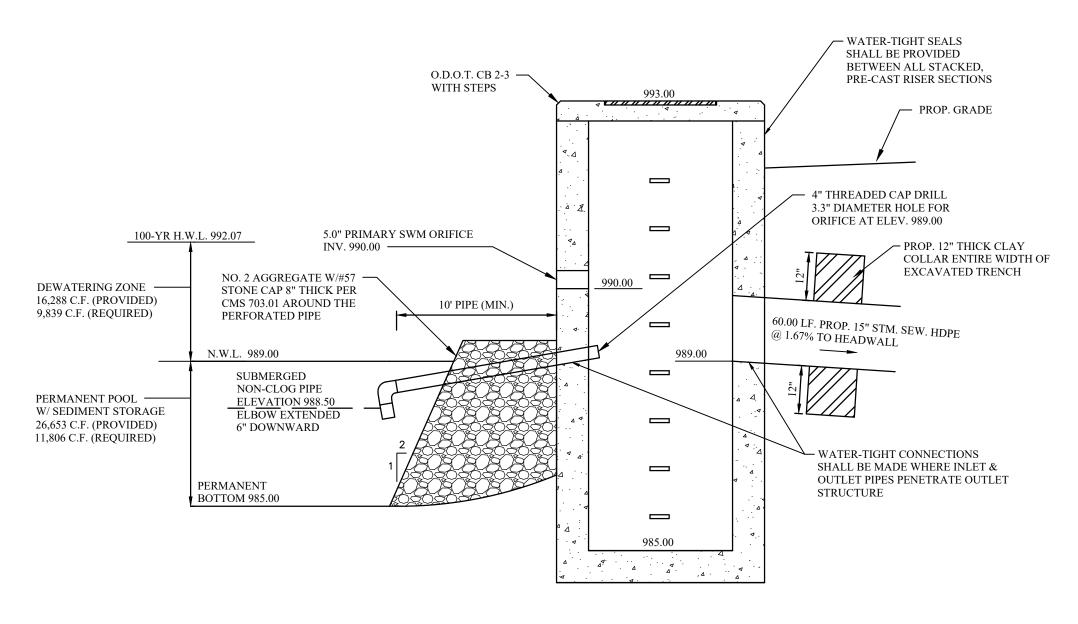
Static	n	Len	Drng /	Area	Rnoff	Area	C	Тс		Rain	Total		Vel	Pipe		Invert El	ev	HGL Ele	ev	Grnd / R	im Elev	Line ID
Line	To Line	1	Incr	Total	coeff	Incr	Total	inlet	Syst	-(I)	flow	full		Size	Slope	Dn	Up	Dn	Up	Dn	Up	
	Line	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	78.000	0.19	0.19	0.71	0.13	0.13	10.0	10.0	5.0	0.67	2.02	0.94	12	0.32	994.00	994.25	995.00	995.02	997.00	997.00	ST-12
2	End	36.108	0.41	3.87	0.90	0.37	3.48	10.0	16.2	3.9	13.75	26.42	3.65	30	0.42	989.00	989.15	990.86	990.88	993.00	994.00	ST-1
3	2	106.217	0.30	2.13	0.90	0.27	1.92	10.0	15.6	4.0	7.74	14.72	2.68	24	0.42	989.15	989.60	991.11	991.20	994.00	994.60	ST-2
4	3	148.421	0.13	1.83	0.90	0.12	1.65	10.0	14.5	4.2	6.89	14.97	3.04	24	0.44	989.60	990.25	991.29	991.41	994.60	995.30	ST-3
5	4	108.000	0.27	1.70	0.90	0.24	1.53	10.0	13.7	4.3	6.58	14.60	3.67	24	0.42	990.25	990.70	991.55	991.68	995.30	995.30	ST-4
6	5	178.646	0.38	1.43	0.90	0.34	1.29	10.0	12.1	4.6	5.86	14.16	3.66	24	0.39	990.70	991.40	991.95	992.27	995.30	996.25	ST-5
7	6	107.700	0.54	0.80	0.90	0.49	0.72	10.0	11.5	4.7	3.36	4.82	4.24	15	0.56	992.15	992.75	992.92	993.52	996.25	996.00	ST-6
8	7	132.749	0.26	0.26	0.90	0.23	0.23	10.0	10.0	5.0	1.16	3.46	2.68	12	0.94	993.00	994.25	993.69	994.70	996.00	997.25	ST-7
9	6	74.607	0.25	0.25	0.90	0.23	0.23	10.0	10.0	5.0	1.12	2.19	3.77	10	1.00	992.57	993.31	992.99	993.78	996.25	998.00	RD-2
10	2	109.000	0.55	1.08	0.90	0.50	0.97	10.0	11.3	4.7	4.57	7.11	3.79	18	0.46	990.00	990.50	991.11	991.37	994.00	994.00	ST-8
11	10	150.022	0.53	0.53	0.90	0.48	0.48	10.0	10.0	5.0	2.36	5.27	3.21	15	0.67	990.75	991.75	991.66	992.36	994.00	995.00	ST-10
12	2	141.479	0.25	0.25	0.90	0.23	0.23	10.0	10.0	5.0	1.12	2.19	3.78	10	1.00	990.82	992.23	991.24	992.70	994.00	998.00	RD-1
13	End	96.539	1.04	1.04	0.90	0.94	0.94	10.0	10.0	5.0	4.64	7.56	2.63	18	0.52	989.00	989.50	990.86	991.00	992.00	995.00	ST-11
14	End	60.000	0.01	0.01	0.90	0.01	0.01	10.0	10.0	5.0	0.95	11.79	1.88	15	3.33	987.00	989.00	988.25	989.38	989.75	993.00	ST-9
		***************************************																				
Dea:	ort File:	2020 4	2 840-	m 01B.st												NJ, mak a	r of lines: 1			D <sub>1</sub> = D <sub>2</sub>	ite: 9/25/2	030

# STORM SEWER CALCULATIONS (25-YR)

Statio	ภ	Len	Drng A	\rea	Rnoff	Area x	C	Τc		Rain	Total	Сар	Vel	Pipe		Invert El	ev	HGL Ele	v	Grnd / Ri	m Elev	Line ID
Line	То		Incr	Total	coeff	Incr	Total	Inlet	Syst	(1)	flow	full		Size	Slope	Dn	Up	Dn	Up	Dn	Up	
	Line	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	78.000	0.19	0.19	0.71	0.13	0.13	10.0	10.0	5.7	0.77	2.02	1.07	12	0.32	994.00	994.25	995.00	995.03	997.00	997.00	ST-12
2	End	36.108	0.41	3.87	0.90	0.37	3.48	10.0	15.4	4.7	16.20	26.42	3.48	30	0.42	989.00	989.15	991.31	991.34	993.00	994.00	ST-1
3	2	106.217	0.30	2.13	0.90	0.27	1.92	10.0	14.9	4.7	9.09	14.72	2.89	24	0.42	989.15	989.60	991.54	991.71	994.00	994.60	ST-2
4	3	148.421	0.13	1.83	0.90	0.12	1.65	10.0	13.9	4.9	8.06	14.97	2.69	24	0.44	989.60	990.25	991.80	991.97	994.60	995.30	ST-3
5	4	108.000	0.27	1.70	0.90	0.24	1.53	10.0	13.2	5.0	7.68	14.60	2.88	24	0.42	990.25	990.70	992.05	992.13	995.30	995.30	ST-4
6	5	178.646	0.38	1.43	0.90	0.34	1.29	10.0	11.9	5.3	6.78	14.16	3.24	24	0.39	990.70	991.40	992.28	992.48	995.30	996.25	ST-5
7	6	107.700	0.54	0.80	0.90	0.49	0.72	10.0	11.3	5.4	3.88	4.82	4.37	15	0.56	992.15	992.75	993.00	993.60	996.25	996.00	ST-6
8	7	132.749	0.26	0.26	0.90	0.23	0.23	10.0	10.0	5.7	1.33	3.46	2.77	12	0.94	993.00	994.25	993.78	994.74	996.00	997.25	ST-7
9	6	74.607	0.25	0.25	0.90	0.23	0.23	10.0	10.0	5.7	1.28	2.19	3.93	10	1.00	992.57	993.31	993.02	993.81	996.25	998.00	RD-2
10	2	109.000	0.55	1.08	0.90	0.50	0.97	10.0	11.1	5.4	5.27	7.11	3.14	18	0.46	990.00	990.50	991.54	991.78	994.00	994.00	ST-8
11	10	150.022	0.53	0.53	0.90	0.48	0.48	10.0	10.0	5.7	2.71	5.27	3.18	15	0.67	990.75	991.75	991.95	992.41	994.00	995.00	ST-10
12	2	141.479	0.25	0.25	0.90	0.23	0.23	10.0	10.0	5.7	1.28	2.19	3.12	10	1.00	990.82	992.23	991.54	992.73	994.00	998.00	RD-1
13	End	96.539	1.04	1.04	0.90	0.94	0.94	10.0	10.0	5.7	5.32	7.56	3.01	18	0.52	989.00	989.50	991.31	991.56	992.00	995.00	ST-11
14	End	60.000	0.01	0.01	0.90	0.01	0.01	10.0	10.0	5.7	1.16	11.79	2.05	15	3.33	987.00	989.00	988.25	989.42	989.75	993.00	ST-9
Proje	ect File:	2020-1	92 Storr	n 01B.st	m	L		L	<b></b>	1	L		1	l	J	Numbe	of lines: 1	4	<b></b>	Run Da	te: 9/25/2	020
MOT	EC.into	noity = 4	79474	inlat tiras	+ 7.60)	A O 74.	Dotum -	oriod =V	· 05 ·			h = hav				<del></del>						

# STORM SEWER CALCULATIONS (100-YR)

Statio	ก	Len	Drng A	Area	Rnoff	Area x	C	Tc		Rain (I)	Total flow	Cap	Vel	Pipe		Invert El	ev	HGL Ele	v	Grnd / R	m Elev	Line ID
Line	То	1	Incr	Total	coeff	Incr	Total	inlet	Syst	(1)	now	Tuli		Size	Slope	Dn	Up	Dn	Up	Dn	Up	
	Line	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	78.000	0.19	0.19	0.71	0.13	0.13	10.0	10.0	6.7	0.91	2.02	1.26	12	0.32	994.00	994.25	995.00	995.04	997.00	997.00	ST-12
2	End	36.108	0.41	3.87	0.90	0.37	3.48	10.0	14.6	5.7	19.83	26.42	4.04	30	0.42	989.00	989.15	992.07	992.15	993.00	994.00	ST-1
3	2	106.217	0.30	2.13	0.90	0.27	1.92	10.0	14.1	5.8	11.10	14.72	3.53	24	0.42	989.15	989.60	992.41	992.66	994.00	994.60	ST-2
4	3	148.421	0.13	1.83	0.90	0.12	1.65	10.0	13.3	5.9	9.79	14.97	3.12	24	0.44	989.60	990.25	992.80	993.08	994.60	995.30	ST-3
5	4	108.000	0.27	1.70	0.90	0.24	1.53	10.0	12.7	6.1	9.29	14.60	2.96	24	0.42	990.25	990.70	993.18	993.36	995.30	995.30	ST-4
6	5	178.646	0.38	1.43	0.90	0.34	1.29	10.0	11.6	6.3	8.15	14.16	2.59	24	0.39	990.70	991.40	993.49	993.72	995.30	996.25	ST-5
7	6	107.700	0.54	0.80	0.90	0.49	0.72	10.0	11.1	6.4	4.64	4.82	3.78	15	0.56	992.15	992.75	993.83	994.38	996.25	996.00	ST-6
8	7	132.749	0.26	0.26	0.90	0.23	0.23	10.0	10.0	6.7	1.58	3.46	2.63	12	0.94	993.00	994.25	994.52	994.84	996.00	997.25	ST-7
9	6	74.607	0.25	0.25	0.90	0.23	0.23	10.0	10.0	6.7	1.52	2.19	2.78	10	1.00	992.57	993.31	993.83	994.14	996.25	998.00	RD-2
10	2	109.000	0.55	1.08	0.90	0.50	0.97	10.0	11.0	6.5	6.31	7.11	3.57	18	0.46	990.00	990.50	992.41	992.80	994.00	994.00	ST-8
11	10	150.022	0.53	0.53	0.90	0.48	0.48	10.0	10.0	6.7	3.22	5.27	2.62	15	0.67	990.75	991.75	993.00	993.37	994.00	995.00	ST-10
12	2	141.479	0.25	0.25	0.90	0.23	0.23	10.0	10.0	6.7	1.52	2.19	2.79	10	1.00	990.82	992.23	992.41	993.05	994.00	998.00	RD-1
13	End	96.539	1.04	1.04	0.90	0.94	0.94	10.0	10.0	6.7	6.31	7.56	3.57	18	0.52	989.00	989.50	992.07	992.42	992.00	995.00	ST-11
14	End	60.000	0.01	0.01	0.90	0.01	0.01	10.0	10.0	6.7	1.45	11.79	2.28	15	3.33	987.00	989.00	988.25	989.48	989.75	993.00	ST-9
		***************************************																				
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PERMANENT OUTLET STRUCTURE NON-CLOG FIGURE 2.6.3 OF OHIO RAINWATER AND LAND DEVELOPMENT MANUAL

# Weber Engineering Where Strong Relationships & Superior Service Guide Your Proj

2555 Hartville Rd., Suite B Rootstown, OH 44272 www.WeberEngineeringServices.com 330-329-2037 matt@webercivil.com



Reg. No.: 61709

CLIENT:

GEIS CONSTRUCTION

10020 AURORA-HUDSON RD. STREETSBORO, OHIO JEN DIASIO PHONE: (216) 218-3507

OWNER:

HEMINGWAY DEVELOPMENT

6555 CARNEGIE AVE., SUITE 301 CLEVELAND, OHIO 44103 JIM DOYLE PHONE: (216) 650-6419

Issue Date 07-13-2020 08-06-2020 09-25-2020 SPONSE ELOPMENT ILLS ROAD,

> SWP3 **DETAILS**

FLEE SITE BOST

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 bum chemicals or containers

•Don't mix chemicals together

2. 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.

3. 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.

4. 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.

**5. 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.

**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.

**8. 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 coated wire 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 1000 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 barbeques. 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.

10. 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.

11. 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.

12. 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.

13. A Permit To Install (PTn 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.





Reviewed by Nick Sugar 11/06/2020, 8:10:18 AM

#### OHIO EPA PERMIT NO. OHC000005

#### PART III G. SWP3 REQUIREMENTS

a. NEW OFFICE BUILDING.

TOTAL SITE AREA - 11.01 AC. - DISTURBED AREA = 6.00 AC.

PRE-CONSTRUCTION CURVE NUMBER - CN = 79;

POST-CONSTRUCTION CURVE NUMBER - CN = 90

IMPERVIOUS AREA = 3.02 AC. (ENTIRE SITE), PERCENT IMPERVIOUS = 38.3% e. SOIL TYPES:

CcB - CANEADEA SILT LOAM, 2 TO 6% SLOPES

GbC2 - GEEBURG SILT LOAM, 6 TO 12% SLOPES

Sb - SEBRING SILT LOAM, 0 TO 2% SLOPES

PRIOR LAND USE: VACANT LAND

CONSTRUCTION SEQUENCE - SEE IMPROVEMENT PLANS

UNNAMED TRIBUTARY TO BRANDYWINE CREEK NOT SUBDIVIDED (MEASURES IDENTIFIED ON PLANS)

NOT APPLICABLE

PERMIT REQUIREMENTS ATTACHED. (FIELD COPY)

**IDENTIFIED ON SHEET C106** 

m. IDENTIFIED ON SHEET C106

n. SITE MAP SHOWN ON PLANS

LIMITS OF CONSTRUCTION IDENTIFIED ON THE PLANS (LC).

SOIL TYPES IDENTIFIED ON THE PLANS

DRAINAGE WATER SHEDS IDENTIFIED ON THE PLANS.

NO SPRINGS. LAKES OR WATER WELLS WITHIN 200 FEET OF THE SITE.

EXISTING & PLANNED LOCATIONS OF BUILDINGS, ROADS, PARKING FACILITIES AND UTILITIES ARE IDENTIFIED ON THE PLANS.

EROSION AND SEDIMENT CONTROL PRACTICES ARE IDENTIFIED ON THE PLANS

(vii) SEDIMENT & STORM WATER MANAGEMENT DATA IS IDENTIFIED ON THE PLANS.

(viii) PERMANENT STORM WATER MANAGEMENT PRACTICES ARE IDENTIFIED ON THE PLANS.

(ix) CEMENT TRUCK WASHOUT, DUMPSTER & VEHICLE FUELING AREA ARE IDENTIFIED ON THE PLANS.

CONSTRUCTION ENTRANCE IS IDENTIFIED ON THE PLANS.

2. A. NOT APPLICABLE

B. TEMPORARY SEEDING AND PERMANENT SEEDING MEASURES ARE IDENTIFIED ON THE PLANS.

(I) TABLE 1 & TABLE 2 HAVE BEEN IDENTIFIED ON THE PLANS.

(II)NOT APPLICABLE.

NOT APPLICABLE

C. SHEET FLOW RUNOFF HAS BEEN CONTROLLED BY MEANS OF SILT FENCE AND DIRECTED TOWARDS UNDISTURBED SOILS. POINT DISCHARGES HAVE BEEN CONTAINED WITHIN STORM SEWERS.

D. SEDIMENT CONTROL HAS BEEN MANAGED BY MEANS OF SILT FENCE.

NOTED THROUGHOUT THE PLANS.

(II)SILT FENCE UTILIZED.

SILT FENCE IS IDENTIFIED ON THE PLANS.

INLET PROTECTION IS IDENTIFIED ON THE PLANS. (V) NOT APPLICABLE.

NOTED ON THE IMPROVEMENT PLANS.

E. POST-CONSTRUCTION MAINTENANCE AND INSPECTION IS IDENTIFIED ON THE PLANS.

LARGE CONSTRUCTION ACTIVITIES - NOT APPLICABLE

SMALL CONSTRUCTION ACTIVITIES - RATIONALE IDENTIFIED ON

F. SURFACE WATER PROTECTION - NOT APPLICABLE

G. OTHER CONTROLS

(I) CEMENT TRUCK WASHOUT AREA IS IDENTIFIED ON THE PLANS. (II)DUST CONTROL MEASURES AND VEHICLE TRACKING ARE IDENTIFIED 9.

ON THE PLANS. ADDITIONAL NOTES ARE IDENTIFIED ON THE PLANS.

(IV) NOTED ON THE PLANS.

NOTED ON THE PLANS.

H. NOTED THROUGHOUT THE PLANS.

I. INSPECTION FREQUENCY AND INSPECTION CHECKLIST IS NOTED ON THE PLANS.

NOTED ON THE PLANS.

NOTED ON THE PLANS.

STATEMENT NOTED.

3. APPROVED STATE OR LOCAL PLANS

STATEMENT NOTED.

4. EXCEPTIONS

STATEMENT NOTED.

## **CONSTRUCTION SEQUENCE**

(ALL ITEMS ARE TO BE THE RESPONSIBILITY OF THE GENERAL SITE CONTRACTOR)

#### SITE PREPARATION

PROVIDE SAFE AND SECURE PEDESTRIAN AND VEHICULAR TRAFFIC CIRCULATION THROUGHOUT THE ENTIRETY OF THE CONSTRUCTION SEQUENCE WITH WELL DEFINED CONSTRUCTION BOUNDARIES TO BE ACCESSED BY CONSTRUCTION PERSONNEL ONLY. ALL EROSION CONTROLS ARE TO BE THOROUGHLY INSPECTED BY THE CONTRACTOR UPON THE COMPLETION OF EACH WORK DAY AND MAINTAINED THROUGHOUT THE REQUIRED LIFE OF THE CONTROL, AS SPECIFIED BY THE APPROVED EROSION AND SEDIMENTATION CONTROL PLANS AND NARRATIVE. THE CONTRACTOR MUST REVIEW THE APPROVED EROSION AND SEDIMENTATION CONTROL PLANS AND NARRATIVE. THE CONTRACTOR MUST REVIEW THE APPROVED NPDES PERMIT AND SIGN THE PERMIT TO ACCEPT RESPONSIBILITIES AS THE CO-PERMITEE.

#### INITIAL PHASE (WITHIN 7 DAYS OF START OF GRUBBING)

1. INSTALL A TEMPORARY CONSTRUCTION ENTRANCE FOR ACCESS TO CONSTRUCTION AREAS OF SITE.

2. SETUP CONSTRUCTION TRAILER ON SITE AND ESTABLISH TEMPORARY POWER AND TELEPHONE SERVICE AS NECESSARY.

3. ALL TEMPORARY UTILITY SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

4. STAKEOUT LIMITS OF DISTURBANCE.

5. INSTALL TEMPORARY INLET PROTECTION ON ALL EXISTING CATCH BASINS WITHIN LIMITS OF CONSTRUCTION. REMOVE SILT PROTECTION FROM DESIGNATED INLETS ONLY WHEN INLET STRUCTURE IS TO BE REMOVED AS REQUIRED BY PROGRESSION OF CONSTRUCTION. REFER TO PLANS FOR IDENTIFICATION OF INLET STRUCTURES TO BE REMOVED.

INSTALL ALL FILTER FABRIC FENCE WHERE SHOWN ON PLANS.

7. BEGIN SITE CLEARING.

8. REMOVE TOPSOIL FROM AREAS OF BUILDING AND PAVEMENT.

9. BEGIN EARTHWORK OPERATIONS.

10. CONSTRUCT STORM WATER BASIN.

11. IN THE EVENT OF RAIN, ALLOW STANDING WATER TO SETTLE PRIOR TO PUMPING. UTILIZE THE PUMPING SYSTEMS TO PUMP POLLUTED WATER PER E.P.A. REQUIREMENTS. ALLOW ONLY CLEAN WATER TO BE DISCHARGED TO THE EXISTING DRAINAGE SYSTEM. REMOVE SILT FROM BASINS AS NECESSARY PRIOR TO CONTINUING EARTHWORK. MATERIAL SHOULD BE MECHANICALLY SPREAD AND DRIED PRIOR TO INCORPORATION INTO THE EARTHWORK PROCEDURES. ADEQUACY OF THE DRIED MATERIAL IS TO BE DETERMINED BY A GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE AND ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDES, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC., THAT COULD ADVERSELY IMPACT WATER QUALITY. MEASURES SHALL BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL. WHEREVER POSSIBLE, RECYCLING OF EXCESS MATERIALS IS PREFERRED, RATHER THAN DISPOSAL.

#### INTERIM PHASE GENERAL CONSTRUCTION

1. MAINTAIN TEMPORARY CONTROLS UNTIL REMOVAL IS WARRANTED DUE TO PROGRESSION OF WORK.

2. BEGIN EARTHMOVING OPERATIONS. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE COUNTY CONSERVATION DISTRICT OF LOCATION AND EROSION AND SEDIMENTATION CONTROL MEASURES IMPLEMENTED AT BORROW OR SPOIL SITE OF IMPORT/EXPORT MATERIAL. THE CONTRACTOR

IS TO COORDINATE WITH OWNER THE PLACEMENT OF SUCH MEASURES.

3. STORM SEWER, SANITARY SEWER, WATER LINE AND UTILITY LINE CONSTRUCTION MAY BEGIN IMMEDIATELY FOLLOWING ESTABLISHMENT OF GRADE AND WITH THE PERMISSION OF THE OWNER.

4. STABILIZE ALL UTILITY TRENCHES AT THE END OF EACH WORKDAY BY

MEANS OF GRAVEL BACKFILL TO SURFACE, REPAVING OR MULCHING.

5. REPLACE TOPSOIL, FINE GRADE AND SEED AS REQUIRED. 6. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEED AND MULCHING

OR CROWNVETCH SEEDING IMMEDIATELY UPON REACHING FINAL GRADE.

7. INSTALL PAVEMENT SUBBASE. 8. BEGIN BITUMINOUS PAVING, REMOVING TEMPORARY CONSTRUCTION

ENTRANCE ONLY WHEN NECESSARY. RESEED AND REDRESS ANY AREAS THAT MAY REQUIRE ATTENTION IMMEDIATELY. NOTE THAT LAWN AREAS WILL NOT BE DEEMED STABLE

UNTIL A UNIFORM 80% COVERAGE IS ACHIEVED. 10. ALL EROSION MEASURES SHALL REMAIN IN PLACE UNTIL THE SITE IS STABILIZED. ALL AREAS OF VEGETATIVE SURFACE STABILIZATION, WHETHER TEMPORARY OR PERMANENT, SHALL BE CONSIDERED TO BE IN PLACE AND FUNCTIONAL WHEN THE REQUIRED UNIFORM RATE OF

## FINAL PHASE POST-PAVING BASIN CONVERSION

COVERAGE (80%) IS OBTAINED.

1. IF, FOR ANY REASON, THE PROJECT IS SUSPENDED, THE CONTRACTOR SHALL INSURE THAT ALL INSTALLED EROSION MEASURES ARE FUNCTIONING AND PROPERLY MAINTAINED DURING THIS PERIOD, AND THAT ALL BARED SOILS ARE SEEDED AND MULCHED WITH TEMPORARY SEED MIXTURE.

2. THE FOLLOWING ITEMS MUST BE COMPLETED BY THE CONTRACTOR, IN ORDER, ONCE THE SITE HAS BEEN DEEMED STABLE:

A. REMOVE SEDIMENT CONTROL DEVICES AND ESTABLISH WATER QUALITY CONTROL ORIFICE.

COMPLETION OF PAVING. C. SITE CLEAN UP.

RESEED ANY AREAS THAT REQUIRE ADDITIONAL SEED

B. REMOVE TEMPORARY CONSTRUCTION ENTRANCE PRIOR TO

FILTER FENCES ARE TO BE CLEANED, REMOVED, BACKFILLED AND SEEDED WITH PERMANENT SEEDING.

VERIFY POSITIVE CONVEYANCE FLOW IN ALL DRAINAGE STRUCTURES.

## SPECIFICATIONS FOR TEMPORARY SEEDING

TEMPORAR	Y SEEDING SPECIF	ES SELE	ECTION			
SEEDING DATES	SPECIES	LB/100 FT^2	LB/ACRE			
MARCH 1 TO AUGUST 15	OATS TALL FESCUE ANNUAL RYEGRASS	3 1 1	128 (4 BUSHEL) 40 40			
	PERENNIAL RYEGRASS TALL FESCUE ANNUAL RYEGRASS	1 1 1	40 40 40			
	ANNUAL RYEGRASS PERENNIAL RYEGRASS CREEPING RED FESCUE KENTUCKY BLUEGRASS	1.25 3.25 0.4 0.4	55 142 17 17			
	OATS TALL FESCUE ANNUAL RYEGRASS	3 1 1	128 (3 BUSHELS) 40 40			
AUGUST 16TH TO NOVEMBER	RYE TALL FESCUE ANNUAL RYEGRASS	3 1 1	112 (2 BUSHEL) 40 40			
	WHEAT TALL FESCUE ANNUAL RYEGRASS	3 1 1	120 (BUSHEL) 40 40			
	PERENNIAL RYE TALL FESCUE ANNUAL RYEGRASS	1 1 1	40 40 40			
	ANNUAL RYEGRASS PERENNIAL RYEGRASS CREEPING RED FESCUE KENTUCKY BLUEGRASS	1.25 3.25 0.4 0.4	40 40 40			
NOVEMBER 1 TO FEB. 29	USE MULCH ONLY FOR DORMANT SEEDING					

NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED

STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED 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 14 DAYS OR MORE. THESE IDLE AREAS SHOULD BE SEEDED AS SOON AS POSSIBLE AFTER GRADING OR SHALL BE SEEDED WITHIN 7 DAYS. SEVERAL APPLICATIONS OF TEMPORARY SEEDING ARE NECESSARY ON TYPICAL CONSTRUCTION PROJECTS

THE SEEDBED SHALL BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. HOWEVER, TEMPORARY SEEDING SHALL NOT BE POSTPONED IF IDEAL SEEDBED

4. SOIL AMENDMENTS--APPLICATIONS OF TEMPORARY VEGETATION SHALL ESTABLISHED ADEQUATE STANDS OF VEGETATION WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. SOIL TESTS SHOULD BE TAKEN ON THE SITE TO PREDICT THE NEED FOR LIME AND FERTILIZER.

5. SEEDING METHOD--SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING 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

## MULCHING TEMPORARY SEEDING

APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES AND WITH ACHIEVE ADEQUATE STABILIZATION

MATERIALS: STRAW--IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN APPLIED AT 2 TONS/AC, OR 90 LB / 1 000 SO, FT. (TWO TO THREE BALES), THE MULCH, SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF 45 LB BALES OF STRAW IN EACH SECTION HYDROSEEDERS--IF WOOD CELLULOSE FIBER IS USED IT SHALL BE USED AT 2,000 LB. / AC. OR 46 LB. /1,000 SQ. FT. OTHER--OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OI WOOD CHIPS APPLIED AT 6 TONS / 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, GENERALLY BE LEFT LONGER THAN 6 IN. MULCH NETTINGS --NETTINGS 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 DLR (AGRI-TAC), DCA-70 PETROSET TERRA-TACK OR FOLIAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER. WOOD-CELLULOSE FIBRE--WOOD-CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB. /AC. THE WOOD-CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB. / 100 GAL

#### BMP INSPECTION CHECKLIST

BMP	FREQUENCY	NOTES
GENERAL INSPECTION	EVERY 6 MO.	
STORM WATER BASIN	MONTHLY	
VEGETATION	MONTHLY	FIRST 2 GROWING
		SEASONS THEN TWICE
		A YEAR
SILT FENCE	MONTHLY	FIRST GROWING SEASON

REGULAR INSPECTION AND MAINTENANCE WILL BE PROVIDED FOR ALL EROSION AND SEDIMENT CONTROL PRACTICES. PERMANENT RECORDS OF MAINTENANCE AND INSPECTIONS MUST BE KEPT THROUGHOUT THE CONSTRUCTION PERIOD. INSPECTIONS MUST BE MADE A MINIMUM OF ONCE EVERY 7 DAYS AND IMMEDIATELY AFTER STORM EVENTS GREATER THAN 0.5 INCHES OF RAIN IN A 24 HOUR PERIOD. PROVIDED WILL BE NAME OF INSPECTOR, MAJOR OBSERVATIONS, DATED OF INSPECTION AND CORRECTIVE MEASURES TAKEN. RECORDS SHALL BE SUBMITTED TO THE CITY OF HUDSON ENGINEERING DEPARTMENT FOR REVIEW BY MAY 1st OF EACH YEAR.

ALL CONTROL PRACTICES THAT REQUIRE REPAIR SHALL BE REPAIRED WITHIN THREE (3) DAYS OF THE INSPECTION.

## ADDITIONAL SWP3 CONSIDERATIONS

# NO OPEN BURNING

DUST CONTROL SHALL BE ACHIEVED BY USE OF WATERING TRUCKS. USE OF OIL IS STRICTLY PROHIBITED. INLET PROTECTION MUST BE IMPLEMENTED PRIOR TO DUST CONTROL MEASURES.

IN THE EVENT OF A PETROLEUM SPILL (>25 GALLONS) OR THE PRESENCE OF OIL SHEEN, THE CONTRACTOR SHALL CONTACT THE OHIO E.P.A. AT 800-282-9378, THE LOCAL FIRE DEPARTMENT.

SMALL SPILLS (<25 GALLONS) SHALL BE CLEANED UP USING AN ABSORBING AGENT, THE ABSORBING AGENT REMOVED AND DISPOSED OF ACCORDING TO FEDERAL REGULATIONS.

ALL TRENCH DEWATERING MEASURES SHALL BE DISCHARGED INTO SETTLING BASINS PRIOR TO DISCHARGE FROM SITE. BMP'S THAT REQUIRE REPAIR SHALL BE REPAIRED WITHIN 3 DAYS OF INSPECTION. SETTLING PONDS MUST BE REPAIRED WITHIN 10 DAYS OF INSPECTION.

