



J2023-0143
PSP2024-0013
Revision m#3
Received 2/7/2025

City of Rochester
Hills Planning &
Economic
Development

Site Plan Review

Reviewed for compliance with City Ordinance, Building and Fire Codes. Conditions and mark-ups noted throughout plan set must be addressed prior to final approval.

| Department | Reviewer | Approved |
|-------------------------|---|-------------------------|
| Assessing | Assessing | Yes |
| Building | Jason Rhoades 248-841-2435 RhoadesJa@RochesterHills.org | Yes |
| Engineering - Utilities | Jason Boughton 248-841-2490 BoughtonJ@RochesterHills.org | Yes |
| Engineering - Legal | Seth Bucholz 248-841-2491 bucholz@rochesterhills.org | YES Date: 02/12/2025 |
| Fire | Assistant Chief Ann Echols 248-841-2701 EcholsA@RochesterHills.org | Yes |
| Natural Resources | Matt Einheuser 248-841-2551 EinheuserM@RochesterHills.org | Yes |
| Planning | Chris McLeod 248-841-2572 mcleodc@RochesterHills.org | Yes |
| Traffic | Keith Depp 248-841-2503 DeppK@RochesterHills.org | Yes |

Next Steps: Schedule for next available planning commission date.

Maintenance. The owner, tenant, occupant or person responsible for any property which was the subject of an approved site plan shall maintain the property and the improvements thereon in accordance with the approved site plan or an approved amendment thereof. This responsibility shall include the duty to maintain in a condition substantially similar as approved, including the duty to replace, if necessary, all improvements such as, but not by way of limitation, all greenbelts, planting, walls, fences, paving, trash receptacles, handicapped parking areas, etc.

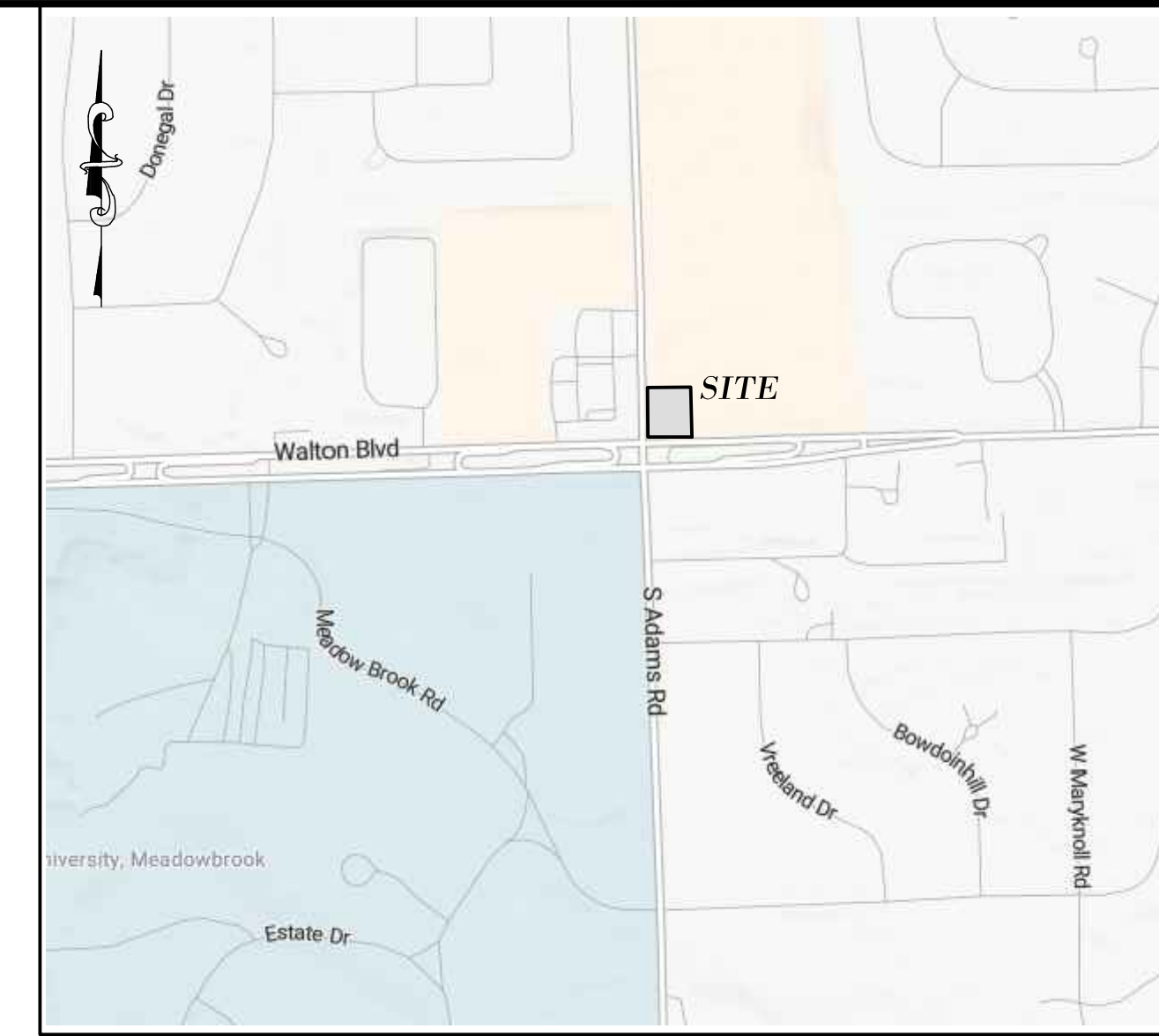
For all conditional uses, a "Conditional Use Proposed Sign" shall be placed onsite no less than fifteen (15) days prior to the public hearing date. Such sign shall be placed onsite by City Staff when the public hearing date/meeting has been confirmed by PED Staff.

ADM

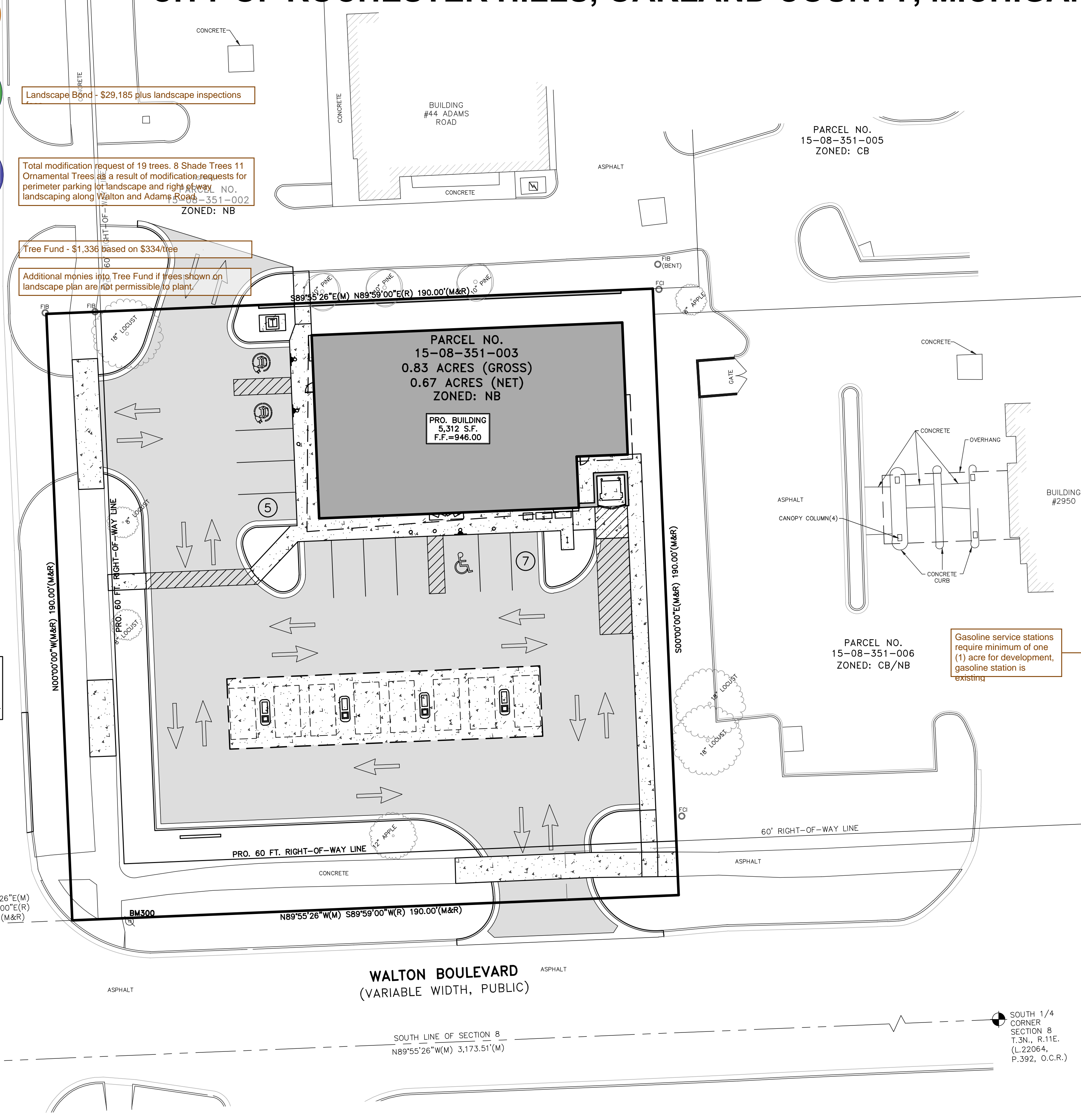
- SP** Planning Commission
- CU**
- LIP**
- BP**
- LB**
- PCM**
- TRP**

SITE PLANS for: PROPOSED GAS STATION

2980 WALTON BOULEVARD CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN



LOCATION MAP N.T.S.



SHEET INDEX

- 1 COVER SHEET/SITE PLAN
- 2 DIMENSION AND LAYOUT PLAN
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- 6 UTILITY PLAN
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- 8 SITE DETAILS

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- L-2 LANDSCAPE DETAILS
- IR-1 IRRIGATION PLAN

- 1 of 2 PHOTOMETRIC PLAN
- 2 of 2 PHOTOMETRIC DETAILS

- A.100 RENDERINGS
- A.101 FLOOR PLAN
- A.201 ELEVATIONS
- A.202 CANOPY ELEVATIONS

- 1 of 2 SANITARY SEWER STANDARD DETAILS
- 2 of 2 SANITARY SEWER STANDARD DETAILS
- 1 of 1 STORM SEWER SYSTEM STANDARD DETAILS
- 1 of 2 WATER MAIN STANDARD DETAILS
- 2 of 2 WATER MAIN STANDARD DETAILS
- 1 of 1 WATER MAIN SPECIAL DETAILS

LEGAL DESCRIPTION (BY OTHERS):
PART OF THE SOUTHWEST 1/4 OF SECTION 8, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS:
BEGINNING AT A POINT DISTANT NORTH 43 FEET AND N89°59'00"E 43 FEET FROM THE SOUTHWEST SECTION CORNER, THENCE NORTH 190 FEET, THENCE N89°59'00"E 190 FEET, THENCE SOUTH 190 FEET, THENCE S89°59'00"W 190 FEET TO THE BEGINNING. CONTAINING 0.83 ACRES.

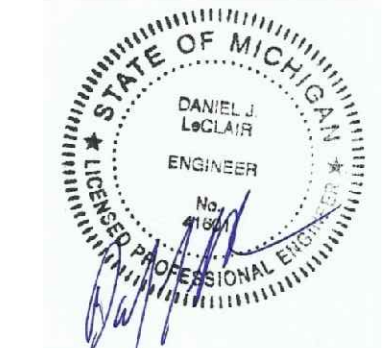
NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

NOTE:
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AS DISCLOSED BY AVAILABLE UTILITY COMPANY RECORDS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE COMPANY. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY IF A CONFLICT IS APPARENT.

OWNER/APPLICANT
SAFeway ACQUISITION CO LLC
19855 OUTER DR. STE 207W
DEARBORN, MI 48126
PHONE: (313) 624-9911
CONTACT: SAM BEYDOUN

ARCHITECT
GAV ASSOCIATES, INC.
24001 ORCHARD LAKE ROAD
SUITE 180A
FARMINGTON, MI 48336
PHONE: (248) 985-9101
CONTACT: GHASSAN ABDELNOUR

CIVIL ENGINEER
GREENTECH ENGINEERING, INC.
51147 WEST PONTIAC TRAIL
WIXOM, MI 48393
PHONE: (248) 668-0700
FAX: (248) 668-0701
CONTACT: CHAD HOLDWICK
DANIEL LECLAIR



GREENTECH ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS
51147 West Pontiac Trail, Wixom, MI 48393
Phone: (248) 668-0700 Fax: (248) 668-0701

811
Know what's below
Call before you dig.

CLIENT: G.A.V. & ASSOCIATES, INC.
COVER SHEET/SITE PLAN
2980 WALTON BOULEVARD - PARCEL NO. 15-08-351-003
SECTION: 8 RANGE: 11 E.
CITY OF ROCHESTER HILLS
OAKLAND COUNTY
MICHIGAN

| REVISED | |
|-------------------------------------|-----------------|
| 2024-10-7 | PER CITY REVIEW |
| 2025-1-7 | PER CITY REVIEW |
| 2025-2-6 | PER CITY REVIEW |
| DATE: 5-23-2024 | |
| DRAWN BY: CEH | |
| CHECKED BY: JPP/DJL | |
| FBK: -- | 1 |
| CHF: RG | |
| SCALE HOR 1"=20 FT. VER 1"=4 FT. | |

- LEGEND**
- FIB FOUND IRON BAR
 - FCI FOUND CAPPED IRON
 - MON MONUMENT
 - (M) MEASURED
 - (R) RECORD
 - EX. CONDUIT
 - EX. GAS MAIN
 - EX. OVERHEAD LINES
 - EX. SANITARY SEWER
 - EX. STORM SEWER
 - EX. WALL
 - EX. WATER MAIN
 - EX. FENCE
 - EX. BOLLARD
 - EX. CATCH BASIN
 - EX. CLEANOUT
 - EX. ELECTRIC METER
 - EX. FLAG POLE
 - EX. GAS MARKER
 - EX. GENERATOR
 - EX. GUY ANCHOR
 - EX. HYDRANT
 - EX. MONITORING WELL
 - EX. PEDESTAL
 - EX. SANITARY MANHOLE
 - EX. SIGN
 - EX. TRAFFIC SIGNAL
 - EX. TRANSFORMER
 - EX. WATER SHUT OFF
 - EX. LIGHT POLE
 - EX. UTILITY POLE
 - EX. DECIDUOUS TREE
 - EX. CONIFEROUS TREE
 - PRO. SIGN
 - PRO. BOLLARD WITH SIGN
 - INDICATES NUMBER OF PARKING SPACES

SETBACKS:
 FRONT: 50 FEET*
 SIDES: 0 FEET ONE SIDE, 50 FEET TOTAL
 REAR: 50 FEET**

*IN THE NB & CB DISTRICTS, THE FRONT YARD SETBACK MAY BE REDUCED TO THE AVERAGE SETBACK OF STRUCTURES WITHIN 300 FEET OF THE SUBJECT PARCEL, ALONG THE SAME SIDE OF THE STREET.

**WHEN A NB OR CB DISTRICT ADJUTS ANY OTHER NON-RESIDENTIAL DISTRICT, THE REAR YARD FOR THE NB OR CB DISTRICT MAY BE REDUCED TO TEN FEET WITH THE APPROVAL OF THE PLANNING COMMISSION, UPON ITS DETERMINATION THAT THE REQUESTED REDUCTION ALLOW FOR BETTER DEVELOPMENT AND WILL BE COMPATIBLE WITH ADJOINING PROPERTIES.

NOTE: ARCHITECT OR DESIGN INDIVIDUAL TO VERIFY SETBACKS WITH THE CITY OF ROCHESTER HILLS AND/OR ANY ASSOCIATION ORDINANCE PRIOR TO DESIGN.

LEGAL DESCRIPTION (BY OTHERS):
 PART OF THE SOUTHWEST 1/4 OF SECTION 8, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: BEGINNING AT A POINT DISTANT NORTH 43 FEET AND N89°59'00"E 43 FEET FROM THE SOUTHWEST SECTION CORNER, THENCE NORTH 190 FEET, THENCE N89°59'00"E 190 FEET, THENCE SOUTH 190 FEET, THENCE S89°59'00"W 190 FEET TO THE BEGINNING, CONTAINING 0.83 ACRES.

FLOOD HAZARD STATEMENT:
 THIS PROPERTY IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" FLOOD HAZARD AREA AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FOR MICHIGAN FLOOD INSURANCE RATE MAP (FIRM) #2612500387F (COMMUNITY ID NO. 260471 - CITY OF ROCHESTER HILLS, MI) WITH AN EFFECTIVE DATE OF SEPTEMBER 29, 2006. THIS STATEMENT IS BASED ON THE RESULTS OF GRAPHIC PLOTTING ONTO THE ABOVE NAMED MAP AND PANEL, WHICH IS THE CURRENT MAP FOR THE COMMUNITY IN WHICH THE PROPERTY IS LOCATED. ZONE "X" INDICATES AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

HATCH LEGEND

| | |
|--|----------|
| | ASPHALT |
| | CONCRETE |

ILLUSTRATIVE RETAINING WALL OPTION & DETAIL:
 NOTE: ALL RETAINING WALLS TO BE 30" MAXIMUM HEIGHT, UNLESS OTHERWISE SPECIFIED. RETAINING WALLS GREATER THAN 30" SHALL BE DESIGNED BY A STRUCTURAL ENGINEER.

PISA2®

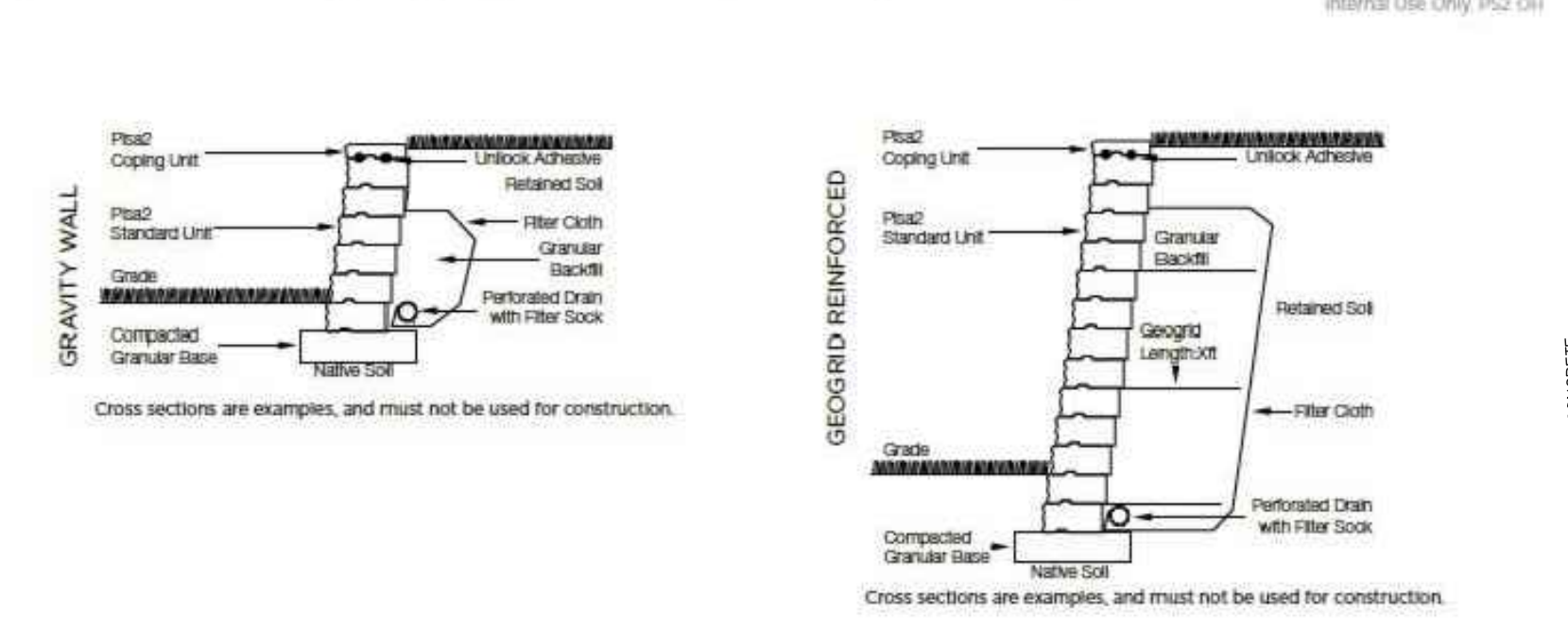
XL TAPERED AVAILABLE IN GRANITE, MAHOGANY ASH & NEVADA ONLY

| Stones & Bundling | Face Ft/ Bundle | Face Ft/ Unit | Lin Ft/ Bundle | Lin Ft/ Unit | Units/ Bundle | Units/ Face Ft | Sections/ Bundle | Lbs/ Unit | Lbs/ Bundle |
|----------------------|-----------------|---------------|----------------|--------------|---------------|----------------|------------------|-----------|-------------|
| Standard | 20 | 0.67 | 40 | 1.33 | 30 | 1.5 | 2 | 85.6 | 2570 |
| Tapered | 20 | 0.67 | 40 | 1.33 | 30 | 1.5 | 2 | 76.8 | 2305 |
| XL Tapered* | 21.34 | 0.67* | 42.67 | 1.33* | 32* | 1.5* | - | 72* | 2467 |
| Corner - Double Unit | 15 | 1.67 | - | - | 9 | 0.83 | 3 | 104.8 | 943 |
| 12" Coping ** | 21 | 0.25 | 84 | 2 | 42 | 4 | 2 | 64.6 | 2714 |

Notes: *All XL Tapered data is based on split units. Maximum height - 48" (under optimum conditions). Higher walls can be achieved using geogrid reinforcement. Tapered units will allow for a minimum 5ft. outside radius. 12" Coping bundle has 7 double units of Closed-End coping. All measurements are nominal.

