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 Artinian 248-841-2446 ArtinianM@RochesterHills.org	Yes
Engineering	Jason Boughton 248-841-2490 BoughtonJ@RochesterHills.org	Yes
Traffic	Keith Depp 248-841-2503 DeppK@RochesterHills.org	No
Nat. Resources	Matt Einheuser 248-841-2551 EinheuserM@RochesterHills.org	No
Fire	Capt. Ann Echols 248-841-2701 EcholsA@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.

Conditioned on the providing of landscaped islands within the parking lot, adjacent to pedestrian connection to S. Rochester Road and all other noted comments being addressed.

This approval is in part due to responses to the Building Department items noted on the *"Comment Response Letter"*. Architectural sheets are referenced in the response letter but they were not resubmitted. **Please include all Architectural sheets with the next full submittal including responses to all building code analysis items.**

For all conditional uses, a "Conditional Use Proposed Sign" shall be placed onsite no less than fifteen (15) days prior to the public hearing date. Such sign shall be compliant with Section 138-1.203 of City Ordinances.

FINAL ENGINEERING PLANS

BANK OF AMERICA

3035 S ROCHESTER ROAD
ROCHESTER HILLS, MI 48307

UTILITY AND GOVERNING AGENCY CONTACTS

BUILDING DEPARTMENT
CITY OF ROCHESTER HILLS
1000 ROCHESTER HILLS DRIVE
ROCHESTER HILLS, MI 48309
TEL: (248) 656-4615
EMAIL: BUILDING@ROACHESTERHILLS.ORG
CONTACT: MIKE VIAZANKO

PLANNING AND ZONING DEPARTMENT
CITY OF ROCHESTER HILLS
1000 ROCHESTER HILLS DRIVE
ROCHESTER HILLS, MI 48309
TEL: (248) 656-4660
EMAIL: PLANNING@ROCHESTERHILLS,ORG
CONTACT CHRIS MCLEOD

STORM SEWER SERVICE
CITY OF ROCHESTER HILLS
1000 ROCHESTER HILLS DRIVE
ROCHESTER HILLS, MI 48309
TEL: (248) 656-4685
CONTACT: BILL FRITZ

SANITARY/WATER SERVICE
NORTH OAKLAND COUNTY WATER AUTHORITY
1 PUBLIC WORKS DRIVE, BUILDING 95W
WATERFORD, MI 48328
TEL: (248) 452-2172
CONTACT: MARK DAVIS

ROADWAY AUTHORITY
MICHIGAN DEPARTMENT OF TRANSPORTATION
18101 W. NINE MILE ROAD
SOUTHFIELD, MI 48075
TEL: (248) 752-0336
CONTACT: DIANE CROSS, P.E.

POWER COMPANY
DTE ENERGY - NORTHWEST REGION
37849 INTERCHANGE DRIVE
FARMINGTON HILLS, MI 48335
TEL: (248) 427-2200

NATURAL GAS COMPANY
CONSUMERS ENERGY
11801 FARMINGTON ROAD
LIVONIA, MI 48150
TEL: (800) 477-5050

PROJECT TEAM

OWNER'S REPRESENTATIVE
CBRE
TEL: (303) 476-8469
CONTACT: KRIS KUIZENGA

SURVEYOR
MERIDIAN LAND SURVEYING
601 S. GRAND TRAVERSE STREET
FLINT, MI 48502
TEL: (801) 339-6605
CONTACT: GREG MCARDLE, P.L.S.

GEOTECH
TERRACON
800 MORRISON ROAD
GAHANNA, OH 43230
TEL: (470) 452-9752
EMAIL: MZAID@TERRACON.COM
CONTACT: MOHAMMAD ZAID

CIVIL ENGINEER
KIMLEY-HORN OF MICHIGAN, INC.
39111 SIX MILE ROAD
LIVONIA, MI 48152
TEL: (248) 825-8245
EMAIL: JUSTIN.MULLER@KIMLEY-HORN.COM
CONTACT: JUSTIN MULLER, P.E.
EMAIL: JOHN.GROSS@KIMLEY-HORN.COM
CONTACT: JOHN GROSS, P.E. (IL)

LANDSCAPE ARCHITECT
KIMLEY-HORN OF MICHIGAN, INC.
39111 SIX MILE ROAD
LIVONIA, MI 48152
TEL: (248) 825-8245
EMAIL: JOE.COGSWELL@KIMLEY-HORN.COM
CONTACT: JOE COGSWELL

LEGAL DESCRIPTION

PART OF THE NORTHWEST QUARTER OF SECTION 35, T3N, R11E, CITY OF ROCHESTER HILLS, IN OAKLAND COUNTY, MICHIGAN.

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 35, THENCE ALONG THE NORTH LINE OF SAID SECTION 35 N87°47'36"E, 347.42 FEET, THENCE S02°36'48"E, 346.48 FEET; THENCE S87°47'31"W, 118.16 FEET TO THE POINT OF BEGINNING; THENCE S02°00'59"E 30.34 FEET TO A NON-TANGENT POINT OF CURVE ALSO BEING THE BACK OF THE CURB LINE; THENCE FOLLOWING SAID BACK OF CURB LINE THE FOLLOWING SIX (6) COURSES; THENCE ALONG A CURVE TO THE LEFT 40.29 FEET, HAVING A RADIUS OF 79.74 FEET, DELTA OF 28°56'59", AND A CHORD BEARING OF S57°18'58"W 39.86 FEET. THENCE S42°50'28"W 13.79 FEET. THENCE S27°53'28"W 44.28 FEET. THENCE ALONG A CURVE TO THE RIGHT 26.24 FEET, HAVING A RADIUS OF 21.93 FEET, A DELTA OF 69°35'21", AND A CHORD BEARING OF S62°41'08"W 25.03 FEET, THENCE N82°31'11"W 47.86 FEET, THENCE ALONG A CURVE TO THE RIGHT 48.95 FEET, HAVING A RADIUS OF 65.74 FEET, DELTA OF 42°39'28", AND A CHORD BEARING OF N61°11'28"W 47.82 FEET TO A NON-TANGENT POINT ALSO BEING A POINT ON THE EAST LINE OF ROCHESTER ROAD (VARIABLE WIDTH); THENCE ALONG THE SAID EAST LINE OF ROCHESTER ROAD N02°00'59"W, 76.53 FEET; THENCE S87°47'31"W 15.00 FEET; THENCE N02°00'59"W 197.45 FEET; THENCE N87°47'31"E 192.00 FEET; THENCE S02°00'59"E 197.45 FEET TO THE POINT OF BEGINNING. CONTAINING 1.21 ACRES AND SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD, IF ANY.

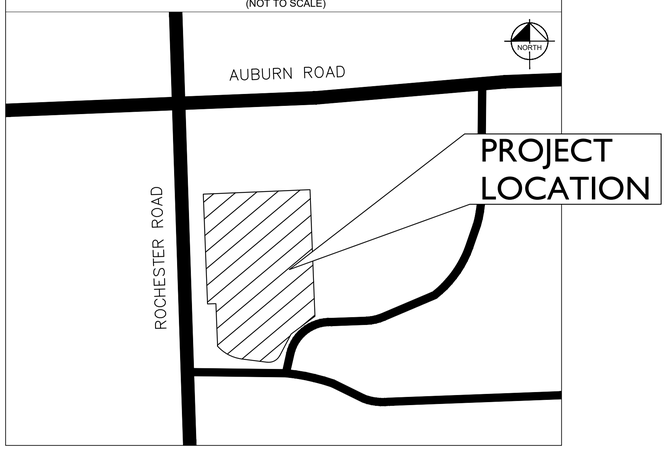
Verify distance

Verify distance

Written legal description and survey description are different. Also, both descriptions do not match the point of commencement on record.

LOCATION MAP

(NOT TO SCALE)



BENCHMARKS

SITE BENCHMARKS:
(LOCATIONS SHOWN ON SURVEY)

SBM #1 RAILROAD SPIKE IN POWER POLE AT NORTHWEST CORNER OF PROPERTY.
ELEVATION= 756.67' (NAVD88)

SBM #2 RIM OF DRAINAGE MANHOLE SOUTHEAST CORNER OF PROPERTY
ELEVATION= 751.28' (NAVD88)

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.

Sheet List Table

PROFESSIONAL ENGINEER'S CERTIFICATION

I, JUSTIN MULLER, A LICENSED PROFESSIONAL ENGINEER OF MICHIGAN, HEREBY CERTIFY THAT THIS SUBMISSION, PERTAINING ONLY TO THE "C" SERIES CIVIL SHEETS LISTED ABOVE BUT EXCLUDING DETAILS PREPARED BY OTHERS, WAS PREPARED ON BEHALF OF ARCHITECTURAL DESIGN COLLABORATIVE BY KIMLEY-HORN AND ASSOCIATES, INC. UNDER MY PERSONAL DIRECTION. THIS TECHNICAL SUBMISSION IS INTENDED TO BE USED AS AN INTEGRAL PART OF AND IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS.

DATED THIS 6TH DAY OF FEBRUARY, A.D., 2023.

MICHIGAN LICENSED PROFESSIONAL ENGINEER 6201055212
MY LICENSE EXPIRES ON 3/7/23.
DESIGN FIRM REGISTRATION NUMBER: 184002012-0006

STATE OF MICHIGAN
JUSTIN M. MULLER
ENGINEER
NO. 6201055212
PROFESSIONAL ENGINEER

CITY FILE #22-039 SECTION #35

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	02/06/23	JWG
2	ISSUED FOR PERMIT	12/19/22	JWG
3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

Kimley»Horn of Michigan, Inc.

39111 SIX MILE ROAD
LIVONIA, MI 48152
PHONE: 734-542-7200
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

ADC Architectural Design Collaborative

TITLE SHEET

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
C0.0

GENERAL NOTES

1. EXISTING SITE TOPOGRAPHY, UTILITIES, RIGHT-OF-WAY AND HORIZONTAL CONTROL SHOWN ON THE DRAWINGS WERE OBTAINED FROM A SURVEY PREPARED BY:

   MERIDIAN LAND SURVEYING
   601 S. GRAND TRAVERSE STREET
   FLINT, MI 48502
   TEL: (801) 339-6605
   CONACT: GREG MCARDLE, P.L.S.

   COPIES OF THE SURVEY ARE AVAILABLE FROM THE ENGINEER. SITE CONDITIONS MAY HAVE CHANGED SINCE THE SURVEY WAS PREPARED. CONTRACTORS TO VISIT SITE TO FAMILIARIZE THEMSELVES WITH THE CURRENT CONDITIONS.

2. COPIES OF SOILS INVESTIGATION REPORTS MAY BE OBTAINED FROM THE OWNER. ANY BRACING, SHEETING OR SPECIAL CONSTRUCTION METHODS DEEMED NECESSARY BY THE CONTRACTOR IN ORDER TO INSTALL THE PROPOSED IMPROVEMENTS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PROJECT. ANY ADDITIONAL SOILS DATA NEEDED TO CONFIRM THE CONTRACTOR'S OPINIONS OF THE SUBSOIL CONDITIONS SHALL BE DONE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL OBTAIN THE OWNER'S WRITTEN AUTHORIZATION TO ACCESS THE SITE TO CONDUCT A SUPPLEMENTAL SOILS INVESTIGATION.

3. THE CONTRACTOR SHALL PHOTOGRAPH THE WORK AREA PRIOR TO CONSTRUCTION FOR THE PURPOSE OF DOCUMENTING EXISTING CONDITIONS.

4. EXCEPT WHERE MODIFIED BY THE CONTRACT DOCUMENTS, ALL PROPOSED WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS WHICH ARE HEREBY MADE A PART HEREOF:

   A. "STANDARD SPECIFICATIONS FOR CONSTRUCTION," AS PREPARED BY MICHIGAN DEPARTMENT OF TRANSPORTATION, LATEST EDITION.

   B. "MICHIGAN ADMINISTRATIVE CODE" AS PUBLISHED BY THE BY THE OFFICE OF REGULATOR REINVENTION, DEPARTMENT OF LICENSING AND REGULATOR AFFIARS, LATEST EDITION.

   C. REGULATIONS, STANDARDS AND GENERAL REQUIREMENTS SET FORTH BY THE CITY OF ROCHESTER HILLS, UNLESS OTHERWISE NOTED ON THE PLANS.

   D. THE NATIONAL ELECTRIC CODE.

   E. ALL APPLICABLE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT ARE HEREIN INCORPORATED BY REFERENCE.

5. STANDARD SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND RECURRING SPECIAL PROVISIONS, CONSTRUCTION PLANS, AND SUBSEQUENT DETAILS ARE ALL TO BE CONSIDERED AS PART OF THE CONTRACT. INCIDENTAL ITEMS OR ACCESSORIES NECESSARY TO COMPLETE THE CONTRACTOR'S WORK MAY NOT BE SPECIFICALLY NOTED, BUT ARE CONSIDERED A PART OF THE CONTRACTOR'S CONTRACT.

6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL ITEMS REQUIRED FOR CONSTRUCTION OF THE PROJECT, AS SHOWN ON THE PLANS, ARE INCLUDED IN THE CONTRACT. ANY ITEM NOT SPECIFICALLY INCLUDED IN THE CONTRACT, BUT SHOWN ON THE PLANS, SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IN THE EVENT OF A DISCREPANCY WITH THE PLANS AND QUANTITIES.

7. THE CONTRACTOR IS RESPONSIBLE FOR HAVING A SET OF "APPROVED" ENGINEERING PLANS WITH THE LATEST REVISION DATE ON THE JOB SITE PRIOR TO THE START OF CONSTRUCTION. IF THERE ARE ANY DISCREPANCIES WITH WHAT IS SHOWN ON THE CONSTRUCTION PLANS, HE MUST IMMEDIATELY REPORT THEM TO THE SURVEYOR OR ENGINEER BEFORE DOING ANY WORK. OTHERWISE, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY. IN THE EVENT OF DISAGREEMENT BETWEEN THE CONSTRUCTION PLANS, SPECIFICATIONS, AND/OR SPECIAL DETAILS, THE CONTRACTOR SHALL SECURE WRITTEN INSTRUCTION FROM THE ENGINEER PRIOR TO PROCEEDING WITH ANY PART OF THE WORK AFFECTED BY OMISSIONS OR DISCREPANCIES. FAILING TO SECURE SUCH INSTRUCTION, THE CONTRACTOR WILL BE CONSIDERED TO HAVE PROCEEDED AT THE CONTRACTOR'S OWN RISK AND EXPENSE. IN THE EVENT OF ANY DOUBT OR QUESTIONS ARISING WITH RESPECT TO THE TRUE MEANING OF THE CONSTRUCTION PLANS OR SPECIFICATIONS, THE DECISION OF THE ENGINEER SHALL BE FINAL AND CONCLUSIVE.

8. THE CONTRACTOR SHALL SUBSCRIBE TO ALL GOVERNING REGULATIONS AND SHALL OBTAIN ALL NECESSARY PUBLIC AGENCY PERMITS PRIOR TO STARTING WORK. THE CONTRACTOR, BY USING THESE PLANS FOR THEIR WORK, AGREE TO HOLD HARMLESS KIMLEY-HORN AND ASSOCIATES, INC, THE CITY OF ROCHESTER HILLS, THEIR EMPLOYEES AND AGENTS AND THE OWNER FROM AND AGAINST ANY AND ALL LIABILITY, CLAIMS, DAMAGES, AND THE COST OF DEFENSE ARISING OUT OF CONTRACTOR(S) PERFORMANCE OF THE WORK DESCRIBED HEREIN.

9. THE ENGINEER AND OWNER ARE NOT RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, TIME OF PERFORMANCE, PROGRAMS OR FOR ANY SAFETY PRECAUTIONS USED BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS.

10. CONSTRUCTION MATERIALS AND/OR EQUIPMENT MAY NOT BE STORED IN THE RIGHT-OF-WAY, AS DIRECTED BY THE OWNER.

11. EASEMENTS FOR THE EXISTING UTILITIES, BOTH PUBLIC AND PRIVATE, AND UTILITIES WITHIN PUBLIC RIGHT-OF-WAYS ARE SHOWN ON THE PLANS ACCORDING TO AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF THESE UTILITY LINES AND THEIR PROTECTION FROM DAMAGE DUE TO CONSTRUCTION OPERATIONS. IF EXISTING UTILITY LINES OF ANY NATURE ARE ENCOUNTERED WHICH CONFLICT WITH LOCATIONS OF THE NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.

12. OWNER SHALL OBTAIN EASEMENTS AND APPROVAL OF PERMITS NECESSARY TO FACILITATE CONSTRUCTION OF THE PROPOSED UTILITIES. THE CONTRACTOR, HOWEVER, SHALL FURNISH ALL REQUIRED BONDS AND EVIDENCE OF INSURANCE NECESSARY TO SECURE THESE PERMITS AND EASEMENTS.

13. THE CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES UNTIL THEY ARE NO LONGER NEEDED. ANY STAKES DESTROYED OR DISTURBED BY THE CONTRACTOR PRIOR TO THEIR USE SHALL BE RESET BY THE SURVEYOR AT THE CONTRACTOR'S EXPENSE.

14. NOTIFICATION OF COMMENCING CONSTRUCTION:

    14.A. THE CONTRACTOR SHALL NOTIFY AFFECTED GOVERNMENTAL AGENCIES IN WRITING AT LEAST THREE FULL WORKING DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL NOTIFY, AS NECESSARY, ALL TESTING AGENCIES, THE CITY OF ROCHESTER HILLS, AND THE OWNER 48-HOURS IN ADVANCE OF CONSTRUCTION.

    14.B. FAILURE OF THE CONTRACTOR TO ALLOW PROPER NOTIFICATION TIME WHICH RESULTS IN THE TESTING COMPANIES TO BE UNABLE TO VISIT THE SITE AND PERFORM TESTING WILL CAUSE THE CONTRACTOR TO SUSPEND THE OPERATION TO BE TESTED UNTIL THE TESTING AGENCY CAN SCHEDULE TESTING OPERATIONS. COST OF SUSPENSION OF WORK SHALL BE BORNE BY THE CONTRACTOR.

15. ALL CONTRACTORS SHALL KEEP ACCESS AVAILABLE AT ALL TIMES FOR ALL EMERGENCY TRAFFIC, AS DIRECTED BY THE CITY OF ROCHESTER HILLS.

16. ANY EXISTING SIGNS, LIGHT STANDARDS, AND UTILITY POLES THAT INTERFERE WITH CONSTRUCTION OPERATIONS AND ARE NOT NOTED ON THE PLANS FOR DISPOSAL SHALL BE REMOVED AND RESET BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE, AS DIRECTED BY THE ENGINEER. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE TO THE SATISFACTION OF THE OWNER. ANY SIGNS NOT REQUIRED TO BE RESET SHALL BE DELIVERED TO THE RESPECTIVE OWNERS.

17. ALL TREES TO BE SAVED SHALL BE IDENTIFIED PRIOR TO CONSTRUCTION BY THE LANDSCAPE ARCHITECT AND SHALL BE PROTECTED PER MDOT SECTION 201.05. THE RIGHT-OF-WAY LINE AND LIMITS OF THE CONTRACTOR'S OPERATIONS SHALL BE CLEARLY DEFINED THROUGHOUT THE CONSTRUCTION PERIOD. ALL TREES NOTED TO REMAIN SHALL BE PROTECTED FROM DAMAGE TO TRUNKS, BRANCHES AND ROOTS. NO EXCAVATING, FILLING OR GRADING IS TO BE DONE INSIDE THE DRIP LINE OF TREES UNLESS OTHERWISE INDICATED.

18. LIMB PRUNING SHALL BE PERFORMED UNDER THE SUPERVISION OF AN APPROVED LANDSCAPE ARCHITECT, FORESTER, OR ARBORIST AND SHALL BE UNDERTAKEN IN A TIMELY FASHION SO AS NOT TO INTERFERE WITH CONSTRUCTION. ALL LIMBS, BRANCHES, AND OTHER DEBRIS RESULTING FROM THE CONTRACTOR'S WORK SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE. ALL CUTS OVER ONE (1) INCH IN DIAMETER SHALL BE PAINTED WITH AN APPROVED TREE PAINT.

19. ALL EXISTING PAVEMENT OR CONCRETE TO BE REMOVED SHALL BE SAWCUT ALONG LIMITS OF PROPOSED REMOVAL BEFORE COMMENCEMENT OF PAVEMENT REMOVAL.

20. ALL EXISTING UTILITIES OR IMPROVEMENTS, INCLUDING WALKS, CURBS, PAVEMENT, AND PARKWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE PROMPTLY RESTORED TO THEIR RESPECTIVE ORIGINAL CONDITION. THE CONTRACTOR'S WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT UNLESS A PAY ITEM IS LISTED ON THE BID LIST.

21. REMOVAL OF SPECIFIED ITEMS, INCLUDING BUT NOT LIMITED TO, PAVEMENT, SIDEWALK, CURB, CURB AND GUTTER, CULVERTS, ETC., SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE. THE CONTRACTOR IS RESPONSIBLE FOR ANY PERMITS REQUIRED FOR SUCH DISPOSAL.

22. THE CONTRACTOR SHALL COLLECT AND REMOVE ALL CONSTRUCTION DEBRIS, EXCESS MATERIALS, TRASH, OIL AND GREASE RESIDUE, MACHINERY, TOOLS, AND OTHER MISCELLANEOUS ITEMS WHICH WERE NOT PRESENT PRIOR TO PROJECT COMMENCEMENT AT NO ADDITIONAL EXPENSE TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ANY AND ALL PERMITS NECESSARY FOR THE HAULING AND DISPOSAL REQUIRED FOR CLEANUP, AS DIRECTED BY THE ENGINEER OR OWNER. BURNING ON THE SITE IS NOT PERMITTED.

23. NO UNDERGROUND WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE COVERED UNTIL IT HAS BEEN APPROVED BY THE CITY OF ROCHESTER HILLS. APPROVAL TO PROCEED MUST BE OBTAINED FROM THE CITY OF ROCHESTER HILLS PRIOR TO INSTALLING PAVEMENT BASE, BINDER, AND SURFACE, AND PRIOR TO POURING ANY CONCRETE AFTER FORMS HAVE BEEN SET, AS NECESSARY.

24. WHERE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, EXISTING DRAINAGE STRUCTURES AND PIPE SHALL BE CLEANED OF DEBRIS AND PATCHED AS NECESSARY TO ASSURE INTEGRITY OF THE STRUCTURE. THE CONTRACTOR'S WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE MERGED INTO THE CONTRACT UNIT PRICE EACH FOR STRUCTURES AND CONTRACT UNIT PRICE PER LINEAL FOOT FOR STORM SEWERS, WHICH SHALL BE PAYMENT IN FULL FOR CLEANING, PATCHING, REMOVAL, AND DISPOSAL OF DEBRIS AND DIRT. DRAINAGE STRUCTURES AND STORM SEWERS CONSTRUCTED AS PART OF THE CONTRACTOR'S PROJECT SHALL BE MAINTAINED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. NO EXTRA PAYMENT WILL BE MADE FOR CLEANING STRUCTURES OR STORM SEWERS CONSTRUCTED AS PART OF THE CONTRACTOR'S PROJECT.

25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE UTILITY COMPANIES LOCATE THEIR FACILITIES IN THE FIELD PRIOR TO CONSTRUCTION AND SHALL ALSO BE RESPONSIBLE FOR THE MAINTENANCE AND PRESERVATION OF THESE FACILITIES. THE ENGINEER DOES NOT WARRANT THE LOCATION OF ANY EXISTING UTILITIES SHOWN ON THE PLANS. THE CONTRACTOR SHALL CALL J.U.L.I.E. (1-800-892-0123) AND THE CITY OF ROCHESTER HILLS FOR UTILITY LOCATIONS.

26. THE GENERAL CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO PROVIDE CABLE TV, PHONE, ELECTRIC, GAS AND IRRIGATION SERVICES. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING SITE LAYOUTS FOR THESE UTILITIES AND SHALL COORDINATE AND PROVIDE CONDUIT CROSSINGS AS REQUIRED. THIS COORDINATION SHALL BE CONSIDERED INCIDENTAL TO GENERAL CONTRACTOR AGREEMENT WITH THE OWNER. ANY CONFLICTS IN UTILITIES SHALL BE CORRECTED BY THE GENERAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

27. CONTRACTOR IS TO VERIFY ALL EXISTING STRUCTURES AND FACILITIES AT ALL PROPOSED UTILITY CONNECTION LOCATIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL AND STARTING WORK.

28. ANY FIELD TILES ENCOUNTERED SHALL BE INSPECTED BY THE ENGINEER. THE DRAIN TILE SHALL BE CONNECTED TO THE STORM SEWER SYSTEM AND A RECORD KEPT BY THE CONTRACTOR OF THE LOCATIONS AND TURNED OVER TO THE ENGINEER UPON COMPLETION OF THE PROJECT. THE COST OF THE CONTRACTOR'S WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT, AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

29. ALL FRAMES AND LIDS FOR STORM AND SANITARY SEWERS, VALVE VAULT COVERS, FIRE HYDRANTS, AND B-BOXES ARE TO BE ADJUSTED TO MEET FINISHED GRADE. THE CONTRACTOR'S ADJUSTMENT IS TO BE MADE BY THE SEWER AND WATER CONTRACTOR, AND THE COST IS TO BE CONSIDERED INCIDENTAL. THESE ADJUSTMENTS TO FINISHED GRADE WILL NOT ALLEVIATE THE CONTRACTOR FROM ANY ADDITIONAL ADJUSTMENTS AS REQUIRED BY THE CITY OF ROCHESTER HILLS UPON FINAL INSPECTION OF THE PROJECT.

30. HYDRANTS SHALL NOT BE FLUSHED DIRECTLY ONTO THE ROAD SUBGRADES. WHENEVER POSSIBLE, HOSES SHALL BE USED TO DIRECT THE WATER INTO LOT AREAS OR THE STORM SEWER SYSTEM, IF AVAILABLE. DAMAGE TO THE ROAD SUBGRADE OR LOT GRADING DUE TO EXCESSIVE WATER SATURATION AND/OR EROSION FROM HYDRANT FLUSHING, OR FROM LEAKS IN THE WATER DISTRIBUTION SYSTEM, WILL BE REPAIRED BY THE CONTRACTOR FLUSHING OR USING THE HYDRANT AT THE CONTRACTOR'S OWN EXPENSE. LEAKS IN THE WATER DISTRIBUTION SYSTEM SHALL BE THE RESPONSIBILITY OF THE WATER MAIN CONTRACTOR AND SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

31. TRENCH BACKFILL WILL BE REQUIRED TO THE FULL DEPTH ABOVE SEWERS AND WATERMAIN WITHIN TWO (2) FEET HORIZONTAL OF PROPOSED OR EXISTING PAVEMENT.

32. ALL UTILITIES INSTALLED WITHIN THE MDOT RIGHT-OF-WAY SHALL BE BACKFILLED WITH FLOWABLE FILL "CONTROLLED, LOW-STRENGTH MATERIAL, BACKFILL" WITHIN MDOT RIGHT-OF-WAY, MEETING MDOT REQUIREMENTS.

33. IF SOFT, SPONGY, OR OTHER UNSUITABLE SOILS WITH UNCONFINED COMPRESSIVE STRENGTH LESS THAN 0.5 TSF ARE ENCOUNTERED AT THE BOTTOM OF THE TRENCH, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH WELL-COMPACTED, CRUSHED LIMESTONE BEDDING MATERIAL. IF ROCK IS ENCOUNTERED, IT SHALL BE REMOVED TO AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE TO ALLOW PROPER THICKNESS OF BEDDING. ANY UNDERCUTS OF TWO (2) FEET OR LESS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. DEPTHS GREATER THAN TWO (2) FEET SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PROCEEDING.

34. THE TRENCHES FOR PIPE INSTALLATION SHALL BE KEPT DRY AT ALL TIMES DURING PIPE PLACEMENT. APPROPRIATE FACILITIES TO MAINTAIN THE DRY TRENCH SHALL BE PROVIDED BY THE CONTRACTOR, AND THE COST OF SUCH SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE ITEM. PLANS FOR THE SITE DEWATERING, IF EMPLOYED, SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER PRIOR TO IMPLEMENTATION. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR DEWATERING DURING CONSTRUCTION UNLESS APPROVED IN WRITING BY THE OWNER.

35. AFTER THE STORM SEWER SYSTEM HAS BEEN CONSTRUCTED, THE CONTRACTOR SHALL PLACE PROPER INLET PROTECTION EROSION CONTROL AT LOCATIONS INDICATED BY THE ENGINEER. THE PURPOSE OF THE INLET PROTECTION WILL BE TO MINIMIZE THE AMOUNT OF SILTATION THAT NORMALLY WOULD ENTER THE STORM SEWER SYSTEM FROM ADJACENT AND/OR UPSTREAM DRAINAGE AREAS.

36. AT THE CLOSE OF EACH WORKING DAY AND AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL DRAINAGE STRUCTURES AND FLOW LINES SHALL BE FREE FROM DIRT AND DEBRIS.

37. EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH DEQ REGULATIONS AND MDOT STANDARDS FOR SOIL EROSION AND SEDIMENTATION CONTROL AND SHALL BE MAINTAINED BY THE CONTRACTOR AND REMAIN IN PLACE UNTIL A SUITABLE GROWTH OF GRASS, ACCEPTABLE TO THE ENGINEER, HAS DEVELOPED.

38. THE CONTRACTOR SHALL CONFORM TO ALL EROSION CONTROL REQUIREMENTS AS SET FORTH BY THE MICHIGAN DEPARTMENT ENVIRONMENTAL QUALITY THROUGH THE NPDES PHASE II PERMIT PROGRAM REQUIREMENTS AND GOVERNING MUNICIPALITY. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL MEASURES AS INDICATED ON THE EROSION CONTROL DRAWINGS AND SPECIFICATIONS.

39. THE PAVEMENT SHALL BE KEPT FREE OF MUD AND DEBRIS AT ALL TIMES. IT MAY BE NECESSARY TO KEEP A SWEEPER ON-SITE AT ALL TIMES.

40. ALL DISTURBED AREAS OF THE RIGHT-OF-WAY SHALL BE FULLY RESTORED TO PRE-CONSTRUCTION CONDITIONS WITH A MINIMUM OF FOUR (4) INCHES OF TOPSOIL, SEEDING, AND MULCH AS PER MDOT STANDARDS.

41. ALL PROPOSED GRADES SHOWN ON PLANS ARE FINISHED SURFACE ELEVATIONS, UNLESS NOTED OTHERWISE.

42. ALL TESTING SHALL BE THE RESPONSIBILITY AND EXPENSE OF THE CONTRACTOR. IF REQUESTED BY THE CITY OF ROCHESTER HILLS OR ENGINEER, COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER
FOR REVIEW AND APPROVAL.

43. PROVIDE SMOOTH VERTICAL CURVES THROUGH HIGH AND LOW POINTS INDICATED BY SPOT ELEVATIONS. PROVIDE UNIFORM SLOPES BETWEEN NEW AND EXISTING GRADES. AVOID RIDGES AND DEPRESSIONS.

44. WHEN REQUIRED, THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN RECORD DRAWINGS CAN BE PREPARED. RECORD DRAWINGS SHALL INDICATE THE FINAL LOCATION AND LAYOUT OF ALL IMPROVEMENTS, INCLUDING VERIFICATION OF ALL CONCRETE PADS, INVERT, RIM, AND SPOT GRADE ELEVATIONS, AND INCORPORATE ALL FIELD DESIGN CHANGES APPROVED BY THE OWNER.

45. BEFORE ACCEPTANCE, ALL WORK SHALL BE INSPECTED BY THE CITY OF ROCHESTER HILLS, AS NECESSARY.

EARTHWORK NOTES

1. GENERAL

1.1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE SOIL AND GROUNDWATER CONDITIONS AT THE SITE.

1.2. ANY QUANTITIES IN THE BID PROPOSAL ARE INTENDED AS A GUIDE FOR THE CONTRACTOR'S USE IN DETERMINING THE SCOPE OF THE COMPLETED PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALL MATERIAL QUANTITIES AND BE KNOWLEDGEABLE OF ALL SITE CONDITIONS.

1.3. THE CONTRACTOR WILL NOTE THAT THE ELEVATIONS SHOWN ON THE CONSTRUCTION PLANS ARE FINISHED GRADE AND THAT PAVEMENT THICKNESS, TOPSOIL, ETC., MUST BE ACCOUNTED FOR.

1.4. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND PREVENT STORMWATER FROM RUNNING INTO OR STANDING IN EXCAVATED AREAS. THE FAILURE TO PROVIDE PROPER DRAINAGE WILL NEGATE ANY POSSIBLE ADDED COMPENSATION REQUESTED DUE TO DELAYS OR UNSUITABLE MATERIALS CREATED AS A RESULT THEREOF. FINAL GRADES SHALL BE PROTECTED AGAINST DAMAGE FROM EROSION, SEDIMENTATION, AND TRAFFIC.

1.5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES. THE INITIAL ESTABLISHMENT OF EROSION CONTROL PROCEDURES AND THE PLACEMENT OF SILT AND FILTER FENCING, ETC., TO PROTECT ADJACENT PROPERTY, WETLANDS, ETC., SHALL OCCUR BEFORE GRADING BEGINS.

1.6. PRIOR TO COMMENCEMENT OF GRADING ACTIVITIES, THE CONTRACTOR SHALL ERECT A CONSTRUCTION FENCE AROUND ANY TREE DESIGNATED TO BE PRESERVED. SAID FENCE SHALL BE PLACED IN A CIRCLE CENTERED AROUND THE TREE, THE DIAMETER OF WHICH SHALL BE SUCH THAT THE ENTIRE DRIP ZONE (EXTENT OF FURTHEST EXTENDING BRANCHES) SHALL BE WITHIN THE FENCE LIMITS. THE EXISTING GRADE WITHIN THE FENCED AREA SHALL NOT BE DISTURBED.

1.7. EXISTING SUBSURFACE CONDITIONS WERE OBTAINED FROM A GEOTECHNICAL PREPARED BY:

   PEA GROUP
   1849 POND RUN
   AUBURN HILLS, MI 48326
   TEL: (248) 689-9090

2. TOPSOIL EXCAVATION INCLUDES:

2.1. EXCAVATION OF TOPSOIL AND OTHER STRUCTURALLY UNSUITABLE MATERIALS WITHIN THOSE AREAS THAT WILL REQUIRE EARTH EXCAVATION OR COMPACTED EARTH FILL MATERIAL. EXISTING VEGETATION SHALL BE REMOVED PRIOR TO STRIPPING TOPSOIL OR FILLING AREAS.

2.2. PLACEMENT OF EXCAVATED MATERIAL IN OWNER-DESIGNATED AREAS FOR FUTURE USE WITHIN AREAS TO BE LANDSCAPED AND THOSE AREAS NOT REQUIRING STRUCTURAL FILL MATERIAL. PROVIDE NECESSARY EROSION CONTROL MEASURES FOR STOCKPILE.

2.3. TOPSOIL STOCKPILED FOR RESPREAD SHALL BE FREE OF CLAY AND SHALL NOT CONTAIN ANY OF THE TRANSITIONAL MATERIAL BETWEEN THE TOPSOIL AND CLAY. THE TRANSITIONAL MATERIAL SHALL BE USED IN NON-STRUCTURAL FILL AREAS OR DISPOSED OF OFF-SITE.

2.4. TOPSOIL RESPREAD SHALL INCLUDE HAULING AND SPREADING SIX (6) INCHES OF TOPSOIL DIRECTLY OVER AREAS TO BE LANDSCAPED WHERE SHOWN ON THE PLANS OR AS DIRECTED BY THE OWNER.

2.5. MODERATE COMPACTION IS REQUIRED IN NON-STRUCTURAL FILL AREAS.

3. EARTH EXCAVATION INCLUDES:

3.1. EXCAVATION OF SUBSURFACE MATERIALS WHICH ARE SUITABLE FOR USE AS STRUCTURAL FILL. THE EXCAVATION SHALL BE TO WITHIN A TOLERANCE OF 0.1 FEET OF THE PLAN SUBGRADE ELEVATIONS WHILE MAINTAINING PROPER DRAINAGE. THE TOLERANCE WITHIN PAVEMENT AREAS SHALL BE SUCH THAT THE EARTH MATERIALS SHALL "BALANCE" DURING THE FINE GRADING OPERATION.

3.2. PLACEMENT OF SUITABLE MATERIALS SHALL BE WITHIN THOSE AREAS REQUIRING STRUCTURAL FILL IN ORDER TO ACHIEVE THE PLAN SUBGRADE ELEVATIONS TO WITHIN A TOLERANCE OF 0.1 FEET. THE FILL MATERIALS SHALL BE PLACED IN LOOSE LIFTS THAT SHALL NOT EXCEED EIGHT (8) INCHES IN THICKNESS, AND THE WATER CONTENT SHALL BE ADJUSTED IN ORDER TO ACHIEVE REQUIRED COMPACTION.