STREETS ADJACENT TO SITE SHALL BE CLEANED AT THE END OF EACH WORK

### POST-CONSTRUCTION BMP RATIONALE

STORM WATER MANAGEMENT AND POST CONSTRUCTION WATER QUALITY BMP'S HAVE BEEN ADDRESSED BY MEANS OF AN ON-SITE STORM WATER MANAGEMENT/WATER QUALITY BASIN.

Ъ	MAINTENANCE F	OR PERMA	ANENT SE	EDINGS 1	FERTILIZATION AN	ID MOWING
D	MIXTURE	FORMULA	LBS./ACRE	LBS./1,000 SQ. FT	TIME	MOWING
	CREEPING RE FESCUE RYEGRASS KEENTCKY BLUEGRASS	10-10-10	500	12	FALL, YEARLY AS NEEDED	NOT CLOSER THAN 3"
	TALL FESCUE	10-10-10	500	12		NOT CLOSER
	TURF-TYPE FESCUE	10-10-10	500	12		THAN 4"
	CROWN VETCH FESCUE	0-20-20	400	10	SPRING, YEARLY FOLLOWING ESTABLISHMENT AND EVERY 4-7	DO NOT MOW
	FLAT PEA FESCUE	0-20-20	400	10	YEARS THEREAFTER	DO NOT MOW
	NOTE: FOLLOWING SOIL TEST RECO	MMENDATIONS IS P	REFERRED TO FERTI	LIZER RATES SH	OWN ABOVE.	

#### SPECIFICATIONS FOR PERMANENT SEEDING

SITE PREPARATION

1. A SUBSOILER, PLOW OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. (MAXIMIZING INFILTRATION WILL HELP CONTROL BOTH RUNGER ATE AND WATER QUALITY.) SUBSOILING SHOULD BE DONE WHEN THE SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL T CRACK OR FRACTURE. SUBSOILING SHALL NOT BE DONE ON SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR

2. THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.

3. TOPSOIL SHALL BE APPLIED WHERE NEEDED TO

FERTILIZER--FERTILIZER SHALL BE APPLIED AS

ESTABLISH VEGETATION, SEEDBED PREPARATION LIME--AGRICULTURAL GROUND LIMESTON SHALL BE APPLIED TO ACID SOIL AS COMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 LB./1,000 SQ. FT. OR 2 TONS/ACRE.

> RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 25 LB./1,000 SO. FT. OR 1000 LB./ACRE OF 0-10-10 OR 12-12-12 ANALYSES. THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND, THE SOIL SHALL BE WORKED ON

#### EROSION PREVENTION PRACTICES

SEEDING DATES AND SOIL CONDITIONS

ESTABLISHING VEGETATION

SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUG 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 TILLAGE FOR SEEDBED PREPARATION SHOULD BE DONE WHEN SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND, FOR WINTER SEEDING, SEE THE FOLLOWING SECTION ON

SEEDINGS SHOULD NOT BE MADE FROM OCTOBER THROUGH NOVEMBER 20. DURING THIS PERIOD, TH SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT BE ABLE TO SURVIVE THE WINTER

2. THE FOLLOWING METHODS MAY BE USED FOR FROM OCTOBER 1 THROUGH NOVEMBER 20 PREPARI

AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20, BROADCAST THE SELECTED SEED MIXTURE AT A 50% INCREASE IN THE SEEDING RATE. FROM NOVEMBER 20 THROUGH MARCH 15 WHEN SOIL CONDITIONS PERMIT PREPARE THE SEEDBED AND FERTILIZE, APPLY THE SELECTED SEED

MIXTURE, MULCH AND ANCHOR. INCREASE THE

SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING

THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME

APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER DRILL, CULTIPACKER SEEDER OR HYDRO-SEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED.

SEEDER IS USED, THE SEEDBED SHOULD BE

FOLLOW THE CONTOUR WHERE FEASIBLE.

FIRMED FOLLOWING SEEDING OPERATIONS WITH

OPING LAND, SEEDING OPERATIONS SHOULI

A CULTIPACKER, ROLLER OR LIGHT DRAG. ON

WHERE FEASIBLE, EXCEPT WHEN A CULTIPACKER TYPE

MULCH MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. DORMANT SEEDING SHALL BE MULCHED, 100% OF THE GROUND SURFACE SHALL BE COVERED WITH AN APPROVED MATERIA

> STRAW--IF STRAW IS USED IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/ACR OR 90 LB./1,000 SQ. FT. (TWO TO THREE BALES). THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALI THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF DIVIDE AREA INTO APPROXIMATELY 1,000-SQ.-FT HAND-SPREAD MULCH, SECTIONS AND SPREAD TWO 45-LB. BALES OF STRAW IN EACH SECTION.

HYDROSEEDERS--IF WOOD CELLULOSE FIBER IS USED. IT SHALL BE USED AT 2,000 LB./ACRE. OR 46 LB./1,000 SQ. FT. OTHER--OTHER ACCEPTABLE MULCHES INCLUDE ROLLED EROSION CONTROL MATTINGS OR BLANKETS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6

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 LEFT LONGER THAN 6 IN MULCH NETTINGS-NETTINGS 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 DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUIVALENT MAY BE USED AT RATES SPECIFIED BY THE MANUFACTURER.

#### EROSION PREVENTION PRACTICES

WOOD CELLULOSE FIBER--WOOD CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LBS./ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER WITH THE MIXTURE CONTAINING A MAXIMUN OF 50 LBS. CELLULOSE/100 GALLONS OF WATER IRRIGATION
I. PERMANENT SEEDING SHALL INCLUDE IRRIGATION TO

> DEQUATE MOISTURE FOR SEED GERMINATION AND IRRIGATION RATES SHALL BE MONITORED TO

FROM EXCESSIVE RUNOFF.

ESTABLISH VEGETATION DURING DRY WEATHER OR

PREVENT EROSION AND DAMAGE TO SEEDED AREAS

ON ADVERSE SITE CONDITIONS, WHICH REQUIRE

Weber/ Lugineering

Where Strong Relationships & Superior Service Guide Your Pro 2555 Hartville Rd., Suite B Rootstown, OH 44272 www.WeberEngineeringServices.com 330-329-2037 matt@webercivil.com



Reg. No.: 61709

CLIENT:

**GEIS** CONSTRUCTION

10020 AURORA-HUDSON RD. STREETSBORO, OHIO JEN DIASIO PHONE: (216) 218-3507

OWNER:

HEMINGWAY

PE	RMANE	NT SEEDIN	G						
	SEEDIN	G RATE							
SEED MIX	LBS./ACRE	LBS./1,000 SQ. FEET	NOTES						
CREEPING RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	20-40 10-20 20-40	1/2-1 1/4-1/2 1/2-1	FOR CLOSE MOWING & FOR WATERWAYS WITH<2.0 FT/SEC VELOCITY						
TALL FESCUE	40-50	$1-1\frac{1}{4}$							
TURF- TYPE (DWARF) FESCUE	90	2 1/4							
STEEP BANKS OR CUT SLOPES									
TALL FESCUE	40-50	1-1/4							
CROWN VETCH TALL FESCUE	10-20 20-30	1/4-1/2 1/2-3/4	DO NOT SEED LATER THAN AUGUST						
FLAT PEA TALL FESCUE	20-25 20-30	1/2-3/4 1/2-3/4	DO NOT SEED LATER THAN AUGUST						
ROA	D DITCHES A	ND SWALES							
TALL FESCUE	40-50	1-1 1/4							
TURF-TYPE (DWARF) FESCUE LENTUCKY BLUEGRASS	90 5	2 1/4 0.1							
	LA	WNS							
ENTUCKY BLUEGRASS PERENNIAL RYEGRASS	100-120	2 2							

CREEPING RED FESCUE NOTE: OTHER APPROVAL SEED SPECIES MAY BE SUBSTITUTED.

KENTUCKY BLUEGRASS | 100-120

WINTER

# TABLE 1: PERMANENT STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE	WITHIN SEVEN DAYS OF THE MOST RECENT
YEAR OR MORE	DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE	WITHIN TWO DAYS OF REACHING FINAL GRAI
WATER OF THE STATE AND AT FINAL GRADE	
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL
	GRADE WITHIN THAT AREAS

# TABLE 2: TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A	WITHIN TWO DAYS OF THE MOST RECENT
SURFACE WATER OF THE STATE AND NOT AT	DISTURBANCE IF THE AREA WILL REMAIN IDLE
FINAL GRADE	FOR MORE THAN 14 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, AND	WITHIN SEVEN DAYS OF THE MOST RECENT
DISTURBED AREAS THAT WILL BE DORMANT	DISTURBANCE WITHIN THE AREA
FOR MORE THAN 14 DAYS BUT LESS THAN ONE	
YEAR, AND NOT WITHIN 50 FEET OF A SURFACE	FOR RESIDENTIAL SUBDIVISIONS, DISTURBED
WATER OF THE STATE	AREAS MUST BE STABILIZED AT LEAST SEVEN
	DAYS PRIOR TO TRANSFER OF PERMIT
	COVERAGE FOR THE INDIVIDUAL LOT(S).
DISTURBED AREAS THAT WILL BE IDLE OVER	PRIOR TO THE ONSET OF WINTER WEATHER

WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. PERMANENT AND TEMPORARY STABILIZATION ARE DEFINED IN PART VII.

DEVELOPMENT 6555 CARNEGIE AVE., SUITE 301

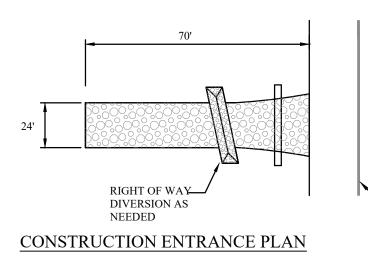
FOR SHADED AREAS

CLEVELAND, OHIO 44103 JIM DOYLE PHONE: (216) 650-6419

> Issue Date 07-13-2020 08-06-2020 08-24-2020 09-17-2020 09-25-2020

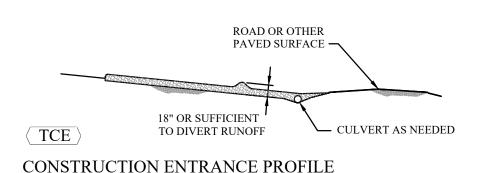
SWP3

. S



REFERENCE ONLY NOT TO SCALE

REFERENCE ONLY NOT TO SCALE



- 1. STONE SIZE ODOT #2 (1.5-2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
- 2. LENGTH- THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABALIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOTS.)
- 3. THICKNESS- THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
- 4. WIDTH- THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- 5. 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.

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE			
MINIMUM TENSILE STRENGTH 200 LBS.			
MINIIMUM PUNCTURE STRENGTH	80 PSI.		
MINIMUM TEAR STRENGTH	50 LBS.		
MINIMUM BURST STENGTH	320 PSI.		
MINIMUM ELONGATION	20%		
EQUIVALENT OPENIING SIZE	EOS<0.6MM.		
PERMITTIVITY	1X10^3 CM/SEC.		

UPON TO REMOVE MUD FROM VEHICLES AND 11. PREVENT OFF-SITE TRACKING, VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.

SWEEPING.

REMOVAL- THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

STONE SHALL BE APPLIED AS CONDITIONS DEMAND.

RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS,

CONSTRUCTION ENTRANCES SHALL NOT BE RELIED

MUD SPILLED, DROPPED, WASHED OR TRACKED

ONTO PUBLIC ROADS, OR ANY SURFACE WHERE

10. SHALL BE REMOVED IMMEDIATELY. REMOVAL

SHALL BE ACCOMPLISHED BY SCRAPING OR

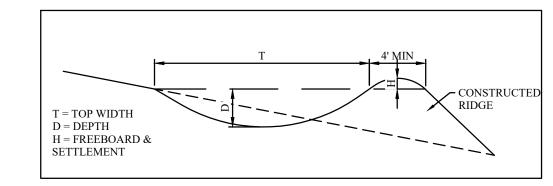
TCE > SPECIFICATIONS FOR CONSTRUCTION ENTRANCE

6. TIMING- THE CONSTRUCTION ENTRANCE SHALL BE					
INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.	REQUIREMENTS FOR GEOTEXTILES				
7. CULVERT- A PIPE OR CULVERT SHALL BE	PROPERTY	TEST METHOD	WOVEN- CLASS I	NONWOVEN-I	
CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING	TENSILE STRENGTH (POUNDS) 1/	ASTM C 4632 GRAB TEST	200 MINIMUM IN ANY PRINCIPAL DIRECTION	180 MINIMUM	
ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECT OUT ONTO PAVED SURFACES.	ELONGATION AT FAILURE (PERCENT) 1/	ASTM D 4632 GRAB TEST	<50	> 50	
. WATER DAR A WATER DAR SWALL DE	PUNCTURE (POUNDS) 1/	ASTM D 4833	90 MINIMUM	80 MINIMUM	
8. WATER BAR- A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE	ULTRAVIOLET LIGHT (% RESIDUAL TENSILE STRENGTH)	ASTM D 4355 150-HR EXPOSURE	70 MINIMUM	70 MINIMUM	
RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED 9. SURFACES.	APPARENT OPENING SIZE (AOS)	ASTM D 4751	AS SPECIFIED, BUT NO SMALLER THAN .212 (#70) 2/	AS SPECIFIED MAX. #40 2/	
MAINTENANCE- TOP DRESSING OF ADDITIONAL	PERCENT OPEN AREA (PERCENT)	CWO-02215-86	4.0 MINIMUM		
STONE SHALL BE APPLIED AS CONDITIONS DEMAND.	PERMITIVITY SEC-1	ASTM D 4491	0.10 MINIMUM	0.70 MINIMUM	

MINIMUM AVERAGE ROLL VALUE (WEAKEST PRINCIPAL DIRECTION).

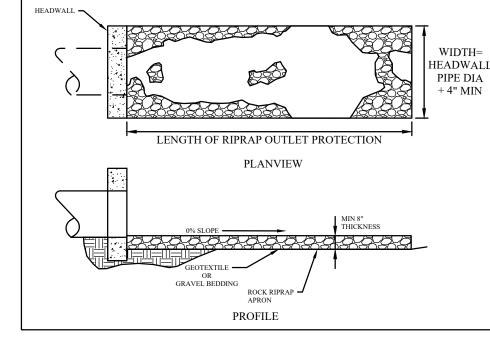
U.S. STANDARD SIEVE SIZE NOTE: CWO IS A USACE REFERENCE

RIPRAP SIZE CHART				
TYPE OF ROCK OR	"N" VALUE	SIZE OF ROCK		
RIPRAP (ODOT)		50%	85%	
TYPE D	.036	>6 IN.	3-12 IN.	
TYPE C	.04	>12 IN.	6-18 IN.	
TYPE B	.043	>18 IN.	12-24 IN.	
TYPE A	.045	>24 IN.	18-30 IN.	



- ALL TREES, BRUSH, STUMPS, AND OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE WORK SITE.
- THE DIVERSION SHALL BE EXCAVATED AND SHAPED TO THE PROPER GRADE AND CROSS SECTION.
- FILL MATERIAL USED IN THE CONSTRUCTION OF THE CHANNEL SHALL BE WELL COMPACTED IN UNIFORM LAYERS NOT EXCEEDING 9 INCHES USING THE WHEEL TREADS OR TRACKS OF THE CONSTRUCTION EQUIPMENT TO PREVENT UNEQUAL SETTLEMENT.
- EXCESS EARTH SHALL BE GRADED OR DISPOSED OF SO THAT IT WILL NOT RESTRICT FLOW TO THE CHANNEL OR INTERFERE WITH ITS FUNCTIONING.
- 5. FERTILIZING, SEEDING, AND MULCHING SHALL CONFORM TO THE RECOMMENDATION IN THE APPLICABLE VEGETATIVE SPECIFICATIONS.
- 6. CONSTRUCTION SHALL BE SEQUENCED SO THAT THE NEWLY CONSTRUCTED CHANNEL IS STABILIZED 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.
- . GULLIES THAT MAY FORM IN THE CHANNEL OR OTHER EROSION DAMAGE THAT OCCURS BEFORE THE GRASS LINING BECOMES ESTABLISHED SHALL BE REPAIRED WITHOUT DELAY.

SPECIFICATIONS FOR TEMPORARY DIVERSION REFERENCE ONLY NOT TO SCALE



SUBGRADE FOR THE FILTER OR BEDDING AND RIPRAP SHALL BE PREPARED TO THE 67'S OR 57'S UNLESS SHOWN REQUIRED LINES AND GRADES AS SHOWN ON THE PLAN. THE SUBGRADE SHALL BE CLEARED OF ALL TREES,

RIPRAP SHALL CONFORM TO THE GRADING LIMITS AS SHOWN ON THE

OTHER MATERIAL.

3. GEOTEXTILE SHALL BE SECURELY ANCHORED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.

STUMPS, ROOTS, SOD, LOOSE ROCK, OR

4. GEOTEXTILE SHALL BE LAID WITH THE LONG DIMENSION PARALLEL TO THE DIRECTION OF FLOW AND SHALL BE LAID LOOSELY BUT WITHOUT WRINKLES AND CREASES. WHERE JOINTS ARE NECESSARY, STRIPS SHALL BE PLACED

TO PROVIDE A 12-IN. MINIMUM OVERLAP, WITH THE UPSTREAM STRIP OVERLAPPING THE DOWNSTREAM STRIP.

GRAVEL BEDDING SHALL BE ODOT NO. DIFFERENTLY ON THE DRAWINGS.

RIPRAP MAY BE PLACED BY EQUIPMENT BUT SHALL BE PLACED IN A MANNER TO PREVENT SLIPPAGE OR DAMAGE TO THE GEOTEXTILE.

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CLIENT:

**GEIS** 

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Issue Date

07-13-2020

08-06-2020

09-17-2020

09-25-2020

CONSTRUCTION

2555 Hartville Rd., Suite B

Rootstown, OH 44272

matt@webercivil.com

330-329-2037

RIPRAP SHALL BE PLACED BY A METHOD THAT DOES NOT CAUSE SEGREGATION OF SIZES. EXTENSIVE PUSHING WITH A DOZER CAUSES SEGREGATION AND SHALL BE AVOIDED BY DELIVERING RIPRAP NEAR ITS FINAL LOCATION WITHIN THE CHANNEL

8. CONSTRUCTION SHALL BE SEQUENCED SO THAT OUTLET PROTECTION IS PLACED AND FUNCTIONAL WHEN THE STORM DRAIN, CULVERT, OR OPEN CHANNEL ABOVE IT BECOMES OPERATIONAL.

9. ALL DISTURBED AREAS WILL BE VEGETATED AS SOON AS PRACTICAL.

SPECIFICATIONS FOR ROCK OUTLET PROTECTION REFERENCE ONLY NOT TO SCALE

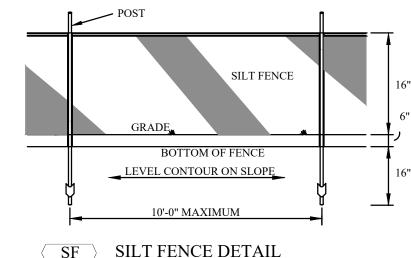


ROAD OR OTHER

PAVED SURFACE



Reviewed by Nick Sugar 11/06/2020, 8:10:23 AM



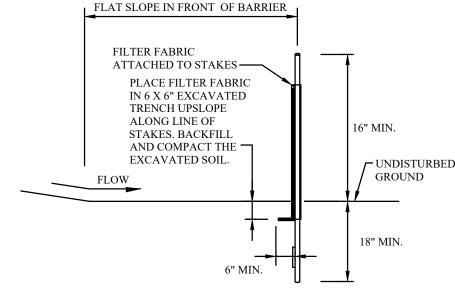
SF SILT FENCE DETAIL



JOINING SECTIONS OF SILT FENCE DETAIL

PROP. SILT FENCE

TYPICAL SILT FENCE



SILT FENCE SECTION

## 2 x 4 WOOD FRAME WITH OVERLAP JOINTS -2 x 4 WOOD POSTS — AT 4 CORNERS WIRE MESH STRETCHED TIGHTLY — ALL AROUND FRAME AND FASTENED SECURELY TO FRAME NSTALLATION AT ALL INLETS SHALL REMAIN IN PLACE UNTIL PAVEMENT : ESTABLISHED. 2. ONCE PAVEMENT HAS BEEN INSTALLED, THE INLETS WITHIN THE PAVING LIMITS MUST BE FITTED WITH THE "SILTSACK" SEDIMENT CONTROL DEVICE AS MANUFACTURED BY ACF ENVIROMENTAL CONTROL INC., OR APPROVED FOLIAL 3. SILT SACK MUST REMAIN IN PLACE UNTIL THE SITE HAS BEEN SEEDED & STABILIZED. GEOTEXTILE STRETCHED TIGHTLY OVER MESH -AND FASTENED SECURELY. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF INLET

TO THE SAME POST. 1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM INLET BECOMES

> THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 18 INCHES.

3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2-BY-4-IN. CONSTRUCTION-GRADE LUMBER. THE 2-BY-4-IN. POSTS SHALL BE DRIVEN 1 FT. INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2-BY-4-IN. FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.

4. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.

GEOTEXTILE MATERIAL SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20-40- SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ON SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE

BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6-IN. LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.

A COMPACTED EARTH DIKE OR A CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION AND IF RUNOFF BYPASSING THE INLET WILL NOT FLOW TO A SETTLING POND. THE TOP OF EARTH DIKES SHALL BE AT LEAST 6 INCHES HIGHER THAN THE TOP OF THE FRAME.

### MAINTENANCE

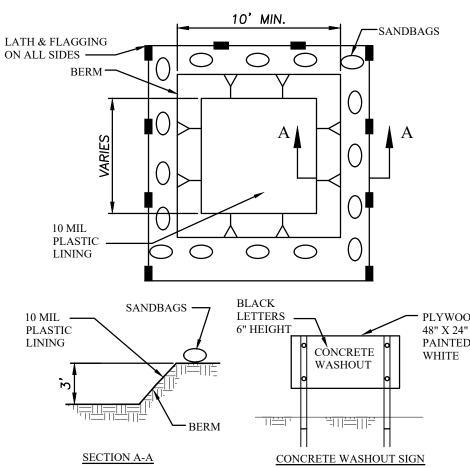
SO THE ENDS OF CLOTH ARE NOT FASTENED

EFFECTIVE STORM DRAIN INLET PROTECTION COLLECTS SEDIMENT AND THEREFORE MUST BE CLEANED REGULARLY TO PREVENT CLOGGING AND SUBSEQUENT FLOODING CONDITIONS, PIPING, OR OVERTOPPING OF THE CONTROL STRUCTURES. SEDIMENT BARRIERS THAT SAG, FALL OVER, OR ARE NOT PROPERLY SECURED, MUST BE PROMPTLY REPAIRED OR REPLACED.

INLET PROTECTION SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT. AREAS WHERE THERE IS ACTIVE TRAFFIC SHALL BE INSPECTED DAILY, REPAIRS SHALL BE MADE AS NEEDED TO ASSURE THE PRACTICE IS PERFORMING AS INTENDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION IS ONE-HALF THE HEIGHT OF THE TRAP. SEDIMENT SHALL NOT BE WASHED INTO THE INLET. SEDIMENT SHALL BE REMOVED AND PLACED IN A LOCATION WHERE IT IS STABLE AND NOT SUBJECT TO EROSION.

ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, ALL FILTER MATERIAL AND COLLECTED SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED.

> SPECIFICATIONS FOR GEOTEXTILE INLET PROTECTION REFERENCE ONLY NOT TO SCALE



TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE LOCATED A MINIMUM OF 50 FT FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES, AND WATERCOURSES. FACILITY SHALL BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OR ACCESS AREAS TO PREVENT DISTURBANCE OR TRACKING.

TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED AS SHOWN ON THE DETAIL WITH A MINIMUM LENGTH AND MINIMUM WIDTH OF 10 LATH AND FLAGGING SHALL BE COMMERCIAL TYPE PLASTIC LINING MATERIAL SHALL BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHALL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT

COMPROMISE THE IMPERMEABILITY OF THE MATERIAL A SIGN SHALL BE INSTALLED ADJACENT TO WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL HAVE A TEMPORARY PIT OR BERMED AREAS OF SUFFICIENT VOLUME TO COMPLETELY CONTAIN ALL

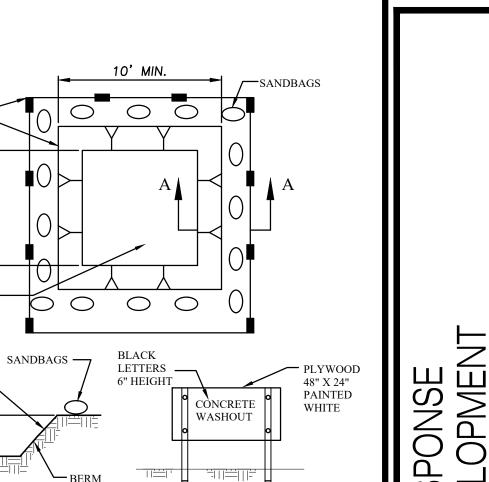
LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT PROCEDURES. WASHOUT OF CONCRETE TRUCKS SHALL BE PERFORMED IN DESIGNATED AREAS ONLY CONCRETE FROM MIXER TRUCK CHUTES SHOULD BE WASHED INTO

CONCRETE WASHOUT. CONCRETE WASHOUT FROM CONCRETE PUMPER BINS CAN BE WASHED INTO CONCRETE PUMPER TRUCKS AND DISCHARGED INTO DESIGNATED WASHOUT

AREA OR PROPERLY DISPOSED OF OFFSITE 10. CONCRETE WASTES SHALL BE ALLOWED TO HARDEN THEN BROKEN UP, REMOVED, AND PROPERLY DISPOSED OF IN ACCORDANCE WITH LOCAL

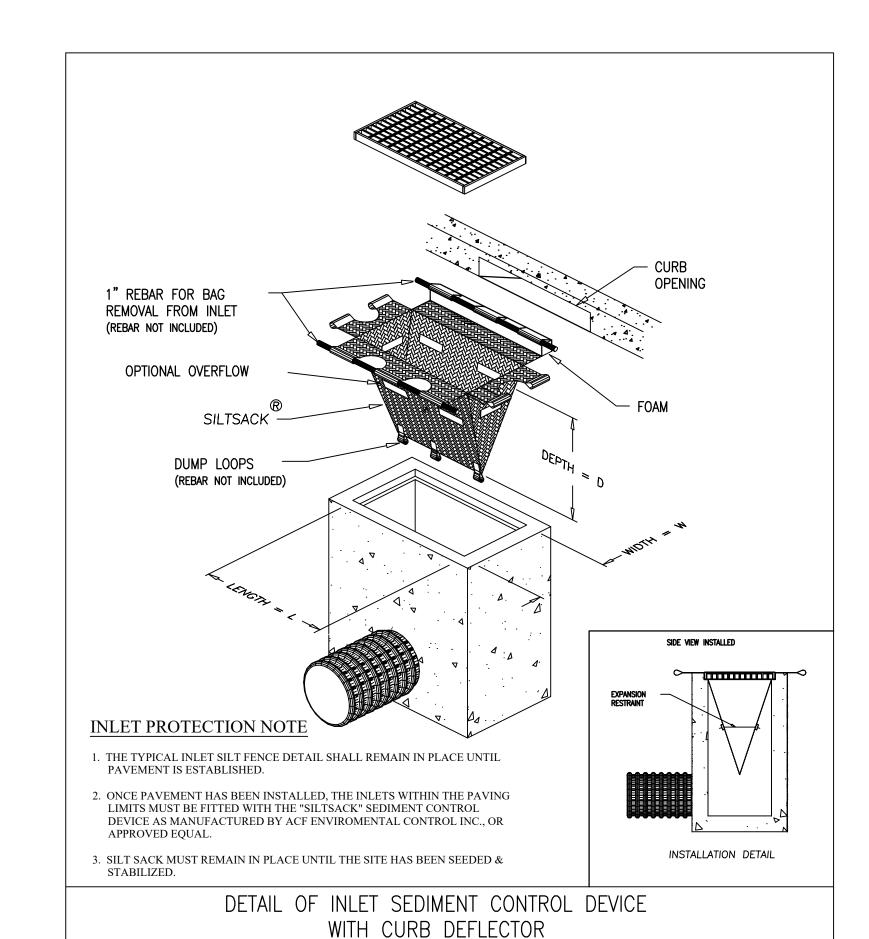
REGULATION ON A REGULAR BASIS. WHEN TEMPORARY WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHALL BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT THE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

TEMP. CONCRETE WASHOUT FACILITY



SWP3

. S



(IPSS) SILTSACK DETAIL

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.

ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALI SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.

3. TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS. EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER

4. WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.

5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FT. (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE IF VEGETÁTION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.

6. THE HEIGHT OF THE SILT FENCE SHALL BE A MIN. OF 16 IN. ABOVE THE ORIGINAL GROUND SURFACE.

THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MIN. OF 6 IN. DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABL DEVICE WHICH WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.

THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWN SLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8 IN. OF CLOTH ARE BELOW THE GROUND SURFACE. EXCES MATERIAL SHALL LAY ON THE BOTTOM OF THE 6 IN. DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.

9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-IN. OVERLAP PRIOR TO DRIVING INTO THE

0. MAINTENANCE--SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS. OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS FENCE SHALL BÉ CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.

SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELYONE-HALF OF THE HEIGHT

SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS, IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

CRITERIA FOR SILT FENCE MATERIALS MINIMUM OF 32 IN. LONG. WOOD POSTS WILL BE 2-BY-2 IN. HARDWOOD OF SOUND

QUALITY. THE MAXIMUM SPACING BETWEEN

2. SILT FENCE FABRIC (SEE CHART BELOW):

POSTS SHALL BE 10 FT.