Unilock, through Reti Stone Systems International, can provide preliminary site engineering for most commercial projects. Soils information, site drawings, and loading requirements are some of the information details required in order to provide this preliminary site engineering. Contact your local Unilock representative for details. Retaining wall engineering software is also available free of charge at www.unilock.com.

Internal Use Only PSP 011



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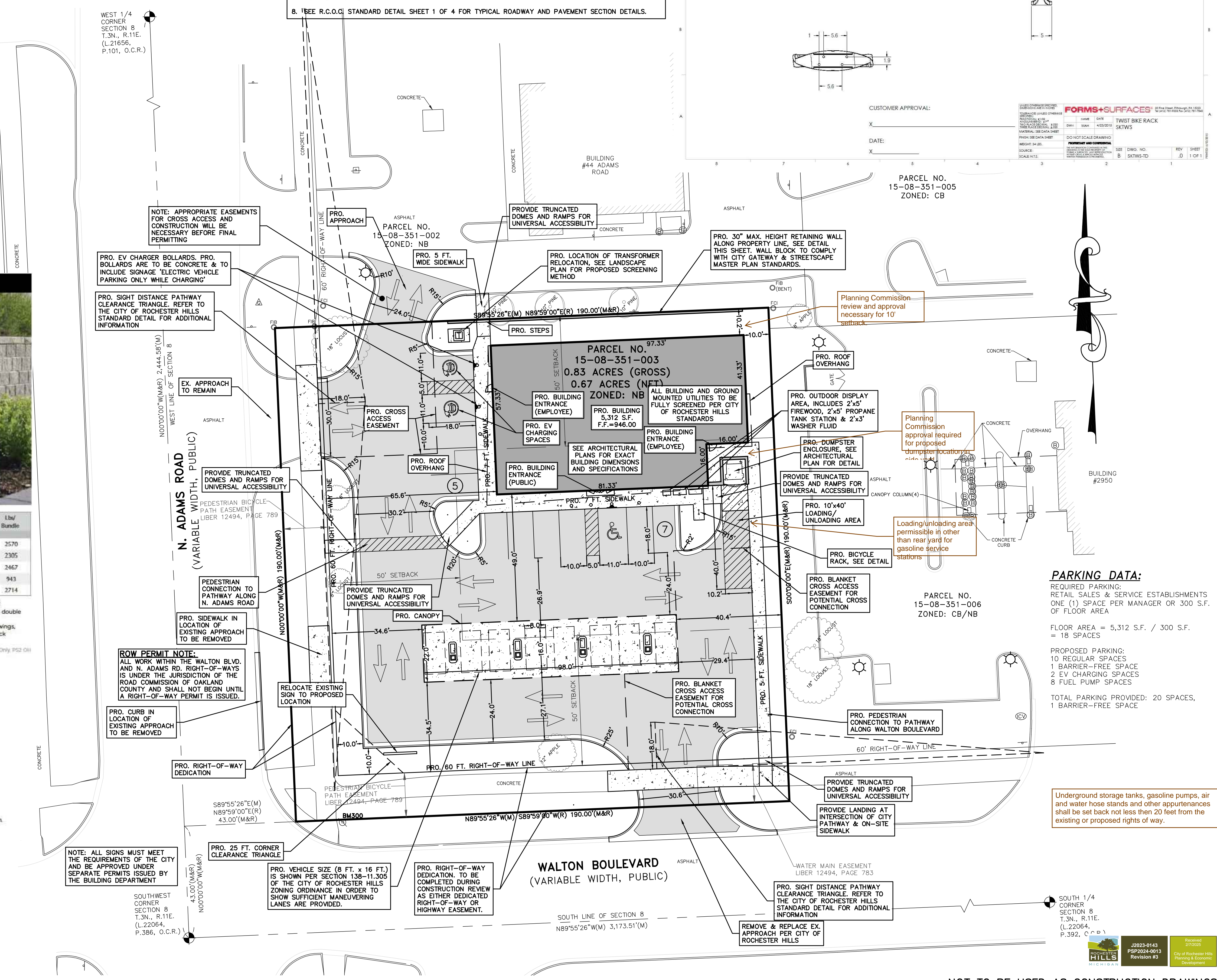
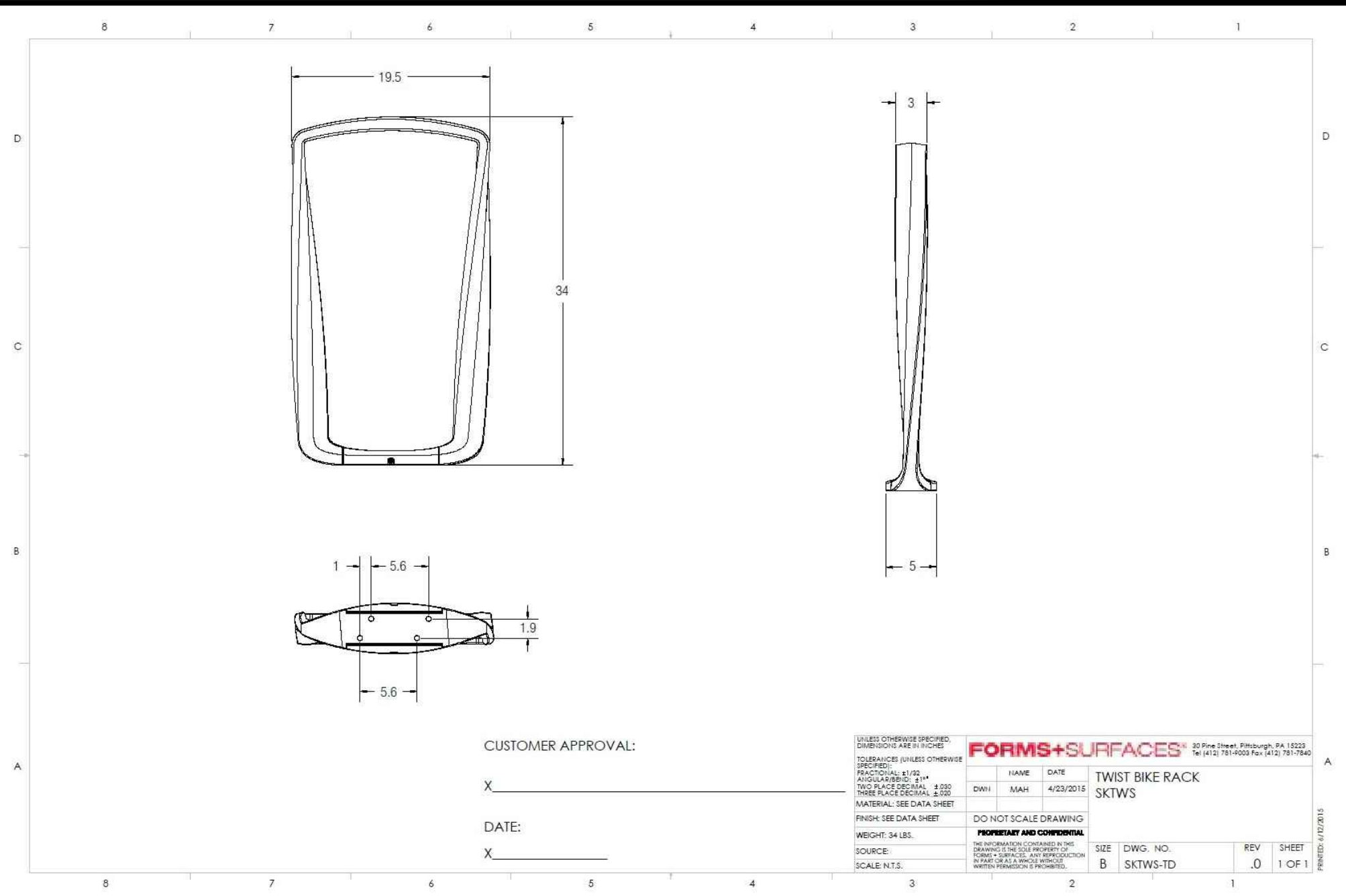
ZONING:
 NB, NEIGHBORHOOD BUSINESS DISTRICT

BENCHMARK:
 BM300
 IN THE BASE OF THE TRAFFIC SIGNAL POLE AT THE NORTHEAST CORNER OF N. ADAMS ROAD AND WALTON BOULEVARD. ELEVATION: 944.70 N.A.V.D.88

SURVEY NOTES:
 1. TITLE WORK WAS NOT PROVIDED. EXISTING EASEMENTS, IF ANY, HAVE NOT BEEN SHOWN.
 2. A WETLAND AND TREE SURVEY WERE NOT PERFORMED AS PART OF THIS SURVEY.

GENERAL NOTES:
 THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

- ALL DIMENSIONS SHOWN ARE TO FACE OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
- SEE DETAIL SHEET FOR ADDITIONAL SIDEWALK RAMP DETAILS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF ROCHESTER HILLS AND R.C.O.C. CURRENT STANDARDS AND REGULATIONS.
- THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- ANY WORK WITHIN THE STREET OR HIGHWAY RIGHT-OF-WAYS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION AND SHALL NOT BEGIN UNTIL ALL NECESSARY PERMITS HAVE BEEN ISSUED FOR THE WORK.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST THE TOP OF ALL EXISTING AND PROPOSED STRUCTURES (MANHOLES, CATCH BASINS, INLETS, GATE WELLS ETC.) WITHIN GRADED AND/OR PAVED AREAS TO FINAL GRADE SHOWN ON THE PLANS. ALL SUCH ADJUSTMENTS SHALL BE INCIDENTAL TO THE JOB AND WILL NOT BE PAID FOR SEPARATELY.
- CONTRACTOR TO PROVIDE ALL REQUIRED TRAFFIC CONTROL DEVICES AND PERSONNEL TO MAINTAIN A SAFE WORK ENVIRONMENT.
- SEE R.C.O.C. STANDARD DETAIL SHEET 1 OF 4 FOR TYPICAL ROADWAY AND PAVEMENT SECTION DETAILS.



GREENTECH ENGINEERING, INC.
 CIVIL ENGINEERS & LAND SURVEYORS
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G.A.V. & ASSOCIATES, INC.

DIMENSION AND LAYOUT PLAN

CLIENT: 2980 WALTON BOULEVARD - PARCEL NO. 15-08-351-003
 SECTION: 8
 CITY OF ROCHESTER HILLS
 OAKLAND COUNTY
 MICHIGAN

REVISIONS:

| REVISED | DATE | BY |
|-----------|-----------------|----|
| 2024-10-7 | PER CITY REVIEW | |
| 2025-1-7 | PER CITY REVIEW | |
| 2025-2-6 | PER CITY REVIEW | |

DATE: 5-23-2024
 DRAWN BY: CEH
 CHECKED BY: JPP/JDL

SCALE: 1" = 20 FT.
 VER: 1" = 1 FT.

NOT TO BE USED AS CONSTRUCTION DRAWINGS

2

- LEGEND**
- OFIB FOUND IRON BAR
 - OFCI FOUND CAPPED IRON
 - OMON MONUMENT
 - (M) MEASURED
 - (R) RECORD
 - EX. CONDUIT
 - EX. GAS MAIN
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 - EX. LIGHT POLE
 - EX. UTILITY POLE
 - EX. DECIDUOUS TREE
 - EX. CONIFEROUS TREE

SOILS MAP:



SOILS LEGEND:
Oakland County, Michigan (M1125)
Oakland County, Michigan (M1125)

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|------------------------------------|---------------|--------------|----------------|
| 59 | Urban land | 0.7 | 100.0% |
| Totals for Area of Interest | | 0.7 | 100.0% |

ZONING:
NB, NEIGHBORHOOD BUSINESS DISTRICT

SETBACKS:
ORDINANCE
FRONT: 50 FEET**
SIDES: 0 FEET ONE SIDE, 50 FEET TOTAL
REAR: 50 FEET**

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BENCHMARK:

BM300
IN THE BASE OF THE TRAFFIC SIGNAL POLE AT THE NORTHEAST CORNER OF N. ADAMS ROAD AND WALTON BOULEVARD.
ELEVATION: 944.70 N.A.V.D.88

SURVEY NOTES:

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FLOOD HAZARD STATEMENT:

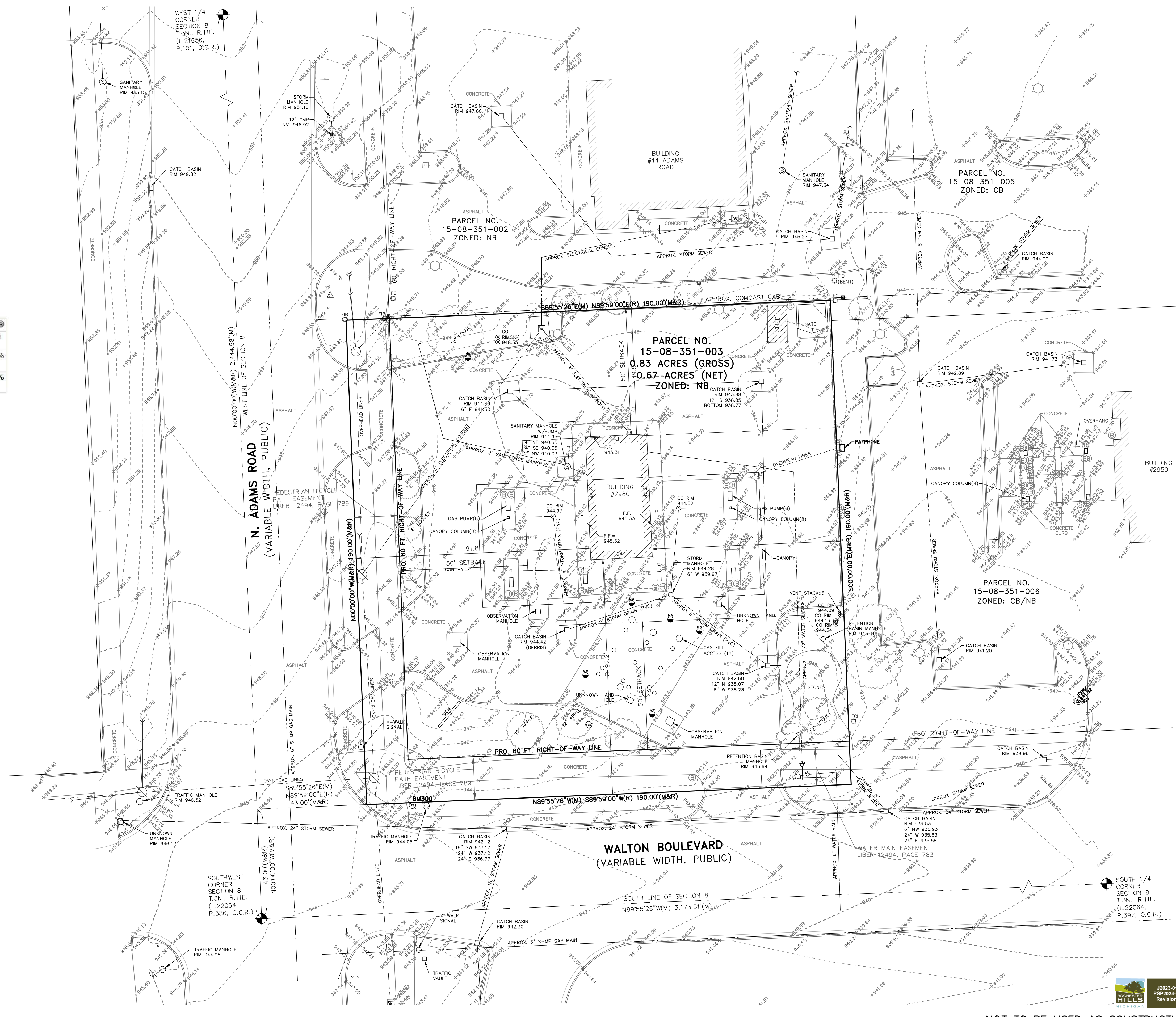
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CLIENT: G.A.V. & ASSOCIATES, INC.
EXISTING CONDITIONS PLAN
2980 WALTON BOULEVARD - PARCEL NO. 15-08-351-003
SECTION: 8 RANGE: 11 E.
CITY OF ROCHESTER HILLS
OAKLAND COUNTY
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REVISED
2024-10-7 PER CITY REVIEW
2025-1-7 PER CITY REVIEW
2025-2-6 PER CITY REVIEW

DATE: 5-23-2024
DRAWN BY: CEH
CHECKED BY: JPP/DJL

SCALE: HOR 1" = 20 FT.
VER 1" = 4 FT.

