

LEGAL DESCRIPTIONS

DESCRIPTION OF ROCHESTER UNIVERSITY PARCEL (REMAINDER PARCEL #15-15-451-008) AFTER EXCEPTING THE AVON ROAD RIGHT-OF-WAY PARCEL AND THE MODIFIED HISTORIC DISTRICT PARCEL LAND IN PART OF THE WEST HALF OF THE SOUTHWEST 1/4 AND PART OF THE SOUTH 1/2 OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS SUBSEQUENT TO A BOUNDARY SURVEY BY RAYMOND J. DONNELLY & ASSOCIATES (PROJECT 2005-035) IN MAY 2005:

COMMENCING AT THE SOUTH 1/4 CORNER OF SAID SECTION 15 AND PROCEEDING THENCE ALONG THE SOUTH LINE OF SECTION 15 AND CENTERLINE OF AVON ROAD, DUE EAST 756.89 FEET, THENCE DUE NORTH 60.00 FEET TO THE POINT OF BEGINNING OF THIS ROCHESTER UNIVERSITY (REMAINDER) PARCEL, THENCE ALONG THE PROPOSED NORTHERLY R.O.W. LINE OF AVON ROAD (60 FEET NORTH OF THE CENTERLINE OF AVON ROAD), DUE WEST 756.89 FEET, AND NORTH 89° 48' 25" WEST 1309.71 FEET, AND NORTH 89° 25' 10" WEST 390.91 FEET TO THE INTERSECTION OF THE PROPOSED NORTHERLY R.O.W. LINE OF AVON ROAD WITH THE SOUTHEASTERLY LINE OF THE CLINTON RIVER "TRAIL" (FORMERLY KNOWN AS THE GRAND TRUNK WESTERN RAILROAD), THENCE ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTH 42° 34' 44" EAST 252.80 FEET TO A POINT OF CURVATURE, THENCE CONTINUING ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTHEASTERLY 797.48 FEET ON THE ARC OF A 5524.16 FT. CURVE TO THE RIGHT (CONCAVE TO THE SOUTHWEST), WITH A CENTRAL ANGLE OF 98° 18' 18" AND CHORD BEARING AND DISTANCE OF NORTH 45° 42' 52" EAST 796.77 FEET TO THE END OF SAID CURVE, THENCE CONTINUING ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTH 50° 51' 00" EAST 1021.20 FEET TO THE SOUTHWESTERLY CORNER OF A TRIANGULAR SHAPED PARCEL OF LAND OWNED BY LOCHIRCO, et al (TAX ID # 15-15-328-001), THENCE LEAVING THE SOUTHEASTERLY LINE OF SAID "TRAIL", AND FOLLOWING ALONG THE SOUTH LINE OF SAID LOCHIRCO PARCEL, NORTH 89° 41' EAST 244.89 FEET TO THE EAST 1/8 CORNER OF THE SW 1/4 OF SECTION 15, THENCE ALONG THE SOUTH LINE OF THE SW 1/4 OF SE 1/4, NORTH 89° 47' EAST 27 FEET, MORE OR LESS, TO A POINT IN THE CENTER OF THE CLINTON RIVER, THENCE FOLLOWING ALONG WITH THE CENTER OF THE CLINTON RIVER IN MEANDERING DIRECTIONS, BUT GENERALLY NORTHEASTERLY, A DISTANCE OF 1740 FEET, MORE OR LESS, DOWNSTREAM, THENCE LEAVING THE CENTER OF THE CLINTON RIVER, SOUTH 89° 44' EAST 25 FEET, MORE OR LESS, TO THE NORTHWEST CORNER OF LAND OWNED BY ROSE AND WOLAS (TAX ID # 15-15-405-004), THENCE FOLLOWING ALONG WITH THE WESTERLY AND SOUTHERLY BOUNDARY OF SAID ROSE AND WOLAS PARCEL, SOUTH 22° 07' 04" EAST 228.22 FEET AND SOUTH 71° 51' 04" EAST 610.00 FEET TO THE SOUTHWEST CORNER OF SAID PARCEL, THENCE ALONG THE WESTERLY LINE OF THE SZENKO PARCEL, (TAX ID # 15-15-420-032), SOUTH 02° 19' 58" WEST 118.03, THENCE ALONG THE WESTERLY LINE, IN PART, OF THE LIFE TIME FITNESS PARCEL, (TAX ID # 15-15-476-039), SOUTH 01° 52' 23" WEST 623.74 FEET TO THE NORTHEAST CORNER OF THE ROCHESTER CHURCH OF CHRIST PARCEL, (TAX ID # 15-15-451-007), THENCE ALONG THE NORTHERLY AND WESTERLY BOUNDARY OF SAID CHURCH PARCEL, DUE WEST 393.27 FEET AND SOUTH 01° 40' 04" WEST 207.19 FEET, AND DUE WEST 2.50 FEET, AND SOUTH 01° 40' 04" WEST 539.97 FEET TO A POINT ON THE PROPOSED NORTHERLY R.O.W. LINE OF AVON ROAD, THENCE ALONG THE PROPOSED NORTHERLY R.O.W. LINE OF AVON ROAD, DUE WEST 39.35 FEET, THENCE ALONG THE EASTERLY, NORTHERLY, AND WESTERLY BOUNDARY OF THE MODIFIED HISTORIC DISTRICT PARCEL, NORTH 01° 40' 04" EAST 213.09 FEET, AND DUE WEST 212.24 FEET, AND DUE SOUTH 213.00 FEET BACK TO THE POINT OF BEGINNING.

THIS DESCRIBED PARCEL CONTAINS 76.23 ACRES OF LAND AS SURVEYED, BEING SUBJECT TO AND TOGETHER WITH ANY EASEMENTS, RESTRICTIONS, OR RESERVATIONS AFFECTING THIS PARCEL.

DESCRIPTION OF AVON ROAD RIGHT-OF-WAY (NOW KNOWN AS TAX ID PARCEL #15-15-451-010), BEING THE SOUTHERLY 60 FEET OF ROCHESTER UNIVERSITY FORMER PARCELS #15-15-376-001, #15-15-451-003 and #15-15-451-006, ALSO KNOWN AS A 60 FT. WIDE HIGHWAY EASEMENT (EXCEPTION NO. 28, L. 42152, P. 671)

LAND IN PART OF THE WEST HALF OF THE SOUTHWEST 1/4 AND PART OF THE SOUTH 1/2 OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS SUBSEQUENT TO A BOUNDARY SURVEY BY RAYMOND J. DONNELLY & ASSOCIATES (PROJECT 2005-035) IN MAY 2005:

BEGINNING AT THE SOUTH 1/4 CORNER OF SAID SECTION 15 AND PROCEEDING THENCE ALONG THE SOUTH LINE OF THE SE 1/4 OF SECTION 15 AND CENTERLINE OF AVON ROAD, NORTH 89° 48' 25" WEST 1310.54 FEET TO THE SOUTH 1/8 CORNER OF THE SW 1/4, THENCE CONTINUING ALONG THE SOUTH LINE OF THE SW 1/4 OF SECTION 15 AND CENTERLINE OF AVON ROAD, NORTH 89° 25' 10" WEST 443.79 FEET TO THE INTERSECTION OF SAID SOUTH LINE WITH THE SOUTHEASTERLY LINE OF THE CLINTON RIVER "TRAIL" (FORMERLY KNOWN AS THE GRAND TRUNK WESTERN RAILROAD), THENCE ALONG THE SOUTHEASTERLY LINE OF SAID "TRAIL", NORTH 42° 34' 44" EAST 79.50 FEET TO THE PROPOSED NORTHERLY R.O.W. LINE OF AVON ROAD (60 FEET NORTH OF THE CENTERLINE OF AVON ROAD), THENCE ALONG THE PROPOSED NORTHERLY R.O.W. LINE OF AVON ROAD, SOUTH 89° 25' 10" EAST 390.91 FEET, AND SOUTH 89° 48' 25" EAST 1309.71 FEET, AND DUE EAST 1002.28 FEET TO THE WESTERLY LINE OF THE ROCHESTER CHURCH OF CHRIST PARCEL, (TAX ID # 15-15-451-007), THENCE SOUTH 01° 40' 04" WEST 60.00 FEET TO A POINT ON THE SOUTH LINE OF SECTION 15, THENCE ALONG THE SOUTH LINE OF SECTION 15 AND CENTERLINE OF AVON ROAD, DUE WEST 1000.83 FEET BACK TO THE POINT OF BEGINNING.

THIS DESCRIBED PARCEL CONTAINS 3.76 ACRES OF LAND AS SURVEYED, BEING SUBJECT TO AND TOGETHER WITH ANY EASEMENTS, RESTRICTIONS, OR RESERVATIONS AFFECTING THIS PARCEL.

MODIFIED HISTORIC DISTRICT PARCEL DESCRIPTION (PARCEL #15-15-451-009)

LAND IN THE CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE SOUTH 1/4 CORNER OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST, THENCE ALONG THE SOUTH LINE OF SAID SECTION 15, DUE EAST 756.89 FEET, THENCE DUE NORTH 60.00 FEET TO THE POINT OF BEGINNING, THENCE DUE NORTH 213.00 FEET, THENCE DUE EAST 212.24 FEET, THENCE SOUTH 01° 40' 04" WEST, 213.09 FEET, THENCE ALONG THE NORTHERLY 60 FT. RIGHT-OF-WAY LINE OF AVON ROAD, DUE WEST 206.04 FEET BACK TO THE POINT OF BEGINNING.

CONTAINING 1.02 ACRES OF LAND SUBJECT TO AND TOGETHER WITH ANY EASEMENTS, RESTRICTIONS, OR RESERVATIONS AFFECTING THIS PARCEL.

BENCHMARK DESCRIPTIONS

SITE BM#100	DATUM: GPS-DERIVED NAVD83 CHISELED "X" ON NORTH RIM OF BEEHIVE CATCH BASIN (STRUCTURE 22), LOCATED 175' SOUTHEAST OF THE NORTHEAST BUILDING CORNER OF GARTH PLEASANT ARENA. ELEV.=778.89
SITE BM#101	ARROW ON HYDRANT, LOCATED 175' SOUTHEAST OF THE SOUTHEAST BUILDING CORNER OF HAGGOTT HALL. ELEV.=762.44

Update to the current tax parcel description. The parcel was split after 2005.

Site Plan Review
Reviewed for compliance to the City Ordinance, Building and Fire Codes

Department	Reviewer	Approved
Planning	Chris McLeod 248-841-2572 mcleodc@RochesterHills.org	Yes
Building	Mark Artiman 248-841-2446 ArtimanM@RochesterHills.org	No
Engineering	Jason Boughton 248-841-2490 BoughtonJ@RochesterHills.org	Yes
Traffic	Keith Depp 248-841-2503 DeppK@RochesterHills.org	Yes
Nat. Resources	Matt Einheuser 248-841-2551 EinheuserM@RochesterHills.org	Yes
Fire	Lt. Josh Boyce 248-841-2713 BoyceJ@RochesterHills.org	Yes

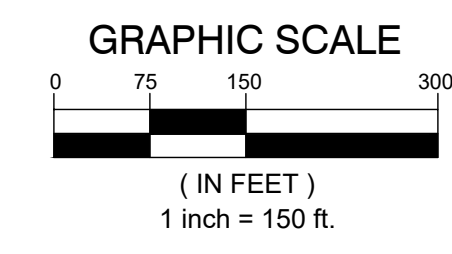
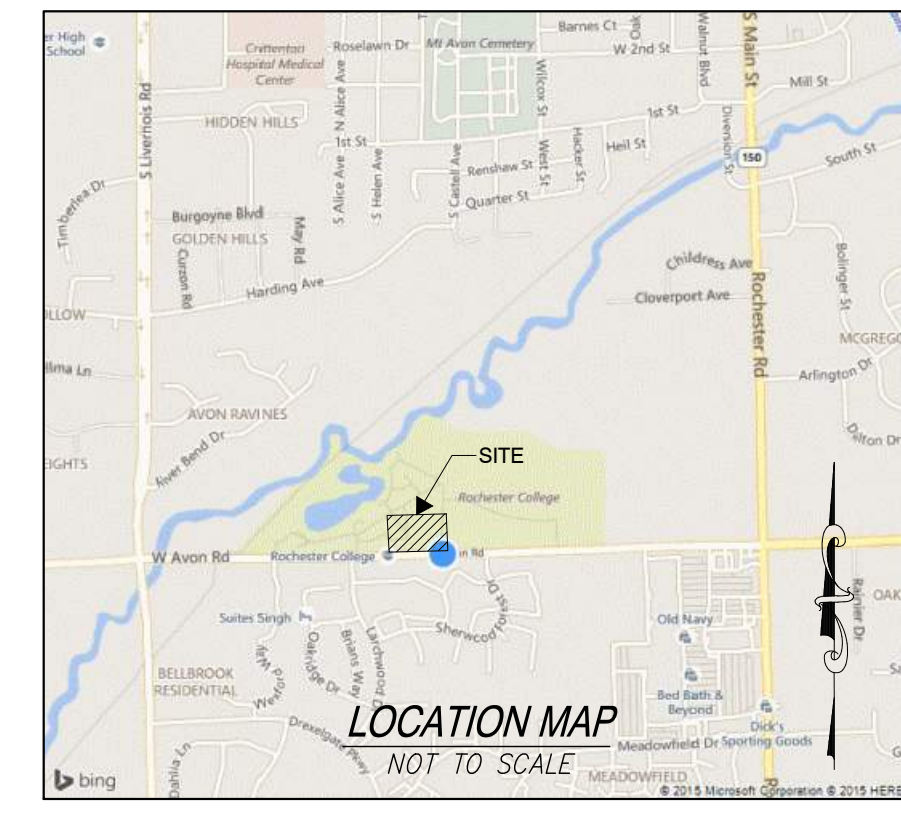
City of Rochester Hills
Planning & Economic Development

Conditions and mark-ups noted throughout the plan set must be addressed prior to final approval.

ROCHESTER HILLS MICHIGAN

JPUD2022-0001
PSP2022-0013
Revision 1

Received 12/7/2022
City of Rochester Hills
Planning & Economic
Development



ZONED R-4

CIVIL SHEET INDEX

- C1.0 - OVERALL SITE PLAN
- C1.1 - SITE PLAN
- C1.2 - FIRE PROTECTION PLAN
- C2.0 - DEMOLITION PLAN
- C2.1 - TREE INVENTORY
- C3.0 - SOIL EROSION & SEDIMENTATION CONTROL PLAN
- C3.1 - SOIL EROSION & SEDIMENTATION CONTROL DETAILS
- C4.0 - OVERALL GRADING PLAN
- C4.1 - GRADING PLAN AREA 1
- C4.2 - GRADING PLAN AREA 2
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- C4.4 - GRADING PLAN AREA 4
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- C5.0 - OVERALL WALL PLAN
- C5.1 - WALL PROFILES
- C7.0 - UTILITY PLAN
- C7.2 - STORM SEWER PROFILES
- C8.0 - DRAINAGE AREA MAP
- C8.1 - CMP BASIN DETAILS
- C8.0 - PAVING & LAYOUT PLAN
- C8.1 - PAVING NOTES & DETAILS
- C8.2 - MDOT DRIVEWAY DETAILS
- C8.3 - MDOT CURB RAMP DETAILS
- C10.1 - SANITARY SEWER STANDARD DETAILS (1 of 2)
- C10.2 - SANITARY SEWER STANDARD DETAILS (2 of 2)
- C10.3 - STORM SYSTEM STANDARD DETAILS (1 of 1)
- C10.4 - WATER MAIN STANDARD DETAILS (1 of 2)
- C10.5 - WATER MAIN STANDARD DETAILS (2 of 2)

TOPOGRAPHIC SURVEY, BY SPALDING D E DECKER

- 1 of 6 - TOPOGRAPHIC SURVEY (OVERALL)
- 2 of 6 - TOPOGRAPHIC SURVEY
- 3 of 6 - TOPOGRAPHIC SURVEY
- 4 of 6 - TOPOGRAPHIC SURVEY
- 5 of 6 - TOPOGRAPHIC SURVEY
- 6 of 6 - TOPOGRAPHIC SURVEY (TREE INVENTORY)