LBS			
MINIMUM TENSILE STRENGTH         120 LBS. (535 N)         ASTM D 4362           MAXIMUM ELONGATION AT 60 LBS         50%         ASTM D 4632           MINIMUM PUNCTURE STRENGTH         50 LBS (220 N)         ASTM D 4833           MINIMUM TEAR STRENGTH         40 LBS (180 N)         ASTM D 4533           APPARENT OPENING SIZE         <.84 MM	MINIMUM CRITERIA	FOR SILT FENCE FAB	RIC (ODOT, 2002)
MAXIMUM ELONGATION AT 60 LBS         50%         ASTM D 4632           MINIMUM PUNCTURE STRENGTH         50 LBS (220 N)         ASTM D 4833           MINIMUM TEAR STRENGTH         40 LBS (180 N)         ASTM D 4533           APPARENT OPENING SIZE         <.84 MM	FABRIC PROPERTIES	VALUES	TEST METHOD
LBS  MINIMUM PUNCTURE STRENGTH 50 LBS (220 N) ASTM D 4833  MINIMUM TEAR STRENGTH 40 LBS (180 N) ASTM D 4533  APPARENT OPENING SIZE <.84 MM ASTM D 4751  MINIMUM PERMITTIVITY 1X10^2 SEC^-1 ASTM D 4491  UV EXPOSURE STRNEGTH 70% ASTM D 4355	MINIMUM TENSILE STRENGTH	120 LBS. (535 N)	ASTM D 4362
MINIMUM TEAR STRENGTH 40 LBS (180 N) ASTM D 4533  APPARENT OPENING SIZE <.84 MM ASTM D 4751  MINIMUM PERMITTIVITY 1X10^2 SEC^-1 ASTM D 4491  UV EXPOSURE STRNEGTH 70% ASTM D 4355	MAXIMUM ELONGATION AT 60 LBS	50%	ASTM D 4632
APPARENT OPENING SIZE	MINIMUM PUNCTURE STRENGTH	50 LBS (220 N)	ASTM D 4833
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UV EXPOSURE STRNEGTH 70% ASTM D 4355	APPARENT OPENING SIZE	<.84 MM	ASTM D 4751
	MINIMUM PERMITTIVITY	1X10^2 SEC^-1	ASTM D 4491
		70%	ASTM D 4355

SF SPECIFICATIONS FOR SILT FENCE



**✓** Approved

Reviewed by Nick Sugar 11/06/2020, 8:10:30 AM

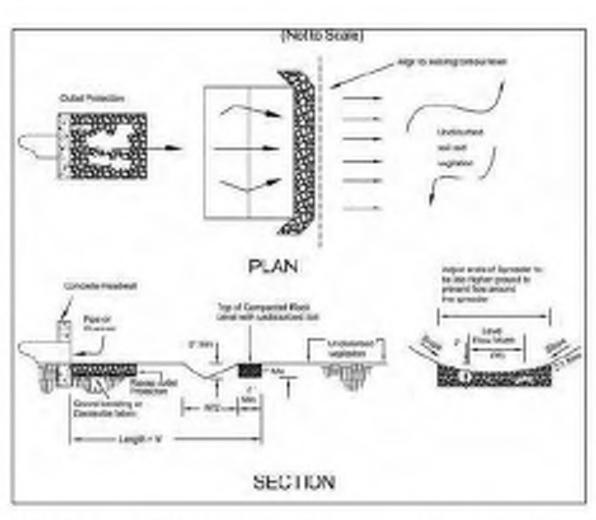
# SPECIFICATIONS FOR DUST CONTROL

ADHESIVES FOR DUST CONTROL				
ADHESIVE	WATER DILUTION (ADHESIVE WATER)	NOZZLE TYPE	APPLICATION RATE GAL./AC.	
LATEX EMULSION	12.5:1	FINE	235	
TESIN IN WATER ACRYLIC EMULSION (NO-TRAFFIC)	4:1	FINE	300	
ACRYLIC EMULSION (NO-TRAFFIC)	7:1	COARSE	450	
ACRYLIC EMULSION (TRAFFIC)	3.5:1	COARSE	350	

- 1. VEGETATIVE COVER AND/MULCH- APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 21 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.
- 2. WATERING- SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEED, 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. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS.
- 3. SPRAY-ON ADHESIVES-APPLY ADHESIVE ACCORDING TO THE
- FOLLOWING TABLE OR MANUFACTURERS' INSTRUCTIONS 4. STONE - GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL GRADE. CRUSHED STONE OR COARSE GRAVEL CAN BE USED AS A PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS.
- 5. BARRIERS- EXISTING WINDBREAK VEGETATION SHALL BE MARKED AND PRESERVED. SNOW FENCING OR OTHER SUITABLE BARRIER MAY BE PLACED PERPENDICULAR TO PREVAILING AIR CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHT TO CONTROL AIR **CURRENTS AND BLOWING SOIL**
- 6. 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 SUPPLIERS' SPECIFIED RATES.
- 7. OPERATION AND MAINTENANCE WHEN TEMPORARY DUST CONTROL MEASURES ARE USED; REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROLS.

STREET CLEANING- PAVED ARES THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEED, UTILIZING A STREET SWEEPER OR BUCKET-TYPE ENDLOADER OR SCRAPER.

# Specifications Rigid Lip Level Spreader



- Construct level aproader on a level grade to amoure uniform spreading of storre navell.
- 2. Level agreeders must be constructed on undisturbed soil, 3. The level spreader must outlet to ensoon resistant areas
- with established existing vegetation.
- 4. Rick shall be 0007 Type 0 where 50% of the material by weight is larger than 6 inches, and 50% of the material by weight is larger than 3 inches but less than 12 inches.

MULCH AND OTHER APPROPRIATE

GRADING IF THE AREA IS TO REMAIN

VEGETATIVE PRACTICES SHALL BE APPLIED

DORMANT (UNDISTURBED) FOR MORE THAN 21

TO DISTURBED AREAS WITHIN 7 DAYS OF

DAYS OR ON AREAS AND PORTIONS OF THE

SITE WHICH CAN BE BROUGHT TO FINAL

MULCH SHALL CONSIST OF ONE OF THE

• STRAW - SHALL BE UNROTTED SMALL GRAIN

STRAW APPLIED AT THE RATE OF 2 TONS/AC.

THE STRAW MULCH SHALL BE SPREAD

DISTRIBUTION OF HAND-SPREAD MULCH,

• HYDROSEEDERS - WOOD CELLULOSE FIBER

SHOULD BE USED AT 2,000 LB./AC. OR 46

• OTHER - ACCEPTABLE MULCHES INCLUDE

WOOD MULCH/CHIPS APPLIED AT 10-20

MULCH MATTINGS AND ROLLED EROSION

CONTROL PRODUCTS APPLIED ACCORDING TO

MANUFACTURER'S RECOMMENDATIONS OR

DIVIDE AREA INTO APPROXIMATELY

BALES OF STRAW IN EACH SECTION.

OR 90 LB./1,000 SQ. FT. (TWO TO THREE BALES).

UNIFORMLY BY HAND OR MECHANICALLY SO

THE SOIL SURFACE IS COVERED. FOR UNIFORM

1,000-SQ.-FT. SECTIONS AND PLACE TWO 45-LB.

FOLLOWING:

LB./1,000 SQ. FT.

TONS/AC.

SPECIFICATIONS FOR MULCHING

3. MULCH ANCHORING - MULCH SHALL BE

ARE ACCEPTABLE METHODS FOR

• MECHANICAL - USE A DISK, CRIMPER, OR

SOIL. STRAW MECHANICALLY ANCHORED

GENERALLY LONGER THAN 6 INCHES.

FOLLOWING ALL PLACEMENT AND

SLOPES TO HOLD MULCH IN PLACE.

OR EQUAL MAY BE USED AT RATES

OF THE STATE.

CELLULOSE FIBER.

SHALL NOT BE FINELY CHOPPED BUT BE LEFT

• MULCH NETTINGS - USE ACCORDING TO THE

ANCHORING REQUIREMENTS. USE IN AREAS

MANUFACTURER'S RECOMMENDATIONS,

OF WATER CONCENTRATION AND STEEP

• SYNTHETIC BINDERS - FOR STRAW MULCH,

SYNTHETIC BINDERS SUCH AS ACRYLIC DLR

(AGRI-TAC), DCA-70, PETROSET, TERRA TACK,

RECOMMENDED BY THE MANUFACTURER.

ALL APPLICATIONS OF SYNTHETIC BINDERS

WHERE THERE IS NO CONTACT WITH WATER

• WOOD CELLULOSE FIBER - WOOD CELLULOSE

FIBER MAY BE USED FOR ANCHORING STRAW.

THE FIBER BINDER SHALL BE APPLIED AT A

NET DRY WEIGHT OF 750 LBS./AC. THE WOOD

WATER AND THE MIXTURE SHALL CONTAIN A

CELLULOSE FIBER SHALL BE MIXED WITH

MAXIMUM OF 50 LB./100 GAL. OF WOOD

MUST BE CONDUCTED IN SUCH A MANNER

ANCHORING MULCH:

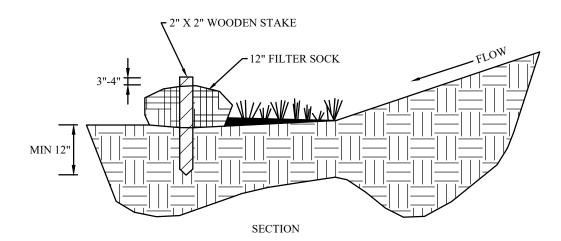
ANCHORED IMMEDIATELY TO MINIMIZE

LOSS BY WIND OR RUNOFF. THE FOLLOWING

SIMILAR TYPE TOOL SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE

- 5. Fock in level spreader shall be compacted with at least hen passes of body machinery to provent further setting. Spread gravel or soll over top of the placed riprap surface to fill the voids and interbook the riprop logether.
- 6. Fertilizing, seeding, and making shall conform to the recommendations in the applicable regetative specification.





- 1. 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 PARTICLES RANGING FROM 3" TO 2"
- 2. FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE \( \frac{3}{8} \)" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.

- 3. 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.
- 4. FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.

5. FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATE FLOW SITUATIONS OR IN RUNOFF CHANNELS.

- 6. ROUTINELY INSPECT FILER SOCKS AFTER EACH SIGNIFICANT RAIN. MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES
- 7. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
- 8. WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
- 9. REMOVAL-FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH A WAY AS TO FACILITATE AN NO OBSTRUCT SEEDINGS.

COMPOST FILTER SOCK DETAIL

# SPECIFICATIONS FOR SODDING

#### MATERIALS 1. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 48 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE INSPECTED AND APPROVED PRIOR TO INSTALLATION.

- 2. THE SOD SHALL BE KEPT MOIST AN COVERED DURING HAULING AND PREPARATION FOR PLACEMENT.
- 3. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 0.75 INCHES, PLUS OR MINUS 0.25 INCHES, AT THE TIME OF CUTTING. MEASUREMENTS FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND
- SITE PREPARATION 1. A SUBSOILER, PLOW OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. MAXIMIZING INFILTRATION WILL HELP CONTROL BOTH RUNOFF RATE AND WATER OUALITY. SUBSOILING SHALL NOT BE CONDUCTED ON SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED
- ONLY TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION. 2. THE AREA SHALL BE GRADED AND TOPSOIL SPREAD WHERE NEEDED.
- 3. SOIL AMENDMENTS

LIME- AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACIDIC SOILS AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 LB./1,000 SQ. FT OR 2 TONS/AC.

FERTILIZER-FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A 2 SOIL TEST FERTILIZER SHALL BE APPLIED AT A RATE OF 12 LB./1,000 SQ. FT OR 500 LB./AC. OF 10-10-10 OR 12-12-12

THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW, OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES.

4. BEFORE LAYING SOD, THE SURFACE SHALL BE UNIFORMLY GRADED AND CLEARED OF ALL DEBRIS, STONES AND CLODS LARGER THAN 3-IN.

## SOD INSTALLATION

- 1. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURES, THE SOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY BEFORE LAYING THE SOD.
- 2. SOD SHALL NOT BE PLACED ON FROZEN SOIL.
- 3. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED IN A BRICK-LIKE PATTERN. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS THAT WOULD DRY THE ROOTS.
- 4. ON SLOPING AREAS WHERE EROSION MAY BE A PROBLEM, SOD SHALL BE LAID WITH THE LONG EDGE PARALLEL TO THE CONTOUR AND STAGGERED JOINTS. THE SOD SHALL BE SECURED WITH PEGS OR
- 5. AS SODDING IS COMPLETED IN ANY ONE SECTION, THE ENTIRE AREA SHALL BE ROLLED OR TAMPED TO ENSURE SOLID CONTACT OF ROOTS WITH THE SOIL SURFACE. SOD SHALL BE WATERED IMMEDIATELY AFTER ROLLING OR TAMPING UNTIL THE SOD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN 8

#### MAINTENANCE 1. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK WITH SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4-6 INCHES.

2. AFTER THE FIRST WEEK, SOD SHALL BE WATERED AS NECESSARY TO

MAINTAIN ADEQUATE MOISTURE AND ENSURE ESTABLISHMENT.

3. THE FIRST MOWING SHALL NOT BE ATTEMPTED UNTIL SOD IS FIRMLY

Weber Lugineering Where Strong Relationships & Superior Service Guide Your Pr

www.WeberEngineeringServices.com

2555 Hartville Rd., Suite B

Rootstown, OH 44272

matt@webercivil.com

330-329-2037



Reg. No.: 61709

CLIENT:

**GEIS** CONSTRUCTION

10020 AURORA-HUDSON RD. STREETSBORO, OHIO JEN DIASIO PHONE: (216) 218-3507

OWNER:

HEMINGWAY DEVELOPMENT

6555 CARNEGIE AVE.,

SUITE 301 CLEVELAND, OHIO 44103 JIM DOYLE

PHONE: (216) 650-6419

Issue Date

07-13-2020 08-06-2020 08-24-2020 09-17-2020 09-25-2020 ONSE PMEI S ROA LOF LOF LLS

SWP3

F S m

Project No. 2020-192



GP SP Architects, L.L.C. 10020 Aurora-Hudson Rd Streetsboro, Ohio 44241 PH: (330) 528-3500 FX: (330) 528-0008

www.geisco.net

Checked By Project Number ##-##-###

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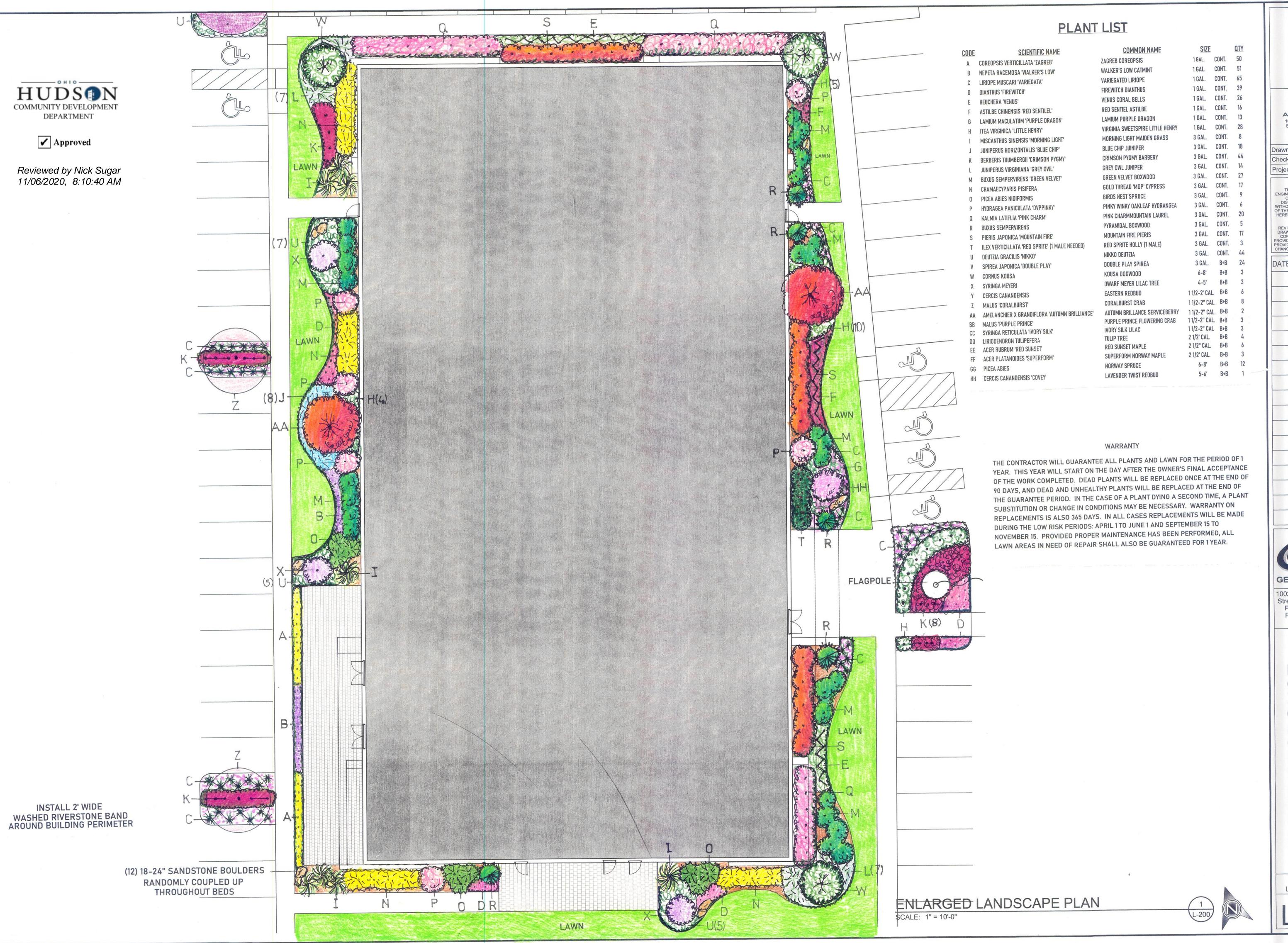
DATES AND REVISIONS

30 July 2020 PROGRESS PRINT

10020 Aurora-Hudson Rd Streetsboro, Ohio 44241 PH: (330) 528-3500 FX: (330) 528-0008 www.geisco.net

695 BOSTON I HUDSON, ( FLEET

OVERALL LANDSCAPE PLAN



Architects, L.L.C.

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Streetsboro, Ohio 44241
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DATES AND REVISIONS

30 July 2020 PROGRESS PRINT



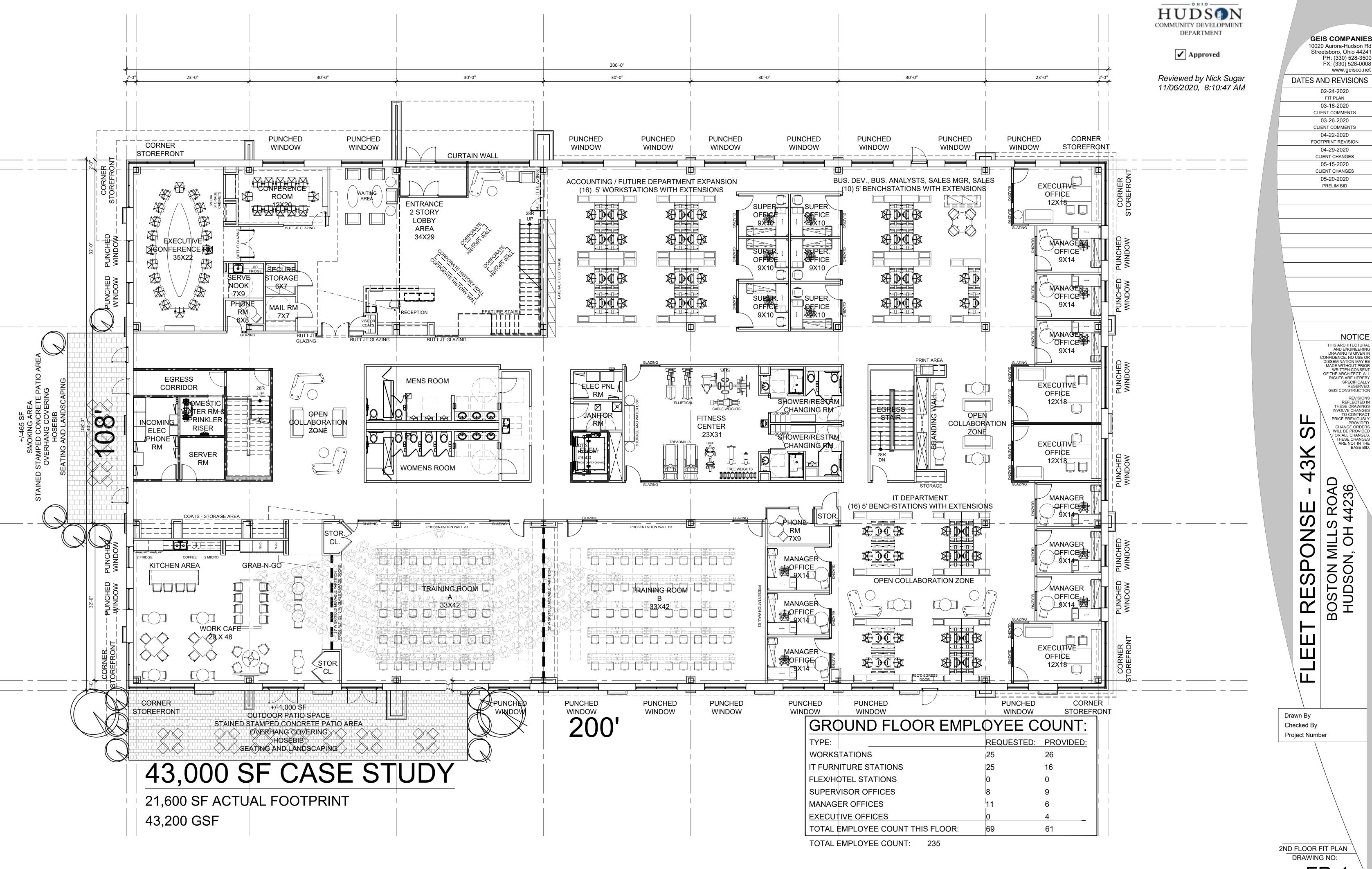
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10020 Aurora-Hudson Rd Streetsboro, Ohio 44241 PH: (330) 528-3500 FX: (330) 528-0008 www.geisco.net

> FLEET RESPONSE 695 BOSTON MILLS ROAD HUDSON, OH 44236

ENLARGED LANDSCAPE PLAN

L-200

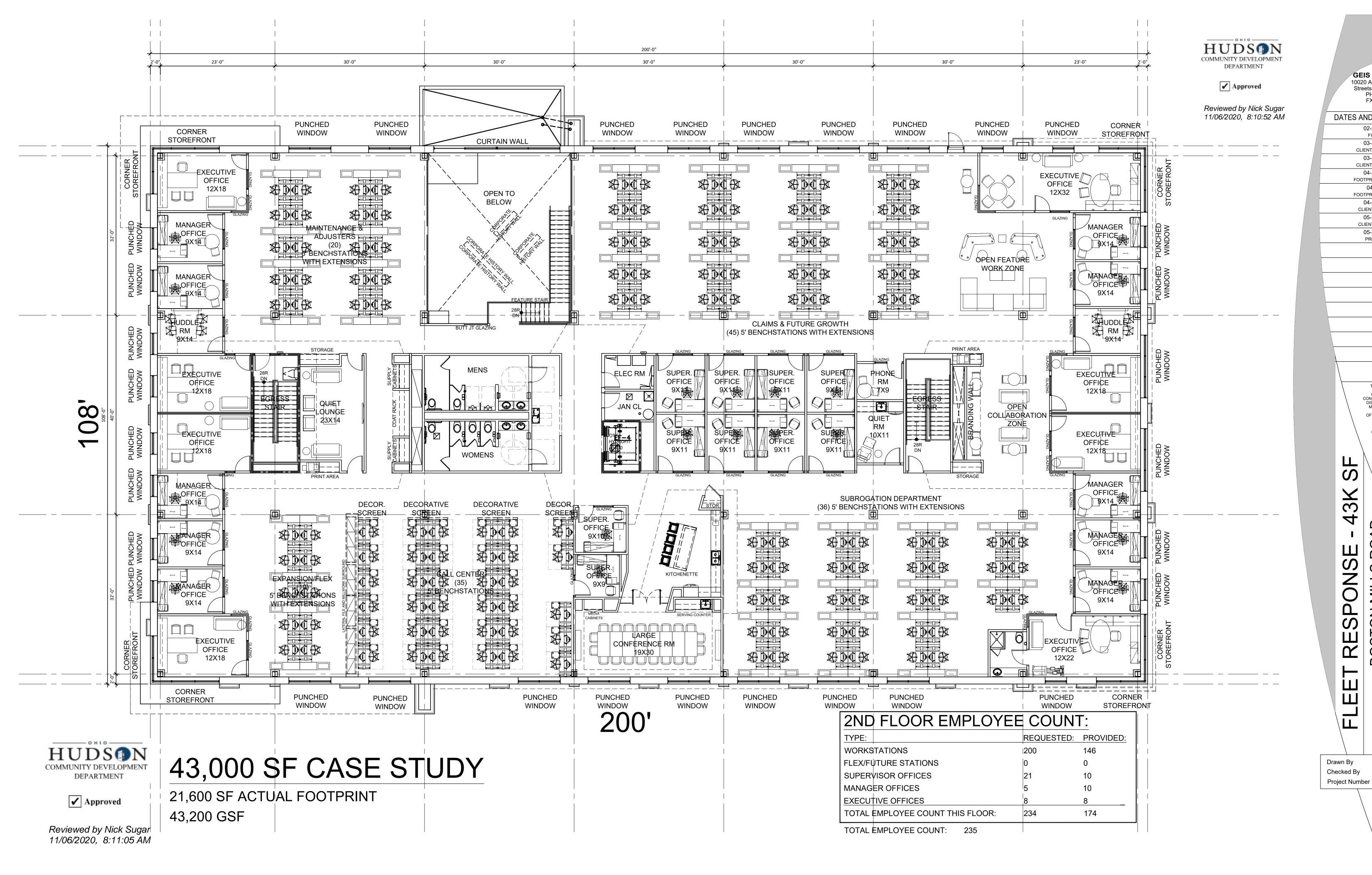


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FP-1



**GEIS COMPANIES** Streetsboro, Ohio 44241 PH: (330) 528-3500 FX: (330) 528-0008

www.geisco.net DATES AND REVISIONS 02-24-2020 FIT PLAN 03-18-2020 CLIENT COMMENTS 03-26-2020

CLIENT COMMENTS 04-22-2020 FOOTPRINT REVISION 04-27-20 FOOTPRINT REVISION 04-29-2020 CLIENT CHANGES 05-15-2020 CLIENT CHANGES 05-20-2020 PRELIM BID

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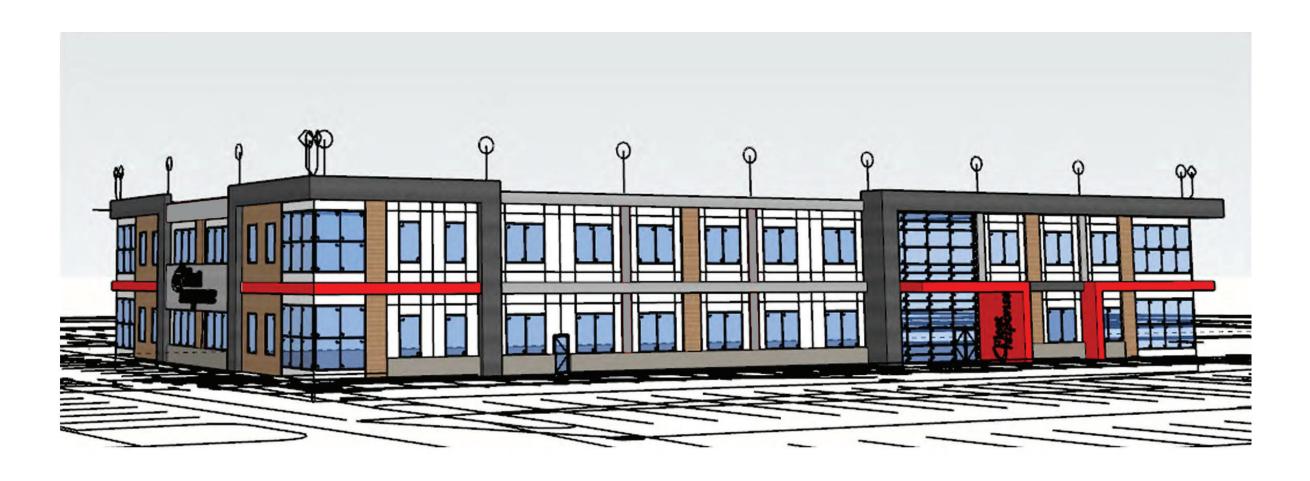
2ND FLOOR FIT PLAN DRAWING NO:

FP-2





Reviewed by Nick Sugar 11/06/2020, 8:11:10 AM

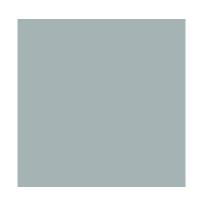




CHERRY RED METALPANEL



WHITE DRYVIT EIFS TEXTURED



"TIN MAN"
DRYVIT EIFS
REFLECTIT SMOOTH



CHARCOAL DRYVIT EIFS REFLECTIT SMOOTH



"TABLE WALNUT" LONGBOARD ALUMINUM SIDING



CHARCOAL SPLITFACE CMU BLOCK



WINDOW SYSTEMS: KAWNEER CLEAR ANODIZED ALUMINUM & SOLARGRAY GLASS



FLEET RESPONSE - EXTERIOR DESIGN

695 BOSTON MILLS ROAD, HUDSON, OH





✓ Approved

Reviewed by Nick Sugar 11/06/2020, 8:11:22 AM





CONCEPTUAL RENDERING
OFFICE BUILDING











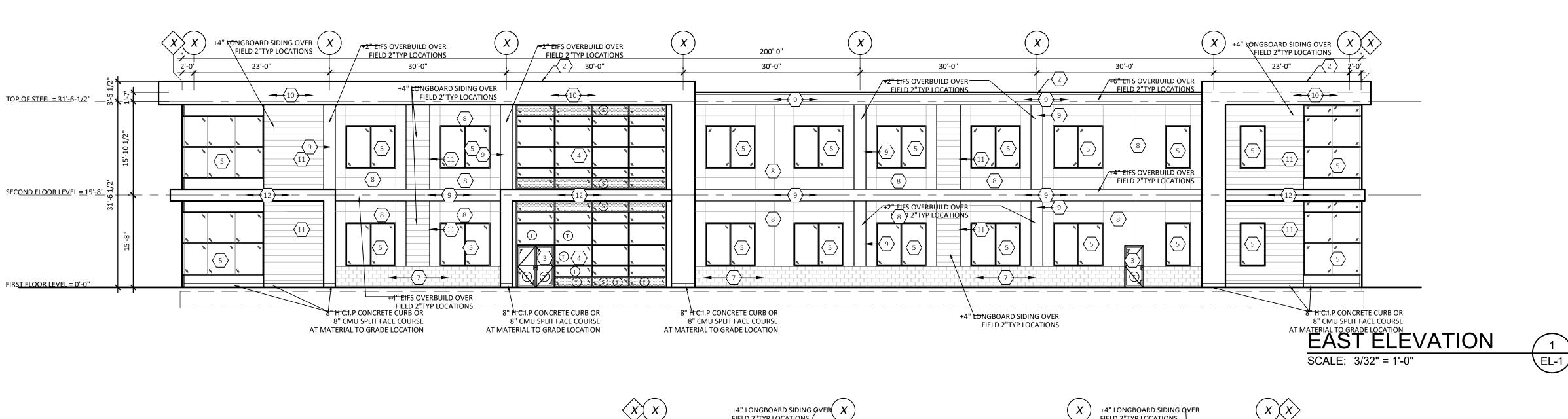
CONCEPTUAL RENDERING 3
OFFICE BUILDING

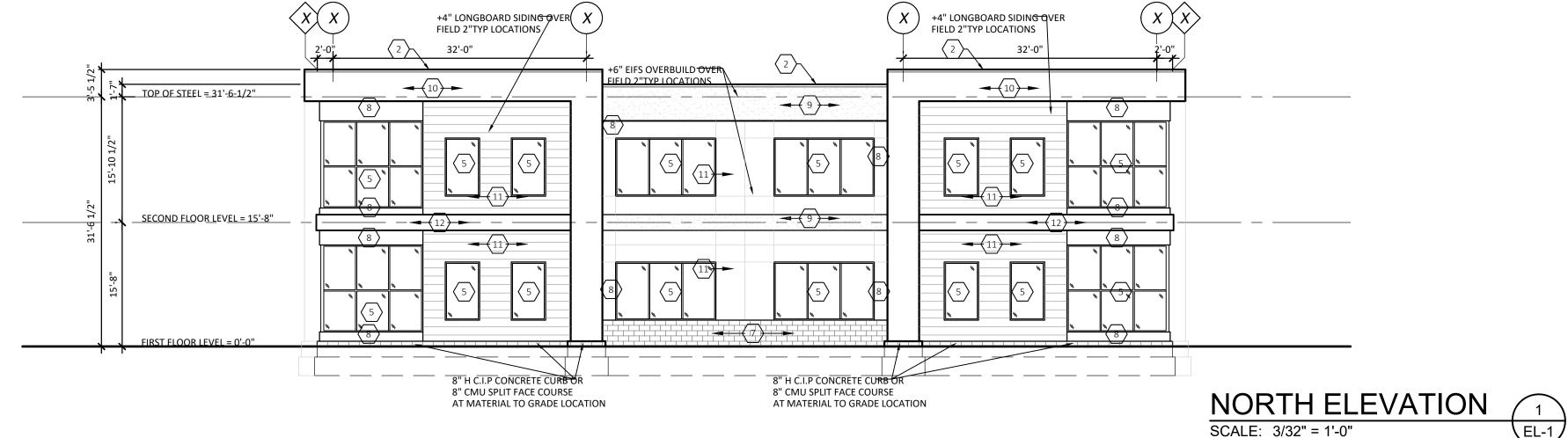


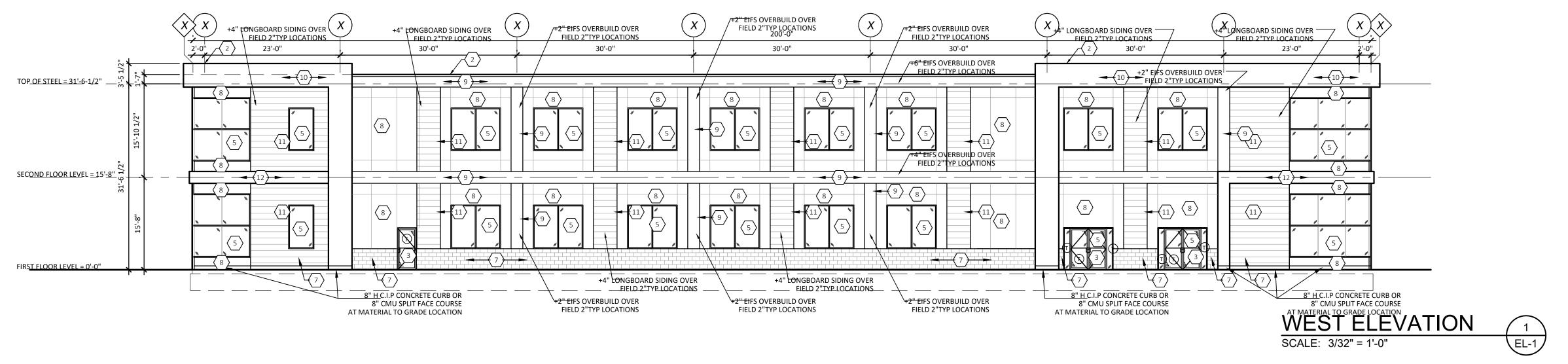


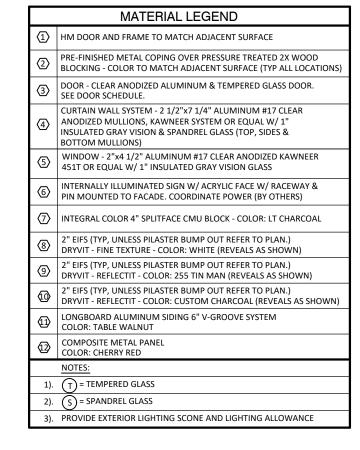
**✓** Approved

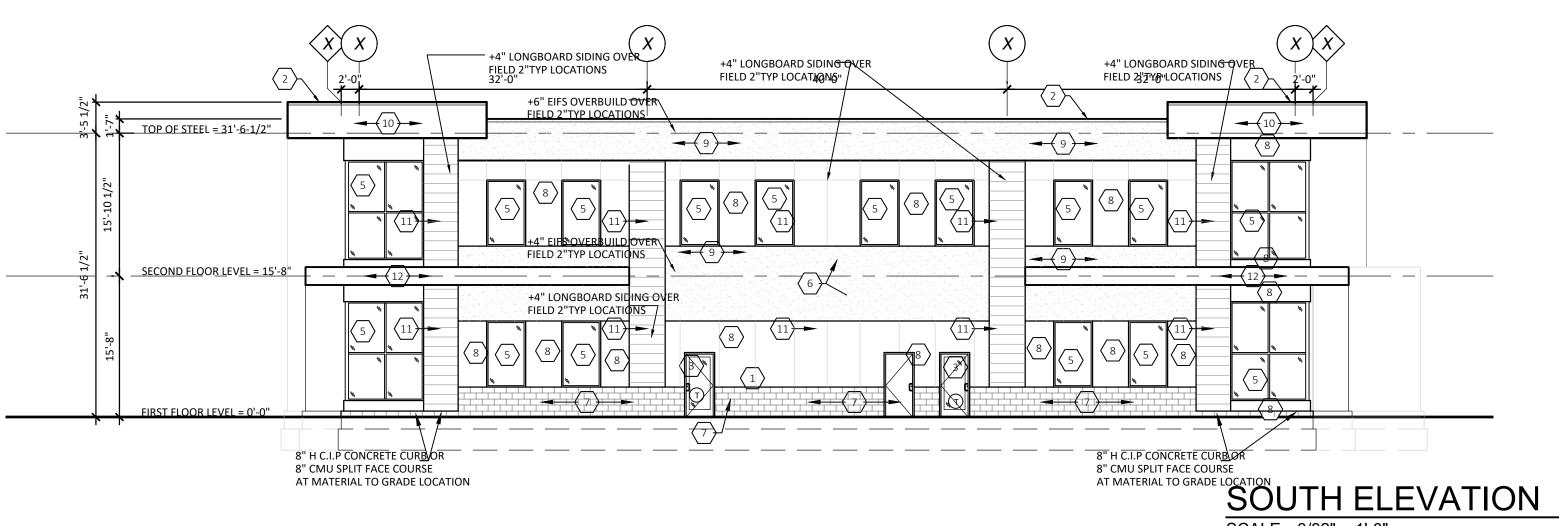
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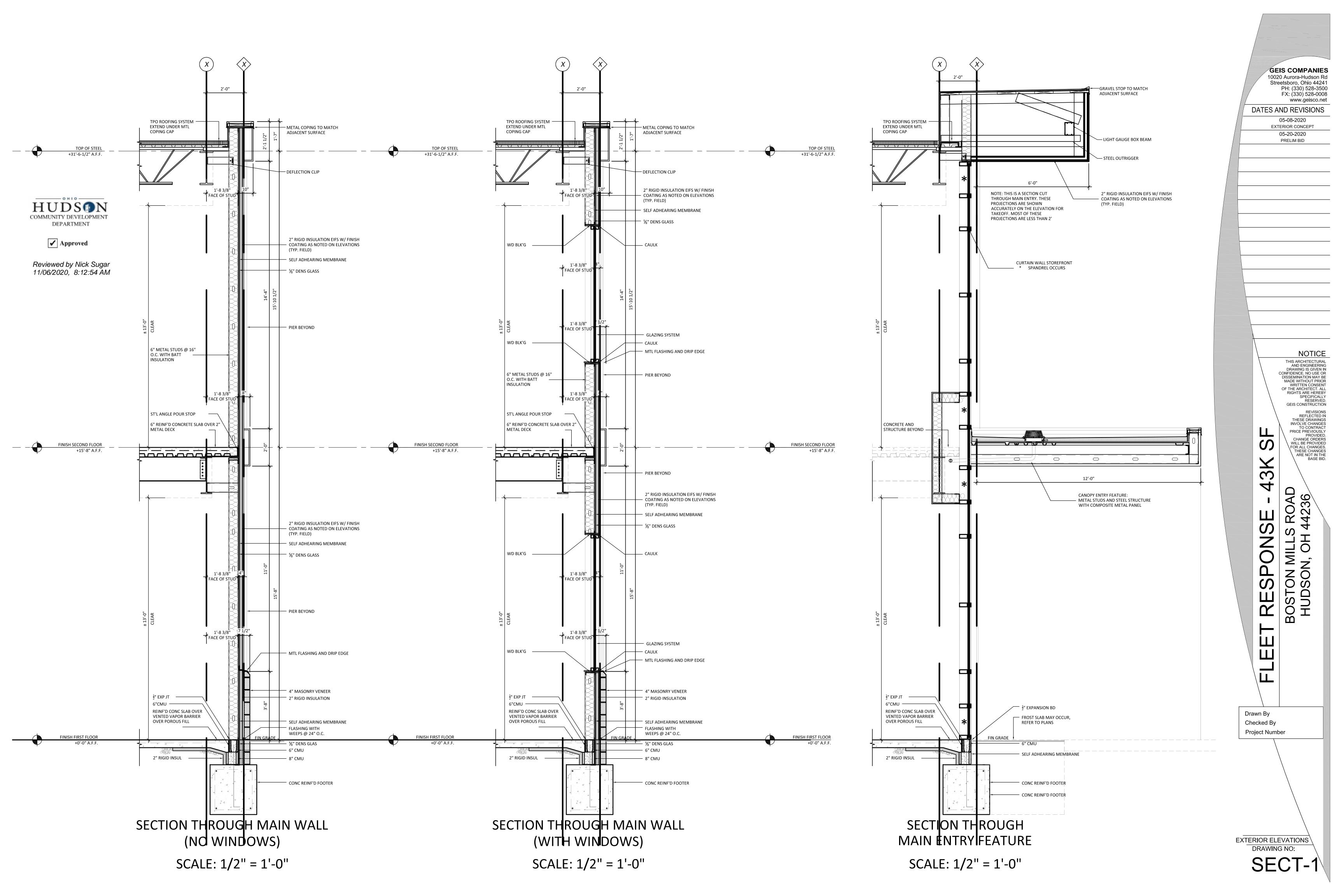


SCALE: 3/32" = 1'-0"

**GEIS COMPANIES** 10020 Aurora-Hudson Rd Streetsboro, Ohio 44241 PH: (330) 528-3500 FX: (330) 528-0008 www.geisco.net DATES AND REVISIONS 05-08-2020 **EXTERIOR CONCEPT** 05-20-2020 PRELIM BID 07-29-2020 **BUILDING FLIP** 08-11-2020 CITY REVIEW COMMENTS NOTICE THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE. NO USE OR DISSEMINATION MAY BE MADE WITHOUT PRIOR OF THE ARCHITECT. ALL RIGHTS ARE HEREBY GEIS CONSTRUCTION REVISIONS
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FOR ALL CHANGES.
THESE CHANGES
ARE NOT IN THE
BASE BID. 3 4 SPONSE N 0 BOSTOR **R** Drawn By Checked By Project Number

EXTERIOR ELEVATIONS
DRAWING NO:

EL-





 From:
 Tentler, Janae

 To:
 Brandon Moore

 Subject:
 RE: 695 Boston Mills

**✓** Approved

Date: Tuesday, September 22, 2020 1:04:33 PM

Reviewed by Nick Sugar 11/06/2020, 8:13:00 AM

Thank you Brandon!

The permit is ready to be released. The fee is \$29,657.00

The reviewing engineer had a calculation of 15 benefits @ \$1960.00/ benefit(tap-fee) + \$257.00 (service fee)

\$29,657.00

Our office is closed to the public. We have drop box outside our office door on the second floor or you can mail in the payment.

Payments should be made and sent to

"Summit County DSSS"

Attn Permits

1180 S. Main St Suite 201

Akron Oh 44301

Once payment is received, I will scan you over a copy of the permit. Please reference the project address on your payment.

Thank you,

Janae

**From:** Brandon Moore <BrandonM@geisco.net> **Sent:** Monday, September 21, 2020 7:29 AM

To: Tentler, Janae <gtentler@summitoh.net>; Weaver, Don <dweaver@summitoh.net>

Subject: RE: 695 Boston Mills

Janae,

No, this project will not have a commercial kitchen. It will be limited to microwaves and sinks in the two employee break areas.

Thanks,

Brandon

From: Tentler, Janae <<u>gtentler@summitoh.net</u>> Sent: Thursday, September 17, 2020 3:52 PM

To: Brandon Moore < BrandonM@geisco.net >; Weaver, Don < dweaver@summitoh.net >

Subject: 695 Boston Mills

Brandon,

Will this have a cafeteria? I did not see plumbing plans addressing such.

Please see below.

Thank you,

Janae

Hi Janae –

Based on the application, this appears to be a 300-employee office building. If the building has a large commercial cafeteria for employees, we would need additional information about the food service operation (menu, volume of meals per day, list of kitchen equipment). A grease interceptor and a sampling port would be required. If food service in the building is limited to employee lunch rooms (microwave, two-compartment sink and a refrigerator), a grease interceptor is not necessary.

I will not be in the office tomorrow (Friday 9/18). I'll see you next Monday. Have a great weekend!

Sincerely,

#### Don





Reviewed by Nick Sugar 11/06/2020, 8:13:07 AM



Mike DeWine, Governor Jon Husted, Lt. Governor Laurie A. Stevenson, Director





Sep 02, 2020

Geis Companies Greg Seifert 10020 Aurora-Hudson Road Streetsboro, OH 44241 Reviewed by Nick Sugar 11/06/2020, 8:13:13 AM

Re: Approval Under Ohio EPA National Pollutant Discharge Elimination System (NPDES) - Construction Site Stormwater General Permit - OHC000005

Dear Applicant,

Your NPDES Notice of Intent (NOI) application is approved for the following facility/site. Please use your Ohio EPA Facility Permit Number in all future correspondence.

Facility Name: Fleet Response ESCP (Tree Clearing &Grubbing)

Facility Location: Boston Mills Road

City: Hudson
County: Summit

Township:

Ohio EPA Facility Permit Number: 3GC11739\*AG
Permit Effective Date: Sep 02, 2020

Please read and review the permit carefully. The permit contains requirements and prohibitions with which you must comply. Coverage under this permit will remain in effect until a renewal of the permit is issued by the Ohio EPA.

If more than one operator (defined in the permit) will be engaged at the site, each operator shall seek coverage under the general permit. Additional operator(s) shall submit a Co-Permittee NOI to be covered under this permit. There is no fee associated with the Co-Permittee NOI form.

Please be aware that this letter only authorizes discharges in accordance with the above referenced NPDES CGP. The placement to fill into regulated waters of the state may require a 401 Water Quality Certification and/or Isolated Wetlands Permit from Ohio EPA. Also, a Permit-To-Install (PTI) is required for the construction of sanitary or industrial wastewater collection, conveyance, storage, treatment, or disposal facility; unless a specific exemption by rule exists. Failure to obtain the required permits in advance is a violation of Ohio Revised Code 6111 and potentially subjects you to enforcement and civil penalties.

To view your electronic submissions and permits please Logon in to the Ohio EPA's eBusiness Center at http://ebiz.epa.ohio.gov.

If you need assistance or have questions please call (614) 644-2001 and ask for Construction Site Stormwater General Permit support or visit our website at http://www.epa.ohio.gov.

Sincerely, Laurie a Sevenson

Laurie A. Stevenson

Director

Division of Building Standards · <u>buildingstandards.summitoh.net</u> 1030 E Tallmadge Avenue · Akron OH 44310 · 330.630.7280 · fax 330.630.7296

October 2, 2020

HUDSON

COMMUNITY DEVELOPMENT DEPARTMENT

✓ Approved

Reviewed by Nick Sugar

11/06/2020, 8:13:18 AM

#### **Phased Plan Approval**

Construction documents for the above referenced project which were submitted on <u>September 24, 2020</u> have been reviewed for compliance with the current codes. A phased approval is granted per OBC 105.1.4. The holder of a phased approval shall proceed at the holder's own risk with the building operation and without assurance that an approval for the entire structure will be granted. <u>This phased approval is for all construction permitted up to and including rough inspections</u>, <u>subject to items identified in this adjudication</u>.

Application Number: PPR200913-A (E)
Project/Tenant Name: Fleet Response

Project Address: 695 Boston Mills Road

Jurisdiction: Hudson

Owner/Agent: Scott Mawaka, Fleet Response

Submitter: Brian A. Jarzenski, GLSD Architects

Design Professional: Jennifer Dotson Diasio, GLSD Architects

Project Description: New construction (Shell and core submittal)

**Building Code Data** 

Occupancy Class: B, Business Use: Office

Construction Type: IIB

**Project size:** 43,200 square-feet

Occupant load: 432 persons

Fire Alarm: Required (Sprinkler monitoring system, at a minimum); provided

Fire Suppression: Required; provided

Plans Reviewed for: Shell and core for: Building, Plumbing, Electrical May Issue Permits for: Shell and core for: Building, Plumbing, Electrical Sep Submittal Regd for: Fire alarm and automatic sprinkler system

Conditions/Variances/Comments: None.

#### **Building Department Review:**

- 1. **OBC Section 106.1.1.** Please provide additional information or clarify the following items so that compliance with the code can be determined.
  - A. General.
    - i. The edition of the fire code and electrical code reference on drawing G-110 are incorrect. The 2017 editions of both codes are the correct editions.
  - B. System Descriptions, Electrical.
    - i. Submit available fault current.
- 2. OBC Section 106.2.1 Seal requirements. Construction documents shall bear the seal of the registered design profession pursuant to Section 3791.04 of the Ohio Revised Code and Ohio Administrative Code 4703-3-01(B) which requires a seal; an ink or electronic signature; and the name, license number, and license expiration date below the architect's seal on the first sheet of bound sets of drawings.
- 3. OBC Section 716.5 Fire Door and Shutter Assemblies. Door assemblies in fire-resistance rated stair enclosures are required to comply with the requirements of Table 716.5. Doors S-1/A, S-1/B, S-2/A, S-2/B,

- and S-2/C are located in a one-hour fire-resistance rated stair enclosure; however, no rating (label) is indicated in the door schedule. Please clarify compliance with this Section.
- **4. OBC Section 1301, Energy Efficiency.** Provide COMcheck or similar data indicating compliance with ASHRAE 90.1 for the building envelope and lighting system.

#### **Reviewers Note:**

An approved (stamped) set of construction documents shall be available and remain on the jobsite for use by Building Standards personnel, during the construction process.

Resubmit one electronic copy of the entire set. Two complete sets of resubmitted/revised drawings are required for re-review. Partial submissions will not be accepted. Resubmitted drawings should indicate revision number, date revised, changes and additions must be "bubbled/clouded" or otherwise highlighted on the drawings.

Adjudication comments must be answered in letter form to expedite the review. **Date, sign and seal this letter.** Additional comments/corrections may follow after resubmitted/revised drawings are reviewed.

You have the right to appeal any or all of the above items. If you decide to appeal, this letter is to be used as an adjudication order pursuant of OBC, Section 110.1. You have 30 days from the mailing date to appeal the adjudication order. To request an appeal hearing, send a written request along with a check or money order for \$100.00 made payable to County of Summit Department of Building Standards to the address above. Your written request shall include the items from the Correction Letter being appealed, the reason for the appeal, and the relief sought. A copy of this letter shall be attached to your request. Submit eleven (11) complete sets of necessary data and/or plans/specifications, testing laboratory reports, samples of material (s) or products, etc. to support your appeal. At an appeal hearing you have the right to be represented by counsel. You may present arguments orally or in writing. You may also present evidence and examine witnesses appearing for or against you. You will receive a letter by mail indicating a time and date of the Appeal Hearing.

Christopher Randles
Chief Building Official
submittals@summitoh.net

Plans reviewed by:

Review A: James R. Duber, Duber Architectural & Consulting Services, LLC, 10-02-2020

#### This plan review is based on the following current codes and standards:

2017 Ohio Building Code

2017 Ohio Mechanical Code

2017 Ohio Plumbing Code

2017 National Electrical Code - NFPA 70

ICC A117.1 - 2009 Accessible & Usable Buildings and Facilities

2015 International Fuel Gas Code

2012 International Energy Conservation Code / ASHRAE 90.1 2010

2016 NFPA 13 – Standard for the Installation of Sprinkler Systems

2016 NFPA 72 – National Fire Alarm and Signaling Code

2017 Ohio Fire Code





Reviewed by Nick Sugar 11/06/2020. 8:13:25 AM

#### Required Inspections as determined by OBC 108 as applicable:

■ 108.2.2 <u>Footing or foundation inspection</u>. Footing and foundation inspections shall be made after excavations for footings are complete and any required reinforcing steel is in place. For concrete foundations, any required forms shall be in place prior to inspection. Materials for the foundation shall be

on the job, except where concrete is ready mixed in accordance with "ASTM C 94", the concrete need not be on the job.

- 108.2.3 <u>Concrete slab and under-floor inspection</u>. This inspection shall be made after the following is completed: in-slab, under-floor reinforcing steel and building service equipment, conduit, insulation, vapor retarder, piping accessories and any ancillary equipment items are in place, but before any concrete is placed or floor sheathing installed, including the subfloor.
- 108.2.5 *Frame inspection.* A framing inspection shall be made after the roof deck or sheathing, all framing, fire blocking and bracing are in place and pipes, chimneys and vents to be concealed are complete and the rough electrical, plumbing, heating, wires and ducts are approved.
- 108.2.7 <u>Fire-resistant penetrations</u>. Protection of joints and penetrations in fire-resistance-rated assemblies shall not be concealed from view until inspected and approved.
- 108.2.8 <u>Energy efficiency inspections</u>. Inspections shall be made to determine compliance with Chapter 13 of the Ohio Building Code (OBC) and shall include, but not limited to, inspections for: envelope insulation "R" and "U" value, fenestration "U" value, duct system "R" value, infiltration air barriers, caulking / sealing of openings in envelope and ductwork, and "HVAC" and water heating equipment efficiency.
- 108.2.9 <u>Building services equipment inspections</u>. Inspections shall be made of all building services equipment to ensure that it has been installed in accordance with the approved construction documents, the equipment listings, and the manufacturer's installation instructions. Inspections shall include but not be limited to inspections for the following systems and their associated components: mechanical heating and ventilating systems, mechanical exhaust systems, plumbing systems, fire protection systems, and electrical systems.
- 108.2.12 *Final inspection*. The final inspection shall be made after all work required by the plan approval is completed.





Reviewed by Nick Sugar 11/06/2020, 8:13:29 AM

## SUMMIT SOIL & WATER CONSERVATION DISTRICT

1180 SOUTH MAIN STREET, SUITE 241, \* AKRON, OH 44301 \* (330) 929-2871 FAX:

#### **PLAN REVIEW**

September 24, 2020

Matthew Weber, PE Weber Engineering Services LLC 2555 Hartville Road, Suite B Rootstown, OH 44272

> Re: Fleet Response Clearing and Grubbing Parcel No. - 3203767 Plan Review - Submittal #1

Dear Mr. Weber:

Alina Godbey, from the Summit SWCD office, reviewed the Storm Water Pollution Prevention Plan for the above referenced site. This plan meets with our approval.

1. Prior to earth disturbance, a pre-construction meeting must be scheduled with our office. We will require the attendance of those associated with the implementation of the SWPPP.

Please feel free to contact me at 330-926-2443 if you have any questions.

Sincerely,

Alina Godbey

Stormwater Specialist

alina Golbe

cc: City of Hudson

File

HUDSON
COMMUNITY DEVELOPMENT
DEPARTMENT

**✓** Approved

Reviewed by Nick Sugar 11/06/2020, 8:13:35 AM

### **NEORSD**

3900 Euclid Avenue, Cleveland, Ohio

### Review Cycle Results

PROJECT/CASE #: CDPP-08-26-2020-0001545

PROJECT/CASE NAME: Fleet Response

**REVIEW CYCLE:** 

**REVIEW TYPE:** 

**REVIEW #:** 

PROCESS: Title V Regional Stormwater System/Stormwater Management

ADDRESS: 705 Boston Mills RD, Hudson, OH 44236-1608

Stormwater Title V Review

REV-20-08-000997

COMMUNITY DEVELOPMENT DEPARTMENT

✓ Approved

Reviewed by Nick Sugar 11/06/2020, 8:13:40 AM

REVIEW RESULT: No Objection

**REVIEWED BY:** Christopher Hartman

**REVIEWED ON:** 9/3/2020

**COMMENTS & RESPONSES:** 



#### Stormwater Title V Review



#### **O&M Plan Dredging**

Regarding the O&M Plan for the pond, per Ohio EPA NPDES Permit No. OHC000005 (Part III.G.2.e), provide relevant elevations and associated volumes that dictate when removal of accumulated sediments must occur.

- Christopher Hartman, Review Cycle 1 on Sep 03, 2020 @ 01:32 PM



#### **Regional Stormwater Management Program information**

NEORSD has implemented a Regional Stormwater Management Program. Under the program this property, and other impervious surfaces across our service area, will be charged a fee

based on the amount of impervious surface. The program includes credits whereby entities can reduce their stormwater fees through the installation, operation, and long-term maintenance of stormwater control measures. These credits are detailed in the Stormwater Fee Credit Policy Manual, available on our website at https://www.neorsd.org/fee-credit/ or contact Chris Hartman at 216-881- 6600, ext. 6656, regarding questions on the credit manual or assistance with developing a credit application.

- Christopher Hartman, Review Cycle 1 on Sep 03, 2020 @ 01:32 PM



#### **Local Review Required**

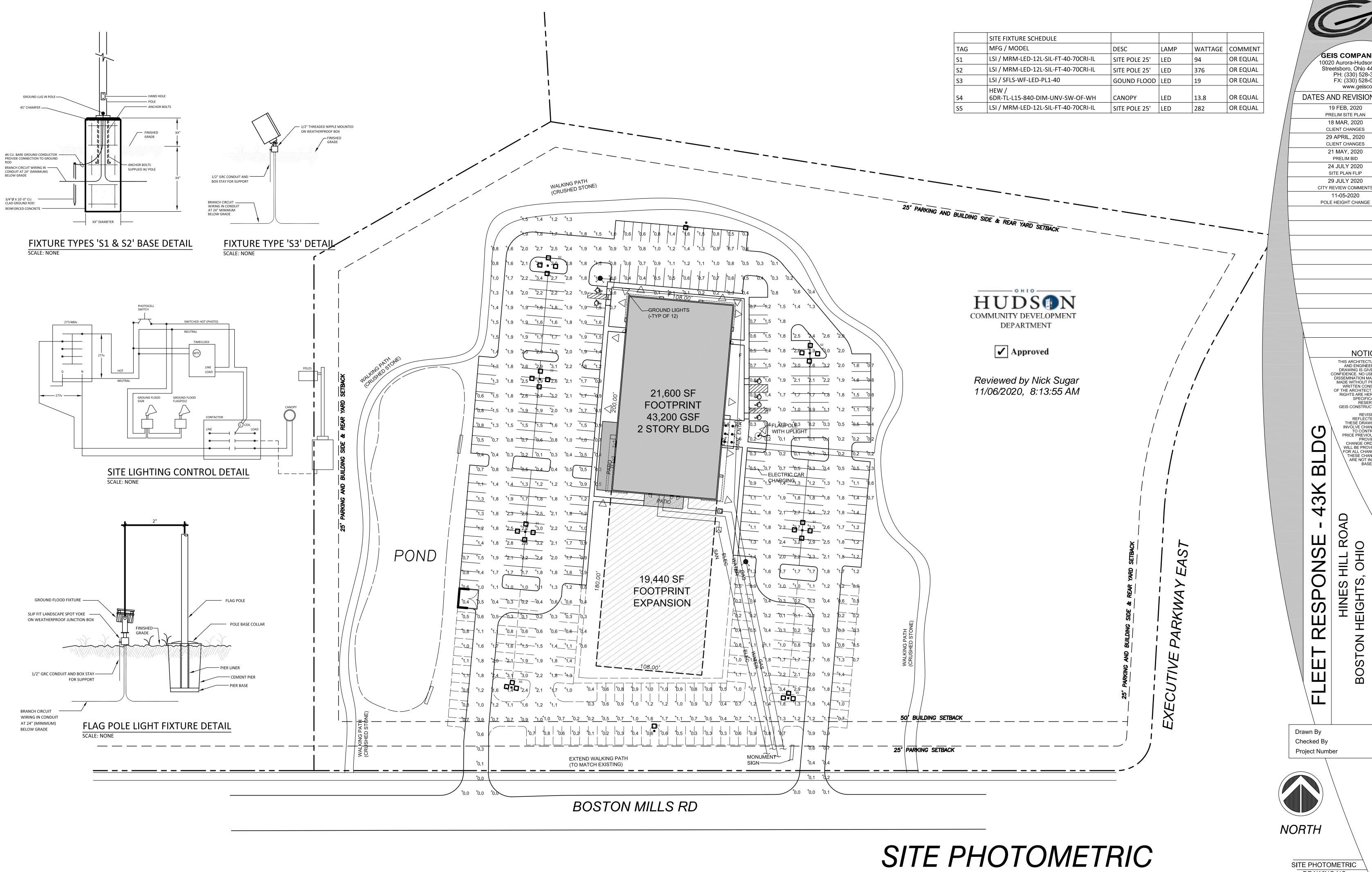
NEORSD has reviewed the Stormwater Management Plan for the above referenced site for assessing potential impacts to the Regional Stormwater System with respect to flooding, erosion and water quality issues, as described in Code of Regulations of the Northeast Ohio Regional Sewer District Title V: Stormwater Management Code. Although comments provided herein consider minimum design standards and criteria set forth by the local community, these comments are advisory in nature and are not intended to duplicate or replace the local community's review process.

- Christopher Hartman, Review Cycle 1 on Sep 03, 2020 @ 01:32 PM





Reviewed by Nick Sugar 11/06/2020, 8:13:45 AM



GEIS COMPANIES 10020 Aurora-Hudson Rd Streetsboro, Ohio 44241 PH: (330) 528-3500 FX: (330) 528-0008 www.geisco.net

DATES AND REVISIONS

PRELIM SITE PLAN 18 MAR, 2020 CLIENT CHANGES 29 APRIL, 2020 CLIENT CHANGES 21 MAY, 2020 PRELIM BID 24 JULY 2020 SITE PLAN FLIP 29 JULY 2020

NOTICE THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE. NO USE OR MADE WITHOUT PRIOR OF THE ARCHITECT. ALL RIGHTS ARE HEREBY GEIS CONSTRUCTION

REVISIONS
REFLECTED IN
THESE DRAWINGS
INVOLVE CHANGES
TO CONTRACT
PRICE PREVIOUSLY
PROVIDED.
CHANGE ORDERS
WILL BE PROVIDED
FOR ALL CHANGES.
THESE CHANGES
ARE NOT IN THE
BASE BID.

SITE PHOTOMETRIC DRAWING NO:

SCALE: 1"= 40'-0"

E-0



Catalog #	riujeut
Prepared Ry ·	Data ·

## Slice Medium (SLM)

## Outdoor LED Area Light

















**✓** Approved

Reviewed by Nick Sugar 11/06/2020, 8:14:00 AM

OVER	VIEW
Lumen Package	9,000 - 42,000
Wattage Range	69 - 390
Efficacy Range (LPW)	93 - 145
Weight lbs(kg)	30 (13.6)

#### **QUICK LINKS**

**Ordering Guide** 

Performance

**Photometrics** 

Dimensions

#### **FEATURES & SPECIFICATIONS**

#### Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Designed to mount to square poles.
- Fixtures are finished with LSI's DuraGrip\* polyester powder coat finishing process.
   The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 30 lbs in carton.

#### **Optical System**

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated sealed optical chamber in 1 component.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in IES Types 2, 3, 5W, FT and FTA.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- · Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377. Also Available in Phosphor Converted Amber with Peak intensity at 610nm.
- Minimum CRI of 70.
- Integral Louver (IL) option available for improved back-light control without sacrificing street side performance. See page 5 for more details.

#### **Electrical**

- High-performance driver features overvoltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz or optional High Voltage (347-480 Vac).
- L80 Calculated Life: >100k Hours (See Lumen Maintenance on Page 3)
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 42L lumen package rated to +40°C.
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed.

#### **Controls**

- Optional integral passive infrared Bluetooth™ motion and photocell sensor (see page 5 for more details).
   Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance

costs while optimizing light quality 24/7. (see page 5 for more details.

#### Installation

- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional 3" drill pattern B3 for easy fastening of LSI products.

#### Warranty

• LSI LED Fixtures carry a 5-year warranty.

#### Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet Locations.
- IP66 rated Luminaire per IEC 60598. IP66 rated optical chamber.
- 3G rated for ANSI C136.31 high vibration applications
- IP66 rated Luminaire per IEC 60598. IP66 rated optical chamber.
- 3G rated for ANSI C136.31 high vibration applicationsapplicationsare qualified.

Specifications and dimensions subject to change without notice.