3.3. STRUCTURAL FILL MATERIAL MAY BE PLACED WITHIN THOSE PORTIONS OF THE SITE NOT REQUIRING STRUCTURAL FILL, WITHIN SIX (6) INCHES OF THE PLAN FINISHED GRADE ELEVATION. IN AREAS REQUIRING STRUCTURAL FILL, HOWEVER, THIS MATERIAL SHALL NOT BE PLACED OVER TOPSOIL OR OTHER UNSUITABLE MATERIALS UNLESS SPECIFICALLY DIRECTED BY A SOILS ENGINEER WITH THE CONCURRENCE OF THE OWNER.

3.4. COMPACTION OF SUITABLE MATERIALS SHALL BE TO AT LEAST 93% OF THE MODIFIED PROCTOR DRY DENSITY WITHIN PROPOSED PAVEMENT AREAS, SIDEWALK, ETC. COMPACTION SHALL BE AT LEAST 95% OF THE MODIFIED PROCTOR WITHIN PROPOSED BUILDING PAD AREAS.

4. UNSUITABLE MATERIAL: UNSUITABLE MATERIALS SHALL BE CONSIDERED MATERIAL THAT IS NOT SUITABLE FOR THE SUPPORT OF PAVEMENT AND BUILDING CONSTRUCTION, AND IS ENCOUNTERED BELOW NORMAL TOPSOIL DEPTHS AND THE PROPOSED SUBGRADE ELEVATION. THE DECISION TO REMOVE SAID MATERIAL AND TO WHAT EXTENT SHALL BE MADE BY THE ENGINEER WITH THE CONCURRENCE OF THE OWNER.

5. MISCELLANEOUS. THE CONTRACTOR SHALL:

5.1. SPREAD AND COMPACT UNIFORMLY TO THE DEGREE SPECIFIED ALL EXCESS TRENCH SPOIL AFTER COMPLETION OF THE UNDERGROUND IMPROVEMENTS.

5.2. SCARIFY, DISC, AERATE, AND COMPACT, TO THE DEGREE SPECIFIED, THE UPPER TWELVE (12) INCHES OF THE SUITABLE SUBGRADE MATERIAL IN ALL AREAS THAT MAY BE SOFT DUE TO EXCESS MOISTURE CONTENT. THIS APPLIES TO CUT AREAS AS WELL AS FILL AREAS.

5.3. ADD WATER TO DRY MATERIAL IN ORDER TO ADJUST THE MOISTURE CONTENT FOR THE PURPOSE OF ACHIEVING THE SPECIFIED COMPACTION.

5.4. BACKFILL THE CURB AND GUTTER AFTER ITS CONSTRUCTION AND PRIOR TO THE PLACEMENT OF THE BASE COURSE MATERIAL.

6. TESTING AND FINAL ACCEPTANCE

6.1. THE CONTRACTOR SHALL PROVIDE AS A MINIMUM A FULLY LOADED SIX-WHEEL TANDEM AXLE TRUCK FOR PROOF ROLLING THE PAVEMENT SUBGRADE PRIOR TO THE PLACEMENT OF THE CURB AND GUTTER AND THE BASE MATERIAL. THIS SHALL BE WITNESSED BY THE TESTING ENGINEER AND THE OWNER. (SEE PAVING SPECIFICATION.)

6.2. ANY UNSUITABLE AREA ENCOUNTERED AS A RESULT OF PROOF ROLLING SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL OR OTHERWISE CORRECTED AND APPROVED BY THE ENGINEER.

PAVING NOTES

1. GENERAL

1.1. PAVING WORK INCLUDES FINAL SUBGRADE SHAPING, PREPARATION, AND COMPACTION; PLACEMENT OF SUBBASE OR BASE COURSE MATERIALS; BITUMINOUS BINDER AND/OR SURFACE COURSES; FORMING, FINISHING, AND CURING CONCRETE PAVEMENT, CURBS, AND WALKS; AND FINAL CLEAN-UP AND ALL RELATED WORK.

1.2. COMPACTION REQUIREMENTS [REFERENCE ASTM D-1557 (MODIFIED PROCTOR)]: SUBGRADE = 93%; SUBBASE = 95%; AGGREGATE BASE COURSE = 95%; BITUMINOUS COURSES = 95% OF MAXIMUM DENSITY, PER MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) HIGHWAY STANDARDS.

1.3. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE PROPER BARRICADING WARNING DEVICES, AND THE SAFE MANAGEMENT OF TRAFFIC WITHIN THE AREA OF CONSTRUCTION. ALL SUCH DEVICES AND THEIR INSTALLATION SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, AND IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS CODE.

2. SUBGRADE PREPARATION

2.1. EARTHWORK FOR PROPOSED PAVEMENT SUBGRADE SHALL BE FINISHED TO WITHIN 0.1 FOOT, PLUS OR MINUS, OF PLAN ELEVATION. THE CONTRACTOR SHALL CONFIRM THAT THE SUBGRADE HAS BEEN PROPERLY PREPARED AND THAT THE FINISHED TOP SUBGRADE ELEVATION HAS BEEN GRADED WITHIN TOLERANCES ALLOWED IN THESE SPECIFICATIONS, UNLESS THE CONTRACTOR ADVISES THE ENGINEER IN WRITING PRIOR TO FINE GRADING FOR BASE COURSE CONSTRUCTION. IT IS UNDERSTOOD THAT THE CONTRACTOR HAS APPROVED AND ACCEPTS THE RESPONSIBILITY FOR THE SUBGRADE.

2.2. PRIOR TO THE PLACEMENT OF THE BASE COURSE, THE SUBGRADE MUST BE PROOF-ROLLED AND INSPECTED FOR UNSUITABLE MATERIALS AND/OR EXCESSIVE MOVEMENT. IF UNSUITABLE SUBGRADE IS ENCOUNTERED, IT SHALL BE CORRECTED. THIS MAY INCLUDE ONE OR MORE OF THE FOLLOWING METHODS:

2.2.1. SCARIFY, DISC, AND AERATE.

2.2.2. REMOVE AND REPLACE WITH STRUCTURAL CLAY FILL.

2.2.3. REMOVE AND REPLACE WITH GRANULAR MATERIAL.

2.2.4. USE OF GEOTEXTILE FABRIC.

MAXIMUM DEFLECTION ALLOWED IN ISOLATED AREAS MAY BE ONE-QUARTER (1/4) INCH TO ONE-HALF (1/2) INCH IF NO DEFLECTION OCCURS OVER THE MAJORITY OF THE AREA.

2.3. PRIOR TO THE CONSTRUCTION OF THE CURB AND GUTTER AND THE PLACEMENT OF THE BASE MATERIAL, THE PAVEMENT AREA SHALL BE FINE-GRADED TO WITHIN 0.04 FEET (1/2 INCH) OF FINAL SUBGRADE ELEVATION, TO A POINT TWO (2) FEET BEYOND THE BACK OF THE CURB, SO AS TO ENSURE THE PROPER THICKNESS OF PAVEMENT COURSES. NO CLAIMS FOR EXCESS QUANTITY OF BASE MATERIALS DUE TO IMPROPER SUBGRADE PREPARATION WILL BE HONORED.

2.4. PRIOR TO PLACEMENT OF THE BASE COURSE, THE SUBGRADE SHALL BE APPROVED BY THE TESTING ENGINEER.

3. CONCRETE WORK

3.1. ALL EXTERIOR CONCRETE SHALL BE PORTLAND CEMENT CONCRETE WITH AIR ENTRAINMENT OF NOT LESS THAN FIVE (5%) OR MORE THAN EIGHT (8%) PERCENT. CONCRETE SHALL BE A MINIMUM OF SIX (6) BAG MIX AND SHALL DEVELOP A MINIMUM OF 4,200 PSI COMPRESSIVE STRENGTH AT TWENTY-EIGHT (28) DAYS. ALL CONCRETE SHALL BE BROOM-FINISHED PERPENDICULAR TO THE DIRECTION OF TRAVEL.

3.2. CONCRETE CURB AND/OR COMBINATION CURB AND GUTTER SHALL BE OF THE TYPE SHOWN ON THE PLANS. THE CONTRACTOR IS CAUTIONED TO REFER TO THE CONSTRUCTION STANDARDS AND THE PAVEMENT CROSS SECTION TO DETERMINE THE GUTTER FLAG THICKNESS AND THE AGGREGATE BASE COURSE THICKNESS BENEATH THE CURB AND GUTTER. PRE-MOLDED FIBER EXPANSION JOINTS, WITH TWO 3/4-INCH BY 18-INCH EPOXY-COATED STEEL DOWEL BARS, SHALL BE GREASED AND FITTED WITH METAL EXPANSION TUBES

3.3. CURBS SHALL BE DEPRESSED AND MEET THE SLOPE REQUIREMENTS OF THE MICHIGAN BUILDING CODE AT LOCATIONS WHERE PUBLIC WALKS INTERSECT CURB LINES AND OTHER LOCATIONS, AS DIRECTED, FOR THE PURPOSE OF PROVIDING ACCESSIBILITY.

3.4. THE CURBS SHALL BE BACKFILLED AFTER THEIR CONSTRUCTION AND PRIOR TO THE PLACEMENT OF THE BASE COURSE.

3.5. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH THE ABOVE AND THE PLANS. PROVIDE SCORED JOINTS AT 5-FOOT INTERVALS AND 1/2-INCH PRE-MOLDED FIBER EXPANSION JOINTS AT 20-FOOT INTERVALS AND ADJACENT TO CONCRETE CURBS, DRIVEWAYS, FOUNDATIONS, AND OTHER STRUCTURES.

3.6. CONCRETE CURING AND PROTECTION SHALL BE PER MDOT STANDARDS. TWO (2) COATS OF MDOT APPROVED CURING AGENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES.

3.7. THE COST OF AGGREGATE BASE OR SUBBASE UNDER CONCRETE WORK SHALL BE INCLUDED IN THE COST OF THE RESPECTIVE CONCRETE ITEM.

4. FLEXIBLE PAVEMENT

4.1. THE PAVEMENT MATERIALS FOR BITUMINOUS STREETS, PARKING LOTS, AND DRIVE AISLES SHALL BE AS DETAILED ON THE PLANS. UNLESS OTHERWISE SHOWN ON THE PLANS, THE FLEXIBLE PAVEMENTS SHALL CONSIST OF AGGREGATE BASE COURSE, MDOT 22A (OR SIMILAR), BITUMINOUS CONCRETE LEVELING COURSE, MDOT 13A; AND BITUMINOUS SURFACE COURSE, MDOT13A, OF THE THICKNESS AND MATERIALS SPECIFIED ON THE PLANS. THICKNESSES SPECIFIED SHALL BE CONSIDERED TO BE THE MINIMUM COMPACTED THICKNESS.

4.2. ALL TRAFFIC SHALL BE KEPT OFF THE COMPLETED AGGREGATE BASE UNTIL THE BINDER COURSE IS LAID. THE AGGREGATE BASE SHALL BE UNIFORMLY PRIME COATED AT A RATE OF 0.4 TO 0.5 GALLONS PER SQUARE YARD PRIOR TO PLACING THE BINDER COURSE. PRIME COAT MATERIALS SHALL BE MDOT APPROVED.

4.3. PRIOR TO PLACEMENT OF THE SURFACE COURSE, THE BINDER COURSE SHALL BE CLEANED AND TACK-COATED IF DUSTY OR DIRTY. ALL DAMAGED AREAS IN THE LEVELING COURSE, BASE, OR CURB SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER PRIOR TO LAYING THE SURFACE COURSE. THE CONTRACTOR SHALL PROVIDE WHATEVER EQUIPMENT AND STAFF NECESSARY, INCLUDING THE USE OF POWER BROOMS IF REQUIRED BY THE OWNER, TO PREPARE THE PAVEMENT FOR APPLICATION OF THE SURFACE COURSE. THE TACK COAT SHALL BE UNIFORMLY APPLIED TO THE BINDER COURSE AT A RATE OF 0.05 TO 0.10 GALLONS PER SQUARE YARD. TACK COAT SHALL BE AS PER MDOT STANDARDS.

4.4. SEAMS IN BAM, BINDER, AND SURFACE COURSE SHALL BE STAGGERED A MINIMUM OF 6 INCHES.

5. TESTING AND FINAL ACCEPTANCE.

5.1. THE CONTRACTOR SHALL FOLLOW THE QUALITY CONTROL TESTING PROGRAM FOR CONCRETE AND PAVEMENT MATERIALS ESTABLISHED BY THE MATERIALS/TESTING ENGINEER.

5.2. PRIOR TO PLACEMENT OF THE BITUMINOUS CONCRETE SURFACE COURSE, THE CONTRACTOR, WHEN REQUIRED BY THE CITY OF ROCHESTER HILLS, SHALL OBTAIN SPECIMENS OF THE BINDER COURSE WITH A CORE DRILL WHERE DIRECTED, FOR THE PURPOSE OF THICKNESS VERIFICATION.

5.3. WHEN REQUIRED BY THE CITY OF ROCHESTER HILLS, THE CONTRACTOR SHALL OBTAIN SPECIMENS OF THE FULL DEPTH BITUMINOUS CONCRETE PAVEMENT STRUCTURE WITH A CORE DRILL WHERE DIRECTED IN ORDER TO CONFIRM THE PLAN THICKNESS. DEFICIENCIES IN THICKNESS SHALL BE ADJUSTED FOR BY THE METHOD REQUIRED BY MDOT STANDARDS.

5.4. FINAL ACCEPTANCE OF THE TOTAL PAVEMENT INSTALLATION SHALL BE SUBJECT TO THE TESTING AND CHECKING REQUIREMENTS CITED ABOVE.

6. ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE CITY OF ROCHESTER HILLS CODE. WHEN CONFLICTS ARISE BETWEEN MUNICIPAL CODE, GENERAL NOTES AND SPECIFICATIONS, THE MORE STRINGENT SHALL TAKE PRECEDENCE.

SIGNAGE AND PAVEMENT MARKING NOTES

1. ALL SIGNING AND PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARDS.

2. SIGNS: SIGNS SHALL BE CONSTRUCTED OF 0.080-INCH THICK FLAT ALUMINUM PANELS WITH REFLECTORIZED LEGEND ON THE FACE. LEGEND SHALL BE IN ACCORDANCE WITH THE MUTCD.

3. POSTS: SIGN POSTS SHALL BE A HEAVY-DUTY STEEL "U" SHAPED CHANNEL WEIGHING 3.0 POUNDS/FOOT, SUCH AS A TYPE B METAL POST, AS PER THE MDOT STANDARDS (OR 2-INCH PERFORATED STEEL TUBE).

4. SIGNS AND POSTS SHALL BE INSTALLED IN ACCORDANCE WITH MDOT STANDARDS.

5. PAVEMENT MARKINGS: ALL PAVEMENT MARKINGS IN THE PUBLIC RIGHT-OF-WAY, SUCH AS STOP LINES, CENTERLINES, CROSSWALKS, AND DIRECTIONAL ARROWS, SHALL BE REFLECTORIZED THERMOPLASTIC HOT ROLLED INTO PAVEMENT.

6. PAVEMENT MARKINGS ON BIKE PATHS, PARKING LOT STALLS, AND SIMILAR "LOW-WEAR" APPLICATIONS, SHALL BE PAINT IN ACCORDANCE WITH MDOT STANDARDS.

7. COLOR, WIDTH, STYLE, AND SIZE OF ALL MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND LOCAL CODE. STANDARD PARKING SPACES SHALL BE PAINTED WHITE OR YELLOW PER LOCAL CODE.

8. THERMOPLASTIC MARKINGS SHALL BE INSTALLED WHEN THE PAVEMENT TEMPERATURE IS 55 DEGREES FAHRENHEIT AND RISING. PAINT MARKINGS MAY BE INSTALLED WHEN THE AIR TEMPERATURE IS 50 DEGREES FAHRENHEIT AND RISING.

SANITARY SEWER NOTES

1. SANITARY SEWER PIPE: ALL SANITARY SEWER PIPE MATERIAL, SIZE AND TYPE SHALL BE INSTALLED AS INDICATED ON THE UTILITY PLAN. UNLESS OTHERWISE NOTED ON THE PLANS, ALL SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE PLASTIC PIPE (PVC SDR-35), CONFORMING TO ASTM D3034 AND D2241 WITH ELASTOMERIC GASKET JOINTS CONFORMING TO ASTM D3139 AND D3212. ANY CHANGES TO THE PIPE MATERIAL, SIZE AND TYPE MUST BE APPROVED BY THE OWNER, ENGINEER AND CITY OF ROCHESTER HILLS PRIOR TO ORDERING MATERIALS OR INSTALLING THE PIPE. ALL SANITARY SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:

PIPE SIZE	CODE	PIPE MATERIAL
4" - 12"	PVC	POLYVINYL CHLORIDE PLASTIC PIPE SDR-26 (ASTM D3034 AND D2241)
4"-48"	DIP	DUCTILE IRON PIPE, CLASS 52 (ANSI 21.51 AND AWWA C151)

2. BAND-SEAL OR SIMILAR FLEXIBLE-TYPE COUPLINGS SHALL BE USED WHEN CONNECTING SEWER PIPES OF DISSIMILAR MATERIALS. ALL SANITARY SEWER CONSTRUCTION (AND STORM SEWER CONSTRUCTION IN COMBINED SEWER AREAS), REQUIRES STONE BEDDING WITH STONE ¼" TO 1" IN SIZE WITH MINIMUM BEDDING THICKNESS EQUAL TO ¼ THE OUTSIDE DIAMETER OF THE SEWER PIPE, BUT NO LESS THAN FOUR (4) INCHES NOR MORE THAN EIGHT (8) INCHES. AS A MINIMUM, THE MATERIAL SHALL CONFORM TO MDOT STANDARDS. THE GRADATION SHALL CONFORM TO GRADATION MDOT 3G, 5G, 6A, OR 34R. BEDDING REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION OVER THE UTILITY INSTALLATION TAKE PRECEDENCE OVER THESE SPECIFICATIONS.

3. ALL UNSUITABLE MATERIALS SHALL BE REMOVED BELOW THE PROPOSED SANITARY SEWER AND REPLACED WITH COMPACTED CRUSHED GRAVEL OR STONE, AS PER MDOT STANDARDS.

4. ALL TRENCHES BENEATH PROPOSED OR EXISTING UTILITIES, PAVEMENTS, ROADWAYS, SIDEWALKS, AND FOR A DISTANCE OF TWO (2) FEET ON EITHER SIDE OF SAME, AND/OR WHERE SHOWN ON THE PLANS, SHALL BE BACKFILLED WITH SELECT GRANULAR BACKFILL PER MDOT STANDARDS AND THOROUGHLY MECHANICALLY COMPACTED IN 9-INCH THICK (LOOSE MEASUREMENT) LAYERS. JETTING WITH WATER IS NOT PERMITTED.

5. ALL SANITARY SEWERS ARE TO BE CONSTRUCTED USING A LASER INSTRUMENT TO MAINTAIN LINE AND GRADE.

6. CONNECTIONS TO EXISTING SANITARY SEWER SYSTEM SHALL NOT BE DONE UNTIL AUTHORIZED BY THE CITY OF ROCHESTER HILLS.

7. WATERMAINS SHALL BE SEPARATED FROM SANITARY SEWERS AND STORM SEWERS IN ACCORDANCE WITH MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY(MDEQ) REQUIREMENTS, AS SPECIFIED IN THE MUNICIPAL SEPARATE STORM SEWER SYSTEM IN MICHIGAN.

8. NO WATER LINE SHALL BE PLACED IN THE SAME TRENCH AS A SEWER LINE, EXCEPT UNDER SPECIAL CIRCUMSTANCES AND THEN ONLY UNDER THE FOLLOWING RULES:

   A. IF NECESSARY PERMISSION SHALL BE OBTAINED FROM THE CITY OF ROCHESTER HILLS IN WRITING PRIOR TO BEGINNING CONSTRUCTION.

   B. THE BOTTOM OF A WATER LINE SHALL BE INSTALLED ON A SHELF A MINIMUM OF 18 INCHES ABOVE THE TOP OF THE SEWER AND 18 INCHES HORIZONTALLY AWAY FROM THE EDGE OF THE SEWER.

9. ALL SANITARY MANHOLES (AND STORM MANHOLES IN COMBINED SEWER AREAS) SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48 INCHES AND SHALL BE CAST IN PLACE OR PRE-CAST REINFORCED CONCRETE. A WATERTIGHT BOOT, CONFORMING TO ASTM C-923, SHALL BE USED AT THE PIPE-STRUCTURE CONNECTION.

10. ALL PIPE CONNECTION OPENINGS SHALL BE PRECAST WITH RESILIENT RUBBER WATER-TIGHT SLEEVES. THE BOTTOM OF THE MANHOLE SHALL HAVE A CONCRETE BENCH POURED TO FACILITATE SMOOTH FLOWS.

11. FRAMES AND LIDS: SEE DETAILS FOR ALL SANITARY SEWER MANHOLE FRAMES AND LIDS. THE LIDS SHALL HAVE RECESSED (CONCEALED) PICK HOLE AND BE SELF-SEALING WITH AN "O" RING GASKET. THE LIDS SHALL HAVE THE WORD "SANITARY" EMBOSSED ON THE SURFACE. THE JOINTS BETWEEN THE FRAME AND CONCRETE SECTION SHALL BE SEALED WITH A BUTYL ROPE.

12. A MAXIMUM OF TWELVE (12) INCHES OF CONCRETE-ADJUSTING RINGS SHALL BE USED TO ADJUST FRAME ELEVATIONS. RINGS SHALL BE SEALED TOGETHER WITH BUTYL ROPE.

13. CLEANING: ALL MANHOLES AND PIPES SHALL BE THOROUGHLY CLEANED OF DIRT AND DEBRIS, AND ALL VISIBLE LEAKAGE ELIMINATED, BEFORE FINAL INSPECTION AND ACCEPTANCE.

14. TESTING: DEFLECTION, AIR, AND LEAKAGE TESTING WILL BE REQUIRED. THE PROCEDURE AND ALLOWABLE TESTING LIMITS SHALL BE IN ACCORDANCE WITH THE MUNICIPAL SEPARATE STORM SEWER SYSTEM IN MICHIGAN.

15. TESTING THE ALIGNMENT/STRAIGHTNESS SHALL BE IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS CODE.

16. TELEVISING: IF REQUIRED BY THE CITY OF ROCHESTER HILLS, ALL SANITARY SEWERS SHALL BE TELEVISED, AND A COPY OF THE TAPE AND A WRITTEN REPORT SHALL BE SUBMITTED AND REVIEWED BY THE CITY OF ROCHESTER HILLS BEFORE FINAL ACCEPTANCE. THE REPORT SHALL INCLUDE STUB LOCATION AS WELL AS A DESCRIPTION OF ALL DEFECTS, WATER LEVEL, LEAKS, AND LENGTHS. IDENTIFY MANHOLE TO MANHOLE BOTH VERBALLY AND ON-SCREEN USING MANHOLE NUMBERS FROM APPROVED PLANS. ORDER OF WRITTEN REPORT SHALL BE THE SAME AS THE VIDEOTAPES.

17. TEST RESULTS: IF THE SANITARY SEWER INSTALLATION FAILS TO MEET THE TEST REQUIREMENTS SPECIFIED, THE CONTRACTOR SHALL DETERMINE THE CAUSE OR CAUSES OF THE DEFECT AND REPAIR, OR REPLACE ALL MATERIALS AND WORKMANSHIP, AS MAY BE NECESSARY TO COMPLY WITH THE TEST REQUIREMENTS.

18. CERTIFICATION: CONTRACTOR SHALL SUBMIT CERTIFIED COPIES OF ALL REPORTS OF TESTS CONDUCTED BY AN INDEPENDENT LABORATORY BEFORE INSTALLATION OF PVC PLASTIC PIPE. TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH STANDARD METHOD OF TEST FOR "EXTERNAL LOADING PROPERTIES OF PLASTIC PIPE BY PARALLEL PLATE LOADING." ASTM STANDARDS D-2241, AS APPROPRIATE FOR THE PIPE, TO BE USED. TESTS SHALL ALSO BE CONDUCTED TO DEMONSTRATE JOINT PERFORMANCE AT FIVE (5) PERCENT MAXIMUM DIAMETRIC DEFLECTION OF THE SPIGOT.

19. CONTRACTOR SHALL VERIFY THAT THE TESTING METHODS DESIGNATED HEREIN ARE ACCEPTABLE TO THE LOCAL AUTHORITIES HAVING JURISDICTION OVER THIS PROJECT.

STORM SEWER NOTES

1. STORM SEWER PIPE: ALL STORM SEWER PIPE MATERIAL, SIZE AND TYPE SHALL BE INSTALLED AS INDICATED ON THE UTILITY PLAN. UNLESS OTHERWISE NOTED ON THE PLANS, ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE, IN ACCORDANCE WITH IDOT STANDARD SPECIFICATIONS FOR DETERMINING PIPE CLASS AND CONFORMING TO ASTM C76. ANY CHANGES TO THE PIPE MATERIAL, SIZE AND TYPE MUST BE APPROVED BY THE OWNER, ENGINEER AND CITY OF ROCHESTER HILLS PRIOR TO ORDERING MATERIALS OR INSTALLING THE PIPE. ALL STORM SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:

PIPE SIZE	CODE	PIPE MATERIAL
12"-60"	RCP	REINFORCED CONCRETE PIPE (ASTM C76); SEE IDOT SPECS FOR PIPE CLASS
3"-12"	PVC	POLYVINYL CHLORIDE PLASTIC PIPE SDR-26 (ASTM D3034 AND D2241)
3"-48"	HDPE	HIGH DENSITY POLYETHYLENE PIPE
3"-48"	DIP	DUCTILE IRON PIPE, CLASS 52 (ANSI 21.51 AND AWWA C151)

2. BAND-SEAL OR SIMILAR COUPLING SHALL BE USED WHEN JOINING SEWER PIPES OF DISSIMILAR MATERIALS.

3. ALL FOOTING DRAIN DISCHARGE PIPES AND DOWN SPOUTS SHALL DISCHARGE TO THE STORM SEWER SYSTEM.

4. CONSTRUCTION: ALL STORM SEWERS ARE TO BE CONSTRUCTED USING A LASER INSTRUMENT TO MAINTAIN LINE AND GRADE.

5. COVER: THE CONTRACTOR SHALL MAINTAIN AT LEAST TWO (2) FEET OF COVER OVER THE TOP OF SHALLOW PIPES AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL MOUND OVER ANY PIPES THAT HAVE LESS THAN TWO (2) FEET OF COVER DURING CONSTRUCTION UNTIL THE AREA IS FINAL GRADED OR PAVED.

6. STRUCTURES: MANHOLE, CATCH BASIN, AND INLET BOTTOMS SHALL BE PRECAST CONCRETE SECTIONAL UNITS OR MONOLITHIC CONCRETE. MANHOLES AND CATCH BASINS SHALL BE A MINIMUM OF FOUR (4) FEET IN DIAMETER UNLESS OTHERWISE SPECIFIED ON THE PLANS. STRUCTURE JOINTS SHALL BE SEALED WITH "O" RING OR BUTYL ROPE. A MAXIMUM OF TWELVE (12) INCHES OF ADJUSTING RINGS SHALL BE USED.

7. A CONCRETE BENCH TO DIRECT FLOWS SHALL BE CONSTRUCTED IN THE BOTTOM OF ALL INLETS AND MANHOLES.

8. THE FRAME, GATE, AND/OR CLOSED LID SHALL BE CAST IRON OF THE STYLE SHOWN ON THE PLANS.

9. CLEANING: THE STORM SEWER SYSTEM SHALL BE THOROUGHLY CLEANED PRIOR TO FINAL INSPECTION AND TESTING.

10. THE STORM SEWER SHALL BE TELEVISED IF REQUIRED BY THE CITY OF ROCHESTER HILLS.

11. MANHOLES, CATCH BASINS, INLETS, FRAMES, GRATES, AND OTHER STRUCTURES SHALL BE CONSTRUCTED OF THE TYPE, STYLE, AND SIZE AS SET FORTH WITH THE ORDINANCES AND STANDARDS OF THE CITY OF ROCHESTER HILLS.

12. ALL PVC PIPES CONNECTED TO REINFORCED CONCRETE PIPE SHALL BE CORED AND BOOTED PER THE CITY OF ROCHESTER HILLS REQUIREMENTS.

WATERMAIN NOTES

1. WATERMAIN PIPE: ALL WATERMAIN PIPE MATERIAL, SIZE AND TYPE SHALL BE INSTALLED AS INDICATED ON THE UTILITY PLAN. UNLESS OTHERWISE NOTED ON THE PLANS, ALL WATERMAIN PIPE SHALL BE CONSTRUCTED OF BITUMINOUS-COATED CEMENT-LINED DUCTILE IRON PIPE, CLASS 52, CONFORMING TO ANSI A21.51 (AWWA C151). CEMENT MORTAR LINING SHALL CONFORM TO ANSI A21.4 (AWWA C104). THE JOINTS SHALL BE PUSH-ON COMPRESSION GASKET JOINTS CONFORMING TO ANSI A21.11 (AWWA C111). ANY CHANGES TO THE PIPE MATERIAL, SIZE AND TYPE MUST BE APPROVED BY THE OWNER, ENGINEER AND CITY OF ROCHESTER HILLS PRIOR TO ORDERING MATERIALS OR INSTALLING THE PIPE. ALL WATERMAIN PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:

PIPE SIZE	CODE	PIPE MATERIAL
3"-48"	DIP	DUCTILE IRON PIPE, CLASS 52 (ANSI 21.51 AND AWWA C151)
< 3"		TYPE "K" COPPER PIPE

2. FITTINGS: ALL FITTINGS SHALL BE OF DUCTILE IRON WITH CEMENT MORTAR LINING AND MECHANICAL JOINTS CONFORMING TO ANSI AS21.10 (AWWA C110).

3. VALVES: GATE VALVES SHALL BE USED ON ALL WATERMAINS. ALL VALVES SHALL TURN COUNTER-CLOCKWISE TO OPEN. VALVES SHALL BE IRON BODY RESILIENT WEDGE GATE VALVES WITH BRONZE-MOUNTED SEATS AND NON-RISING STEMS CONFORMING TO AWWA C-509 OR C-515. THE VALVES SHALL HAVE MECHANICAL JOINTS.

4. THE MECHANICAL JOINTS AND ALL FASTENERS ON THE VALVE BODY SHALL HAVE STAINLESS STEEL NUTS AND BOLTS.

5. VALVE VAULTS: VALVE VAULTS SHALL BE PRECAST CONCRETE STRUCTURES FIVE (5) FEET IN DIAMETER, AS NOTED ON THE PLANS. THE FRAME AND LID SHALL BE ACCORDING TO THE DETAIL ON THE PLANS, WITH "WATER" EMBOSSED ON THE LID.

6. FIRE HYDRANTS: SEE PLANS FOR APPROVED FIRE HYDRANT DETAIL. FIRE HYDRANTS SHALL BE INSTALLED WITH AN AUXILIARY VALVE AND CAST IRON VALVE BOX. FIRE HYDRANTS SHALL HAVE AUXILIARY VALVES WITH A HYDRANT BARREL TO VALVE BOX RESTRAINING DEVICE. THE PUMPER CONNECTION SHALL FACE THE ROADWAY.

7. PROVIDE AND INSTALL FOUR MEGALUG JOINT RESTRAINTS AT EACH JOINT FROM THE MAINLINE TEE TO THE AUXILIARY VALVE AND BETWEEN THE AUXILIARY VALVE AND THE HYDRANT BARREL.

8. THE BREAK FLANGE AND ALL BELOW-GRADE FITTING SHALL HAVE STAINLESS STEEL NUTS AND BOLTS.

9. CORPORATION STOPS: CORPORATION STOPS SHALL BE BRONZE BODY KEY STOPS CONFORMING TO AWWA C-800 AND SHALL INCLUDE "J" BEND, TAILPIECE, AND COMPRESSION FITTINGS. SIZE AND LOCATION AS SHOWN ON THE PLANS.

10. SERVICE BOX: PROVIDE CURB VALVE AND CURB BOX, AS INDICATED ON THE PLANS. BOX SHALL BE EXTENSION TYPE WITH FOOT PIECE AND STATIONARY RODS FOR SIX (6) FEET OF BURY.

11. MAXIMUM DEFLECTION AT PIPE JOINTS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURER'S CURRENT RECOMMENDATIONS AND AWWA SPECIFICATIONS.

12. BEDDING: ALL WATERMAINS SHALL BE BEDDED ON FIRM GROUND, WITH BELLHOLES EXCAVATED SO THAT THE PIPE HAS AN EVEN BEDDING FOR ITS ENTIRE LENGTH.

13. GRANULAR BEDDING MATERIAL OR GRANULAR BACKFILL MATERIAL SHALL BE CAREFULLY PLACED TO TWELVE (12) INCHES OVER THE TOP OF THE PIPE BEFORE FINAL BACKFILLING AND COMPACTION.

14. A MINIMUM DEPTH OF COVER OF 5-FEET, 6-INCHES SHALL BE MAINTAINED OVER THE WATER LINES. THE MAXIMUM COVER SHALL BE EIGHT (8) FEET, EXCEPT AT SPECIAL CROSSINGS AND ONLY AS DESIGNATED ON THE PLANS.

15. "MEGA-LUG" RETAINER GLANDS AND THRUST BLOCKING SHALL BE INSTALLED ON WATERMAINS AT ALL BENDS, FITTINGS, TEES, ELBOWS, ETC. "MEGA-LUG" RESTRAINED JOINTS ARE REQUIRED ON ALL VALVES AND ALL FITTINGS. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE UNIT PRICE FOR THE PIPE INSTALLED.

16. MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) AND CITY OF ROCHESTER HILLS WATERMAIN PROTECTION:

16.1. HORIZONTAL SEPARATION

16.1.1. WATERMAINS SHALL BE LAID AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED DRAIN, STORM SEWER, SANITARY SEWER, OR SEWER SERVICES CONNECTION.

16.1.2. WATERMAINS MAY BE LAID CLOSER THAN TEN (10) FEET TO A SEWER LINE WHEN:

16.1.2.1. LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF TEN (10) FEET;

16.1.2.2. THE WATERMAIN INVERT IS AT LEAST EIGHTEEN (18) INCHES ABOVE THE CROWN OF THE SEWER;

16.1.2.3. THE WATERMAIN IS EITHER IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE SIDE OF THE SEWER.

16.1.3. WHEN IT IS IMPOSSIBLE TO MEET (1) OR (2) ABOVE, BOTH THE WATERMAIN AND DRAIN OR SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON PIPE, PRESTRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATERMAIN STANDARDS OF CONSTRUCTION AND IN CONFORMANCE WITH THE MUNICIPAL SEPARATE STORM SEWER SYSTEM IN MICHIGAN. THE DRAIN OR SEWER SHALL BE PRESSURE-TESTED TO THE MAXIMUM EXPECTED SURCHARGE HEAD BEFORE BACKFILLING.

16.2. VERTICAL SEPARATION

16.2.1. A WATERMAIN SHALL BE LAID SO THAT ITS INVERT IS EIGHTEEN (18) INCHES ABOVE THE CROWN OF THE DRAIN OR SEWER WHENEVER WATERMAINS CROSS STORM SEWERS, SANITARY SEWERS, OR SEWER SERVICE CONNECTIONS. THE VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATERMAIN LOCATED WITHIN TEN (10) FEET HORIZONTALLY OF ANY SEWER OR DRAIN CROSSED. A LENGTH OF WATERMAIN PIPE SHALL BE CENTERED OVER THE SEWER TO BE CROSSED WITH JOINTS EQUIDISTANT FROM THE SEWER OR DRAIN.

16.2.2. BOTH THE STORM SEWER AND SANITARY SEWER SHALL BE CONSTRUCTED WITH PIPE EQUIVALENT TO WATERMAIN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED USING "O" RING GASKET JOINTS, PER ASTM C-443, OR THE WATERMAIN MAY BE IN ENCASED IN A WATERTIGHT CASING PIPE WHEN:

16.2.2.1. IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION, AS DESCRIBED ABOVE; OR

16.2.2.2. THE WATERMAIN PASSES UNDER A SEWER OR DRAIN.

16.2.3. A VERTICAL SEPARATION OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE SEWER OR DRAIN AND THE CROWN OF THE WATERMAIN SHALL BE MAINTAINED WHERE A WATERMAIN CROSSES UNDER A SEWER. SUPPORT THE SEWER OR DRAIN LINES TO PREVENT SETTLING AND BREAKING OF THE WATERMAIN.

16.2.4. CONSTRUCTION SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE NORMAL DISTANCE FROM THE WATERMAIN TO THE SEWER OR DRAIN LINE IS AT LEAST TEN (10) FEET.

17. ALL WATERMAINS SHALL BE PRESSURE-TESTED FOR A MIN. OF 2 HOURS AT 200 PSI, FLUSHED, AND DISINFECTED IN ACCORDANCE WITH AWWA AND CITY OF ROCHESTER HILLS SPECIFICATIONS. EACH VALVE SECTION SHALL BE PRESSURE-TESTED FOR A MINIMUM OF ONE (1) HOUR. ALLOWABLE LEAKAGE IS TO BE ONLY THAT WHICH IS PREDETERMINED BY THE CITY OF ROCHESTER HILLS. AT NO TIME IS THERE TO BE ANY VISIBLE LEAKAGE FROM THE MAIN.