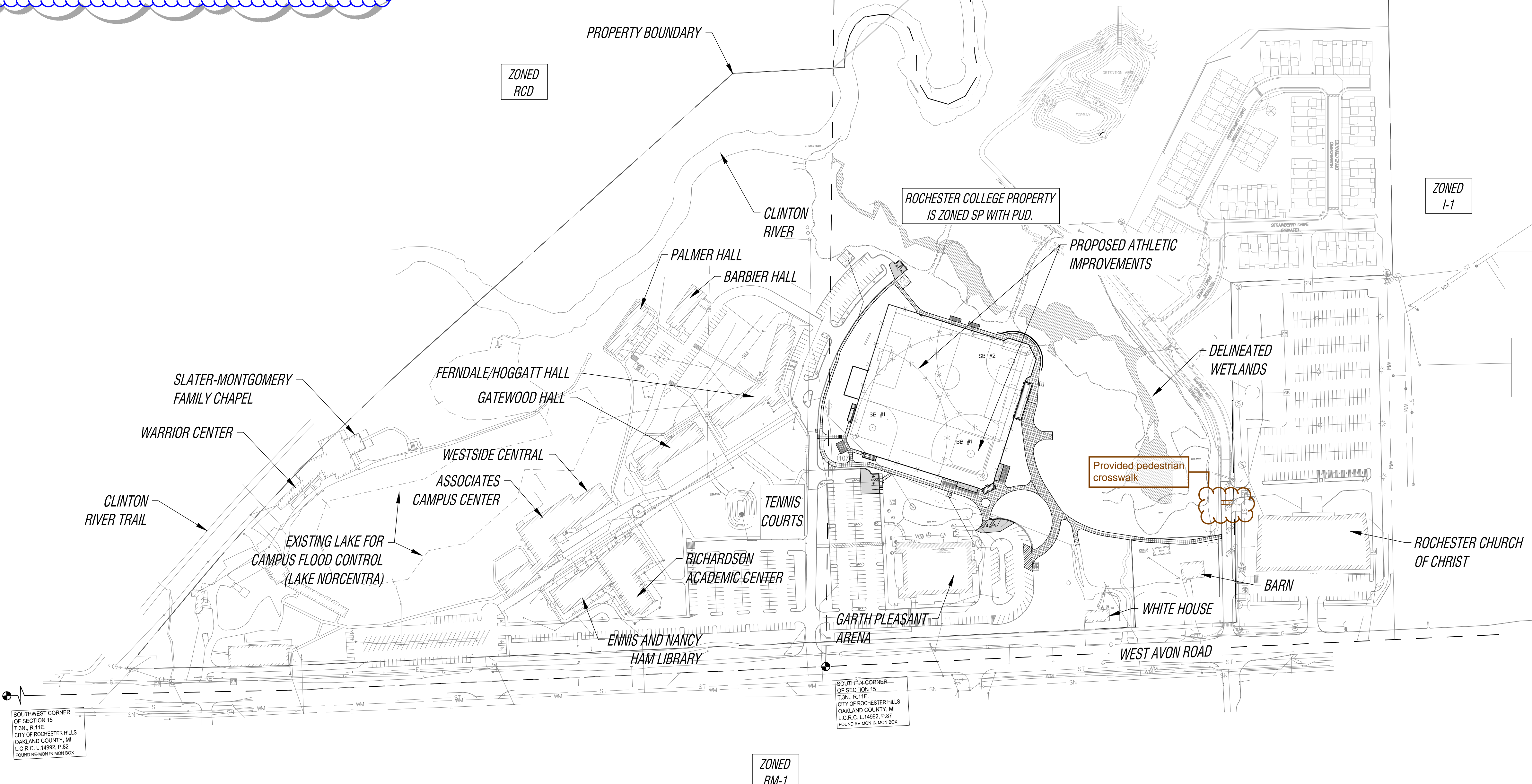
ISSUE DATE	ISSUED FOR
10/5/22	BIDS
10/24/22	ADDENDUM #1
11/23/22	PERMITS
12/2/22	SITE PLAN RESUBMITTAL

DRAWN: JA
CHECKED: JA
APPROVED: JA

FRENCH associates
architects planners interior

236 Mill Street
Rochester, MI 48307
T: 248.656.1377
F: 248.656.7746
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CREATIVE SITE SOLUTIONS, PLC
CIVIL ENGINEERING & SITE DESIGN
3728 NASH DRIVE
TROY, MI 48063
248.259.2023
jarnold@creative-site-solutions.com



The applicant needs to submit a Land Improvement Permit (LIP) application with engineer's estimate, fee and construction plans to proceed with the construction plan review process.

PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
ROCHESTER HILLS MICHIGAN

SHEET
Overall Site Plan

PROJECT NUMBER
2020-003

SHEET NUMBER
City File #22-021 Section #15
C1.0

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2020-003 ROCHESTER UNIVERSITY



ATHLETIC FIELD IMPROVEMENTS

ROCHESTER HILLS, MICHIGAN
PROJECT NO. 2020-003

DECEMBER 2, 2022

SITE PLAN REVIEW RESUBMITTAL

FRANK **REWOLD**
AND SON INC.

FRENCH
associates

LIST OF DRAWINGS

LANDSCAPE

L1.01 AERIAL VIEW

LANDSCAPE

L100 PLANTING PLAN
L101 PLANTING DETAILS

ARCHITECTURAL

A0.01 CODE ANALYSIS

A2.01 PRESS BOX AND TEAM ROOM BUILDING
A2.02 DUGOUT PLANS
A2.03 ROOF PLANS

A4.01 BUILDING ELEVATIONS
A4.02 BUILDING SECTIONS AND DUGOUT ELEVATIONS

ATHLETICS

L1.01 ATHLETIC SITE PLAN
L1.02 ATHLETIC DIMENSION PLAN
L1.03 ATHLETIC FENCE PLAN
L1.04 ATHLETIC GRADING PLAN
L1.05 ATHLETIC DRAINAGE PLAN

LD1.01 DETAILS
LD1.02 DETAILS
LD1.03 BLEACHER DETAILS
LD1.04 BLEACHER DETAILS
LD1.05 FIELD GRAPHICS REFERENCE DETAILS
LD1.06 FIELD GRAPHICS DETAILS
LD1.07 SOCCER DETAILS
LD1.08 LACROSSE DETAILS
LD1.09 BASEBALL TURF DETAILS
LD1.10 SOFTBALL DETAILS
LD1.11 BATTING CAGE DETAILS
LD1.12 FENCE AND BACKSTOP DETAILS
LD1.13 BACKSTOP DETAILS
LD1.14 BACKSTOP DETAILS
LD1.15 DETAILS

LE1.01 SOFTBALL AND BASEBALL ELEVATIONS
LE1.02 BASEBALL ELEVATIONS
LE1.03 BASEBALL ELEVATIONS

ELECTRICAL

ES1.00 PROJECT SUMMARY
ES1.01 ILLUMINATION SURVEY
ES1.02 ILLUMINATION SURVEY
ES1.03 ILLUMINATION SURVEY
ES1.04 ILLUMINATION SURVEY
ES1.05 ILLUMINATION SURVEY
ES1.06 EQUIPMENT LAYOUT

SITE ANALYSIS

ZONING	
EXISTING SITE ZONED	SP WITH PUD
ADJACENT SITE ZONING	
NORTH	RCD/R-4
SOUTH	RM-1
EAST	B-1
WEST	RCD
SITE AREA	
GROSS SITE AREA	76.23 ACRES
PROPOSED SITE COVERAGE (BUILDING FOOTPRINT)	1%
BUILDING REGULATIONS	
TOTAL TEAMS/CONCESSION BUILDING AREA	5,115 S.F.
TOTAL PRESS BOX BUILDING AREA	896 S.F.
PROPOSED BUILDING HEIGHTS	
TEAM/CONCESSION BUILDING HEIGHT	36'-6" ABOVE FIELD LEVEL
PRESS BOX BUILDING HEIGHT	26'-10" ABOVE FIELD LEVEL
PROPOSED BUILDING STORIES	2 AND 3 STORIES ABOVE FIELD LEVEL
REQUIRED BUILDING SETBACKS (SP ZONING)	
FRONT	50'
SIDE	50'
REAR	50'
PROPOSE BUILDING SETBACKS (SP ZONING)	
FRONT	30'
WEST SIDE	115'
EAST SIDE	48'
REAR	70'
PARKING REQUIREMENTS	
EXISTING DORMITORY	176 PARKING SPACES
EXISTING CHAPEL	71 PARKING SPACES
EXISTING THEATER	68 PARKING SPACES
EXISTING GARTH PLEASANT ARENA	290 PARKING SPACES
NEW ATHLETIC FIELD	154 PARKING SPACES
TOTAL PARKING SPACES REQUIRED	759 PARKING SPACES
EXISTING PARKING SPACES PROVIDED ON CAMPUS	589 PARKING SPACES
OVERFLOW PARKING AT CHURCH	322 PARKING SPACES
TOTAL PARKING AVAILABLE ON CAMPUS FOLLOWING IMPROVEMENTS	586 PARKING SPACES
BARRIER FREE PARKING REQUIREMENTS - BALLFIELDS	6 SPACES
BARRIER FREE PARKING REQUIREMENTS - CAMPUS WIDE:	
586 TOTAL PARKING SPACES SO 12 BARRIER FREE SPACES ARE REQUIRED	
32 TOTAL BARRIER FREE PARKING SPACES ARE PROPOSED TO BE PROVIDED ON CAMPUS.	
LOADING SPACE REQUIRED:	1 (10'X50') SPACES
(1 SPACE + 1 SPACE FOR EACH 20,000 S.F. OVER 20,001 S.F.)	
LOADING SPACE PROVIDED:	1 SPACES (10'X50')

CIVIL

C1.0 OVERALL SITE PLAN
C1.1 SITE PLAN
C1.2 FIRE PROTECTION PLAN

C2.0 DEMOLITION PLAN
C2.1 TREE INVENTORY

C4.0 OVERALL GRADING PLAN
C4.1 GRADING PLAN - AREA 1
C4.2 GRADING PLAN - AREA 2
C4.3 GRADING PLAN - AREA 3
C4.4 GRADING PLAN - AREA 4
C4.5 GRADING DETAIL AREAS

12/2/22 SITE PLAN RESUBMITTAL

C5.0 OVERALL WALL PLAN
C5.1 WALL PROFILE AND SECTION

C7.0 UTILITY PLAN

C7.1 WATERMAIN AND SANITARY SEWER PROFILES
C7.2 STORM SEWER PROFILES - 1

12/2/22 SITE PLAN RESUBMITTAL

C8.0 DRAINAGE AREA PLAN
C8.1 CMP BASIN DETAILS

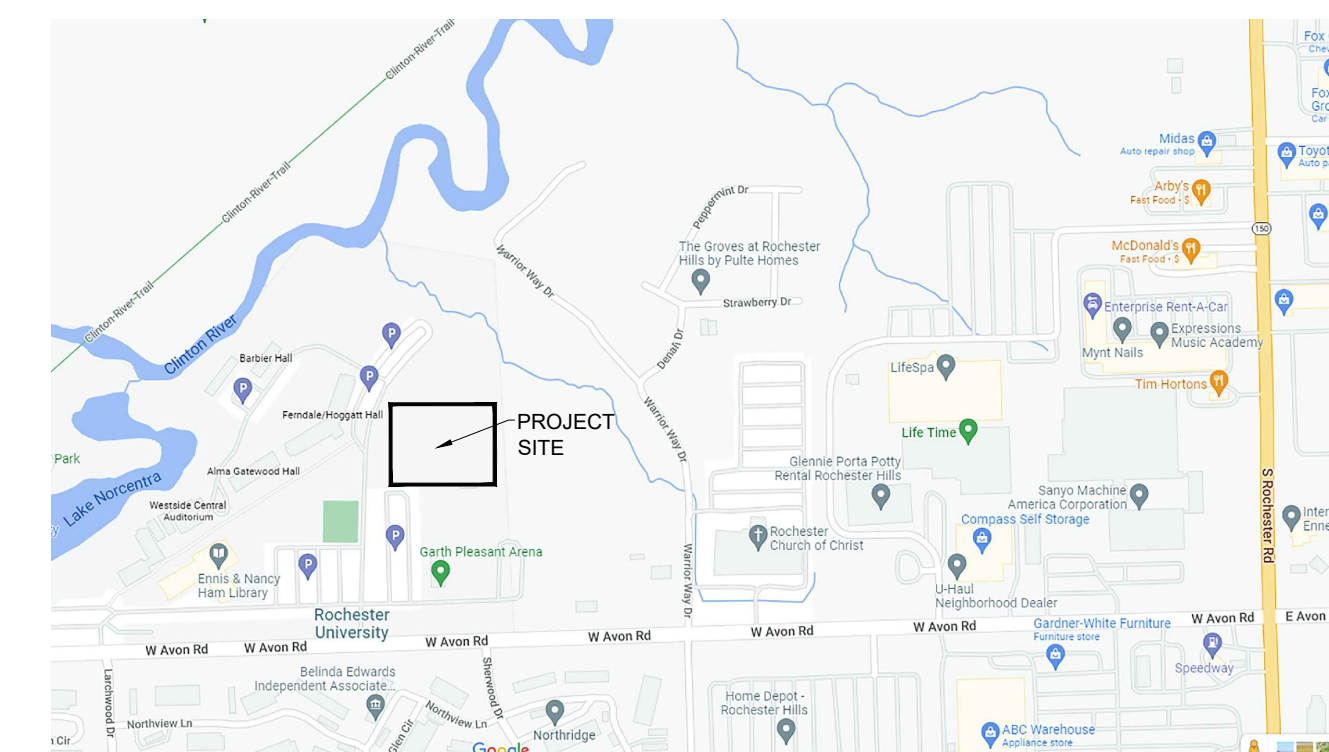
C9.0 PAVING AND LAYOUT PLAN
C9.1 PAVING NOTES AND DETAILS
C9.2 MDOT DRIVEWAY DETAILS
C9.3 MDOT CURB RAMP DETAILS

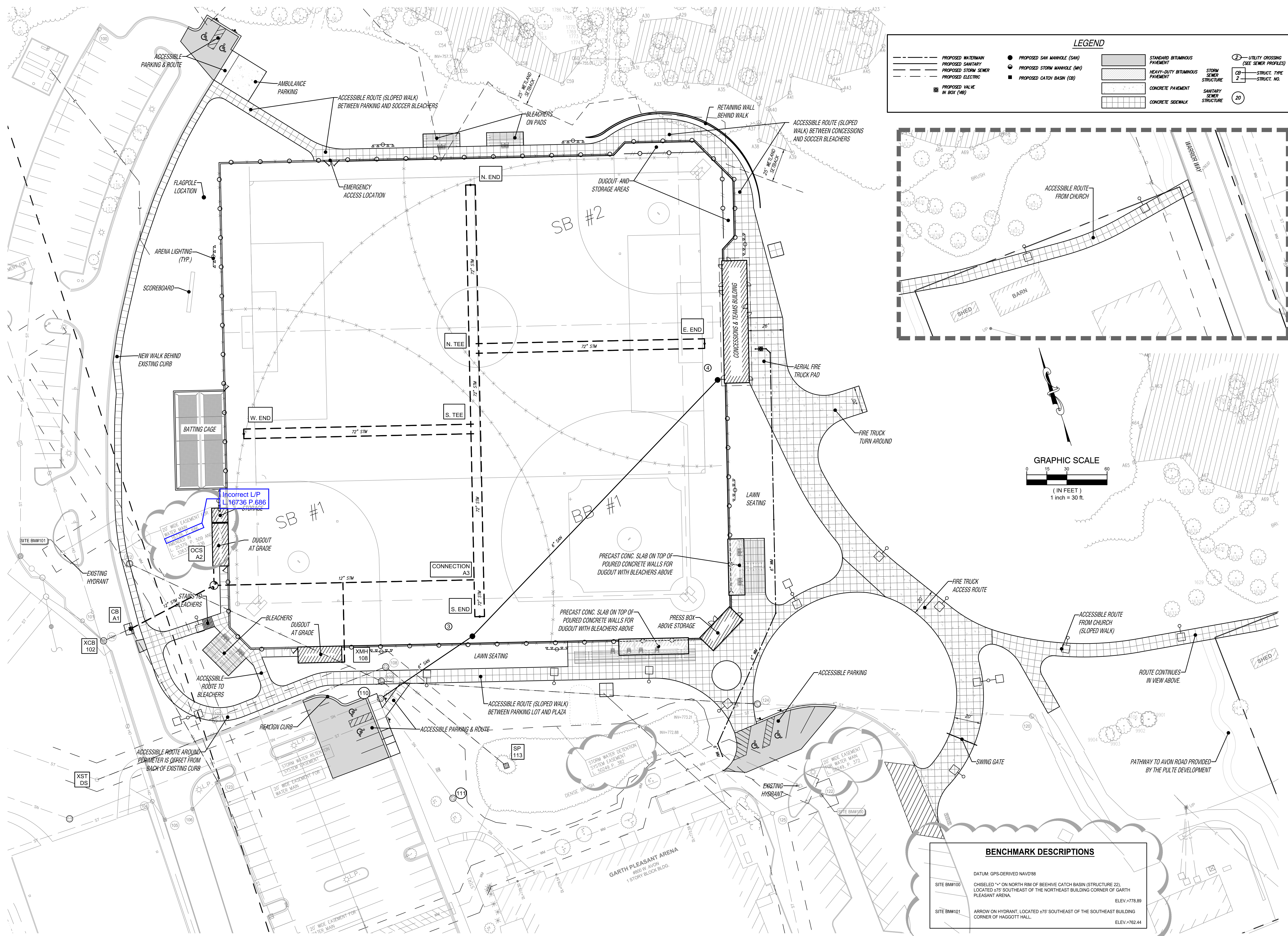
C10.1 ROCHESTER HILLS SANITARY SEWER STANDARD DETAILS
C10.2 ROCHESTER HILLS SANITARY SEWER STANDARD DETAILS
C10.3 ROCHESTER HILLS STORM SYSTEM STANDARD DETAILS
C10.4 ROCHESTER HILLS WATER MAIN STANDARD DETAILS
C10.5 ROCHESTER HILLS WATER MAIN STANDARD DETAILS

SPALDING DEDECKER DRAWINGS ISSUED FOR REFERENCE

1 OF 6 TOPOGRAPHICAL SURVEY
2 OF 6 TOPOGRAPHICAL SURVEY
3 OF 6 TOPOGRAPHICAL SURVEY
4 OF 6 TOPOGRAPHICAL SURVEY
5 OF 6 TOPOGRAPHICAL SURVEY
6 OF 6 TOPOGRAPHICAL SURVEY