## Slice Medium Outdoor LED Area Light

Back to Quick Links ORDERING GUIDE

TYPICAL ORDER EXAMPLE:	SLM	LED	36L	SIL	FTA	UNV	DIM	<b>50</b>	<b>70CRI</b>	ALSCS04	BRZ IL	

Luminaire Prefix	Light Source		ımen ckage	Light Output	Distribution	Orientation <sup>1</sup>		Voltage		Driver
<b>SLM</b> Slice Medium	LED	12L - 1 18L - 1 24L - 2 30L - 3 36L - 3	2,000 lms 2,000 lms 8,000 lms 44,000 lms 10,000 lms 16,000 lms 12,000 lms	SIL - Silicone	2 - Type 2 3 - Type 3 5W - Type 5 Wide FT - Forward Throw FTA - Forward Throw Automotive	(blank) - standard L- Optics rotated left 9 R - Optics rotated righ	, ,			<b>DIM</b> - 0-10V Dimming (0-10%)
	Color Temp		Color Renderin	g	Controls (Choose One)			Finish		Options
3	50 - 5,000 CC 10 - 4,000 CC 10 - 3,000 CC sphor Conver	T <sup>2</sup>	<b>70CRI</b> - 70 CRI	ALSC - Airl ALSCH - Ai ALSCHSO1 ALSCHSO2 - ALSCHSO2 Motion S ALSCHSO2 Motion S ALSCHSO4 - ALSCHSO4 Motion S ALBCS1 - A (8-24' m	AirLink Synapse Control System with - AirLink Synapse Control System Hos Sensor <sup>4,5</sup> AirLink Synapse Control System with 2 - AirLink Synapse Control System Hos	Satellite 4.5 3-12' Motion Sensor 4 tt / Satellite with 8-12'  12-20' Motion Sensor 4 tt / Satellite with 12-20'  20-40' Motion Sensor 4 tt / Satellite with 20-40'  Sensor Controller	BLK GPT MSV WHT	- Bronze - Black - Graphite / - Metallic Silver Γ - White - Platinum Plus - Satin Verde Green		) - None tegral Louver HSS¹

**Stand-Alone Controls** 

IMSBT1- Integral Bluetooth™ Motion and Photocell Sensor max 8-24'

IMSBT2- Integral Bluetooth Motion and Photocell Sensor max 25-40'

**Button Type Photocells** 

EXT - 0-10V Dimming leads extended to housing exterior CR7P - 7 Pin Control Receptacle ANSI C136.41

mounting height 4, 6

mounting height 4,6

**PCI120** - 120V PCI208-277 - 208 -277V **PCI347** - 347V

#### FOOTNOTES:

- 1 Not available on "Type 5W" distribution.2 Consult Factory for availability.
- 3 Only available in 9L and 12L Lumen Packages
- 4 Not available in HV.
- 5 Consult Factory for Site Layout
   6 IMSBT is field configurable via the LSI app that can be downloaded from your smartphone's native app store.

- 7 Control device or shorting cap must be ordered separately. See Accessory Ordering
- Information.
- 8 Accessories are shipped separately and field installed.
- 9 Factory installed CR7P option required. See Options. 10 "CLR" denotes finish. See Finish options.





Reviewed by Nick Sugar 11/06/2020, 8:14:41 AM





#### **ACCESSORY ORDERING INFORMATION<sup>8</sup>**

Controls Accessories	
Description	Order Number
Twist Lock Photocell (120V) for use with CR7P	122514
Twist Lock Photocell (208-277) for use with CR7P	122515
Twist Lock Photocell (347V) for use with CR7P	122516
Twist Lock Photocell (480V) for use with CR7P	1225180
AirLink 5 Pin Twist Lock Controller	661409
AirLink 5 Pin Twist Lock Controller	661410
Pole-Mounted Occupancy Sensor (24V)	663284CLR
Shorting Cap for use with CR7P	149328

Mounting Accessories	
Description	Order Number
Round Pole Adapter (3" Round/Tapered Poles)	408273CLR
Round Pole Adapter (4" Round Poles)	379967CLR
Round Pole Adapter (5" Round Poles)	379968CLR
Universal Mounting Bracket	684616CLR
Adjustable Slip Fitter (2" - 2 3/8" Tenon)	688138CLR
Quick Mount Pole Bracket (Square Pole)	687073CLR
Quick Mount Pole Bracket (4-5" Round Pole)	689903CLR
15 Tilt Quick Mount Pole Bracket (Square Pole)	688003CLR
15 Tilt Quick Mount Pole Bracket (4-5" Round Pole)	689905CLR
Wall Mount Bracket	382132CLR
Integral Louver/Shield	684812

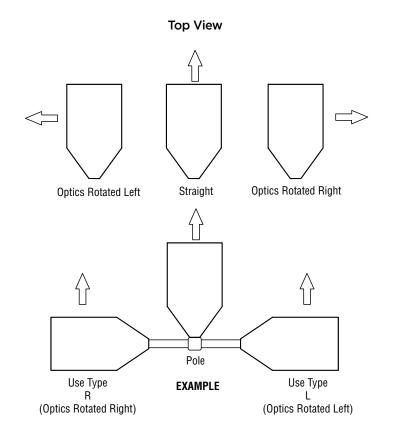
Fusing Accessories						
Description	Order Number					
Single Fusing (120V)	FK120					
Single Fusing (120V)	FK277					
Double Fusing (208V, 240V)	DFK240					
Double Fusing (480V)	DFK480					
Double Fusing (347V)	DFK347					





Reviewed by Nick Sugar 11/06/2020, 8:14:46 AM

#### **OPTICS ROTATION**



#### **ACCESSORIES/OPTIONS**

#### Integral Louver (IL)

Accessory Integral Louver available for improved backlight control without sacrificing street side performance. LSI's Integral Louver (IL) option delivers backlight control that significantly reduces light spill behind the pole for applications with pole locations close to adjacent properties. The integrated louvers' design maximizes forward-reflected light while - reducing glare, maintaining the optical distribution selected, and most importantly, eliminating light trespass. The Integral louver rotates with the optical distribution.

Luminaire Shown with Integral Loxquver (IL)



Luminaire Shown with IMSBT Option



#### 7 Pin Photoelectric Control

7-pin ANSI C136.41-2013 control receptacle option available for twist lock photocontrols or wireless control modules. Control accessories sold separately. Dimming leads from the receptacle will be connected to the driver dimming leads (Consult factory for alternate wiring).

Fixture Shown with CR7P





PERFORMANCE Back to Quick Links

				3000K CCT			4000K CCT			5000K CCT		
Lumen Package	Distribution	CRI	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Wattage
	2	70	8956	131	B2-U0-G2	9427	138	B2-U0-G2	9838	144	B2-U0-G2	
	2 IL	70	5632	81	B1-U0-G1	5928	86	B1-U0-G1	6186	89	B1-U0-G1	
	3	70	9088	133	B2-U0-G2	9566	140	B2-U0-G2	9983	146	B2-U0-G2	
	3 IL	70	6608	95	B0-U0-G2	6956	101	B0-U0-G2	7259	105	B0-U0-G2	
9L	5W	70	8431	123	B3-U0-G2	8875	130	B3-U0-G2	9262	135	B3-U0-G2	68.2
	FT	70	9046	133	B2-U0-G2	9522	140	B2-U0-G2	9937	146	B2-U0-G2	
	FT IL	70	5782	84	B0-U0-G2	6086	88	B0-U0-G2	6351	92	B0-U0-G2	
	FTA	70	8993	131	B2-U0-G2	9466	138	B2-U0-G2	9879	144	B2-U0-G2	
	FTA IL	70	6847	99	B1-U0-G1	7207	104	B1-U0-G1	7521	109	B1-U0-G1	
	2	70	11842	127	B3-U0-G2	12465	134	B3-U0-G2	13009	140	B3-U0-G2	
	2 IL	70	7447	80	B1-U0-G2	7839	84	B1-U0-G1	8180	88	B1-U0-G1	
	3	70	12017	129	B2-U0-G2	12649	136	B2-U0-G2	13200	142	B2-U0-G2	
12L	3 IL	70	8738	94	B0-U0-G2	9198	99	B0-U0-G2	9599	103	B0-U0-G2	
	5W	70	11149	120	B4-U0-G2	11735	126	B4-U0-G2	12247	132	B4-U0-G2	93.1
	FT	70	11962	128	B2-U0-G2	12591	135	B2-U0-G2	13140	141	B2-U0-G3	
	FT IL	70	7645	82	B0-U0-G2	8048	86	B1-U0-G2	8398	90	B1-U0-G2	
	FTA	70	11891	128	B3-U0-G3	12517	134	B3-U0-G3	13062	140	B3-U0-G3	
	FTA IL	70	9053	97	B1-U0-G1	9530	102	B1-U0-G1	9945	107	B1-U0-G1	31-U0-G1
	2	70	17722	119	B3-U0-G3	18655	126	B3-U0-G3	19468	131	B3-U0-G3	
	2 IL	70	11144	75	B1-U0-G2	11731	79	B1-U0-G2	12242	82	B1-U0-G2	
	3	70	17984	121	B2-U0-G3	18930	127	B3-U0-G3	19755	133	B3-U0-G3	
	3 IL	70	13077	88	B1-U0-G2	13765	93	B1-U0-G2	14365	97	B1-U0-G3	
18L	5W	70	16685	112	B4-U0-G2	17563	118	B4-U0-G2	18328	123	B4-U0-G2	148.5
	FT	70	17901	121	B3-U0-G3	18843	127	B3-U0-G3	19664	132	B3-U0-G4	
	FT IL	70	11441	77	B1-U0-G3	12044	81	B1-U0-G3	12568	85	B1-U0-G3	
	FTA	70	17796	120	B3-U0-G3	18732	126	B3-U0-G3	19549	132	B3-U0-G3	
	FTA IL	70	13549	91	B1-U0-G2	14262	96	B1-U0-G2	14883	100	B1-U0-G2	
	2	70	24122	128	B4-U0-G3	24851	132	B4-U0-G3	25119	133	B4-U0-G3	
	2 IL	70	14595	78	B1-U0-G2	15036	80	B1-U0-G2	15198	81	B1-U0-G2	
	3	70	24945	132	B3-U0-G3	25699	136	B3-U0-G4	25976	138	B3-U0-G4	188.8
	3 IL	70	17364	92	B1-U0-G3	17889	95	B1-U0-G3	18082	96	B1-U0-G3	
24L	5W	70	22673	122	B5-U0-G3	23667	125	B5-U0-G3	23823	127	B5-U0-G3	
	FT	70	24276	129	B3-U0-G4	25010	132	B3-U0-G4	25280	134	B3-U0-G4	
	FT IL	70	15254	81	B1-U0-G3	15715	84	B1-U0-G3	15885	85	B1-U0-G3	
	FTA	70	24715	131	B3-U0-G3	25462	135	B3-U0-G3	25737	136	B3-U0-G3	
	FTA IL	70	16738	89	B1-U0-G2	17244	92	B1-U0-G2	17430	93	B1-U0-G2	





Reviewed by Nick Sugar 11/06/2020, 8:14:51 AM



#### **PERFORMANCE (CONT.)**

Delivered Lumens*												
				3000K CCT			4000K CCT			5000K CCT		
Lumen Package	Distribution	CRI	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Wattage
	2	70	30286	122	B4-U0-G3	31201	126	B4-U0-G3	31538	127	B1-U0-G2	
	2 IL	70	18324	74	B1-U0-G2	18878	76	B1-U0-G2	19082	77	B1-U0-G2	
	3	70	31319	126	B3-U0-G4	32266	130	B3-U0-G4	32614	131	B3-U0-G4	
	3 IL	70	21801	88	B1-U0-G4	22460	90	B1-U0-G4	22703	91	B1-U0-G4	
30L	5W	70	28843	116	B5-U0-G3	29715	120	B5-U0-G3	30036	121	B5-U0-G4	248.6
	FT	70	30479	123	B3-U0-G4	31401	126	B3-U0-G4	31740	128	B3-U0-G5	
	FT IL	70	19152	77	B1-U0-G3	19731	79	B1-U0-G3	19944	80	B1-U0-G4	
	FTA	70	31030	125	B3-U0-G3	31969	129	B4-U0-G3	32314	130	B4-U0-G3	
	FTA IL	70	21015	85	B1-U0-G2	21650	87	B1-U0-G2	21884	88	B1-U0-G2	
	2	70	36082	114	B4-U0-G4	37173	117	B4-U0-G4	37574	118	B4-U0-G4	
	2 IL	70	21831	69	B2-U0-G3	22491	71	B2-U0-G3	22734	72	B2-U0-G3	
	3	70	37313	117	B3-U0-G4	38442	121	B3-U0-G4	38857	122	B4-U0-G4	
	3 IL	70	25974	82	B1-U0-G4	26759	84	B1-U0-G4	27048	85	B1-U0-G4	
36L	5W	70	34363	108	B5-U0-G4	35402	111	B5-U0-G4	35784	113	B5-U0-G4	317.8
	FT	70	36313	114	B3-U0-G5	37411	118	B4-U0-G5	37815	119	B4-U0-G5	
	FT IL	70	22817	72	B1-U0-G4	23507	74	B1-U0-G4	23761	75	B1-U0-G4	
	FTA	70	36969	116	B4-U0-G4	38087	120	B4-U0-G4	38498	121	B4-U0-G4	
	FTA IL	70	25037	79	B1-U0-G2	25794	81	B1-U0-G2	26073	82	B1-U0-G2	
	2	70	41060	104	B5-U0-G4	42301	108	B5-U0-G4	42758	109	B5-U0-G4	
	2 IL	70	24843	63	B2-U0-G3	25594	65	B2-U0-G3	25871	66	B2-U0-G3	
	3	70	42461	108	B4-U0-G5	43745	111	B4-U0-G5	44217	112	B4-U0-G5	
	3 IL	70	29557	75	B1-U0-G4	30451	77	B1-U0-G4	30779	78	B1-U0-G4	
42L	5W	70	39104	99	B5-U0-G4	40286	102	B5-U0-G4	40721	104	B5-U0-G4	393.4
	FT	70	41323	105	B4-U0-G5	42572	108	B4-U0-G5	43032	109	B4-U0-G5	
	FT IL	70	25965	66	B1-U0-G4	26750	68	B1-U0-G4	27039	69	B1-U0-G4	
	FTA	70	42069	107	B4-U0-G4	43341	110	B4-U0-G4	43809	111	B4-U0-G4	
	FTA IL	70	28491	72	B1-U0-G2	29353	75	B1-U0-G3	29670	75	B1-U0-G3	

ELECTRICA	ELECTRICAL DATA (AMPS)*										
Lumens	Watts	120V	208V	240V	277V	347V	480V				
9L	68.2	0.6	0.3	0.3	0.2	0.2	0.1				
12L	93.1	0.8	0.4	0.4	0.3	0.3	0.2				
18L	148.5	1.2	0.7	0.6	0.5	0.4	0.3				
24L	188.8	1.6	0.9	0.8	0.7	0.5	0.4				
30L	248.6	2.1	1.2	1.0	0.9	0.7	0.5				
36L	317.8	2.6	1.5	1.3	1.1	0.9	0.7				
42L	393.4	3.3	1.9	1.6	1.4	1.1	0.8				

<sup>\*</sup>Electrical data at 25°C (77°F). Actual wattage may differ by +/-10%

#### FOOTNOTES:

- 1. Lumen maintenance values at 25C are calculated per TM-21 based on LM-80 data and in-situ testing.
- In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times the IESNA LM-80-08 total test duration for the device under testing.
- In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times the IESNA LM-80-08 total test duration for the device under testing.

RECOMMEND	RECOMMENDED LUMEN MAINTENANCE¹ (9-18L)										
Ambient	Intial <sup>2</sup>	25h²	50hr <sup>2</sup>	75hr²	100hr²						
0 C	100%	97%	94%	90%	87%						
10 C	100%	97%	94%	90%	87%						
20 C	100%	97%	94%	90%	87%						
25 C	100%	97%	93%	90%	86%						
30 C	100%	97%	93%	89%	86%						
40 C	100%	97%	92%	88%	84%						
50 C	100%	96%	91%	87%	83%						

RECOMMENDED LUMEN MAINTENANCE <sup>1</sup> (42L)									
Ambient Intial <sup>2</sup> 25h <sup>2</sup> 50hr <sup>2</sup> 75hr <sup>2</sup> 100hr <sup>2</sup>									
0 C - 40C	100%	100%	97%	94%	92%				





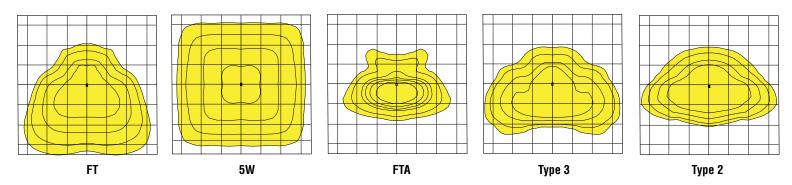




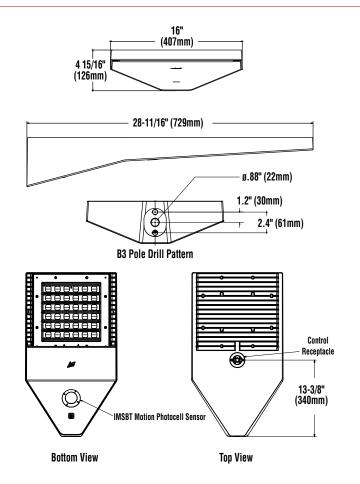
PHOTOMETRICS

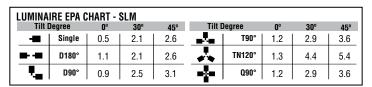
Back to Quick Links

All published luminaire photometric testing performed to IESNA LM-79 standards. ISO footcandle plots below demonstrate the Slice (SLM) light patterns only. Not for total fixture output. For complete specifications and IES files, see website.



#### PRODUCT DIMENSIONS Back to Quick Links









Reviewed by Nick Sugar 11/06/2020, 8:15:01 AM



#### **CONTROLS**

#### AirLink Wireless Lighting Controller

The AirLink integrated controller is a California Title 24 compliant lighting controller that provides real-time light monitoring and control with utility-grade power monitoring. It includes a 24V sensor input and power supply to connect a sensor into the outdoor AirLink wireless lighting system.

The wireless integrated controller is compatible with this fixture.

Click the link below to learn more details about AirLink.

https://www.lsi-industries.com/documents/datasheets/airlink-outdoor-specsheet.pdf

#### Integral Bluetooth™ Motion and Photocell Sensor (IMSBT)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is rated for cold and wet locations (-30° C to 70° C). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click the link below to learn more details about IMSBT.

https://www.lsi-industries.com/documents/datasheets/imsbt-specsheet.pdf

#### AirLink Blue

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click the link below to learn more details about AirLink Blue.

https://www.lsi-airlink.com/airlink-blue/





Reviewed by Nick Sugar 11/06/2020, 8:15:08 AM

#### **POLES & BRACKETS**

LSI offers a full line of poles and mounting accessories to complete your lighting assembly. Aluminum and steel in both square and round shafts. In addition, LSI offers round tapered, fluted and hinge based poles. Designed and engineered for durability and protected with our oven baked DuraGrip Protection System. Also available with our DuraGrip+ Protection system for unmatched corrosion resistance and an extended warranty. American made in our Ohio facility with industry leading lead times.

Click the link below to learn more details about poles & brackets.

https://www.lsi-industries.com/products/poles-and-brackets-area-street.aspx



#### BKA UMB CLR

The 3G rated UMB allows for seamless integration of LSI luminaires onto existing/retrofit or new construction poles. The UMB was designed for square or round (tapered or straight) poles with two mounting hole spacings between 3.5" – 5".



#### **BKA ASF CLR**

The adjustable Slip Fitter is a 3G rated rugged die cast aluminum adapter to mount LSI luminaires onto a onto a 2" iron pipe , 2 3/8 OD tenon. The Adjustable Slip Fitter can be rotated 180° allowing for tilting LSI luminaires up to 45° and 90° when using a vertical tenon.



#### BKS PQM15 CLR

The Pole Quick Mount Bracket allows for preset 15° uptilt of LSI luminaires for greater throw of light and increased vertical illumination as well as fast installation onto poles with LSI's 3" or 5" bolt pattern.



#### **BKS PQMH CLR**

The Pole Quick Mount Bracket allows for lightning fast installation of LSI luminaires onto existing and new construction poles with LSI's B3 or B5 standard pole bolt patterns.



Square Pole



Round Pole 10'-30'



Tapered Pole 20'-39'



## LED TRADITIONAL SMALL FLOODS (SFLS)



HUDS N
COMMUNITY DEVELOPMENT
DEPARTMENT

**✓** Approved

Reviewed by Nick Sugar 11/06/2020, 8:15:12 AM

7-13/16"
(199 mm)
(170 mm)
(151 mm)

SMALL

Optional Yoke shown

**CONSTRUCTION:** Precision die-cast aluminum housing with stainless steel hardware, tempered borosilicate glass lens.

**LEDs:** Select High-performance COB LEDs. Color temperature available in 5000K and 4000K

CRI: Reference below Technical / Lumen Output chart

**ELECTRICAL:** Universal Voltage (120-277V, 50/60 Hz) input. 10Kv surge protection standard.

DIMMING: 0-10 volt dimming, standard

**OPERATING TEMPERATURE:** -35° through 40°C (-31° through

104°F

PHOTOCELL: 120-277 photocell standard with cover.

**DISTRIBUTION:** Highly specular forward throw reflector

FINISH: Chip and fade resistant powder coat finish

PHOTOMETRICS: Please visit our web site at www.lsi-industries.com

for detailed photometric data

INSTALLATION: Luminaire easily mounts via Knuckle or Yoke. 1/2"

threaded knuckle standard.

**EXPECTED LIFE:** Minimum 50,000 hours

WARRANTY: Limited 5-year warranty

**LISTING:** UL listed to U.S. and Canadian safety standards. Suitable for wet locations. For a list of the specific products in this series that are DLC listed, please consult the LED Lighting section of our website

or the Design Lights website at www.designlights.org

#### **TECHNICAL INFORMATION**

SFLS	Į PL	.1
Color Temperature	4000K	5000K
System Wattage	20w	20w
Replaces	70w HID	70w HID
Lumens	2181 lms	2281 lms
Lumens Per Watt	111 lpw	114 lpw
CRI	70	70
Dimensions (Inches)	7.83" x 5.9	3" x 6.70"
Weight	6.33	lbs.









Project Name \_\_\_\_\_\_ Fixture Type \_\_\_\_\_\_ Cat#

# Stormwater Management Report

For





Reviewed by Nick Sugar 11/06/2020, 8:15:16 AM

## **FLEET RESPONSE**

Boston Mills Rd. Hudson, OH 44236

**Prepared For** 

### **Geis Construction**

10020 Aurora-Hudson Road Streetsboro, OH 44241

Design Engineer



2555 Hartville Road, Suite B Rootstown, OH 44272 Phone: 330-329-2037

www.weberengineeringservices.com



WES Job No.: <u>2020-192</u> Date: <u>07-13-2020</u>

Revised: <u>09-25-2020</u>

#### PROJECT DESCRIPTION AND DESIGN CRITERIA

The project has been designed based on the City of Hudson design requirements for storm water management whereas the 25-year post-developed runoff generated from the site shall be detained to the pre-developed 1-year runoff rate and all less frequent storm events shall be limited to their respective pre-developed runoff rates.

The existing site is primarily undeveloped (woods) and discharges to the wetland to the west before reaching an unnamed tributary to Brandywine Creek. The proposed development creates approximately 3.02 acres of impervious area (38.3%). The proposed stormwater management retention basin has been designed to provide full water quality control in accordance with the Ohio EPA Permit No. OHC000005.

The pre-developed drainage area for the site:

The pre-developed drainage area accounted for at the discharge point is 5.87 acres (CN = 79, Tc = 63.9 min).

The post developed drainage area for the site:

The post-developed drainage area accounted for in the basin design is 5.87 acres (CN = 90, Tc = 12.0 min).

#### WATER OUALITY

The stormwater quality basin proposed for the site has been designed to account for the proposed building and parking area. Water quality control is provided with a 3.3" orifice in the proposed retention basin outlet structure.





Reviewed by Nick Sugar 11/06/2020, 8:15:21 AM

## ROUTING THROUGH THE PROPOSED STORMWATER MANAGEMENT BASIN

The following table is a summary of the storm routing for the proposed site.

			Post			
	Pre-Developed		Developed	Post-Developed		
	Runoff from	Allowable	Runoff	Outflow from		Peak
Storm	site	Outflow	Generated	SWM Basin	Peak	Storage,
Event	c.f.s.	c.f.s.	c.f.s.	c.f.s.	Elevation	c.f.
1	1.41	1.41	9.48	0.26	989.97	15,757
2	2.19	1.41	12.35	0.42	990.22	20,341
5	3.48	1.41	16.64	0.73	990.56	26,663
10	4.63	1.41	20.23	0.91	990.86	32,729
25	6.41	1.41	25.50	1.11	991.31	42,240
50	7.96	7.96	29.89	1.25	991.68	50,449
100	9.67	9.67	34.62	1.39	992.07	59,686

The following table summarizes the new stormwater quality basin design information for the proposed on-site basin:

#### **Stormwater Quality Basin**

Top of Bank Elevation	995.25	OHIO
Emergency Spillway Elevation	994.25	HUDSON
100 Year high water elevation	992.07	DEPARTMENT
Top of Structure Elevation	993.00	<b>✓</b> Approved
Inv. 3.3" Water Quality Orifice Elevation	989.00	Reviewed by Nick Sugar 11/06/2020, 8:15:27 AM
Water Quality Elevation	989.63	
Inv. 5.0" SWM Orifice	990.00	
Inv. Outlet Storm Sewer (15")	989.00	
Bottom of SWM Basin	985.00	

Emergency Spillway Calculation:

$$Q = CLH^{3/2}$$

$$C = 2.62 \quad 100\text{-yr inflow} = 34.62 \text{ c.f.s.}$$

$$Q = 2.62(20\text{ft})(1\text{ft})^{3/2} = 52.4 \text{ c.f.s.} > 34.62 \text{ c.f.s.}$$

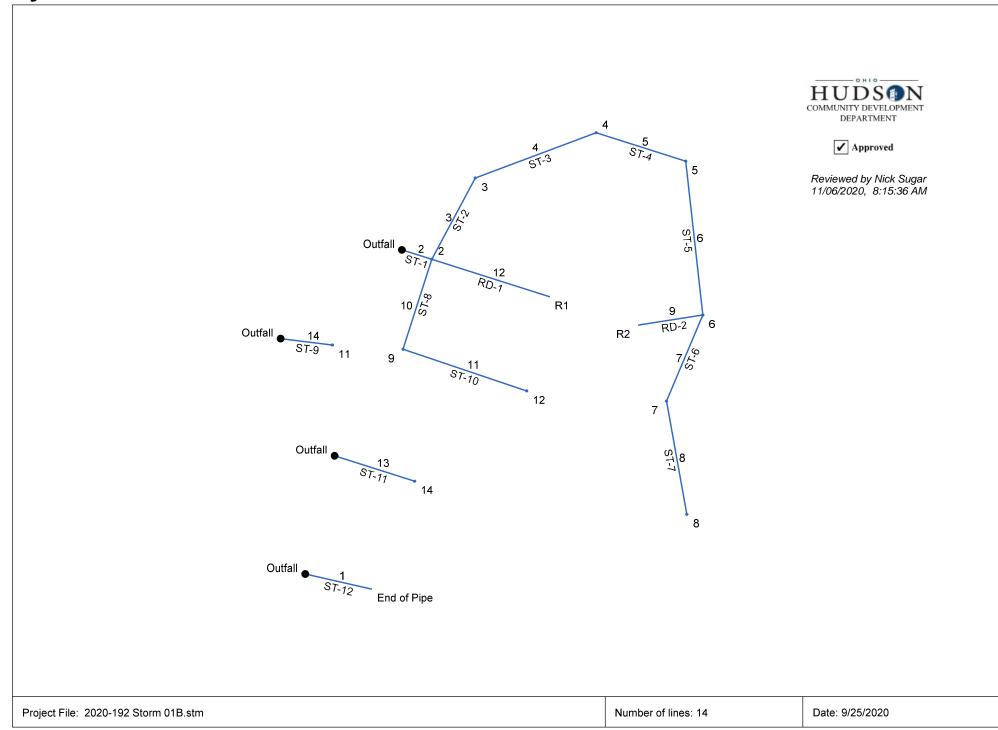




Reviewed by Nick Sugar 11/06/2020, 8:15:32 AM

**STORM SEWER CALCULATIONS (10-YR)** 

## Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



## **Storm Sewer Tabulation**

Statio	n	Len	Drng A	Area	Rnoff	Area x	C	Тс		Rain	Total	Сар	Vel	Pipe		Invert El	ev	HGL Ele	v	Grnd / Ri	m Elev	Line ID
Line	То		Incr	Total	coeff	Incr	Total	Inlet	Syst	(1)	flow	full		Size	Slope	Dn	Up	Dn	Up	Dn	Up	
	Line	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	78.000	0.19	0.19	0.71	0.13	0.13	10.0	10.0	5.0	0.67	2.02	0.94	12	0.32	994.00	994.25	995.00	995.02	997.00	997.00	ST-12
2	End	36.108	0.41	3.87	0.90	0.37	3.48	10.0	16.2	3.9	13.75	26.42	3.65	30	0.42	989.00	989.15	990.86	990.88	993.00	994.00	ST-1
3	2	106.217	0.30	2.13	0.90	0.27	1.92	10.0	15.6	4.0	7.74	14.72	2.68	24	0.42	989.15	989.60	991.11	991.20	994.00	994.60	ST-2
4	3	148.421	0.13	1.83	0.90	0.12	1.65	10.0	14.5	4.2	6.89	14.97	3.04	24	0.44	989.60	990.25	991.29	991.41	994.60	995.30	ST-3
5	4	108.000	0.27	1.70	0.90	0.24	1.53	10.0	13.7	4.3	6.58	14.60	3.67	24	0.42	990.25	990.70	991.55	991.68	995.30	995.30	ST-4
6	5	178.646	0.38	1.43	0.90	0.34	1.29	10.0	12.1	4.6	5.86	14.16	3.66	24	0.39	990.70	991.40	991.95	992.27	995.30	996.25	ST-5
7	6	107.700	0.54	0.80	0.90	0.49	0.72	10.0	11.5	4.7	3.36	4.82	4.24	15	0.56	992.15	992.75	992.92	993.52	996.25	996.00	ST-6
8	7	132.749	0.26	0.26	0.90	0.23	0.23	10.0	10.0	5.0	1.16	3.46	2.68	12	0.94	993.00	994.25	993.69	994.70	996.00	997.25	ST-7
9	6	74.607	0.25	0.25	0.90	0.23	0.23	10.0	10.0	5.0	1.12	2.19	3.77	10	1.00	992.57	993.31	992.99	993.78	996.25	998.00	RD-2
10	2	109.000	0.55	1.08	0.90	0.50	0.97	10.0	11.3	4.7	4.57	7.11	3.79	18	0.46	990.00	990.50	991.11	991.37	994.00	994.00	ST-8
11	10	150.022	0.53	0.53	0.90	0.48	0.48	10.0	10.0	5.0	2.36	5.27	3.21	15	0.67	990.75	991.75	991.66	992.36	994.00	995.00	ST-10
12	2	141.479	0.25	0.25	0.90	0.23	0.23	10.0	10.0	5.0	1.12	2.19	3.78	10	1.00	990.82	992.23	991.24	992.70	994.00	998.00	RD-1
13	End	96.539	1.04	1.04	0.90	0.94	0.94	10.0	10.0	5.0	4.64	7.56	2.63	18	0.52	989.00	989.50	990.86	991.00	992.00	995.00	ST-11
14	End	60.000	0.01	0.01	0.90	0.01	0.01	10.0	10.0	5.0	0.95	11.79	1.88	15	3.33	987.00	989.00	988.25	989.38	989.75	993.00	ST-9
																						HUDS N COMMUNITY DEVELOPMENT DEPARTMENT  Approved
																						Reviewed by Nick Sugar 11/06/2020, 8:15:41 AM
Proje	Project File: 2020-192 Storm 01B.stm											Numbe	r of lines: 1	4		Run Da	te: 9/25/20	)20				

NOTES:Intensity = 51.43 / (Inlet time + 8.90) ^ 0.80; Return period =Yrs. 10; c = cir e = ellip b = box