ADA GENERAL NOTES

1. CURB RAMPS ALONG PUBLIC STREETS AND IN THE PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS OF THE AUTHORITY HAVING JURISDICTION.

2. ALL ACCESSIBLE ROUTES, GENERAL SITE AND BUILDING ELEMENTS, RAMPS, CURB RAMPS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA STANDARDS FOR ACCESSIBLE DESIGN, LATEST EDITION.

3. ANY COMPONENTS OF THE PROJECT SERVING MULTI-FAMILY DWELLINGS IN BUILDINGS THAT HAVE (4) OR MORE UNITS PER DWELLING SHALL ALSO CONFORM TO THE FAIR HOUSING ACT (FHA), AND COMPLY WITH THE FAIR HOUSING ACT DESIGN MANUAL BY THE US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.

4. BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE ACCESSIBLE PEDESTRIAN ROUTES (PER ADA AND FHA) EXIST TO AND FROM EVERY DOOR AND ALONG SIDEWALKS, ACCESSIBLE PARKING SPACES, ACCESS AISLES, AND ACCESSIBLE ROUTES. IN NO CASE SHALL AN ACCESSIBLE RAMP SLOPE EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPES EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPES EXCEED 5.0 PERCENT. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 2.0 PERCENT SLOPE IN ANY DIRECTION.

5. CONTRACTOR SHALL TAKE FIELD SLOPE MEASUREMENTS ON FINISHED SUBGRADE AND FORM BOARDS PRIOR TO PLACING PAVEMENT TO VERIFY THAT ADA SLOPE REQUIREMENTS ARE PROVIDED. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING IF ANY EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR ADA SLOPE COMPLIANCE ISSUES.

NOTE:

CITY OF ROCHESTER HILLS NOTES SHALL SUPERSEDE ALL OTHER NOTES AND DETAILS WITHIN THE CIVIL ENGINEERING PLAN SET, OR AS OTHERWISE APPROVED IN WRITING BY THE CITY OF WALLED LAKE. CITY OF ROCHESTER HILLS NOTES CAN BE SEEN ON CORRESPONDING DETAIL SHEETS.

WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

CITY FILE #22-039 SECTION #35

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SCALE: AS NOTED
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DRAWN BY: EC
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CITY FILE
#22-039
SECTION #35

ADC Architectural Design Collaborative

GENERAL NOTES

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE:
11/18/2022

KHA PROJECT NO.
268266000

SHEET NUMBER
C1.0

Drawing name: K:\CHS_LDEV\268266000_ADC_Rochester_Hills_MI\2 Design\CAD\PlanSheets\C2.0 – EXISTING CONDITIONS & DEMO PLAN.dwg C2.0 Feb 06, 2023 6:31pm by: John.Gross
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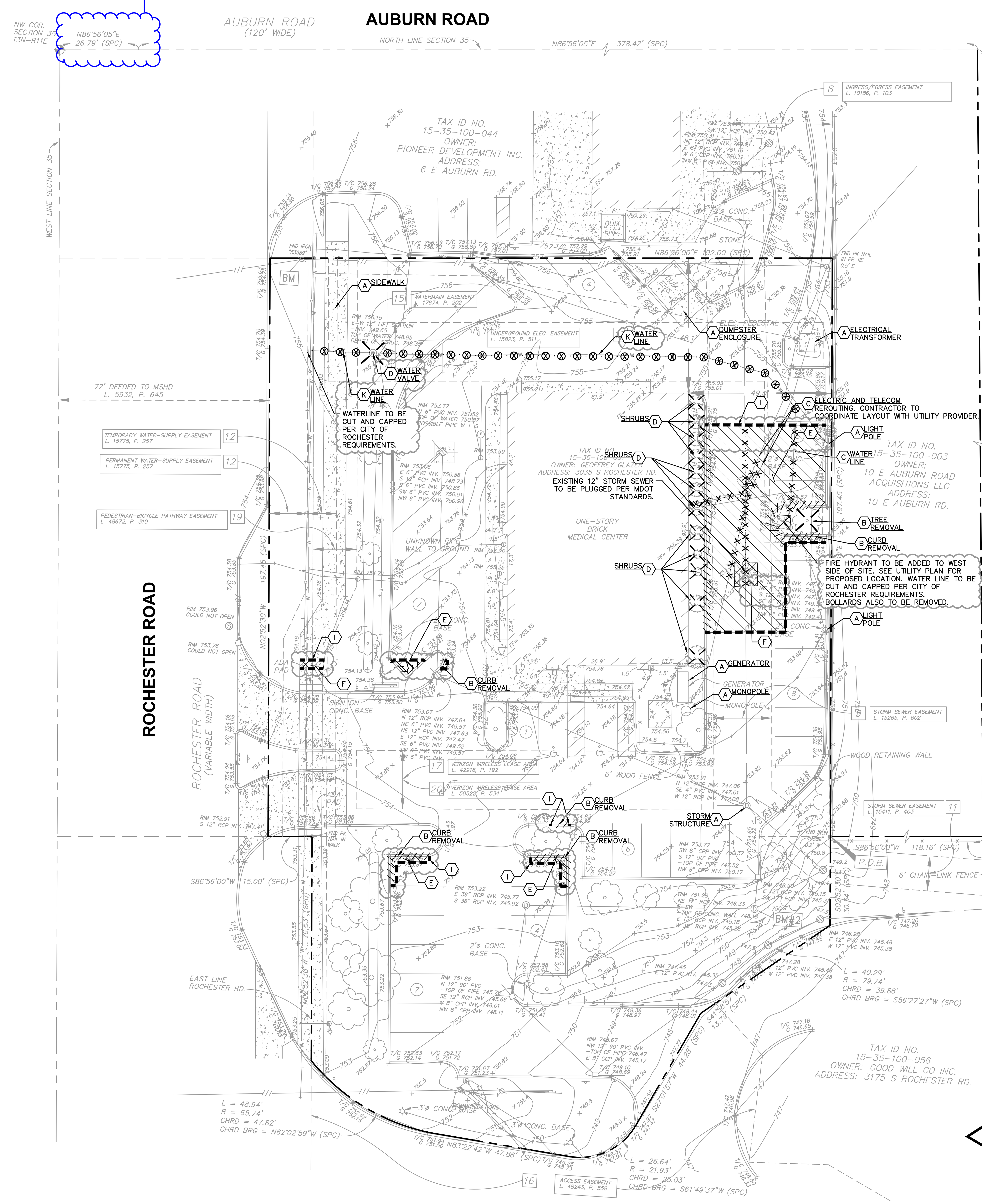

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GRAPHIC SCALE IN FEET
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NORTH

WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

DEMOLITION NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE EXISTING STRUCTURES, RELATED UTILITIES, PAVING, AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED.
2. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
3. THE GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR SHALL NOT DEMOLISH ANYTHING OUTSIDE THE OWNERS LEASE/PROPERTY LINE UNLESS SPECIFICALLY MENTIONED ON THIS SHEET.
4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
5. IF DEMOLITION OR CONSTRUCTION ON SITE WILL INTERFERE WITH THE ADJACENT PROPERTY OWNER'S TRAFFIC FLOW, THE CONTRACTOR SHALL COORDINATE WITH ADJACENT PROPERTY OWNER, TO MINIMIZE THE IMPACT ON TRAFFIC FLOW. TEMPORARY RE-ROUTING OF TRAFFIC IS TO BE ACCOMPLISHED BY USING MDOT APPROVED TRAFFIC BARRICADES, BARRELS, AND/OR CONES. TEMPORARY SIGNAGE AND FLAGMEN MAY BE ALSO NECESSARY.
6. QUANTITIES DEPICTED ON THIS SHEET SHALL SERVE AS A GUIDE ONLY. CONTRACTOR TO VERIFY ALL DEMOLITION QUANTITIES.
7. REFER TO GEOTECHNICAL REPORT PROVIDED BY OTHERS FOR ALL SUBSURFACE INFORMATION.
8. CONTRACTOR SHALL BEGIN CONSTRUCTION OF ANY LIGHT POLE BASES FOR RELOCATED LIGHT FIXTURES AND RELOCATION OF ELECTRICAL SYSTEM AS SOON AS DEMOLITION BEGINS. CONTRACTOR SHALL BE AWARE THAT INTERRUPTION OF POWER TO ANY LIGHT POLES OR SIGNS SHALL NOT EXCEED 24 HOURS.
9. EROSION CONTROL MUST BE ESTABLISHED PRIOR TO ANY WORK ON SITE INCLUDING DEMOLITION.
10. THE EXTENT OF SITE DEMOLITION WORK IS AS SHOWN ON THE CONTRACT DOCUMENTS AND AS SPECIFIED HEREIN.
11. CONTRACTOR MUST RECEIVE APPROVAL FROM CIVIL ENGINEER AND GEOTECHNICAL ENGINEER FOR THE MATERIAL TYPE AND USE IF CONTRACTOR DESIRES TO REUSE DEMOLISHED SITE PAVEMENT AS STRUCTURAL FILL.
12. EXISTING UTILITIES, WHICH DO NOT SERVICE STRUCTURES BEING DEMOLISHED, ARE TO BE KEPT IN SERVICE AND PROTECTED AGAINST DAMAGE DURING DEMOLITION OPERATIONS. CONTRACTOR SHALL ARRANGE FOR SHUT-OFF OF UTILITIES SERVING STRUCTURES TO BE DEMOLISHED. CONTRACTOR IS RESPONSIBLE FOR TURNING OFF, DISCONNECTING, AND SEALING INDICATED UTILITIES BEFORE STARTING DEMOLITION OPERATIONS. EXISTING UTILITIES TO BE ABANDONED ARE TO BE CAPPED AT BOTH ENDS AND FILLED WITH FA-1 OR APPROVED EQUAL. ALL UNDERGROUND UTILITIES TO BE REMOVED ARE TO BE BACKFILLED WITH ENGINEERED FILL OR SELECT EXCAVATED MATERIAL, AS APPROVED BY THE GEOTECHNICAL ENGINEER, TO 95% OF MODIFIED PROCTOR DENSITY WITHIN PAVED AREAS AND TO 90% OF MODIFIED PROCTOR DENSITY FOR GREEN SPACE AREAS, IN ACCORDANCE WITH THE EARTHWORK SPECIFICATIONS. ALL PRIVATE UTILITIES (ELECTRIC, CABLE, TELEPHONE, FIBER OPTIC, GAS) SHALL BE REMOVED AND RELOCATED PER THE UTILITY OWNER AND THE LOCAL MUNICIPALITY'S REQUIREMENTS.
13. UNDERGROUND UTILITIES SHOWN ARE BASED ON ATLASES AND AVAILABLE INFORMATION PRESENTED AT THE TIME OF SURVEY. CONTRACTOR SHOULD CALL "MISS DIG SYSTEM, INC." (1-800-482-7171) TO COORDINATE FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES BEFORE ORDERING MATERIALS OR COMMENCING CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY. CONTRACTOR SHALL LOCATE AND PROTECT EXISTING UNDERGROUND AND OVERHEAD UTILITIES DURING CONSTRUCTION. UTILITY PROTECTION SHALL BE COORDINATED WITH THE RESPECTIVE UTILITY OWNER AND AS DIRECTED BY THE GOVERNING MUNICIPALITY. DAMAGED CABLES/CONDUITS SHALL BE REPLACED IMMEDIATELY. ALL EXISTING STRUCTURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PROCESS. ALL DAMAGED STRUCTURES SHALL BE REPLACED IN-KIND AND THEIR REPLACEMENT COST SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. PROPER NOTIFICATION TO THE OWNERS OF THE EXISTING UTILITIES SHALL BE MADE AT LEAST 48 HOURS BEFORE CONSTRUCTION COMMENCES.
14. USE WATER SPRINKLING, TEMPORARY ENCLOSURES, AND OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING IN THE AIR TO THE LOWEST LEVEL. COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION. SEE EROSION CONTROL SHEETS FOR FURTHER EROSION CONTROL REQUIREMENTS.
15. COMPLETELY FILL BELOW-GRADE AREAS AND VOIDS RESULTING FROM DEMOLITION OF STRUCTURES TO THE FINAL LINES AND GRADES SHOWN ON THE CONTRACT DOCUMENTS. BACKFILL MATERIAL SHALL BE MDOT APPROVED CRUSHED LIMESTONE OR APPROVED EQUAL. USE SATISFACTORY SOIL MATERIALS CONSISTING OF STONE, GRAVEL AND SAND, FREE FROM DEBRIS, TRASH, FROZEN MATERIALS, ROOTS AND OTHER ORGANIC MATTER. PRIOR TO PLACEMENT OF FILL MATERIALS, ENSURE THAT AREAS TO BE FILLED ARE FREE OF STANDING WATER, FROST, FROZEN MATERIAL, TRASH AND DEBRIS. PLACE FILL MATERIALS IN HORIZONTAL LAYERS NOT EXCEEDING 9" IN LOOSE DEPTH. COMPACT EACH LAYER AT OPTIMUM MOISTURE CONTENT OF FILL MATERIAL TO 95% OF MODIFIED PROCTOR DENSITY UNLESS SUBSEQUENT EXCAVATION FOR NEW WORK IS REQUIRED.

DEMOLITION LEGEND

A		ITEM TO REMAIN, PROTECT DURING CONSTRUCTION
B	////	CURB REMOVAL
C	X·X	UTILITY REMOVAL
D	╳	ITEM TO BE REMOVED
E	▧	FULL-DEPTH ASPHALT PAVEMENT REMOVAL
F	▩	CONCRETE REMOVAL
G	▭	BUILDING REMOVAL
H	▦	ASPHALT 1.5" MILL
I	- - -	SAWCUT LINE
J	⋀⋀	FENCE REMOVAL
K	⊗	UTILITY ABANDONMENT

CITY FILE #22-039 SECTION #35

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SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

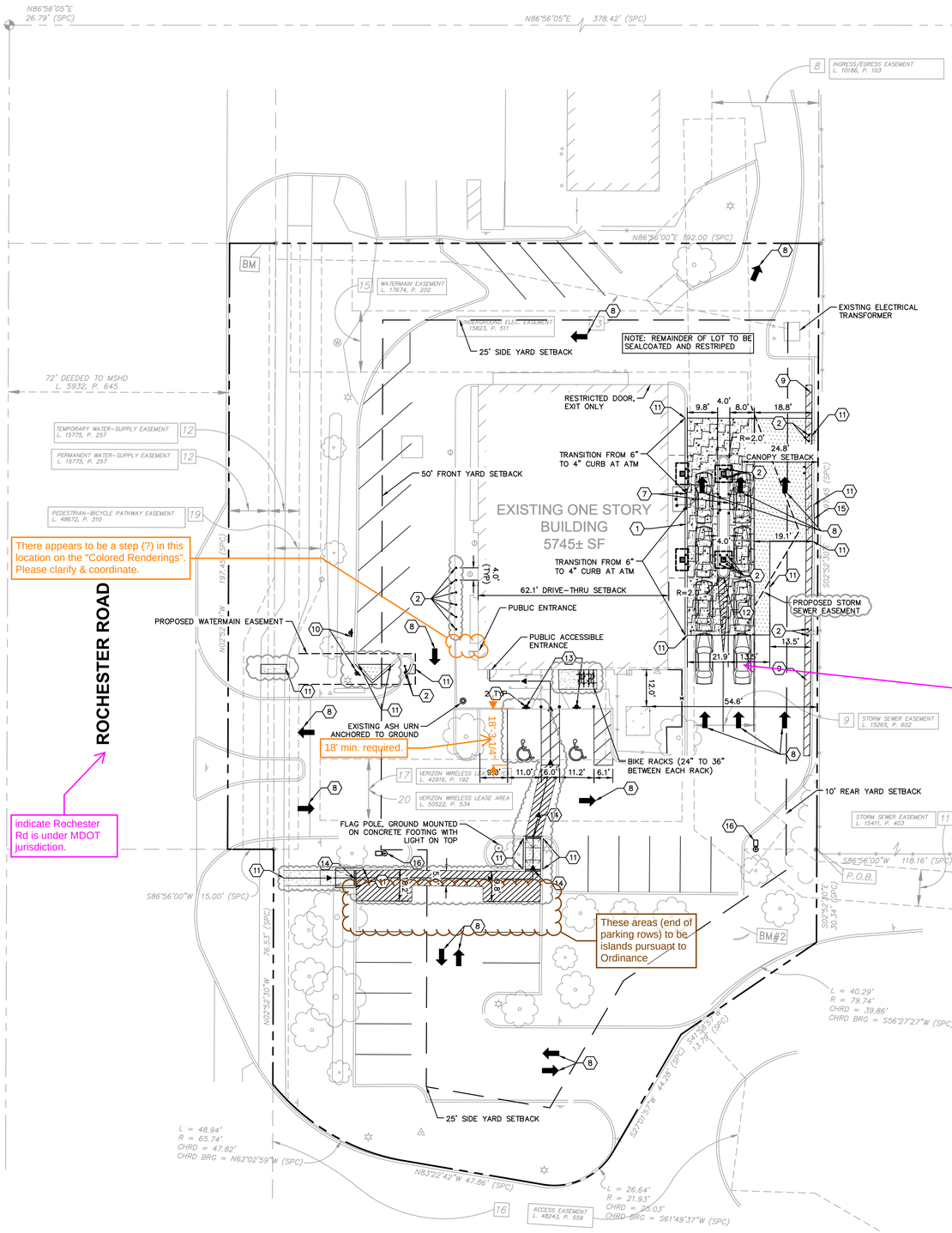
CITY FILE #22-039 SECTION #35

ADC Architectural Design Collaborative

EXISTING CONDITIONS & DEMO PLAN

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
C2.0



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NORTH

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GENERAL NOTES

1. ALL DIMENSIONS REFER TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
2. BUILDING DIMENSIONS ARE TO THE OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
3. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS TO VERIFY ALL BUILDING DIMENSIONS.
4. RADII ADJACENT TO PARKING STALL AND NOT DIMENSIONED ON THIS PLAN SHALL BE 3-FEET, TYPICAL.
5. REFER TO ARCHITECTURAL PLANS FOR MONUMENT SIGN DETAILS. SEE MEP PLANS FOR SITE ELECTRICAL DRAWINGS.
6. ALL PROPOSED ON-SITE STRIPING SHALL BE PAINTED UNLESS OTHERWISE NOTED.

SITE DATA TABLE

PARCEL NUMBER: 15-35-100-051

SITE ADDRESS: 3035 S. ROCHESTER DRIVE, ROCHESTER HILLS, MI 48307

PARCEL AREA: 1.21 ACRES

DISTURBANCE AREA:

ZONING: B-2 GENERAL BUSINESS

PROPOSED USE: BANK

EXISTING BUILDING AREA: 5745 SF

EXISTING PARKING:	42 SPACES
EXISTING ADA PARKING:	2 SPACES
EXISTING TOTAL PARKING:	44 SPACES
REQUIRED PARKING (1 STALL/ 350 SF):	17 SPACES
MAX PARKING (125% OF REQUIRED):	22 SPACES
PROPOSED PARKING:	27 SPACES
PROPOSED ADA PARKING:	2 SPACES
PROPOSED TOTAL PARKING:	29 SPACES

KEY NOTES

1. CONCRETE BARRIER CURB (SEE DETAILS)
2. BOLLARD, TYP. (SEE DETAILS).
3. THROUGH LANE ARROW (SEE DETAILS)
4. LOW EMISSION VEHICLE PARKING SIGN (SEE DETAILS FOR SIGN BASE)
5. FLAG POLE, GROUND MOUNTED ON CONCRETE FOOTING WITH LIGHT ON TOP (SEE ARCHITECTURAL PLANS FOR DETAILS)
6. BIKE RACKS – 34" TO 36" BETWEEN EACH RACK (SEE ARCHITECTURAL PLANS FOR DETAILS)
7. ATM (SEE ARCHITECTURAL PLANS FOR DETAILS)
8. DIRECTIONAL ARROWS (SEE DETAILS)
9. 9 – 4" YELLOW STRIPING AT 45 DEGREES
10. LOW EMISSION VEHICLE SIGNAGE
11. CONNECT TO EXISTING PAVEMENT, SIDEWALK, CURB, TYP.
12. 4" RAISED PLATFORM (SEE ARCHITECTURAL PLANS FOR DETAIL)
13. ADA SIGNAGE (SEE DETAILS)
14. DEPRESSED CURB (SEE DETAILS)
15. ASPHALT CURB (SEE DETAILS)
16. PROPOSED LIGHT POLE (SEE PHOTOMETRIC PLAN)

PAVING AND CURB LEGEND

- STANDARD DUTY ASPHALT PAVEMENT — SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- HEAVY DUTY CONCRETE PAVEMENT — SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- SIDEWALK — SEE CONSTRUCTION DETAILS FOR SIDEWALK SECTION
- STANDARD PITCH CONCRETE CURB AND GUTTER
- DEPRESSED CONCRETE CURB AND GUTTER
- ACCESSIBLE ROUTE

NOTE: REMAINDER OF LOT TO BE SEALCOATED AND RESTRIPED

FEMA NOTE

PER FLOOD INSURANCE RATE MAP PANEL NO. 26125C0394F, THE SITE IS LOCATED IN ZONE X, OUTSIDE THE 500-YEAR FLOOD AND PROTECTED BY LEVEE FROM 100-YEAR FLOOD.

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SITE PLAN

BANK OF AMERICA
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ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022

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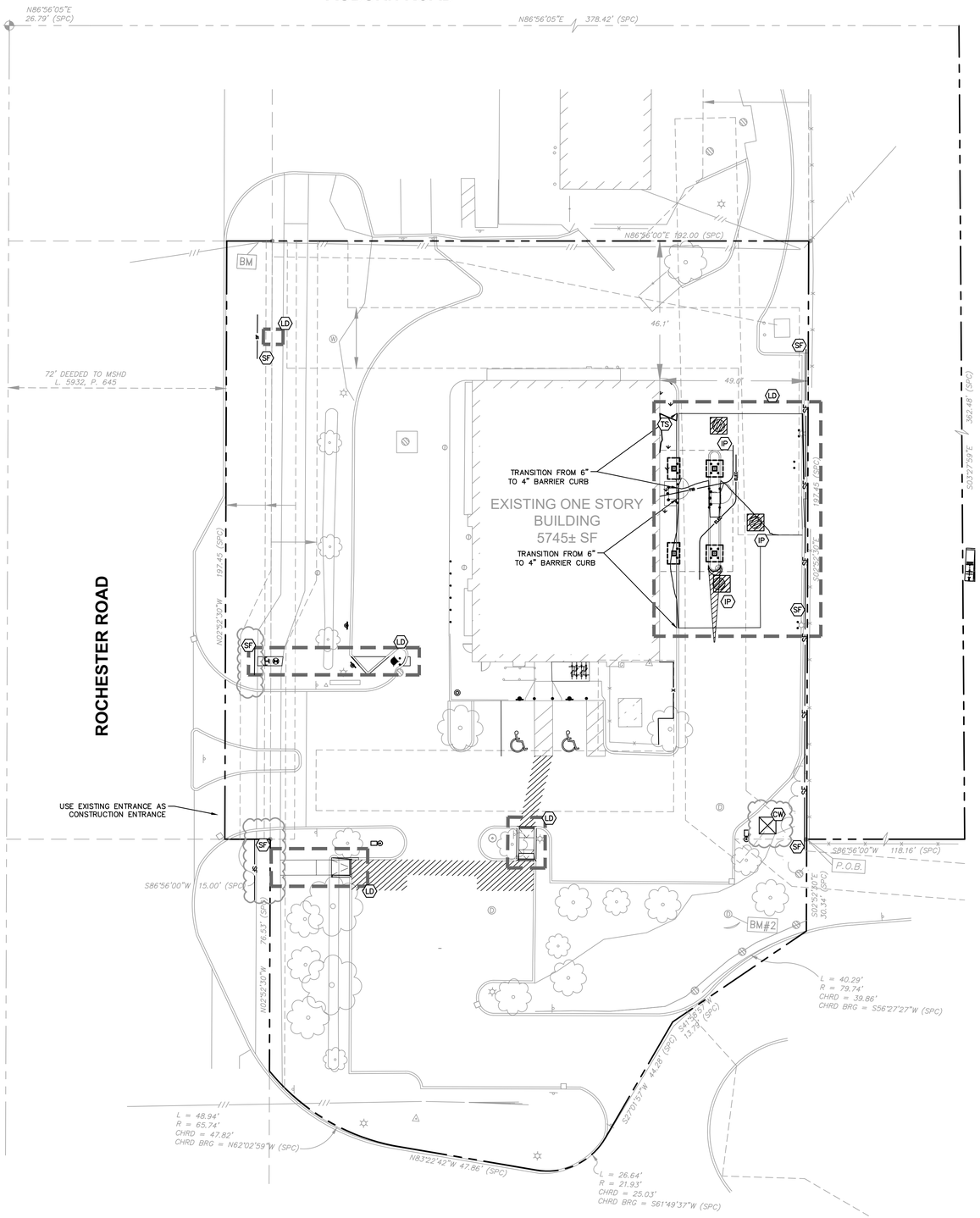

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0 10 20 40

NORTH

EROSION CONTROL NOTES

1. CONSTRUCTION ENTRANCE SHALL BE LOCATED SO AS TO PROVIDE THE LEAST AMOUNT OF DISTURBANCE TO THE FLOW OF TRAFFIC IN AND OUT OF THE SITE. ADDITIONALLY, CONSTRUCTION ENTRANCE SHALL BE LOCATED TO COINCIDE WITH THE PHASING OF THE PAVEMENT REPLACEMENT.
2. POST CONSTRUCTION STORM WATER POLLUTION CONTROL MEASURES INCLUDE STABILIZATION BY PERMANENT PAVING, DRAINAGE SYSTEM STRUCTURE, OR LANDSCAPING.
3. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
4. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.
5. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
6. ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST, OR ARBORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY THE PLANNING AND DEVELOPMENT DEPARTMENT AND THE DRAINAGE UTILITY DEPARTMENT. MINOR CHANGES OR ADDITIONAL CONTROL MEASURES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES AT NO ADDITIONAL COST TO THE OWNER.
7. CONTRACTOR SHALL PLACE EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S150BN OR APPROVED EQUAL) ON ALL SITE AREAS WITH SLOPES GREATER THAN 4:1, AND IN THE BOTTOM AND SIDE SLOPES OF ALL SWALES.
8. PRIOR TO FINAL ACCEPTANCE, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.
9. PERMANENT, FINAL PLANT COVERING OR STRUCTURES SHALL BE INSTALLED PRIOR TO FINAL ACCEPTANCE.
10. ALL CONTROL DEVICES THAT FUNCTION SIMILARLY TO SILT FENCE OR FIBER ROLLS MUST BE REPAIRED, REPLACED OR SUPPLEMENTED WITH EFFECTIVE CONTROLS WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES ONE-THIRD THE HEIGHT OF THE DEVICE. THESE REPAIRS MUST BE MADE WITHIN 24 HOURS OF THE RAINFALL EVENT OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.
11. ALL SEDIMENT DELTAS AND DEPOSITS MUST BE REMOVED FROM SURFACE WATERS, DRAINAGE WAYS, CATCH BASINS AND OTHER DRAINAGE SYSTEMS. ALL AREAS WHERE SEDIMENT REMOVAL RESULTED IN EXPOSED SOIL MUST BE RESTABILIZED. THE REMOVAL AND STABILIZATION MUST TAKE PLACE IMMEDIATELY, BUT NO MORE THAN 7 DAYS AFTER THE RAINFALL EVENT UNLESS PRECLUDED BY LEGAL, REGULATORY OR PHYSICAL ACCESS CONSTRAINTS. ALL REASONABLE EFFORTS MUST BE USED TO OBTAIN ACCESS. ONCE ACCESS IS OBTAINED, REMOVAL AND STABILIZATION MUST TAKE PLACE IMMEDIATELY, BUT NO MORE THAN 7 DAYS LATER. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL APPROPRIATE AUTHORITIES AND RECEIVING THE APPLICABLE PERMITS PRIOR TO CONDUCTING ANY WORK.
12. ACCUMULATIONS OF TRACKED AND DEPOSITED SEDIMENT MUST BE REMOVED FROM OFF-SITE PAVED SURFACES WITHIN 24 HOURS OR SOONER IF REQUIRED. SEDIMENT TRACKING MUST BE MINIMIZED BY THE APPROPRIATE MANAGEMENT PRACTICE, LIKE A DEDICATED SITE EXIT WITH AN AGGREGATE SURFACE OR DESIGNATED OFFSITE PARKING AREA. CONTRACTOR IS RESPONSIBLE FOR STREET SWEEPING AND/OR SCRAPING IF YOUR PRACTICES ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED FROM THE SITE.
13. SURFACE WATERS, DRAINAGE DITCHES AND CONVEYANCE SYSTEMS MUST BE INSPECTED FOR SEDIMENT DEPOSITS.
14. PUMPING SEDIMENT LADEN WATER INTO ANY STORMWATER FACILITY THAT IS NOT DESIGNATED TO BE A SEDIMENT TRAP, DRAINAGEWAY, OR OFFSITE AREA EITHER DIRECTLY OR INDIRECTLY WITHOUT FILTRATION IS PROHIBITED.
15. SOIL STOCKPILES SHALL NOT BE LOCATED IN A DRAINAGEWAY, FLOOD PLAIN AREA OR A DESIGNATED BUFFER, UNLESS OTHERWISE APPROVED, UNDER SPECIFIC CONDITIONS TO BE ESTABLISHED BY THE DIRECTOR OR ADMINISTRATOR.
16. STOCKPILES TO REMAIN IN PLACE FOR MORE THAN THREE DAYS SHALL BE PROVIDED WITH SESC MEASURES. MATERIAL IS TO BE HAULED OFF IMMEDIATELY AND LEGALLY IF NO STOCKPILE IS TO REMAIN IN PLACE.
17. ALL TEMPORARY SESC MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL STABILIZATION IS ACHIEVED.TRAPPED SEDIMENT AND OTHER DISTURBED SOILS RESULTING FROM TEMPORARY MEASURES SHALL BE PROPERLY DISPOSED OF PRIOR TO PERMANENT STABILIZATION.
18. WATER REMOVED FROM TRAPS, BASINS, AND OTHER WATER HOLDING DEPRESSIONS OR EXCAVATIONS MUST FIRST PASS THROUGH A SEDIMENT CONTROL AND/OR FILTRATION DEVICE. WHEN DEWATERING DEVICES ARE USED, DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION.
19. SITE STABILIZATION REQUIREMENTS ARE AS FOLLOWS:
    - 19.1. WHERE THE INITIATION OF STABILIZATION MEASURE BY THE 7TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES ON A PORTION OF THE SITE IS PRECLUDED BY SNOW COVER, STABILIZATION MEASURE SHALL BE INITIATED AS SOON AS PRACTICABLE.
    - 19.2. WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 14 DAYS FROM WHEN ACTIVITIES CEASED, (E.G. THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN 14 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE 7TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED.

EROSION CONTROL SCHEDULE AND SEQUENCING:

I.	*SITE PREP*	*CONSTRUCTION ENTRANCE/EXIT, SILT FENCE PROTECTION, AND TREE PROTECTION SHALL BE INSTALLED PRIOR TO THE INITIATION OF SITE PREP PHASE, AS NEEDED. TEMPORARY EROSION CONTROL MEASURES TO BE INSTALLED UPON COMPLETION OF ROUGH GRADING AND AS NECESSARY THROUGHOUT CONSTRUCTION.*
II.	*UTILITY INSTALLATION*	*ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING UTILITY INSTALLATION. STORM STRUCTURE INLET PROTECTION SHALL BE INSTALLED AS STORM DRAINAGE SYSTEM IS CONSTRUCTED.*
III.	*PAVING*	*ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING PAVING AND THROUGHOUT THE REMAINDER OF THE PROJECT.*
IV.	*FINAL GRADING/SOIL STABILIZATION/ LANDSCAPING*	*ALL TEMPORARY EROSION CONTROL MEASURES TO BE REMOVED AT THE CONCLUSION OF THE PROJECT AS DIRECTED BY THE LOCAL MUNICIPALITY.*

EROSION CONTROL LEGEND

- TS — TEMPORARY SEEDING (SEE EROSION CONTROL DETAILS)
- SF — SILT FENCE (SEE EROSION CONTROL DETAILS)
- IP — INLET PROTECTION (SEE EROSION CONTROL DETAILS)
- CW — CONCRETE WASHOUT (SEE EROSION CONTROL DETAILS)
- LD — LIMITS OF DISTURBANCE
- XXX — EXISTING CONTOURS
- XXX — PROPOSED CONTOURS

CITY FILE #22-039 SECTION #35

NO.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	02/06/23	JWG
2	ISSUED FOR PERMIT	12/19/22	JWG
3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

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SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

ADC Architectural Design Collaborative

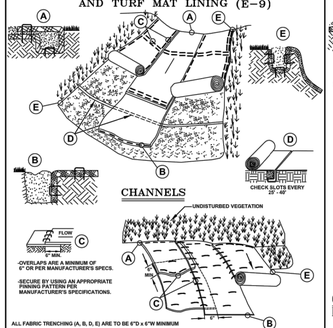
EROSION CONTROL PLAN

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
C4.0

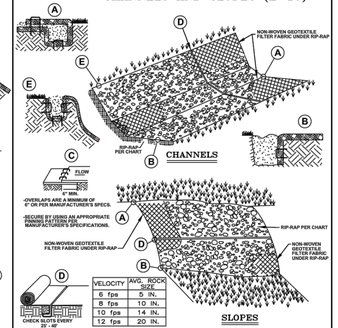
CITY FILE #22-039 SECTION #35

EROSION CONTROL BLANKETS AND TURF MAT LINING (E-9)



DEPENDING ON THE VELOCITY, SLOPE, SOILS, USE PROPER BLANKET OR TURF MAT LINING PER MANUFACTURER'S SPECIFICATIONS TO HANDLE THE SHEER STRESSES OF THE SLOPE/CHANNEL.

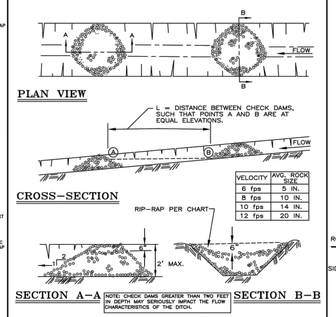
RIP-RAP: CHANNELS AND SLOPES (E-10)



VELOCITY	AVG. ROCK SIZE
6 fps	5 IN.
8 fps	10 IN.
10 fps	14 IN.
12 fps	20 IN.

DEPENDING ON THE VELOCITY, SLOPE AND SOILS, USE THE PROPER SIZED RIP-RAP AND NON-WOVEN GEOTEXTILE FABRIC TO HANDLE THE SHEER STRESS OF THE SLOPE/CHANNEL.

CHECK DAMS (E-3)



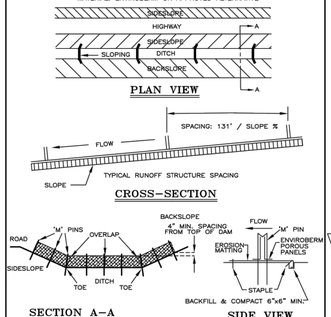
VELOCITY	AVG. ROCK SIZE
6 fps	5 IN.
8 fps	10 IN.
10 fps	14 IN.
12 fps	20 IN.

NOTE: CHECK DAMS GREATER THAN TWO FEET IN DEPTH MAY SERIOUSLY IMPACT THE FLOW CHARACTERISTICS OF THE DITCH.

DEPENDING ON THE VELOCITY, SLOPE AND SOILS, USE THE PROPER SIZED RIP-RAP TO HANDLE THE SHEER STRESS OF THE SLOPE/CHANNEL.