3
22-457

NOT TO BE USED AS CONSTRUCTION DRAWINGS

LEGEND

| | |
|-------|----------------------|
| ○ FIB | FOUND IRON BAR |
| ○ FCI | FOUND CAPPED IRON |
| ○ MON | MONUMENT |
| (M) | MEASURED |
| (R) | RECORD |
| --- | EX. CONDUIT |
| --- | EX. GAS MAIN |
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| --- | EX. STORM SEWER |
| --- | EX. WALL |
| --- | EX. WATER MAIN |
| --- | EX. FENCE |
| □ | EX. BOLLARD |
| □ | EX. CATCH BASIN |
| ○ | EX. CLEANOUT |
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DEMOLITION LEGEND:

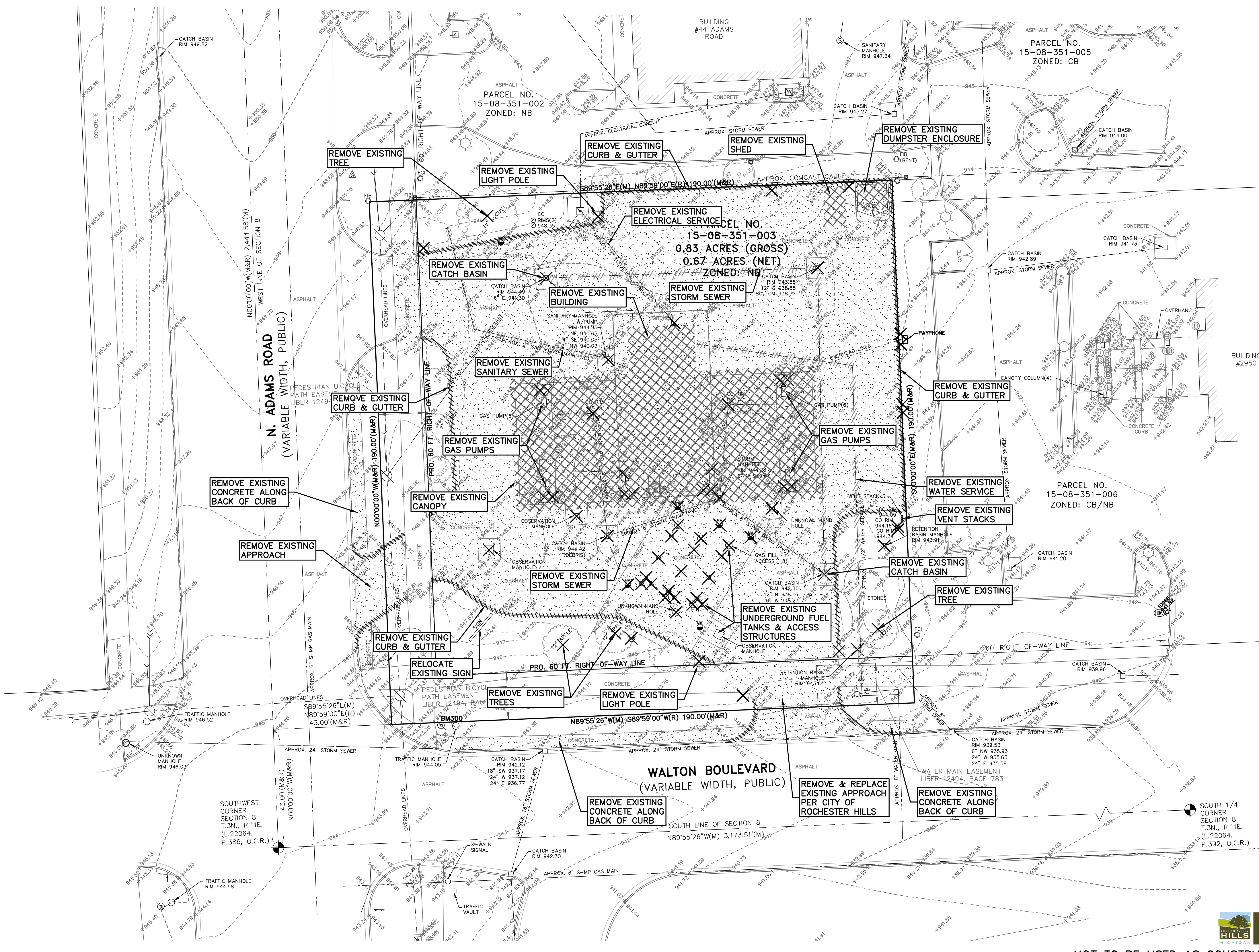
| | |
|----------------------------|---|
| ITEM TO BE REMOVED | ✕ |
| CURB TO BE REMOVED | ▨ |
| PAVEMENT TO BE REMOVED | ▤ |
| BUILDING/STRUCTURE REMOVAL | ▩ |
| UTILITY REMOVAL | ▧ |

- GENERAL DEMOLITION NOTES:**
- ALL WORK TO BE ACCOMPLISHED IN STRICT ACCORDANCE WITH ALL CITY, COUNTY AND STATE REGULATIONS.
 - WITHIN THE SUBJECT PROPERTY, THE INTENT IS TO HAVE A CLEAN, CLEAR SITE, FREE OF ALL EXISTING ITEMS NOTED TO BE REMOVED IN ORDER TO PERMIT THE CONSTRUCTION OF THE NEW PROJECT.
 - ALL ITEMS NOTED TO BE REMOVED SHALL BE DONE SO AS PART OF THE CONTRACT FOR GENERAL CONSTRUCTION.
 - REMOVE AND DISPOSE OF ANY PAVEMENT, SIDEWALK, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF SITE LANDFILL.
 - THE CONTRACTOR SHALL SECURE ALL PERMITS FOR HIS DEMOLITION AND DISPOSAL OF HIS DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED.
 - THE DETAILED PLANS MAY NOT REFLECT ALL UTILITIES ON THE SITE OR SURROUNDING STREETS AND PROPERTIES. THE CONTRACTOR SHALL VERIFY LOCATIONS AND EXISTENCE OF UTILITY SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CALL MISS DIG, A MINIMUM 72 HOURS PRIOR TO CONSTRUCTION.
 - THE CONTRACTOR TO REMOVE ALL UTILITIES TO EXISTING STRUCTURES WHETHER SHOWN OR NOT OR ARRANGE FOR THE APPROPRIATE UTILITY COMPANY TO CUT AND CAP SERVICE PIPING AT THE PROPERTY LINE OR MAIN (AS REQUIRED). ALL SERVICES MAY NOT BE SHOWN ON THIS PLAN.
 - FOR ALL ITEMS NOTED TO BE REMOVED - REMOVE NOT ONLY THE ABOVE GROUND ELEMENTS, BUT ALL UNDERGROUND ELEMENTS AS WELL INCLUDING BUT NOT NECESSARILY LIMITED TO: FOUNDATIONS, GRAVEL FILLS, TREE ROOTS, OLD PIPES, ETC.
 - BACK FILL ALL EXCAVATIONS RESULTING FROM THE DEMOLITION WORK TO MEET THE REQUIREMENTS FOR FILL OUTLINED IN THE GEOTECHNICAL REPORT.
 - THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING CONSTRUCTION. ANY CONTRACTOR DISTURBED PINS, MONUMENTS, ETC. SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.

- GENERAL DEMOLITION NOTES (CONTINUED):**
- THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPES, PAVEMENT, CURBS, SIDEWALKS OR LANDSCAPED AREAS DISTURBED DURING DEMOLITION TO THEIR ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER.
 - ALL MATERIAL TO BE REMOVED, WHETHER SPECIFICALLY NOTED IN THE PLANS OR NOT, SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF OFF-SITE IN A LEGAL MANNER. NO ON-SITE BURY OR BURN PITS SHALL BE ALLOWED.
 - STAGING/PHASING OF DEMOLITION AND CONSTRUCTION IS TO BE COORDINATED WITH THE OWNER AND THE CONTRACTOR PRIOR TO CONSTRUCTION.
 - SPECIFIC DEMOLITION ITEMS HAVE BEEN INDICATED ON THE PLANS AS A GUIDE TO THE GENERAL SCOPE OF THE WORK. IT IS THE INTENT THAT THESE ITEMS SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR ABOVE AND BELOW GROUND, UNLESS SPECIFICALLY NOTED OTHERWISE, AND THAT DEMOLITION WILL INCLUDE BUT NOT NECESSARILY BE LIMITED TO THESE ITEMS. CONTRACTOR SHALL VISIT SITE TO VERIFY EXISTING CONDITIONS AND EXTENTS OF THE DEMOLITION THAT WILL BE REQUIRED PRIOR TO SUBMITTING A BID.
 - REMOVE ALL STRUCTURES DESIGNATED FOR REMOVAL ACCORDING TO THE DEMOLITION PLAN. THIS INCLUDES FOUNDATIONS, UNDERGROUND UTILITIES, CONCRETE, CURBS, TREES, ETC.
 - THE CONTRACTOR SHALL, AS A MINIMUM, PROVIDE TREE PROTECTION FENCING AROUND EXISTING TREES TO BE SAVED THAT ARE WITHIN 15' OF CONSTRUCTION ACTIVITIES AND AS INDICATED IN THE PLANS OR PER LOCAL AGENCY REQUIREMENTS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPING AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
 - THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SIGNAGE, MARKINGS, LIGHTS AND OTHER TRAFFIC CONTROL DEVICES TO PROTECT THE WORK ZONE AND SAFELY MAINTAIN TRAFFIC PER OHV-OF-MAN-ARBOR REQUIREMENTS AND IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) LATEST EDITION.
 - THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES TO COORDINATE ALL UTILITY WORK.

THERE IS A RESTRICTIVE COVENANT FROM 2006 ON THIS PROPERTY RECORDED AS LIBER 37796 PAGE 033 AS A RESULT OF A UST LEAK. SIX (6) MONITORING WELLS WERE INSTALLED PER THE PLAN TO MONITOR THE CONTAMINATION. UNLESS DOCUMENTATION CAN BE PROVIDED THAT INDICATES A FULL REMEDIATION OF THE SITE HAS OCCURRED IN ACCORDANCE WITH AN APPROVED CORRECTIVE ACTION PLAN, AND EGL HAS ALLOWED FOR THE MONITORING WELLS TO BE REMOVED, THE LAND USE AND RESOURCE LIMITATIONS OUTLINED IN THE RESTRICTIVE COVENANT WILL APPLY AND SHALL BE ADHERED TO DURING CONSTRUCTION. A DUE CARE PLAN MAY BE REQUIRED AT TIME OF CONSTRUCTION PLAN REVIEW.

ROAD COMMISSION FOR OAKLAND COUNTY



ZONING:
NB, NEIGHBORHOOD BUSINESS DISTRICT

SETBACKS:
ORDINANCE
FRONT: 50 FEET*
SIDES: 0 FEET ONE SIDE, 50 FEET TOTAL
REAR: 50 FEET**

*IN THE NB & CB DISTRICTS, THE FRONT YARD SETBACK MAY BE REDUCED TO THE AVERAGE SETBACK OF STRUCTURES WITHIN 300 FEET OF THE SUBJECT PARCEL, ALONG THE SAME SIDE OF THE STREET.

**WHEN A NB OR CB DISTRICT ABUTS ANY OTHER NON-RESIDENTIAL DISTRICT, THE REAR YARD FOR THE NB OR CB DISTRICT MAY BE REDUCED TO TEN FEET WITH THE APPROVAL OF THE PLANNING COMMISSION, UPON ITS DETERMINATION THAT THE REQUESTED REDUCTION ALLOW FOR BETTER DEVELOPMENT AND WILL BE COMPATIBLE WITH ADJOINING PROPERTIES.

NOTE: ARCHITECT OR DESIGN INDIVIDUAL TO VERIFY SETBACKS WITH THE CITY OF ROCHESTER HILLS AND/OR ANY ASSOCIATION ORDINANCE PRIOR TO DESIGN.

BENCHMARK:
BM300
IN THE BASE OF THE TRAFFIC SIGNAL POLE AT THE NORTHEAST CORNER OF N. ADAMS ROAD AND WALTON BOULEVARD.
ELEVATION: 944.70 N.A.V.D.88

SURVEY NOTES:
1. TITLE WORK WAS NOT PROVIDED. EXISTING EASEMENTS, IF ANY, HAVE NOT BEEN SHOWN.
2. A WETLAND AND TREE SURVEY WERE NOT PERFORMED AS PART OF THIS SURVEY.

LEGAL DESCRIPTION (BY OTHERS):
PART OF THE SOUTHWEST 1/4 OF SECTION 8, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS:
BEGINNING AT A POINT DISTANT NORTH 43 FEET AND N89°59'00"E 43 FEET FROM THE SOUTHWEST SECTION CORNER, THENCE NORTH 190 FEET, THENCE N89°59'00"E 190 FEET, THENCE SOUTH 190 FEET, THENCE S89°59'00"W 190 FEET TO THE BEGINNING. CONTAINING 0.83 ACRES.

FLOOD HAZARD STATEMENT:
THIS PROPERTY IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" FLOOD HAZARD AREA AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FOR MICHIGAN FLOOD INSURANCE RATE MAP (FIRM) #26125C0397F (COMMUNITY ID NO. 260477) - CITY OF ROCHESTER HILLS, MI) WITH AN EFFECTIVE DATE OF SEPTEMBER 29, 2006. THIS STATEMENT IS BASED ON THE RESULTS OF GRAPHIC PLOTTING ONTO THE ABOVE NAMED MAP AND PANEL, WHICH IS THE CURRENT MAP FOR THE COMMUNITY IN WHICH THE PROPERTY IS LOCATED. ZONE "X" INDICATES AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

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GREENTECH ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS
51147 Pontiac Trail, Wixom, MI 48393
Phone: (248) 668-0700 Fax: (248) 668-0701

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Know what's below
Call before you dig.

G.A.V. & ASSOCIATES, INC.
DEMOLITION PLAN
CLIENT: 2980 WALTON BOULEVARD - PARCEL NO. 15-08-351-003
SECTION: 8 RANGE: 11 E.
CITY OF ROCHESTER HILLS
OAKLAND COUNTY
MICHIGAN

REVISED
2024-10-7 PER CITY REVIEW
2025-1-7 PER CITY REVIEW
2025-2-6 PER CITY REVIEW

DATE: 5-23-2024
DRAWN BY: CEH
CHECKED BY: JPP/DJL

SCALE: HOR 1" = 20 FT.
VER 1" = 1 FT.

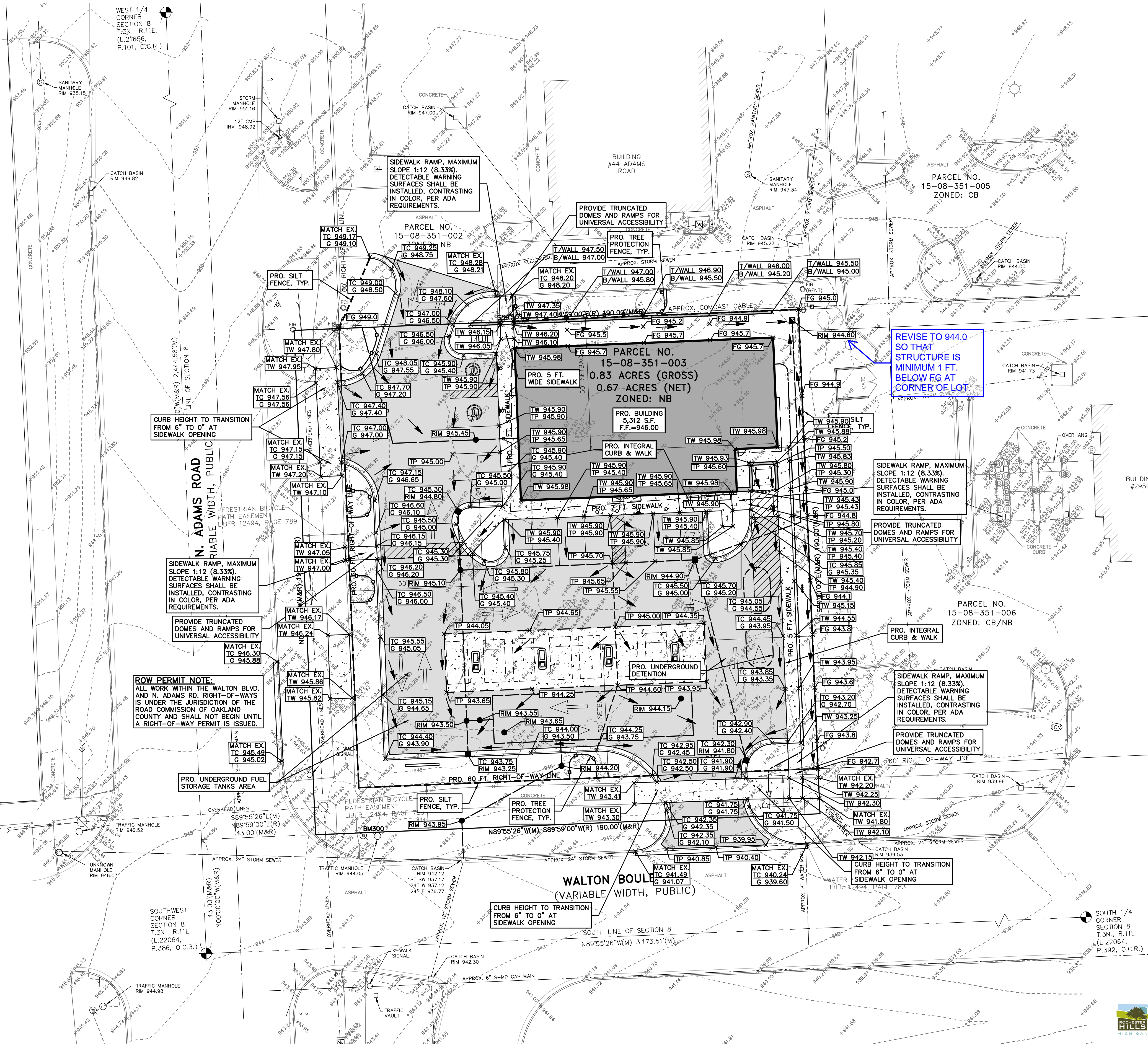
4

NOT TO BE USED AS CONSTRUCTION DRAWINGS

- LEGEND**
- FIB FOUND IRON BAR
 - FCI FOUND CAPPED IRON
 - MON MONUMENT
 - (M) MEASURED
 - (R) RECORD
 - EX. CONDUIT
 - EX. GAS MAIN
 - EX. OVERHEAD LINES
 - EX. SANITARY SEWER
 - EX. STORM SEWER
 - EX. WALL
 - EX. WATER MAIN
 - EX. FENCE
 - EX. BOLLARD
 - EX. CATCH BASIN
 - EX. CLEANOUT
 - EX. ELECTRIC METER
 - EX. FLAG POLE
 - EX. GAS MARKER
 - EX. GENERATOR
 - EX. GUY ANCHOR
 - EX. HYDRANT
 - EX. MONITORING WELL
 - EX. PEDESTAL
 - EX. SANITARY MANHOLE
 - EX. SIGN
 - EX. TRAFFIC SIGNAL
 - EX. TRANSFORMER
 - EX. WATER SHUT OFF
 - EX. LIGHT POLE
 - EX. UTILITY POLE
 - EX. DECIDUOUS TREE
 - EX. CONIFEROUS TREE
 - PRO. CATCH BASIN
 - PRO. MANHOLE
 - PRO. STORM SEWER
 - PRO. SANITARY SEWER LEAD
 - PRO. WATER LEAD
 - PRO. TRANSFORMER
 - PRO. PROTECTION FENCE
 - SILT FENCE

- HATCH LEGEND**
- ASPHALT
 - CONCRETE

- GRADING AND DRAINAGE LEGEND:**
- 945.00 PROPOSED SPOT GRADE ELEVATION
 - TP = TOP OF PAVEMENT
 - TW = TOP OF WALK
 - TC = TOP OF CURB
 - G = GUTTER
 - FG = FINISH GRADE
 - FF = FINISH FLOOR
 - T/WALL = TOP OF WALL
 - B/WALL = BOTTOM OF WALL
 - OVERLAND FLOW DIRECTION



REVISE TO 944.0 SO THAT STRUCTURE IS MINIMUM 1 FT. BELOW FG AT CORNER OF LOT

BENCHMARK:
 BM300
 IN THE BASE OF THE TRAFFIC SIGNAL POLE AT THE NORTHEAST CORNER OF N. ADAMS ROAD AND WALTON BOULEVARD.
 ELEVATION: 944.70 N.A.V.D.88

RESTORATION NOTE:
 THE CONTRACTOR SHALL RESTORE AREAS DISTURBED FROM HIS CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER, AND TO THE SATISFACTION OF THE OWNER. LANDSCAPE AREAS REQUIRING RESTORATION SHALL INCLUDE MIN. 3" TOPSOIL AND SOD. PAVEMENT AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, WITH THE APPLICABLE CROSS-SECTION TO MATCH EXISTING.

EARTHWORK BALANCING NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPORTING OR EXPORTING ALL MATERIALS AS REQUIRED TO PROPERLY GRADE THIS PROJECT TO THE FINISHED ELEVATIONS SHOWN ON THE APPROVED PLANS. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF CUT AND FILL QUANTITIES AND ALLOW FOR REMOVAL OF EXCESS OR IMPORTATION OF ADDITIONAL MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

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CLIENT:
 G.A.V. & ASSOCIATES, INC.
 2980 WALTON BOULEVARD - PARCEL NO. 15-08-351-003
 SECTION: 8
 CITY OF ROCHESTER HILLS
 OAKLAND COUNTY
 MICHIGAN

REVISED
 2024-10-7 PER CITY REVIEW
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 VER. 1" = 4 FT.

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 CHECKED BY: JPP/DJL
 FBK: --
 CHP: RG
 SCALE: 1" = 20 FT.
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 5
 22-457

NOT TO BE USED AS CONSTRUCTION DRAWINGS

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 - PRO. SANITARY SEWER LEAD
 - PRO. WATER LEAD
 - PRO. TRANSFORMER

- HATCH LEGEND**
- ASPHALT
 - CONCRETE

SAND BACKFILL NOTE:
ALL UTILITIES UNDER PAVEMENT OR WITHIN 3' OF THE EDGE OF PAVEMENT (OR WITHIN THE 45' LINE OF INFLUENCE OF PAVEMENT) SHALL HAVE M.D.O.T. CLASS II GRANULAR BACKFILL COMPACTED TO 95% MAX. DRY DENSITY (ASTM D-1557).

BENCHMARK:
BM300
IN THE BASE OF THE TRAFFIC SIGNAL POLE AT THE NORTHEAST CORNER OF N. ADAMS ROAD AND WALTON BOULEVARD.
ELEVATION: 944.70 N.A.V.D.88

- GENERAL UTILITY NOTES:**
- ALL UTILITY LINES, STRUCTURES AND TRENCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND REQUIREMENTS OF THE CITY OF ROCHESTER HILLS.
 - NO PHYSICAL CONNECTION TO THE EXISTING WATER MAIN CAN BE MADE UNTIL ALL NEW WATER MAIN PASSES PRESSURE AND BACTERIOLOGICAL TESTS TO THE SATISFACTION OF THE CITY.
 - WATER MAIN SERVICE LEADS SHALL BE TYPE "K" ANNEALED SEAMLESS COPPER WITH FLARED FITTINGS, UNLESS OTHERWISE NOTED.
 - ALL WATER MAIN SHALL BE PROVIDED WITH 5.5" OF COVER UNLESS OTHERWISE NOTED.
 - ALL SANITARY SEWER LEADS SHALL BE POLYVINYL CHLORIDE (PVC) SDR 23.5 PIPE AND FITTINGS. ALL JOINTS TO BE ELASTOMERIC GASKET JOINTS PER ASTM D3212 UNLESS OTHERWISE NOTED.
 - PIPE LENGTHS ARE GIVEN FROM CENTER OF STRUCTURE AND TO END OF FLARED END SECTION UNLESS NOTED OTHERWISE.