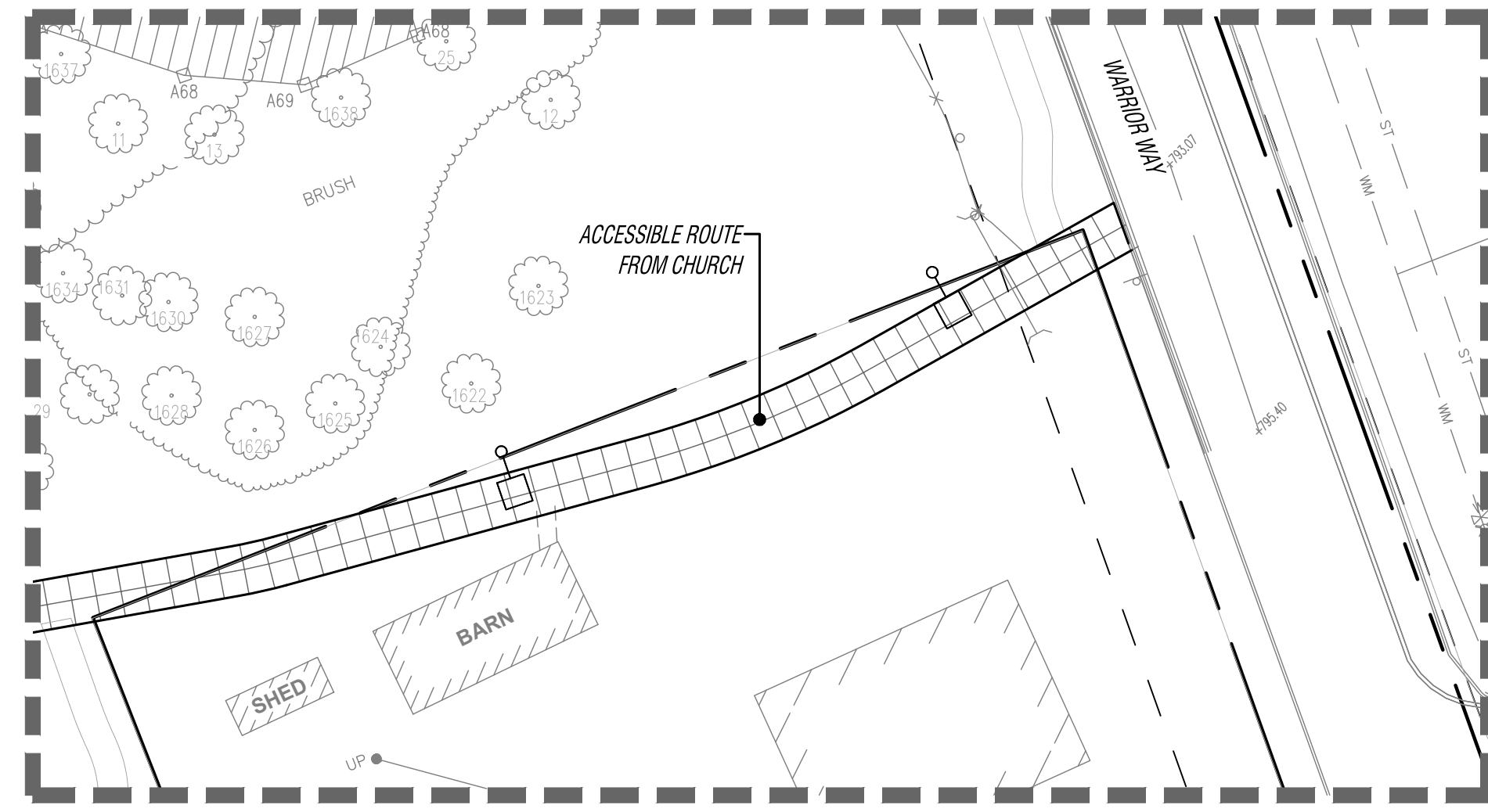
12/2/22 SITE PLAN RESUBMITTAL





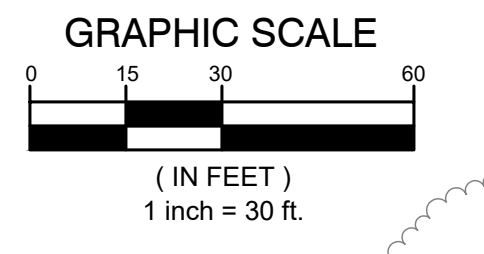
LEGEND

--- PROPOSED WATER MAIN	● PROPOSED SAN MANHOLE (SAN)	▨ STANDARD BITUMINOUS PAVEMENT	⊕ UTILITY CROSSING (SEE SEWER PROFILES)
--- PROPOSED SANITARY	● PROPOSED STORM MANHOLE (MH)	▨ HEAVY-DUTY BITUMINOUS PAVEMENT	CB-2 STRUCT. TYPE
--- PROPOSED STORM SEWER	■ PROPOSED CATCH BASIN (CB)	▨ CONCRETE PAVEMENT	20 STRUCT. NO.
--- PROPOSED ELECTRIC		▨ CONCRETE SIDEWALK	
⊕ PROPOSED VALVE IN BOX (VB)			



ISSUE DATE	ISSUED FOR
10/5/22	BIDS
10/24/22	ADDENDUM #1
11/23/22	PERMITS
12/2/22	SITE PLAN RESUBMITTAL
DRAWN	JA
CHECKED	
APPROVED	JA

FRENCH associates
 236 Mill Street
 Rochester, MI 48307
 T 248.656.1377
 F 248.656.7746
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CREATIVE SITE SOLUTIONS, PLC
 CIVIL ENGINEERING & SITE DESIGN
 3728 NASH DRIVE
 TROY, MI 48063
 248 259 2023
 jarnold@creative-site-solutions.com

PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
 ROCHESTER HILLS MICHIGAN

SHEET
 Site Plan

BENCHMARK DESCRIPTIONS

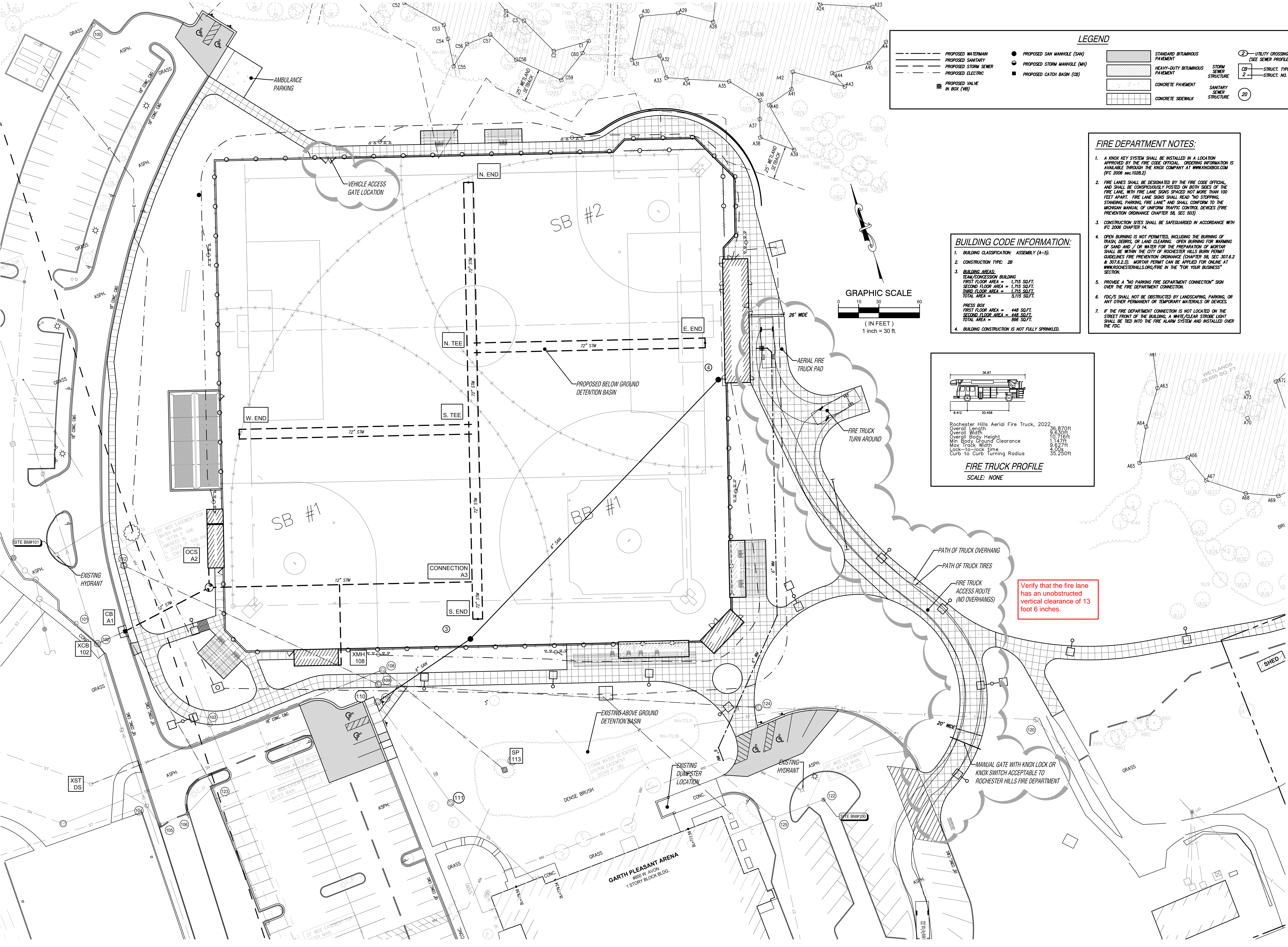
DATUM:	GPS-DERIVED NAVD88
SITE BM#100:	CHISELED "X" ON NORTH RIM OF BEEHIVE CATCH BASIN (STRUCTURE 22), LOCATED 475' SOUTHWEST OF THE NORTHEAST BUILDING CORNER OF GARTH PLEASANT ARENA. ELEV.=778.89
SITE BM#101:	ARROW ON HYDRANT, LOCATED 475' SOUTHWEST OF THE SOUTHWEST BUILDING CORNER OF HAGGOTT HALL. ELEV.=762.44

PROJECT NUMBER
2020-003

SHEET NUMBER
City File #22-021 Section #15
 C1.1

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2020-003 ROCHESTER UNIVERSITY



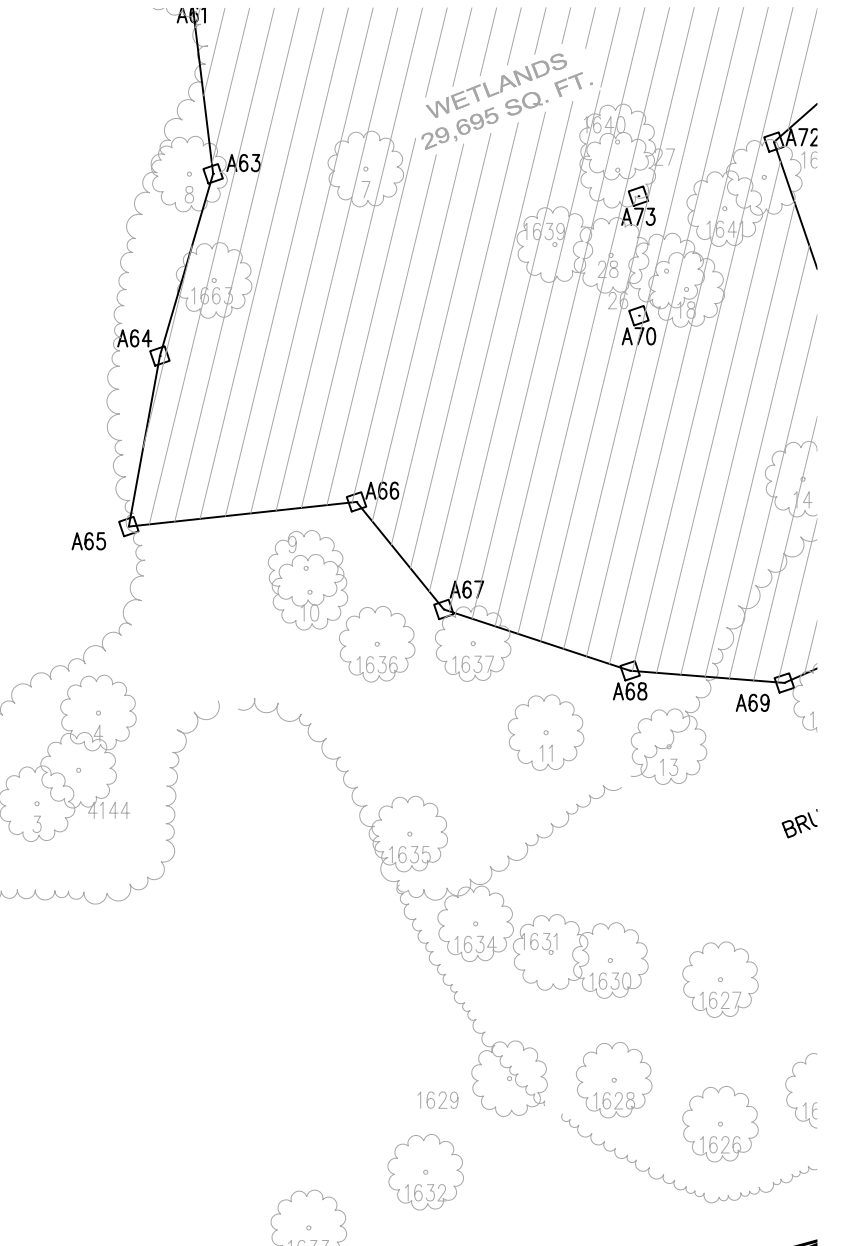
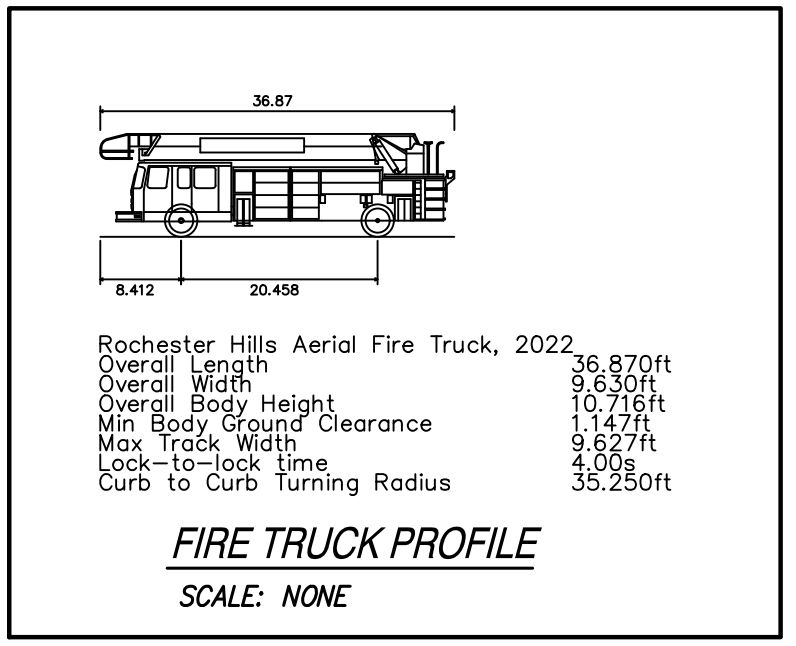
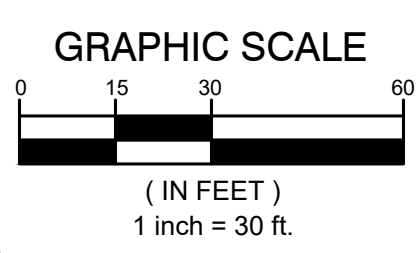
--- PROPOSED WATERMAIN	● PROPOSED SAN MANHOLE (SAN)	▨ STANDARD BITUMINOUS PAVEMENT	○ UTILITY CROSSING (SEE SEWER PROFILES)
--- PROPOSED SANITARY	● PROPOSED STORM MANHOLE (MH)	▨ HEAVY-DUTY BITUMINOUS PAVEMENT	CB STRUCTURE TYPE
--- PROPOSED STORM SEWER	■ PROPOSED CATCH BASIN (CB)	▨ CONCRETE PAVEMENT	2 STRUCT. NO.
--- PROPOSED ELECTRIC		▨ CONCRETE SIDEWALK	20
⊠ PROPOSED VALVE IN BOX (VB)			

FIRE DEPARTMENT NOTES:

- A KNOX KEY SYSTEM SHALL BE INSTALLED IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE THROUGH THE KNOX COMPANY AT WWW.KNOXCO.COM (FC 2006 sec.1028.2)
- FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL, AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE LANE SIGNS SPACED NOT MORE THAN 100 FEET APART. FIRE LANE SIGNS SHALL READ "NO STOPPING, STANDING, PARKING, FIRE LANE" AND SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (FIRE PREVENTION ORDINANCE CHAPTER 58, SEC. 503)
- CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14.
- OPEN BURNING IS NOT PERMITTED, INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING. OPEN BURNING FOR WARMING OF SAND AND / OR WATER FOR THE PREPARATION OF MORTAR SHALL BE WITHIN THE CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES FIRE PREVENTION ORDINANCE (CHAPTER 58, SEC. 307.6.2 & 307.6.2.1). MORTAR PERMIT CAN BE APPLIED FOR ONLINE AT WWW.ROCHESTERHILLS.ORG/FIRE IN THE "FOR YOUR BUSINESS" SECTION.
- PROVIDE A "NO PARKING FIRE DEPARTMENT CONNECTION" SIGN OVER THE FIRE DEPARTMENT CONNECTION.
- FDG/S SHALL NOT BE OBSTRUCTED BY LANDSCAPING, PARKING, OR ANY OTHER PERMANENT OR TEMPORARY MATERIALS OR DEVICES.
- IF THE FIRE DEPARTMENT CONNECTION IS NOT LOCATED ON THE STREET FRONT OF THE BUILDING, A WHITE/CLEAR STROBE LIGHT SHALL BE TIED INTO THE FIRE ALARM SYSTEM AND INSTALLED OVER THE FDC.

BUILDING CODE INFORMATION:

- BUILDING CLASSIFICATION: ASSEMBLY (A-5).
- CONSTRUCTION TYPE: 2B
- BUILDING AREAS:
TEAM/CONCRESSION BUILDING
FIRST FLOOR AREA = 1,715 SQ.FT.
SECOND FLOOR AREA = 1,715 SQ.FT.
THIRD FLOOR AREA = 1,715 SQ.FT.
TOTAL AREA = 5,145 SQ.FT.
PRESS BOX
FIRST FLOOR AREA = 448 SQ.FT.
SECOND FLOOR AREA = 448 SQ.FT.
TOTAL AREA = 896 SQ.FT.
- BUILDING CONSTRUCTION IS NOT FULLY SPRINKLED.