Reviewed by Nick Sugar 11/06/2020, 8:15:45 AM

**STORM SEWER CALCULATIONS (25-YR)** 

## **Storm Sewer Tabulation**

Statio	n	Len	Drng A	Area	Rnoff	Area x	C	Тс		Rain	Total		Vel	Pipe		Invert Ele	ev	HGL Ele	v	Grnd / Ri	m Elev	Line ID
Line	То		Incr	Total	coeff	Incr	Total	Inlet	Syst	(1)	flow	full		Size	Slope	Dn	Up	Dn	Up	Dn	Up	
	Line	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	78.000	0.19	0.19	0.71	0.13	0.13	10.0	10.0	5.7	0.77	2.02	1.07	12	0.32	994.00	994.25	995.00	995.03	997.00	997.00	ST-12
2	End	36.108	0.41	3.87	0.90	0.37	3.48	10.0	15.4	4.7	16.20	26.42	3.48	30	0.42	989.00	989.15	991.31	991.34	993.00	994.00	ST-1
3	2	106.217	0.30	2.13	0.90	0.27	1.92	10.0	14.9	4.7	9.09	14.72	2.89	24	0.42	989.15	989.60	991.54	991.71	994.00	994.60	ST-2
4	3	148.421	0.13	1.83	0.90	0.12	1.65	10.0	13.9	4.9	8.06	14.97	2.69	24	0.44	989.60	990.25	991.80	991.97	994.60	995.30	ST-3
5	4	108.000	0.27	1.70	0.90	0.24	1.53	10.0	13.2	5.0	7.68	14.60	2.88	24	0.42	990.25	990.70	992.05	992.13	995.30	995.30	ST-4
6	5	178.646	0.38	1.43	0.90	0.34	1.29	10.0	11.9	5.3	6.78	14.16	3.24	24	0.39	990.70	991.40	992.28	992.48	995.30	996.25	ST-5
7	6	107.700	0.54	0.80	0.90	0.49	0.72	10.0	11.3	5.4	3.88	4.82	4.37	15	0.56	992.15	992.75	993.00	993.60	996.25	996.00	ST-6
8	7	132.749	0.26	0.26	0.90	0.23	0.23	10.0	10.0	5.7	1.33	3.46	2.77	12	0.94	993.00	994.25	993.78	994.74	996.00	997.25	ST-7
9	6	74.607	0.25	0.25	0.90	0.23	0.23	10.0	10.0	5.7	1.28	2.19	3.93	10	1.00	992.57	993.31	993.02	993.81	996.25	998.00	RD-2
10	2	109.000	0.55	1.08	0.90	0.50	0.97	10.0	11.1	5.4	5.27	7.11	3.14	18	0.46	990.00	990.50	991.54	991.78	994.00	994.00	ST-8
11	10	150.022	0.53	0.53	0.90	0.48	0.48	10.0	10.0	5.7	2.71	5.27	3.18	15	0.67	990.75	991.75	991.95	992.41	994.00	995.00	ST-10
12	2	141.479	0.25	0.25	0.90	0.23	0.23	10.0	10.0	5.7	1.28	2.19	3.12	10	1.00	990.82	992.23	991.54	992.73	994.00	998.00	RD-1
13	End	96.539	1.04	1.04	0.90	0.94	0.94	10.0	10.0	5.7	5.32	7.56	3.01	18	0.52	989.00	989.50	991.31	991.56	992.00	995.00	ST-11
14	End	60.000	0.01	0.01	0.90	0.01	0.01	10.0	10.0	5.7	1.16	11.79	2.05	15	3.33	987.00	989.00	988.25	989.42	989.75	993.00	ST-9
																						HUDS IN COMMUNITY DEVELOPMENT DEFARTMENT  V Approved  Reviewed by Nick Sugar 11/06/2020, 8:15:52 AM
-																-	1				1	

Number of lines: 14

NOTES:Intensity = 47.31 / (Inlet time + 7.60) ^ 0.74; Return period =Yrs. 25; c = cir e = ellip b = box

Project File: 2020-192 Storm 01B.stm

Run Date: 9/25/2020





Reviewed by Nick Sugar 11/06/2020, 8:15:57 AM

**STORM SEWER CALCULATIONS (100-YR)** 

## **Storm Sewer Tabulation**

Statio	n	Len	Drng A	rea	Rnoff	Area x	С	Тс		Rain	Total		Vel	Pipe		Invert Ele	ev	HGL Ele	v	Grnd / Rim Elev		Line ID
Line	То	-	Incr	Total	coeff	Incr	Total	Inlet	Syst	(1)	flow	full		Size	Slope	Dn	Up	Dn	Up	Dn	Up	
	Line	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	78.000	0.19	0.19	0.71	0.13	0.13	10.0	10.0	6.7	0.91	2.02	1.26	12	0.32	994.00	994.25	995.00	995.04	997.00	997.00	ST-12
2	End	36.108	0.41	3.87	0.90	0.37	3.48	10.0	14.6	5.7	19.83	26.42	4.04	30	0.42	989.00	989.15	992.07	992.15	993.00	994.00	ST-1
3	2	106.217	0.30	2.13	0.90	0.27	1.92	10.0	14.1	5.8	11.10	14.72	3.53	24	0.42	989.15	989.60	992.41	992.66	994.00	994.60	ST-2
4	3	148.421	0.13	1.83	0.90	0.12	1.65	10.0	13.3	5.9	9.79	14.97	3.12	24	0.44	989.60	990.25	992.80	993.08	994.60	995.30	ST-3
5	4	108.000	0.27	1.70	0.90	0.24	1.53	10.0	12.7	6.1	9.29	14.60	2.96	24	0.42	990.25	990.70	993.18	993.36	995.30	995.30	ST-4
6	5	178.646	0.38	1.43	0.90	0.34	1.29	10.0	11.6	6.3	8.15	14.16	2.59	24	0.39	990.70	991.40	993.49	993.72	995.30	996.25	ST-5
7	6	107.700	0.54	0.80	0.90	0.49	0.72	10.0	11.1	6.4	4.64	4.82	3.78	15	0.56	992.15	992.75	993.83	994.38	996.25	996.00	ST-6
8	7	132.749	0.26	0.26	0.90	0.23	0.23	10.0	10.0	6.7	1.58	3.46	2.63	12	0.94	993.00	994.25	994.52	994.84	996.00	997.25	ST-7
9	6	74.607	0.25	0.25	0.90	0.23	0.23	10.0	10.0	6.7	1.52	2.19	2.78	10	1.00	992.57	993.31	993.83	994.14	996.25	998.00	RD-2
10	2	109.000	0.55	1.08	0.90	0.50	0.97	10.0	11.0	6.5	6.31	7.11	3.57	18	0.46	990.00	990.50	992.41	992.80	994.00	994.00	ST-8
11	10	150.022	0.53	0.53	0.90	0.48	0.48	10.0	10.0	6.7	3.22	5.27	2.62	15	0.67	990.75	991.75	993.00	993.37	994.00	995.00	ST-10
12	2	141.479	0.25	0.25	0.90	0.23	0.23	10.0	10.0	6.7	1.52	2.19	2.79	10	1.00	990.82	992.23	992.41	993.05	994.00	998.00	RD-1
13	End	96.539	1.04	1.04	0.90	0.94	0.94	10.0	10.0	6.7	6.31	7.56	3.57	18	0.52	989.00	989.50	992.07	992.42	992.00	995.00	ST-11
14	End	60.000	0.01	0.01	0.90	0.01	0.01	10.0	10.0	6.7	1.45	11.79	2.28	15	3.33	987.00	989.00	988.25	989.48	989.75	993.00	ST-9
																						HUDSON COMMINITY DEVELOPMENT DEVELOPMENT  Approved  Reviewed by Nick Sugar 11/06/2020, 8:16:04 AM

Number of lines: 14

NOTES:Intensity = 41.59 / (Inlet time + 5.70) ^ 0.66; Return period =Yrs. 100; c = cir e = ellip b = box

Project File: 2020-192 Storm 01B.stm

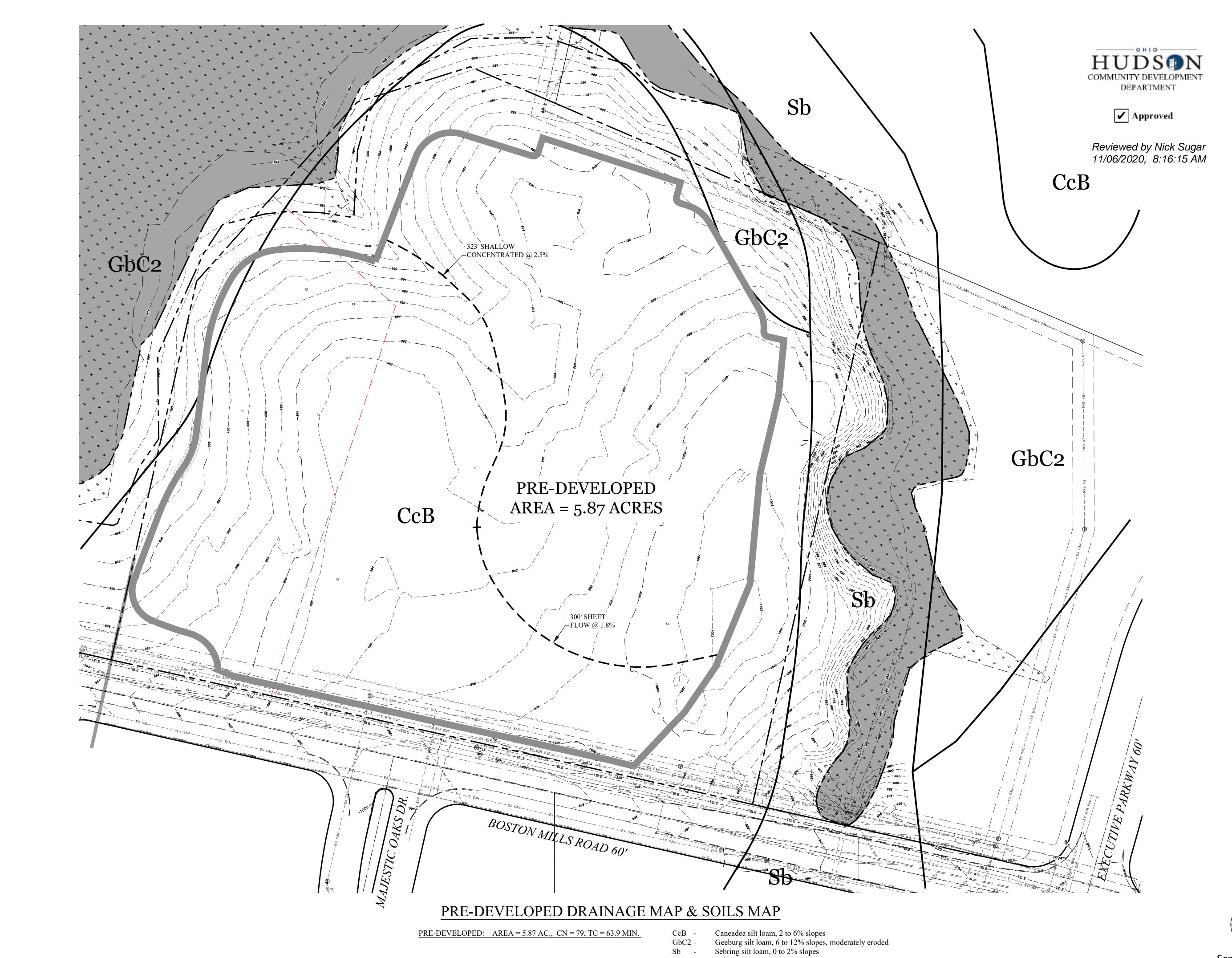
Run Date: 9/25/2020





Reviewed by Nick Sugar 11/06/2020, 8:16:08 AM

**DRAINAGE MAPS** 





2555 Hartville Rd., Suite B Rootstown, OH 44272 www.WeberEngineeringServices.com 330-329-2037 matt@webercivil.com



Reg. No.: 61709

CLIENT:

GEIS CONSTRUCTION

10020 AURORA-HUDSON RD. STREETSBORO, OHIO JEN DIASIO PHONE: (216) 218-3507

OWNER:

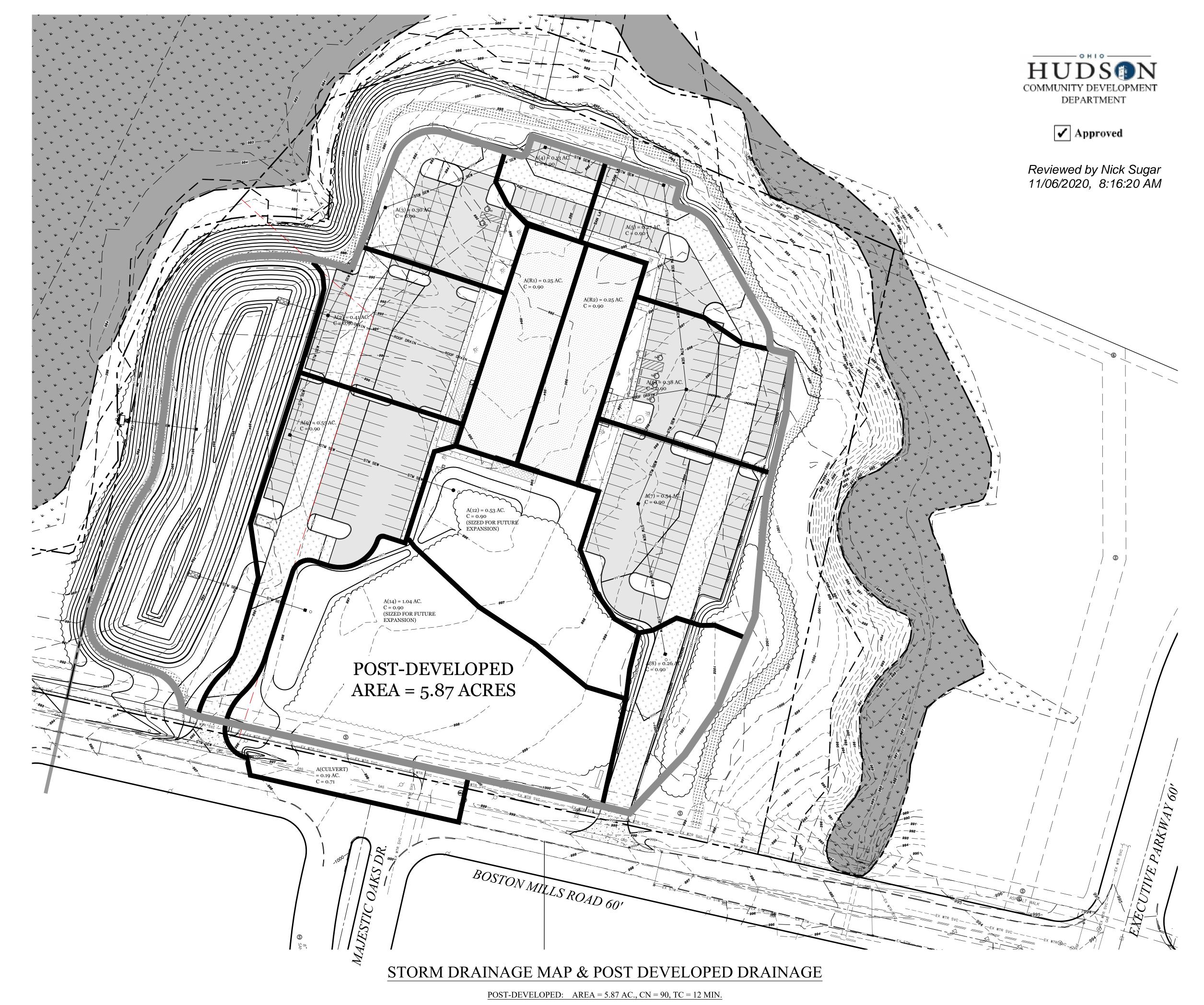
## HEMINGWAY DEVELOPMENT

6555 CARNEGIE AVE., SUITE 301 CLEVELAND, OHIO 44103 JIM DOYLE PHONE: (216) 650-6419

Issue Date 07-13-2020 08-06-2020 08-24-2020 09-17-2020 09-25-2020 FLEE SITE BOST

> SWP3 **DETAILS**

Scale: 1" = 40' Project No. 2020-192





2555 Hartville Rd., Suite B Rootstown, OH 44272 www.WeberEngineeringServices.com 330-329-2037 matt@webercivil.com



Reg. No.: 61709

CLIENT:

GEIS CONSTRUCTION

10020 AURORA-HUDSON RD. STREETSBORO, OHIO JEN DIASIO PHONE: (216) 218-3507

OWNER:

## HEMINGWAY DEVELOPMENT

6555 CARNEGIE AVE., SUITE 301 CLEVELAND, OHIO 44103 JIM DOYLE PHONE: (216) 650-6419

SITE DEVELOPMENT
BOSTON MILLS ROAD, HUDSON, OHO
BOSTON MILLS ROAD, HUDSON, OHO
BOSTON MILLS ROAD, HUDSON, OHO

SWP3 DETAILS

C107A
Project No. 2020-192







Reviewed by Nick Sugar 11/06/2020, 8:16:29 AM

## WATER QUALITY CALCULATIONS

## **Project and Watershed Information; WQv Calculation**

version 3.1 2018-10-25

Project Details		
Project Name:	Fleet Response	
Project Location:	Hudson, OH	
Project Latitude:	41.252579	
Project Longitude:	-81.484438	
NPDES Permit Applicant:		
Submitted by:	MLW	
Date:	8/5/2020	

bwatershed Details			
Subwatershed ID/Label:		Pond #1	
Subwatershed Drainage Area, A <sub>total</sub> =	5.87	acres =	255,697
Subwatershed Impervious Area, A <sub>imp</sub> =	3.02	acres =	131,551
Imperviousness fraction, i =	0.51	=	51
Volumetric Runoff Coefficient, Rv =	0.51		
Volumetric Runoff Coefficient, Rv = Water Quality Volume, WQv =		ft³	





Reviewed by Nick Sugar 11/06/2020, 8:16:34 AM

#### Wet Extended Detention Basin WQv Compliance Tool

version 3.1 2018-10-25

#### **Project Summary**

**Project Name: Fleet Response** 

Subwatershed ID/Label: Pond #1

Submitted by: MLW

Date: 8/5/2020

Subwatershed Drainage Area, Atotal =

Subwatershed Impervious Area, A<sub>imp</sub> = 3.02 acres Imperviousness fraction, i = 0.51

> 9,839 ft<sup>3</sup> Water Quality Volume, WQv =

255,697 ft2 131,551 ft2 =

51 %

0.23 ac-ft

#### Step 1 - Soil Suitability

Soil Series

Caneadea

9839 ft<sup>3</sup>

1968 ft<sup>3</sup>

Elevation

5.87 acres

HSG

#### Step 2 - Wet ED Basin Volume Requirements

Extended Detention Volume, EDv = Minimum Sediment Storage Volume, V<sub>sediment</sub> =

11806 ft<sup>3</sup> Minimum Permanent Pool Volume, PPv =

#### Step 3 - Basin Stage-Storage Relationship

**Bottom of Permanent Micropool =** 

Incremental Cumulative

Volume

Volume

ft2 ft<sup>3</sup> ft<sup>3</sup> 985.00 2460 4227 986.00 3,304 3,304 987.00 6066 5,119 8,423 988.00 7976 15,422 6,999 989.00 14839 11,231 990.00 17782 16,288 991.00 20825 19,283 992.00 23969 22,379

Area

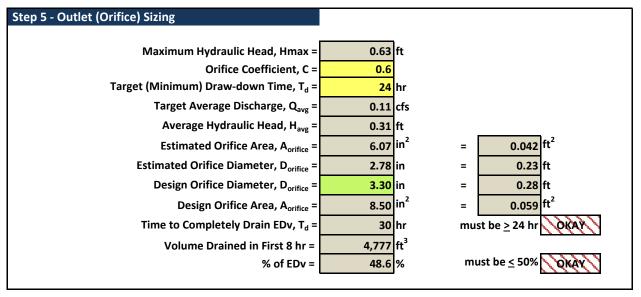
HUDSON COMMUNITY DEVELOPMENT DEPARTMENT

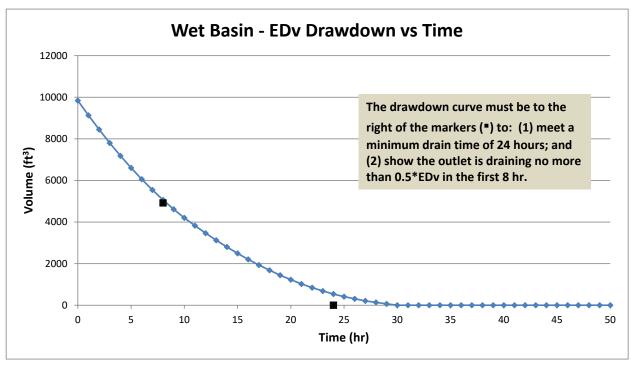
✓ Approved

Reviewed by Nick Sugar 11/06/2020, 8:16:39 AM

26,653 42,942 62,225 84,604 993.00 27213 25,574 110,178 994.00 30558 28,869 139,047 171,312 995.00 34003 32,265 995.25 38451 9,051 180,363

Step 4 - Outlet Elevations and Storage Volumes	
WQ Orifice Invert Elevation =	989.00
· · · · · · · · · · · · · · · · · · ·	
Elevation of Top of EDv =	989.63
Secondary Outlet Invert Elevation =	990.00
WQ Treatment Volume Provided, V <sub>treatment</sub> =	= 16,288 ft <sup>3</sup>
Treatment Vol Provided Relative to EDv, V <sub>treatment</sub> /EDv =	= 1.66 = 166% (OKAY)
Permanent Pool Volume Provided, PPv =	26,653 ft <sup>3</sup>
Ratio PPv Provided to PPv Required =	= 2.26%   QKAY







## STORM ROUTING





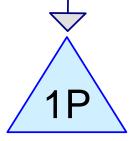
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Pre-developed



Post-developed



**New Pond** 





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### **Area Listing (selected nodes)**

Area	CN	Description
(sq-ft)		(subcatchment-numbers)
118,919	80	>75% Grass cover, Good, HSG D (1S, 2S)
131,551	98	Paved parking, HSG D (2S)
14,810	98	Water Surface, HSG D (2S)
246,114	79	Woods, Fair, HSG D (1S)
511,394	85	TOTAL AREA





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### Soil Listing (selected nodes)

Area	Soil	Subcatchment
(sq-ft)	Group	Numbers
0	HSG A	
0	HSG B	
0	HSG C	
511,394	HSG D	1S, 2S
0	Other	
511,394		<b>TOTAL AREA</b>





#### 2020-192 Pond 01B

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> Su Nu

## **Ground Covers (selected nodes)**

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
 0	0	0	118,919	0	118,919	>75% Grass
						cover, Good
0	0	0	131,551	0	131,551	Paved parking
0	0	0	14,810	0	14,810	Water Surface
0	0	0	246,114	0	246,114	Woods, Fair
0	0	0	511.394	0	511.394	TOTAL AREA





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Type II 24-hr 1-year Rainfall=2.04"

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Time span=0.00-60.00 hrs, dt=0.02 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment 1S: Pre-developed Runoff Area=5.870 ac 0.00% Impervious Runoff Depth=0.55"

Flow Length=623' Tc=63.9 min CN=79 Runoff=1.41 cfs 11,635 cf

**Subcatchment 2S: Post-developed** Runoff Area=5.870 ac 57.24% Impervious Runoff Depth=1.13"

Tc=12.0 min CN=90 Runoff=9.48 cfs 24,039 cf

Pond 1P: New Pond Peak Elev=989.97' Storage=15,755 cf Inflow=9.48 cfs 24,039 cf

Outflow=0.26 cfs 22,948 cf

Total Runoff Area = 511,394 sf Runoff Volume = 35,675 cf Average Runoff Depth = 0.84" 71.38% Pervious = 365,033 sf 28.62% Impervious = 146,362 sf





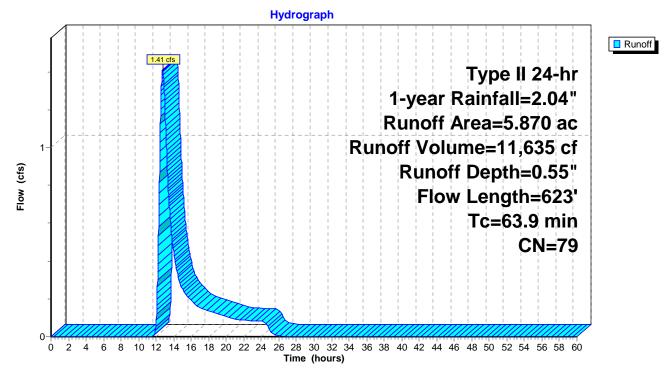
# **Summary for Subcatchment 1S: Pre-developed**

Runoff = 1.41 cfs @ 12.72 hrs, Volume= 11,635 cf, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 1-year Rainfall=2.04"

	Area	(ac) C	N Des	cription		
	5.	650 7	79 Woo	ds, Fair, F	ISG D	
_	0.	220 8	30 >759	% Grass co	over, Good	, HSG D
	5.	870 7	79 Wei	ghted Aver	age	
	5.	870	100.	00% Pervi	ous Area	
	_		01		•	
	Tc	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	61.8	300	0.0180	0.08		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 2.44"
	2.1	323	0.0250	2.55		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	63.9	623	Total			

# **Subcatchment 1S: Pre-developed**







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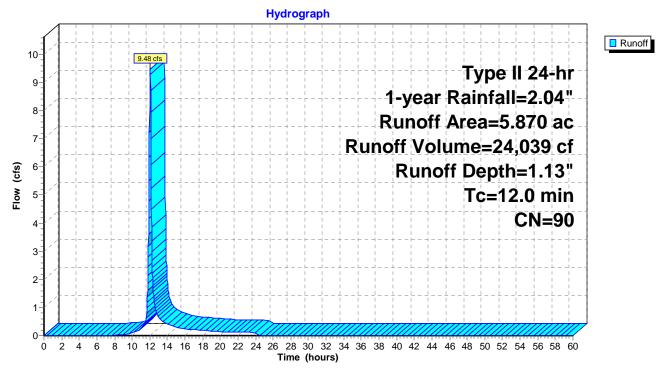
# Summary for Subcatchment 2S: Post-developed

Runoff = 9.48 cfs @ 12.04 hrs, Volume= 24,039 cf, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 1-year Rainfall=2.04"

_	Area	(ac)	CN	Desc	ription		
_	3.	020	98	Pave	ed parking,	HSG D	
	2.	510	80	>75%	6 Grass co	over, Good	d, HSG D
_	0.	340	98	Wate	er Surface	, HSG D	
	5.	870	90	Weig	hted Aver	age	
	2.	510		42.7	6% Pervio	us Area	
	3.	360		57.2	4% Imperv	rious Area	
	Tc	Leng		Slope	Velocity	Capacity	Description
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	12.0						Direct Entry.

# Subcatchment 2S: Post-developed







Volume

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## **Summary for Pond 1P: New Pond**

Inflow Area = 255,697 sf, 57.24% Impervious, Inflow Depth = 1.13" for 1-year event

Inflow = 9.48 cfs @ 12.04 hrs, Volume= 24,039 cf

Outflow = 0.26 cfs @ 15.75 hrs, Volume= 22,948 cf, Atten= 97%, Lag= 222.4 min

Primary = 0.26 cfs @ 15.75 hrs, Volume= 22,948 cf

Routing by Sim-Route method, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Peak Elev= 989.97' @ 15.75 hrs Surf.Area= 17,690 sf Storage= 15,755 cf

Plug-Flow detention time= 782.1 min calculated for 22,948 cf (95% of inflow)

Avail.Storage Storage Description

Center-of-Mass det. time= 756.1 min (1,584.1 - 828.0)

Invert

10.0	miron 7 traine	storage eterage	2 2 0 0 0 1 1 2 1 1 2 1 1	
#1	989.00' 153	3,825 cf Custon	m Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
989.00	14,839	0	0	
990.00	17,782	16,311	16,311	
991.00	20,825	19,304	35,614	
992.00	23,969	22,397	58,011	
993.00	27,213	25,591	83,602	
994.00	30,558	28,886	112,488	
995.00	34,003	32,281	144,768	
995.25	38,451	9,057	153,825	
Device Ro	outing Inve	ert Outlet Device	29	

Device	Routing	invert	Outlet Devices
#1	Primary	989.00'	15.0" Round Culvert
			L= 60.0' CMP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 989.00' / 987.00' S= 0.0333 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf
#2	Device 1	989.00'	<b>3.3" Vert. WQ Orifice</b> C= 0.600
#3	Device 1	990.00'	5.0" Vert. Primary Orifice C= 0.600
#4	Device 1	993.00'	1.0" x 22.0" Horiz. Top of Grate
			X 12 rows C= 0.600 in 24.0" x 24.0" Grate (46% open area)
			Limited to weir flow at low heads

**Primary OutFlow** Max=0.26 cfs @ 15.75 hrs HW=989.97' (Free Discharge)

**1=Culvert** (Passes 0.26 cfs of 3.42 cfs potential flow)

**—2=WQ Orifice** (Orifice Controls 0.26 cfs @ 4.39 fps)

-3=Primary Orifice (Controls 0.00 cfs)

**-4=Top of Grate** (Controls 0.00 cfs)

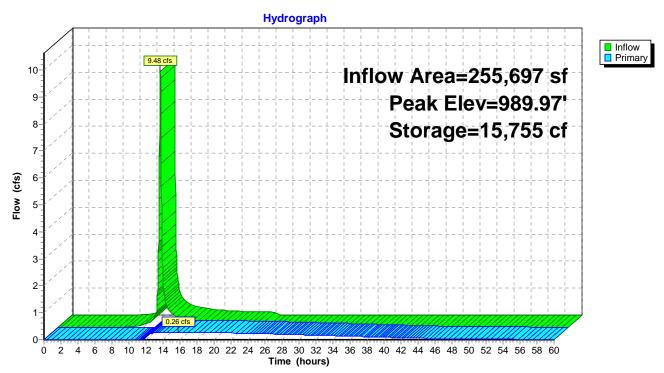




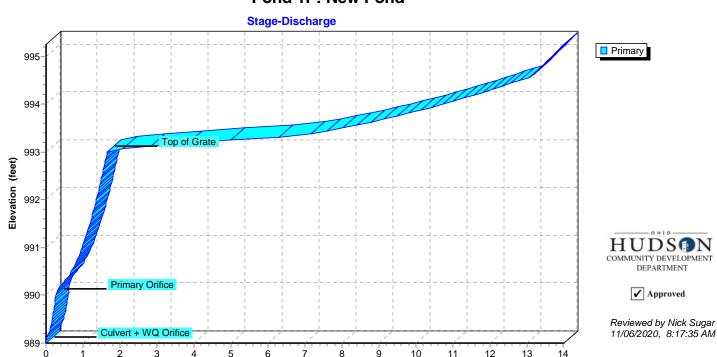
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### Pond 1P: New Pond



### **Pond 1P: New Pond**



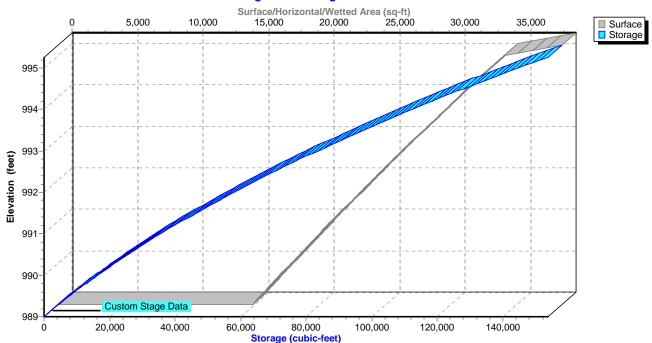
Discharge (cfs)

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## Pond 1P: New Pond

### Stage-Area-Storage







Type II 24-hr 2-year Rainfall=2.44"

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Time span=0.00-60.00 hrs, dt=0.02 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment 1S: Pre-developed Runoff Area=5.870 ac 0.00% Impervious Runoff Depth=0.80"

Flow Length=623' Tc=63.9 min CN=79 Runoff=2.19 cfs 16,993 cf

Subcatchment 2S: Post-developed Runoff Area=5.870 ac 57.24% Impervious Runoff Depth=1.48"