CHECK DAMS ALTERNATIVE "A" (E-3A)

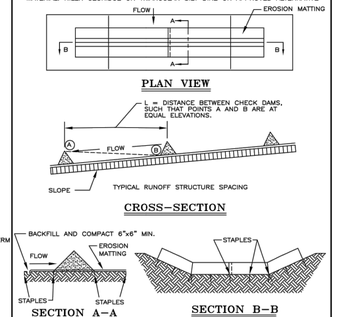
MATERIAL: ENVIROBERM OR APPROVED ALTERNATIVE



FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

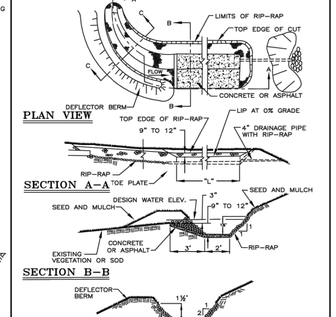
CHECK DAMS ALTERNATIVE "B" (E-3B)

MATERIAL: NILEX GEORIDGE OR TRIANGULAR SILT DIKE OR APPROVED ALTERNATIVE



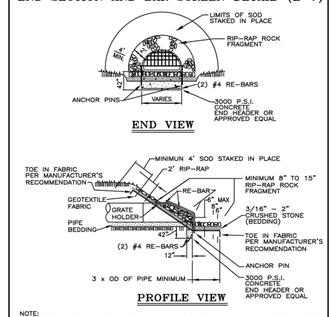
FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

LEVEL SPREADER (E-4)



FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

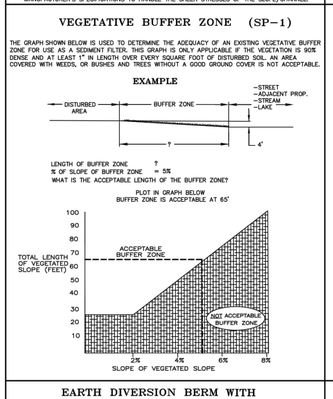
RIP-RAP, END SECTION AND BAR SCREEN DETAIL (E-7)



NOTE:
BAR SCREEN DETAILS PER MDOT ROAD & BRIDGE STANDARD PLANS, STEEL GRATES FOR END SECTIONS. BARS ARE TO BE CUT OFF AT EDGE OF END SECTION.
FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

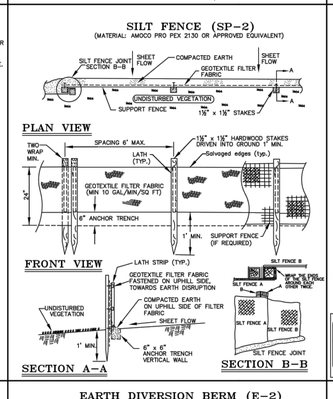
VEGETATIVE BUFFER ZONE (SP-1)

THE GRAPH SHOWN BELOW IS USED TO DETERMINE THE ADEQUACY OF AN EXISTING VEGETATIVE BUFFER ZONE FOR USE AS A SEDIMENT FILTER. THIS GRAPH IS ONLY APPLICABLE IF THE VEGETATION IS 90% DENSE AND AT LEAST 1" IN LENGTH OVER EVERY SQUARE FOOT OF DISTURBED SOIL. AN AREA COVERED WITH WEEDS, OR BUSHES AND TREES WITHOUT A GOOD GROUND COVER IS NOT ACCEPTABLE.



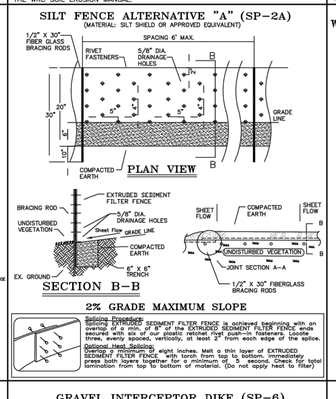
SILT FENCE (SP-2)

(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)



SILT FENCE ALTERNATIVE "A" (SP-2A)

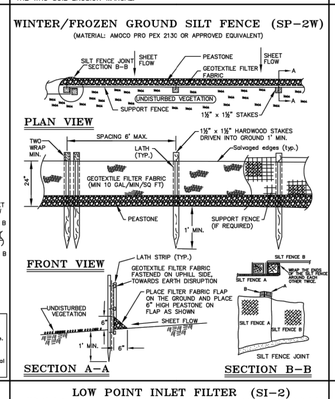
(MATERIAL: SILT SHIELD OR APPROVED EQUIVALENT)



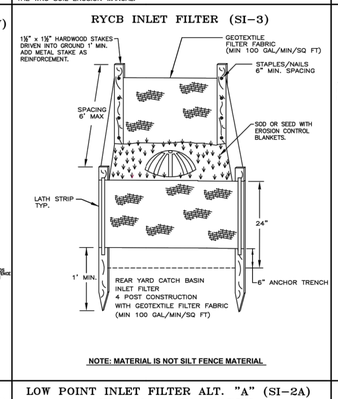
2% GRADE MAXIMUM SLOPE

WINTER/FROZEN GROUND SILT FENCE (SP-2W)

(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)

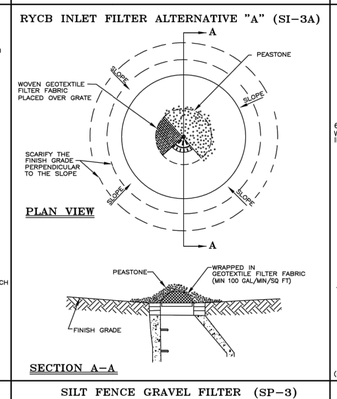


RYCB INLET FILTER (SI-3)



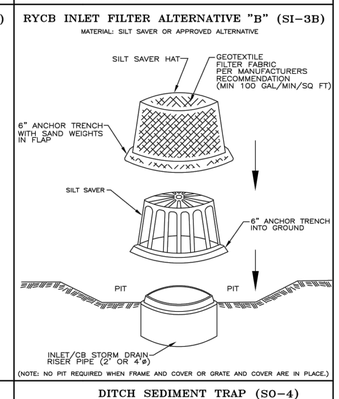
NOTE: MATERIAL IS NOT SILT FENCE MATERIAL

RYCB INLET FILTER ALTERNATIVE "A" (SI-3A)



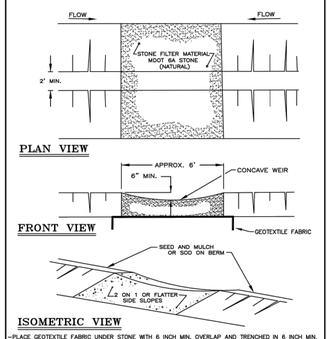
RYCB INLET FILTER ALTERNATIVE "B" (SI-3B)

MATERIAL: SILT SAVER OR APPROVED ALTERNATIVE



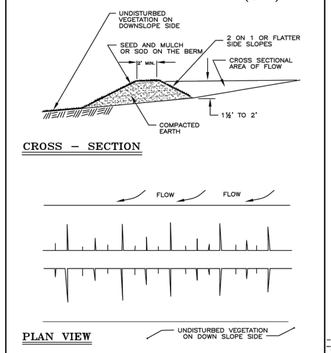
(NOTE: NO PIT REQUIRED WHEN FRAME AND COVER OR GRATE AND COVER ARE IN PLACE.)

EARTH DIVERSION BERM WITH STONE OUTLET FILTER (SP-4)

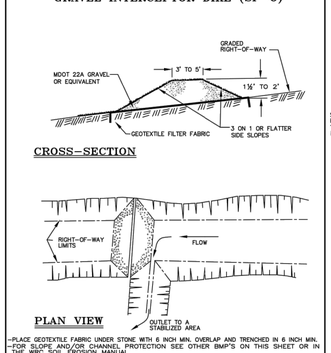


PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.

EARTH DIVERSION BERM (E-2)



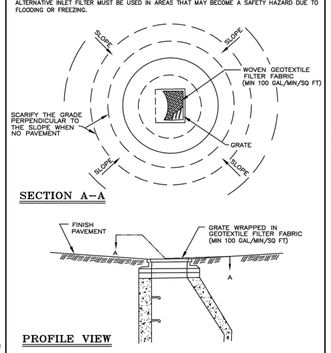
GRAVEL INTERCEPTOR DIKE (SP-6)



PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.
FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

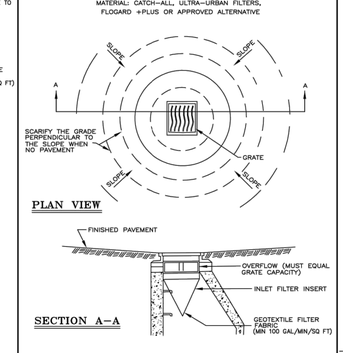
LOW POINT INLET FILTER (SI-2)

ALTERNATIVE INLET FILTER MUST BE USED IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING.

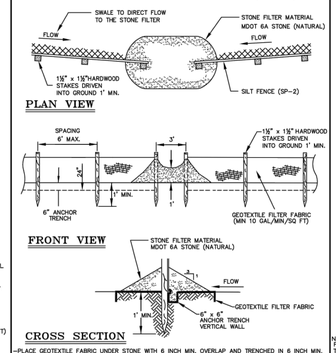


LOW POINT INLET FILTER ALT. "A" (SI-2A)

MATERIAL: CATCH-ALL, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE

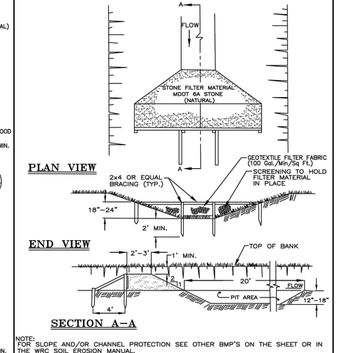


SILT FENCE GRAVEL FILTER (SP-3)



FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

DITCH SEDIMENT TRAP (SO-4)

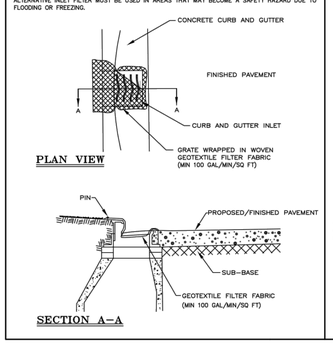


NOTE:
FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THE SHEET OR IN THE WRC SOIL EROSION MANUAL.

CURB AND GUTTER INLET FILTER (SI-4)

(BEFORE AND AFTER PAVING)

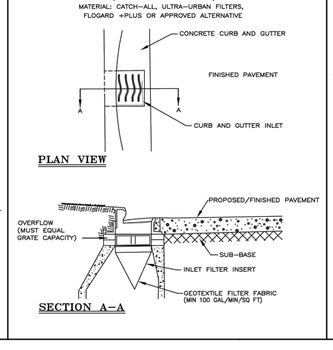
ALTERNATIVE INLET FILTER MUST BE USED IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING.



CURB AND GUTTER INLET FILTER ALTERNATIVE "A" (SI-4A)

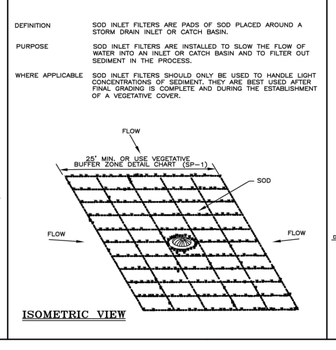
(BEFORE AND AFTER PAVING)

MATERIAL: CATCH-ALL, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE

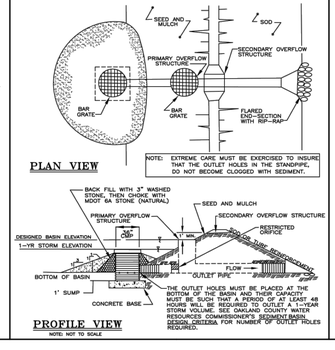


SOD INLET FILTER (SI-1)

DEFINITION	SOD INLET FILTERS ARE PADS OF SOD PLACED AROUND A STORM DRAIN INLET OR CATCH BASIN.
PURPOSE	SOD INLET FILTERS ARE INSTALLED TO SLOW THE FLOW OF WATER INTO AN INLET OR CATCH BASIN AND TO FILTER OUT SEDIMENT IN THE PROCESS.
WHERE APPLICABLE	SOD INLET FILTERS SHOULD ONLY BE USED TO HANDLE LIGHT CONCENTRATIONS OF SEDIMENT. THEY ARE BEST USED AFTER FINAL GRADING IS COMPLETE AND DURING THE ESTABLISHMENT OF A VEGETATIVE COVER.



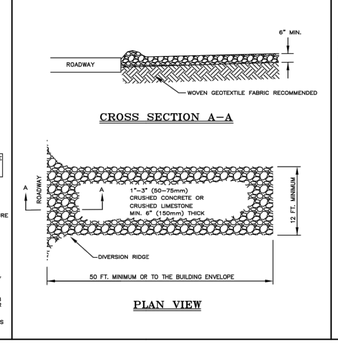
TEMPORARY DETENTION BASIN OUTLET STONE FILTER (SO-2)



NOTE: EXTREME CARE MUST BE EXERCISED TO INSURE THAT THE OUTLET HOLES IN THE STANDPIPE, DO NOT BECOME CLOGGED WITH SEDIMENT.

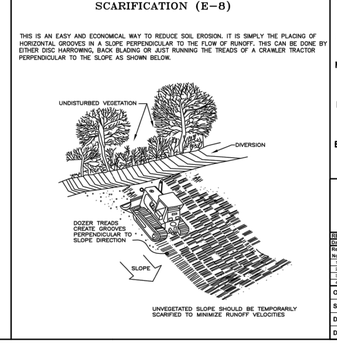
THE OUTLET HOLES MUST BE PLACED AT THE BOTTOM OF THE BASIN AND THEIR CAPACITY MUST BE SUCH THAT A PERIOD OF AT LEAST 48 HOURS WILL BE REQUIRED TO OUTLET A 1-YEAR STORM VOLUME. SEE OAKLAND COUNTY WATER RESOURCES COMMISSIONER'S STANDARDS AND SPECIFICATIONS FOR NUMBER OF OUTLET HOLES REQUIRED.

TEMPORARY STONE ACCESS DRIVE (SP-9)



SURFACE ROUGHENING AND SCARIFICATION (E-8)

THIS IS AN EASY AND ECONOMICAL WAY TO REDUCE SOIL EROSION. IT IS SIMPLY THE PLACING OF HORIZONTAL GROOVES IN A SLOPE PERPENDICULAR TO THE FLOW OF RUNOFF. THIS CAN BE DONE BY EITHER DISC HARROWING, BACK BLADING OR JUST RUNNING THE TREADS OF A CRAWLER TRACTOR PERPENDICULAR TO THE SLOPE AS SHOWN BELOW.



NOTE:

WHILE PERFORMING WORK INVOLVING GROUNDS MAINTENANCE AND/OR THE CONSTRUCTION/MAINTENANCE OF ANY INFRASTRUCTURE, INCLUDING ROADS, WATER MAINS, SANITARY SEWERS, STORM DRAINS AND STORM WATER BEST MANAGEMENT PRACTICES (BMPS), CONTRACTORS SHALL MINIMIZE POLLUTION FROM STORM WATER RUNOFF THAT CAN AFFECT WATER QUALITY RELATED TO WORK ACTIVITIES. POLLUTANTS THAT COULD IMPAIR WATER QUALITY MAY INCLUDE FUEL, GREASE AND OIL, NUTRIENTS, BACTERIA AND PATHOGENS, LITTER AND DEBRIS, AND SOIL EROSION AND SEDIMENTATION. APPLICABLE BMPS SHALL BE IMPLEMENTED BY THE CONTRACTOR TO THE MAXIMUM EXTENT PRACTICABLE TO PROTECT WATER QUALITY AND WILDLIFE HABITAT.

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REVISION BLOCK			
Date Source / Source Date: N/A			
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	EC	8-20-07	ENLARGED DETAIL BOX'S
2	S	2-20-09	STANDARDS COMMITTEE APPROVAL / NAME CHANGES
3	DS	3-25-11	SILT FENCE ALTERNATIVE "A" DETAIL (SP-2A) ADDED
4	DS	4-10-13	STANDARDS COMMITTEE APPROVAL / NOTE CHANGES

ORIG. DATE:	01/01/01
SCALE:	NONE
DESIGNED BY:	WRC
DRAWN BY:	Mapping

WRC WATER RESOURCES COMMISSIONER Jim Nash

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907

SHEET NO.: 1 of 1

CITY FILE #22-039 SECTION #35

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	02/06/23	JWG
2	ISSUED FOR PERMIT	12/19/22	JWG
3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

Kimley»Horn of Michigan, Inc.

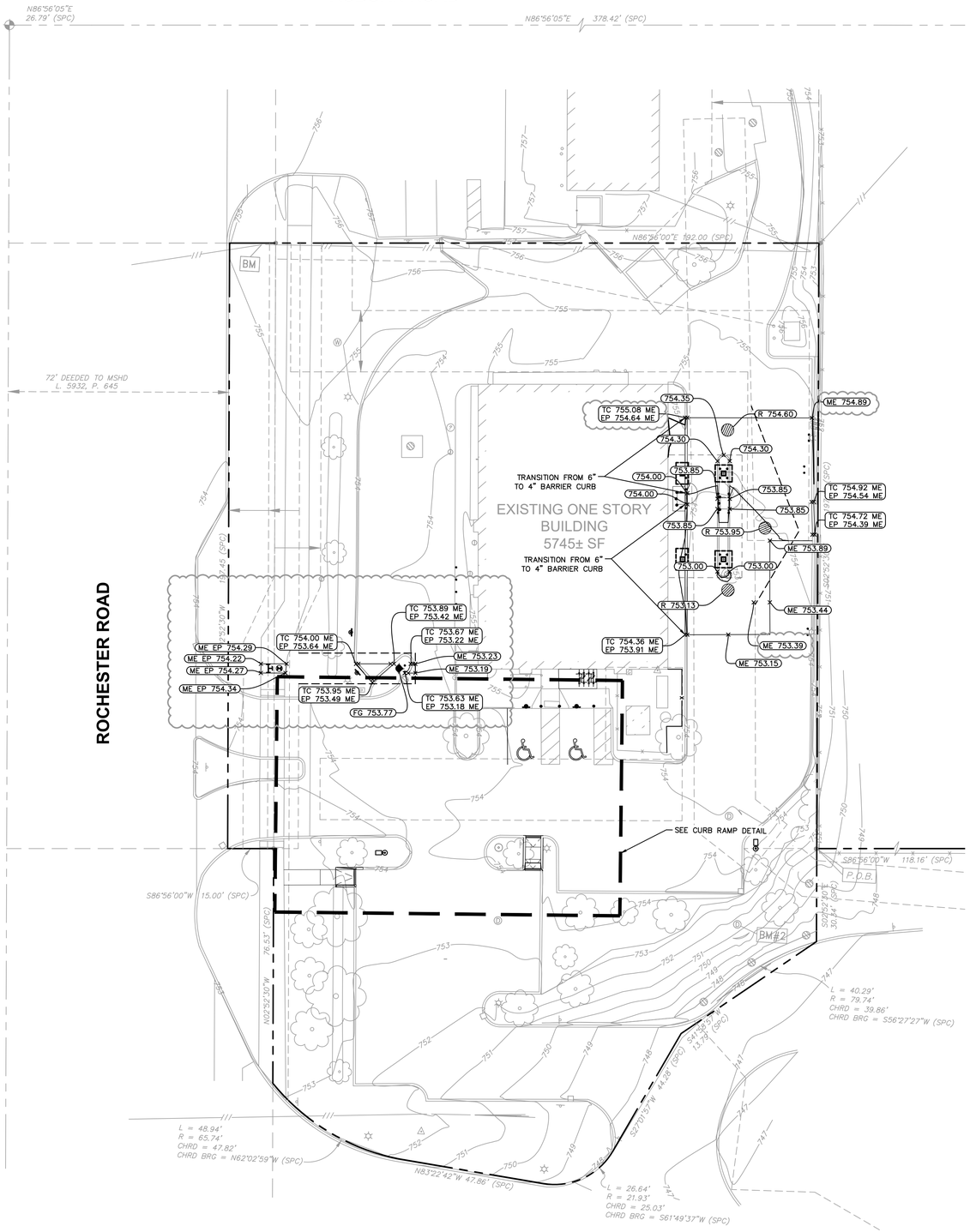
ADC Architectural Design Collaborative

EROSION CONTROL DETAILS

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
C4.1

CITY FILE #22-039 SECTION #35



GRAPHIC SCALE IN FEET
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NORTH

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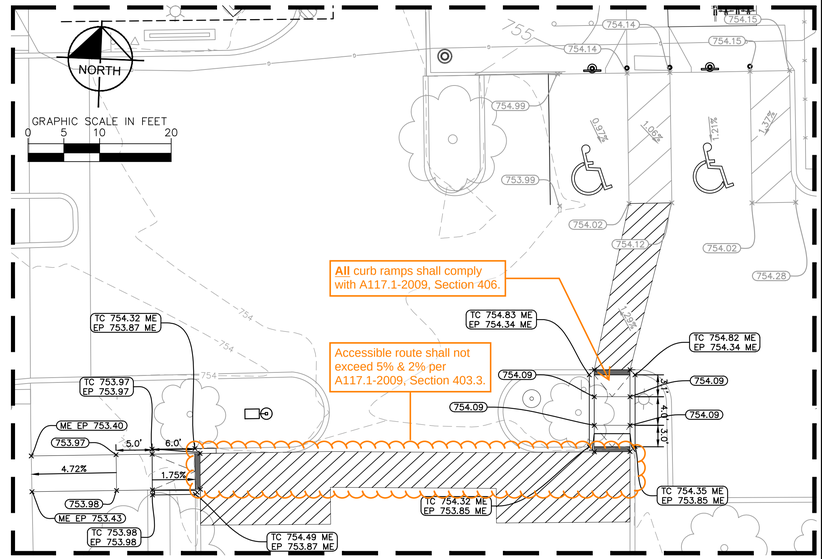
GRADING NOTES

1. CONTRACTOR TO VERIFY ALL EXISTING TOPOGRAPHY AND STRUCTURES ON THE SITE AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING WORK.
2. ALL PAVEMENT SPOT GRADE ELEVATIONS AND RIM ELEVATIONS WITHIN OR ALONG CURB AND GUTTER REFER TO FLOW LINE ELEVATIONS UNLESS OTHERWISE NOTED.
3. ALL ELEVATIONS SHOWN DEPICT FINISHED GRADE UNLESS OTHERWISE NOTED. GENERAL CONTRACTOR TO COORDINATE WITH EXCAVATION, LANDSCAPE AND PAVING SUBCONTRACTORS REGARDING TOPSOIL THICKNESS FOR LANDSCAPE AREAS AND PAVEMENT SECTION THICKNESS FOR PAVED AREAS TO PROPERLY ENSURE ADEQUATE CUT TO ESTABLISH SUBGRADE ELEVATIONS.
4. NO EARTHEN SLOPE SHALL BE GREATER THAN 3:1, UNLESS OTHERWISE NOTED.
5. MAXIMUM SLOPE IN ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL NOT EXCEED 2.0% IN ALL DIRECTIONS.
6. MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL NOT EXCEED 2% ON ALL SIDEWALKS AND ACCESSIBLE ROUTES.
7. WHEN NATURAL FLOW OF DRAINAGE IS AWAY FROM CURB, CONTRACTOR TO INSTALL REVERSE GUTTER PITCH.
8. MATCH EXISTING ELEVATIONS AT THE PROPERTY LIMITS.

GRADING LEGEND

TP = TOP OF PAVEMENT
EP = EDGE OF PAVEMENT
FL = FLOW LINE
TC = TOP OF CURB
ME = MATCH ELEVATION
TF = TOP OF FOUNDATION
R = RIM ELEVATION
TW = TOP OF WALL
FG = FINISHED GRADE
TS = TOP OF STAIRS
BS = BOTTOM OF STAIRS

XXX — PROPOSED CONTOUR
XXX — EXISTING CONTOUR
RIDGE — RIDGE LINE
X.XX% — SLOPE AND FLOW DIRECTION
100-YEAR OVERLAND OVERFLOW ROUTE
DETENTION BASIN 100-YEAR EMERGENCY OVERLAND OVERFLOW ROUTE
PROPOSED SWALE
PROPOSED RETAINING WALL
REVERSED PITCH CURB AND GUTTER
AR — ACCESSIBLE ROUTE
RIP RAP (SEE DETAILS)



ADA CURB RAMP DETAIL
1"=10'

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CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

ADC Architectural Design Collaborative

GRADING PLAN

BANK OF AMERICA
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ORIGINAL ISSUE: 11/18/2022
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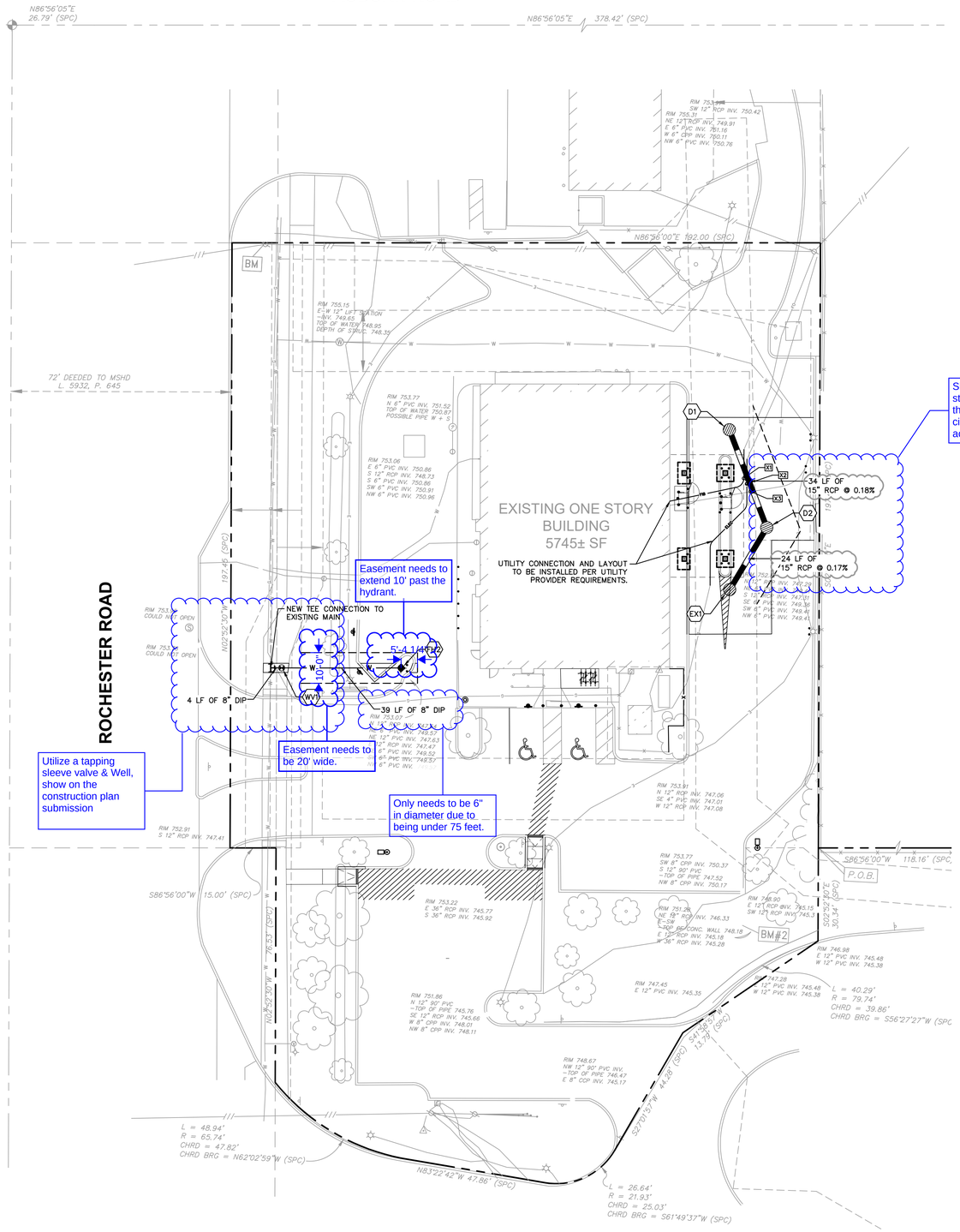
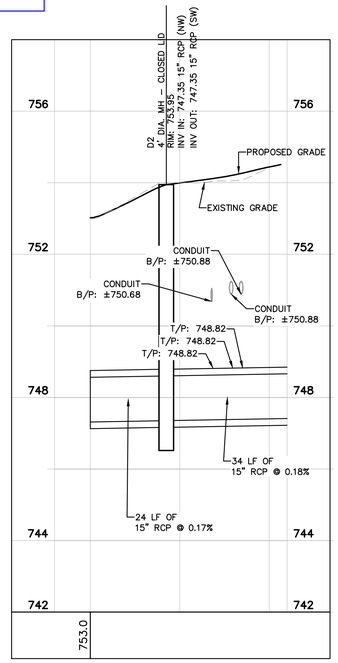
AUBURN ROAD



WATER STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
FH2	FH2 FG ELEV: 753.77
WV1	VALVE FG ELEV: 754.30

STORM STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
D1	4' DIA. MH – CLOSED LID RIM: 754.60 INV IN: 747.41 (N, 12") INV OUT: 747.41 (SE, 15")
D2	4' DIA. MH – CLOSED LID RIM: 753.95 INV IN: 747.35 (NW, 15") INV OUT: 747.35 (SW, 15")
EX1	4' DIA. MH – OPEN LID RIM: 753.13 INV IN: 747.31 (NE, 15") INV OUT: 747.31 (S, 12")



UTILITY CROSSING LEGEND

X1	15" STORM (SEE PROFILE) X" TELECOM
X2	15" STORM (SEE PROFILE) X" ELECTRIC
X3	15" STORM (SEE PROFILE) X" ELECTRIC
X4	8" WATER T/P 748.59 X ELECTRIC

NOTE: WHERE THERE IS LESS THAN 10 FT HORIZONTAL OR 18-IN VERTICAL SEPARATION BETWEEN A SEWER AND WATER MAIN, OR IF WATER MAIN CROSSES UNDER A SEWER, WATER MAIN QUALITY PIPE IS TO BE USED TO CONSTRUCT THE SEWER OR EITHER PIPE IS TO BE ENCASED. THE PROTECTION MUST EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE DISTANCE BETWEEN THE WATER MAIN AND SEWER IS AT LEAST 10 FT. ACCEPTABLE WATER MAIN QUALITY PIPE INCLUDES PVC SDR/WMQ MEETING ASTM D2241 WITH JOINTS MEETING ASTM D3139 OR DUCTILE IRON PIPE. RCP STORM SEWER WITH FLEXIBLE GASKET JOINTS MEETING ASTM C361 OR ASTM C443 IS ALSO ACCEPTABLE AT CROSSINGS.

UTILITY NOTES

1. ALL WATER LINES ≥ 3" SHALL BE DUCTILE IRON PIPE, CLASS 54.
2. ALL SANITARY SEWER LINES SHALL BE PVC MEETING, ASTM D-3034 SDR 26 EXCEPT FOR SANITARY SEWER THAT CROSSES ABOVE WATER MAIN, THIS PIPE SHALL BE AWWA C900 (UNLESS WATER MAIN CASING IS UTILIZED). PROVIDE 42" MINIMUM COVER.
3. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
4. ALL ELECTRIC AND TELEPHONE EXTENSIONS INCLUDING SERVICE LINES SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATED WITH THE DESIGNATED UTILITY COMPANIES.
5. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
6. CONTRACTOR TO CALL "MISS DIG SYSTEM, INC." (1-800-482-7171) TO COORDINATE FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES BEFORE ORDERING MATERIALS OR COMMENCING CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
7. PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OTHER UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM THE ENGINEER AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION. THE ENGINEER AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION. THE MUNICIPALITY SHALL BE NOTIFIED OF ANY AND ALL CHANGES TO THE DESIGN PLANS.
8. CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS IS TO INCLUDE, BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.
9. CONTRACTOR TO AVOID DISRUPTION OF ANY ADJACENT TENANT'S TRAFFIC OPERATIONS DURING INSTALLATION OF UTILITIES.
10. ALL DIMENSIONS ARE TO CENTERLINE OF PIPE OR CENTER OF MANHOLE UNLESS NOTED OTHERWISE.
11. SEE ARCHITECTURAL AND MEP PLANS FOR EXACT UTILITY CONNECTION LOCATIONS AT BUILDING.
12. LIGHT POLES SHOWN FOR COORDINATION PURPOSES ONLY AND DO NOT REPRESENT ACTUAL SIZE. SEE SITE LIGHTING PLANS BY OTHERS FOR MORE INFORMATION.
13. SEE DETAILS FOR LOCATING STORM STRUCTURES WITHIN THE CURB LINE.
14. STORMWATER FACILITIES MUST BE FUNCTIONAL BEFORE BUILDING CONSTRUCTION BEGINS IF REQUIRED BY AUTHORITY HAVING JURISDICTION.

UTILITY LEGEND

- EX. WATER LINE
- EX. HYDRANT
- EX. SANITARY SEWER LINE
- EX. STORM DRAIN LINE
- EX. STORM MANHOLE
- EX. GAS LINE
- EX. UNDERGROUND ELECTRIC LINE
- EX. LIGHT POLE
- PROPOSED UNDERGROUND ELECTRIC LINE
- GAS LINE (BY GAS COMPANY)
- PROPOSED PHONE LINE
- PROPOSED STORM SEWER LINE
- PROPOSED OPEN LID STORM STRUCTURE (PAVEMENT USE NEENAH R-2540) (GRASS USE NEENAH R-4340-B BEEHIVE)
- PROPOSED CLOSED LID STORM STRUCTURE (PAVEMENT USE NEENAH R-1713) (GRASS USE NEENAH R-1786)
- PROPOSED COMBINATION CURB INLET (B6.12 C&G USE NEENAH R-3281-A)
- PROPOSED FLARED END SECTION
- PROPOSED SANITARY SEWER LINE
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM/SANITARY CLEANOUT
- PROPOSED WATER LINE
- PROPOSED VALVE VAULT
- PROPOSED VALVE BOX
- PROPOSED FIRE HYDRANT
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER PAD (FOR REFERENCE ONLY)
- RIP RAP (SEE DETAILS)

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DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039
SECTION #35

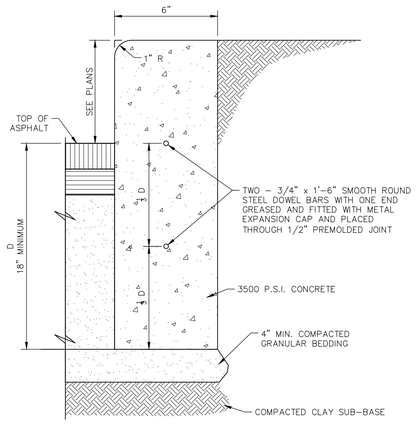
Architectural Design Collaborative

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

UTILITY PLAN

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER C6.0

CITY FILE #22-039 SECTION #35

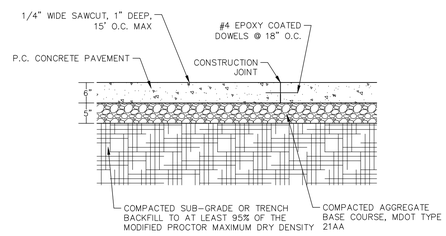


NOTES:

1. USE TWO #5 REBARS FOR 10 L.F. ON EITHER SIDE OF ALL UTILITY TRENCHES.
2. INSTALL EXPANSION JOINTS EVERY 50 FT. AND SAW–CUT CONSTRUCTION JOINTS EVERY 25 FT.

BARRIER CURB

N.T.S.



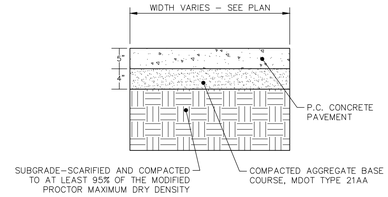
NOTES:

PAVEMENT THICKNESS, SUBGRADE PREP, ETC. DETERMINED FROM GEOTECHNICAL REPORT PERFORMED BY TERRACON DATED 11/23/22. REFER TO REPORT FOR ALL INFORMATION RELATED TO PAVING.

CONCRETE COMPRESSIVE STRENGTH SHALL COMPLY WITH ASTM DESIGNATION C31. MINIMUM 28–DAY STRENGTH = 4000 PSI

HEAVY DUTY CONCRETE PAVEMENT SECTION

N.T.S.

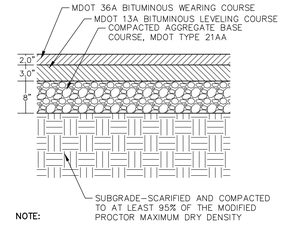


NOTES:

1. PROVIDE 1/2" EXPANSION JOINTS AT 20', MAXIMUM, SPACING AND FILLED WITH PREMOLDED BITUMINOUS EXPANSION JOINT FILLER MATERIAL OR REDWOOD. EXPANSION JOINTS SHALL HAVE #4 DOWELS, LUBRICATED, 18" LONG, AT 12" CENTERS, 6" FROM EDGE.
2. PROVIDE 3/8" GROOVED CONTROL JOINTS AT 5' CENTERS.
3. WELDED WIRE FABRIC (6X6–6X6) SHALL BE INSTALLED THROUGH DRIVEWAYS AT 2" ABOVE SLAB BOTTOM.
4. PROVIDE 1/2" BITUMINOUS EXPANSION JOINT FILLER MATERIAL WHERE WALK ABUTS EXISTING IMPROVEMENTS AND AT ALL CHANGES IN GRADE
5. USE 2–#4 REINFORCING BARS, 10' LONG OVER ALL UTILITY TRENCHES FOR NEW SIDEWALK AND CONNECTIONS TO EXISTING SIDEWALK.
6. AT DRIVE APPROACHES, SIDEWALK PCC AND BASE THICKNESS SHALL MATCH THAT OF THE DRIVE.