Verify that the fire lane has an unobstructed vertical clearance of 13 foot 6 inches.

ISSUE DATE	ISSUED FOR
10/5/22	BIDS
10/24/22	ADDENDUM #1
11/23/22	PERMITS
12/2/22	SITE PLAN RESUBMITTAL
DRAWN	JA
CHECKED	
APPROVED	JA

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Rochester, MI 48307
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F 248.656.7746
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TROY, MI 48063
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PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
ROCHESTER HILLS MICHIGAN

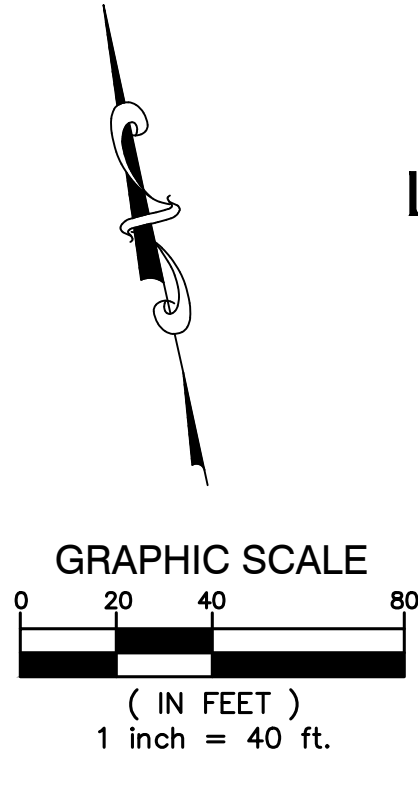
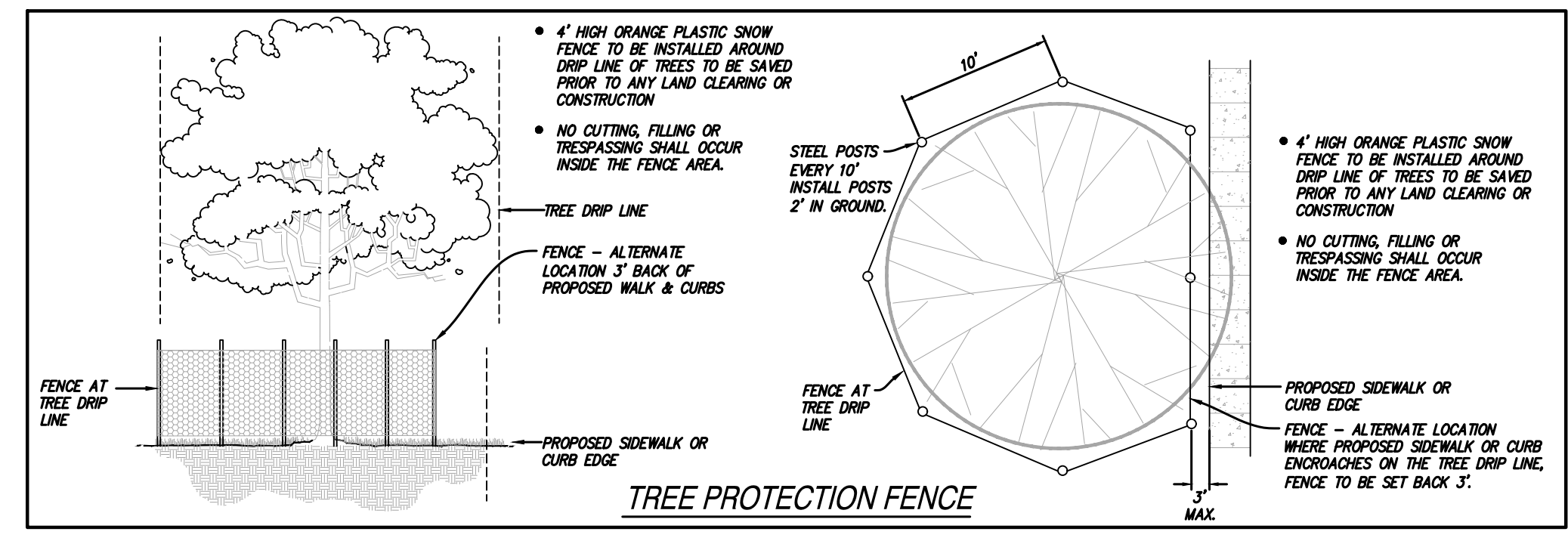
SHEET
Fire Protection Plan

PROJECT NUMBER
2020-003

SHEET NUMBER
City File #22-021 Section #15
C1.2

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2020-003 ROCHESTER UNIVERSITY



- DEMOLITION NOTES**
- REMOVE ASPHALT PAVEMENT TO FULL DEPTH. SAWCUT FULL DEPTH WHERE NEW PAVEMENT WILL BE PLACED ADJACENT TO EXISTING PAVEMENT. INCLUDE REMOVAL OF CONCRETE CURB AND GUTTER WHERE SHOWN.
 - REMOVE CONCRETE PAVEMENT TO FULL DEPTH. SAWCUT FULL DEPTH WHERE NEW PAVEMENT WILL BE PLACED ADJACENT TO EXISTING PAVEMENT. INCLUDE REMOVAL OF CONCRETE CURB AND GUTTER WHERE SHOWN.
 - CLEAR AND GRUB TO THE LIMITS SHOWN. INCLUDE REMOVAL OF ALL SIGNS, POSTS, FOOTINGS, GRAVEL, BRUSH, SHRUBS, GRASS, AND TREES NOT INDICATED FOR PROTECTION INCLUDING ROOTS. STRIP TOPSOIL AND STOCKPILE ON SITE IN DESIGNATED LOCATION.
 - REMOVE EXISTING TREE (INCLUDING STUMPS AND ROOTS). REFER TO LANDSCAPE PLANS FOR TREE REPLACEMENT CALCULATIONS.
 - PROTECT EXISTING TREES AND LANDSCAPING TO REMAIN DURING CONSTRUCTION. SEE TREE PROTECTION DETAIL THIS SHEET.
 - REMOVE EXISTING FENCE INCLUDING ALL GATES, POSTS, AND FOOTINGS.
 - REMOVE EXISTING UTILITY COMPLETE. COORDINATE ACTIVITIES WITH LOCAL AUTHORITIES HAVING JURISDICTION AS REQUIRED. SEE PLAN FOR UTILITY SIZE AND TYPE. ALIGNMENTS SHOWN MAY BE FOR A RECORD DOCUMENT. CONTRACTOR MUST CONFIRM EXISTING LOCATION IN THE FIELD. INCLUDE ASSOCIATED STRUCTURES NOT SHOWN TO REMAIN.
 - REMOVE EXISTING BUILDINGS COMPLETE, INCLUDING FOOTINGS.
- PROTECT EXISTING UTILITIES AND UTILITY STRUCTURES TO REMAIN.
REMOVE AND SALVAGE RECREATIONAL AND ATHLETIC EQUIPMENT, BENCHES, BLEACHERS, ETC. THAT FALL WITHIN THE CONSTRUCTION AREA. STAGE IN ON SITE LOCATION AS SPECIFIED BY OWNER (UNLESS NOTED ON THE PLANS).
- ALL DEPRESSIONS CREATED BY DEMOLITION PROCEDURES SHALL BE BACKFILLED WITH CLASS II FILL MATERIAL IN 8" LIFTS COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT, UP TO PROPOSED SUBGRADE.
- CONTRACTOR IS RESPONSIBLE FOR DOING AN EARTHWORK CALCULATION FOR CUT AND FILL REQUIREMENTS, AND IS RESPONSIBLE FOR INCLUDING IMPORT AND EXPORT OF MATERIALS IN THEIR BID. ALL EXCESS MATERIAL (INCLUDING TOPSOIL, CLEAN FILL, AND WASTE MATERIAL) SHALL BE REMOVED FROM THE SITE.
- CONTRACTOR TO PROVIDE UNIT PRICES (\$/CY) IN THE BID DOCUMENTS FOR UNDERLAY AND REPLACEMENT OF POOR SOILS. UNIT PRICE TO INCLUDE DISPOSAL OF POOR SOILS AND IMPORT AND PLACEMENT OF CLASS II ENGINEERED FILL IN 8" LIFTS, COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT, UP TO PROPOSED SUBGRADE.
- CONTRACTOR TO PROTECT EXISTING WALKS, PAVEMENT, CURBS, GUTTERS, WALLS, FENCES, GATES, LANDSCAPING AND TREES TO REMAIN DURING CONSTRUCTION.

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10/24/22	ADDENDUM #1
11/23/22	PERMITS
12/2/22	NO CHANGE
DRAWN	JA
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F 248.656.7746
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CIVIL ENGINEERING & SITE DESIGN
3728 NASH DRIVE
TROY, MI 48063
248 259 2023
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PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
ROCHESTER HILLS MICHIGAN

SHEET
Demolition Plan

PROJECT NUMBER
2020-003

SHEET NUMBER
City File #22-021 Section #15
C2.0

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2020-003 ROCHESTER UNIVERSITY

SOIL EROSION/SEDIMENTATION CONTROL CONSTRUCTION SEQUENCE

1. INSTALL SILT FENCE AND INLET FILTERS IN EXISTING STORM SEWER STRUCTURES AS SHOWN.
2. CLEAR, GRUB AND STRIP TOPSOIL IN AREAS OF EARTH DISRUPTION.
3. COMPLETE SITE DEMOLITION ACTIVITIES.
4. COMPLETE LAND BALANCING OPERATIONS AND ROUGH GRADING.
5. INSTALL NEW UNDERGROUND UTILITIES AND PLACE INLET FILTERS IN NEW STRUCTURES WHERE INDICATED.
6. CONSTRUCT BUILDINGS AND RETAINING WALLS.
7. PERFORM FINE GRADING, PAVING OPERATIONS, AND LANDSCAPING.
8. EROSION CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL THE OCWRG GRANTS ITS APPROVAL. INLET FILTERS SHALL BE PERIODICALLY INSPECTED AND CLEANED/REPLACED AS NECESSARY.

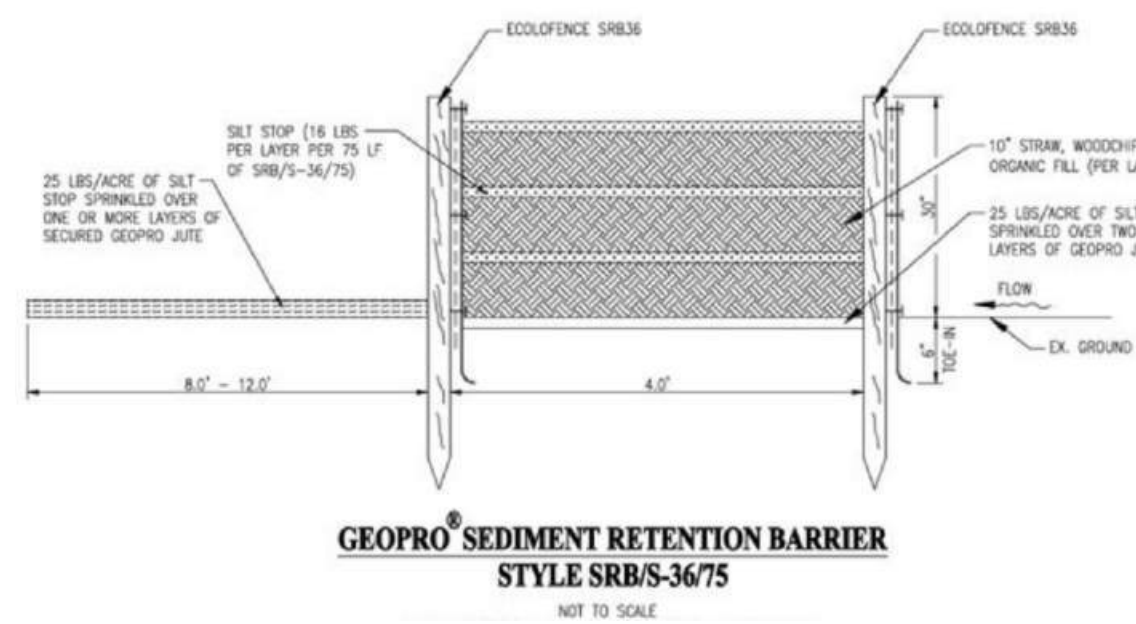
ALL EROSION CONTROL MEASURES SHALL BE INSTALLED APPROXIMATELY ACCORDING TO THE FOLLOWING SEQUENCE OF CONSTRUCTION.

PROJECT COMMENCEMENT ON OR ABOUT APRIL 2023.

SCHEDULE

A. INSTALL SILT FENCE AND INLET FILTERS IN EXISTING STRUCTURES AS SHOWN ON PLANS.	1-2 DAYS
B. STRIP AND STOCKPILE TOPSOIL.	1 WEEK
C. COMPLETE PAVEMENT, BUILDING AND UTILITY DEMOLITION ACTIVITIES.	3 WEEKS
D. LAND BALANCING AND ROUGH GRADE SITE.	3 WEEKS
E. INSTALL PROPOSED UNDERGROUND UTILITIES AND INLET FILTERS.	3 WEEKS
F. BUILDING AND RETAINING WALL CONSTRUCTION.	12 WEEKS
G. FINE GRADE SITE, PAVE, INSTALL LANDSCAPING AND ESTABLISH VEGETATION.	3 WEEKS
H. CLEAN PAVEMENTS, WALKS, CULVERTS, AND WATERCOURSES OF ALL ACCUMULATED SEDIMENT IN CONJUNCTION WITH REMOVING ALL TEMPORARY DEVICES.	1 WEEK

PROJECT COMPLETION ON OR ABOUT NOVEMBER 2023.



SOIL EROSION/SEDIMENTATION CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF OKLAHOMA COUNTY WATER RESOURCES COMMISSION.
2. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO DETERMINE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL DEVICES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
3. EROSION AND ANY SEDIMENT FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MANMADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
4. EROSION AND SEDIMENT CONTROL DEVICES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORT OF SILT OFF THE SITE.
5. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY DEVICES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED AND APPROVED BY THE CITY OF NOWA.
6. DEBRIS FROM PROJECT WILL BE LEFT ON THE SITE BY DELIVERY OR CONSTRUCTION VEHICLES THROUGH THE USE OF CLEAN STONE EXITS. SHOULD THE STONE BECOME LESS EFFECTIVE IT WILL BE REPLACED. ALL CONSTRUCTION TRAFFIC WILL USE THE CLEAN STONE EXIT.
7. DUST CONTROL WILL BE EXERCISED AT ALL TIMES WITHIN THE PROJECT BY THE CONTRACTOR. SPRINKLING TANK TRUCKS WILL BE AVAILABLE AT ALL TIMES TO BE USED ON HAUL ROUTES OR OTHER PLACES WHERE DUST BECOMES A PROBLEM.
8. IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW OR HAY - SPREAD UNIFORMLY AT A RATE OF 1 1/2 TO 2 TONS PER ACRE OR 0.10 POUNDS PER SQUARE FOOT. ANCHOR MULCH WITH DISC TYPE MULCH ANCHORING TOOL.
9. ALL MUD, DIRT, AND DEBRIS TRACKED ONTO EXISTING ROADS FROM THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR OR SUBCONTRACTOR. ALL MUD, DIRT, AND DEBRIS TRACKED OR SPILLED ONTO PAVED SURFACES WITHIN THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
10. PERMANENT SOIL EROSION CONTROL DEVICES FOR ALL SLOPES, CHANNELS, DITCHES OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 15 CALENDAR DAYS AFTER FINAL GRADING OR FINAL EARTH CHANGES HAVE BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL DEVICES SHALL BE IMPLEMENTED WITHIN 30 CALENDAR DAYS. ALL TEMPORARY SOIL EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL DEVICES ARE IMPLEMENTED AND/OR ESTABLISHED. ALL PERMANENT SOIL EROSION CONTROL DEVICES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF INSURANCE IS ISSUED.
11. ALL CONTRACTORS ARE TO KEEP EXCAVATED MATERIAL ON SITE. PARTICULAR CARE SHOULD BE TAKEN WORKING ALONG THE PERIMETER OF THE SITE. IN NO EVENT SHALL THE WORK AREA EXTEND BEYOND THE LIMITS INDICATED ON THE PLANS.
12. THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE CONTRACTOR.
13. IF DEWATERING IS ANTICIPATED OR ENCOUNTERED DURING CONSTRUCTION A DEWATERING PLAN MUST BE SUBMITTED TO THE CITY OF NOWA ENGINEERING DIVISION FOR REVIEW.
14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBANCES DUE TO THE INSTALLATION OF PUBLIC UTILITIES.
15. A RING OF SILT FENCE WILL BE INSTALLED SURROUNDING ANY STOCKPILED MATERIAL.
16. VEGETATION SHALL BE REINSTALLED WITHIN 5 DAYS OF FINAL GRADE, OR WHENEVER DISTURBED AREAS WILL REMAIN UNCHANGED FOR 30 DAYS OR GREATER. 3-4\"/>

SITE NOTES:

APPROX. GROSS ACREAGE DISTURBED = 8.57± ACRES

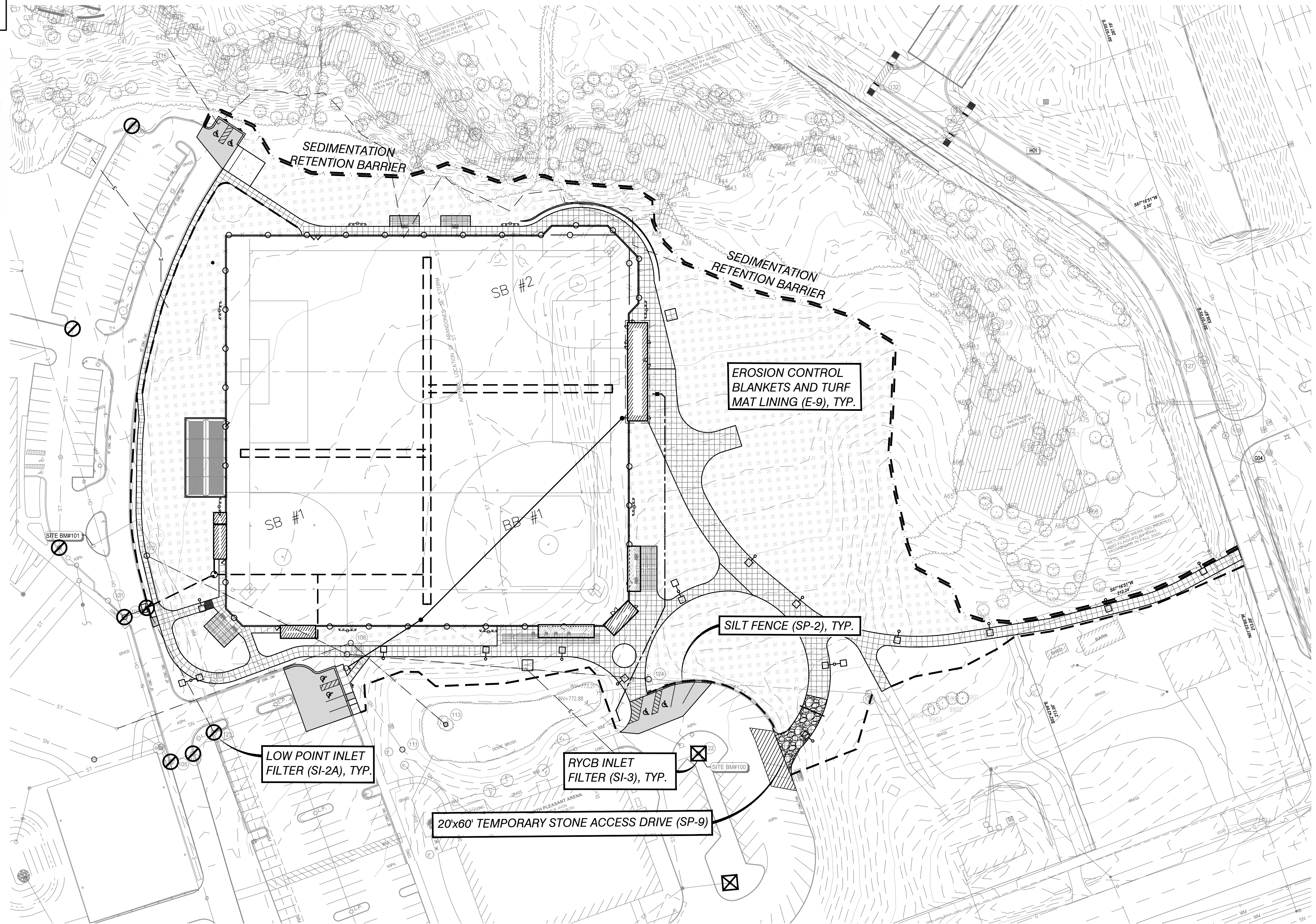
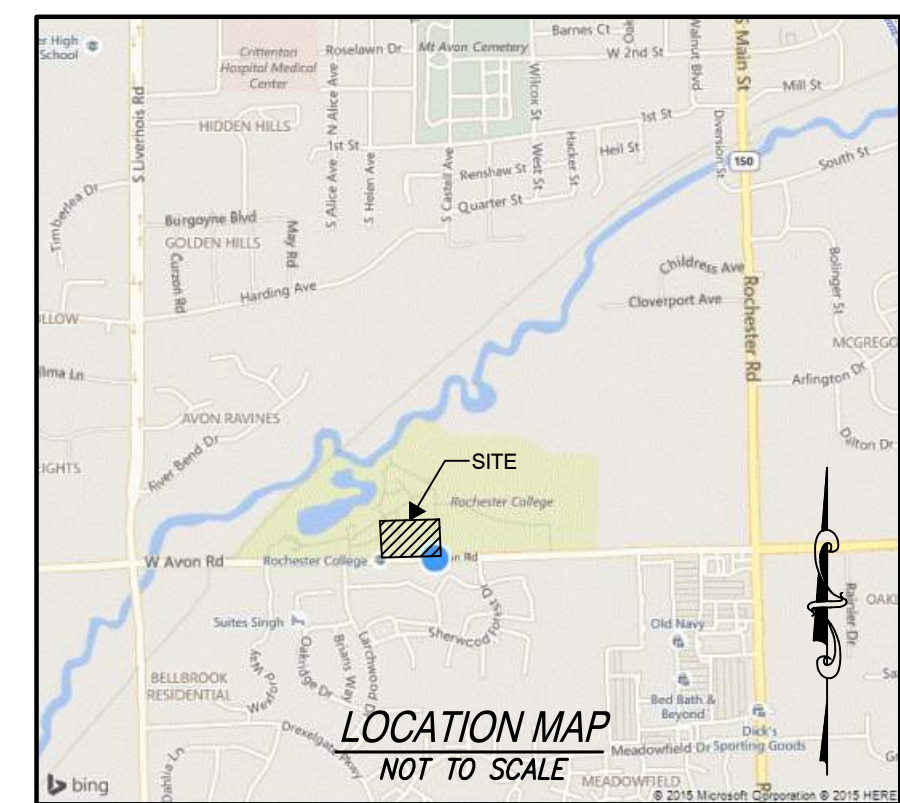
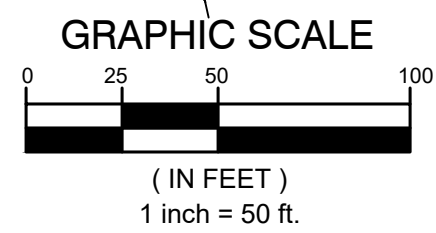
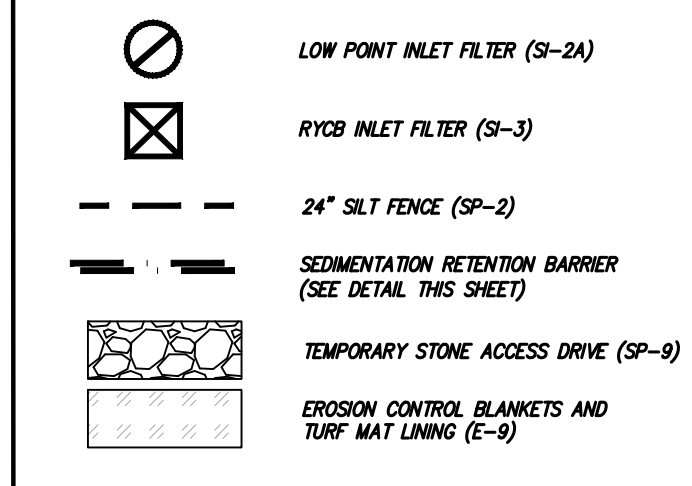
NEAREST BODY OF WATER: CLINTON RIVER @ 350± FEET

SOIL TYPES:

- 10C - MARLETTE SANDY LOAM, 6 TO 12 PERCENT SLOPES
- 34B - KIBBIE FINE SANDY LOAM, 0 TO 4 PERCENT SLOPES

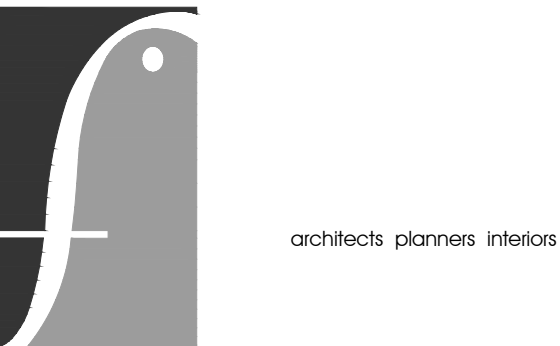
THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED. THE SOIL EROSION AND SEDIMENT CONTROL ACT.

SOIL EROSION CONTROL DEVICES



ISSUE DATE	ISSUED FOR
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11/23/22	PERMITS
12/2/22	SITE PLAN RESUBMITTAL

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CHECKED	
APPROVED	JA



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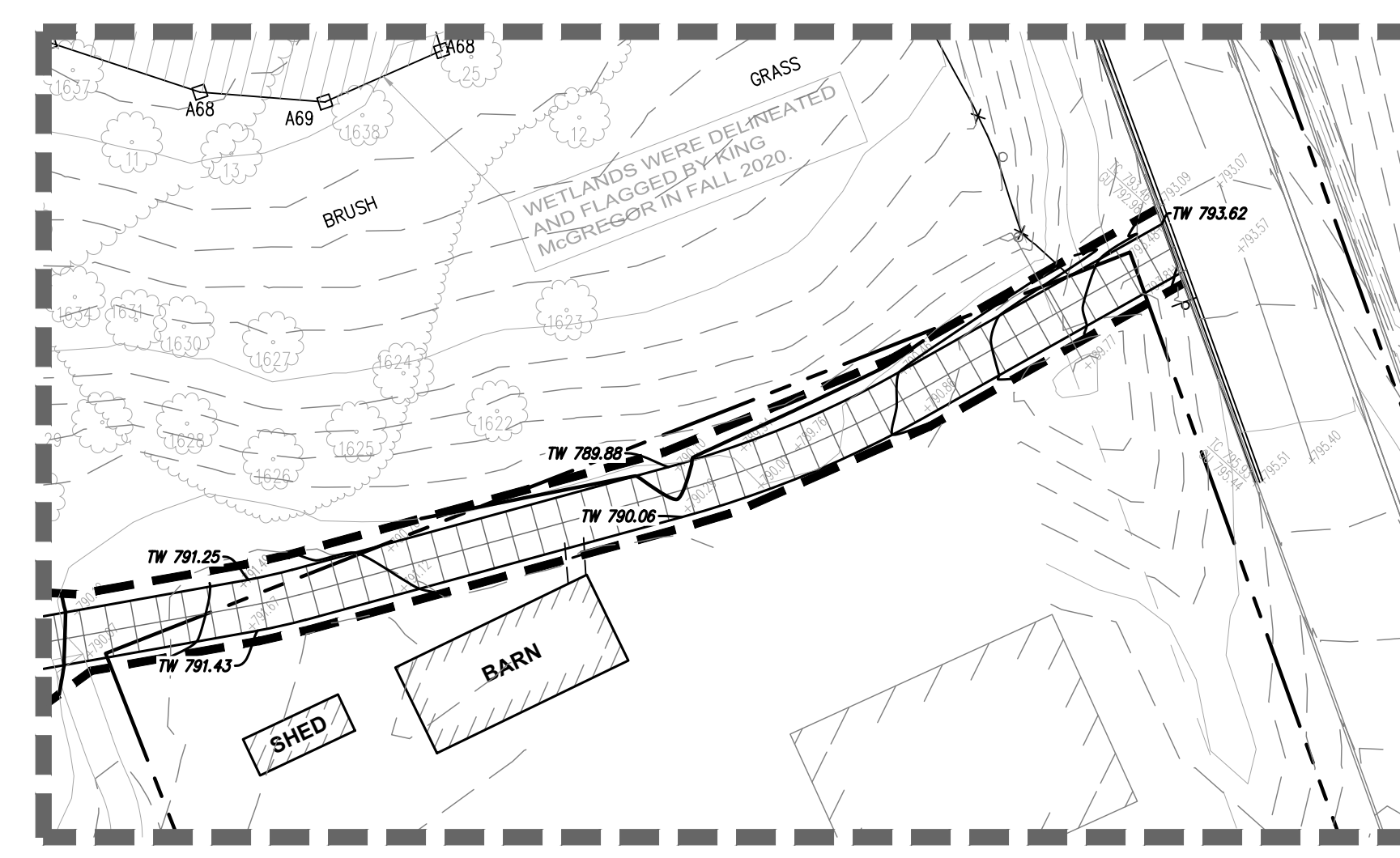
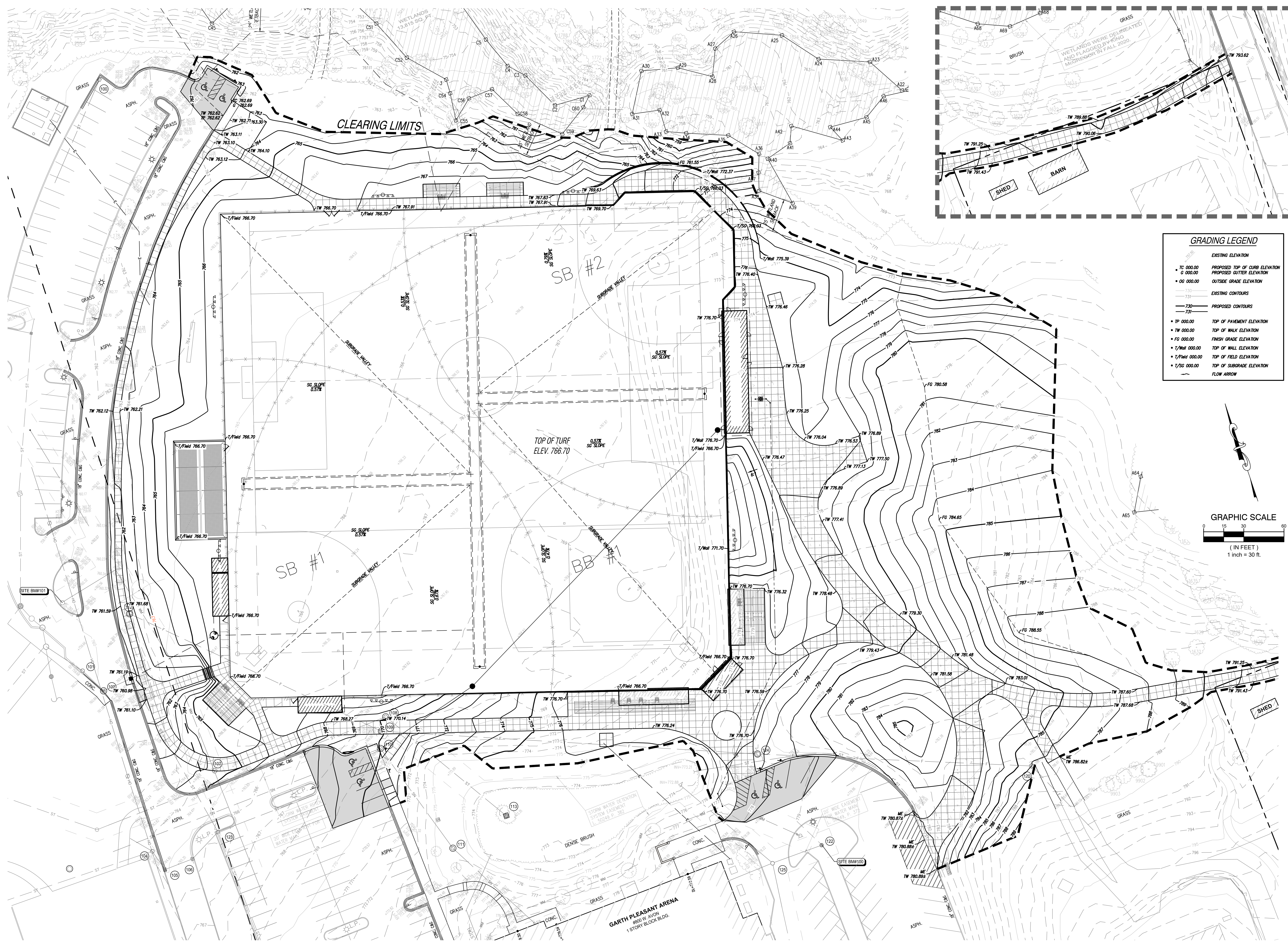
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PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
 ROCHESTER HILLS MICHIGAN

SHEET
 Soil Erosion & Sedimentation Control Plan

PROJECT NUMBER
2020-003

SHEET NUMBER
 City File #22-021 Section #15
C3.0

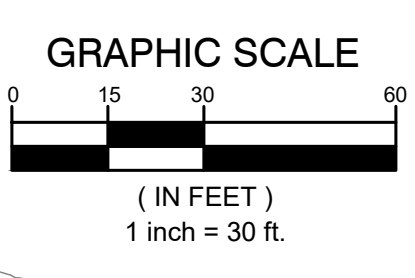


GRADING LEGEND

—	EXISTING ELEVATION
• TC 000.00	PROPOSED TOP OF CURB ELEVATION
• G 000.00	PROPOSED GUTTER ELEVATION
• OG 000.00	OUTSIDE GRADE ELEVATION
— 730 —	EXISTING CONTOURS
— 730 —	PROPOSED CONTOURS
— 731 —	PROPOSED CONTOURS
• TP 000.00	TOP OF PAVEMENT ELEVATION
• TW 000.00	TOP OF WALK ELEVATION
• FG 000.00	FINISH GRADE ELEVATION
• T/Wall 000.00	TOP OF WALL ELEVATION
• T/Field 000.00	TOP OF FIELD ELEVATION
• T/SG 000.00	TOP OF SUBGRADE ELEVATION
→	FLOW ARROW

ISSUE DATE	ISSUED FOR
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11/23/22	PERMITS
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PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
 ROCHESTER HILLS MICHIGAN