Tc=12.0 min CN=90 Runoff=12.35 cfs 31,483 cf

Pond 1P: New Pond Peak Elev=990.22' Storage=20,339 cf Inflow=12.35 cfs 31,483 cf

Outflow=0.42 cfs 30,211 cf

Total Runoff Area = 511,394 sf Runoff Volume = 48,476 cf Average Runoff Depth = 1.14" 71.38% Pervious = 365,033 sf 28.62% Impervious = 146,362 sf





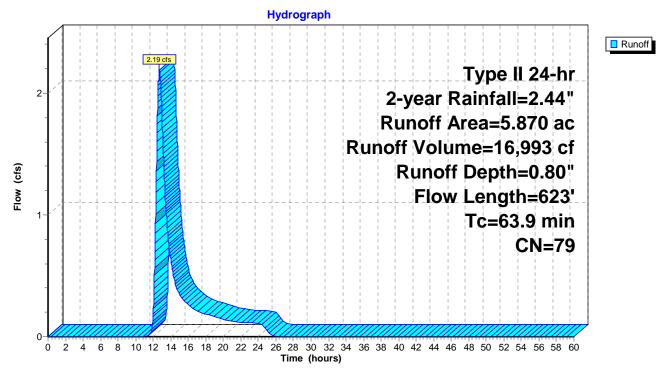
# **Summary for Subcatchment 1S: Pre-developed**

Runoff = 2.19 cfs @ 12.71 hrs, Volume= 16,993 cf, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 2-year Rainfall=2.44"

_	Area	(ac) C	N Desc	cription		
	5.	650 7	79 Woo	ds, Fair, F	ISG D	
_	0.	220 8	30 >759	% Grass co	over, Good	, HSG D
	5.	870 7	79 Wei	ghted Aver	age	
	5.	870	100.	00% Pervi	ous Area	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
-	61.8	300	0.0180	0.08	(0.0)	Sheet Flow,
	2.1	323	0.0250	2.55		Woods: Light underbrush n= 0.400 P2= 2.44" <b>Shallow Concentrated Flow,</b> Unpaved Kv= 16.1 fps
	63.9	623	Total			

# Subcatchment 1S: Pre-developed







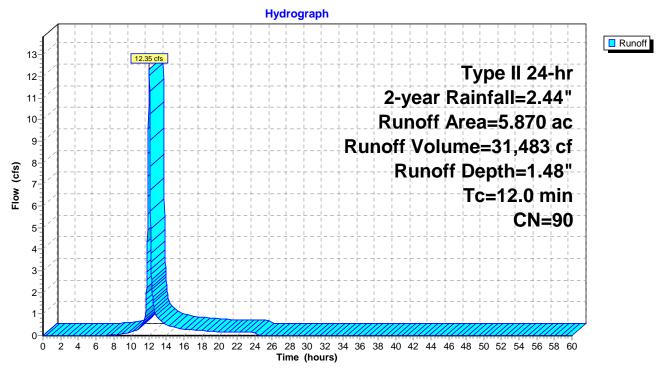
# Summary for Subcatchment 2S: Post-developed

Runoff = 12.35 cfs @ 12.04 hrs, Volume= 31,483 cf, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 2-year Rainfall=2.44"

	Area	(ac)	CN	Desc	ription		
	3.	020	98	Pave	ed parking	HSG D	
	2.	510	80	>75%	6 Grass co	over, Good	I, HSG D
	0.	340	98	Wate	er Surface	, HSG D	
	5.	870	90	Weig	ghted Aver	age	
	2.	510		42.7	6% Pervio	us Area	
	3.	360		57.2	4% Imperv	ious Area	
	_						
	Tc	Leng		Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	12.0						Direct Entry,

# Subcatchment 2S: Post-developed







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## **Summary for Pond 1P: New Pond**

Inflow Area = 255,697 sf, 57.24% Impervious, Inflow Depth = 1.48" for 2-year event

Inflow 12.35 cfs @ 12.04 hrs. Volume= 31.483 cf

Outflow 0.42 cfs @ 14.67 hrs, Volume= 30,211 cf, Atten= 97%, Lag= 157.8 min

Primary 0.42 cfs @ 14.67 hrs, Volume= 30,211 cf

Routing by Sim-Route method, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Peak Elev= 990.22' @ 14.67 hrs Surf.Area= 18,459 sf Storage= 20,339 cf

Plug-Flow detention time= 780.7 min calculated for 30,201 cf (96% of inflow)

Center-of-Mass det. time= 757.7 min (1,578.0 - 820.3)

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	989.00'	153,82	25 cf Custom	Stage Data (Pri	smatic) Listed below (Recalc)
Elevation (feet)	Surf.,	Area sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
989.00	14	,839	0	0	
990.00	17	,782	16,311	16,311	
991.00	20	,825	19,304	35,614	
992.00	23	,969	22,397	58,011	
993.00	27	,213	25,591	83,602	
994.00	30	,558	28,886	112,488	
995.00	34	,003	32,281	144,768	
995.25	38	,451	9,057	153,825	
Device R	Routing	Invert	Outlet Device	s	

Device	Routing	invert	Outlet Devices
#1	Primary	989.00'	15.0" Round Culvert
			L= 60.0' CMP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 989.00' / 987.00' S= 0.0333 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf
#2	Device 1	989.00'	<b>3.3" Vert. WQ Orifice</b> C= 0.600
#3	Device 1	990.00'	5.0" Vert. Primary Orifice C= 0.600
#4	Device 1	993.00'	1.0" x 22.0" Horiz. Top of Grate
			X 12 rows C= 0.600 in 24.0" x 24.0" Grate (46% open area)
			Limited to weir flow at low heads

**Primary OutFlow** Max=0.42 cfs @ 14.67 hrs HW=990.22' (Free Discharge)

**-1=Culvert** (Passes 0.42 cfs of 4.59 cfs potential flow)

**-2=WQ Orifice** (Orifice Controls 0.30 cfs @ 5.02 fps)

-3=Primary Orifice (Orifice Controls 0.12 cfs @ 1.61 fps)

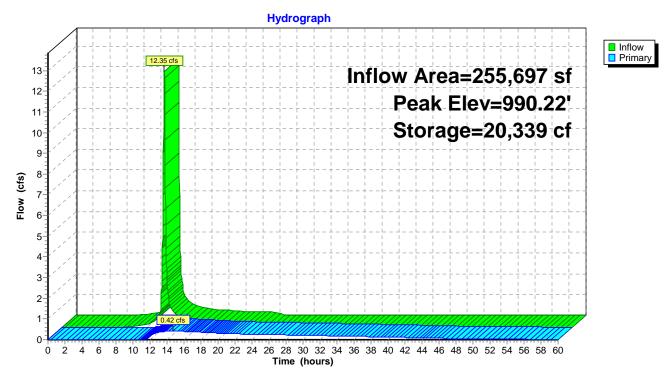
**-4=Top of Grate** (Controls 0.00 cfs)



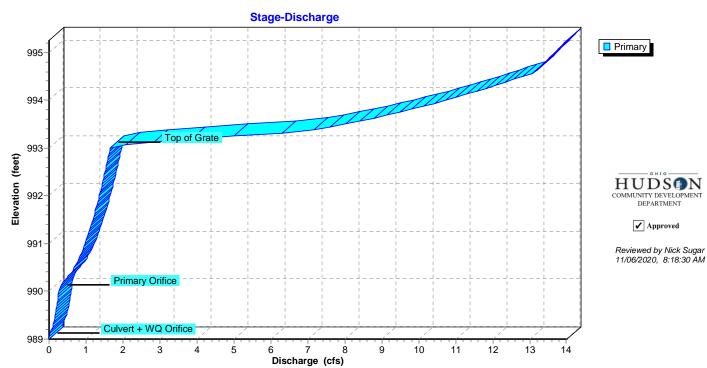


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Pond 1P: New Pond



Pond 1P: New Pond

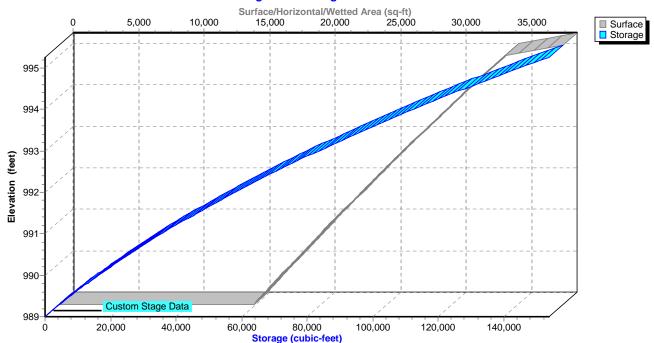


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## Pond 1P: New Pond

### Stage-Area-Storage







Type II 24-hr 5-year Rainfall=3.03"

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Time span=0.00-60.00 hrs, dt=0.02 hrs, 3001 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment 1S: Pre-developed**Runoff Area=5.870 ac 0.00% Impervious Runoff Depth=1.21"

Flow Length=623' Tc=63.9 min CN=79 Runoff=3.48 cfs 25,792 cf

**Subcatchment 2S: Post-developed** Runoff Area=5.870 ac 57.24% Impervious Runoff Depth=2.01"

Tc=12.0 min CN=90 Runoff=16.64 cfs 42,865 cf

Pond 1P: New Pond Peak Elev=990.56' Storage=26,662 cf Inflow=16.64 cfs 42,865 cf

Outflow=0.73 cfs 41,469 cf

Total Runoff Area = 511,394 sf Runoff Volume = 68,658 cf Average Runoff Depth = 1.61" 71.38% Pervious = 365,033 sf 28.62% Impervious = 146,362 sf





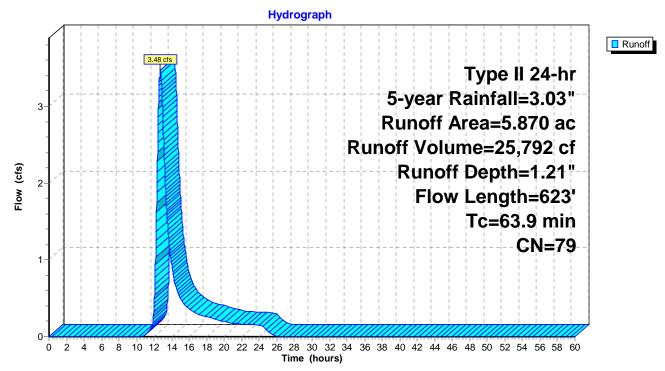
# **Summary for Subcatchment 1S: Pre-developed**

Runoff = 3.48 cfs @ 12.71 hrs, Volume= 25,792 cf, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 5-year Rainfall=3.03"

Area	(ac) C	N Desc	cription		
5	.650 7	'9 Woo	ds, Fair, F	ISG D	
0	.220 8	30 >759	% Grass co	over, Good	, HSG D
5	.870 7	'9 Wei	ghted Aver	age	
5	.870	100.	00% Pervi	ous Area	
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
61.8	300	0.0180	0.08		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 2.44"
2.1	323	0.0250	2.55		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
63.9	623	Total			

# Subcatchment 1S: Pre-developed







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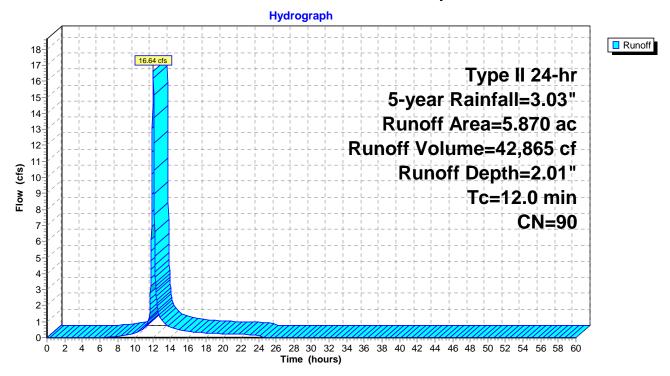
## **Summary for Subcatchment 2S: Post-developed**

Runoff = 16.64 cfs @ 12.04 hrs, Volume= 42,865 cf, Depth= 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 5-year Rainfall=3.03"

_	Area	(ac)	CN	Desc	ription			
_	3.	020	98	Pave	d parking,	HSG D		
	2.	510	80	>75%	6 Grass co	over, Good,	HSG D	
_	0.	340	98	Wate	er Surface,	, HSG D		
	5.	870	90	Weig	hted Aver	age		
	2.	510		42.7	6% Pervio	us Area		
	3.	360		57.24	4% Imperv	rious Area		
	_	_						
	Tc	Lengi		Slope	Velocity	Capacity	Description	
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)		
	12.0						Direct Entry,	

# **Subcatchment 2S: Post-developed**







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## **Summary for Pond 1P: New Pond**

Inflow Area = 255,697 sf, 57.24% Impervious, Inflow Depth = 2.01" for 5-year event

Inflow = 16.64 cfs @ 12.04 hrs, Volume= 42,865 cf

Outflow = 0.73 cfs @ 13.77 hrs, Volume= 41,469 cf, Atten= 96%, Lag= 103.8 min

Primary = 0.73 cfs @ 13.77 hrs, Volume= 41,469 cf

Routing by Sim-Route method, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Peak Elev= 990.56' @ 13.77 hrs Surf.Area= 19,473 sf Storage= 26,662 cf

Plug-Flow detention time= 687.6 min calculated for 41,455 cf (97% of inflow)

Center-of-Mass det. time= 668.7 min (1,480.3 - 811.5)

Volume	Inver	t Avail.Sto	rage Storage D	Description	
#1	989.00	)' 153,82	25 cf Custom \$	Stage Data (Pri	smatic) Listed below (Recalc)
Elevatio	n 5	Surf.Area	Inc.Store	Cum.Store	
(feet	-	(sq-ft)	(cubic-feet)	(cubic-feet)	
989.00	)	14,839	0	0	
990.00	)	17,782	16,311	16,311	
991.00	)	20,825	19,304	35,614	
992.0	)	23,969	22,397	58,011	
993.00	)	27,213	25,591	83,602	
994.00	)	30,558	28,886	112,488	
995.00	)	34,003	32,281	144,768	
995.2	5	38,451	9,057	153,825	
Device	Routing	Invert	Outlet Devices		

Device	Routing	invert	Outlet Devices
#1	Primary	989.00'	15.0" Round Culvert
			L= 60.0' CMP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 989.00' / 987.00' S= 0.0333 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf
#2	Device 1	989.00'	<b>3.3" Vert. WQ Orifice</b> C= 0.600
#3	Device 1	990.00'	5.0" Vert. Primary Orifice C= 0.600
#4	Device 1	993.00'	1.0" x 22.0" Horiz. Top of Grate
			X 12 rows C= 0.600 in 24.0" x 24.0" Grate (46% open area)
			Limited to weir flow at low heads

**Primary OutFlow** Max=0.73 cfs @ 13.77 hrs HW=990.56' (Free Discharge)

**-1=Culvert** (Passes 0.73 cfs of 5.70 cfs potential flow)

**2=WQ Orifice** (Orifice Controls 0.34 cfs @ 5.73 fps)

**-3=Primary Orifice** (Orifice Controls 0.39 cfs @ 2.84 fps)

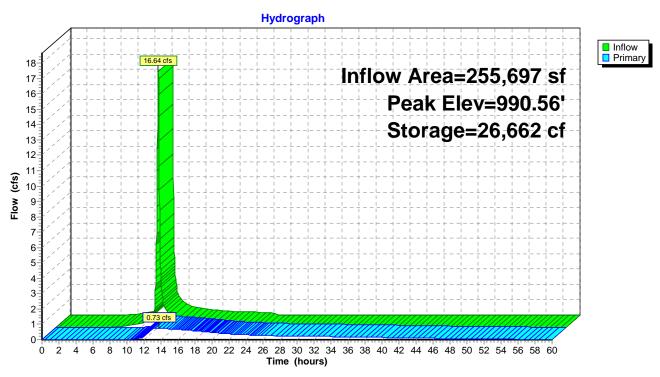
-4=Top of Grate (Controls 0.00 cfs)



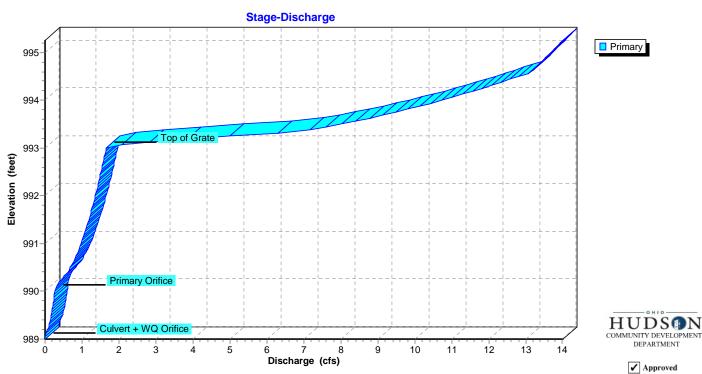


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### Pond 1P: New Pond



## Pond 1P: New Pond

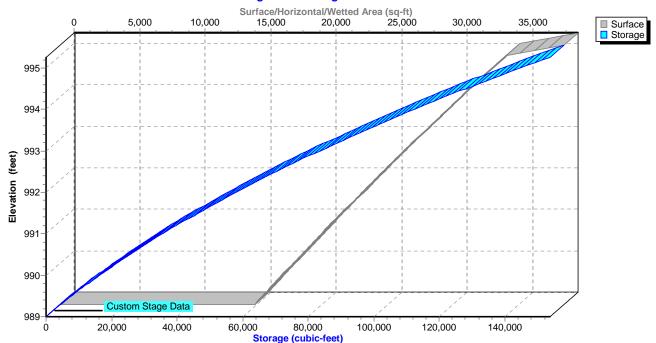


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### Pond 1P: New Pond

### Stage-Area-Storage







Type II 24-hr 10-year Rainfall=3.52"

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Time span=0.00-60.00 hrs, dt=0.02 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment 1S: Pre-developed Runoff Area=5.870 ac 0.00% Impervious Runoff Depth=1.58"

Flow Length=623' Tc=63.9 min CN=79 Runoff=4.63 cfs 33,699 cf

Subcatchment 2S: Post-developed Runoff Area=5.870 ac 57.24% Impervious Runoff Depth=2.47"

Tc=12.0 min CN=90 Runoff=20.23 cfs 52,560 cf

Pond 1P: New Pond Peak Elev=990.86' Storage=32,728 cf Inflow=20.23 cfs 52,560 cf

Outflow=0.91 cfs 51,061 cf

Total Runoff Area = 511,394 sf Runoff Volume = 86,260 cf Average Runoff Depth = 2.02" 71.38% Pervious = 365,033 sf 28.62% Impervious = 146,362 sf





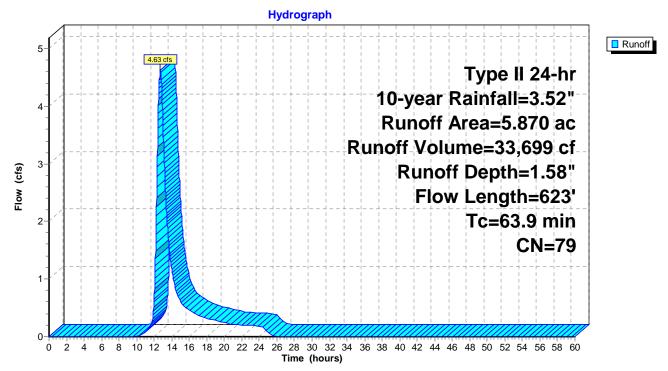
# **Summary for Subcatchment 1S: Pre-developed**

Runoff = 4.63 cfs @ 12.70 hrs, Volume= 33,699 cf, Depth= 1.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 10-year Rainfall=3.52"

_	Area	(ac) C	N Desc	cription		
5.650 79 Woods, Fair, HSG D					ISG D	
_	0.	, HSG D				
	5.	870 7	'9 Wei	ghted Aver	age	
	5.	870	100.	00% Pervi	ous Area	
	Tc	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	61.8	300	0.0180	0.08		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 2.44"
	2.1	323	0.0250	2.55		Shallow Concentrated Flow,
_						Unpaved Kv= 16.1 fps
	63.9	623	Total			

# **Subcatchment 1S: Pre-developed**







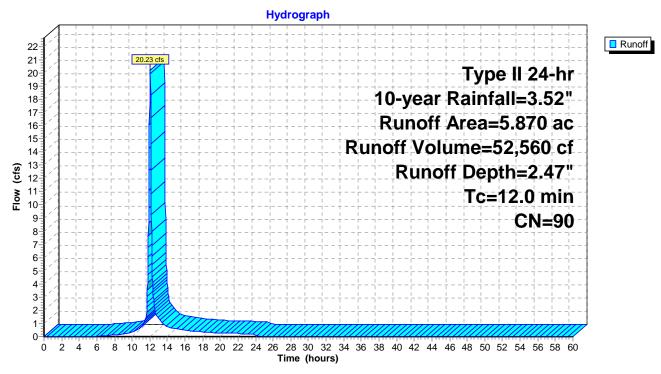
# Summary for Subcatchment 2S: Post-developed

Runoff = 20.23 cfs @ 12.03 hrs, Volume= 52,560 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 10-year Rainfall=3.52"

	Area	(ac)	CN	Desc	ription		
	3.	020	98	Pave	ed parking	HSG D	
	2.	510	80	>75%	6 Grass co	over, Good	I, HSG D
	0.	340	98	Wate	er Surface	, HSG D	
	5.	5.870 90 Weighted Average					
	2.510 42.76% Pervious Area				6% Pervio	us Area	
	3.	360		57.2	4% Imperv	ious Area	
	_						
	Tc	Leng		Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	12.0						Direct Entry,

# Subcatchment 2S: Post-developed







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## **Summary for Pond 1P: New Pond**

Inflow Area = 255,697 sf, 57.24% Impervious, Inflow Depth = 2.47" for 10-year event

Inflow = 20.23 cfs @ 12.03 hrs, Volume= 52,560 cf

Outflow = 0.91 cfs @ 13.67 hrs, Volume= 51,061 cf, Atten= 96%, Lag= 98.4 min

Primary = 0.91 cfs @ 13.67 hrs, Volume= 51,061 cf

Routing by Sim-Route method, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Peak Elev= 990.86' @ 13.67 hrs Surf.Area= 20,399 sf Storage= 32,728 cf

Plug-Flow detention time= 651.3 min calculated for 51,061 cf (97% of inflow)

Center-of-Mass det. time= 634.1 min (1,439.8 - 805.7)

Volume	In	vert	Avail.Sto	rage	Storage	Description		
#1	989	0.00'	153,82	25 cf	Custom	Stage Data (Prism	natic) Listed below (I	Recalc)
Elevation (fee	et)		-ft)		.Store c-feet)	Cum.Store (cubic-feet)		
989.0	00	14,8	339		0	0		
990.0	00	17,7	'82	1	6,311	16,311		
991.0	00	20,8	325	1	9,304	35,614		
992.0	00	23,9	969	2	2,397	58,011		
993.0	00	27,2	213	2	25,591	83,602		
994.0	00	30,5	558	2	28,886	112,488		
995.0	00	34,0	003	3	32,281	144,768		
995.2	25	38,4	151		9,057	153,825		
Device	Routin	g	Invert	Outle	et Device	s		
#1	Primar	y	989.00'	15.0	" Round	Culvert		
		-		1 – 6		D sauara adaa haa	adwall Ka- 0 500	

Device	Routing	mvert	Outlet Devices
#1	Primary	989.00'	15.0" Round Culvert
			L= 60.0' CMP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 989.00' / 987.00' S= 0.0333 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf
#2	Device 1	989.00'	<b>3.3" Vert. WQ Orifice</b> C= 0.600
#3	Device 1	990.00'	<b>5.0" Vert. Primary Orifice</b> C= 0.600
#4	Device 1	993.00'	1.0" x 22.0" Horiz. Top of Grate
			X 12 rows C= 0.600 in 24.0" x 24.0" Grate (46% open area)
			Limited to weir flow at low heads

Primary OutFlow Max=0.91 cfs @ 13.67 hrs HW=990.86' (Free Discharge)

**-1=Culvert** (Passes 0.91 cfs of 6.57 cfs potential flow)

**2=WQ Orifice** (Orifice Controls 0.38 cfs @ 6.32 fps)

**-3=Primary Orifice** (Orifice Controls 0.53 cfs @ 3.89 fps)

-4=Top of Grate (Controls 0.00 cfs)

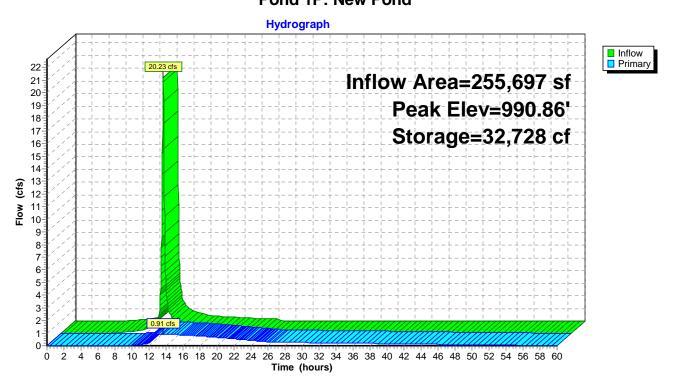




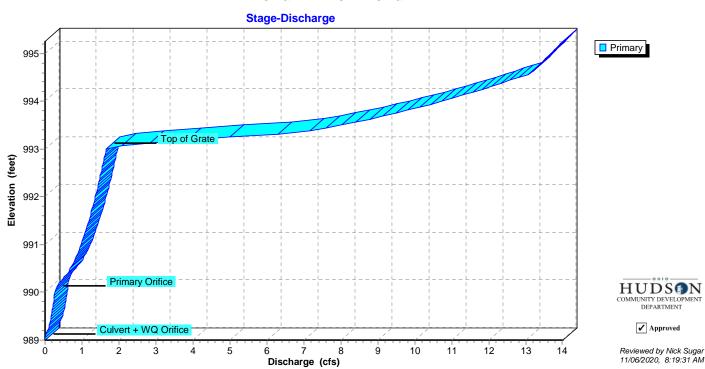
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Pond 1P: New Pond



Pond 1P: New Pond

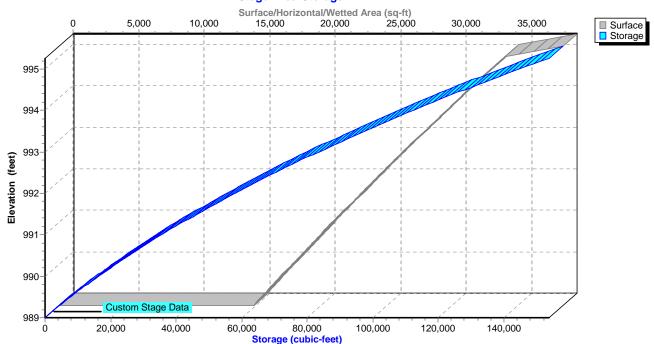


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## Pond 1P: New Pond

### Stage-Area-Storage







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Type II 24-hr 25-year Rainfall=4.24"

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Time span=0.00-60.00 hrs, dt=0.02 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment 1S: Pre-developed Runoff Area=5.870 ac 0.00% Impervious Runoff Depth=2.16"

Flow Length=623' Tc=63.9 min CN=79 Runoff=6.41 cfs 46,026 cf

Subcatchment 2S: Post-developed Runoff Area=5.870 ac 57.24% Impervious Runoff Depth=3.15"

Tc=12.0 min CN=90 Runoff=25.50 cfs 67,065 cf

**Pond 1P: New Pond**Peak Elev=991.31' Storage=42,240 cf Inflow=25.50 cfs 67,065 cf

Outflow=1.11 cfs 65,376 cf

Total Runoff Area = 511,394 sf Runoff Volume = 113,090 cf Average Runoff Depth = 2.65" 71.38% Pervious = 365,033 sf 28.62% Impervious = 146,362 sf





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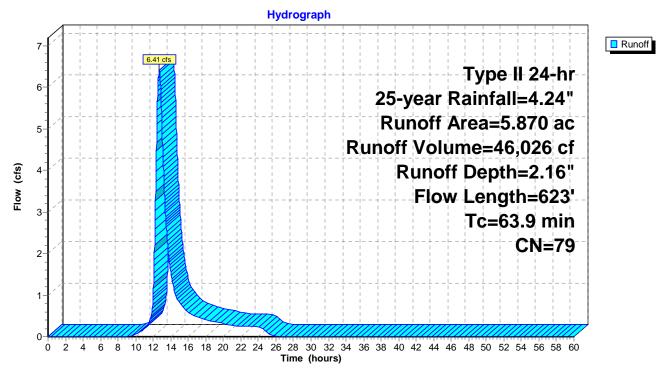
# **Summary for Subcatchment 1S: Pre-developed**

Runoff = 6.41 cfs @ 12.70 hrs, Volume= 46,026 cf, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 25-year Rainfall=4.24"

Area	(ac) C	N Desc	cription		
5	.650 7	'9 Woo	ds, Fair, F	ISG D	
0	.220 8	30 >759	% Grass co	over, Good	, HSG D
5	.870 7	'9 Wei	ghted Aver	age	
5	.870	100.	00% Pervi	ous Area	
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
61.8	300	0.0180	0.08		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 2.44"
2.1	323	0.0250	2.55		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
63.9	623	Total			

# Subcatchment 1S: Pre-developed







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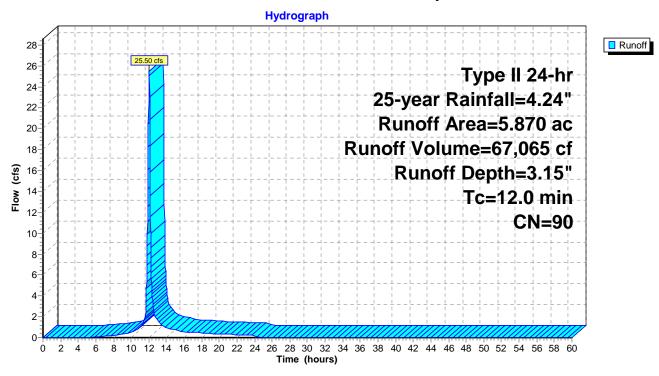
## **Summary for Subcatchment 2S: Post-developed**

Runoff = 25.50 cfs @ 12.03 hrs, Volume= 67,065 cf, Depth= 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 25-year Rainfall=4.24"

	Area	(ac)	CN	Desc	ription		
	3.	020	98	Pave	ed parking	HSG D	
	2.	510	80	>75%	6 Grass co	over, Good	I, HSG D
	0.	340	98	Wate	er Surface	, HSG D	
	5.	5.870 90 Weighted Average					
	2.510 42.76% Pervious Area				6% Pervio	us Area	
	3.	360		57.2	4% Imperv	ious Area	
	_						
	Tc	Leng		Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	12.0						Direct Entry,

# **Subcatchment 2S: Post-developed**







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## **Summary for Pond 1P: New Pond**

Inflow Area = 255,697 sf, 57.24% Impervious, Inflow Depth = 3.15" for 25-year event

Inflow = 25.50 cfs @ 12.03 hrs, Volume= 67,065 cf

Outflow = 1.11 cfs @ 13.69 hrs, Volume= 65,376 cf, Atten= 96%, Lag= 99.2 min

Primary = 1.11 cfs @ 13.69 hrs, Volume= 65,376 cf

Routing by Sim-Route method, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Peak Elev= 991.31' @ 13.69 hrs Surf.Area= 21,802 sf Storage= 42,240 cf

Plug-Flow detention time= 636.1 min calculated for 65,376 cf (97% of inflow)

Center-of-Mass det. time= 620.7 min (1,419.5 - 798.9)

Volume	Inv	<u>rert Avail.Sto</u>	orage Storage I	Description	
#1	989.	00' 153,8	25 cf <b>Custom</b>	Stage Data (Prismatic) Listed below (Recalc)	
Elevatio		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
989.0	00	14,839	0	0	
990.0	00	17,782	16,311	16,311	
991.0	00	20,825	19,304	35,614	
992.0	00	23,969	22,397	58,011	
993.0	00	27,213	25,591	83,602	
994.0	00	30,558	28,886	112,488	
995.0	00	34,003	32,281	144,768	
995.2	25	38,451	9,057	153,825	
Device	Routing	Invert	Outlet Devices	s	
#1	Primary	989 00'	15.0" Round	Culvert	