CONCRETE SIDEWALK

N.T.S.

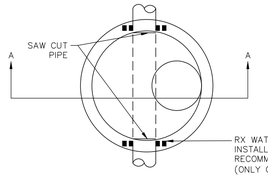


NOTE:

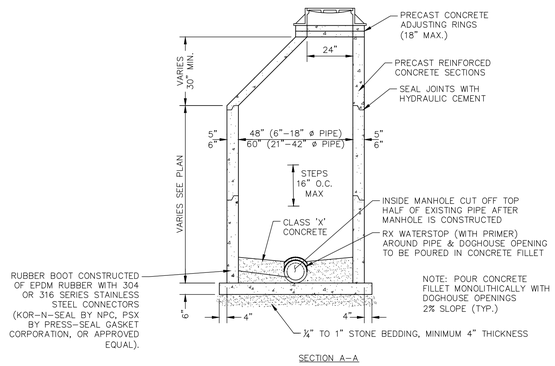
1. PAVEMENT THICKNESS, SUBGRADE PREP, ETC. DETERMINED FROM GEOTECHNICAL REPORT PERFORMED BY TERRACON DATED 11/23/22. REFER TO REPORT FOR ALL INFORMATION RELATED TO PAVING.
2. SEE PAVING NOTES ON THE GENERAL NOTES SHEET FOR PRIME COAT AND TACK–COAT REQUIREMENTS.
3. ASSUMED 50,000 EQUIVALENT SINGLE–AXLE LOAD (ESAL).

STANDARD DUTY ASPHALT PAVEMENT SECTION

N.T.S. 10/19/20



PLAN VIEW



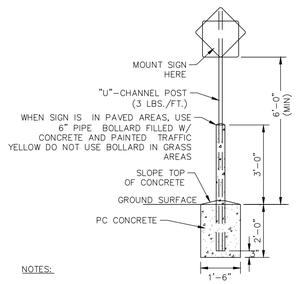
SECTION A–A

NOTES:

1. UNLESS OTHERWISE NOTED, USE THE FOLLOWING FRAMES & GRATES OR EQUALS:
   1.1. IN PAVED AREAS: NEENAH R–1713 OR APPROVED EQUAL W/TYPE B COVER (CLOSED)
   1.2. IN GRASS: NEENAH R–1711 W/TYPE B COVER (CLOSED)
2. EAST JORDAN EQUIVALENTS ALSO MAY BE USED.
3. WATER PROOF WRAP REQUIRED ON ALL JOINTS.
4. DOGHOUSE OPENING IN PRECAST UNIT ARE TO BE 4" MIN. TO 8" MAX. LARGER THAN THE OUTSIDE DIAMETER OF THE EXISTING PIPE.

DOGHOUSE MANHOLE

N.T.S.



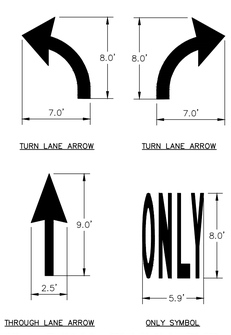
NOTES:

POLE AND SIGN TO BE PROVIDED AND INSTALLED BY GENERAL CONTRACTOR.

ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

STANDARD SIGN BASE

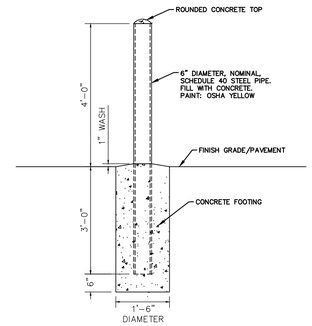
N.T.S.



NOTE: ALL TRAFFIC FLOW ARROWS TO BE PAINTED PER STATE DOT STANDARDS PER DIMENSIONS ABOVE.

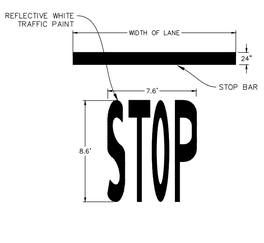
TRAFFIC FLOW ARROW

N.T.S.



6" BOLLARD DETAIL

N.T.S.



STOP BAR

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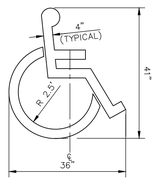
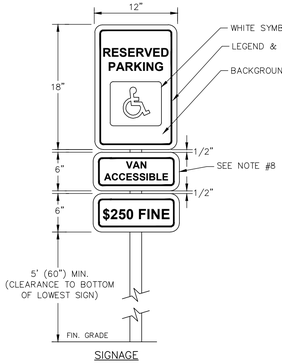


ACCESSIBLE PARKING SYMBOL

N.T.S.



SIGNAGE

NOTES:

1. ALL LETTERS ARE 1" SERIES "C" PER MUTCD.
2. SIGN SHALL HAVE A REFLECTIVE (ENGINEERING GRADE) WHITE BACKGROUND WITH GREEN REFLECTIVE LEGEND AND BORDER.
3. FINE NOTIFICATION SIGN SHALL HAVE A REFLECTIVE (ENGINEERING GRADE) WHITE BACKGROUND WITH GREEN LEGEND AND BORDER.
4. CONTRACTOR SHALL VERIFY FINE AMOUNT.
5. ONE (1) SIGN REQUIRED FOR EACH PARKING SPACE.
6. INSTALLED HEIGHT OF SIGN SHALL BE IN ACCORDANCE WITH SECTION 24–23 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND LOCAL ADA CODE.
7. ALL ACCESSIBLE FEATURES TO BE IN STRICT ACCORDANCE WITH ADA STANDARDS AND LOCAL LAWS.
8. AT LEAST ONE (1) FOR EVERY SIX (6) ACCESSIBLE SPACES MUST BE VAN ACCESSIBLE, WITH A MINIMUM OF ONE (1) VAN ACCESSIBLE SPACE PER SITE.

ACCESSIBLE PARKING SIGNAGE

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CITY FILE #22-039 SECTION #35

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CONSTRUCTION DETAILS

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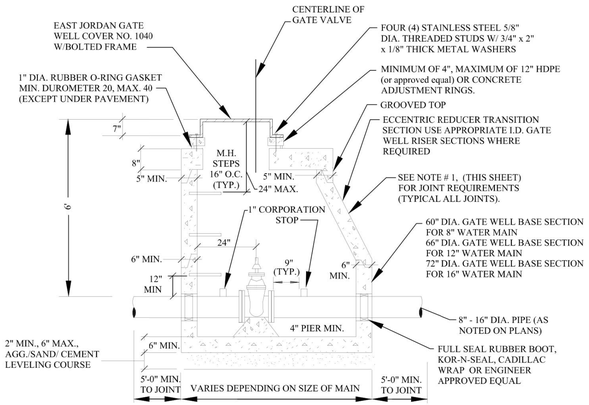
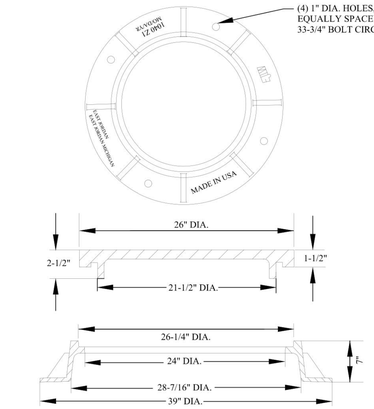


ALL GATE WELLS



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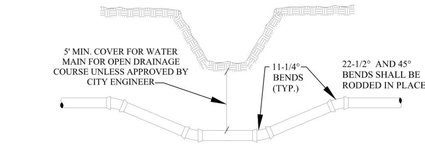
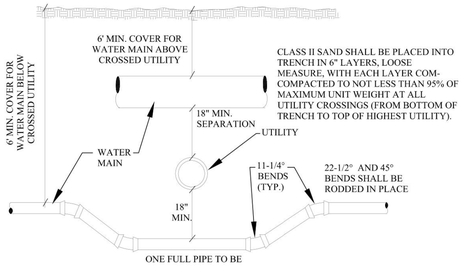
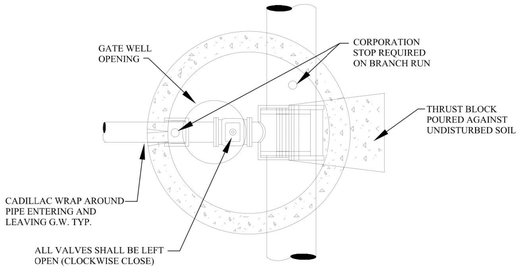


DITCH CROSSING

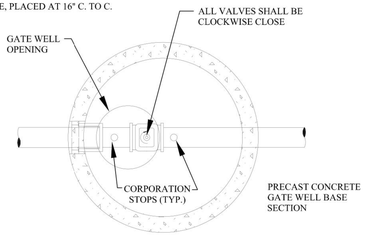


UTILITY CROSSING

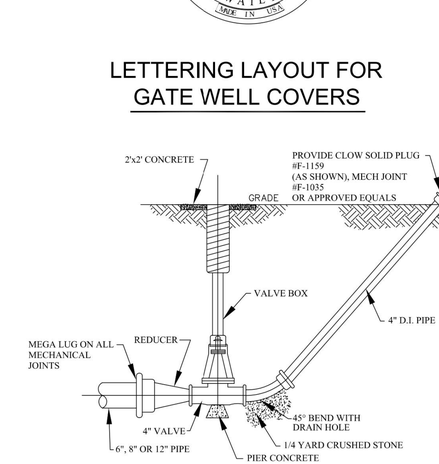


PLAN TAPPING SLEEVE VALVE & WELL (TYPICAL)

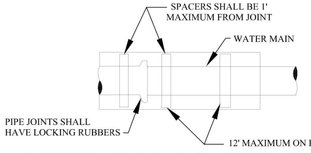
MANHOLE STEPS TO BE PLASTIC COATED STEEL MEETING THE REQUIREMENTS IN ASTM D 2146, TYPE II, GRADE 49108. MA. INDUSTRIES P.S.I. POLYPROPYLENE OR APPROVED EQUAL. STEPS TO BE INSTALLED DURING MANHOLE MANUFACTURE, PLACED AT 16" C. TO C.



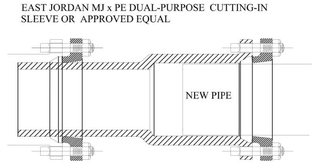
GATE WELL (TYPICAL)



LETTERING LAYOUT FOR GATE WELL COVERS

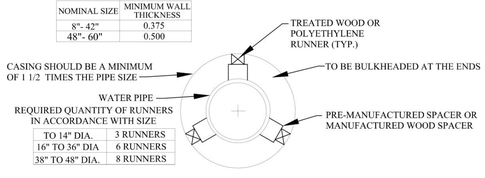


WATER MAIN IN CASING SECTION

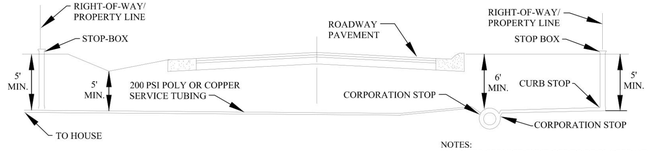


BOTTLE SLEEVE

DETAIL OF 4" BLOWOFF

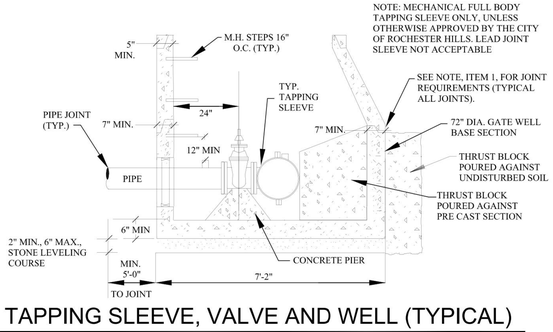


SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING PIPE



TYPICAL PUBLIC ROAD WATER SERVICE CONNECTION

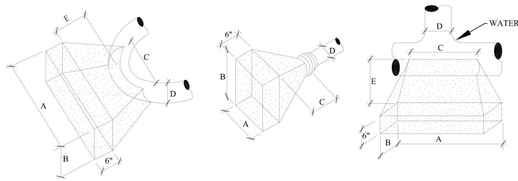
NOTES:
1. WATER SERVICE SHUT-OFF TO BE PLACED AT PROPERTY LINE.
2. LATERAL LOCATION SHALL BE AS REQUESTED BY THE ABUTTING PROPERTY OWNER.
3. ROCHESTER HILLS DPS PERFORMS SERVICE LEAD TAPS UP TO 2" DIAMETER..



TAPPING SLEEVE, VALVE AND WELL (TYPICAL)

NOTES:

1. ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE MANUFACTURED TO CONFORM WITH A.S.T.M. C478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, EXCEPT WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C 443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
2. CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 1(i.e. 2'-0" BETWEEN GATE WELL WALL & CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATE WELL OPENING. FAILURE TO DO SO WILL REQUIRE CONTRACTOR TO CORRECT AT HIS EXPENSE.
3. TAPPING SLEEVES SHALL BE MANUFACTURED BY ROMAC INDUSTRIES; MUELLER; EAST JORDAN; SMITH-BLAIR OR APPROVED EQUAL AND APPROVED BY THE CITY OF ROCHESTER HILLS. FULL BODY SLEEVES MUST BE USED EXCEPT FOR REINFORCED CONCRETE PRESSURE PIPE OR A.C. PIPE.
4. FOR ALL PIPE USE A 1" CORPORATION STOP. NO CORPS SHALL BE USED IN CONCRETE PRESSURE PIPE.
5. RUBBER O-RINGS SHALL NOT BE USED IN PAVEMENT.



FOR 90° BENDS OR SMALLER

D	A	B	C	E MIN.
20"	8'	6.5'	3.5'	2.5'
16"	6'	4'	2.5'	2'
12"	4'	3'	2'	1.75'
10"	3'	3'	2'	1.75'
8"	3'	2'	2'	1.5'
6"	2'	1.5'	2'	1.25'

FOR PLUGS

D	A	B	C MIN.
20"	7'	5'	2.5'
16"	4'-10"	4'-10"	2'
12"	4'-4"	3'	1'-9"
10"	3'	2'	1'-6"
8"	2'-10"	2'-6"	1'-6"
6"	1'-6"	1'-6"	3'

FOR TEES

D	A	B	C	E MIN.
20"	6.5'	4.5'	3.5'	3'
16"	4'-8"	4'-8"	2.5'	2.75'
12"	4'	3'	2.5'	2.5'
10"	3'	2'	2'	2.25'
8"	2'-6"	2'	2'	2.25'
6"	2'	2'	2'	2.25'

THRUST BLOCK DETAILS

REVISIONS	DATE	APPROVED BY CITY COUNCIL, DATE: SEPTEMBER 23, 2019	NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION	*City of Rochester Hills* 1000 Rochester Hills Drive, Rochester Hills, Michigan 48309	WATER MAIN STANDARD DETAILS	NOT TO SCALE	DATE: 1/10/2018
		PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES				SHEET 1 OF 2	REV 04/22/2022

CITY FILE #22-039 SECTION #35

NO.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	02/06/23	JWG
2	ISSUED FOR PERMIT	12/19/22	JWG
3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

Kimley»Horn of Michigan, Inc.

27777 FRANKLIN ROAD, SUITE 2100
SOUTHFIELD, MI 48034
PHONE: 248-645-2500
LIVONIA, MI 48152
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED | DESIGNED BY: EC | DRAWN BY: EC | CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

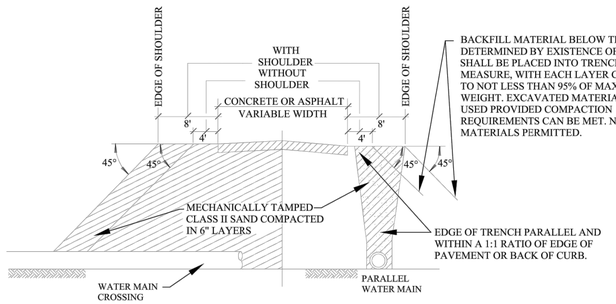
ADC Architectural Design Collaborative

ROCHESTER HILLS WATER DETAILS

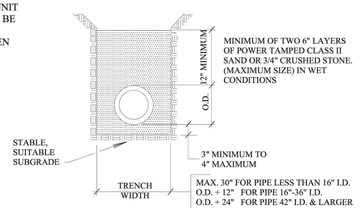
BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
C7.1

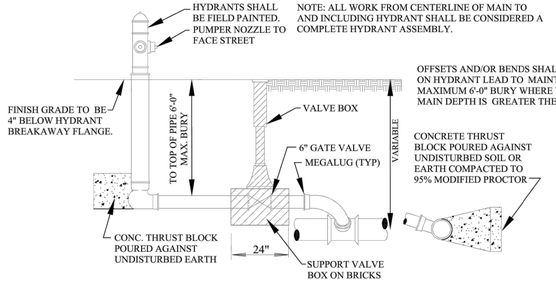
CITY FILE #22-039 SECTION #35



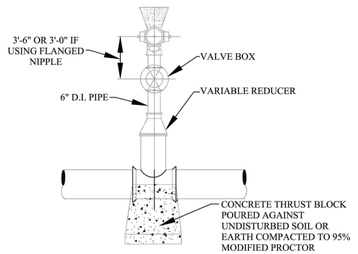
MINIMUM BACKFILL UNDER OR WITHIN PAVEMENT INFLUENCE



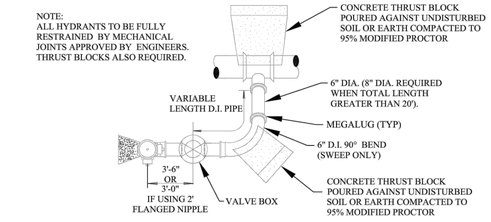
STANDARD BEDDING FOR WATER MAIN



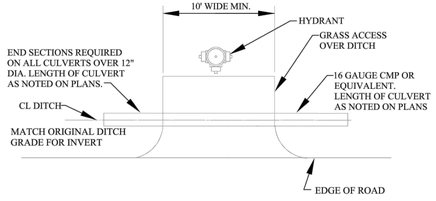
HYDRANT SIDE OUTLET OPTION



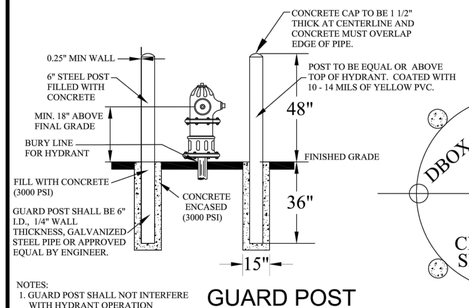
HYDRANT CONNECTION (TYPICAL)



HYDRANT SIDE OUTLET OPTION

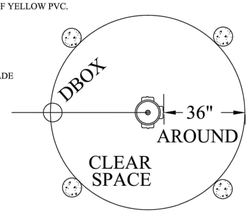


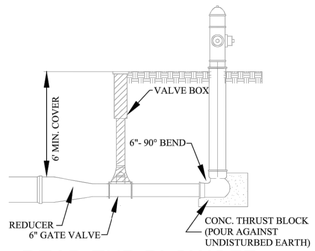
DITCH ENCLOSURE AT HYDRANT/ GATE WELL



NOTES:
1. GUARD POST SHALL NOT INTERFERE WITH HYDRANT OPERATION
2. TO BE INSTALLED IN ALL PAVED AREAS WHERE VEHICLE EQUIPMENT DAMAGE TO HYDRANT IS POSSIBLE.

GUARD POST





DEAD END BLOWOFF CONNECTION

HYDRANT & BLOWOFF DETAILS

GENERAL NOTES

1. ALL CONSTRUCTION PROCEDURES AND MATERIALS SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS.
2. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED BY THE CITY OF ROCHESTER HILLS AND HELD PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR MUST CONTACT MISS DIG (811) AT LEAST THREE WORKING DAYS PRIOR TO THE START OF CONSTRUCTION FOR UNDERGROUND UTILITY LOCATIONS. ALL UTILITIES SHALL BE STAKED BEFORE CONSTRUCTION BEGINS.
4. ALL WATER MAIN EASEMENTS SHALL BE PROVIDED PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM.
5. WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 6 FEET BELOW FINISHED GRADES, INCLUDING OPEN DRAINAGE COURSES.
6. ALL TRENCHES UNDER OR WITHIN A 1:1 RATIO OF EXISTING OR PROPOSED PAVEMENT OR DRIVEWAYS, SHALL BE BACKFILLED WITH COMPACTED CLASS II SAND TO GRADE (95% MAXIMUM UNIT DENSITY).
7. WHERE TWO UTILITIES CROSS, PROVIDE CLASS II BACKFILL MATERIAL IN SIX (6) INCH COMPACTED LAYERS TO TOP OF HIGHEST UTILITY.
8. WHERE WATER MAINS DIP UNDER OTHER UTILITIES, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE CONSTRUCTED WITH 11-1/4° VERTICAL BENDS, 22 1/2° OR 45° BENDS MUST BE RODDED AND PROPERLY ANCHORED.
9. ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE IN ACCORDANCE WITH A.S.T.M. C478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS. WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C 443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
10. CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 1 (2'-0" BETWEEN GATE WELL WALL & CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATE WELL OPENING.
11. ALL CROSS-CONNECTION CONTROL DEVICES SHALL BE INSTALLED AS REQUIRED BY THE ROCHESTER HILLS PLUMBING INSPECTOR AND IN ACCORDANCE WITH THE STANDARDS OF THE OAKLAND COUNTY WATER RESOURCE COMMISSIONER OPERATION AND MAINTENANCE DIVISION AND THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER AND RADIOLOGICAL PROTECTION.
12. ALL WATER SERVICE CONNECTIONS TWO (2) INCHES AND SMALLER SHALL BE MADE BY THE CITY OF ROCHESTER HILLS, DEPARTMENT OF PUBLIC SERVICES AFTER WATER MAIN ACCEPTANCE AND APPLICABLE PERMITS ARE OBTAINED.
13. ALL FITTINGS AND BENDS SHOULD BE BLOCKED IN ACCORDANCE WITH THRUST BLOCK DETAILS, UNLESS ALTERNATE THRUST RESTRAINT SYSTEM, AS INDICATED PLANS AND SPECIFICATIONS, IS APPROVED BY THE CITY OF ROCHESTER HILLS DEPARTMENT OF PUBLIC SERVICE.

WATER MAIN MATERIALS NOTES

1. TEMPORARY CONNECTIONS, WHICH MAY BE MADE FOR CHLORINATING AND FLUSHING PURPOSES, SHALL INCLUDE A TESTABLE DOUBLE CHECK VALVE BACKFLOW PREVENTER WITH CURRENT CERTIFICATION.
2. CORPORATION STOPS USED FOR INSERTION INTO MAINS SHALL BE FORD TYPE B-44. ALL STOPS SHALL HAVE BRONZE CAST BODIES, KEYS, STEM WASHERS AND NUTS. INLET THREADS SHALL CONFORM TO THE LATEST VERSION OF AWWA C800.
3. ALL DUCTILE IRON PIPE (D.I.P.) WATER MAIN SHALL BE DESIGNED FOR 150 PSI MINIMUM WORKING PRESSURE. A ZINC COATING WITH CLASS 52 MAY BE PROPOSED AND IS SUBJECT TO FINAL DECISION FOR APPROVAL BY THE CITY ENGINEER.
4. THE DUCTILE IRON PIPE TO BE FURNISHED AND DELIVERED UNDER THIS SPECIFICATION SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C151 (ANSI A21.5), EXCEPT AS OTHERWISE SPECIFIED HEREIN. PIPE SHALL BE DOUBLE CEMENT-LINED AND SEAL COATED WITH AN APPROVED BITUMINOUS SEAL COAT IN ACCORDANCE WITH AWWA C104 (ANSI A21.4).
5. DUCTILE IRON PIPE SHALL BE CLASS 54 FOR SIZES THREE (3) INCH THROUGH TWENTY (20) INCHES SIZE. TWENTY-FOUR (24) INCH AND LARGER SHALL BE CLASS 55 DUCTILE IRON PIPE.
6. PIPES TWENTY-FOUR (24) INCHES AND LARGER IN NOMINAL DIAMETER SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C100 FOR DUCTILE IRON WATER PIPE.
7. MECHANICAL JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C111 (ANSI A21.11).
8. FLANGE JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C110 (ANSI A21.10).
9. FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON AND SHALL MEET REQUIREMENTS OF AWWA C110 (ANSI A21.10) OR AWWA C153 (ANSI A21.53). DUCTILE IRON FITTINGS SHALL BE RATED FOR 350 PSI, PIPE SIZES TWENTY-FOUR (24) INCH DIAMETER AND LESS, AND 250 PSI FOR PIPE SIZES OVER TWENTY-FOUR (24) INCH DIAMETER. DUCTILE IRON FLANGE FITTINGS SHALL BE RATED FOR 250 PSI FOR ALL PIPE DIAMETERS.
10. ALL DUCTILE IRON PIPE, FITTINGS AND HYDRANTS SHALL BE ENCASED WITH POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH THE REQUIREMENTS OF A.N.S.I./A.W.W.A. STANDARD SPECIFICATION D1248 AND AWWA C105. POLYETHYLENE TUBE MATERIAL SHALL HAVE A THICKNESS OF .008" (8-MILS). ADHESIVE TAPE SHALL BE A GENERAL PURPOSE ADHESIVE TAPE 2" WIDE AND APPROXIMATELY 10-MILS THICK, SUCH AS SCOTCHRAP. NO.50, POLYKEN NO. 900, OR TAPECOAT CT.

VALVE AND SLEEVE NOTES

1. GATE VALVES, SIZES THREE (3) INCH THROUGH SIXTEEN (16) INCH AND TAPPING VALVES SHALL MEET THE CITY OF ROCHESTER HILLS STANDARD AS DETAILED WITH NON-RISING STEM. (EAST JORDAN, AMERICAN FLOW CONTROL, MUELLER)
2. ALL IN LINE GATE VALVES EIGHT (8) INCH AND LARGER SHALL BE IN WELLS. SPECIFICATIONS SHALL INCLUDE THE DIRECTION OF OPERATION OF ALL VALVES (CLOCKWISE CLOSURE). VALVE BOX USE TO BE APPROVED BY ENGINEERING DIVISION.
3. ALL GATE WELL COVERS SHALL BE CITY OF ROCHESTER HILLS STANDARD AS DETAILED.
4. ALL GATE VALVES WITH OPERATING NUTS AT A DISTANCE GREATER THAN FIVE (5) FEET BELOW GROUND SURFACE SHALL BE PROVIDED WITH AN EXTENSION STEM. THE LENGTH OF THE EXTENSION STEM SHALL REACH WITHIN FIVE (5) FEET FROM THE GROUND SURFACE. WHEN AN EXTENSION STEM IS USED, IT SHALL BE HELD IN PLACE BY AN EXTENSION STEM GUIDE SUITABLY FASTENED TO THE WALL OF THE GATE WELL. THE EXTENSION STEM SHALL BE MECHANICALLY ATTACHED TO THE OPERATING NUT. DETAILS OF THE EXTENSION SYSTEM AND THE METHOD OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
5. BUTTERFLY VALVES SHALL BE USED FOR VALVES GREATER THAN 16-INCH DIAMETER AND SHALL BE MODEL 2F11 AS MANUFACTURED BY HENRY PRATT COMPANY OR APPROVED EQUAL.
6. TAPPING VALVES SHALL BE SERIES "A" AS MANUFACTURED BY EAST JORDAN OR RESILIENT SEATED GATE VALVES AS APPROVED BY THE CITY OF ROCHESTER HILLS ENGINEERING SERVICES.
7. TAPPING SLEEVES SHALL BE MANUFACTURED BY ROMAC INDUSTRIES; MUELLER; EAST JORDAN; SMITH-BLAIR OR APPROVED EQUAL AND APPROVED BY THE CITY OF ROCHESTER HILLS. FULL BODY SLEEVES MUST BE USED EXCEPT FOR REINFORCED CONCRETE PRESSURE PIPE OR A.C. PIPE.

HYDRANT REQUIREMENTS

1. ALL HYDRANTS SHALL BE CONSTRUCTED WITH A SIX (6) INCH COMPANION GATE VALVE IN A THREE (3) PIECE, ADJUSTABLE DUCTILE IRON VALVE BOX, WHICH SHALL INCLUDE A FIVE AND ONE-QUARTER (5-1/4) INCH SCREW SHAFT. VALVE BOXES SHALL BE SERIES 6860 AS MANUFACTURED BY TYLER PIPE OR APPROVED EQUAL.
2. ALL HYDRANTS SHALL BE EAST JORDAN NO. 5-BR-250 TRAFFIC MODEL, OR CITY APPROVED EQUAL. SELF-DRAINING HYDRANTS SHALL NOT BE USED. HYDRANTS SHALL HAVE BREAKAWAY FLANGE.
3. ALL HYDRANTS SHALL BE PAINTED RED ABOVE GROUND WITH A FINISH COAT OF RUST-OLEUM SAFETY RED OR APPROVED EQUAL. HYDRANT CAPS SHALL BE PAINTED SAME COLOR AS THE HYDRANT.
4. ALL FIRE HYDRANT JOINTS SHALL BE TOTALLY RESTRAINED BY THE USE OF RESTRAINED JOINT. THRUST BLOCKS ARE ALSO REQUIRED.

ACCEPTANCE OF NEW WATER MAINS

1. PRIOR TO WATER MAIN ACCEPTANCE THE FOLLOWING CONDITIONS MUST BE MET: 1) PRESSURE TESTING AND BACTERIA TESTING MUST BE COMPLETED IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS 2) ALL EASEMENT AND RIGHT-OF-WAY ACQUISITION MUST BE ACCEPTED BY THE CITY OF ROCHESTER HILLS ENGINEERING SERVICES 3) THE CITY OF ROCHESTER HILLS MUST BE PROVIDED WITH THE BILL OF SALE AND 4) ALL MYLAR "AS - BUILT DRAWINGS" MUST BE ACCEPTED AND APPROVED BY THE CITY OF ROCHESTER HILLS, ENGINEERING SERVICES. THE CITY OF ROCHESTER HILLS INSPECTION DIVISION MUST WITNESS THE CONNECTION OF THE WATER MAIN TO THE EXISTING WATER MAIN, AFTER WHICH RESIDENTIAL AND COMMERCIAL TAPS WILL BE ALLOWED.
2. THE CONTRACTOR SHALL NOTIFY THE CITY OF ROCHESTER HILLS, INSPECTION DEPARTMENT (248.841.2510) FOR PRESSURE TESTING, BACTERIOLOGICAL SAMPLING, CONNECTIONS TO EXISTING WATER MAIN AND FINAL FIELD REVIEW. A FORTY-EIGHT (48) HOUR ADVANCE NOTICE IS REQUIRED.
3. THE CONTRACTOR SHALL DISINFECT AND PRESSURE TEST ALL NEW WATER MAIN IN ACCORDANCE WITH ROCHESTER HILLS STANDARDS. THE WATER MAIN SHALL PASS A 150 PSI PRESSURE TEST FOR A TWO (2) HOUR PERIOD. WATER LOSS SHALL NOT EXCEED A RATE OF 11.65 U.S. GALLONS PER INCH DIAMETER PER MILE OF WATER MAIN IN TWENTY-FOUR (24) HOURS.
4. WHERE CONTRACTOR SUPPLIED GAUGES ARE REQUIRED, MINIMUM SIZE SHALL BE 3 1/2" DIAMETER OR LARGER GRADUATED IN ONE (1) OR TWO (2) POUND INCREMENTS FROM 1 TO 160 P.S.I. OR HIGHER AND HAVE CURRENT CERTIFICATION.
5. PRESSURE TESTING AND BACTERIA TESTING MUST BE COMPLETED AND APPROVED PRIOR TO CONNECTING TO THE EXISTING WATER MAIN.

CITY OF ROCHESTER HILLS WATER SYSTEMS AS-BUILT DRAWING SPECIFICATIONS

IN AREAS WHERE WATER SYSTEMS ARE OPERATED AND MAINTAINED BY THE CITY OF ROCHESTER HILLS DEPARTMENT OF PUBLIC SERVICES, FINAL ACCEPTANCE OF THE WATER SYSTEM MUST BE RENDERED BY THE DEPARTMENT OF PUBLIC SERVICES, BEFORE THE SYSTEM CAN BE USED FOR THE SERVICE INTENDED.

ONE ITEM REQUIRED FOR FINAL ACCEPTANCE SHALL BE THE SUBMISSION OF AS-BUILT DRAWINGS TO THE CITY OF ROCHESTER HILLS, DPS, BY THE DESIGN ENGINEER. AS-BUILT DRAWINGS SHALL BE DEFINED AS AND CONTAIN THE FOLLOWING INFORMATION:

1. FINAL AS-BUILT DRAWINGS SHALL BE PROVIDED IN REPRODUCIBLE PDF FORMAT VIA DIGITAL STORAGE MEDIA. XEROX OR ANY HEAT PROCESS REPRODUCTIONS WILL NOT BE ACCEPTED.
2. ALONG WITH THE PDF PLAN SET PROVIDE TWO (2) SETS OF BLACK-LINED DRAWINGS AND THE PLANS ON ELECTRONIC MEDIA IN AUTOCAD FORMAT (LATEST VERSION).
3. EACH AND EVERY SHEET SHALL BE SEALED BY THE DESIGN ENGINEER, ALONG WITH THE FOLLOWING CERTIFICATION STATEMENT ON THE COVER SHEET:

I HEREBY CERTIFY THAT OUR FIRM HAS PREPARED THESE AS-BUILT DRAWINGS OF THE IMPROVEMENTS AS CONSTRUCTED, AND THAT TO THE BEST OF MY KNOWLEDGE THOSE IMPROVEMENTS NOTED AS "AS BUILT" WERE CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS; AND ALSO THAT THE WATER MAIN AND STRUCTURES, AS CONSTRUCTED, LIE WITHIN THE EASEMENT DESCRIPTIONS REQUIRED BY THE CITY OF ROCHESTER HILLS.

(COMPANY NAME)

(ENGINEER'S SIGNATURE)

PROFESSIONAL ENGINEER NO.

ENGINEER SEAL

4. THE MAXIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
5. THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
6. THE SIZE, BRAND AND MODEL NUMBERS OF ALL VALVES AND HYDRANTS INSTALLED SHALL BE INDICATED.
7. A TOTAL AS-BUILT DRAWING QUANTITY LIST SHALL BE INCLUDED, AS WELL AS AN AS-BUILT DRAWING QUANTITY LIST ON EACH INDIVIDUAL SHEET.
8. THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
9. THE OFFSET OF THE WATER MAIN FROM PROPERTY LINES SHALL BE INDICATED.
10. ALL GATE VALVE WELLS, HYDRANTS AND ALL WATER SYSTEM APPURTENANCES SHALL BE LOCATED FROM TWO FIXED OBJECTS (MANHOLES, BUILDING CORNERS ECT.).
11. ALL UNDERGROUND APPURTENANCES, SUCH AS GATE VALVE WELLS, METER PITS, PRESSURE REDUCING VALVE PITS, ETC. SHALL BE LOCATED FROM THE NEAREST HYDRANT THAT IS CONNECTED TO THE SAME WATER MAIN AS THE APPURTENANCE.
12. THE LOCATION AND SIZE OF EVERY RESTRAINED JOINT SHALL BE NOTED.
13. THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE VERTICAL SEPARATION, IS LESS THAN 18" SHALL BE NOTED.
14. AS-BUILT SHALL BE PREPARED IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS AS-BUILT GUIDELINES AS PROVIDED AT THE PRE-CONSTRUCTION MEETING.