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Sanitary Basis of Design

Estimated PROPOSED Townsite 6" Sanitary Sewer

| Usage | Unit Factor | Units | Population |
|-----------------------------|-------------|------------|------------|
| Proposed Gas Station | 2.44 | per person | 1 2.4 |
| TOTAL POPULATION 2.4 | | | |

Estimated Average Flow:

| | | | |
|---------------------|------|--------------------|---------------|
| Total Population: | 2 | gallons/capita/day | |
| Average Daily Flow: | 100 | gallons/day | |
| Peak Factor: | 1.00 | | |
| Average Flow: | 200 | gallons/day | |
| | | | 0.0003 c.f.s. |
| | | | 0.0002 mg.d. |

Estimated Peak Flow:

| | | | |
|---------------------|-------|--------------------|--------------|
| Total Population: | 2 | gallons/capita/day | |
| Average Daily Flow: | 400 | gallons/day | |
| Average Flow: | 800 | gallons/day | |
| Peak Factor: | 1.00 | | |
| Peak Flow: | 3,200 | gallons/day | |
| | | | 0.001 c.f.s. |
| | | | 0.005 c.f.s. |
| | | | 0.003 mg.d. |

Estimated Pipe Capacity of 10" Sanitary Sewer

Pipe Size: 6 inch
Minimum Slope: 0.40 %
Area: 0.20 s.f.
Capacity of 6" Pipe: 0.36 c.f.s.
Therefore pipe has sufficient capacity

Land Use Summary

| Characteristic | Existing Conditions | Proposed Conditions |
|-----------------------------|---------------------|---------------------|
| Total Development Area (ac) | 0.69 | 0.69 |
| Impervious Area (ac) | 0.58 | 0.57 |
| Total Pervious Area (ac) | 0.11 | 0.12 |

Pervious Area Breakdown by Cover Type

| Cover Type | Existing Conditions | Proposed Conditions |
|--|---------------------|---------------------|
| Meadow/fallow/natural areas (non-cultivated) | 0 | 0 |
| Predominant NRCS Soil Type (A, B, C, D) | N/A | N/A |
| Improved area (turf grass, landscape, row crops) | 0.11 | 0.12 |
| Predominant NRCS Soil Type (A, B, C, D) | Type D | Type D |
| Wooded Areas | 0 | 0 |
| Predominant NRCS Soil Type (A, B, C, D) | N/A | N/A |
| Calculated CPVC Volume (cubic feet) | 2,096 | 0 |
| CPVC Volume Provided (cubic feet) | 0 | 0 |
| CPVC Volume Provided (cubic feet) | 3,983 | 3,983 |

Detention Basin Design for 100-Year Design Storm

Time of Concentration - For sites less than 2 acres in size, use tc of 10 min.
(Wayne County Ordinance pg.31)

Time of Concentration Calculations

$T = 10.0$ min

Rainfall Intensity

$I_{100} = 101$
 $I_{100} = (12.33 + 7)^{0.88}$

$I_{100} = 100$ -yr peak rainfall intensity (in/hr)
 $T =$ time of concentration (min)

$I_{100} = 7.4$ in/hr

Channel Protection Volume Control (CPVC) Required Volume

$V_{CPVC} = A * C * 3,630$
 $A =$ area (acres)
 $C =$ runoff coefficient

$A = 0.69$ acres
 $C = 0.84$
 $V_{CPVC} = 2,096$ cf

Channel Protection Rate Control (CPRC) Required Volume

$V_{CPRC} = A * C * 6,897$
 $A =$ area (acres)
 $C =$ runoff coefficient

$A = 0.69$ acres
 $C = 0.84$
 $V_{CPRC} = 3,983$ cf

100-Year Detention Volume

$Q_{allow} =$ 100-yr smaller release rate (cfs/acre)
*For sites smaller than 2 acres use $Q_{allow} = 1.0$ cfs/acre

$Q_{allow} = 1.00$ cfs/acre

$Q_0 = Q_{allow} * A$
 $Q_0 =$ 100-yr peak allowable discharge (cfs)
 $A =$ area (acres)

$A = 0.69$ acres
 $Q_0 = 0.69$ cfs

$Q = C * I_{100} * A$
 $Q =$ 100-yr peak pond inflow (cfs)
 $C =$ runoff coefficient

$A = 0.69$ acres
 $C = 0.84$
 $I_{100} = 7.4$ in/hr
 $Q = 4.29$ cfs

$V = 18,900 * C * A$
 $V =$ 100-yr runoff volume (cf)
 $C =$ runoff coefficient
 $A =$ area (acres)

$A = 0.69$ acres
 $C = 0.84$
 $V = 10,915$ cf

$V_i / V_o = 0.206 - 0.15 \ln(Q_0 / Q_i)$
 $V_i / V_o =$ storage ratio
 $Q_0 =$ 100-yr peak allowable discharge (cfs)
 $Q_i =$ 100-yr peak pond inflow (cfs)

$Q_0 = 0.69$ cfs
 $Q_i = 4.29$ cfs
 $V_i / V_o = 0.48$

100-yr Required Storage Volume

$V_i = V_o * \text{storage ratio}$
 $V_i =$ 100-yr required storage volume (cf)
 $V_o =$ 100-yr runoff volume (cf)
 $V_i / V_o =$ storage ratio

$V_i = 10,915$ cf
 $V_o = 5,242$ cf

Flood Control Volume

$V_{flood} = 5,242$ cf

First Flush Volume & Release Rate

$V_{ff} = 545 * A * C$
 $V_{ff} =$ first flush volume (cf)
 $C =$ runoff coefficient
 $A =$ area (acres)

$A = 0.69$ acres
 $C = 0.84$
 $V_{ff} = 315$ cf

$Q_{avg} = V_{ff} / 86,400$
 $Q_{avg} =$ 24-hr avg. allowable outflow rate (cfs)

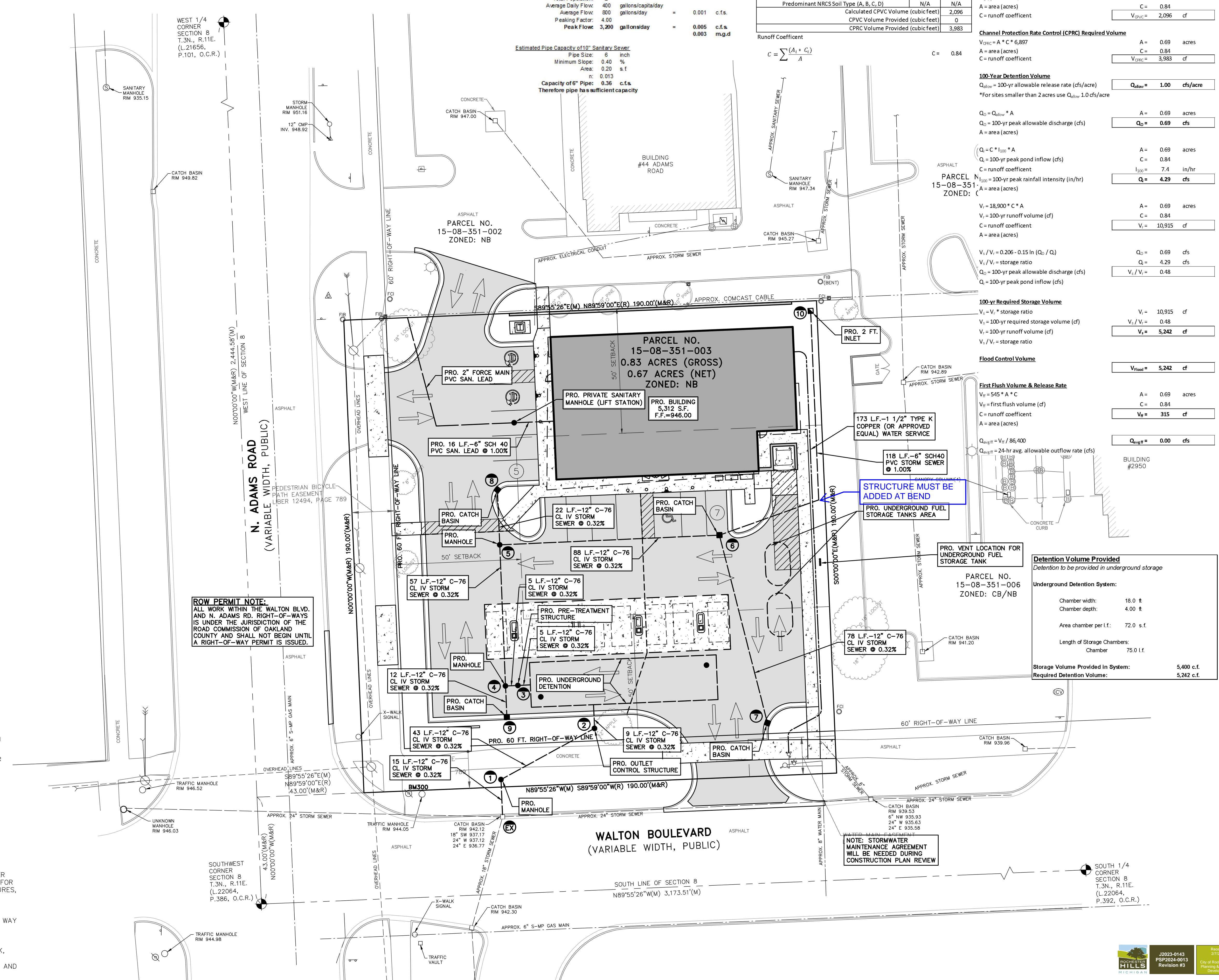
$Q_{avg} = 0.00$ cfs

Detention Volume Provided
Detention to be provided in underground storage

Underground Detention System:

Chamber width: 18.0 ft
Chamber depth: 4.00 ft
Area chamber per i.f.: 72.0 s.f.
Length of Storage Chambers: 75.0 l.f.
Chamber: 75.0 l.f.

Storage Volume Provided in System:
Required Detention Volume: 5,400 c.f.
5,242 c.f.



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UTILITY PLAN

CLIENT: G.A.V. & ASSOCIATES, INC.

REVISED
2024-10-7 PER CITY REVIEW
2025-1-7 PER CITY REVIEW
2025-2-6 PER CITY REVIEW

DATE: 5-23-2024
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FBK: --
CHF: RG
SCALE: HOR 1" = 20 FT.
VER 1" = 1" FT.

6

NOT TO BE USED AS CONSTRUCTION DRAWINGS

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.

| MAJOR ROAD POSTED OR MAX SPEED IN MPH | MINIMUM SIGHT DISTANCE IN FEET, BOTH DIRECTIONS |
|---------------------------------------|---|
| 25 | 280 |
| 30 | 335 |
| 35 | 390 |
| 40 | 445 |
| 45 | 500 |
| 50 | 555 |
| 55 | 610 |

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 distance 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

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

NOT TO SCALE SHEET 1 OF 2

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.

| 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

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

NOT TO SCALE SHEET 2 OF 2

LOCATION OF JOINTS IN CONCRETE SIDEWALK

TYPICAL SIDEWALK JOINT LAYOUTS

4" CONCRETE SIDEWALK

DEPARTMENT DIRECTOR: PAUL SHUMKO
 PREPARED BY: J. L. LITTLE
 APPROVED BY: PAUL SHUMKO, P.E., PTOE
 CITY TRANSPORTATION ENGINEER

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

9-30-2014 7-1-2014 R-29-I SHEET 1 OF 4

DRIVEWAY APPROACH & DUMPSTER ENCLOSURE CONCRETE PAVEMENT
 FOR USE IN THE PUBLIC RIGHT-OF-WAY & ON PRIVATE PROPERTY

ASPHALT PAVEMENT
 FOR USE ON PRIVATE PROPERTY

CONCRETE PAVEMENT
 FOR USE ON PRIVATE PROPERTY

SIDEWALK
 FOR USE IN THE PUBLIC RIGHT-OF-WAY & ON PRIVATE PROPERTY

NOTE: 8" THICK CROSS SECTION TO BE USED WHERE SIDEWALK CROSSES DRIVE APPROACHES

NOTE: CONTRACTOR SHALL COORDINATE PAVEMENT SECTIONS WITH OWNER AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS PRIOR TO CONSTRUCTION

NOTE: PROVIDE 1/2" JOINT PAPER AT BUILDING SIDEWALK INTERFACE

INTEGRAL SIDEWALK AND CURB
 FOR USE ON PRIVATE PROPERTY ALONG THE FRONT OF PROPOSED BUILDING

| DETAIL | DIMENSION | M | N | LANE TIES | CONCRETE STD / LFT |
|--------|-----------|------|----------|-----------|--------------------|
| F1 | 1'-6" | 1/2" | AS SHOWN | 0.0484 | |
| F2 | 1'-4" | 1/2" | OMITTED | 0.0484 | |
| F3 | 2'-0" | 1/2" | AS SHOWN | 0.0620 | |
| F4 | 2'-0" | 1/2" | OMITTED | 0.0620 | |
| F5 | 2'-6" | 1/2" | AS SHOWN | 0.0737 | |
| F6 | 2'-6" | 1/2" | OMITTED | 0.0737 | |

MDOT F-3 MODIFIED CURB & GUTTER

TROWEL TOP ROUND
 CONC. FILLED
 4" DIA. SCH. 40 STEEL PIPE
 6" MIN. BELOW AGG. BASE IN PAVED AREAS & 12" MIN. BELOW NON-PAVED AREAS
 1" WASH
 CONCRETE ENCASUREMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

9-30-2014 7-1-2014 R-29-I SHEET 4 OF 4

CONCRETE DRIVEWAY OPENING LAYOUT

CONCRETE DRIVEWAY OPENING, DETAIL L

CONCRETE DRIVEWAY OPENING, DETAIL M

REINFORCEMENT FOR CONCRETE DRIVEWAYS

| CONCRETE DRIVEWAY THICKNESS | WIRE SIZE (4" x 6" MESH) | SPACING (MIN./MAX.) |
|-----------------------------|--------------------------|---------------------|
| LESS THAN 4" | NO. 4 | 21 |
| 4" OR GREATER | NO. 5 | 42 |

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

9-30-2014 7-1-2014 R-29-I SHEET 2 OF 4

HMA DRIVEWAY APPROACH
 (TO BE USED WITH DETAIL L)

CONCRETE DRIVEWAY APPROACH
 (TO BE USED WITH DETAIL L OR M)

THICKENED CONCRETE SIDEWALK

INTERMEDIATE DRIVEWAY JOINT DETAILS

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

9-30-2014 7-1-2014 R-29-I SHEET 3 OF 4

LOW VOLUME COMMERCIAL OR RESIDENTIAL DRIVEWAY SLOPES

COMMERCIAL DRIVEWAY PROFILE FOR MAJOR TRAFFIC GENERATORS

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

9-30-2014 7-1-2014 R-29-I SHEET 4 OF 4

BOLLARD DETAIL
 NO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

9-30-2014 7-1-2014 R-29-I SHEET 4 OF 4

RESIDENTIAL: Subdivisions, Multi-Family, Single-Family
 COMMERCIAL: Site Planning, Inside of Right-of-Way, Land Surveying
 SURVEYING: Boundary Surveys, Topographic Surveys, Construction Staking

GREENTECH ENGINEERING, INC.
 CIVIL ENGINEERS & LAND SURVEYORS
 51147 Pontiac Trail, Wixom, MI 48393
 Phone: (248) 668-0700 Fax: (248) 668-0701

811
 Know what's below
 Call before you dig.

CLIENT: G.A.V. & ASSOCIATES, INC.

SITE DETAILS

2980 WALTON BOULEVARD - PARCEL NO. 15-08-351-003
 SECTION: 8
 CITY OF ROCHESTER HILLS
 OAKLAND COUNTY
 MICHIGAN

REVISED
 2024-10-7 PER CITY REVIEW
 2025-1-7 PER CITY REVIEW
 2025-2-6 PER CITY REVIEW

DATE: 5-23-2024
 DRAWN BY: CEH
 CHECKED BY: JPP/JDL

FBK: --
 CHF: RG
 SCALE: HOR 1" = 10' FT.
 VER 1" = 10' FT.

8

22-457

Seal: _____

Title:
Irrigation Plan

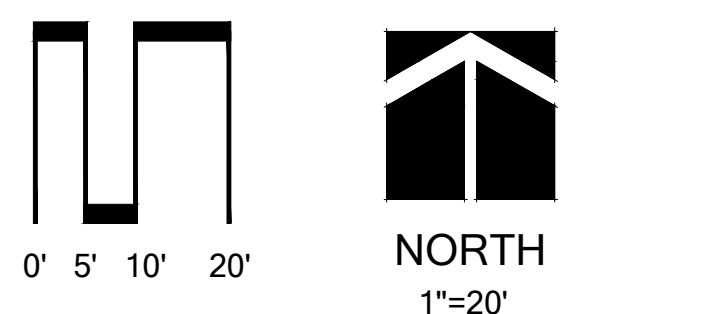
Project:
**2980 Walton Blvd.
 Rochester Hills, Michigan**

Prepared for:
**Greentech Engineering
 51147 W. Pontiac Trail
 Wixom, Michigan 48393**