SHEET

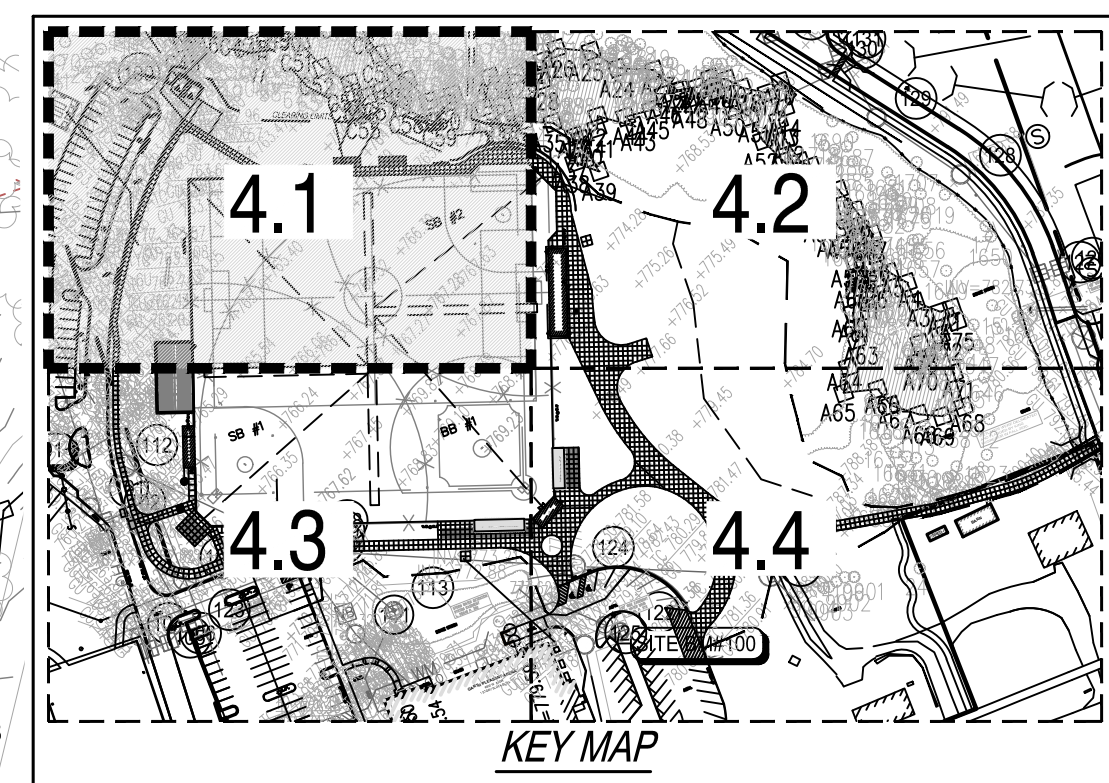
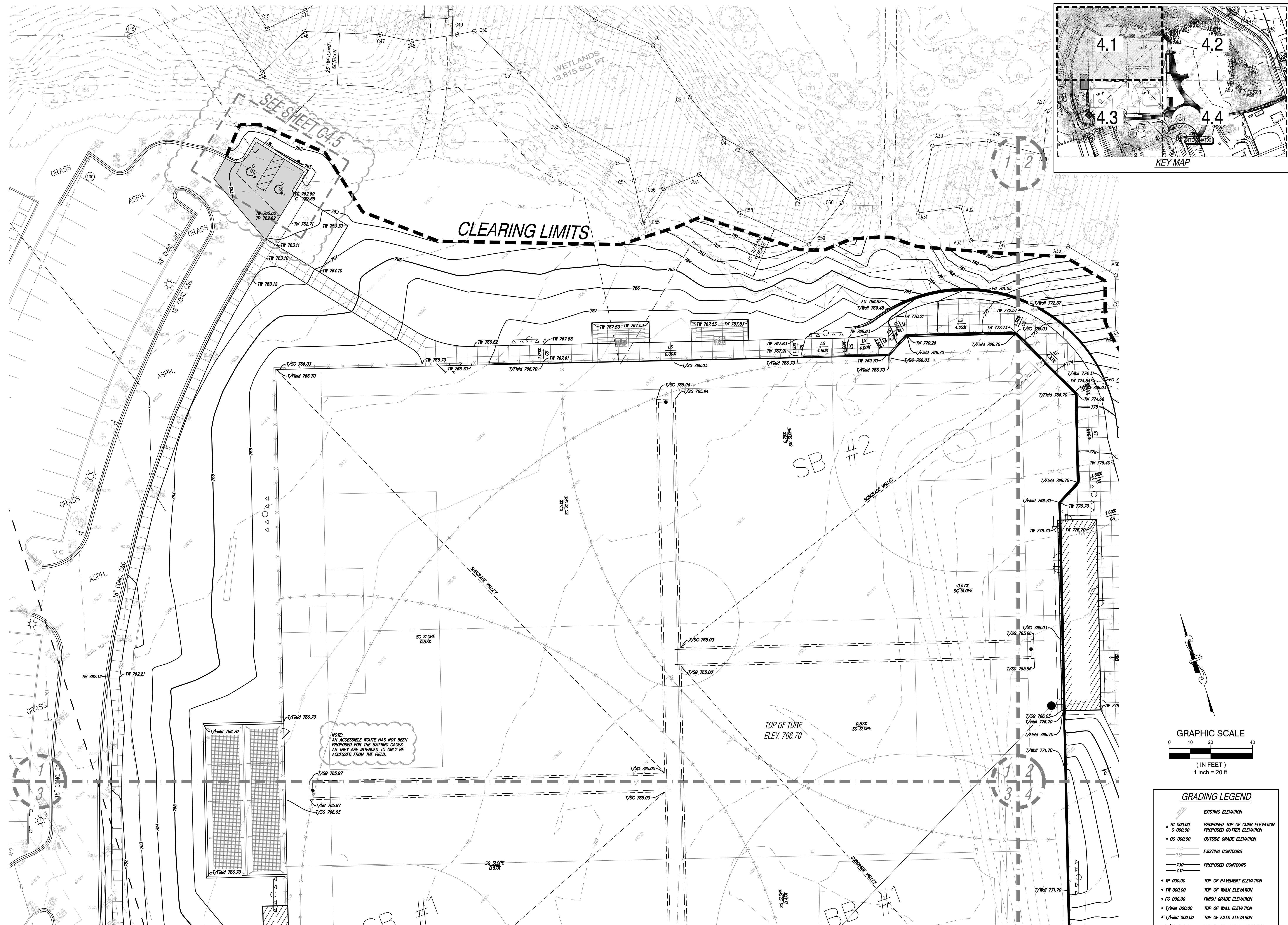
Overall Grading Plan

PROJECT NUMBER
2020-003

SHEET NUMBER
City File #22-021 Section #15
C4.0

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2020-003 ROCHESTER UNIVERSITY



ISSUE DATE	ISSUED FOR
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12/2/22	SITE PLAN RESUBMITTAL
DRAWN	JA
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APPROVED	JA

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PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
ROCHESTER HILLS MICHIGAN

SHEET

Grading Plan
Area 1

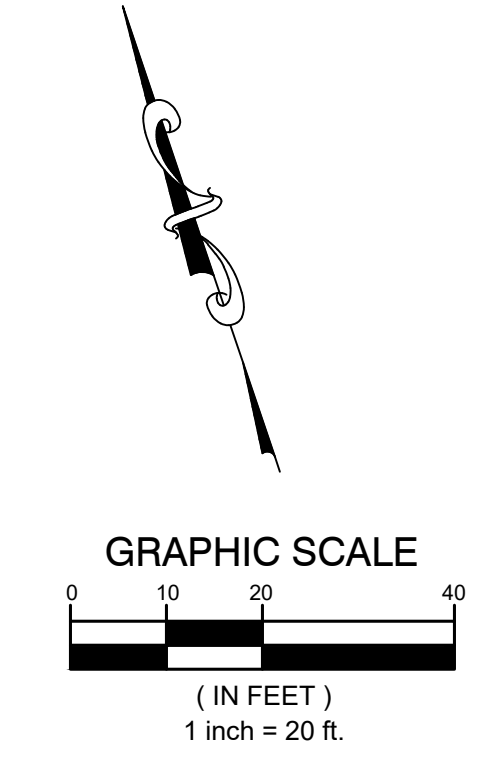
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2020-003

SHEET NUMBER

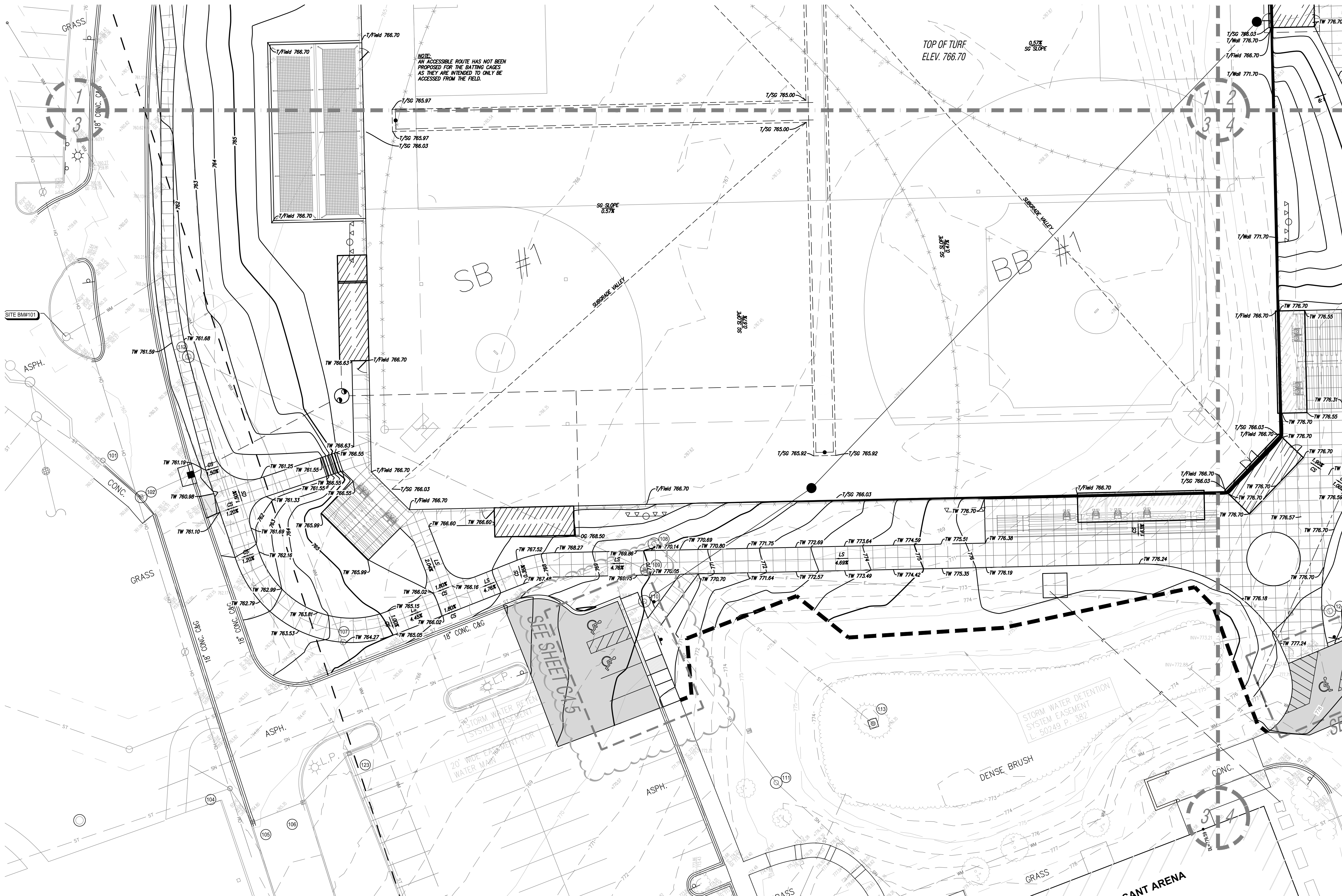
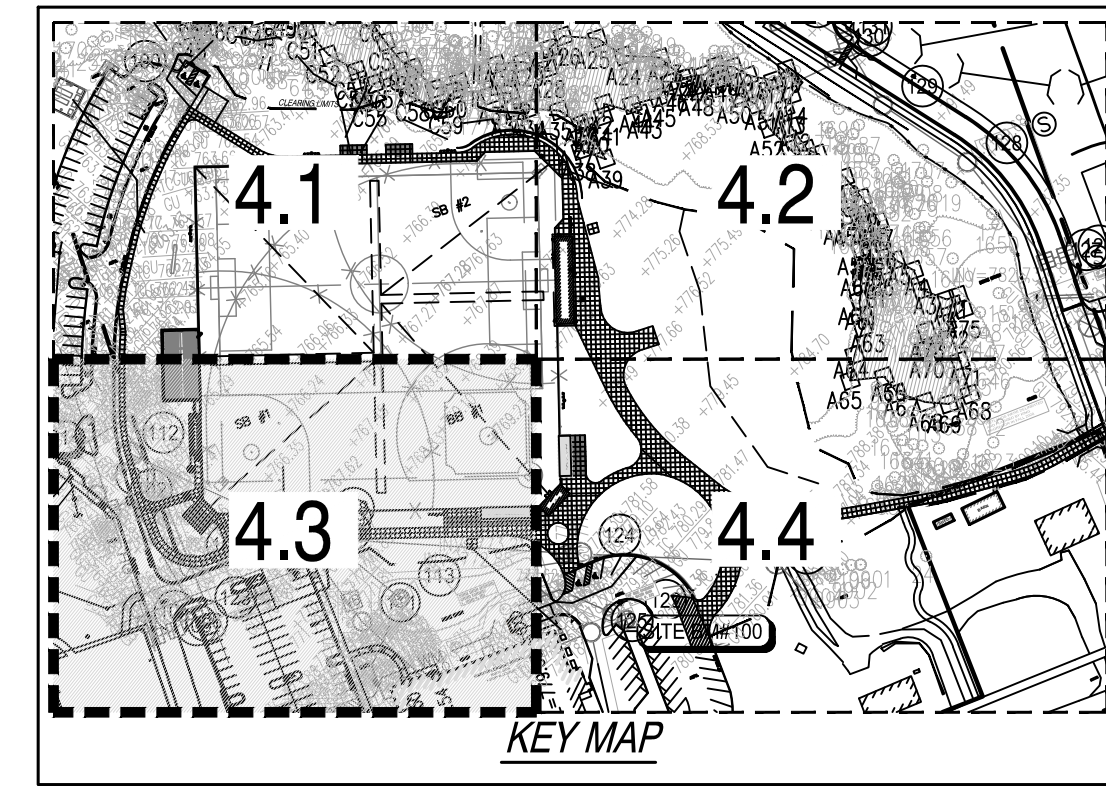
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GRADING LEGEND	
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• C 000.00	PROPOSED GUTTER ELEVATION
• OG 000.00	OUTSIDE GRADE ELEVATION
EXISTING CONTOURS	
---	230
---	231
PROPOSED CONTOURS	
---	230
---	231
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• FG 000.00	FINISH GRADE ELEVATION
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• T/Field 000.00	TOP OF FIELD ELEVATION
• T/SG 000.00	TOP OF SUBGRADE ELEVATION
→	FLOW ARROW

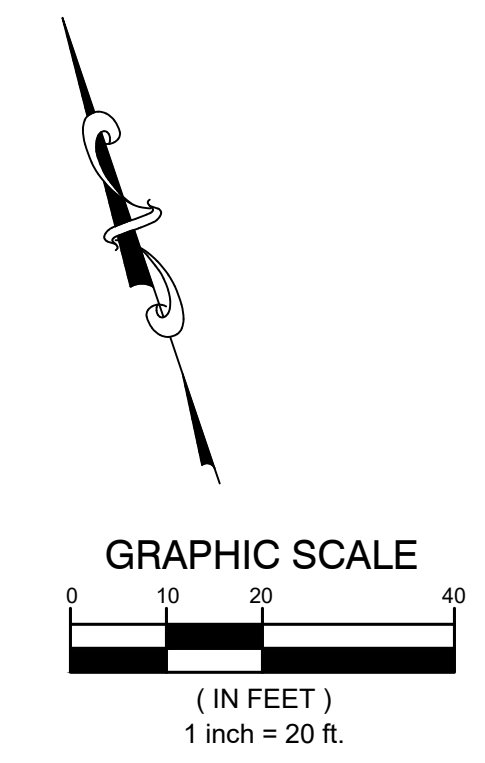
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ISSUE DATE	ISSUED FOR
10/5/22	BIDS
10/24/22	ADDENDUM #1
11/23/22	PERMITS
12/2/22	SITE PLAN RESUBMITTAL
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APPROVED	JA

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GRADING LEGEND	
EXISTING ELEVATION	
• TC 000.00	PROPOSED TOP OF CURB ELEVATION
• G 000.00	PROPOSED GUTTER ELEVATION
• OG 000.00	OUTSIDE GRADE ELEVATION
EXISTING CONTOURS	
---	730
---	731
PROPOSED CONTOURS	
---	730
---	731
• TP 000.00	TOP OF PAVEMENT ELEVATION
• TW 000.00	TOP OF WALK ELEVATION
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• T/Wall 000.00	TOP OF WALL ELEVATION
• T/Field 000.00	TOP OF FIELD ELEVATION
• T/S 000.00	TOP OF SUBGRADE ELEVATION
---	FLOW ARROW

PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
ROCHESTER HILLS MICHIGAN

SHEET

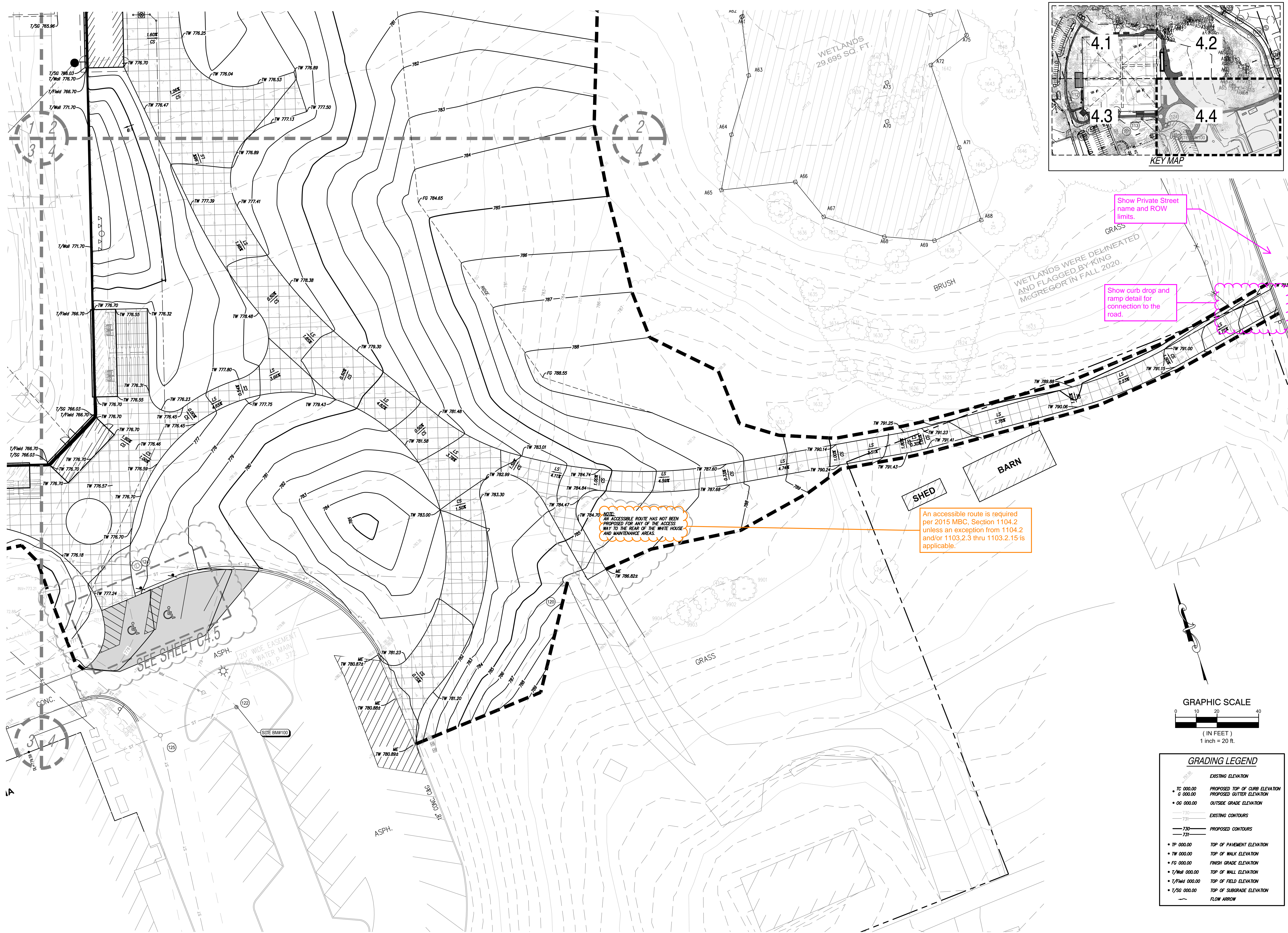
Grading Plan Area 3

PROJECT NUMBER
2020-003

SHEET NUMBER
City File #22-021 Section #15
C4.3

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2020-003 ROCHESTER UNIVERSITY



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12/2/22	SITE PLAN RESUBMITTAL
DRAWN	JA
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 Rochester, MI
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 CIVIL ENGINEERING & SITE DESIGN
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 TROY, MI 48063
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PROJECT

ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS

ROCHESTER HILLS MICHIGAN

SHEET

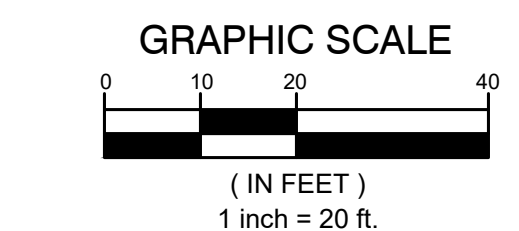
Grading Plan
Area 4

PROJECT NUMBER

2020-003

SHEET NUMBER

City File #22-021 Section #15
C4.4

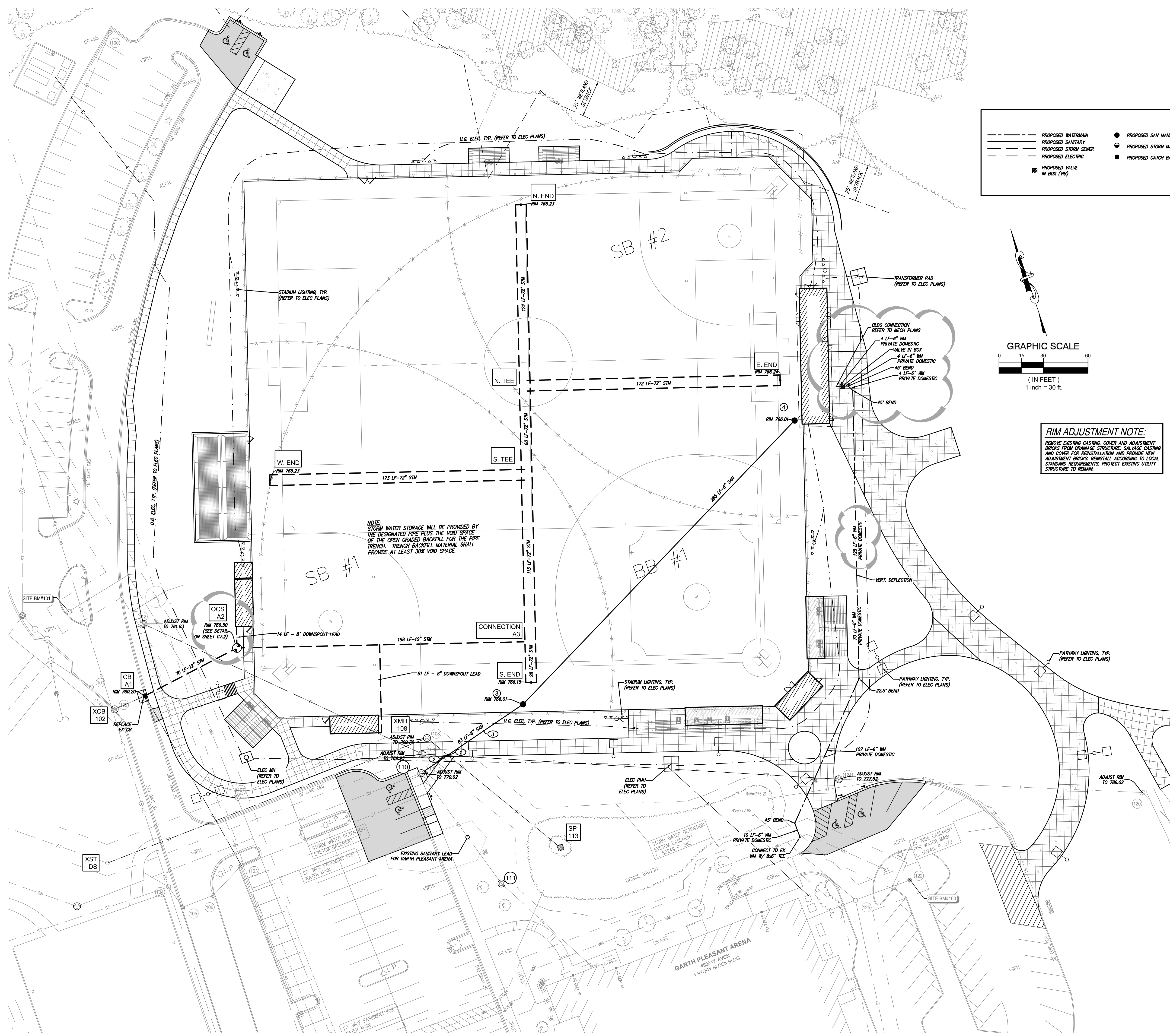


GRADING LEGEND

EXISTING ELEVATION	
TC 000.00	PROPOSED TOP OF CURB ELEVATION
G 000.00	PROPOSED GUTTER ELEVATION
OG 000.00	OUTSIDE GRADE ELEVATION
730	EXISTING CONTOURS
731	EXISTING CONTOURS
730	PROPOSED CONTOURS
731	PROPOSED CONTOURS
TP 000.00	TOP OF PAVEMENT ELEVATION
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T/Field 000.00	TOP OF FIELD ELEVATION
T/SG 000.00	TOP OF SUBGRADE ELEVATION
	FLOW ARROW

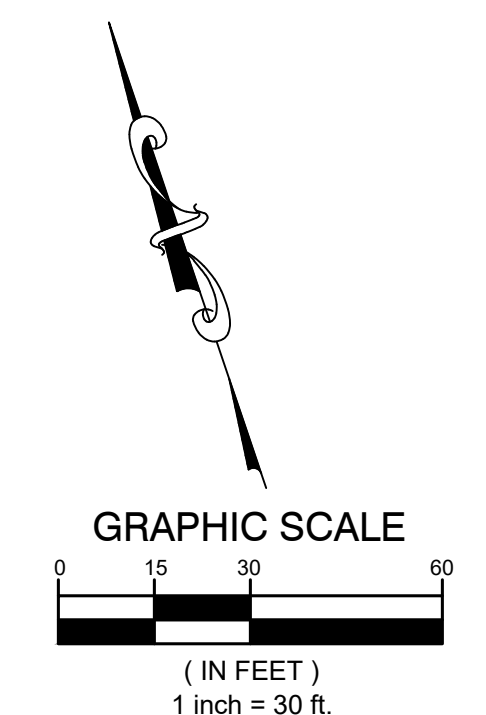
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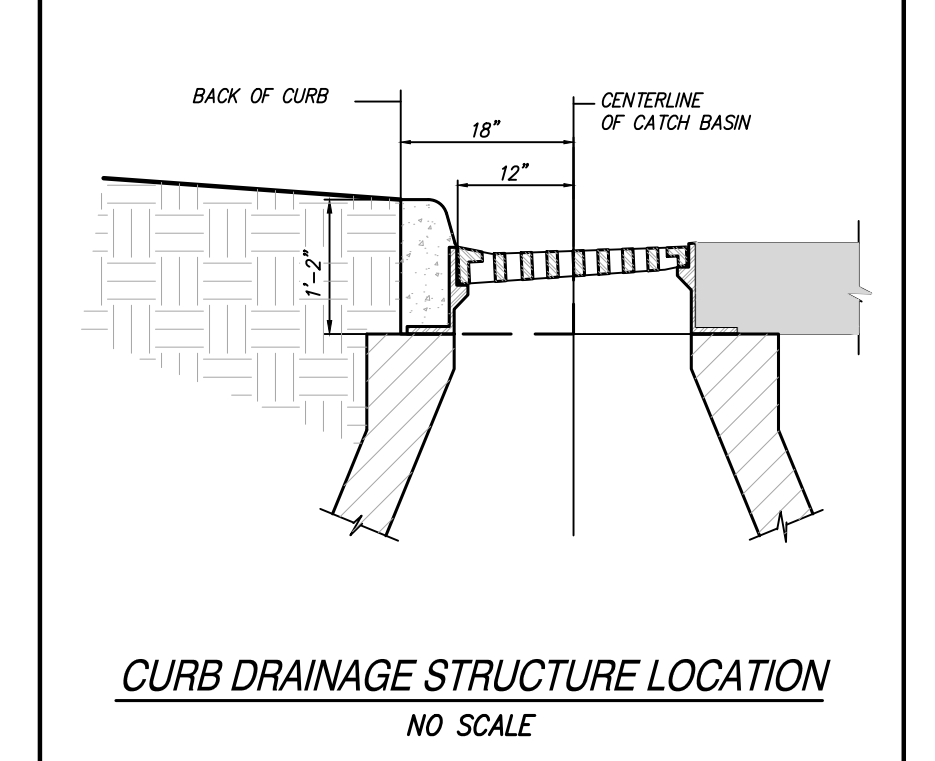
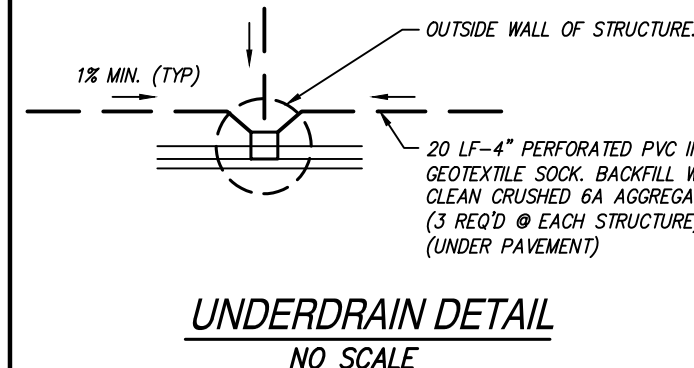
LEGEND

--- PROPOSED WATER MAIN	● PROPOSED SAN MANHOLE (SAN)	■ STANDARD BITUMINOUS PAVEMENT	⊕ UTILITY CROSSING (SEE SEWER PROFILES)
--- PROPOSED SANITARY	○ PROPOSED STORM MANHOLE (MH)	▨ HEAVY-DUTY BITUMINOUS PAVEMENT	⊖ STRUCT. TYPE 2
--- PROPOSED STORM SEWER	■ PROPOSED CATCH BASIN (CB)	▨ CONCRETE PAVEMENT	⊖ STRUCT. NO.
--- PROPOSED ELECTRIC		▨ CONCRETE SIDEWALK	⊖
⊖ PROPOSED VALVE IN BOX (VB)			



RIM ADJUSTMENT NOTE:
REMOVE EXISTING CASTING, COVER AND ADJUSTMENT BRICKS FROM DRAINAGE STRUCTURE. SALVAGE CASTING AND COVER FOR REINSTALLATION AND PROVIDE NEW ADJUSTMENT BRICKS, REINSTALL ACCORDING TO LOCAL STANDARD REQUIREMENTS. PROTECT EXISTING UTILITY STRUCTURE TO REMAIN.

- UTILITY NOTES**
- STORM SEWER 12" AND LARGER SHALL BE C78 CL IV (PREM.I.T.) UNLESS OTHERWISE NOTED ON THE PLAN.
 - STORM SEWER ROOF AND SUMP LEADS SHALL BE SCHEDULE 40 PVC OR SDR 23.5.
 - SANITARY SEWER SHALL BE PVC TRUSS PIPE. LEADS SHALL BE SOLID WALL, PVC, SDR 23.5.
 - WATER MAIN SHALL BE CLASS 54 DUCTILE IRON. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH ANWA STANDARD C202. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH ANWA STANDARD C201 PRIOR TO BEING PUT INTO SERVICE.
 - ALL UTILITY TRENCHES THAT FALL WITHIN A 1'-0" INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY.
 - ALL WATER MAIN SHALL BE BURIED WITH 6' OF COVER FROM PROPOSED GRADES. USE 22.5" BENDS TO LOWER WATER MAIN WHERE NOTED AT UTILITY CROSSING.
 - ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS.
 - ALL UTILITIES SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
 - ALL HYDRANTS MUST BE AT LEAST 5' FROM THE BACK OF CURB OR EDGE OF PAVEMENT.
 - ALL UTILITIES SHALL BE PLACED AT LEAST 10' FROM OTHER UTILITIES, SIGNIFICANT TREES, AND FIXED STRUCTURES.
 - UNLESS OTHERWISE NOTED, ALL STORM SEWER STRUCTURES SHALL BE 4' DIAMETER (INLETS SHALL BE 2' DIAMETER). UNLESS OTHERWISE INDICATED ON THE STANDARD DETAIL SHEETS CASTINGS SHALL BE:
PRIVATE CATCH BASINS - E1W 5105 - "31" (FRAMES WITH CURB BOXES WILL NOT BE ALLOWED)
YARD CATCH BASINS - E1W 1040 - "102"
MANHOLES - E1W 1040 - "A"
 - PLACEMENT OF UNDERDRAINS AT ALL CATCH BASINS IS REQUIRED. SEE DETAIL THIS SHEET.
 - FOR CURB CATCH BASINS, SEE BASIN LOCATION DETAIL FOR BASIN STAKING RELATIVE TO THE CURB.
 - WHERE THESE PLANS DIFFER FROM THE STANDARD DETAILS OR STANDARD SPECIFICATIONS OF THE COMMUNITY, THE COMMUNITY REQUIREMENTS SHALL GOVERN.