ROCHESTER HILLS MICHIGAN

REVISIONS	DATE

APPROVED BY CITY COUNCIL, DATE: SEPTEMBER 23, 2019

PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES

NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION

City of Rochester Hills

1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

WATER MAIN STANDARD DETAILS

NOT TO SCALE | DATE: 1/10/2019

SHEET 2 OF 2

CITY FILE #22-039 SECTION #35

NO.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	02/06/23	JWG
2	ISSUED FOR PERMIT	12/19/22	JWG
3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

Kimley»Horn of Michigan, Inc.
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32900 W. 8 MILE ROAD
LIVONIA, MI 48152
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WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

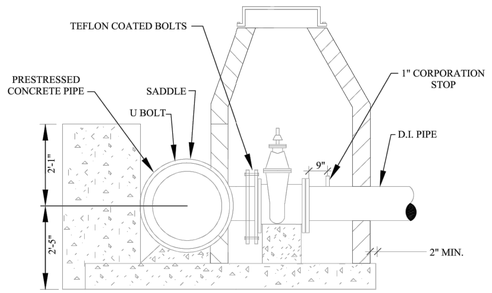
ADC Architectural Design Collaborative

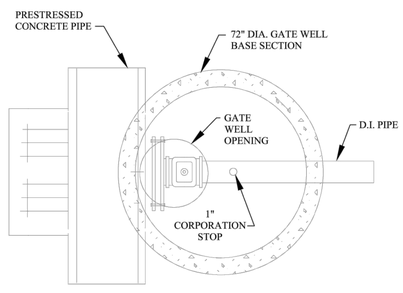
ROCHESTER HILLS WATER DETAILS

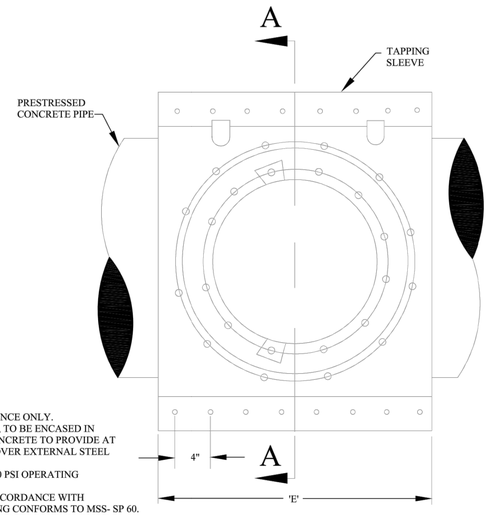
BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
C7.2

CITY FILE #22-039 SECTION #35

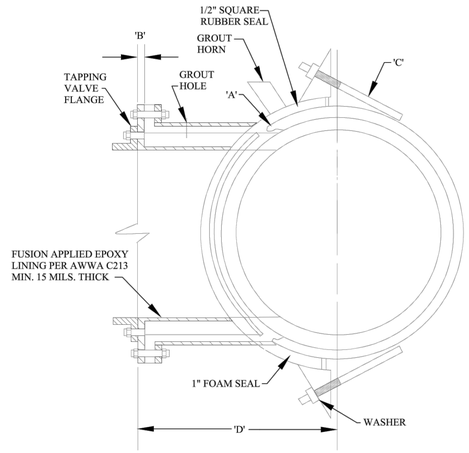






NOTES:
1) THESE DIMENSIONS ARE FOR REFERENCE ONLY.
2) ENTIRE SADDLE, INCLUDING STRAPS, TO BE ENCASED IN PORTLAND CEMENT MORTAR OR CONCRETE TO PROVIDE AT LEAST ONE (1) INCH OF THICKNESS OVER EXTERNAL STEEL SURFACES PRIOR TO BACKFILLING.
3) TAP SADDLES ARE DESIGNED FOR 150 PSI OPERATING PRESSURE.
4) FLANGE DRILLED AND TAPPED IN ACCORDANCE WITH AWWA C207 CLASS D, CENTERING RING CONFORMS TO MSS- SP 60.
5) GROUT SHALL SET A MINIMUM OF TWENTY-FOUR (24) HOURS PRIOR TO PRESSURE TESTING.

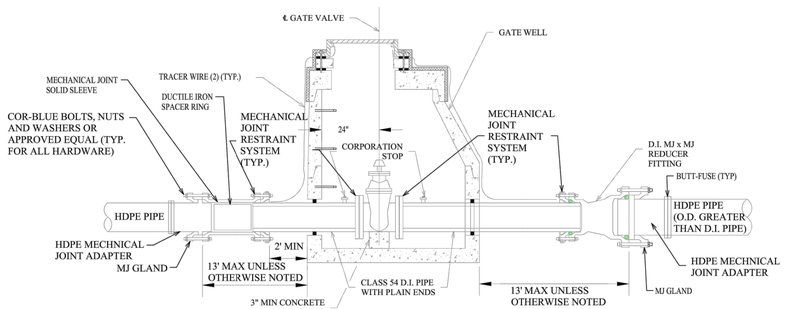
CONCRETE PRESSURE TAP VALVE & WELL ASSEMBLY W/ CONCRETE ENCASEMENT



SECTION A-A

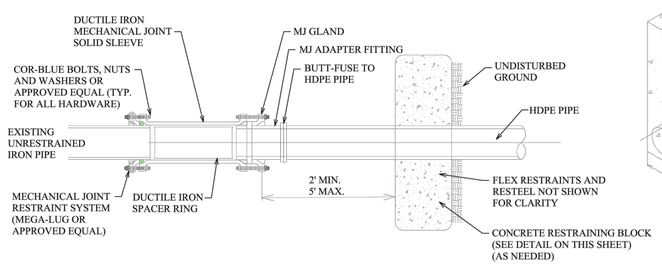
CONCRETE TAPPING SLEEVE DETAILS

PIPE SIZE X TAP SIZE	A	B	C	D	E
16" X 4"	1/4"	7/8"	6	14-1/16 "	24"
16" X 6"	1/4"	1-1/8"	6	14-5/16 "	24"
16" X 8"	1/4"	1-1/8"	6	14-5/16 "	24"
16" X 10"	1/4"	1-3/8"	7	14-9/16 "	28"
16" X 12"	1/4"	1-3/8"	8	14-9/16 "	32"
20" X 4"	1/4"	7/8"	6	16-1/2 "	24"
20" X 6"	1/4"	1-1/8"	6	16-1/2 "	24"
20" X 8"	1/4"	1-1/8"	6	16-1/2 "	24"
20" X 10"	1/4"	1-3/8"	7	17"	28"
20" X 12"	1/4"	1-3/8"	8	17"	32"
24" X 4"	1/4"	7/8"	6	18-3/4"	24"
24" X 6"	1/4"	1-1/8"	6	19"	24"
24" X 8"	1/4"	1-1/8"	6	19"	24"
24" X 10"	1/4"	1-3/8"	7	19-1/4"	28"
24" X 12"	1/4"	1-3/8"	8	19-1/4"	32"
30" X 4"	1/4"	7/8"	6	22-1/8"	24"
30" X 6"	1/4"	1-1/8"	6	22-3/8"	24"
30" X 8"	1/4"	1-1/8"	6	22-3/8"	24"
30" X 10"	1/4"	1-3/8"	7	22-5/8"	28"
30" X 12"	1/4"	1-3/8"	8	22-5/8"	32"
36" X 4"	1/4"	7/8"	6	25-1/2 "	24"
36" X 6"	1/4"	1-1/8"	6	25-3/4 "	24"
36" X 8"	1/4"	1-1/8"	7	25-3/4 "	28"
36" X 10"	1/4"	1-3/8"	8	26"	32"
36" X 12"	1/4"	1-3/8"	9	26"	36"
42" X 4"	1/4"	7/8"	6	28-7/8"	24"
42" X 6"	1/4"	1-1/8"	7	29-1/8"	28"
42" X 8"	1/4"	1-1/8"	8	29-1/8"	32"
42" X 10"	3/8"	1-3/8"	9	29-3/8"	36"
42" X 12"	3/8"	1-3/8"	10	29-3/8"	40"
48" X 4"	3/8"	7/8"	7	32-1/4"	28"
48" X 6"	3/8"	1-1/8"	7	32-1/2"	28"
48" X 8"	3/8"	1-1/8"	7	32-1/2"	28"
48" X 10"	3/8"	1-3/8"	7	32-3/4"	28"
48" X 12"	3/8"	1-3/8"	9	32-3/4"	36"

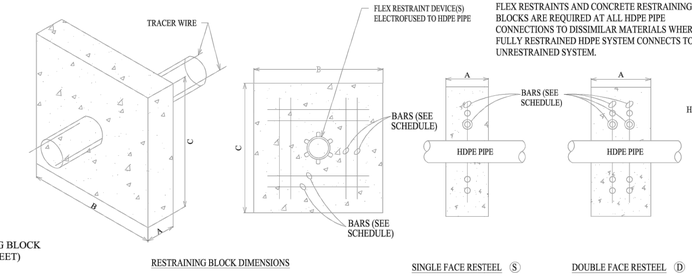


TYPICAL HDPE CONNECTION TO GATE VALVE

NOTES:
1. WHERE GATE VALVE IS IN LINE WITH THE HDPE WATER MAIN, INSTALL D.I. PIPE THROUGH GATE WELL MAKING CONNECTION TO HDPE PIPE OUTSIDE OF GATE WELL AS SHOWN.
2. TRACER WIRES SHALL BE INSTALLED ALONG THE OUTSIDE OF THE GATE WELL AND BENEATH THE FRAME AND COVER.

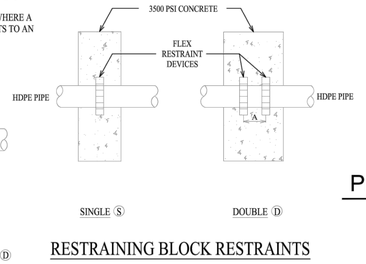


HDPE TO DUCTILE IRON TRANSITIION

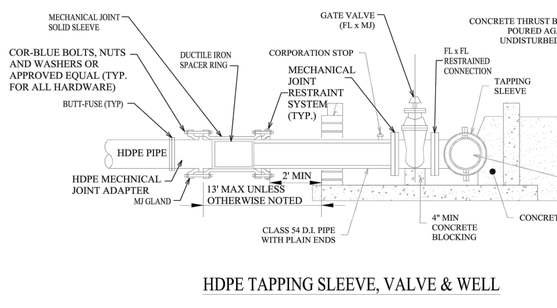


NOTE:
FLEX RESTRAINTS AND CONCRETE RESTRAINING BLOCKS ARE REQUIRED AT ALL HDPE PIPE CONNECTIONS TO DISSIMILAR MATERIALS WHERE A FULLY RESTRAINED HDPE SYSTEM CONNECTS TO AN UNRESTRAINED SYSTEM.

RESTRAINING BLOCK RESTEEL

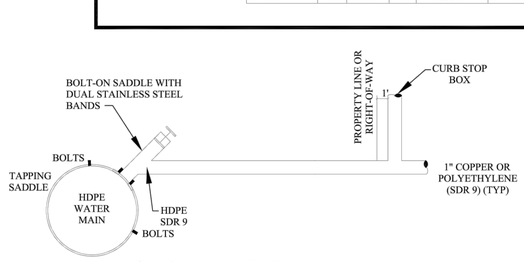


RESTRAINING BLOCK RESTRAINTS



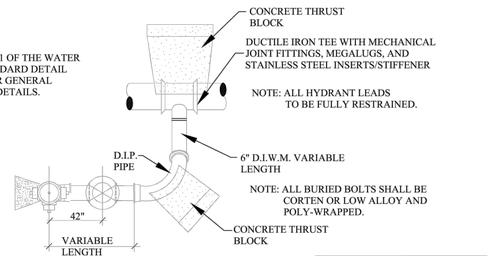
HDPE TAPPING SLEEVE, VALVE & WELL

NOTES:
1. SEE SHEET 1 OF THE WATER MAIN STANDARD DETAIL SHEETS FOR GENERAL TAPPING SLEEVE VALVE AND WELL DETAILS.
2. TAPPING SLEEVES FOR HDPE PIPE REQUIRE AN OUTLET SEAL GASKET AND SPRING WASHERS IN ADDITION TO THE REQUIREMENTS DETAILED IN SHEET 2 (JCM 452, ROMAC SSTH OR APPROVE EQUAL).



HOUSE LEAD DETAIL HDPE TO COPPER OR POLYETHYLENE (SDR 9)

NOTE: SEE SHEET 1 OF THE WATER MAIN STANDARD DETAIL SHEETS FOR GENERAL HYDRANT DETAILS.



PLAN HYDRANT SIDE OUTLET

DETAILS FOR HIGH DENSITY POLYETHYLENE PIPE (HDPE)

REVISIONS	DATE

APPROVED BY
CITY COUNCIL, DATE: SEPTEMBER 23, 2019

PREPARED BY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC SERVICES

NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION

City of Rochester Hills
1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

WATER MAIN
SPECIAL DETAILS

NOT TO SCALE	DATE: 1/10/2019
SHEET 1 OF 1	REV 12/10/2021

CITY FILE #22-039 SECTION #35

NO.	REVISIONS	DATE	BY
3	REVISED PER CITY COMMENTS	02/06/23	JWG
2	ISSUED FOR PERMIT	12/19/22	JWG
1	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

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SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

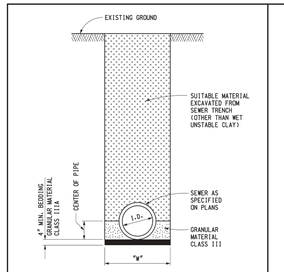
ADC Architectural Design Collaborative

ROCHESTER HILLS WATER DETAILS

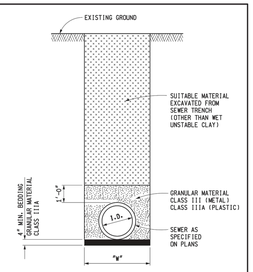
BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER C7.3

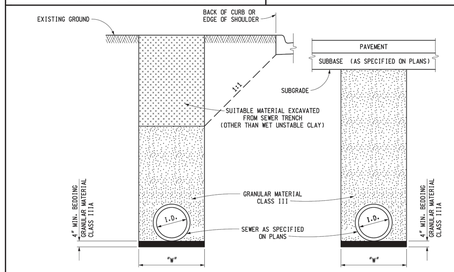
CITY FILE #22-039 SECTION #35



SEWER NOT UNDER ROADBED
CONCRETE
NOTE: FOR "W" SEE NOTES ON SHEET 5
A1

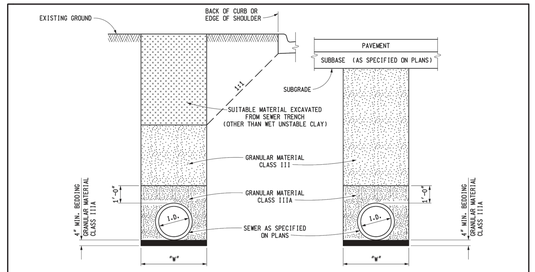


SEWER NOT UNDER ROADBED
METAL & PLASTIC
NOTE: FOR "W" SEE NOTES ON SHEET 5
A2

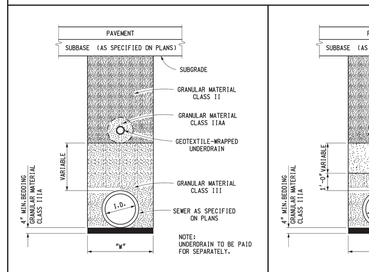


SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
CONCRETE & METAL PIPE
B1

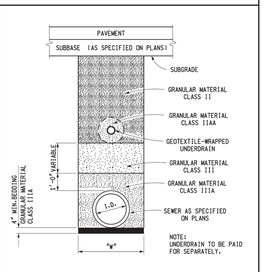
PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: W.K.P.	DEPARTMENT DIRECTOR Kirk T. Steudle APPROVED BY: Kimberly Avery — DIRECTOR, BUREAU OF FIELD SERVICES APPROVED BY: Bradley C. Wieferich — DIRECTOR, BUREAU OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR UTILITY TRENCHES	
		7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 1 OF 5



SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
PLASTIC PIPE
B2

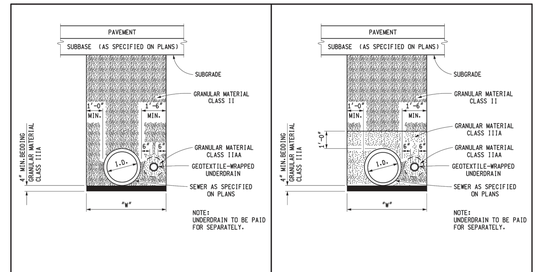


SEWER WITH UNDERDRAIN UNDER ROADBED
CONCRETE & METAL PIPE
C1



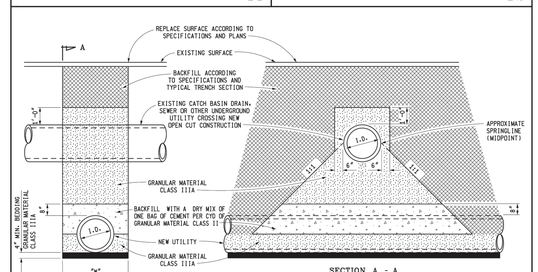
SEWER WITH UNDERDRAIN UNDER ROADBED
PLASTIC PIPE
C2

	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR UTILITY TRENCHES		
	7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 2 OF 5



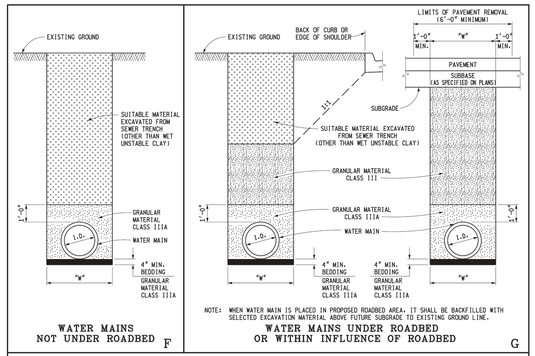
SEWER WITH UNDERDRAIN UNDER ROADBED
CONCRETE & METAL PIPE
(FOR SHALLOW SEWERS)
D1

SEWER WITH UNDERDRAIN UNDER ROADBED
PLASTIC PIPE
(FOR SHALLOW SEWERS)
D2



TYPICAL DETAIL AT CROSSING UNDER EXISTING UTILITIES
PAYMENT FOR THIS TRENCH DETAIL WILL BE INCLUDED WITH THE ADJACENT TRENCH DETAILS
E

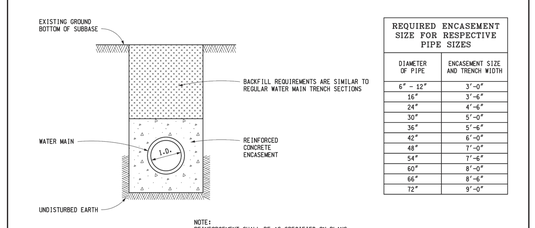
	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR UTILITY TRENCHES		
	7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 3 OF 5



WATER MAINS
NOT UNDER ROADBED
F

NOTE: WHEN WATER MAIN IS PLACED IN PROPOSED ROADBED AREA, IT SHALL BE BACKFILLED WITH SELECTED EXCAVATION MATERIAL ABOVE FUTURE SUBGRADE TO EXISTING GROUND LINE.

WATER MAINS UNDER ROADBED
OR WITHIN INFLUENCE OF ROADBED
G



NOTE:
REINFORCEMENT SHALL BE AS SPECIFIED ON PLANS.

WATER MAINS IN REINFORCED CONCRETE ENCASEMENT
H

REQUIRED ENCASEMENT SIZE FOR RESPECTIVE PIPE SIZES	
DIAMETER OF PIPE	ENCASEMENT SIZE AND TRENCH WIDTH
6" – 12"	3'-0"
16"	3'-6"
24"	4'-6"
30"	5'-0"
36"	5'-6"
42"	6'-0"
48"	7'-0"
54"	7'-6"
60"	8'-0"
66"	8'-6"
72"	9'-0"

	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR UTILITY TRENCHES		
	7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 4 OF 5

NOTES:

BACKFILLING SHALL BE ACCORDING TO THE STANDARD SPECIFICATION.

SUFFICIENT TRENCH WIDTH SHALL BE PROVIDED TO ALLOW FREE WORKING SPACE AND TO PERMIT COMPACTING THE BACKFILL AROUND THE PIPE.

THE FOLLOWING ARE MINIMUM TRENCH WIDTHS:

I.D. PIPE SIZE (INCHES) "W"	LESS THAN 18	21	24	30	36
TRENCH WIDTH (FEET)	3.0	3.5	4.0	5.0	6.0

I.D. PIPE SIZE (INCHES) "W"	42	48	54	60	66	72
TRENCH WIDTH (FEET)	7.0	8.0	9.5	10.0	10.5	11.0

I.D. PIPE SIZE (INCHES) "W"	78	84	90	96	102	108
TRENCH WIDTH (FEET)	11.5	12.0	12.5	13.0	13.5	14.0

ESTIMATED PAVEMENT REMOVAL WIDTH IS TO BE TRENCH WIDTH "W" PLUS 1'-0" EACH SIDE OF THE TRENCH (6'-0" MINIMUM).

	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR UTILITY TRENCHES		
	7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 5 OF 5

CITY FILE #22-039 SECTION #35

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2	ISSUED FOR PERMIT	12/19/22	JWG
3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

Kimley»Horn of Michigan, Inc.

27777 FRANKLIN ROAD, SUITE 1600
SOUTHFIELD, MI 48034-8214
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SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

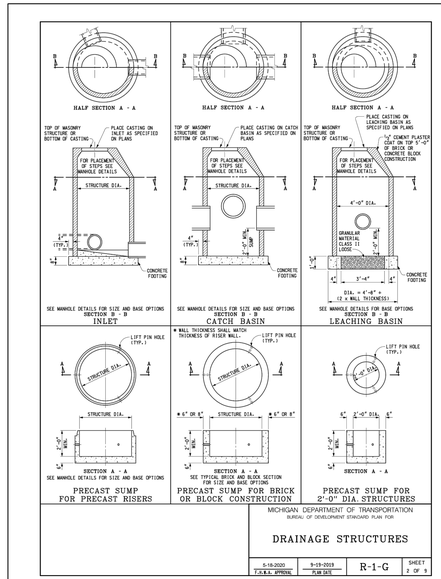
ADC Architectural Design Collaborative

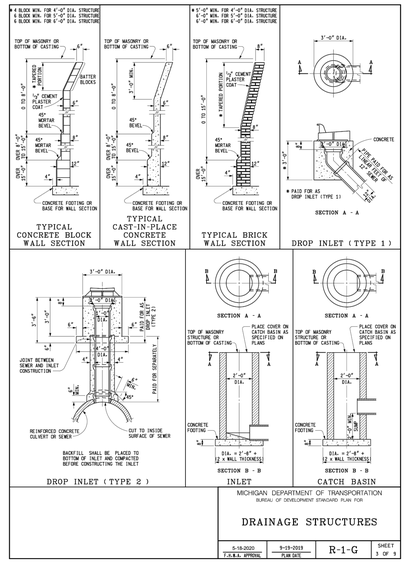
CONSTRUCTION DETAILS

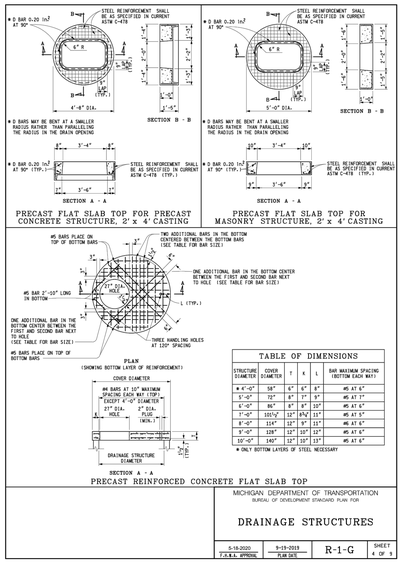
BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

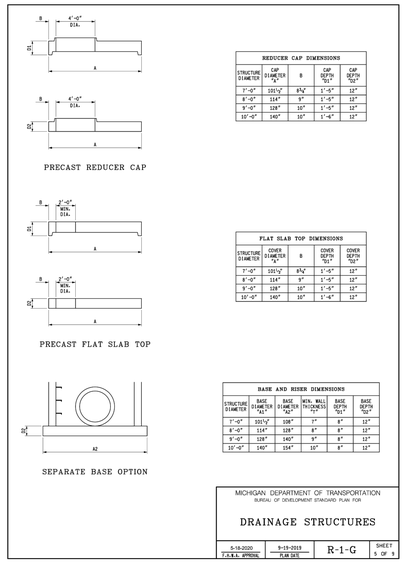
ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
C7.4

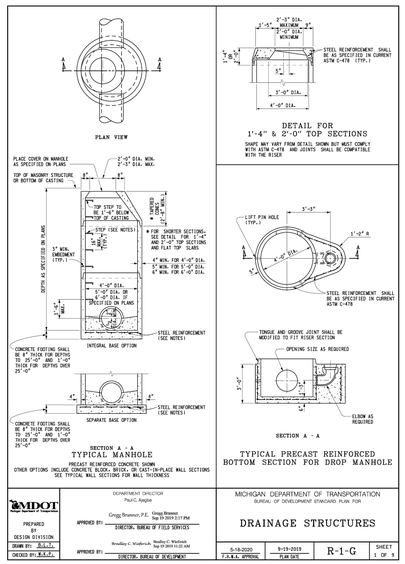
CITY FILE #22-039 SECTION #35

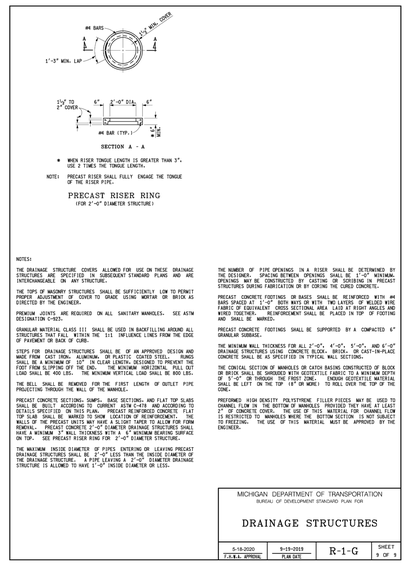












CITY FILE #22-039 SECTION #35

NO.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	02/06/23	JWG
2	ISSUED FOR PERMIT	12/19/22	JWG
3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

Kimley»Horn of Michigan, Inc.

27777 FRANKLIN ROAD, SUITE 2300
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SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

ADC Architectural Design Collaborative

CONSTRUCTION DETAILS

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER C7.5

Provide landscape and planting notes/statements including the following:

"Prior approval is required to plant any tree or shrub on the public right-of-way. All trees and shrubs must be planted at least 10' from the edge of the public road. (Trees must be planted at least 15' away from curb or road edge where the speed limit is more than 35 mph.) Shade trees and shrubs must be planted at least 5' from the edge of the public walkway. Evergreen and ornamental trees must be planted at least 10' from the edge of the public walkway. No trees or shrubs may be planted within the triangular area formed at the intersection of any street right-of-way lines at a distance along each line of 25' from their point of intersection. No trees or shrubs may be planted in the triangular area formed at the intersection of any driveway with a public walkway at a distance along each line of 15' from their point of intersection. All trees and shrubs must be planted at least 10' from any fire hydrant. Shade and evergreen trees must be at least 15' away from the nearest overhead wire. Trees must be planted a minimum of 5' from an underground utility, unless the city's Landscape Architect requires a greater distance. Prior to the release of the performance bond, the City of Rochester Hills Forestry Unit needs to inspect all trees, existing or planted, to identify any that pose a hazard to the safe use of the public right-of-way. Forestry may require the developer to remove, and possibly replace, any such trees.
The above requirements are incorporated into the plan."

Provide cost estimate of all landscape improvements including irrigation as part of next submittal.

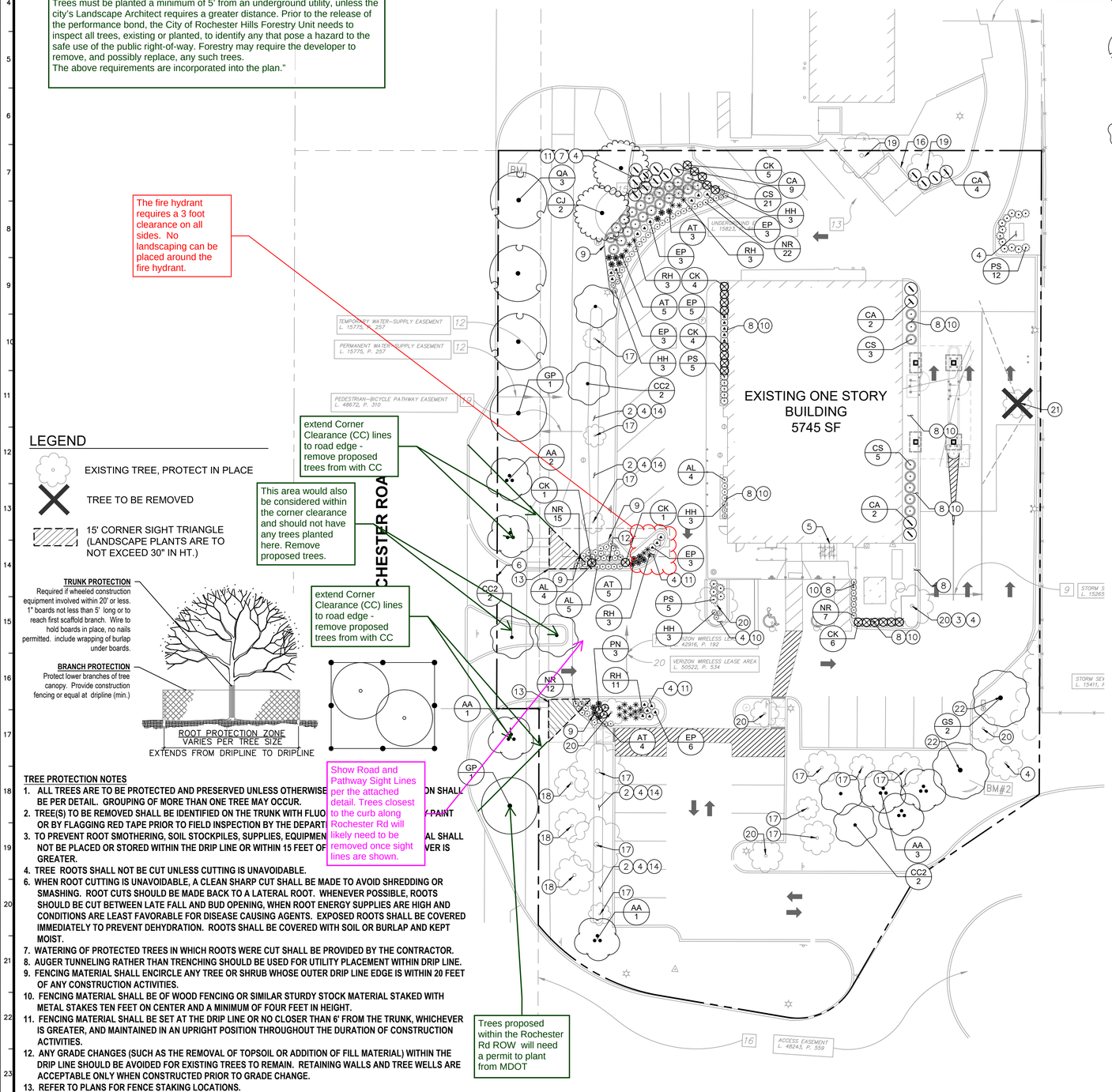
NOTE

PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS MUST INSPECT ALL LANDSCAPING PLANTINGS.

GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

AUBURN ROAD



The fire hydrant requires a 3 foot clearance on all sides. No landscaping can be placed around the fire hydrant.

extend Corner Clearance (CC) lines to road edge - remove proposed trees from with CC

This area would also be considered within the corner clearance and should not have any trees planted here. Remove proposed trees.

extend Corner Clearance (CC) lines to road edge - remove proposed trees from with CC

Show Road and Pathway Sight Lines per the attached detail. Trees closest to the curb along Rochester Rd will likely need to be removed once sight lines are shown.

Trees proposed within the Rochester Rd ROW will need a permit to plant from MDOT

LEGEND

EXISTING TREE, PROTECT IN PLACE

TREE TO BE REMOVED

15' CORNER SIGHT TRIANGLE (LANDSCAPE PLANTS ARE TO NOT EXCEED 30" IN HT.)

TRUNK PROTECTION
Required if wheeled construction equipment involved within 20' or less. 1" boards not less than 5' long or to reach first scaffold branch. Wire to hold boards in place, no nails permitted. include wrapping of burlap under boards.

BRANCH PROTECTION
Protect lower branches of tree canopy. Provide construction fencing or equal at dripline (min.)

TREE PROTECTION NOTES

1. ALL TREES ARE TO BE PROTECTED AND PRESERVED UNLESS OTHERWISE ...ON SHALL BE PER DETAIL. GROUPING OF MORE THAN ONE TREE MAY OCCUR.
2. TREE(S) TO BE REMOVED SHALL BE IDENTIFIED ON THE TRUNK WITH FLUO... PAINT OR BY FLAGGING RED TAPE PRIOR TO FIELD INSPECTION BY THE DEPART...
3. TO PREVENT ROOT SMOTHERING, SOIL STOCKPILES, SUPPLIES, EQUIPMEN...AL SHALL NOT BE PLACED OR STORED WITHIN THE DRIP LINE OR WITHIN 15 FEET OF ...VER IS GREATER.
4. TREE ROOTS SHALL NOT BE CUT UNLESS CUTTING IS UNAVOIDABLE.
6. WHEN ROOT CUTTING IS UNAVOIDABLE, A CLEAN SHARP CUT SHALL BE MADE TO AVOID SHREDDING OR SMASHING. ROOT CUTS SHOULD BE MADE BACK TO A LATERAL ROOT. WHENEVER POSSIBLE, ROOTS SHOULD BE CUT BETWEEN LATE FALL AND BUD OPENING, WHEN ROOT ENERGY SUPPLIES ARE HIGH AND CONDITIONS ARE LEAST FAVORABLE FOR DISEASE CAUSING AGENTS. EXPOSED ROOTS SHALL BE COVERED IMMEDIATELY TO PREVENT DEHYDRATION. ROOTS SHALL BE COVERED WITH SOIL OR BURLAP AND KEPT MOIST.
7. WATERING OF PROTECTED TREES IN WHICH ROOTS WERE CUT SHALL BE PROVIDED BY THE CONTRACTOR.
8. AUGER TUNNELING RATHER THAN TRENCHING SHOULD BE USED FOR UTILITY PLACEMENT WITHIN DRIP LINE.
9. FENCING MATERIAL SHALL ENCIRCLE ANY TREE OR SHRUB WHOSE OUTER DRIP LINE EDGE IS WITHIN 20 FEET OF ANY CONSTRUCTION ACTIVITIES.
10. FENCING MATERIAL SHALL BE OF WOOD FENCING OR SIMILAR STURDY STOCK MATERIAL STAKED WITH METAL STAKES TEN FEET ON CENTER AND A MINIMUM OF FOUR FEET IN HEIGHT.
11. FENCING MATERIAL SHALL BE SET AT THE DRIP LINE OR NO CLOSER THAN 6' FROM THE TRUNK, WHICHEVER IS GREATER, AND MAINTAINED IN AN UPRIGHT POSITION THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
12. ANY GRADE CHANGES (SUCH AS THE REMOVAL OF TOPSOIL OR ADDITION OF FILL MATERIAL) WITHIN THE DRIP LINE SHOULD BE AVOIDED FOR EXISTING TREES TO REMAIN. RETAINING WALLS AND TREE WELLS ARE ACCEPTABLE ONLY WHEN CONSTRUCTED PRIOR TO GRADE CHANGE.
13. REFER TO PLANS FOR FENCE STAKING LOCATIONS.

1 TREE PROTECTION NTS

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	OTHER
	CJ	2	CERCIDIPHYLLUM JAPONICUM / KATSURA TREE	B & B	3" CAL. MIN	
	GP	2	GINKGO BILOBA 'PRINCETON SENTRY' / PRINCETON SENTRY MAIDENHAIR TREE	B & B	3" CAL. MIN	
	GS	2	GLEDITSIA TRIACANTHOS INERMIS `SKYLINE` / SKYLINE HONEY LOCUST	B & B	3" CAL. MIN	
	QA	3	QUERCUS ALBA / WHITE OAK	B & B	3" CAL. MIN	
ORNAMENTAL TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	OTHER
	AA	7	AMELANCHIER ARBOREA / DOWNY SERVICEBERRY	B & B	6` HT MIN	
	CC2	6	CERCIS CANADENSIS / EASTERN REDBUD	B & B	2" CAL. MIN	
SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	SPACING	SIZE
	AL	13	ALLIUM LUSITANICUM 'SUMMER BEAUTY' / SUMMER BEAUTY ORNAMENTAL ONION	3 GAL	SEE PLAN	12" HT. MIN.
	AT	17	ASCLEPIAS TUBEROSA / BUTTERFLY MILKWEED	3 GAL	SEE PLAN	12" HT. MIN.
	CA	17	CEANOTHUS AMERICANUS / NEW JERSEY TEA	3 GAL	SEE PLAN	18" HT. MIN.
	CK	21	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / KARL FOERSTER FEATHER REED GRASS	3 GAL	SEE PLAN	18" HT. MIN.
	CS	29	CORNUS SANGUINEA 'CATO' / ARCTIC SUN® BLOODTWIG DOGWOOD	3 GAL	SEE PLAN	18" HT. MIN.
	EP	23	ECHINACEA PURPUREA / PURPLE CONEFLOWER	3 GAL	SEE PLAN	12" HT. MIN.
	HH	12	HEMEROCALLIS X 'HAPPY RETURNS' / HAPPY RETURNS DAYLILY	3 GAL	SEE PLAN	12" HT. MIN.
	NR	56	NEPETA RACEMOSA 'WALKER'S LOW' / WALKER'S LOW CATMINT	3 GAL	SEE PLAN	24" HT. MIN.
	PN	3	PHYSOCARPUS OPULIFOLIUS / NINEBARK	3 GAL	SEE PLAN	18" HT. MIN.
	PS	22	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS	3 GAL	SEE PLAN	18" HT. MIN.
	RH	20	RUDBECKIA HIRTA / BLACK-EYED SUSAN	3 GAL	SEE PLAN	12" HT. MIN.