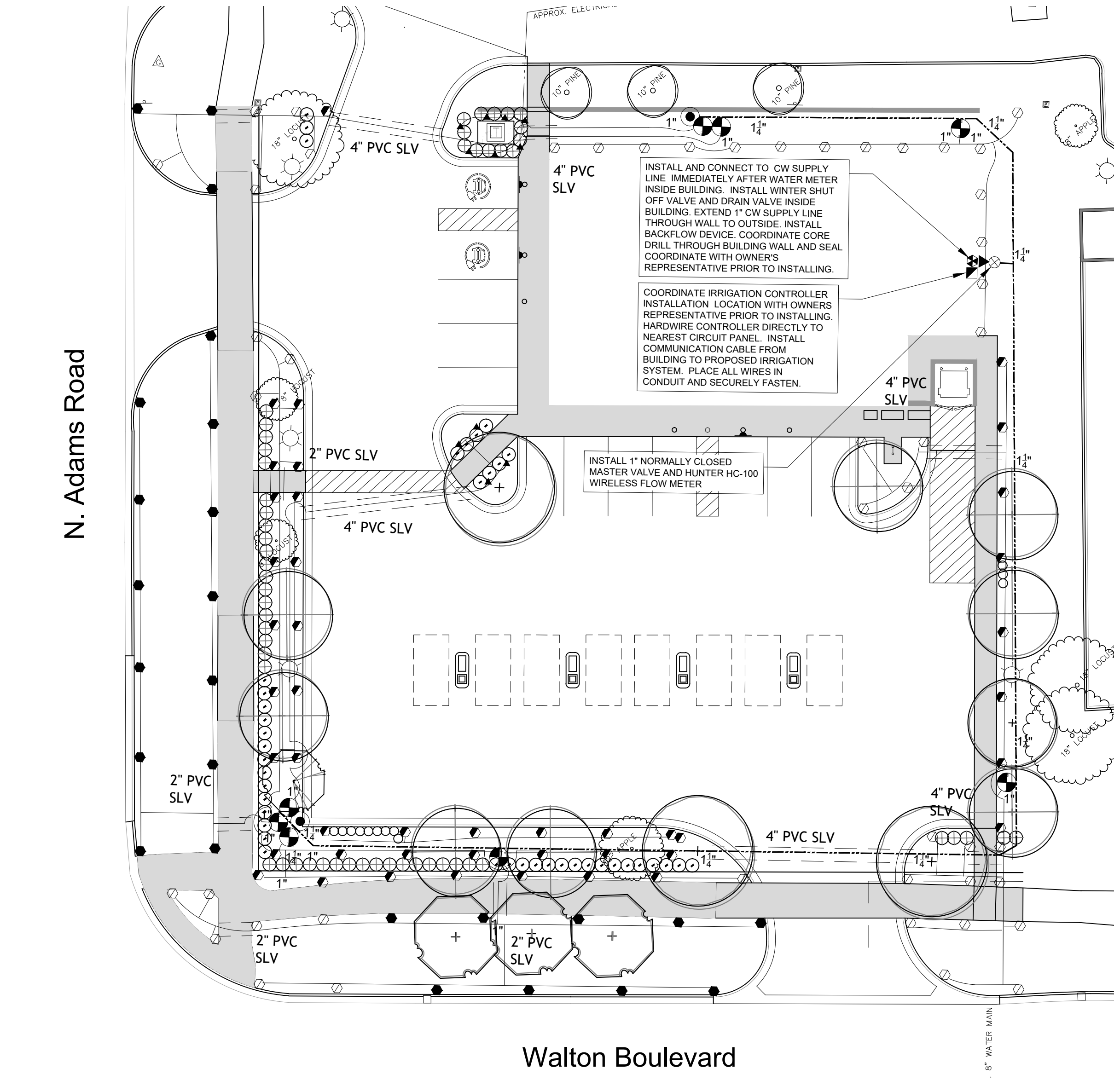
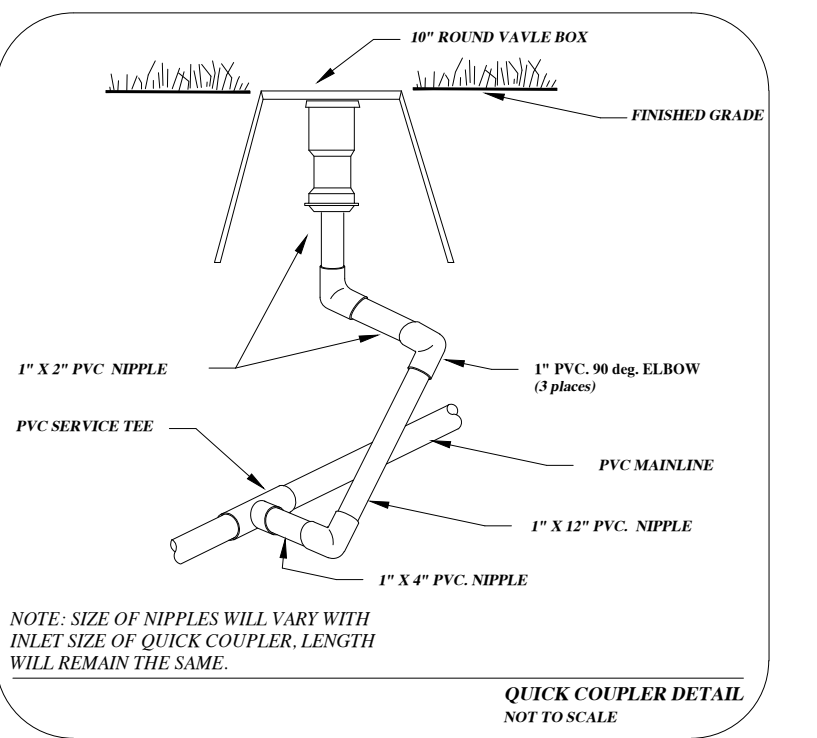
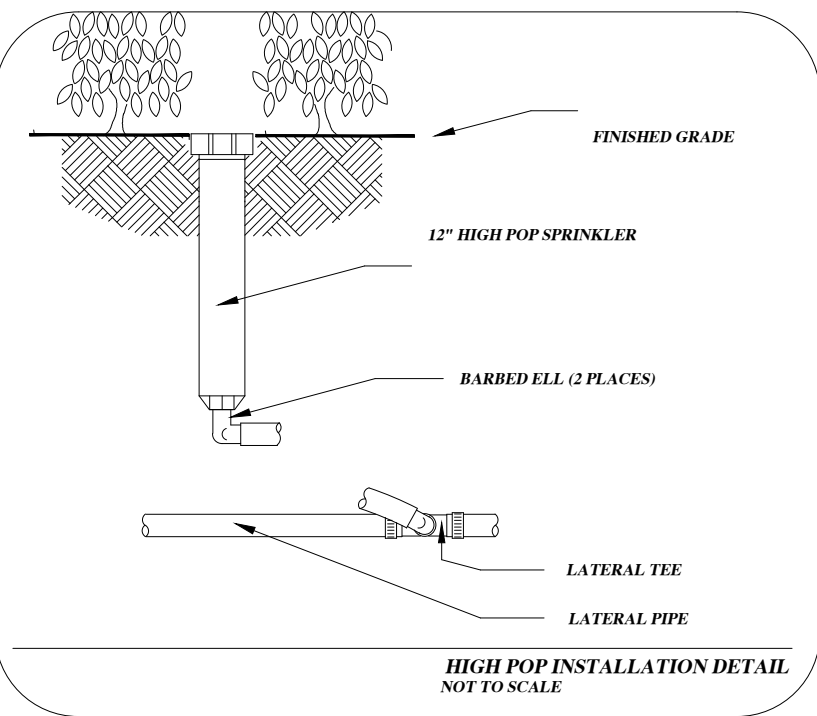
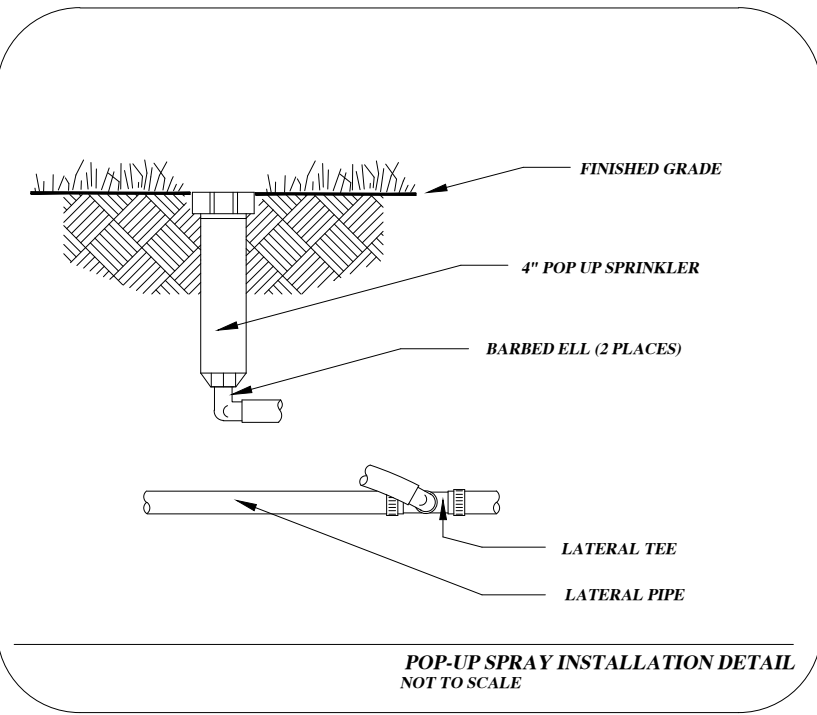
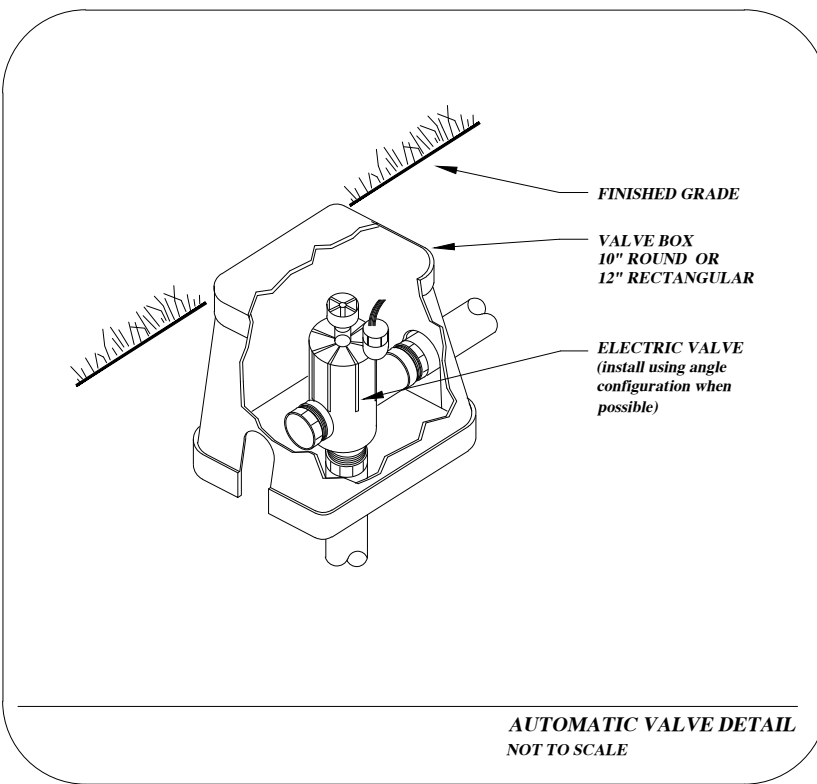
Revision: _____ Issued: _____
 Submittal _____ May 24, 2024
 Revised _____ October 1, 2024
 Revised _____ December 20, 2024

Job Number:
 24-028

Drawn By: _____ Checked By: _____
 AJB jca



Sheet No. _____



- NOTES:**
1. Refer to the specifications for installation details and descriptions, as well as, construction methods which will be accepted.
 2. All work shall be in compliance with all local, state, and federal codes and ordinances.
 3. All electrical connections shall be made using 3m DBYR-6 splice kits.
 4. All control wiring downstream of the controller shall be HUNTER ID WIRE dual strand copper ID Wire ID1 Red UL approved for direct bury.
 5. All lateral PVC fitting clamps shall be stainless steel worm gear type clamps. Pipes 1-1/2" or larger shall be double clamped.
 6. Pipe routing is schematic. All heads are to be field adjusted to within 2' to take into consideration any obstruction. Final head placements are subject to the landscape architects approval.
 7. All sprinkler heads shall be mounted on 2 elbow pvc marlex swing joints as specified.
 8. Contractor to verify existing controller location with owner's authorized representative prior to installation.
 9. All pipe not sized downstream of control valve is 1".
 10. Irrigation contractor's point of connection to water source shall be as noted on this sheet.
 11. Irrigation contractor shall be responsible for determining and maintaining the irrigation schedule during the project construction and throughout the length of the warranty period.
 12. The irrigation schedule shall deliver 1" of precipitation per week +/- natural rainfall quantities for turf grass.
 13. Landscape material shall receive adjusted amounts of precipitation to maintain proper plant health.
 14. Landscape and turf grass shall be irrigated separately.
 15. Rotors and spray zones may not be combined to operate at the same time.
 16. When specified, follow manufacturer's product recommendations concerning proper installation of water flow sensors. Allow proper straight pipe distances before and after flow sensors.
 17. Follow manufacturers requirements to program irrigation controller for flow monitoring and Hydrowise enabled systems.

IRRIGATION LEGEND:

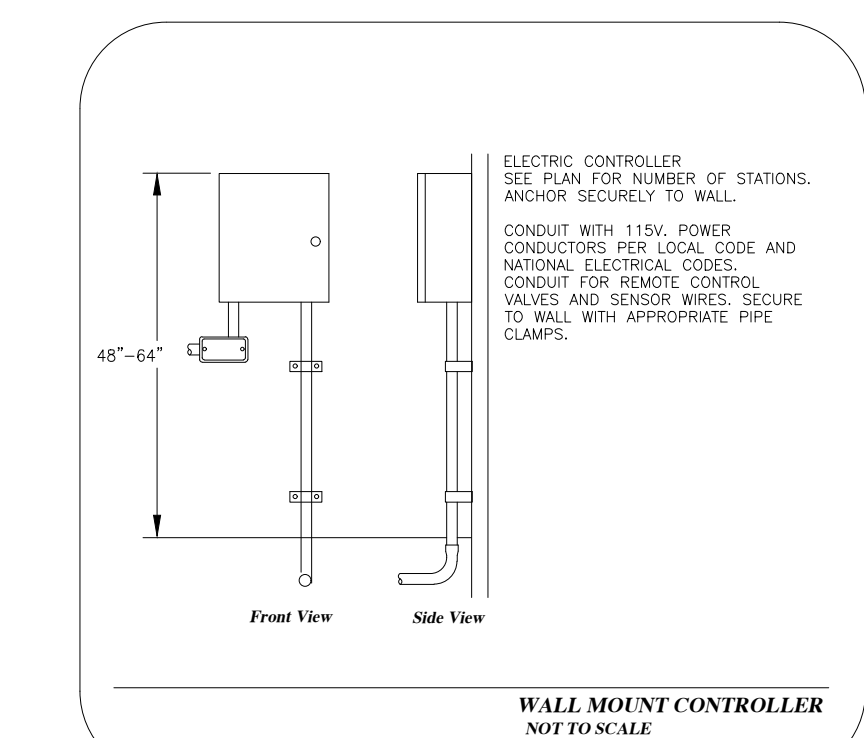
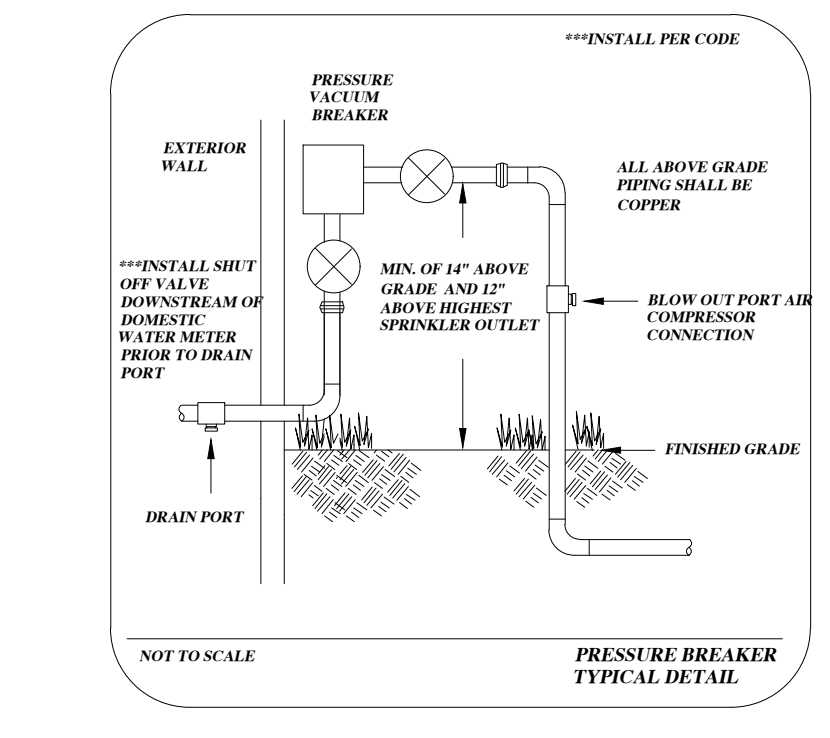
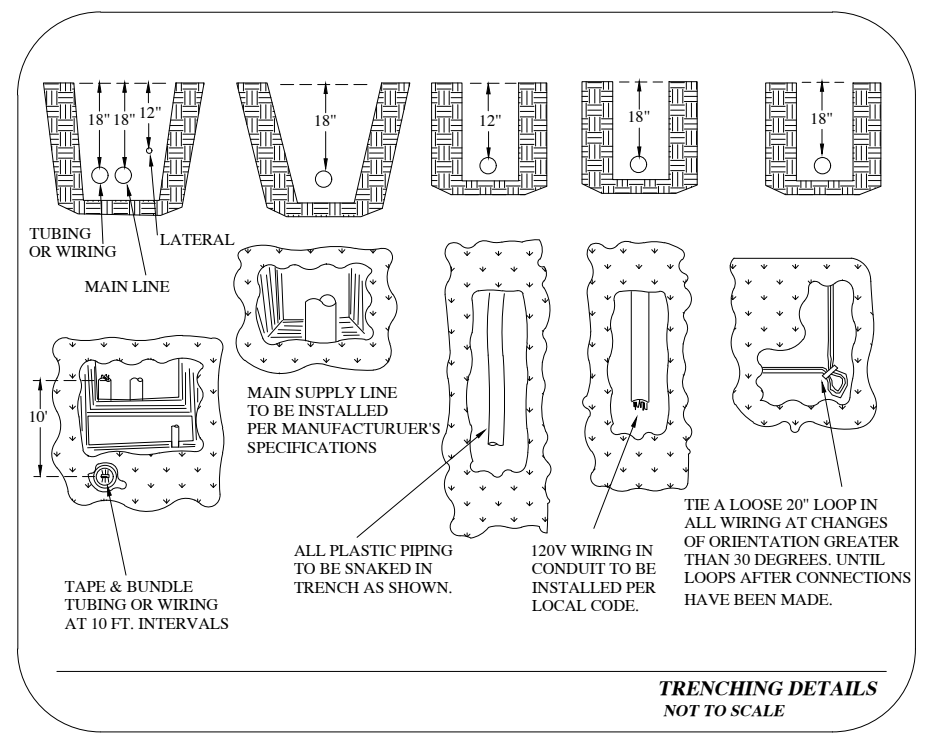
| | |
|--|-------------------|
| FIXED SPRAY POP-UP (12") w/ 2' or 4' radius nozzle | PROS-12-PRS30 CV |
| ▲ 2' or ● 4' Radius Nozzle | |
| FIXED SPRAY POP-UP (4") w/ MPR nozzle | PROS-04 PRS40-CV |
| ⊙ MP1000 ● MP2000 ○ MP3000 ● MPSS530/MPLC(RC)15 ⊕ MP800 | |
| ⊕ MASTER VALVE w/ EZDS decoder | ICV-Series |
| ⊙ ELECTRIC VALVE w/ EZDS decoders | ICV-AS-ADJ Series |
| ⊙ QUICK COUPLER VALVE | HQ44-RC |
| ⊕ ELECTRIC CONTROLLER HCC EZ DECODER WALL MOUNT | HPC-PCDM-EZDS |
| ▲ PRESSURE VACUUM BREAKER | FEBCO 76SP100 |
| ▲ RAIN SENSOR DEVICE (wireless) | WR CLIK |
| ⊕ POINT OF CONNECTION TO IRRIGATION WATER SOURCE | |
| — PVC MAINLINE, SDR 26, BE, | |
| — POLYETHYLENE LATERALS, 100 PSI NSF APPROVED, Size as shown | |
| — PVC SLEEVING SIZE AS SHOWN | |

WATER REQUIREMENTS: 14 GPM @ 55 PSI.
 (CONTRACTOR TO VERIFY PSI PUMP AVAILABILITY ON SITE PRIOR TO SYSTEM INSTALLATION)

⊕ Controller and Station Number
 ● Gallons Per Minute
 ○ Valve Size

PIPE SIZE CHART

| |
|---|
| 0-12 GPM = 1" DIAMETER POLYETHYLENE PIPE |
| 12-24 GPM = 1 1/4" DIAMETER POLYETHYLENE PIPE |
| 24-30 GPM = 1 1/2" DIAMETER POLYETHYLENE PIPE |
| 30-60 GPM = 2" DIAMETER POLYETHYLENE PIPE |