Device	Routing	invert	Outlet Devices
#1	Primary	989.00'	15.0" Round Culvert
			L= 60.0' CMP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 989.00' / 987.00' S= 0.0333 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf
#2	Device 1	989.00'	<b>3.3" Vert. WQ Orifice</b> C= 0.600
#3	Device 1	990.00'	5.0" Vert. Primary Orifice C= 0.600
#4	Device 1	993.00'	1.0" x 22.0" Horiz. Top of Grate
			X 12 rows C= 0.600 in 24.0" x 24.0" Grate (46% open area)
			Limited to weir flow at low heads

**Primary OutFlow** Max=1.11 cfs @ 13.69 hrs HW=991.31' (Free Discharge)

**-1=Culvert** (Passes 1.11 cfs of 7.67 cfs potential flow)

**2=WQ Orifice** (Orifice Controls 0.42 cfs @ 7.10 fps)

-3=Primary Orifice (Orifice Controls 0.69 cfs @ 5.06 fps)

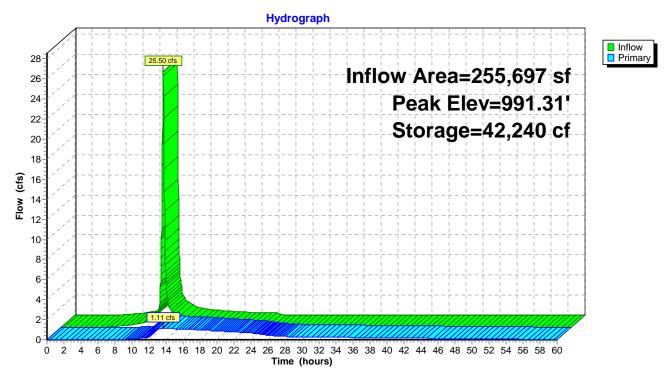
-4=Top of Grate (Controls 0.00 cfs)



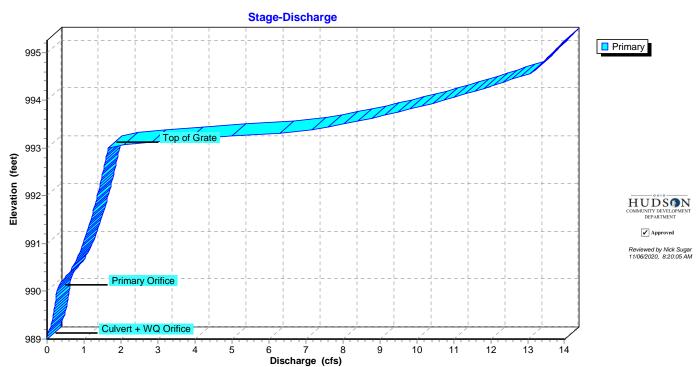


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Pond 1P: New Pond



Pond 1P: New Pond

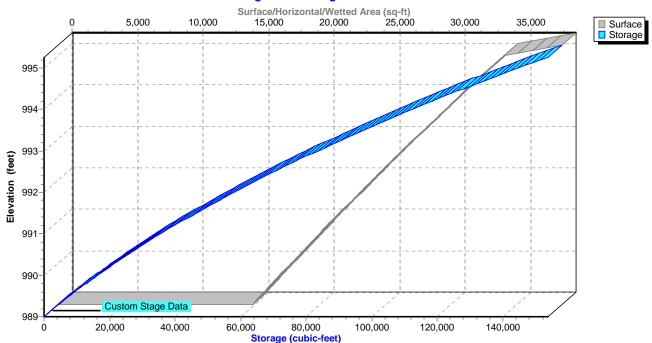


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## Pond 1P: New Pond

### Stage-Area-Storage







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Type II 24-hr 50-year Rainfall=4.84"

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Time span=0.00-60.00 hrs, dt=0.02 hrs, 3001 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment 1S: Pre-developed** Runoff Area=5.870 ac 0.00% Impervious Runoff Depth=2.66"

Flow Length=623' Tc=63.9 min CN=79 Runoff=7.96 cfs 56,774 cf

**Subcatchment 2S: Post-developed** Runoff Area=5.870 ac 57.24% Impervious Runoff Depth=3.72"

Tc=12.0 min CN=90 Runoff=29.89 cfs 79,312 cf

Pond 1P: New Pond Peak Elev=991.68' Storage=50,498 cf Inflow=29.89 cfs 79,312 cf

Outflow=1.25 cfs 77,428 cf

Total Runoff Area = 511,394 sf Runoff Volume = 136,086 cf Average Runoff Depth = 3.19" 71.38% Pervious = 365,033 sf 28.62% Impervious = 146,362 sf





Reviewed by Nick Sugar 11/06/2020, 8:20:18 AM

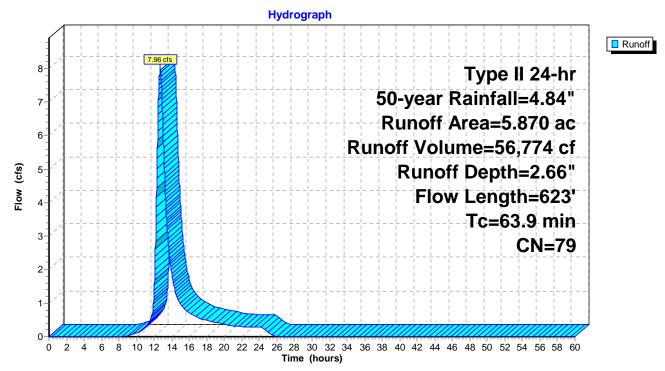
# **Summary for Subcatchment 1S: Pre-developed**

Runoff = 7.96 cfs @ 12.70 hrs, Volume= 56,774 cf, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 50-year Rainfall=4.84"

_	Area	(ac) C	N Desc	cription		
5.650 79 Woods, Fair, HSG D					ISG D	
_	0.	, HSG D				
	5.	870 7	'9 Wei	ghted Aver	age	
	5.	870	100.	00% Pervi	ous Area	
	Tc	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	61.8	300	0.0180	0.08		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 2.44"
	2.1	323	0.0250	2.55		Shallow Concentrated Flow,
_						Unpaved Kv= 16.1 fps
	63.9	623	Total			

# **Subcatchment 1S: Pre-developed**







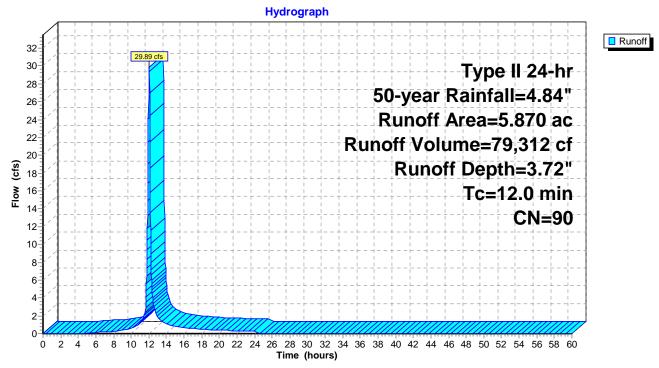
# **Summary for Subcatchment 2S: Post-developed**

Runoff = 29.89 cfs @ 12.03 hrs, Volume= 79,312 cf, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 50-year Rainfall=4.84"

	Area	(ac)	CN	Desc	ription		
	3.	020	98	Pave	ed parking,	HSG D	
	2.	510	80	>75%	6 Grass co	over, Good	I, HSG D
	0.	340	98	Wate	er Surface	, HSG D	
	5.	.870 90 Weighted Average					
	2.510 42.76% Pervious Area				6% Pervio	us Area	
	3.	360		57.2	4% Imperv	rious Area	
	_			01			<b>5</b>
	Tc	Leng		Slope	Velocity	Capacity	Description
(	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	12.0						Direct Entry,

# **Subcatchment 2S: Post-developed**







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## **Summary for Pond 1P: New Pond**

Inflow Area = 255,697 sf, 57.24% Impervious, Inflow Depth = 3.72" for 50-year event

Inflow = 29.89 cfs @ 12.03 hrs, Volume= 79,312 cf

Outflow = 1.25 cfs @ 13.74 hrs, Volume= 77,428 cf, Atten= 96%, Lag= 102.5 min

Primary = 1.25 cfs @ 13.74 hrs, Volume= 77,428 cf

Routing by Sim-Route method, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Peak Elev= 991.68' @ 13.74 hrs Surf.Area= 22,962 sf Storage= 50,498 cf

Plug-Flow detention time= 640.6 min calculated for 77,428 cf (98% of inflow)

Center-of-Mass det. time= 625.9 min (1,420.1 - 794.2)

Volume	Inv	ert Avail.S	torage	Storage	Description	
#1	989.	00' 153	,825 cf	Custon	n Stage Data (Pri	smatic) Listed below (Recalc)
Elevatio	et)	Surf.Area (sq-ft)		c.Store c-feet)	Cum.Store (cubic-feet)	
989.0		14,839		0	0	
990.0	00	17,782	•	16,311	16,311	
991.0	00	20,825	•	19,304	35,614	
992.0	00	23,969	2	22,397	58,011	
993.0	00	27,213	2	25,591	83,602	
994.0	00	30,558	2	28,886	112,488	
995.0	00	34,003	3	32,281	144,768	
995.2	25	38,451		9,057	153,825	
Device	Routing	Inve	rt Outl	et Device	es	
#1	Primary	989.00	)' <b>15.0</b>	" Round	d Culvert	

Device	Rouling	mvert	Outlet Devices
#1	Primary	989.00'	15.0" Round Culvert
			L= 60.0' CMP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 989.00' / 987.00' S= 0.0333 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf
#2	Device 1	989.00'	<b>3.3" Vert. WQ Orifice</b> C= 0.600
#3	Device 1	990.00'	5.0" Vert. Primary Orifice C= 0.600
#4	Device 1	993.00'	1.0" x 22.0" Horiz. Top of Grate
			X 12 rows C= 0.600 in 24.0" x 24.0" Grate (46% open area)
			Limited to weir flow at low heads

**Primary OutFlow** Max=1.25 cfs @ 13.74 hrs HW=991.68' (Free Discharge)

**-1=Culvert** (Passes 1.25 cfs of 8.47 cfs potential flow)

**2=WQ Orifice** (Orifice Controls 0.46 cfs @ 7.68 fps)

**-3=Primary Orifice** (Orifice Controls 0.80 cfs @ 5.84 fps)

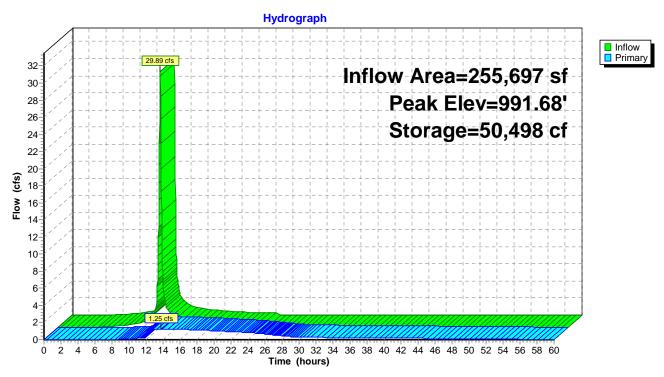
-4=Top of Grate (Controls 0.00 cfs)



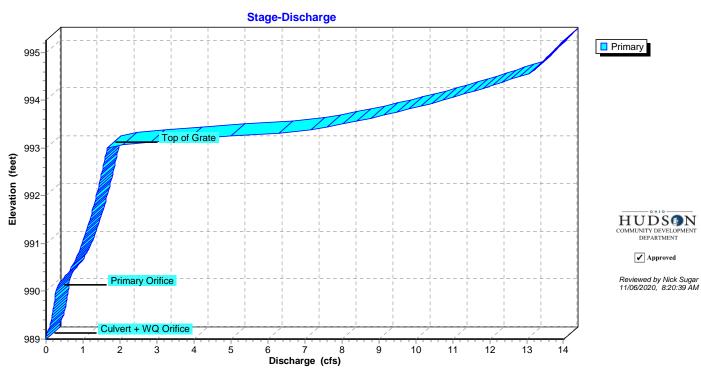


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### Pond 1P: New Pond



# Pond 1P: New Pond

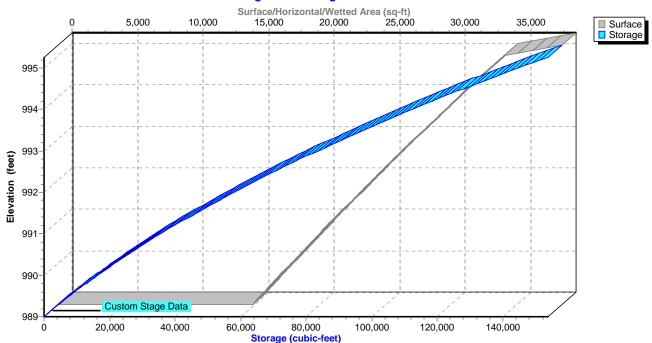


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## Pond 1P: New Pond

### Stage-Area-Storage







### 2020-192 Pond 01B

Type II 24-hr 100-year Rainfall=5.49"

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Time span=0.00-60.00 hrs, dt=0.02 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment 1S: Pre-developed Runoff Area=5.870 ac 0.00% Impervious Runoff Depth=3.23"

Flow Length=623' Tc=63.9 min CN=79 Runoff=9.67 cfs 68,780 cf

Subcatchment 2S: Post-developed Runoff Area=5.870 ac 57.24% Impervious Runoff Depth=4.35"

Tc=12.0 min CN=90 Runoff=34.62 cfs 92,695 cf

Pond 1P: New Pond Peak Elev=992.07' Storage=59,686 cf Inflow=34.62 cfs 92,695 cf

Outflow=1.39 cfs 90,557 cf

Total Runoff Area = 511,394 sf Runoff Volume = 161,474 cf Average Runoff Depth = 3.79" 71.38% Pervious = 365,033 sf 28.62% Impervious = 146,362 sf





Reviewed by Nick Sugar 11/06/2020, 8:20:47 AM

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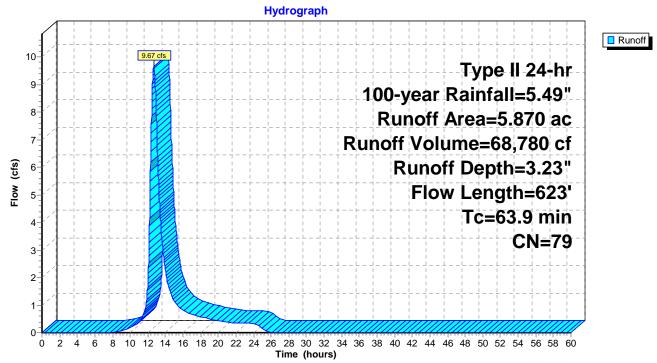
## **Summary for Subcatchment 1S: Pre-developed**

Runoff = 9.67 cfs @ 12.69 hrs, Volume= 68,780 cf, Depth= 3.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 100-year Rainfall=5.49"

Area	(ac) C	N Desc	cription		
5	.650 7	'9 Woo	ds, Fair, F	ISG D	
0	.220 8	30 >759	% Grass co	over, Good	, HSG D
5	.870 7	'9 Wei	ghted Aver	age	
5	.870	100.	00% Pervi	ous Area	
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
61.8	300	0.0180	0.08		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 2.44"
2.1	323	0.0250	2.55		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
63.9	623	Total			

## Subcatchment 1S: Pre-developed







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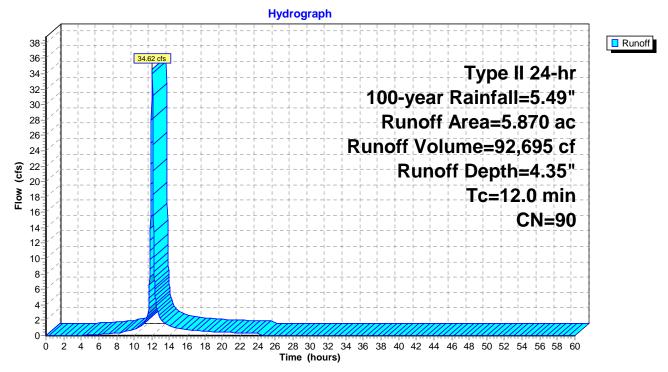
## Summary for Subcatchment 2S: Post-developed

Runoff = 34.62 cfs @ 12.03 hrs, Volume= 92,695 cf, Depth= 4.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Type II 24-hr 100-year Rainfall=5.49"

_	Area	(ac)	CN	Desc	ription		
	3.	020	98	Pave	d parking,	HSG D	
	2.	510	80	>75%	6 Grass co	over, Good,	I, HSG D
	0.	340	98	Wate	er Surface	, HSG D	
	5.	870	90	Weig	hted Aver	age	
	2.	510		42.7	6% Pervio	us Area	
	3.	360		57.24	4% Imperv	ious Area	
	_	_					
	Tc	Leng		Slope	Velocity	Capacity	Description
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	12.0						Direct Entry,

## Subcatchment 2S: Post-developed







### 2020-192 Pond 01B

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## **Summary for Pond 1P: New Pond**

Inflow Area = 255,697 sf, 57.24% Impervious, Inflow Depth = 4.35" for 100-year event

Inflow = 34.62 cfs @ 12.03 hrs, Volume= 92,695 cf

Outflow = 1.39 cfs @ 13.82 hrs, Volume= 90,557 cf, Atten= 96%, Lag= 107.2 min

Primary = 1.39 cfs @ 13.82 hrs, Volume= 90,557 cf

Routing by Sim-Route method, Time Span= 0.00-60.00 hrs, dt= 0.02 hrs Peak Elev= 992.07' @ 13.82 hrs Surf.Area= 24,195 sf Storage= 59,686 cf

Plug-Flow detention time= 653.5 min calculated for 90,557 cf (98% of inflow)

Center-of-Mass det. time= 639.1 min (1,429.0 - 789.9)

Volume	Inv	ert Avai	I.Storage	Storage	Description		
#1	989.	00' 1	53,825 cf	Custon	n Stage Data (Pris	smatic) Listed below (Re	calc)
Elevatio		Surf.Area (sq-ft)		c.Store c-feet)	Cum.Store (cubic-feet)		
989.0		14,839	(Cubi	0	0		
990.0		17,782		16,311	16,311		
991.0	00	20,825		19,304	35,614		
992.0	00	23,969	2	22,397	58,011		
993.0	00	27,213		25,591	83,602		
994.0	00	30,558		28,886	112,488		
995.0	00	34,003	;	32,281	144,768		
995.2	25	38,451		9,057	153,825		
Device	Routing	In	vert Out	et Device	es		
#1	Primary	989	.00' <b>15.0</b>	" Round	I Culvert		

Device	Rouling	mvert	Outlet Devices
#1	Primary	989.00'	15.0" Round Culvert
			L= 60.0' CMP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 989.00' / 987.00' S= 0.0333 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf
#2	Device 1	989.00'	<b>3.3" Vert. WQ Orifice</b> C= 0.600
#3	Device 1	990.00'	<b>5.0" Vert. Primary Orifice</b> C= 0.600
#4	Device 1	993.00'	1.0" x 22.0" Horiz. Top of Grate
			X 12 rows C= 0.600 in 24.0" x 24.0" Grate (46% open area)
			Limited to weir flow at low heads

**Primary OutFlow** Max=1.39 cfs @ 13.82 hrs HW=992.07' (Free Discharge)

**-1=Culvert** (Passes 1.39 cfs of 9.24 cfs potential flow)

2=WQ Orifice (Orifice Controls 0.49 cfs @ 8.24 fps)

**—3=Primary Orifice** (Orifice Controls 0.90 cfs @ 6.57 fps)

-4=Top of Grate (Controls 0.00 cfs)

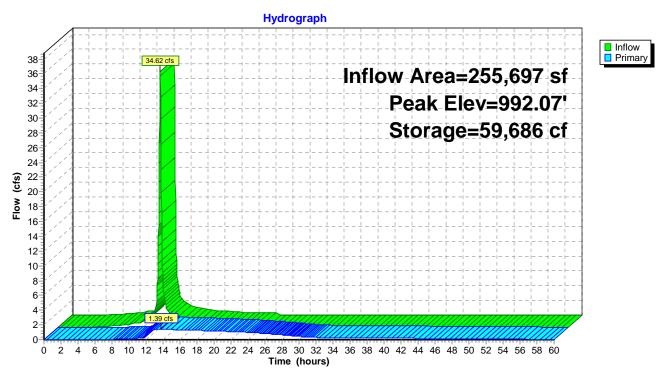




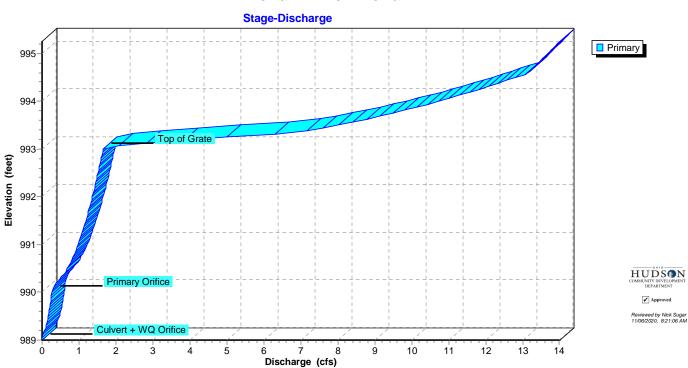
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## Pond 1P: New Pond



## Pond 1P: New Pond

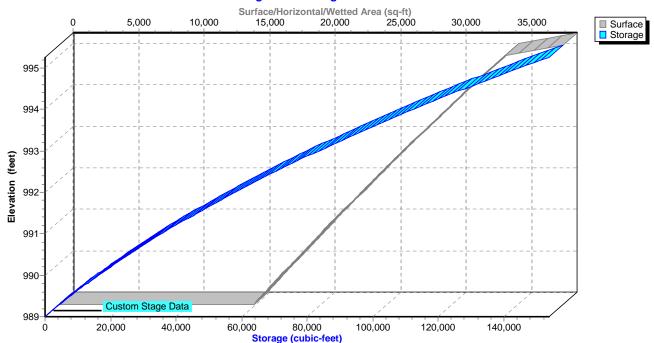


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## Pond 1P: New Pond

### Stage-Area-Storage









# LED TRADITIONAL SMALL FLOODS (SFLS)

### **LUMINAIRE ORDERING INFORMATION**

WF LED PL<sub>1</sub> 50 UE BRZ PD **SFLS** TYPICAL ORDER EXAMPLE:

Prefix	Distribution	Light Source	Drive Current	Color Temperature	Input Voltage	Finish <sup>1</sup>	Controls	Standard
SFLS (LED Small Flood)	WF	LED	PL1 - Performance Level 1	40 - 4000K 50 - 5000K	UE - Universal Voltage (120-277V)	BRZ - Bronze	PD - Photocell Dimming	1/2" Knuckle

1. Black, white and specialty finishes available. Consult factory for prices and lead time.

(Accessories are field installed)
Order Number
625766
122542BRZ

POST TOP ADAPTOR (PT) - One-piece cast aluminum — mounts on pole with 2" pipe tenon (2-3/8" OD x 3-1/2" minimum length) or 2-1/2" pipe tenon (2-7/8" OD x 3-1/2" minimum length). Fixture threads into adaptor and attaches to pole with allen set screws. Post Top Adaptor allows mounting of one or two fixtures and 360° horizontal adjustment. Available in standard finishes



NEMA Type	Field Angle Degree Range
0	<10
1	10 - 18
2	18 -29
3	29-48
4	46 -70
5	70 - 100
6	100 -130
7	130 - up

Γ	SFLS Photometric Technical Summary and Comparison									
	Catalog Number	NEMA Type	Field H <sup>o</sup>	Angle V <sup>0</sup>	Beam H <sup>o</sup>	Angle V <sup>o</sup>	Max CD	Lumens	Watts	LPW
l	SFLS-WF-LED-P1-40	6 H X 6 V	106.4	114.1	73.7	87.1	1,461	2,340	20	120
L	SFLS-WF-LED-P1-50	6 H X 6 V	106.4	114.1	73.7	87.1	1,494	2,394	20	122

LED Chips are frequently updated therefore values may increase.





Reviewed by Nick Sugar 11/06/2020, 8:21:17 AM









Project Name \_ Fixture Type\_ \_\_ Cat#\_



ENGINEERING • 115 Executive Parkway, Suite 400 • Hudson, Ohio 44236 • (330) 342-1770

Bond #\_\_\_014220897

# GENERAL IMPROVEMENT PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT We, _ Geis Construction, Inc.	as
PRINCIPAL, and Liberty Mutual Insurance Company	a
corporation authorized to do surety business in the State of Ohio as Surety, are here	by held and firmly
bound unto the <u>CITY OF HUDSON, OHIO</u> , as Obligee, in the full sum of	,
Eighty One Thousand and 00/100 Dollars (\$_81,000.00	) lawful money
of the United States, for the payment of which sum, well and truly to be made, we	
severally bind ourselves, our heirs, executors, administrators, successors, and assigns by	y these presents.
The condition of the above obligation is such, that whereas the above named Pr	
into an agreement with the Obligee, guaranteeing that the Principal will complete site	
per estimate prepared by: Weber Engineering Services, LLC	
at certain land known as	8
695 Boston Mills Road, Hudson, Ohio Tree Clearing and Grading Engineering Approv	val - Viewpoint #20-607
ight of Way, Storm Water Detention Basin Work and all Erosion Sediment Controls all of which improvements s	shall be completed
on or before the date set forth in the agreement or any extension thereof, and the Prin	cipal provides this
bond as security for such agreement, which agreement is made a part of this bond the s	same as though set
forth herein.	- /
NOW, THEREFORE, the condition of this obligation is such, that if the Princi	inal shall carry out
all of the terms of the above referenced agreement relating to the site improvements on	
such work as set forth in the said agreement, then this obligation shall be null and v	void: otherwise to
remain in full force and effect.	old, otherwise, to
The Surety horeby stimulates and asset it is a second asset in the	1
The Surety hereby stipulates and agrees that no modifications, omissions, or additions,	in or to the terms
of the agreement or in or to the plans or specifications therefore shall in any way affect the Surety on this bond.	the obligations of
No party other than the Obligee shall have any rights hereunder as against the Surety	y. The aggregate
liability of the Surety on this bond obligation shall not exceed the sum stated above	e for any reason
whatsoever.	

HUDSON COMMUNITY DEVELOPMENT DEPARTMENT

**✓** Approved

Reviewed by Nick Sugar 11/06/2020, 8:21:22 AM

IN WITNESS WHEREOF,	this instrument has been duly executed by the	e above-named
PRINCIPAL and SURETY on this		
	Geis Construction, Inc	Principal
1117 1777 1117 1777 1117 179	By John, 40	
(Seal)	Liberty Mutual Insurance Company	Surety
	By de Patront	<u> </u>
	Geri Patronite, Attorney-in-fact	<del></del>







This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

> Liberty Mutual Insurance Company The Ohio Casualty Insurance Company West American Insurance Company

Certificate No: 8204223-014181

#### **POWER OF ATTORNEY**

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, <a href="Maintenanger-Carrie-Linda">Carrie</a> Mahon, David C. Jacobs, Geri Patronite, Linda Discenza, Mark L. Rader, Roberta L. Hardy

all of the city of Cleveland state of OH each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this \_\_11th \_\_day of September , 2020





Liberty Mutual Insurance Company The Ohio Casualty Insurance Company West American Insurance Company

David M. Carey, Assistant Secretary

State of PENNSYLVANIA County of MONTGOMERY ss

On this 11th day of September , 2020 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance call EST Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer. alidity of this Power of Attorney between 9:00 am and 4:30 pm

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



#### COMMONWEALTH OF PENNSYLVANIA

**Notarial Seal** Teresa Pastella, Notary Public Upper Merion Twp., Montge My Commission Expires March 28, 2021

Member, Pennsylvania Association of Notaries

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-infact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this







Renee C. Llewellyn, Assistant Secretary



on any business day

g

8

the va -8240

0-832

**✓** Approved

Office of Risk Assessment 50 West Town Street Third Floor - Suite 300 Columbus, Ohio 43215 (614)644-2658 Fax(614)644-3256 www.insurance.ohio.gov

### **Ohio Department of Insurance**

Mike DeWine - Governor Jillian Froment - Director





Issued 03/20/2020 Effective 04/02/2020 Expires 04/01/2021

I, Jillian Froment, hereby certify that I am the Director of Insurance in the State of Ohio and have supervision of insurance business in said State and as such I hereby certify that

### LIBERTY MUTUAL INSURANCE COMPANY

of Massachusetts is duly organized under the laws of this State and is authorized to transact the business of insurance under the following section(s) of the Ohio Revised Code:

### Section 3929.01 (A)

Accident & Health

Aircraft

Allied Lines

Boiler & Machinery

Burglary & Theft

Collectively Renewable A & H

Commercial Auto - Liability

Commercial Auto - No Fault

Commercial Auto - Physical Damage

Credit

Credit Accident & Health

Earthquake

**Fidelity** 

**Financial Guaranty** 

Fire

Glass

Group Accident & Health

Guaranteed Renewable A & H

**Inland Marine** 

Medical Malpractice

Multiple Peril - Commercial

Multiple Peril - Farmowners

Multiple Peril - Homeowners

Noncancellable A & H

Nonrenew-Stated Reasons (A&H)

Ocean Marine

Other Accident only

Other Liability

Private Passenger Auto - Liability

Private Passenger Auto - No Fault

Private Passenger Auto - Physical Damage

Surety

Workers Compensation

HUDS N
COMMUNITY DEVELOPMENT

**✓** Approved

Reviewed by Nick Sugar 11/06/2020, 8:21:37 AM

<u>LIBERTY MUTUAL INSURANCE COMPANY</u> certified in its annual statement to this Department as of December 31,2019 that it has admitted assets in the amount of \$51,103,579,523, liabilities in the amount of \$34,292,195,090, and surplus of at least \$16,811,384,434.

IN WITNESS WHEREOF, I have hereunto subscribed my name and caused my seal to be affixed at Columbus, Ohio, this day and date.

Jillian Froment,Director





### LIBERTY MUTUAL INSURANCE COMPANY

### FINANCIAL STATEMENT — DECEMBER 31, 2019

Assets	Liabilities
Cash and Bank Deposits \$778,754,989	Unearned Premiums \$8,007,146,482
*Bonds — U.S Government 2.780,808,610	Reserve for Claims and Claims Expense 21,532,853,787
*Other Bonds	Funds Held Under Reinsurance Treaties 507,868,920
*Stocks	Reserve for Dividends to Policyholders
	Additional Statutory Reserve
Real Estate	Reserve for Commissions, Taxes and
Agents' Balances or Uncollected Premiums 6,217,983,641	Other Liabilities
Accrued Interest and Rents	Total \$34,292,195,090
Other Admitted Assets 11.957,106,292	Special Surplus Funds \$32,768,443
11,757,100,272	Capital Stock
	Paid in Surplus 10,044,978,933
	Unassigned Surplus 6,723,636,983
Total Admitted Assets <u>\$51,103,579,523</u>	Surplus to Policyholders16,811,384,434
	Total Liabilities and Surplus



I, TIM MIKOLAJEWSKI, Assistant Secretary of Liberty Mutual Insurance Company, do hereby certify that the foregoing is a true, and correct statement of the Assets and Liabilities of said Corporation, as of December 31, 2019, to the best of my knowledge and belief.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Corporation at Seattle, Washington, this 27th day of March, 2020.

**Assistant Secretary** 

TAMiholajewski.





Reviewed by Nick Sugar 11/06/2020, 8:21:42 AM

<sup>\*</sup> Bonds are stated at amortized or investment value; Stocks at Association Market Values.

The foregoing financial information is taken from Liberty Mutual Insurance Company's financial statement filed with the state of Massachusetts Department of Insurance.