LANDSCAPE KEYNOTES

(2) EXISTING LANDSCAPE TO REMAIN, PROTECT IN PLACE

(3) LIMB EXISTING TREE UP TO AVOID CONFLICTS WITH PROPOSED FENCE, SEE ARCHITECTURE PLANS

(4) FURNISH AND INSTALL TRIPLE SHREDDED HARDWOOD MULCH AT 3" DEPTH MIN. PROVIDE A MIN. 4" DIA. MULCH RING AROUND EXISTING TREES, TYP.

(5) BIKE RACKS, SEE SITE PLAN

(6) PROPERTY LINE, TYP.

(7) REMOVE AND SALVAGE EXISTING ROCK MULCH

(8) REINSTALL EXISTING SALVAGED ROCK MULCH AS NECESSARY TO PROVIDE FOR 100% COMPLETE COVERAGE AROUND THE FOUNDATION LANDSCAPE OF THE BUILDING. CONTRACTOR TO WASH AND ENSURE ROCK MULCH IS FREE OF ANY DEBRIS. CONTRACTOR TO INSTALL ROCK MULCH AT A MIN. DEPTH OF 3". CONTRACTOR TO FURNISH AND INSTALL MIRAFI 140N WEED BARRIR (OR APPROVED EQUAL) BELOW ROCK MULCH, WHERE APPLICABLE. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF ANY EXCESS ROCK MULCH NOT USED IN THE LANDSCAPE AREAS ON SITE.

(9) SHOVEL CUT BED EDGE, TYP.

(10) CONTRACTOR TO REMOVE ANY EXISTING WEEDS, OVERGROWN PLANT MATERIAL, OR EXISTING LANDSCAPE AS NECESSARY TO ACCOMODATE SHOWN LANDSCAPE IMPROVEMENTS.

(11) CONTRACTOR TO REMOVE ANY EXISTING TURF GRASS IMPACTED BY SHOWN LANDSACPE IMPROVEMENTS

(12) MONUMENT SIGN, SEE ARCHITECTURE PLANS

(13) 15' CORNER CLEARANCE SIGHT TRIANGLES. LANDSCAPE PLANTS ARE TO NOT EXCEED 30" HT. WITHIN THE CORNER SIGHT TRIANGLES, TYP.

(14) HEDGEROW IS REQUIRED. CONTRACTOR TO MAINTAIN EXISTING HEDGEROW AND INFILL EXISTING HEDGEROW WITH NECESSARY PLANT MATERIAL TO ENSURE A SOLID HEDGEROW PLANTING IS PROVIDED.

(16) EXISTING TRASH ENCLOSURE, PROTECT IN PLACE

(17) EXISTING PERIMETER LANSCAPE SHADE TREE, PROTECT IN PLACE

(18) EXISTING RIGHT-OF-WAY SHADE TREE, PROTECT IN PLACE

(19) EXISTING BUFFER YARD TREE, PROTECT IN PLACE

(20) EXISTING PARKING LOT TREE, PROTECT IN PLACE

(21) EXISTING 6" DBH GLEDITSIA TRIANCANTHOS IS TO BE REMOVED.

(22) NEW TREE REPLACEMENT(S) FOR THE TREE TO BE REMOVED.

LANDSCAPE NOTES:
1. ANY PLANT MATERIAL THAT IS DESIGNATED TO BE MAINTAINED THAT DIES OR IS DAMAGED DURING OR AS A RESULT OF CONSTRUCTION SHALL BE REPLACED IN KIND WITH LIKE SPECIES AND SIZES.
2. ALL LANDSCAPING REQUIRED PURSUANT TO CITY OF ROCHESTER CODES AND ORDINANCES SHALL BE MAINTAINED IN PERPETUITY.
3. ALL GROUND MOUNTED UTILITIES SHALL BE FULLY SCREENED FROM VIEW.
4. REFER TO SHEET L1.1 FOR DETAILS AND LANDSCAPE GENERAL NOTES.

IRRIGATION NOTES:
1. ALL LANDSCAPE AREAS MUST BE IRRIGATED.
2. WATERING WILL ONLY OCCUR BETWEEN THE HOURS OF 12:00 A.M. AND 5:00 A.M. SHOULD BE INCLUDED ON THE PLANS.
3. CONTRACTOR TO FIELD VERIFY IF AN EXISTING IRRIGATION SYSTEM IS IN PLACE. IF SO, CONTRACTOR TO FIELD VERIFY LIMITS AND CONDITION OF THE EXISTING IRRIGATION SYSTEM PRIOR TO CONSTRUCTION. CONTRACTOR TO PROVIDE TO THE OWNER IN WRITING ANY DEFICIENCIES OR PROBLEMS WITH THE EXISTING IRRIGATION SYSTEM. CONTRACTOR TO PROVIDE TO OWNER A PROPOSED IRRIGATION DESIGN BUILD/SHOP DRAWING WITH AN ESTIMATE THAT OUTLINES STEPS, EQUIPMENT NECESSARY TO ADJUST THE EXISTING IRRIGATION SYSTEM, EQUIPMENT NECESSARY TO REPAIR THE EXISTING IRRIGATION SYSTEM, AND EQUIPMENT NECESSARY TO INSTALL NEW IRRIGATION TO ACCOMMODATE THE SHOWN LANDSCAPE IMPROVEMENTS. CLIENT TO REVIEW AND APPROVE ANY IRRIGATION WORK BEFORE COMMENCEMENT. CONTRACTOR TO ADJUST, REPAIR, EXTEND, CUT, CAP, FURNISH, AND INSTALL NEW IRRIGATION IMPACTED BY SHOWN IMPROVEMENTS.

LANDSCAPE MAINTENANCE NOTES:
THE OWNER OF THE PROPERTY SHALL ABIDE BY THE ZONING ORDINANCE CODE FOR LANDSCAPE MAINTENANCE UNDER SECTION 138-12.109 AND BE RESPONSIBLE FOR ALL MAINTENANCE OF SITE LANDSCAPING, AS FOLLOWS:
1. LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.
2. PRUNING SHALL BE MINIMAL AT THE TIME OF INSTALLATION, ONLY TO REMOVE DEAD OR DISEASED BRANCHES. SUBSEQUENT PRUNING SHALL ASSURE PROPER MATURATION OF PLANTS TO ACHIEVE THEIR APPROVED PURPOSE.
3. ALL DEAD, DAMAGED, OR DISEASED PLANT MATERIAL SHALL BE REMOVED IMMEDIATELY AND REPLACED WITHIN SIX (6) MONTHS AFTER IT DIES OR IN THE NEXT PLANTING SEASON, WHICHEVER OCCURS FIRST. FOR PURPOSES OF THIS SECTION, THE PLANTING SEASON FOR DECIDUOUS PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1 AND FROM OCTOBER 1 UNTIL THE PREPARED SOIL BECOMES FROZEN. THE PLANTING SEASON FOR EVERGREEN PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE PLANT MATERIAL INSTALLED TO REPLACE DEAD OR DISEASED MATERIAL SHALL BE AS CLOSE AS PRACTICAL TO THE SIZE OF THE MATERIAL IT IS INTENDED TO REPLACE. THE CITY MAY NOTIFY PROPERTY OWNERS OF THE NEED TO REPLACE DEAD, DAMAGED, OR DISEASED MATERIAL.
4. THE APPROVED LANDSCAPE PLAN SHALL BE CONSIDERED A PERMANENT RECORD AND INTEGRAL PART OF THE SITE PLAN APPROVAL. UNLESS OTHERWISE APPROVED IN ACCORDANCE WITH THE AFOREMENTIONED PROCEDURES, ANY REVISIONS TO OR REMOVAL OF PLANT MATERIALS, OR NON-COMPLIANCE WITH THE MAINTENANCE REQUIREMENTS OF THIS SECTION 138-12.109 WILL PLACE THE PARCEL IN NON-CONFORMITY WITH THE APPROVED LANDSCAPE PLAN AND BE A VIOLATION OF THIS ORDINANCE.
5. IF PROTECTED TREES ARE DAMAGED, A FINE SHALL BE ISSUED ON AN INCH-BY-INCH BASIS AT A MONETARY RATE AS DEFINED BY THE FORESTRY DEPARTMENT.

CITY FILE #22-039 SECTION #35

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3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

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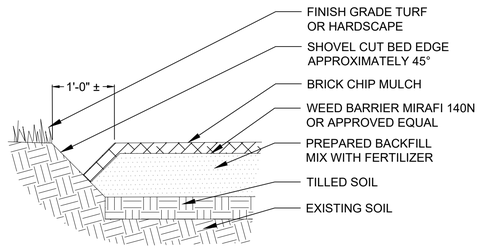
CITY FILE #22-039 SECTION #35

ADC Architectural Design Collaborative

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

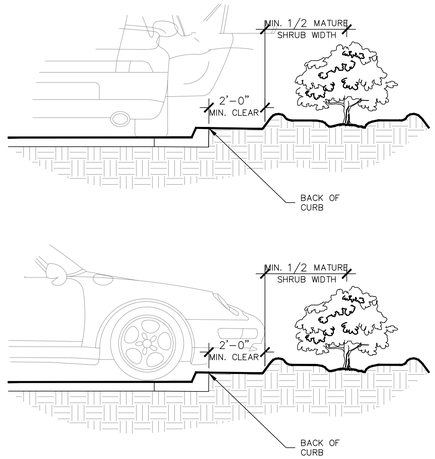
LANDSCAPE PLAN

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
L1.0



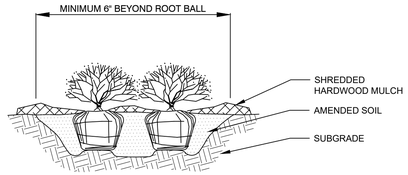
1 LANDSCAPE BED EDGE

NTS



2 SHRUB PLANTING AT CURB

NTS

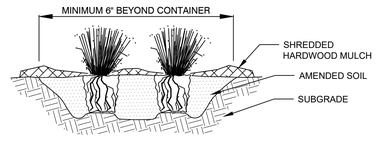


NOTES:

1. APPLY CORRECTIVE PRUNING.
2. SET ROOT BALL OR CONTAINER ON UNEXCAVATED OR TAMPED SOIL. TOP OF ROOTBALL (CONTAINER) SHALL BE ONE INCH ABOVE SURROUNDING GRADE. FOR LARGER SHRUBS WITHIN PLANTING BED DIG A DEEPER PIT ONLY FOR THOSE SHRUBS.
3. REMOVE BURLAP FROM TOP HALF THE LENGTH OF ROOTBALL. TWINE AND (IF USED) SYNTHETIC MATERIAL SHALL BE REMOVED FROM PLANTING BED. FOR CONTAINER GROWN SHRUBS, REMOVE CONTAINER AND LOOSEN ROOTS PRIOR TO INSTALLATION.
4. REMOVE OR CORRECT GIRDLING ROOTS.
5. PLUMB AND BACKFILL WITH AMENDED SOIL PER LANDSCAPE NOTES. WATER THOROUGHLY WITHIN TWO HOURS.
6. APPLY MULCH IN EVEN LAYER, KEEPING AWAY FROM ROOT FLARE. MULCH LIMITS FOR SHRUBS EXTEND TO ALL LIMITS OF PLANTING BED, SEE PLANS FOR BED LAYOUTS.

3 SHRUB PLANTING

NTS



NOTES:

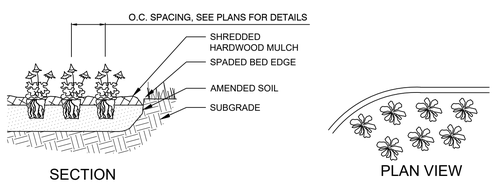
1. APPLY CORRECTIVE PRUNING.
2. SET ROOT BALL OR CONTAINER ON UNEXCAVATED OR TAMPED SOIL. TOP OF CONTAINER SHALL BE ONE INCH ABOVE SURROUNDING GRADE.
3. SYNTHETIC MATERIAL SHALL BE REMOVED FROM PLANTING BED. FOR CONTAINER GROWN GRASSES, REMOVE CONTAINER AND LOOSEN ROOTS PRIOR TO INSTALLATION.
4. REMOVE OR CORRECT GIRDLING ROOTS.
5. PLUMB AND BACKFILL WITH AMENDED SOIL PER LANDSCAPE NOTES. WATER THOROUGHLY WITHIN TWO HOURS.
6. APPLY MULCH IN EVEN LAYER, KEEPING AWAY FROM ROOT FLARE. MULCH LIMITS FOR GRASS EXTEND TO ALL LIMITS OF PLANTING BED, SEE PLANS FOR BED LAYOUTS.

4 ORNAMENTAL GRASS PLANTING

NTS

NOTES:

1. EXCAVATE PLANTING BED.
2. BED HEIGHT IS TO BE 2" ABOVE FINISH GRADE AND WELL DRAINED.
3. REMOVE CONTAINER, SCORE SOIL MASS TO REDIRECT AND PREVENT CIRCLING ROOTS. CORRECT GIRDLING ROOTS.
2. PLANT MATERIAL SHALL BE LAID OUT BY FOLLOWING THE BED EDGE, WORKING TOWARDS THE CENTER OF THE BED USING TRIANGULAR (STAGGERED) SPACING AS PLAUSIBLE.
3. PLUMB AND BACKFILL WITH PLANTING MIX AS SPECIFIED IN LANDSCAPE NOTES.
4. APPLY MULCH IN EVEN LAYER, KEEPING AWAY FROM ROOT FLARE. MULCH LIMITS FOR PERENNIALS/GROUNDCOVER EXTEND TO ALL LIMITS OF PLANTING BED, SEE PLANS FOR BED LAYOUTS.
5. SPACING TO BE AS SPECIFIED IN THE PLANT LIST. PERENNIALS SHALL BE PLACED WITH THEIR CENTER 24" FROM EDGE OF BED.



5 PERENNIAL PLANTING

NTS

LANDSCAPE NOTES

1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING MATERIALS AND PLANTS SHOWN ON THE LANDSCAPE PLAN. THE CONTRACTOR IS RESPONSIBLE FOR THE COST TO REPAIR UTILITIES, ADJACENT LANDSCAPE, PUBLIC AND PRIVATE PROPERTY THAT IS DAMAGED BY THE CONTRACTOR OR THEIR SUBCONTRACTOR'S OPERATIONS DURING INSTALLATION OR DURING THE SPECIFIED MAINTENANCE PERIOD. CALL FOR UTILITY LOCATIONS PRIOR TO ANY EXCAVATION.
2. THE CONTRACTOR SHALL REPORT ANY DISCREPANCY IN PLAN VS. FIELD CONDITIONS IMMEDIATELY TO THE LANDSCAPE ARCHITECT, PRIOR TO CONTINUING WITH THAT PORTION OF WORK.
3. NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY OF THEIR TRENCHES OR EXCAVATIONS THAT SETTLE.
5. ALL PLANTS TO BE SPECIMEN GRADE, WELL BRANCHED, HEALTHY, FULL, PRE-INOCULATED AND FERTILIZED. PLANTS SHALL BE FREE FROM DISEASE, PESTS, WOUNDS, AND SCARS. PLANTS SHALL BE FREE FROM NOTICEABLE GAPS, HOLES, OR DEFORMITIES. PLANTS SHALL BE FREE FROM BROKEN OR DEAD BRANCHES. TRUNKS WILL BE WRAPPED IF NECESSARY TO PREVENT SUN SCALD AND INSECT DAMAGE. THE LANDSCAPE CONTRACTOR SHALL REMOVE THE WRAP AT THE PROPER TIME AS PART OF THIS CONTRACT.
6. THE OWNER'S REPRESENTATIVE MAY REJECT ANY PLANT MATERIALS THAT ARE DISEASED, DEFORMED, OR OTHERWISE NOT EXHIBITING SUPERIOR QUALITY.
7. ALL NURSERY STOCK SHALL BE GUARANTEED, BY THE CONTRACTOR, FOR ONE YEAR FROM DATE OF FINAL INSPECTION. THE GUARANTEE BEGINS ON THE DATE OF THE LANDSCAPE ARCHITECT'S OR OWNERS WRITTEN ACCEPTANCE OF THE INITIAL PLANTING. REPLACEMENT PLANT MATERIAL SHALL HAVE A ONE YEAR GUARANTEE COMMENCING UPON PLANTING.
8. PLANTS TO MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2014 OR MOST CURRENT VERSION) REQUIREMENTS FOR SIZE AND TYPE SPECIFIED.
9. PRUNE PLANTS AS NECESSARY- PER STANDARD NURSERY PRACTICE AND TO CORRECT POOR BRANCHING OF EXISTING AND PROPOSED TREES.
10. TOPSOIL SHALL BE PROVIDED AND GRADED BY THE GENERAL CONTRACTOR UP TO 6 INCHES BELOW FINISHED GRADE IN TURF AREAS AND 18 INCHES IN PLANTING AREAS.
11. PLANTING AREA TOPSOIL SHALL BE AMENDED WITH 25% SPHAGNUM PEATMOSS, 5% HUMUS AND 70% PULVERIZED SOIL FOR ALL NON TURF SEED MIX AREAS, SHRUB, ORNAMENTAL GRASS, PERENNIAL AND ANNUAL BEDS.
12. SEED/SOD LIMIT LINES ARE APPROXIMATE. CONTRACTOR SHALL SEED/SOD ALL AREAS WHICH ARE DISTURBED BY GRADING WITH THE SPECIFIED SEED/SOD MIXES.
13. EDGING TO BE A SPADED EDGE UNLESS INDICATED OTHERWISE ON THE PLANS. SPADED EDGE TO PROVIDE V-SHAPED DEPTH AND WIDTH TO CREATE SEPARATION BETWEEN MULCH AND GRASS. A SPADED BED EDGE SHALL SEPARATE MULCH BEDS FROM TURF OR SEEDED AREAS. A SPADED EDGE IS NOT REQUIRED ALONG CURBED EDGES.
14. CONTRACTOR SHALL INSTALL SHREDDED HARDWOOD MULCH AT A 3" DEPTH TO ALL TREES, SHRUB, PERENNIAL, AND GROUNDCOVER AREAS. TREES PLACED IN AREA COVERED BY TURF SHALL RECEIVE A 4 FT WIDE MAXIMUM TREE RING WITH 3" DEPTH SHREDDED HARDWOOD MULCH.
15. INSTALLATION OF TREES WITHIN PARKWAYS SHALL BE COORDINATED IN THE FIELD WITH LOCATIONS OF UNDERGROUND UTILITIES. TREES SHALL NOT BE LOCATED CLOSER THAN 5' FROM UNDERGROUND UTILITY LINES AND NO CLOSER THAN 10' FROM UTILITY STRUCTURES.
16. DO NOT DISTURB THE EXISTING PAVING, LIGHTING, OR LANDSCAPING THAT EXISTS ADJACENT TO THE SITE UNLESS OTHERWISE NOTED ON PLAN.
17. ALL DISTURBED AREAS TO BE SODDED OR SEEDED, UNLESS OTHERWISE NOTED. SOD/SEED SHALL BE LOCAL HARDY TURF GRASS MIX UNLESS, OTHERWISE NOTED.
18. PLANT QUANTITIES SHOWN ARE FOR THE CONVENIENCE OF THE OWNER AND JURISDICTIONAL REVIEW AGENCIES. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES AS DRAWN.
19. THE CONTINUED MAINTENANCE OF ALL REQUIRED LANDSCAPING SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY ON WHICH SAID MATERIALS ARE REQUIRED. ALL PLANT MATERIALS REQUIRED BY THIS SECTION SHALL BE MAINTAINED AS LIVING VEGETATION AND SHALL BE PROMPTLY REPLACED IF THE PLANT MATERIAL HAS DIED PRIOR TO FINAL ACCEPTANCE. PLANTING AREAS SHALL BE KEPT FREE OF TRASH, LITTER, AND WEEDS AT ALL TIMES.

NOTE

PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS MUST INSPECT ALL LANDSCAPING PLANTINGS.

CITY FILE #22-039 SECTION #35

NO.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	02/06/23	JWG
2	ISSUED FOR PERMIT	12/19/22	JWG
3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

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SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE
#22-039
SECTION #35

ADC Architectural Design Collaborative

LANDSCAPE NOTES & DETAILS

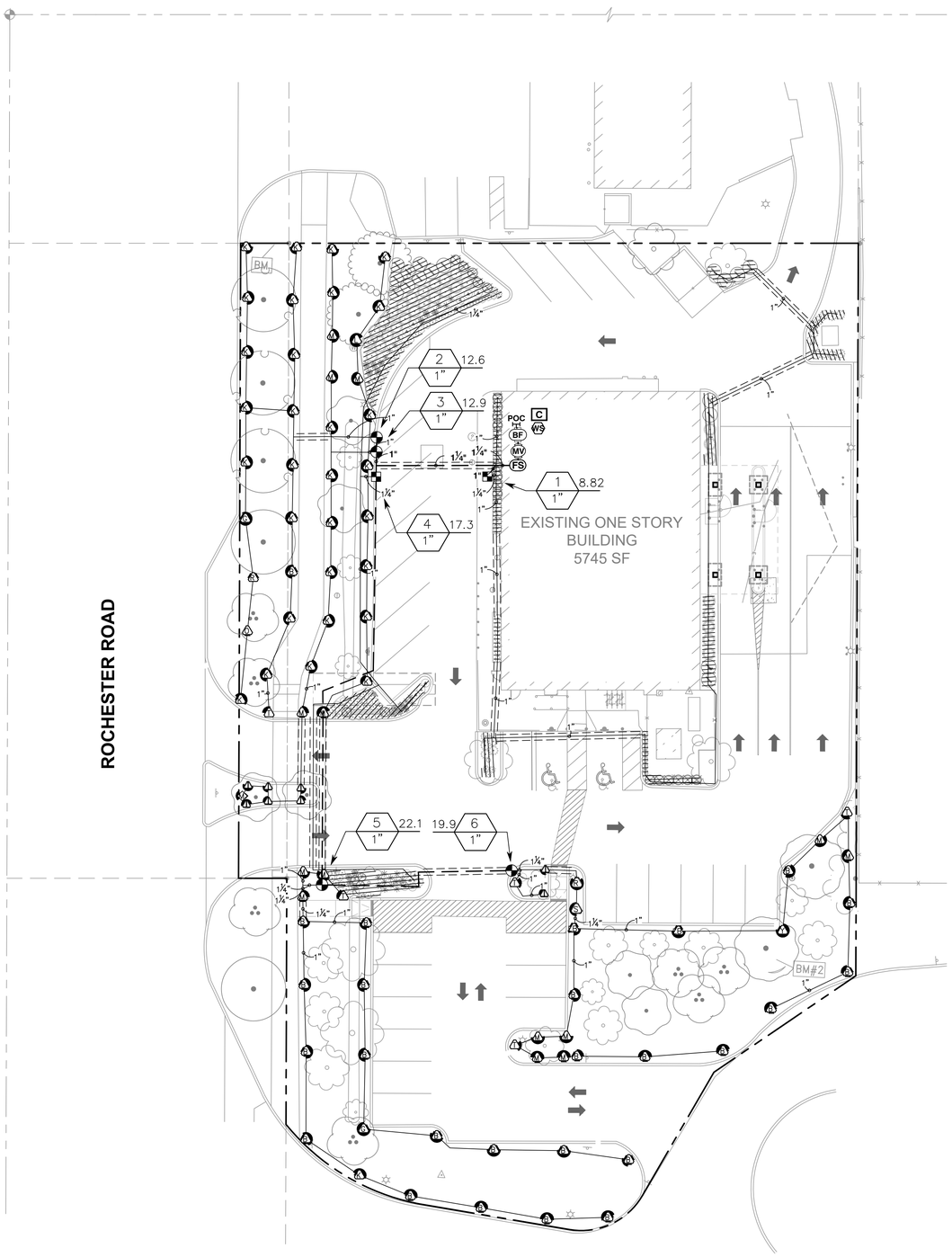
BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE:
11/18/2022

KHA PROJECT NO.
268266000

SHEET NUMBER
L1.1

CITY FILE #22-039 SECTION #35



GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
	HUNTER MP CORNER PROS-04-PRS30-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE. T=TURQUOISE ADJ ARC 45-105 ON PRS30 BODY.	5	30
LST SST RST	HUNTER MP STRIP PROS-04-PRS30-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. LST=IVORY LEFT STRIP, SST=BROWN SIDE STRIP, RST=COPPER RIGHT STRIP.	2	30
	HUNTER MP1000 PROS-04-PRS30-CV TURF ROTATOR, 4IN. POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. M=MAROON ADJ ARC 90 TO 210, L=LIGHT BLUE 210 TO 270 ARC, O=OLIVE 360 ARC.	16	30
	HUNTER MP2000 PROS-04-PRS30-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. K=BLACK ADJ ARC 90-210, G=GREEN ADJ ARC 210-270, R=RED 360 ARC.	34	30
	HUNTER MP3000 PROS-04-PRS30-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. B=BLUE ADJ ARC 90-210, Y=YELLOW ADJ ARC 210-270, A=GRAY 360 ARC.	25	30
	HUNTER MP3500 PROS-04-PRS30-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. LB=LIGHT BROWN ADJUSTABLE ARC, 90-210.	2	30
800 A 800 F	HUNTER MP800SR PROS-04-PRS30-CV TURF ROTATOR, 4IN. POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. ADJ=ORANGE AND GRAY (ARC 90-210), 360=LIME GREEN AND GRAY (ARC 360)	8	30
	HUNTER MP815 PROS-04-PRS30-CV TURF ROTATOR, 4IN. POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. M=MAROON AND GRAY ADJ ARC 90 TO 210, L=LIGHT BLUE AND GRAY 210 TO 270 ARC, O=OLIVE AND GRAY 360 ARC.	1	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	HUNTER ICZ-101-25 DRIP CONTROL ZONE KIT. 1IN. ICV GLOBE VALVE WITH 1IN. HY100 FILTER SYSTEM. PRESSURE REGULATION: 25PSI. FLOW RANGE: 2 GPM TO 20 GPM. 150 MESH STAINLESS STEEL SCREEN.	2
	AREA TO RECEIVE DRIPLINE HUNTER HDL-09-12-CV HDL-09-12-CV: HUNTER DRIPLINE W/ 0.9 GPH EMITTERS AT 12" O.C. CHECK VALVE, DARK BROWN TUBING W/ BLACK STRIPING. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL WITH HUNTER PLD BARBED OR PLD-LOC FITTINGS.	1,772 L.F.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	HUNTER PGV-101G 1IN. PLASTIC ELECTRIC REMOTE CONTROL VALVE, FOR RESIDENTIAL/LIGHT COMMERCIAL USE. FEMALE NPT INLET/OUTLET. GLOBE CONFIGURATION, WITH FLOW CONTROL.	4
MV	HUNTER ICV-G 1" 1IN., 1-1/2IN., 2IN., AND 3IN. PLASTIC ELECTRIC MASTER VALVE, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.	1
BF	FEBCO 825Y 1" REDUCED PRESSURE BACKFLOW PREVENTER	1
C	HUNTER PCC-1200 LIGHT COMMERCIAL & RESIDENTIAL CONTROLLER, 12-STATION FIXED CONTROLLER, 120 VAC, OUTDOOR MODEL	1
WS	HUNTER SOLAR-SYNC SOLAR, RAIN FREEZE SENSOR WITH OUTDOOR INTERFACE, CONNECTS TO HUNTER PCC, PRO-C, AND I-CORE CONTROLLERS, INSTALL AS NOTED. INCLUDES 10 YEAR LITHIUM BATTERY AND RUBBER MODULE COVER, AND GUTTER MOUNT BRACKET. WIRED.	1
FS	HUNTER HFS-100 FLOW SENSOR FOR USE WITH ACC CONTROLLER, 1IN. SCHEDULE 40 SENSOR BODY, 24 VAC, 2 AMP.	1
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40	2,174 L.F.
	IRRIGATION MAINLINE: PVC SCHEDULE 40	274.4 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40	351.0 L.F.

Valve Callout
— Valve Number
— Valve Flow
#" — Valve Size

GENERAL IRRIGATION NOTES

1. IRRIGATION CONTRACTOR SHALL TEST EXISTING STATIC PRESSURE ON SITE PRIOR TO CONSTRUCTION. SHOULD EXISTING SITE PRESSURE BE BELOW 65 PSI, CONTRACTOR SHALL CONTACT THE IRRIGATION DESIGNER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. COORDINATE IRRIGATION INSTALLATION WITH PLANTING PLAN AND SITE CONDITIONS TO PROVIDE COMPLETE 100% COVERAGE WITH MINIMUM OVERSPRAY. THE IRRIGATION CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO ENSURE PROPER COVERAGE AT NO ADDITIONAL COST TO THE OWNER.
4. ALL CONSTRUCTION SHALL CONFORM TO CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THAT ALL IRRIGATION EQUIPMENT MEETS GOVERNMENT REGULATIONS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS OR APPROVALS PRIOR TO COMMENCEMENT OF OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR.
5. LATERAL PIPE SHALL BE INSTALLED AT A MINIMUM DEPTH OF 12 INCHES. MAINLINE PIPE AND WIRES SHALL BE INSTALLED AT A MINIMUM DEPTH OF 18 INCHES.
6. ELECTRICAL POWER SHALL BE PROVIDED WITHIN 5 FEET OF CONTROLLER LOCATION BY GENERAL CONTRACTOR. LICENSED IRRIGATION CONTRACTOR TO PROVIDE FINAL HARD WIRE TO CONTROLLER.
7. 24 VOLT VALVE WIRE SHALL BE A MINIMUM OF 14 GAUGE, U.L. APPROVED FOR DIRECT BURIAL, SINGLE CONDUCTOR "IRRIGATION WIRE". CONTRACTOR TO CONFIRM WIRE SIZE PRIOR TO INSTALLATION. WIRE SPLICES SHALL BE ENCASED IN A WATERPROOF WIRE CONNECTOR UL APPROVED AND FILLED WITH SILICONE.
8. IRRIGATION VALVES AND VALVE BOXES SHALL BE LOCATED IN LANDSCAPE BEDS OR GROUNDCOVER AREAS WHENEVER POSSIBLE. ALL REMOTE VALVE BOXES SHALL BE SET FLUSH WITH FINISHED GRADE AND CONTAIN ONE CUBIC FOOT OF CLEAN GRAVEL BENEATH VALVE. LABEL REMOTE BOXES WITH ONE-INCH ALPHA NUMERIC NOTATION CORRESPONDING TO THE APPLICABLE ALPHA CONTROLLER AND NUMERIC STATION. USE 10" ROUND VALVE BOXES FOR ELECTRIC VALVES AND QUICK COUPLING VALVES. USE 15" X 9.5" RECTANGULAR BOX FOR DRIP VALVES UNLESS NOTED OTHERWISE. DOUBLE CHECK ASSEMBLY SHALL BE BOXED ACCORDING TO LOCAL CODES.
9. USE PVC SWING JOINT ASSEMBLIES TO CONNECT ALL SPRAY AND ROTOR HEADS.
10. CONTRACTOR IS TO CONTACT APPROPRIATE AUTHORITIES AND LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, EQUIPMENT QUANTITIES, AND UTILITY LOCATIONS PRIOR TO BEGINNING WORK.
11. SLEEVES SHALL BE INSTALLED BY GENERAL CONTRACTOR UNLESS OTHERWISE NOTED. SLEEVE MATERIAL SHALL BE PVC, SCHD. 40. CONTRACTOR SHALL EXTEND SLEEVES 18 INCHES BEYOND EDGE OF ALL PAVEMENT. ELECTRICAL WIRES FOR IRRIGATION VALVES AND IRRIGATION LINES ARE TO BE PLACED IN SEPARATE SLEEVES. SEE SLEEVING DETAIL. ALL PRESSURE MAINLINES UNDER ASPHALT PAVEMENT SHALL BE PLACED WITHIN SLEEVES AS NOTED.
12. DRIP LINE SHALL BE PLACED A MINIMUM OF 2" UNDER MULCH.
13. LICENSED IRRIGATION CONTRACTOR SHALL ADJUST SPRAY NOZZLES FOR "HEAD-TO-HEAD" COVERAGE AND ADJUST FOR MINIMUM OVERSPRAY ONTO PAVEMENT. NO OVERSPRAY IS PERMITTED ONTO STREETS OR SIDEWALKS.
14. IRRIGATION CONTRACTOR SHALL SUPPLY AND CONSTRUCT IRRIGATION SYSTEM WITH ALL MATERIALS AND PER MANUFACTURER SPECIFICATIONS SHOWN ON THIS PLAN. IF CONTRACTOR PREFERS MATERIALS THAT DIFFER FROM THE THIS PLAN, THEY SHALL BE APPROVED BY THE IRRIGATION DESIGNER PRIOR TO CONSTRUCTION.
15. VERIFY CONTROLLER AND RAIN SENSOR LOCATION AND MAINLINE POINT OF CONNECTION AT PROJECT SITE WITH OWNER.
16. EXISTING TREES TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. DO NOT TRENCH OR EXCAVATE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE.
17. IRRIGATION LATERAL LINES, MAIN LINES AND EQUIPMENT MAY BE SHOWN OUTSIDE PROPERTY LINES ON THIS PLAN, ALL IRRIGATION LINES AND EQUIPMENT ARE TO BE WITHIN AND INSTALLED WITHIN THE LIMITS OF THE PROPERTY LINE.
18. BACKFLOW PREVENTER TO BE PROVIDED BY IRRIGATION CONTRACTOR. IRRIGATION CONTRACTOR'S POINT OF CONNECTION TO BEGIN AFTER THE IRRIGATION BACKFLOW.
19. IRRIGATION CONTRACTOR SHALL REVIEW WINTERIZATION PROCEDURES FOR IRRIGATION SYSTEM WITH OWNERS REPRESENTATIVE.
20. ALL PLANT MATERIAL IN TREE HOLDING AREAS SHALL BE MANUALLY WATERED/IRRIGATED TO KEEP MOIST UNTIL PLANTED.
21. MAINLINE, VALVES, AND WIRING ARE SHOWN ON DRAWINGS FOR CLARITY, SHOULD BE LOCATED IN ACCESSIBLE GREEN SPACE. CONTRACTOR TO COORDINATE WITH ALL DISCIPLINES TO AVOID CONFLICTS WITH UTILITIES/ STRUCTURES, ETC.
22. INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON THE SITE.
23. SET SPRAY HEADS 4" FROM BACK OF CURB OR 24" IF PAVEMENT HAS NO CURB.
24. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF THE FINAL INSTALLATION TO OWNER AT SUBSTANTIAL COMPLETION BEFORE RECEIVING FINAL PAYMENT. "AS-BUILT" DRAWINGS TO BE COLOR CODED BY ZONE ON 8.5" X 11", LAMINATED, AND PLACED IN CONTROLLER.
25. ALL DRIP ZONES SHALL BE INSTALLED WITH A SELF-FLUSHING DISC FILTER, OR APPROVED EQUAL.
26. INSTALL ALL IRRIGATION COMPONENTS AS PER MANUFACTURERS REQUIREMENTS.
27. IRRIGATION HEADS AND COMPONENTS SHALL BE LOCATED A MINIMUM OF 24" FROM ALL BUILDINGS TO AVOID ADVERSE PERFORMANCE OF FOUNDATIONS AND SLABS.
28. NO LATERALS LESS THAN 3/4" DIAMETER.

NOTE:
SEE SHEET IR1.1 FOR IRRIGATION DETAILS.

SURGE PROTECTION AND WIRE NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO GROUND ALL ELECTRICAL EQUIPMENT INSTALLED IN RELATION TO THE IRRIGATION CONTROL SYSTEM. USE GROUNDING ELECTRODES THAT ARE UL LISTED OR MANUFACTURED TO MEET THE MINIMUM REQUIREMENTS OF THE US NATIONAL ELECTRICAL CODE (NEC).
2. THE IRRIGATION SYSTEM SHALL USE A CONVENTIONAL WIRING FOR ACTIVATION OF ALL VALVES AND SENSORS. CONNECTIONS SHALL BE BELOW GRADE AND IN VALVE BOXES SHALL BE WATERPROOF. THE IRRIGATION CABLE SHALL BE DIRECT BURIAL.
3. CONTRACTOR TO PROVIDE A MINIMUM OF TWO (2) SPARE IRRIGATION CONTROL WIRES FROM THE CONTROLLER THROUGH ALL IRRIGATION ZONES FOR FUTURE USE (COLOR ORANGE).
4. CONTROLLER TO BE GROUNDED PER MANUFACTURER RECOMMENDATIONS.

ALL CONNECTIONS BELOW GRADE AND IN VALVE BOXES SHALL BE WATERPROOF. THE IRRIGATION CABLE SHALL BE DIRECT BURIAL.