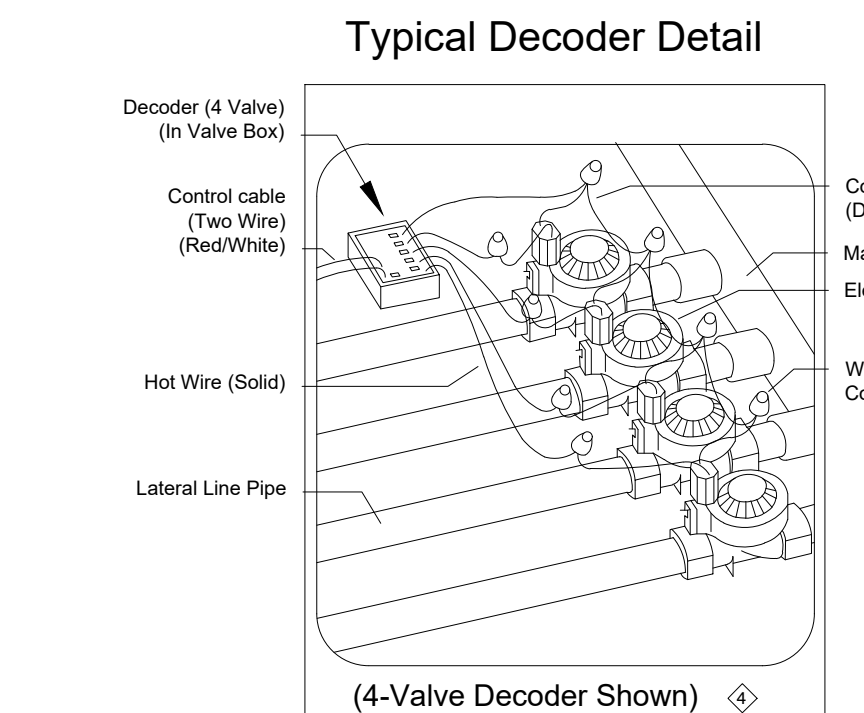
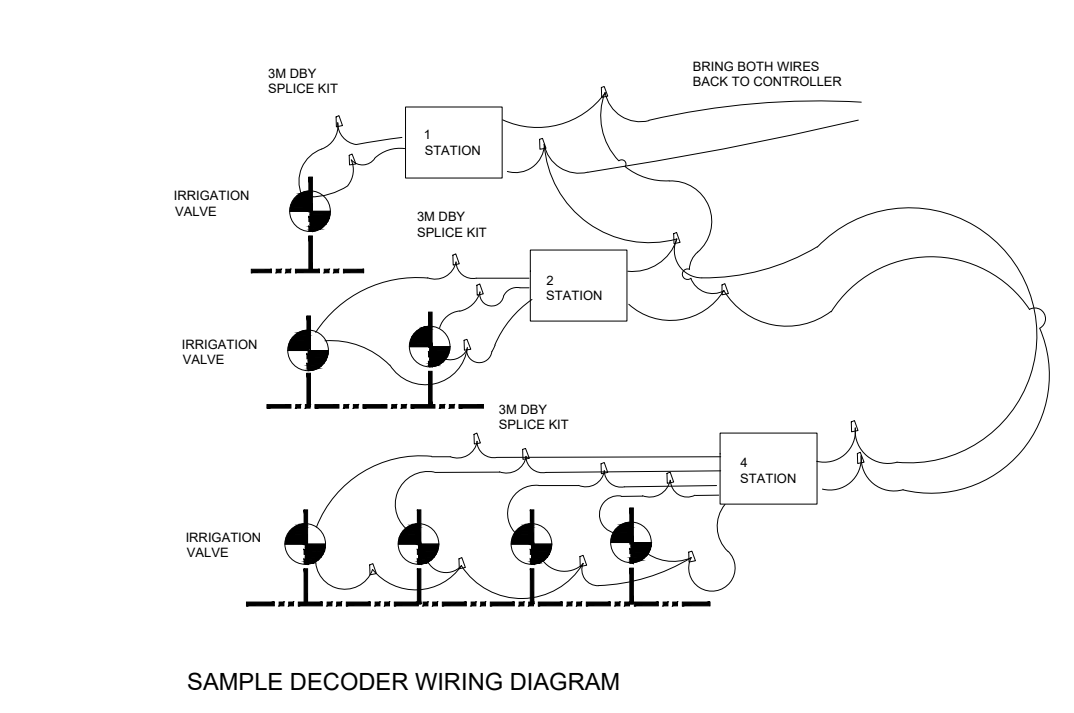
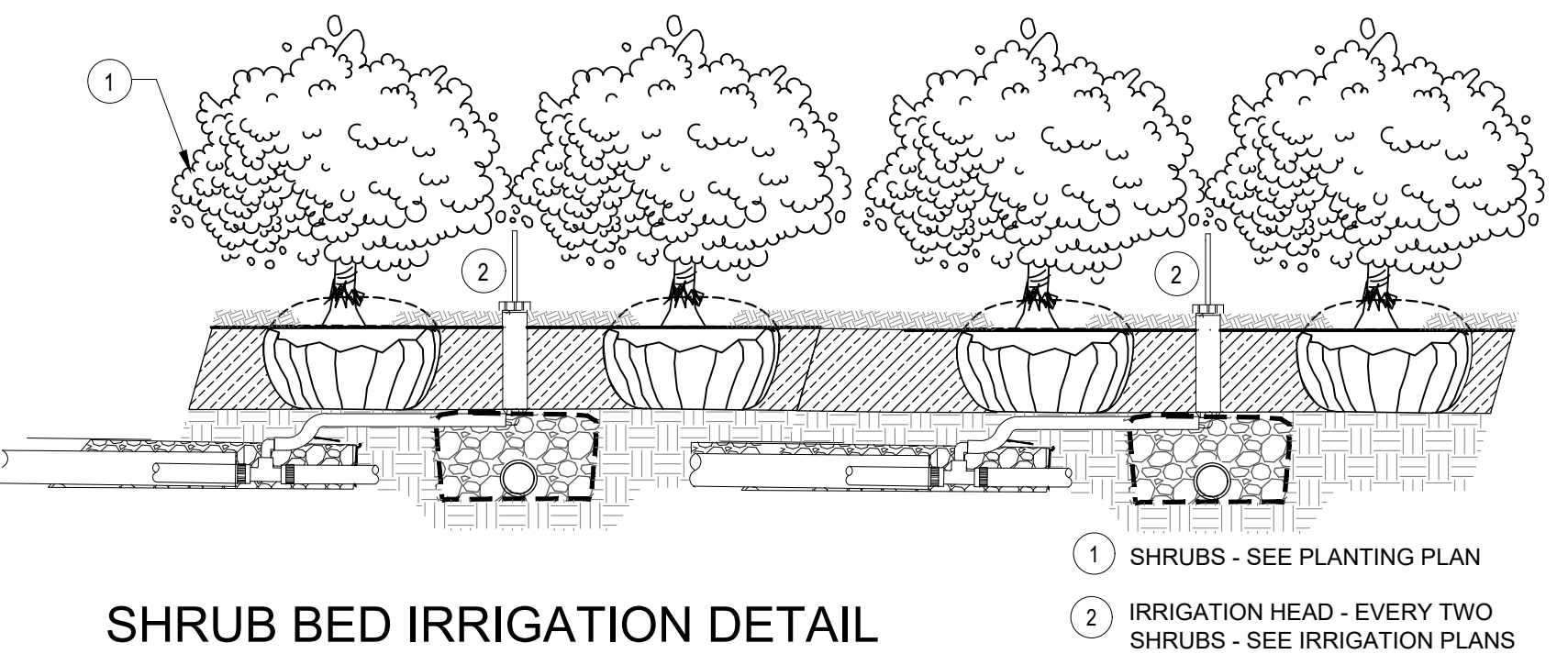


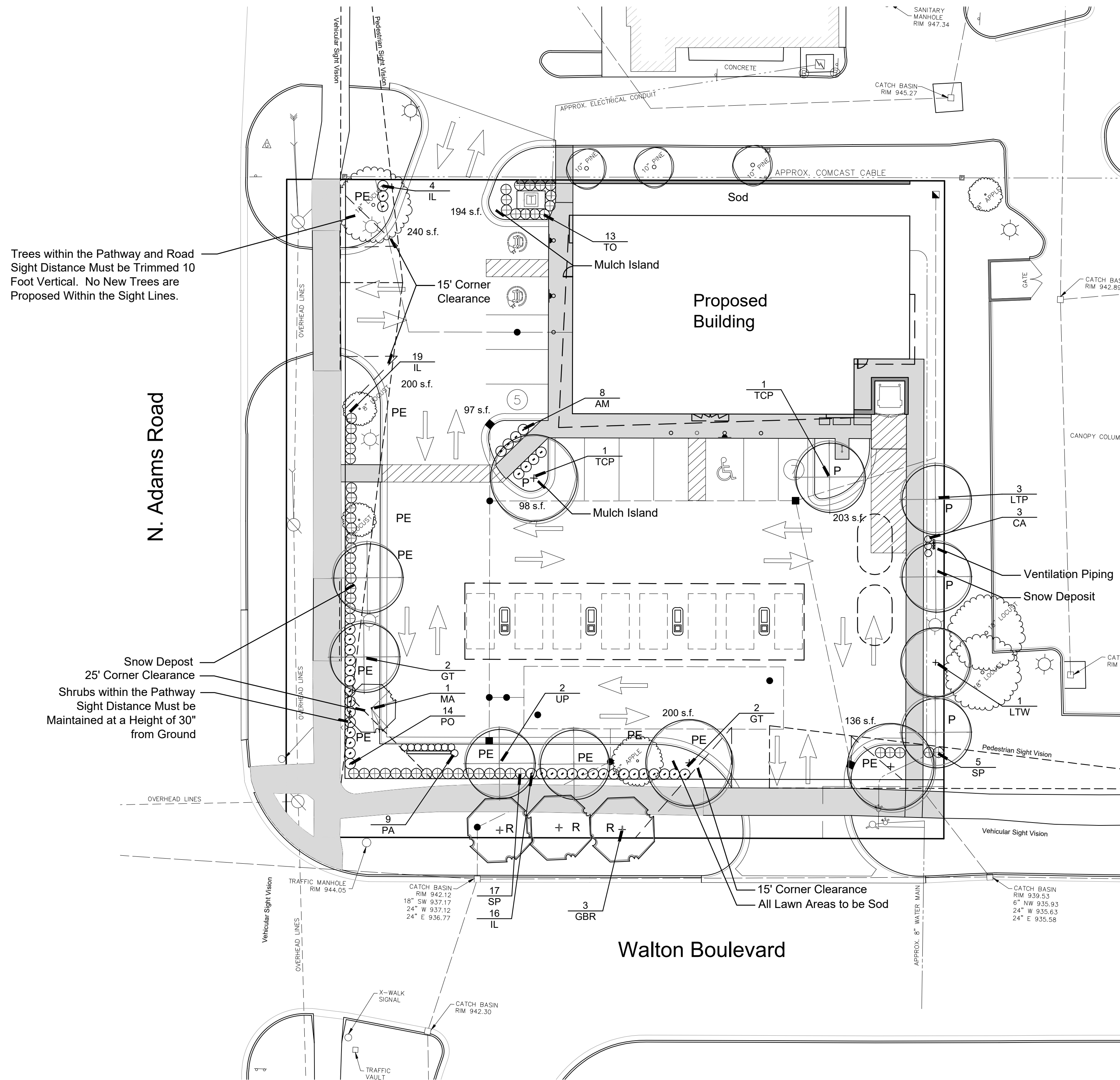
IRRIGATION NOTE:
 ALL LANDSCAPE AREAS, INCLUDING THOSE WITHIN THE R.O.W. SHALL BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. THE SYSTEM SHALL OPERATE IN COMPLIANCE WITH LOCAL STANDARDS AND SEASONAL RESTRICTIONS. SEPARATE ZONES SHALL BE PROVIDED FOR LAWN AREAS AND PLANTING BEDS. IRRIGATION SHALL BE DESIGNED IN THE MOST EFFICIENT MANNER NECESSARY TO FULLY IRRIGATE ALL PLANTING AREAS.

*****COMMUNICATION CABLE TO BE 14 AWG HUNTER IDWIRE. DO NOT LOOP WIRE RUNS BACK TO IRRIGATION CONTROLLER OR IN FIELD. DO NOT EXCEED A MAXIMUM RUN LENGTH OF 1500 FEET.**



4843 Kittery NW
 Comstock Park, Michigan 49321
 Tel. (248) 789-0330
 email: abarnes@liquidassets.org
 www.liquidassets.org





Landscape Summary

| | |
|----------------------------------|----------------------------------|
| Parking Lot Landscaping | |
| Vehicular Use Area | 14,903 s.f. |
| Landscape Area Required | 745 s.f. (14,903 x 5%) |
| Landscape Area Provided | 1,368 s.f.* |
| Trees Required | 4.9 Trees (745 / 150) |
| Trees Provided | 5 Trees (1 Existing) |
| Perimeter Plantings | |
| Perimeter | 245 l.f. (Both Frontages) |
| Trees Required | 9.8 Trees (245 / 25) |
| Trees Provided | 9 Trees (3 Existing) |
| Ornamental Trees Required | 7 Trees (245 / 35) |
| Ornamental Trees Provided | 2 Trees (1 Existing) |
| Right of Way Plantings ** | |
| Walton Boulevard | |
| Frontage | 190 l.f. |
| Trees Required | 5.4 Trees (190 / 35) |
| Trees Provided | 3 Trees - Clear Vision Conflicts |
| Ornamental Trees Required | 3 Trees (190 / 60) |
| Ornamental Trees Provided | 0 Trees - Clear Vision Conflicts |
| Adams Road | |
| Frontage | 190 l.f. |
| Trees Required | 5.4 Trees (190 / 35) |
| Trees Provided | 0 Trees - Overhead Lines |
| Ornamental Trees Required | 3 Trees (190 / 60) |
| Ornamental Trees Provided | 0 Trees - Overhead Lines |
| Tree Replacement | |
| Trees Removed | 5 Trees |
| Replacement Provided | 1 Tree |
| Trees Paid into Tree Fund | 4 Trees |
| Tree Fund Contribution | \$1,336 (\$334 x 4) |



Total modification request of 19 trees, 8 Shade Trees 11 Ornamental Trees

* As measured from the back of curb and Excluding Sidewalks.
 ** ROW Plantings will Require a ROCO Permit. If the Permit is Not Granted, the Value of Required Trees Shall be Placed in the City Tree Fund.

Utility Maintenance Statement:

If, in the event, Utility Maintenance Results in the Removal of Landscaping, as Shown on this Plan, it Will be the Owner's Responsibility to Repair and Replace Shrubs and Trees that are Located within the Utility Easements.

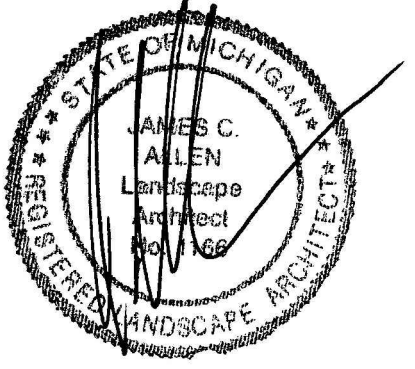
Overhead Line Statement:

Overhead Lines Exist Along Adams

Plant List

| sym | qty | botanical name | common name | caliper | spacing | root | height | price | total |
|---------------------------------|-----|--|------------------------------------|----------|----------|--------------------------|--------|--------------|---------------------|
| Parking Lot Island Trees | | | | | | | | | |
| LTP | 3 | Litodendron tulipifera | Tulip Tree | 3.0" | as shown | B&B | | \$ 425.00 | \$ 1,275.00 |
| TCP | 2 | Tilia tomentosa | Silver Linden | 3.0" | as shown | B&B | | \$ 425.00 | \$ 850.00 |
| | 5 | Trees Provided | | | | | | | |
| Parking Lot Perimeter | | | | | | | | | |
| GT | 4 | Gleditsia triacanthos var. inermis | Honey Locust | 3.0" | as shown | B&B | | \$ 425.00 | \$ 1,700.00 |
| MA | 1 | Malus 'Red Baron' | Red Baron Crabapple | 2.0" | as shown | B&B | | \$ 200.00 | \$ 200.00 |
| UP | 2 | Ulmus 'Princeton' | Princeton Elm | 3.0" | as shown | B&B | | \$ 425.00 | \$ 850.00 |
| | 6 | Trees Provided | | | | | | | |
| | 1 | Ornamental Tree Provided | | | | | | | |
| Right of Way Trees | | | | | | | | | |
| GBR | 3 | Ginkgo biloba | Ginkgo | 3.0" | as shown | B&B | | \$ 425.00 | \$ 1,275.00 |
| Woodland Replacement | | | | | | | | | |
| LTW | 1 | Litodendron tulipifera | Tulip Tree | 3.0" | as shown | B&B | | \$ 425.00 | \$ 425.00 |
| General Plantings | | | | | | | | | |
| AM | 8 | Aronia melanocarpa 'Ground Hog' | Ground Hog Black Chokeberry | as shown | cont. | 24" | | \$ 50.00 | \$ 400.00 |
| CA | 3 | Calamagrostis x acutiflora 'Karl Forester' | Karl Forester's Feather Reed Grass | as shown | cont. | Full, well rooted 1 gal. | | \$ 15.00 | \$ 45.00 |
| IL | 49 | Ilex glabra 'Nordic' | Nordic Inkberry | as shown | B&B | 30" | | \$ 50.00 | \$ 2,450.00 |
| PA | 9 | Pennisetum a 'Hamlet' | Dwarf Fountain Grass | as shown | cont. | #2 | | \$ 15.00 | \$ 135.00 |
| PO | 14 | Physocarpus 'Little Devil' | Little Devil Ninebark | as shown | B&B | 30" | | \$ 50.00 | \$ 700.00 |
| SP | 22 | Spiraea 'Little Princess' | Little Princess Spiraea | as shown | cont. | 30"-36" | | \$ 50.00 | \$ 1,100.00 |
| TO | 13 | Thuja occidentalis 'Techny' | Techny Arborvitae | as shown | B&B | 6" | | \$ 50.00 | \$ 650.00 |
| | 535 | Kentucky Blue Grass, (S.Y.) | | | | | | \$ -4.00 | \$ 2,140.00 |
| | | Irrigation System | | | | | | \$ 15,000.00 | \$ 15,000.00 |
| | | | | | | | | | \$ 29,195.00 |

Seal:



Title:

Landscape Plan

Project:

**2980 Walton Blvd.
 Rochester Hills, Michigan**

Prepared for:

Greentech Engineering
 51147 W. Pontiac Trail
 Wixom, Michigan 48393

Revision:

Issued:

Submission
 Revised
 Revised

May 24, 2024
 October 1, 2024
 December 20, 2024

Job Number:

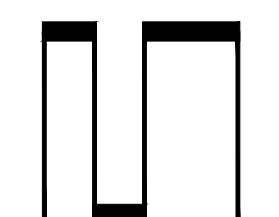
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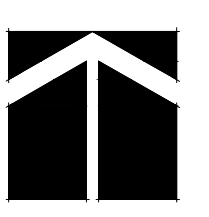
jca

Checked By:

jca



0' 5' 10' 20'

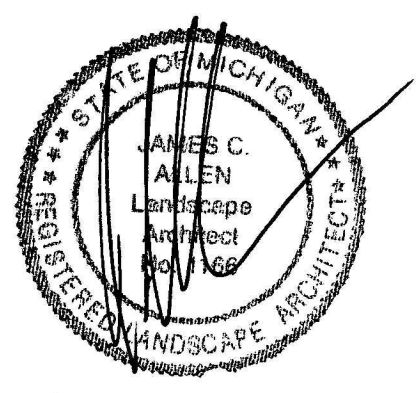


NORTH

1"=20'

Sheet No.

L-1



Seal: _____

Title:
Landscape Plan

Project:
 2980 Walton Blvd.
 Rochester Hills, Michigan

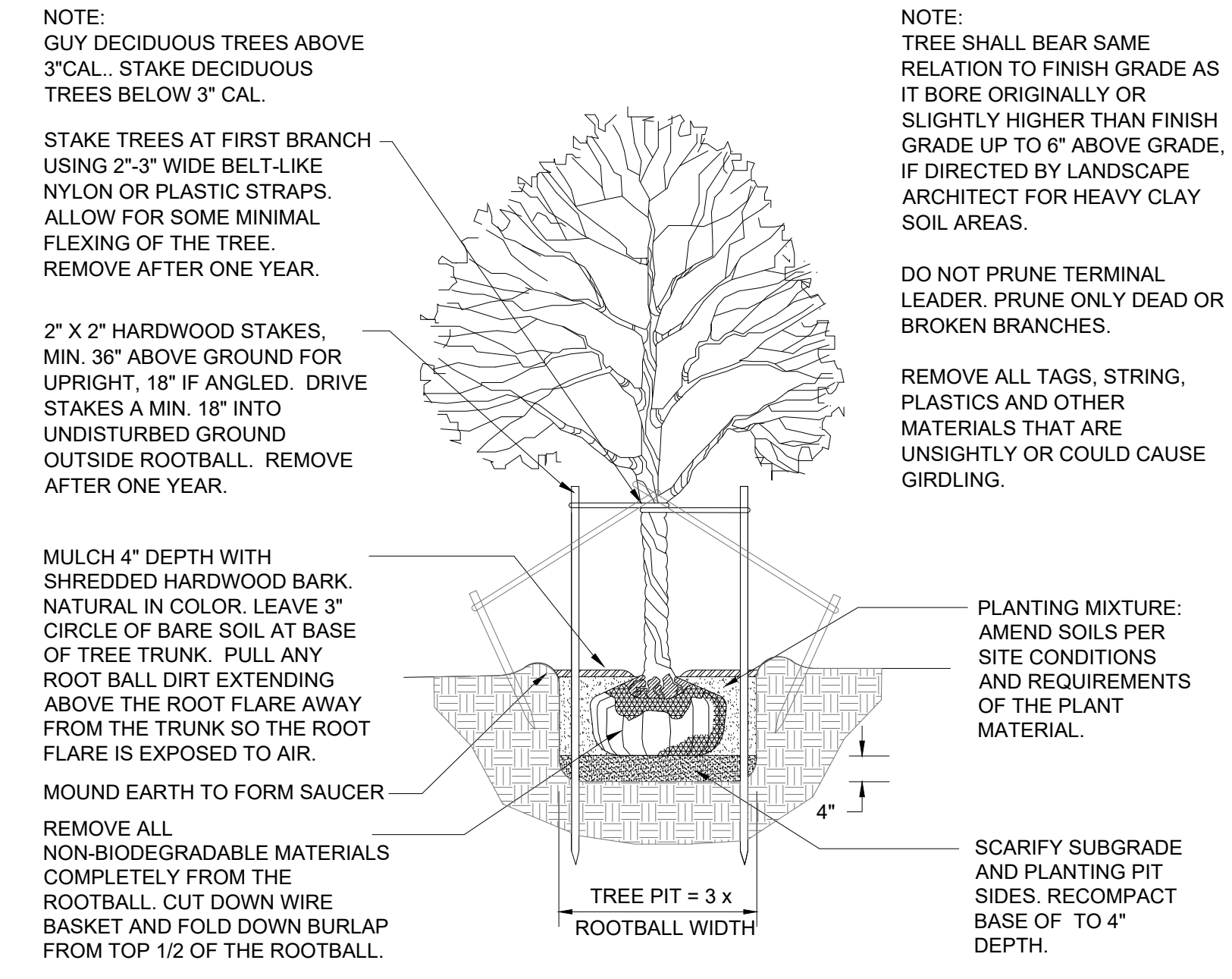
Prepared for:
 Greentech Engineering
 51147 W. Pontiac Trail
 Wixom, Michigan 48393

| Revision: | Issued: |
|------------|-------------------|
| Submission | May 14, 2024 |
| Revised | October 1, 2024 |
| Revised | December 20, 2024 |