ISSUE DATE	ISSUED FOR
10/5/22	BIDS
10/24/22	ADDENDUM #1
11/23/22	PERMITS
12/2/22	SITE PLAN RESUBMITTAL
DRAWN	JA
CHECKED	
APPROVED	JA

FRENCH associates
architects planners interior

236 Mill Street
Rochester, MI 48307
T 248.656.1377
F 248.656.7746
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CREATIVE SITE SOLUTIONS, PLC
CIVIL ENGINEERING & SITE DESIGN

3728 NASH DRIVE
TROY, MI 48063
248.259.2023

jjarnold@creative-site-solutions.com

PROJECT

ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS

ROCHESTER HILLS MICHIGAN

SHEET

Utility Plan

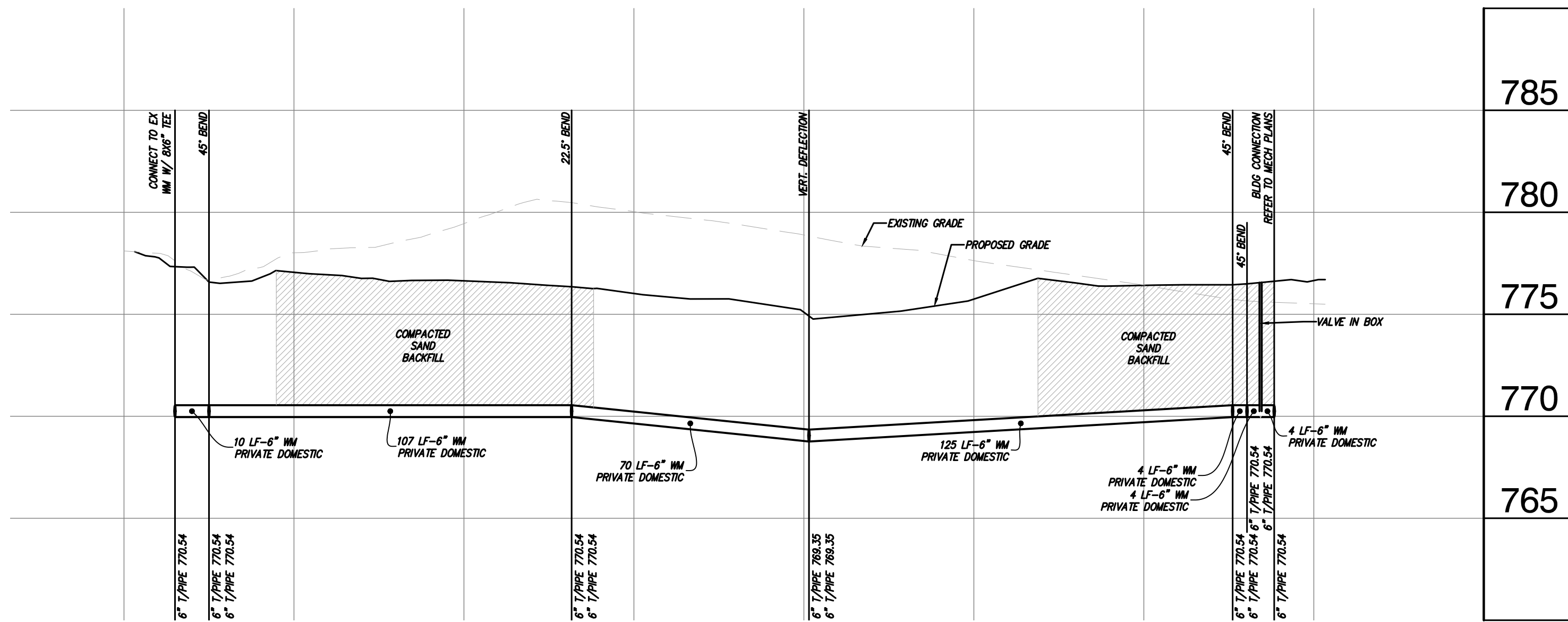
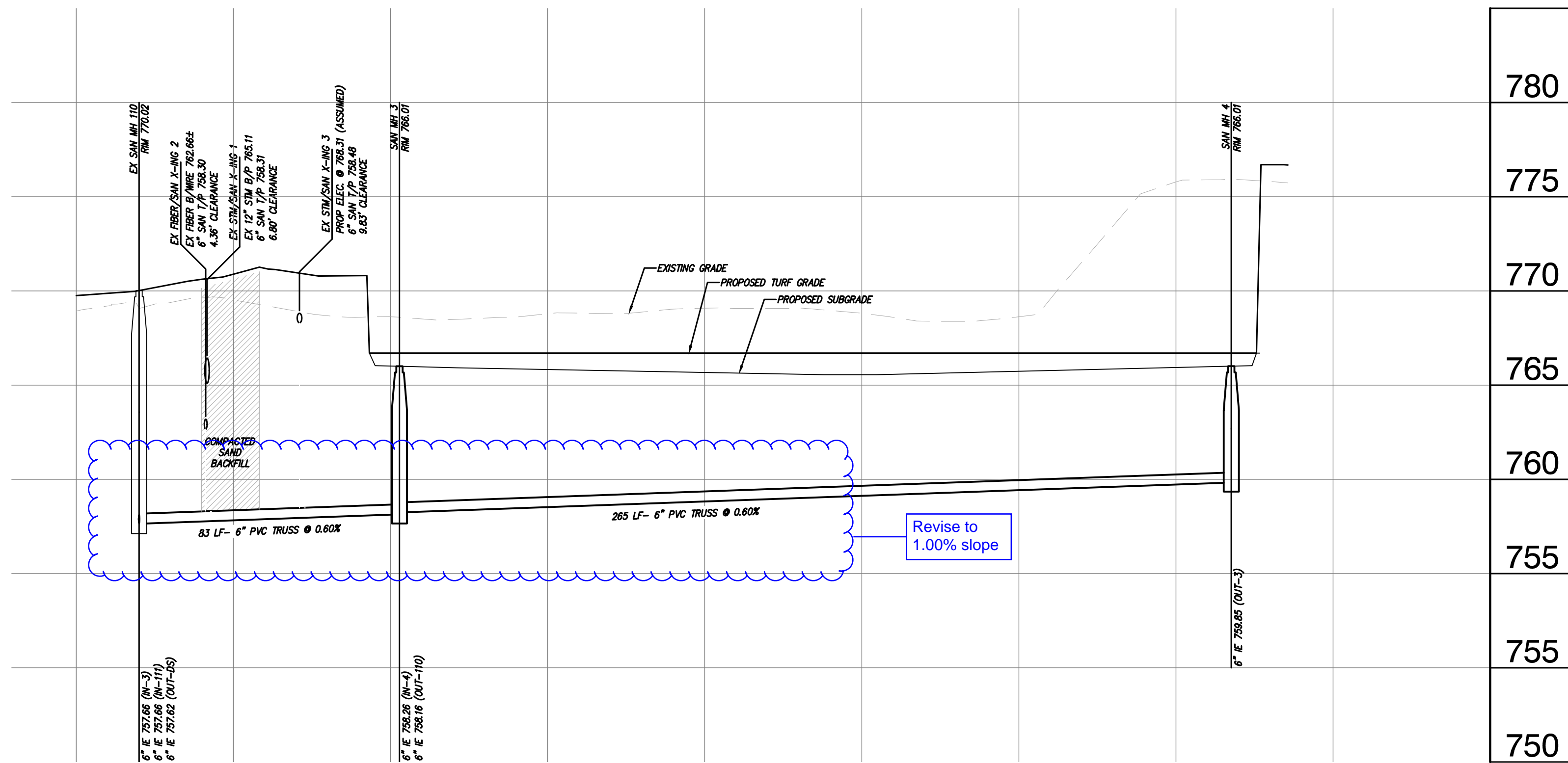
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2020-003

SHEET NUMBER

City File #22-021 Section #15
C7.0

2020-003 ROCHESTER UNIVERSITY



SCALE:
 1" = 30' HORIZONTAL
 1" = 5' VERTICAL

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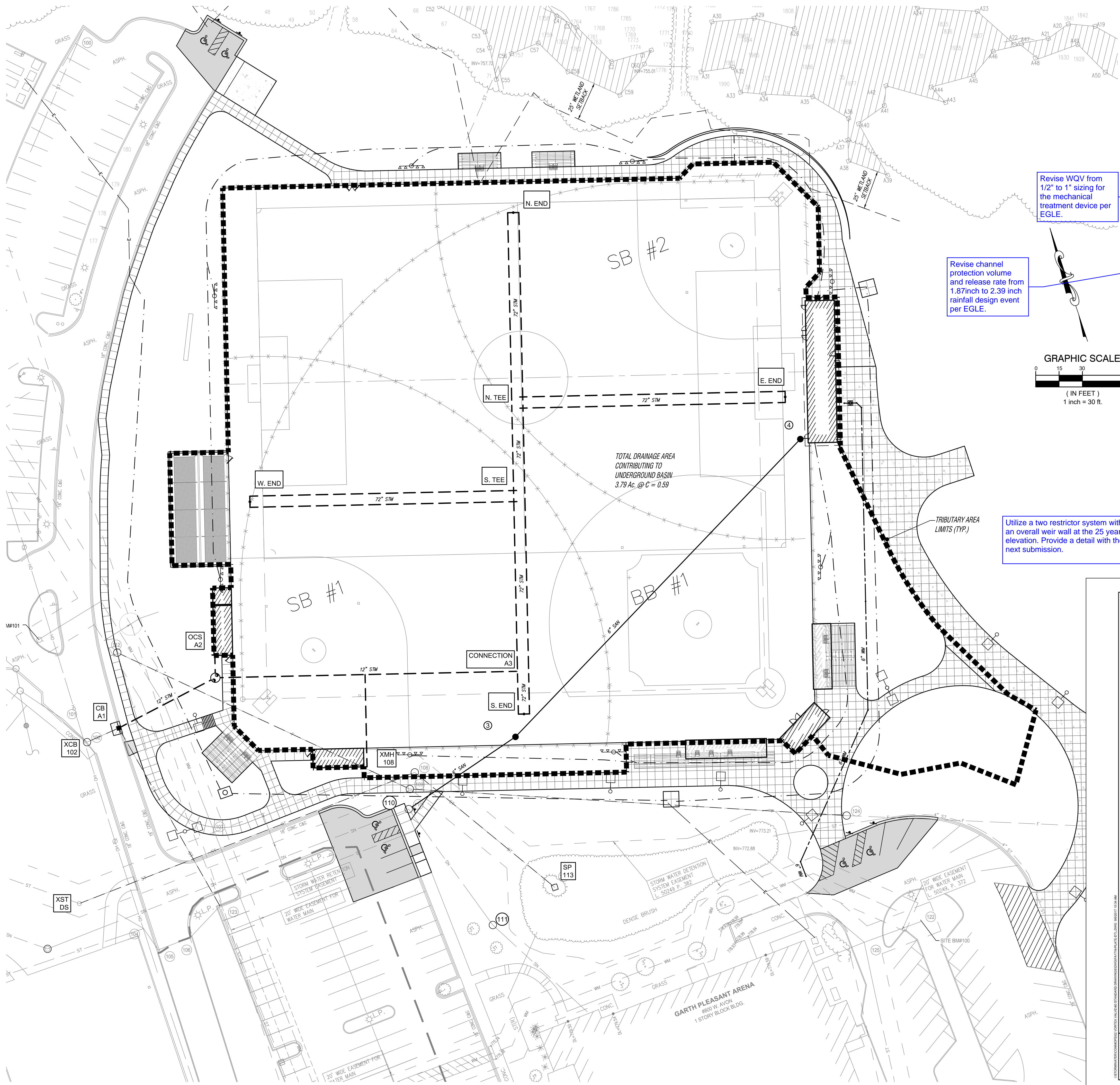
PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
 ROCHESTER HILLS MICHIGAN

SHEET

Watermain & Sanitary Sewer Profiles

PROJECT NUMBER
2020-003

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C7.1



Stormwater Management Calculations
 (Rochester Hills Design Standards, Dated: September 23, 2019)
 Job Name: Rochester University Athletic Improvements
 Job No.: JA1908

Designed by: CP
 Checked by: JA

Detention Basin Calculations

Total Tributary Area (A) = 3.79 Acres

Area Label	A	C	A*C
Roof Area	3,521	0.95	3,346
Pavement	3,677	0.95	3,493
Synthetic Turf	138,040	0.60	82,824
Lawn (slope < 4%, HSG C)	0	0.30	0
Lawn (slope 4-8%, HSG C)	0	0.35	0
Lawn (slope > 8%, HSG C)	19,654	0.40	7,862
Sum	164,892		97,524

Overall site average C factor: 0.59

Post Development Water Quality
 $WQv = 1815 \times A \times C = 1815 \times 3.79 \times 0.59$
 $WQv = 4,058$ CFT

Channel Protection (Bankfull)
 $Cpv = 6788 \times A \times C = 6788 \times 3.79 \times 0.59$
 $Cpv = 16,119$ CFT

Channel Protection Release Rate
 Release rate from bank full storage volume will be such that this volume will be stored not less than 24 nor more than 48 hours.

Therefore assume a total release time, $Ta = 36$ hours
 $Qa = Cpv / Ta / 60min / 60sec = 0.12$ CFS
 Design depth of storage for the basin = 6.78 feet

Flooding Protection (Overbank, 25-Year Oakland County Calculation)

Allowable Release Rate, $q = 0.20$ CFS/Ac
 Total Area Disrupted, $A = 3.79$ Ac
 Composite run-off coefficient, $C = 0.59$ unitless
 Total Allowable Release Rate, $Qa = q \times A = 0.76$ CFS

$Qo = Qa / (A \times C) = 0.76 / (3.79 \times 0.59)$
 $Qo = 0.34$ CFS/ acre of imperviousness
 Storage Time, $T = -25 + \sqrt{(8062.5 / Qo)} = -25 + \sqrt{(8062.5 / 0.34)}$
 $T = 128.99$ minutes

Maximum Volume of Storage per Acre of Imperviousness, Vs
 $Vs = (12,900(T) / (T + 25)) - 40(Qo)(T) = (12,900(128.99) / (128.99 + 25)) - 40(0.34)(128.99)$
 $Vs = 9051$ CFT/ Acre of imperviousness

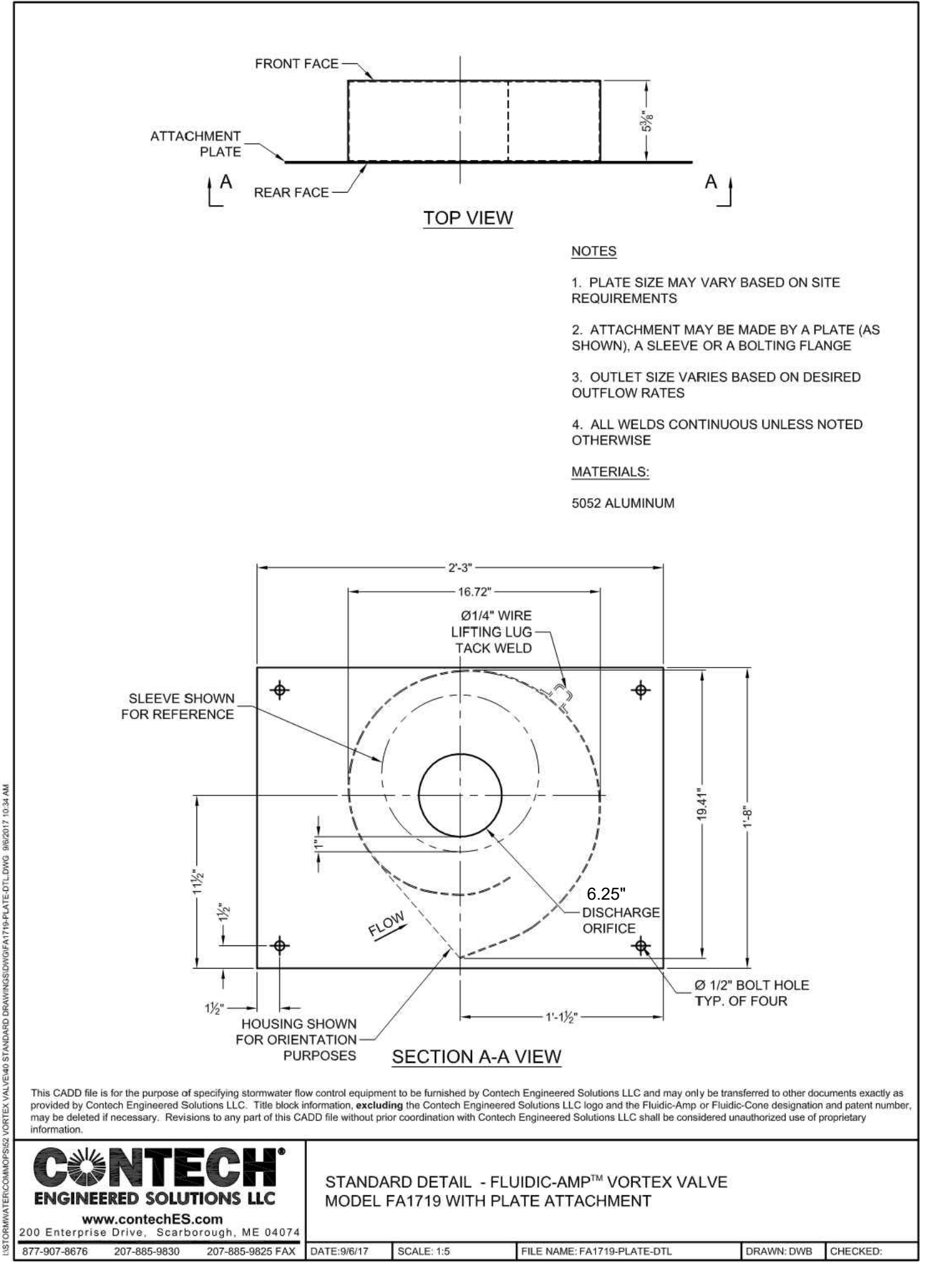
Total Volume of Storage Required for 25-Year Flood Protection, Vt
 $Vt_{25} = Vs \times A \times C = 9051 \times 3.79 \times 0.59$
 $Vt_{25} = 20,239$ CFT

Orifice Area, $A_o = Qa / (0.62 \times \sqrt{2GH}) = 0.009$ square feet
 1.30 square inches
 $A = \pi r^2$ Required. Then $R = 0.64$ in. (radius)
RESTRICTOR SIZE REQUIRED = 1.3 in.
 Too small, specify Vortex Valve.

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FRENCH associates
 236 Mill Street
 Rochester, MI 48307
 F 248.656.1377
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CREATIVE SITE SOLUTIONS, PLC
 CIVIL ENGINEERING & SITE DESIGN
 3728 NASH DRIVE
 TROY, MI 48063
 248 259 2023
 jarnold@creative-site-solutions.com

PROJECT
ROCHESTER UNIVERSITY ATHLETIC FIELD IMPROVEMENTS
 ROCHESTER HILLS MICHIGAN

SHEET
 Drainage Area Map

PROJECT NUMBER
 2020-003

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 C8.0