THIS IRRIGATION PLAN IS DESIGNED TO THE FOLLOWING STATS: 65 PSI AND 23 GPM. CONTRACTOR TO DETERMINE IN THE FIELD IF A BOOSTER PUMP WILL BE REQUIRED AT COST OF CONTRACTOR. CONTACT LANDSCAPE ARCHITECT PRIOR TO INSTALLATION IF SYSTEM HAS +/- 5 PSI THAN DESIGN PRESSURE.

ABOVE QUANTITIES PROVIDED FOR CONVENIENCE ONLY. CONTRACTOR TO CONFIRM ALL QUANTITIES PRIOR TO BIDDING.

REFERENCE MAXIMUM LATERAL DRIPLINE CHART TO DETERMINE MINIMUM NUMBER OF POINTS OF CONNECTION PER DRIP LINE ZONE.

WHERE LAYOUT FLEXIBILITY EXISTS CENTER FEED LAYOUTS MUST BE USED. THIS ALLOWS FOR EVEN FLOW OF WATER THROUGH THE ZONE.

RAINBIRD - DRIP INDICATOR TO BE PLACED IN ALL DRIP AREAS AT THE FURTHEST POINT OF EACH DRIP RUN.

ZONES LOWER THAN THE CAPACITY OF THE FLOW SENSOR ARE TO BE WIRED IN THE CONTROLLER WITH ANOTHER ZONE SO THAT THE FLOW SENSOR READS BOTH ZONES AS ONE ZONE IN ORDER TO MEET THE FLOW SENSOR'S LOWEST GPM REQUIREMENT. DRIP ZONES REQUIRED TO REMAIN PIPED AS SEPARATE ZONES.

CITY FILE #22-039 SECTION #35

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1	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

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SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

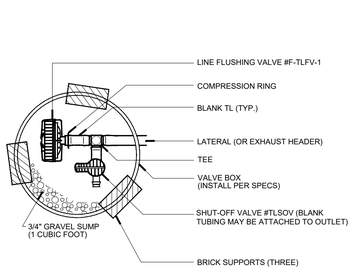
ADC Architectural Design Collaborative

IRRIGATION PLAN

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

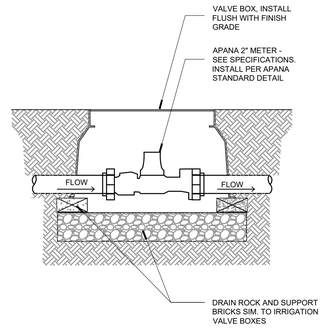
ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
IR1.0

CITY FILE #22-039 SECTION #35



Line Flushing Valve (W/ Shut-off Valve) N

Scale: N.T.S.



ENFLEX WATER METER L

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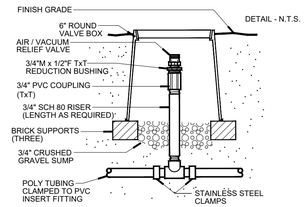
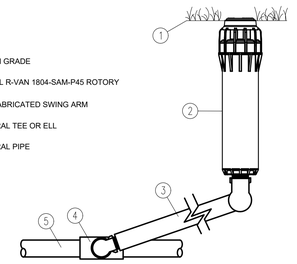


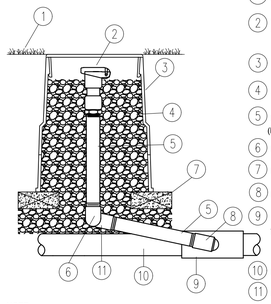
Air/Vacuum Relief (Plumbed to Poly) H

Scale: N.T.S.



Rotory Head Detail D

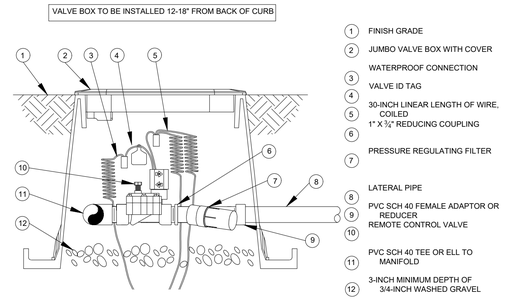
Scale: N.T.S.



NOTE:
1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

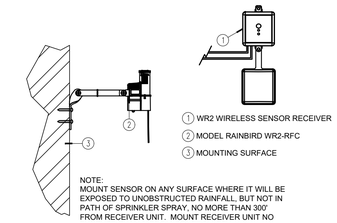
QUICK COUPLING VALVE K

Scale: N.T.S.



Drip Control Zone Kit G

Scale: N.T.S.

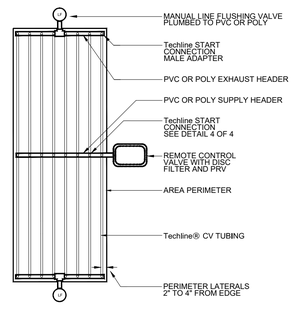


NOTE:
MOUNT SENSOR ON ANY SURFACE WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL, BUT NOT IN PATH OF SPRINKLER SPRAY, NO MORE THAN 300' FROM RECEIVER UNIT. MOUNT RECEIVER UNIT NO FURTHER THAN 6' FROM CONTROLLER.

Wireless Rain/Freeze Sensor C

Scale: N.T.S.

WHERE LAYOUT FLEXIBILITY EXISTS CENTER FEED LAYOUTS MUST BE USED. THIS ALLOWS FOR EVEN FLOW OF WATER THROUGH THE ZONE.

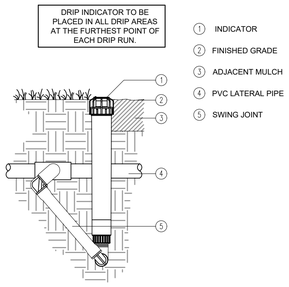


ALL BARBED FITTINGS TO UTILIZE EITHER STAINLESS STEEL HOSE CLAMPS, STEEL CRIMP, OR COMPRESSION RING.

TECHLINE CV-MAXIMUM LENGTH OF A SINGLE LATERAL (FEET)												
TECHLINE DRIPPER SPACING	12"				18"				24"			
DRIPPER FLOW RATE (GPH)	0.26	0.4	0.6	0.9	0.26	0.4	0.6	0.9	0.6	0.9		
INLET PRESSURE (PSI)												
20	331	242	190	144	468	344	270	204	342	260		
25	413	302	238	180	584	429	338	257	430	326		
35	518	380	299	227	737	540	426	323	542	412		
45	594	436	343	260	845	620	489	371	622	472		
55	655	480	378	287	932	684	539	410	686	522		
60	681	580	393	298	969	713	561	426	716	544		

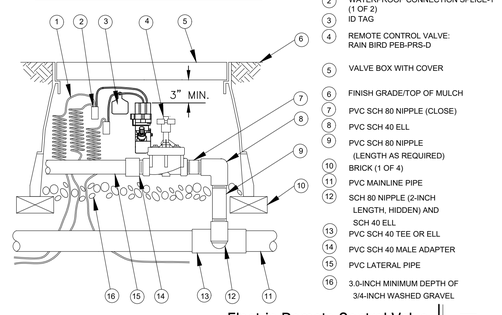
Techline CV Center Feed Layout M

Scale: N.T.S.



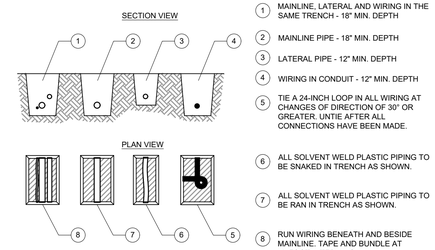
INDICATOR - SWING JOINT J

Scale: N.T.S.



Electric Remote Control Valve F

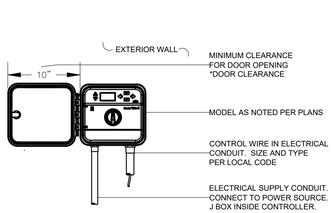
Scale: N.T.S.



NOTES:
1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SCHD. 40 PVC TWICE THE DIAMETER OF THE PIPE OR WITH BUNDLE WITHIN.
2. FOR PIPE AND WIRE BURIAL DEPTHS SEE SPECIFICATIONS.

Pipe and Wire Trenching B

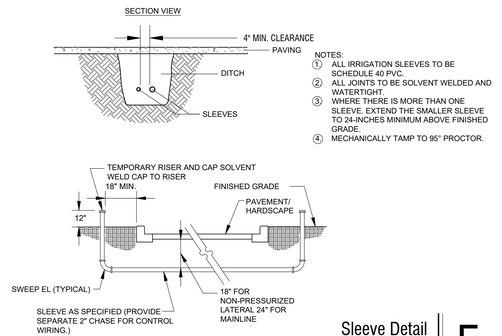
Scale: N.T.S.



NOTE
MOUNT CONTROLLER WITH LCD SCREEN AT EYE LEVEL. CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 VAC SOURCE.

Controller I

Scale: N.T.S.



NOTES:
1. ALL IRRIGATION SLEEVES TO BE SCHEDULE 40 PVC.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. WHERE THERE IS MORE THAN ONE SLEEVE. EXTEND THE SMALLER SLEEVE TO 24-INCHES MINIMUM ABOVE FINISHED GRADE.
4. MECHANICALLY TAMP TO 95° PROCTOR.

Sleeve Detail E

Scale: N.T.S.

PVC PIPE SIZE	SOLVENT WELD SCH. 40 FITTINGS	BELL AND GASKET FITTINGS	SOCKETED PIPE
1/2"	2"	--	2"
3/4"	2"	--	2"
1"	2 1/2"	--	2 1/2"
1 1/4"	3"	--	3"
1 1/2"	3"	3"	3"
2"	4"	4"	4"
2 1/2"	6"	6"	6"
3"	6"	6"	6"
4"	8"	8"	8"

Sleeve Schedule A

Scale: N.T.S.

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IRRIGATION DETAILS

BANK OF AMERICA
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ORIGINAL ISSUE: 11/18/2022
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CITY FILE #22-039 SECTION #35

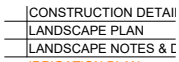
SITE PLAN.pdf Markup Summary

Building Department (12)

IR1.0

Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 10:28:42 AM
Status:

IR1.0



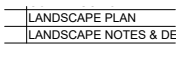
Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 10:29:14 AM
Status:

IRRIGATION PLAN

IR1.1

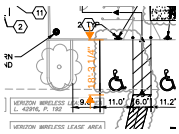
Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 10:30:29 AM
Status:

IR1.1



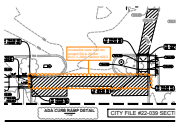
Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 10:30:29 AM
Status:

IRRIGATION DETAILS



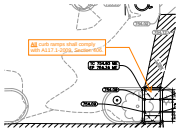
Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 10:33:49 AM
Status:

18'-3 1/4"



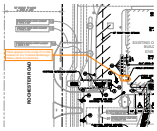
Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 10:55:32 AM
Status:

Accessible route shall not exceed 5% & 2% per A117.1-2009, Section 403.3.



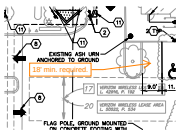
Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 11:00:32 AM
Status:

All curb ramps shall comply with A117.1-2009, Section 406.



Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 11:49:43 AM
Status:

There appears to be a step (?) in this location on the "Colored Renderings". Please clarify & coordinate.



Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 11:54:35 AM
Status:

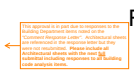
18' min. required.

Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 11:57:19 AM
Status:

Mark Artinian 248-841-2446
ArtinianM@RochesterHills.org

Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 11:57:44 AM
Status:

Yes



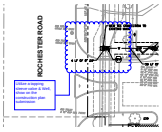
Subject: Building Department
Author: Mark Artinian
Date: 2/22/2023 12:20:29 PM
Status:

This approval is in part due to responses to the Building Department items noted on the "Comment Response Letter". Architectural sheets are referenced in the response letter but they were not resubmitted. Please include all Architectural sheets with the next full submittal including responses to all building code analysis items.

Engineering Department (14)

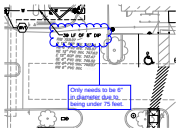
Subject: Engineering Department
Author: Jason Boughton
Date: 2/10/2023 10:45:15 AM
Status:

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.



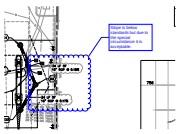
Subject: Engineering Department
Author: Jason Boughton
Date: 2/10/2023 11:07:58 AM
Status:

Utilize a tapping sleeve valve & Well, show on the construction plan submission



Subject: Engineering Department
Author: Jason Boughton
Date: 2/10/2023 11:08:21 AM
Status:

Only needs to be 6" in diameter due to being under 75 feet.

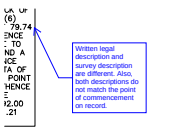


Subject: Engineering Department
Author: Jason Boughton
Date: 2/10/2023 11:08:58 AM
Status:

Slope is below standards but due to the special circumstance it is acceptable.

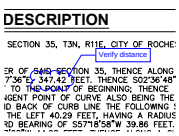
Subject: Engineering Department
Author: Jason Boughton
Date: 2/10/2023 11:09:20 AM
Status:

Yes



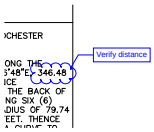
Subject: Engineering Department
Author: Jenny McGuckin
Date: 2/17/2023 3:10:34 PM
Status:

Written legal description and survey description are different. Also, both descriptions do not match the point of commencement on record.



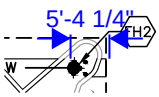
Subject: Engineering Department
Author: Jenny McGuckin
Date: 2/17/2023 3:58:32 PM
Status:

Verify distance



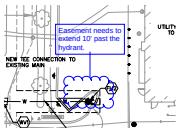
Subject: Engineering Department
Author: Jenny McGuckin
Date: 2/17/2023 3:58:34 PM
Status:

Verify distance



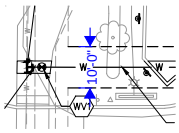
Subject: Engineering Department
Author: Jenny McGuckin
Date: 2/21/2023 1:07:02 PM
Status:

5'-4 1/4"



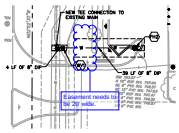
Subject: Engineering Department
Author: Jenny McGuckin
Date: 2/21/2023 7:27:57 AM
Status:

Easement needs to extend 10' past the hydrant.



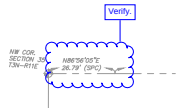
Subject: Engineering Department
Author: Jenny McGuckin
Date: 2/21/2023 1:07:05 PM
Status:

10'-0"



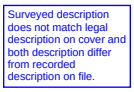
Subject: Engineering Department
Author: Jenny McGuckin
Date: 2/21/2023 7:30:07 AM
Status:

Easement needs to be 20' wide.



Subject: Engineering Department
Author: Jenny McGuckin
Date: 2/21/2023 8:42:51 AM
Status:

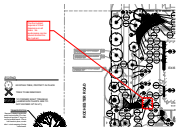
Verify.



Subject: Engineering Department
Author: Jenny McGuckin
Date: 2/21/2023 8:45:18 AM
Status:

Surveyed description does not match legal description on cover and both description differ from recorded description on file.

Fire Department (2)



Subject: Fire Department
Author: Ann Echols
Date: 2/9/2023 7:18:17 AM
Status:

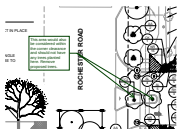
The fire hydrant requires a 3 foot clearance on all sides. No landscaping can be placed around the fire hydrant.

Subject: Fire Department
Author: Ann Echols
Date: 2/9/2023 7:19:49 AM
Status:

Natural Resouces (1)

Subject: Natural Resouces
Author: Matt Einheuser
Date: 2/16/2023 9:50:45 AM
Status:

Natural Resources (7)



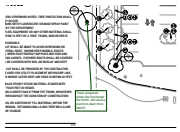
Subject: Natural Resources
Author: Matt Einheuser
Date: 2/16/2023 9:48:44 AM
Status:

This area would also be considered within the corner clearance and should not have any trees planted here. Remove proposed trees.

Subject: Natural Resources
Author: Matt Einheuser
Date: 2/16/2023 9:49:39 AM
Status:

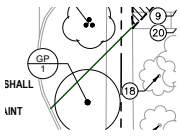
Provide landscape and planting notes/statements including the following:

"Prior approval is required to plant any tree or shrub on the public right-of-way. All trees and shrubs must be planted at least 10' from the edge of the public road. (Trees must be planted at least 15' away from curb or road edge where the speed limit is more than 35 mph.) Shade trees and shrubs must be planted at least 5' from the edge of the public walkway. Evergreen and ornamental trees must be planted at least 10' from the edge of the public walkway. No trees or shrubs may be planted within the triangular area formed at the intersection of any street right-of-way lines at a distance along each line of 25' from their point of intersection. No trees or shrubs may be planted in the triangular area formed at the intersection of any driveway with a public walkway at a distance along each line of 15' from their point of intersection. All trees and shrubs must be planted at least 10' from any fire hydrant. Shade and evergreen trees must be at least 15' away from the nearest overhead wire. Trees must be planted a minimum of 5' from an underground utility, unless the city's Landscape Architect requires a greater distance. Prior to the release of the performance bond, the City of Rochester Hills Forestry Unit needs to inspect all trees, existing or planted, to identify any that pose a hazard to the safe use of the public right-of-way. Forestry may require the developer to remove, and possibly replace, any such trees.
The above requirements are incorporated into the plan."

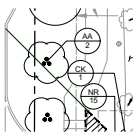


Subject: Natural Resources
Author: Matt Einheuser
Date: 2/16/2023 9:49:22 AM
Status:

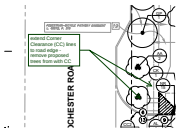
Trees proposed within the Rochester Rd ROW will need a permit to plant from MDOT



Subject: Natural Resources
Author: Matt Einheuser
Date: 2/16/2023 9:46:48 AM
Status:

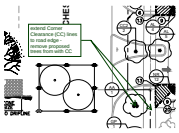


Subject: Natural Resources
Author: Matt Einheuser
Date: 2/16/2023 9:47:00 AM
Status:



Subject: Natural Resources
Author: Matt Einheuser
Date: 2/16/2023 9:48:09 AM
Status:

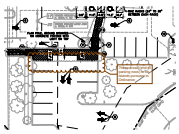
extend Corner Clearance (CC) lines to road edge - remove proposed trees from with CC



Subject: Natural Resources
Author: Matt Einheuser
Date: 2/16/2023 9:48:32 AM
Status:

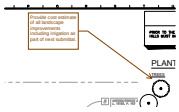
extend Corner Clearance (CC) lines to road edge - remove proposed trees from with CC

Planning Department (5)



Subject: Planning Department
Author: C.McLeod
Date: 2/16/2023 4:28:06 PM
Status:

These areas (end of parking rows) to be islands pursuant to Ordinance



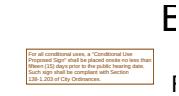
Subject: Planning Department
Author: C.McLeod
Date: 2/16/2023 4:32:09 PM
Status:

Provide cost estimate of all landscape improvements including irrigation as part of next submittal.

Subject: Planning Department
Author: C.McLeod
Date: 2/24/2023 11:57:46 AM
Status:

Subject: Planning Department
Author: C.McLeod
Date: 2/24/2023 11:59:39 AM
Status:

Conditioned on the providing of landscaped islands within the parking lot, adjacent to pedestrian connection to S. Rochester Road and all other noted comments being addressed.



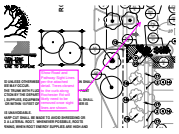
Subject: Planning Department
Author: C.McLeod
Date: 2/24/2023 12:13:44 PM
Status:

For all conditional uses, a "Conditional Use Proposed Sign" shall be placed onsite no less than fifteen (15) days prior to the public hearing date. Such sign shall be compliant with Section 138-1.203 of City Ordinances.

Site Plan Review (1)

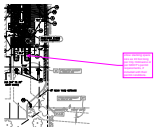
Subject: Site Plan Review
Author: macdonaldj
Date: 2/7/2023 1:20:12 PM
Status:

Traffic (5)



Subject: Traffic
Author: Keith
Date: 2/16/2023 10:05:06 AM
Status:

Show Road and Pathway Sight Lines per the attached detail. Trees closest to the curb along Rochester Rd will likely need to be removed once sight lines are shown.



Subject: Traffic
Author: Keith
Date: 2/17/2023 1:59:35 PM
Status:

show stacking space size as 16 foot long per City Ordinance or per MDOT's permit requirements, if included with their permit conditions.

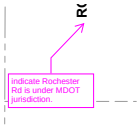
Keith Depp 248-841-2503 No
DeppK@RochesterHills.org

Subject: Traffic
Author: Keith
Date: 2/16/2023 10:14:16 AM
Status:

Provide the MDOT for review and copy the City on MDOTs response.

Subject: Traffic
Author: Keith
Date: 2/17/2023 1:54:50 PM
Status:

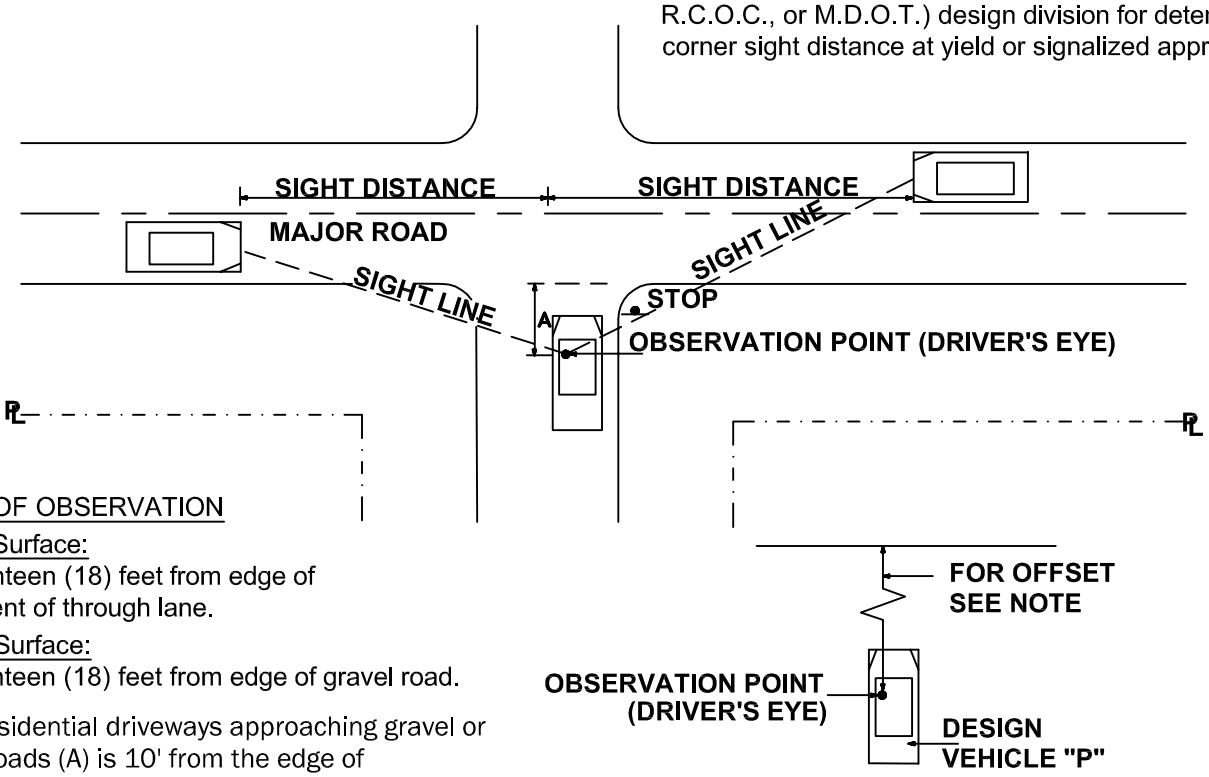
Provide the MDOT for review and copy the City on MDOTs response.



Subject: Traffic
Author: Keith
Date: 2/17/2023 1:56:05 PM
Status:

indicate Rochester Rd is under MDOT jurisdiction.

Different sight distances are required for yield or signal controlled intersections. Contact road agency's (City, R.C.O.C., or M.D.O.T.) design division for determining corner sight distance at yield or signalized approaches.



POINT OF OBSERVATION

Paved Surface:
(A) Eighteen (18) feet from edge of pavement of through lane.

Gravel Surface:
(A) Eighteen (18) feet from edge of gravel road.

* For residential driveways approaching gravel or paved roads (A) is 10' from the edge of gravel/pavement.

The point of vision shall be from the height of eye, 3.5 feet above the proposed intersecting elevation to a height of object 3.5 feet above the existing or proposed road centerline and shall be continuously visible within the specified limits.

MINIMUM CORNER SIGHT DISTANCE FOR DRIVEWAYS AND STREETS AT MAJOR ROAD INTERSECTIONS FOR PASSENGER VEHICLES		
MAJOR ROAD POSTED OR 85% SPEED IN MPH	MINIMUM SIGHT DISTANCE IN FEET, BOTH DIRECTIONS	
	2 OR 3 LANE THRU ROAD IN FEET	4 OR 5 LANE THRU ROAD IN FEET
25	280	295
30	335	355
35	390	415
40	445	470
45	500	530
50	555	590
55	610	650

The basic prima facia speed shall be used for gravel roads, unless otherwise approved by the Engineer.

NOTES

1. Any deviation from given data requires an engineering study approved by the road agency (City, R.C.O.C., or M.D.O.T.) in accordance with the latest edition AASHTO policy on geometric design.
2. This design guide also applies to new Permit and Plat construction projects.
3. The above data is based on a left turn maneuver into the intersecting roadway as described in AASHTO. Due to the higher potential accident severity, the left turning sight distance was used to determine the corner sight distanced required. Right turn onto major roads shall have the same sight distances.
4. Existing site conditions may require an engineering study to determine sight distance.

CITY OF ROCHESTER HILLS
STANDARD DETAIL FOR:

Sight Distance Roadways

ROCHESTER HILLS MICHIGAN

DRAWN BY:	FILE NAME:	PLAN DATE:	REV.	REV.	REV.
B. SMITH	CIRC DRV	8/28/1996	4/12/2012	3/15/2014	

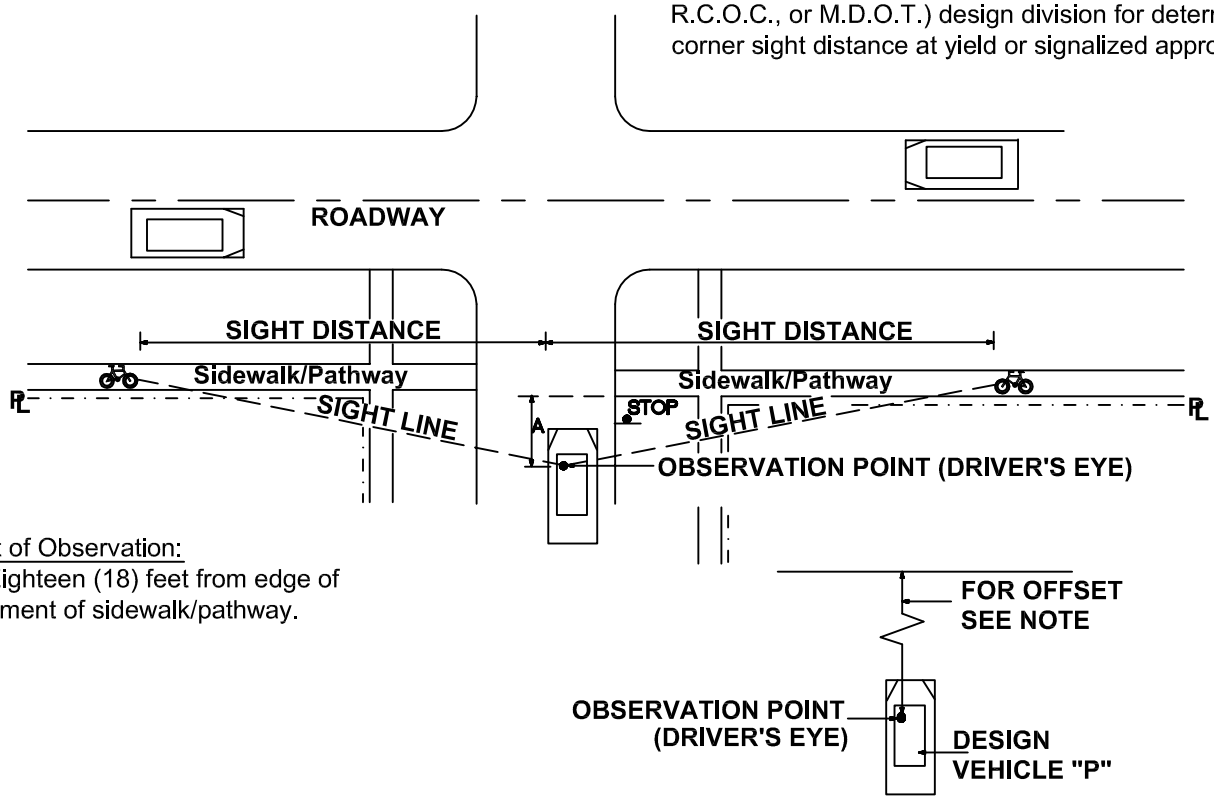
APPROVED BY:
PAUL SHUMEJKO, P.E., PTOE
CITY TRANSPORTATION ENGINEER

NOT TO SCALE

SHEET 1 OF 2

I:\ENG\DWG\DETAILS\ROADS\SIGHT DISTANCE-Rds & Paths.DWG

Different sight distances are required for yield or signal controlled intersections. Contact road agency's (City, R.C.O.C., or M.D.O.T.) design division for determining corner sight distance at yield or signalized approaches.



Point of Observation:
(A) Eighteen (18) feet from edge of pavement of sidewalk/pathway.

The point of vision shall be from the height of eye, 3.5 feet above the proposed intersecting elevation to a height of object 3.5 feet above the existing or proposed road centerline and shall be continuously visible within the specified limits.

MINIMUM CORNER SIGHT DISTANCE FOR STREETS AT INTERSECTIONS	
PATHWAY GRADE APPROACHING INTERSECTION (%)	MINIMUM SIGHT DISTANCE IN FEET, BOTH DIRECTIONS
0	135
-1	140
-2	145
-3	150
-4	160
-5	165
-6	175
-7	190
-8	205

NOTES

1. Any deviation from given data requires an engineering study approved by the road agency (City, R.C.O.C., or M.D.O.T.) in accordance with the latest edition AASHTO Guide for the Development of Bicycle Facilities.
2. This design guide also applies to new Permit and Plat construction projects.
3. The bicycle design speed used in the chart is 18 MPH.
4. Approach pathway slope greater than 8% is not allowed due to ADA compliance.
5. Existing site conditions may require an engineering study to determine sight distance.

CITY OF ROCHESTER HILLS
STANDARD DETAIL FOR:
Sight Distance Pathways

ROCHESTER HILLS MICHIGAN

DRAWN BY:	FILE NAME:	PLAN DATE:	REV.	REV.	REV.
B. SMITH	CIRC DRV	8/28/1996	4/12/2012	3/15/2014	

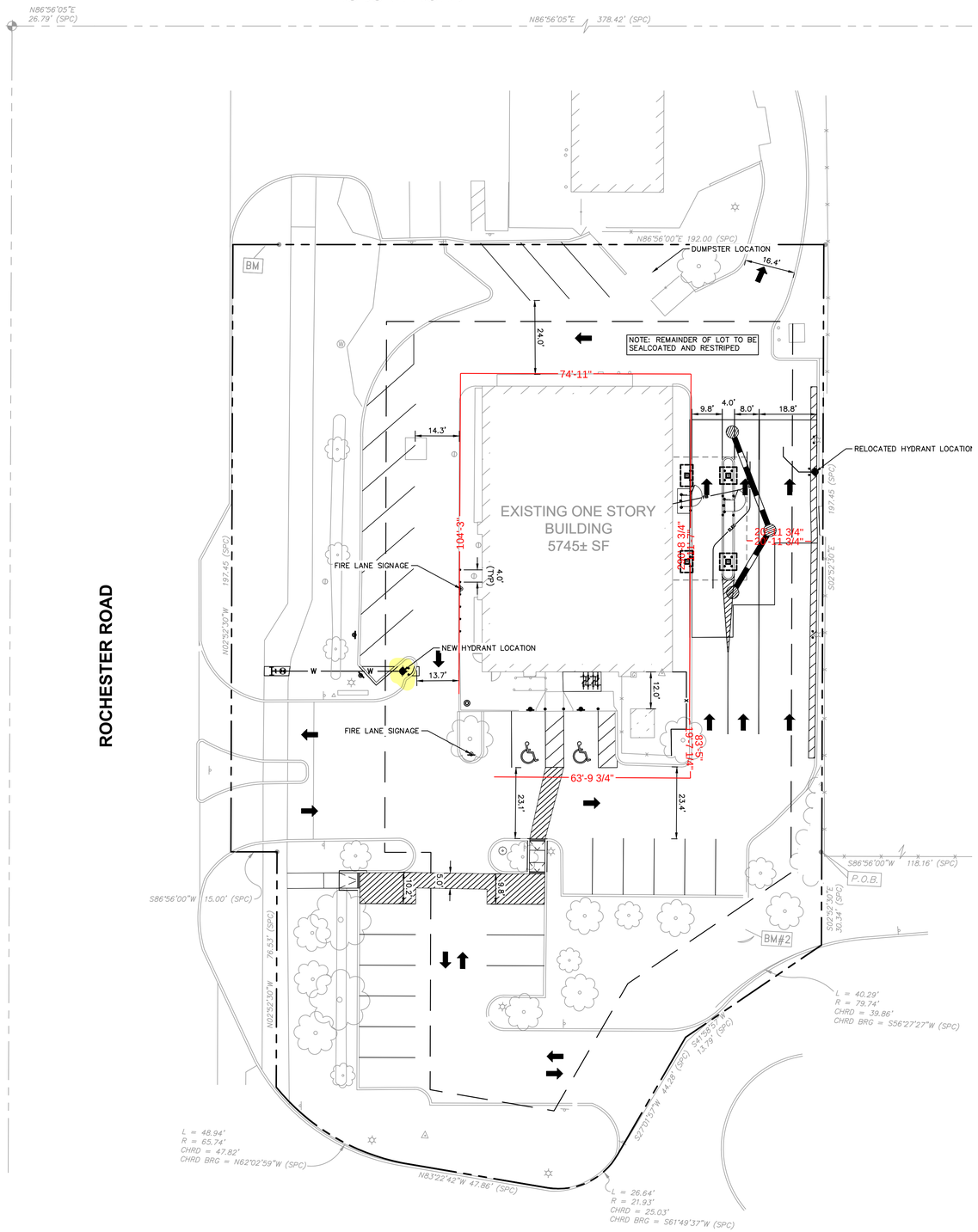
APPROVED BY:
PAUL SHUMEJKO, P.E., PTOE
CITY TRANSPORTATION ENGINEER

NOT TO SCALE

SHEET 2 OF 2

I:\ENG\DWG\DETAILS\ROADS\SIGHT DISTANCE-Rds & Paths.DWG

Capt. Ann Echols 248-841-2701 Yes
EcholsA@RochesterHills.org



GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

MISS DIG System, Inc.
1-800-482-7171

FIRE DEPARTMENT NOTES

1. 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.KNOXBOX.COM (IFC 2006 SEC.1028.2)
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)
3. CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14.
4. OPEN BURNING IS NOT PERMITTED, INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING.
5. 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 & 307.6.2.3) MORTAR PERMIT CAN BE APPLIED FOR ONLINE AT WWW.ROCHESTERHILLS.ORG/FIRE IN THE 'FOR YOUR BUSINESS' SECTION.

SITE DATA TABLE

PARCEL NUMBER: 15-35-100-051	
SITE ADDRESS: 3035 S. ROCHESTER DRIVE, ROCHESTER HILLS, MI 48307	
PARCEL AREA: 1.21 ACRES	
DISTURBANCE AREA:	
ZONING: B-2 GENERAL BUSINESS	
PROPOSED USE: BANK (CONDITIONAL)	
EXISTING BUILDING AREA: 5745 SF	
DRIVE WIDTH: VARIES, SEE PLANS	
EXISTING PARKING:	42 SPACES
EXISTING ADA PARKING:	2 SPACES
EXISTING TOTAL PARKING:	44 SPACES
PROPOSED PARKING:	27 SPACES
PROPOSED ADA PARKING:	2 SPACES

NO.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	02/03/23	JWG
2	ISSUED FOR PERMIT	12/19/22	JWG
3	100% CONSTRUCTION DOCUMENTS	12/16/22	JWG

Kimley»Horn of Michigan, Inc.

31731 NORTHWESTERN HIGHWAY, SUITE 250
FARMINGTON HILLS, MI 48334-2568
LIVONIA, MI 48152
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: EC
DRAWN BY: EC
CHECKED BY: JWG

CITY FILE #22-039 SECTION #35

ADC Architectural Design Collaborative

FIRE PROTECTION PLAN

BANK OF AMERICA
3035 S ROCHESTER RD
ROCHESTER HILLS, MI 48307

ORIGINAL ISSUE: 11/18/2022
KHA PROJECT NO. 268266000
SHEET NUMBER
EXH

CITY FILE #22-039 SECTION #35