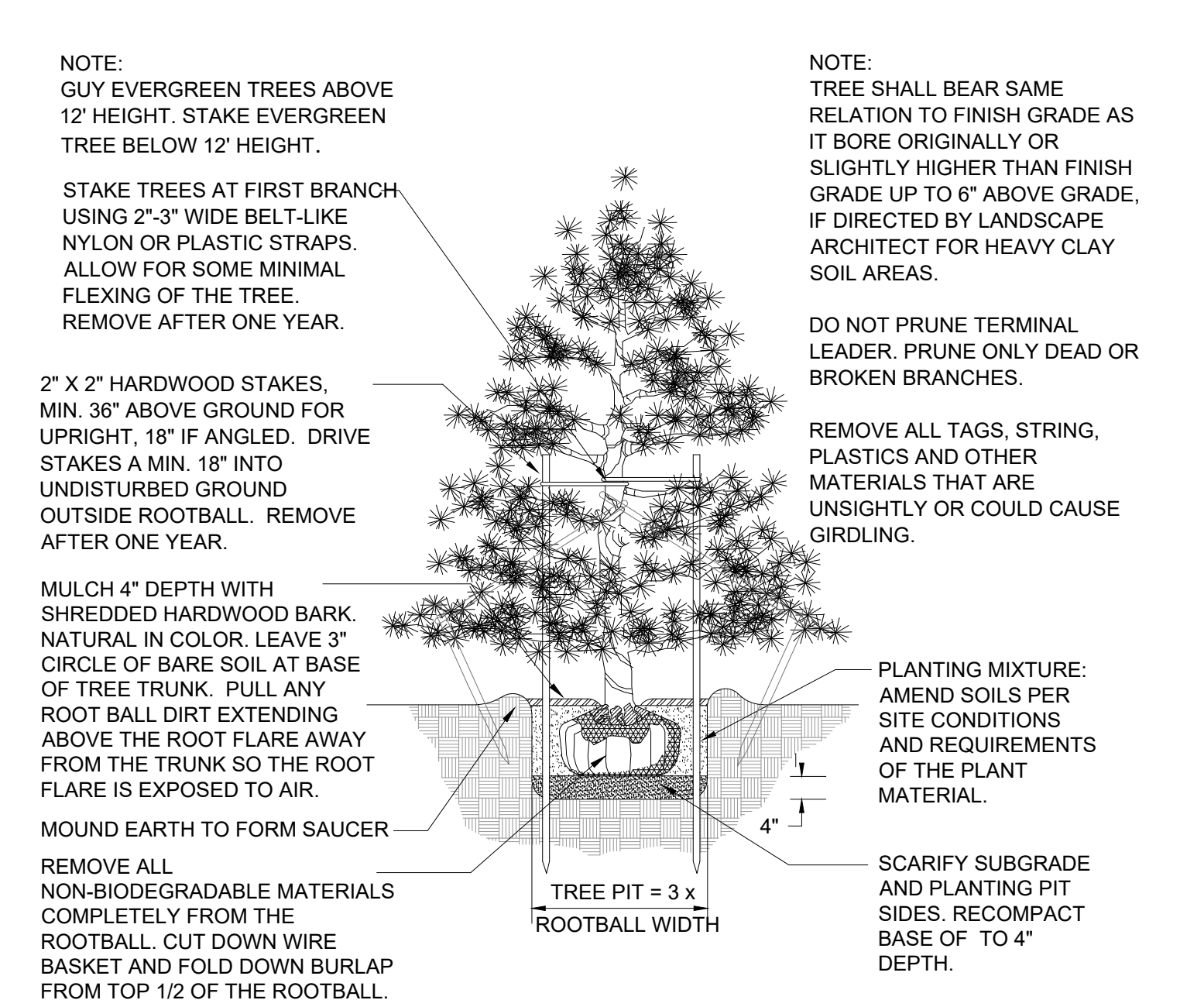
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Drawn By: jca Checked By: jca

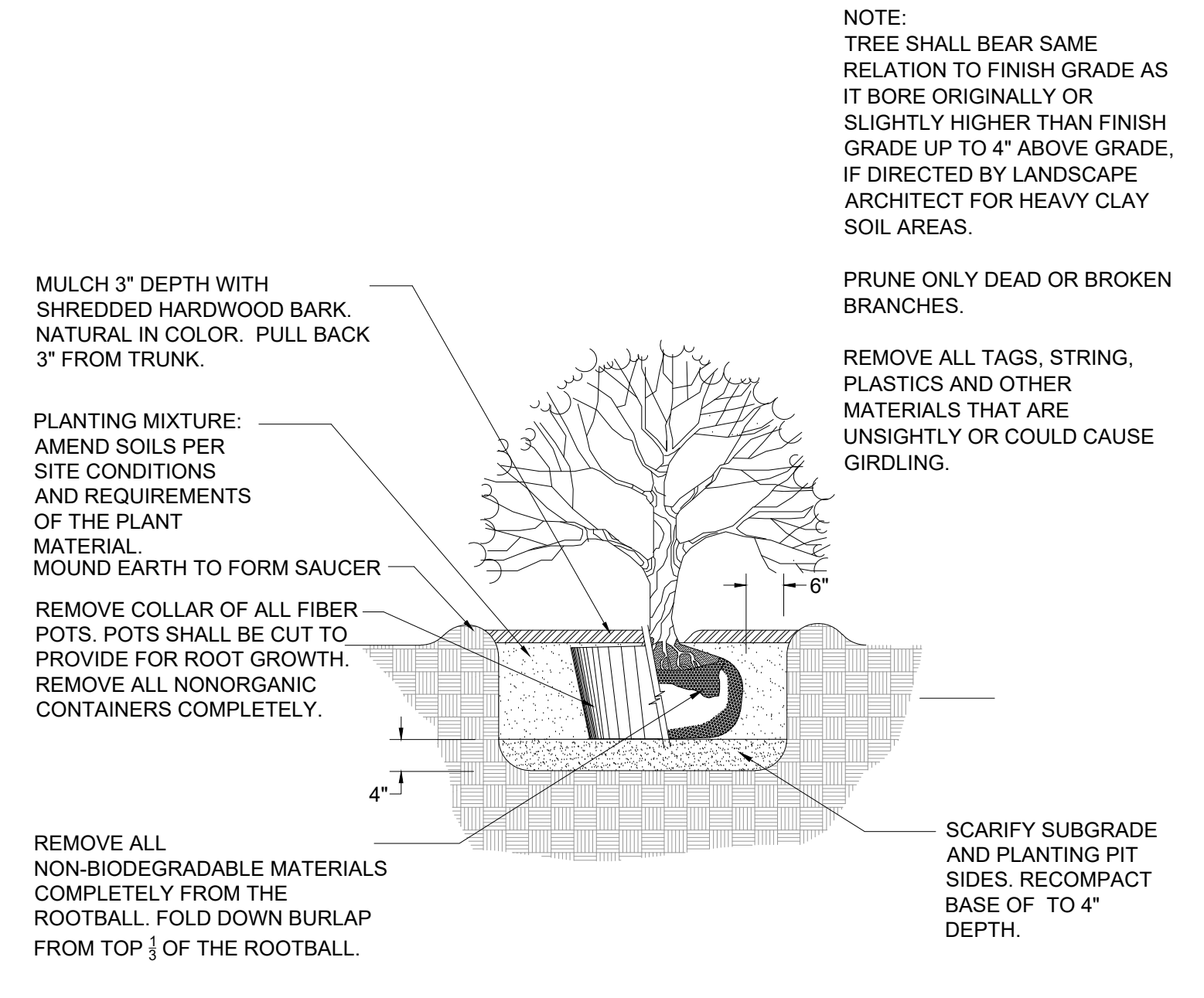
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DECIDUOUS TREE PLANTING DETAIL



EVERGREEN TREE PLANTING DETAIL



SHRUB PLANTING DETAIL

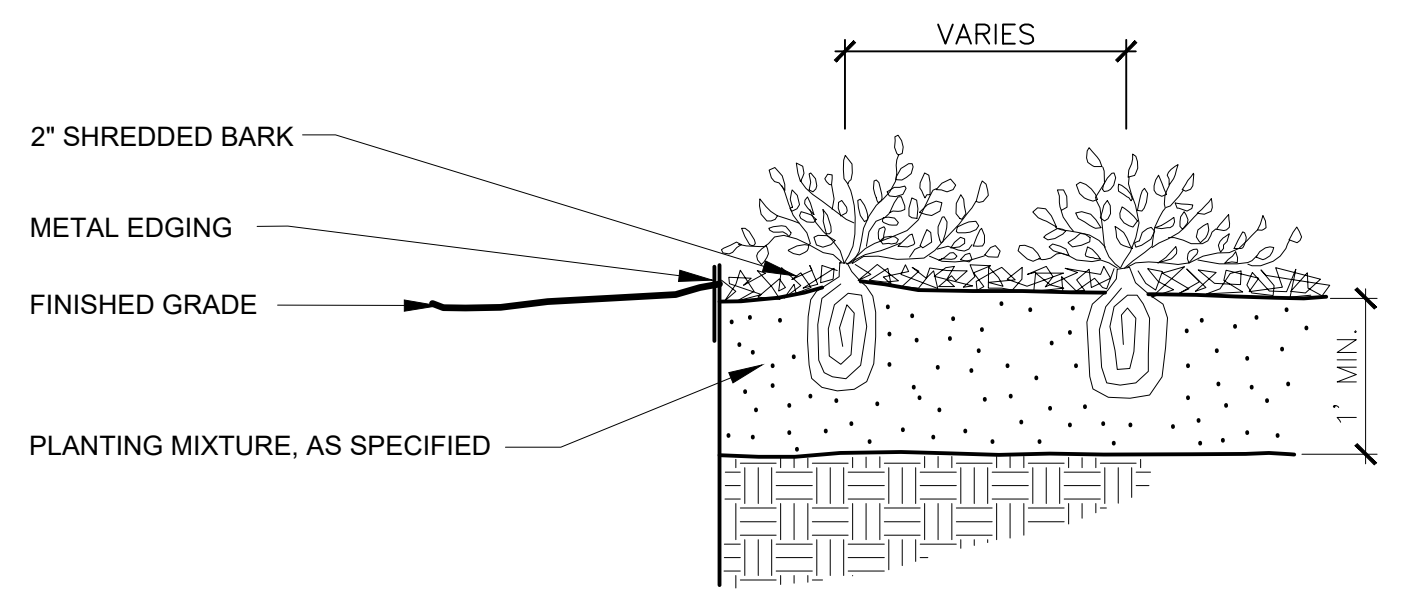
NOT TO SCALE

LANDSCAPE NOTES

- All plants shall be north Midwest American region grown, No. 1 grade plant materials, and shall be true to name, free from physical damage and wind burn.
- Plants shall be full, well-branched, and in healthy vigorous growing condition.
- Plants shall be watered before and after planting is complete.
- All trees must be staked, fertilized and mulched and shall be guaranteed to exhibit a normal growth cycle for at least two (2) full years following Township approval.
- All material shall conform to the guidelines established in the most recent edition of the American Standard for Nursery Stock.
- Provide clean backfill soil, using material stockpiled on site. Soil shall be screened and free of any debris, foreign material, and stone.
- "Agriform" tabs or similar slow-release fertilizer shall be added to the planting pits before being backfilled.
- Amended planting mix shall consist of 1/3 screened topsoil, 1/3 sand and 1/3 peat, mixed well and spread to the depth as indicated in planting details.
- All plantings shall be mulched per planting details located on this sheet.
- The Landscape Contractor shall be responsible for all work shown on the landscape drawings and specifications.
- No substitutions or changes of location, or plant types shall be made without the approval of the Landscape Architect.
- The Landscape Architect shall be notified of any discrepancies between the plans and field conditions prior to installation.
- The Landscape Contractor shall be responsible for maintaining all plant material in a vertical condition throughout the guaranteed period.
- The Landscape Architect shall have the right, at any stage of the installation, to reject any work or material that does not meet the requirements of the plans and specifications, if requested by owner.
- Contractor shall be responsible for checking plant quantities to ensure quantities on drawings and plant list are the same. In the event of a discrepancy, the quantities on the plans shall prevail.
- The Landscape Contractor shall seed and mulch or sod (as indicated on plans) all areas disturbed during construction, throughout the contract limits.
- A pre-emergent weed control agent, "Preem" or equal, shall be applied uniformly on top of all mulching in all planting beds.
- All landscape areas shall be provided with an underground automatic sprinkler system.
- Sod shall be two year old "Baron/Cheriadelpi" Kentucky Blue Grass grown in a sod nursery on loam soil.

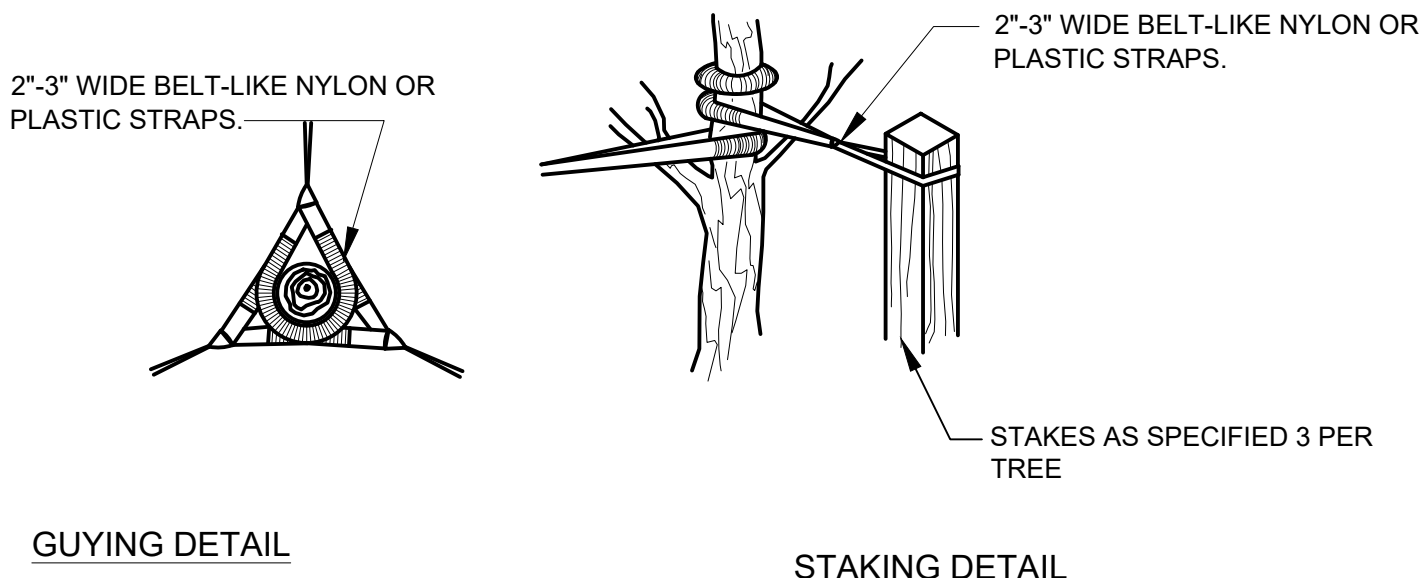
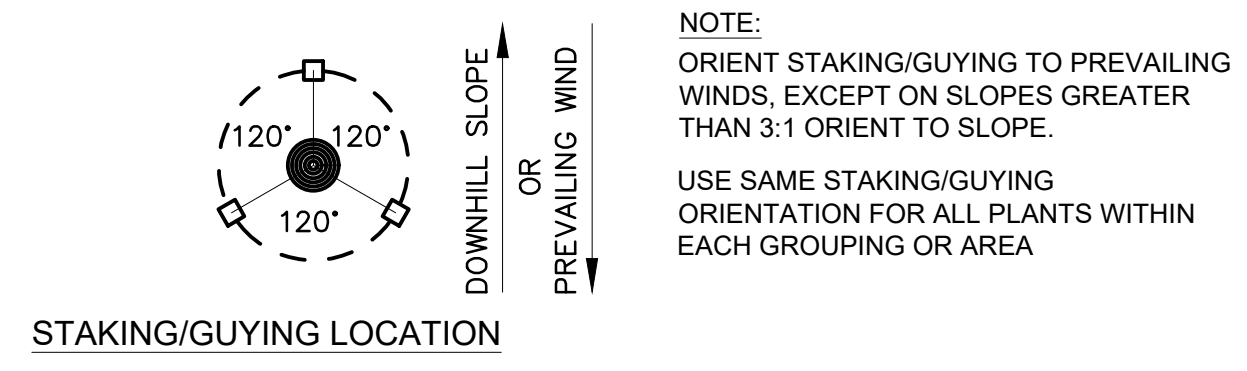
ADDITIONAL NOTES

- All Landscaped Areas Shall be Irrigated with an Automatic, Underground System.
- Islands Shall be Sod.
- Owner Shall be Responsible for Replacing Damaged Plant Material Due to Utility Maintenance.
- Prior to the release of the Performance Bond, the City of Rochester Hills Forestry Division 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.
- These requirements are incorporated into the plan.
- Prior approval is required to plant any tree or shrub on the public right-of-way. All trees and shrubs must be planted 10' from the edge of the public road. (Trees must be planted at least 15' away from the 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 at a distance along each line of 25' from their point intersection. No trees or shrubs may be planted within 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.
- No substitutions or changes of location or plant types shall be made without the approval of the developer and the City of Rochester Hills Planning and Economic Development Department and has Final Right of Approval for the Release of the Performance and Maintenance Bonds.
- The developer and/or the City of Rochester Hills Landscape Architect shall have the right, at any stage of the installation, to reject any work or material that does not meet the requirements of the plans or specifications.
- Replacement trees may not be planted within the drip line of existing trees.
- Trees may not be planted within 4' of any property line.
- Irrigation Shall Only Occur Between the Hours of 12am and 5 am in Accordance with the City's Watering Ordinances.



PERENNIAL PLANTING DETAIL

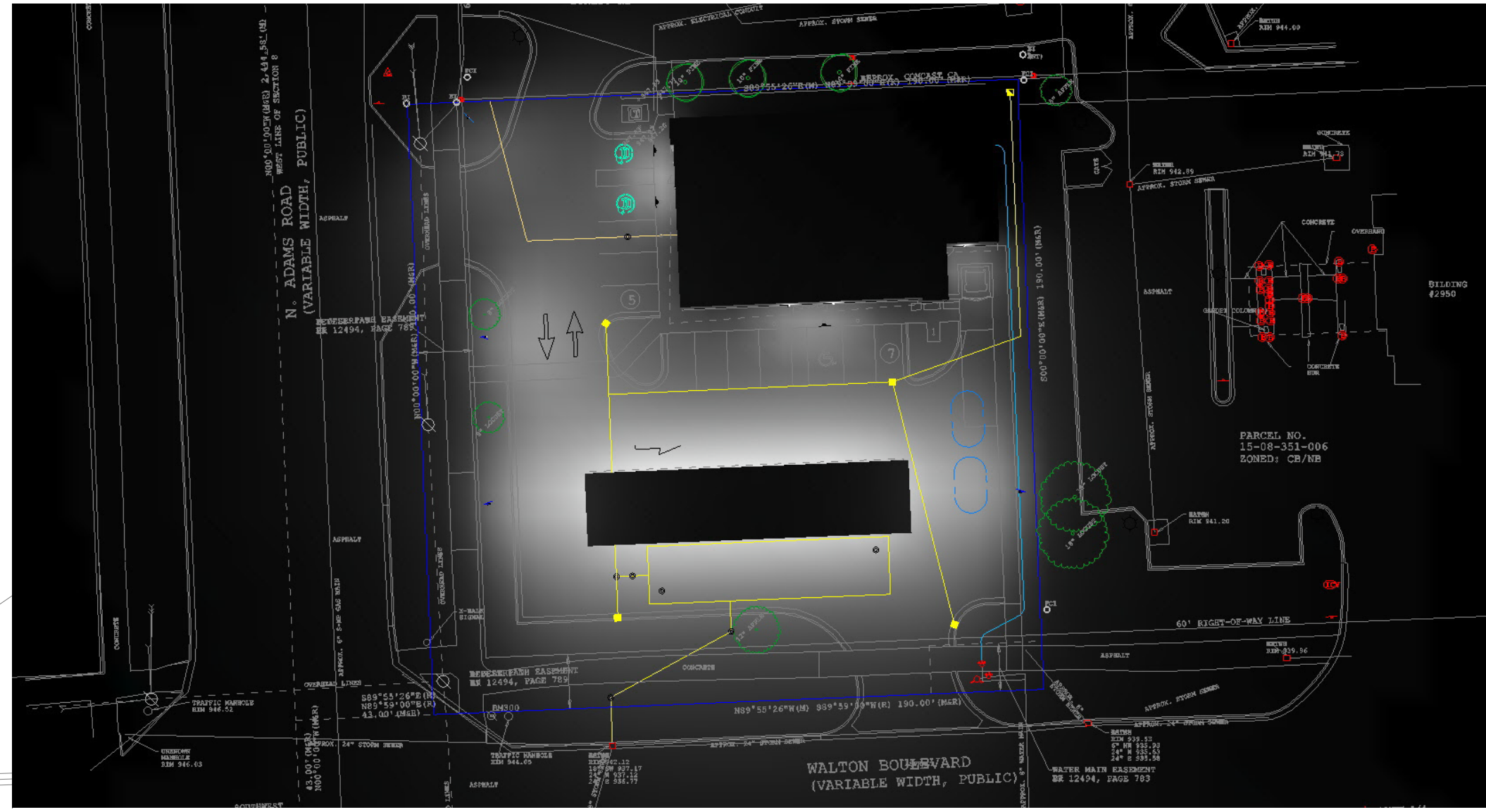
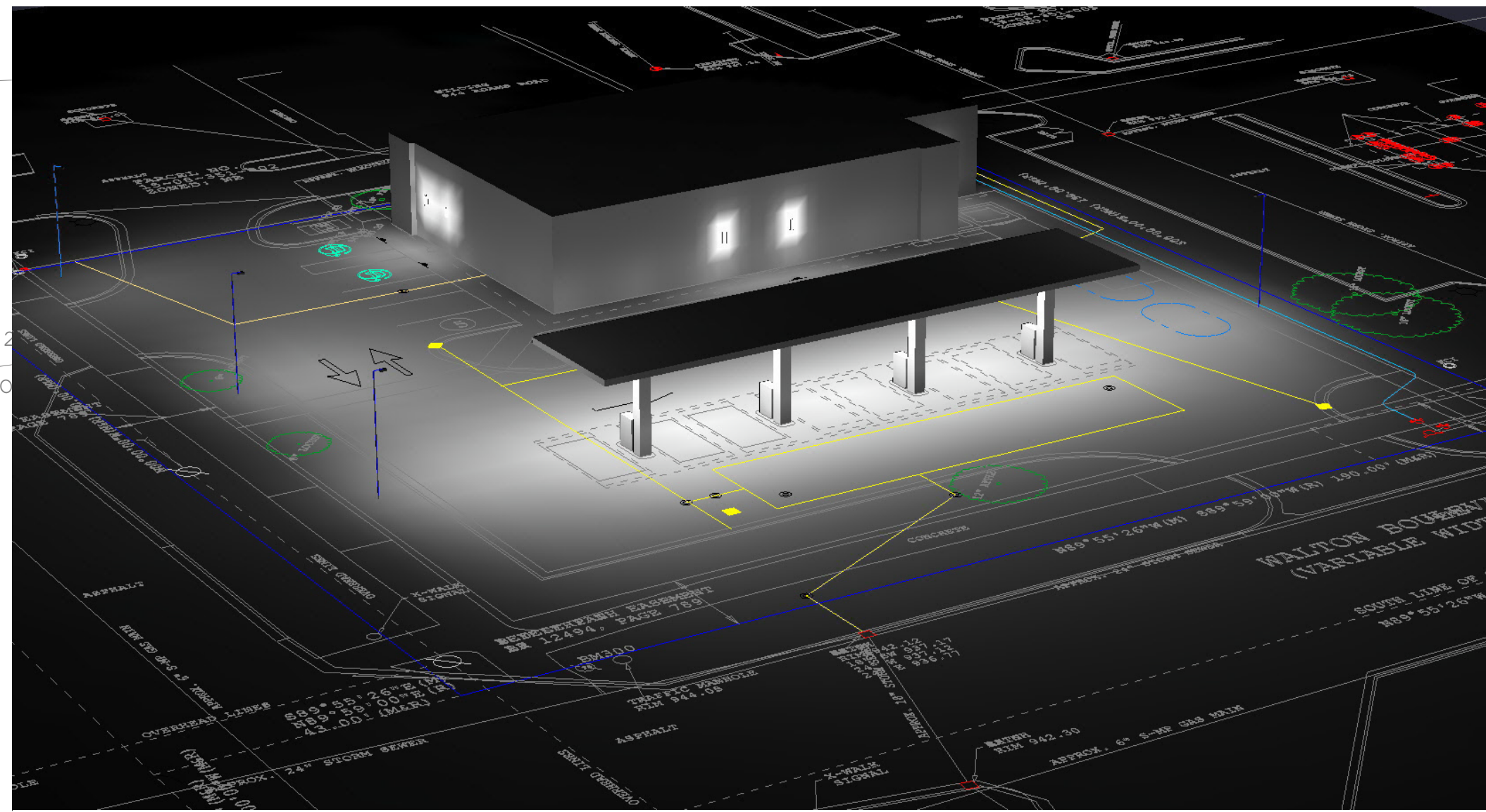
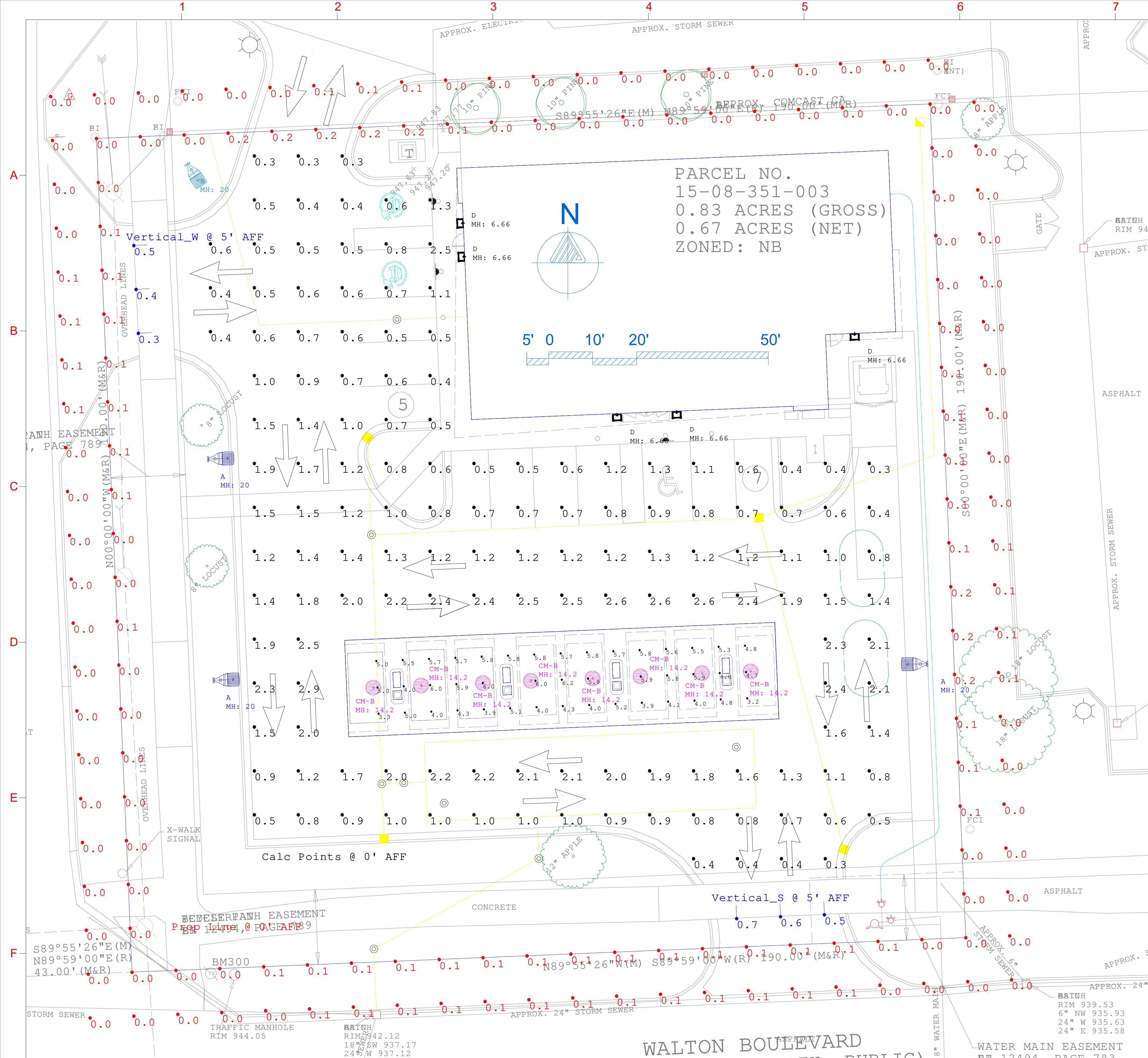
Not to scale



TREE STAKING DETAIL

Not to scale





| Symbol | Qty | Label | Arrangement | LLF | Description | Arr. Lum. Lumens | BUG Rating | Lum. Watts |
|----------|-----|-------|-------------|-------|---|------------------|------------|------------|
| [Symbol] | 3 | A | Single | 0.950 | VISIONAIRE VSX-II_T4L_15L_3K_HS SINGLE @ 20' MTG. HT. | 4190 | B0-U3-G3 | 102 |
| [Symbol] | 1 | B | Single | 0.950 | VISIONAIRE VSX-II_T4L_5L_3K_HS SINGLE @ 20' MTG. HT. | 1387 | B0-U3-G2 | 34 |
| [Symbol] | 8 | CM-B | Single | 0.900 | VISIONAIRE PRK_T5LS_25W_3K_VOLT CM @ 14' MG. HT. | 3164 | B2-U0-G1 | 25 |
| [Symbol] | 5 | D | Single | 0.900 | ALVA NATALIE-28 INCH-X-3K @ 6' 8 INCH MG. HT. | 1298 | B0-U4-G1 | 22.01 |

| Label | CalcType | Units | Avg | Max | Min | Avg/Min | Max/Min |
|-----------------------|-------------|-------|------|-----|-----|---------|---------|
| Calc Points @ 0' AFF | Illuminance | Fc | 1.16 | 2.9 | 0.3 | 3.87 | 9.67 |
| Prop Line @ 0' AFF | Illuminance | Fc | 0.05 | 0.2 | 0.0 | N.A. | N.A. |
| Under Canopy @ 0' AFF | Illuminance | Fc | 5.07 | 6.2 | 3.2 | 1.58 | 1.94 |
| Vertical_S @ 5' AFF | Illuminance | Fc | 0.60 | 0.7 | 0.5 | 1.20 | 1.40 |
| Vertical_W @ 5' AFF | Illuminance | Fc | 0.40 | 0.5 | 0.3 | 1.33 | 1.67 |

DRAWING NUMBER : **LS052024CL-PROPOSED GAS STATION-04**

LAYOUT DESIGNER : **LS**

DESIGNER EMAIL : **Lsalgado@visionairelighting.com**

PROJECT DATE : **05/21/24**

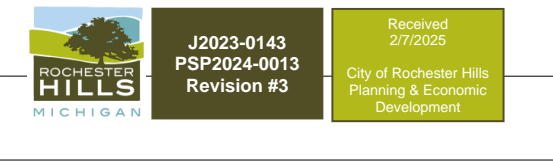
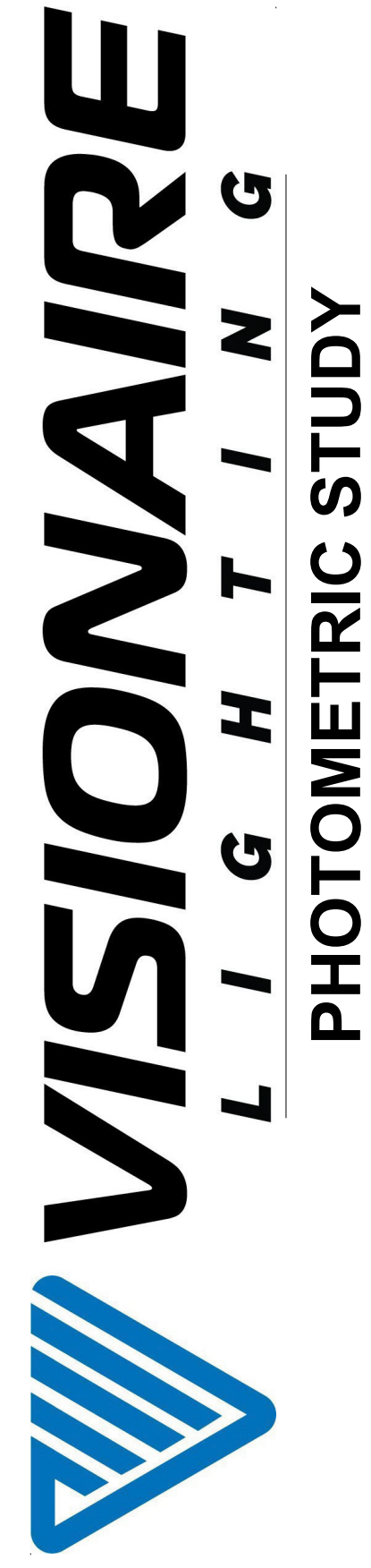
REVISION DATE : **09/18/24**

REP : **CLARUS LIGHTING**

NOTE/S: -

DISCLAIMER
 BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE PROJECT ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS. THE LIGHTING DATA REPRESENTS ILLUMINATION LEVELS TAKEN FROM A LABORATORY SETTING UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA) APPROVED METHODS. ACTUAL PERFORMANCE MAY VARY DUE TO VARIATIONS IN ELECTRICAL VOLTAGE, INSTALLATION TOLERANCES, BUILDINGS, OTHER LIGHTING, AND OTHER VARIABLES THAT WERE NOT CONSIDERED WHEN THIS PHOTOMETRIC FIELD WAS CREATED. IT IS THE RESPONSIBILITY OF THE OWNER OR PROJECT ENGINEER TO ENSURE COMPLIANCE OF ALL STANDARDS IN EFFECT. THIS PHOTOMETRIC LAYOUT IS THE PROPERTY OF VISIONAIRE LIGHTING AND IT CANNOT BE USED FOR INSTALLATION OF PRODUCTS OTHER THAN SPECIFIED.
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www.visionairelighting.com
 Phone: (310) 512-6480 Fax: (310) 512-6486
 19645 Rancho Way-Rancho Dominguez, CA. 90220
 POINT-BY-POINT CALCULATION
 Illuminance at Grade (Footcandles), unless otherwise specified.



VSX-II Array LED Specifications

Control Number: AREA-VSX-II-AR-08_19_2022



Project Name: _____
 Catalog Number: _____
 Type: _____

The new VSX-II Array LED Series offers clean, functional styling that is defined by its sleek low profile design and rugged construction. It combines the latest LED Array technology, advanced LED thermal management and provides outdoor lighting that is both energy efficient and aesthetically pleasing. The LED's performance and the driver's life are maximized by enclosing them in two separate die cast aluminum housings.

The VSX-II Array LED fixture is offered with lumen packages ranging from 5,000 - 25,000. Ten optical distribution patterns are available. Choose between 3000, 4000 or 5000 Kelvin temperature of the LEDs.

A durable polyester powder coat finish is guaranteed for five years; and is available in standard or custom colors.

The VSX-II Array LED series is an exceptional choice for commercial parking lots, office complexes, architectural projects, and other general lighting projects.

Ordering Information

| MODEL | OPTICS | LUMENS | KELVIN | VOLTAGE | MOUNTING | FINISH | OPTIONS | OPTIONS | OPTIONS |
|--------|--------------------------|--------|----------|--------------|--|--------------------|--|---|--|
| VSX-II | T1 Type 1 | 5L | 3K 3000K | UNV 120-277V | AM Arm Mount | BZ Bronze | PCR-120 Motion Sensor 5' Mounting Height | WSC-8 Universal Square Pole Mount Adaptor | UPMA-S Universal Square Pole Mount Adaptor |
| | T2 Type 2 | 10L | 4K 4000K | 8 347V | SAM Straight Arm Mount W/Terminal Block (New Construction) | BK Black | PCR-206 PCR-240 | WSC-20 Motion Sensor 9-20' Mounting Height | UPMA-R Universal Round Pole Mount Adaptor |
| | T3 Type 3 | 15L | 4K 4000K | 5 480V | UBM Universal Mount (Resetrofit) | SBK Smooth Black | PCR-277 PCR-347 PCR-450 | WSC-40 Motion Sensor 21-42' Mounting Height | BAMP Cast Wall Plate |
| | T3L Type 3 Long | 20L | 5K 5000K | | UAM Universal Arm/Terminal Block Mount (Resetrofit) | WH White | PER 3, 5, or 7 Pin Photo Receptor | WSC-40 Motion Sensor 21-42' Mounting Height | ROT-R Rotated Case Right Side |
| | T4 Type 4 | 25L | | | MAF Mast Arm Fitter | SWH Smooth White | 7PINPER 3, 5, or 7 Pin Photo Receptor | ROT-L Rotated Optics Left Side | CLS Backplate |
| | T4L Type 4 Long | | | | KM Kludde Mount | GP Graphite | UMAP Universal Mast Arm Fitter | CLS Backplate | CLS Backplate |
| | T4A Type 4 Automobile | | | | WM Wall Mount *Requires BAMP | GY Grey | DIM 0-10v Dimming Driver | CLS Backplate | CLS Backplate |
| | T5SR Type 5 Street Round | | | | AWM Adjustable Wall Mount | SL Silver Metallic | RPP-3* RPP-4* RPP-5* | ECLS Egg Crate Louver Shield | RCLS Recessed Louver Shield |
| | T5LR Type 5 Long Round | | | | RP Round Pole Plate Adaptors (RPP) are to be ordered separately. | CC Custom Color | ADJLS Adjustable Lower Light Shield | LCLS Louver Light Shield | LCLS Louver Light Shield |
| | T5LS Type 5 Long Square | | | | | | VWC Wireless Controls *Consult Factory | BD Beam Door Shield | HS House Shield |

VISIONAIRE LIGHTING

ML-PA-ING-001-F37

REV. 0

CRCAR22-03

PRK LED Specifications

Control Number: WALL_CEILING-PRK-07_08_2024



Project Name: _____
 Catalog Number: _____
 Type: _____

The PRK LED Series offers clean, functional styling that is defined by its sleek low profile design and rugged construction. It combines the latest LED edge-lit Array technology, advanced LED thermal management and provides canopy lighting that is both energy efficient and aesthetically pleasing.

The PRK housing is die-cast aluminum with internal heat sinks for maximum heat dissipation.

The PRK LED fixture is offered with lumen packages between 5,000 - 15,000. Four different optical distribution patterns are available. Choose between 3K, 4K, or 5K Kelvin temperature of the LEDs.

A durable polyester powder coat finish is guaranteed for five years; and is available in standard or custom colors.

The PRK series is an exceptional choice for parking garage lighting and other ceiling mount application.

Ordering Information

| MODEL | OPTICS | WATTAGE | KELVIN | VOLTAGE | MOUNTING | FINISH | OPTIONS | OPTIONS |
|-------|---|-------------|-------------------|---------------------|--|--|--|--|
| PRK | T1 Type 1 Symmetrical 25W - 50W | 25W 35W 45W | 3K 3000K 4K 4000K | UNV 120-277V 8 347V | LPM Low Profile Mount Ceiling Mount No conduit feed. | BZ Bronze BK Black | UPL Up-Light 500 Lumens *Pendant Mount Only UNV Voltage Only | DIM 0-10v Dimming Driver |
| | T3L Type 3 Long Asymmetrical 25W - 50W | 55W 65W | 5K 5000K | 5 480V | CM Ceiling Mount 1/2" & 3/4" Knockouts | SBK Smooth Black | WG Wire Guard | EBPL 20W Emergency Battery Pack UNV Voltage Only |
| | T5LR Type 5 Long Round Symmetrical 25W - 115W | 75W 85W 95W | | | TM Trunion Mount | WH White SWH Smooth White | WLG Wild Life Guard *Pendant Mount Only | CLD-ESPL 20W Code Weather Emergency Battery Pack Rated for 20°C UNV Voltage Only |
| | T5LS Type 5 Long Square Symmetrical 25W - 50W | 105W 115W | | | ATM Adjustable Trunion Mount | GP Graphite GY Grey SL Silver Metallic CC Custom Color | WSC-8 Dimmable Motion Sensor 8' Mounting Height | ULB24 ULB24 Relay for Emergency Circuit UNV Voltage Only |
| | | | | | PM12 Pendant Mount 12" *30" Leads | | WSC-20 Dimmable Motion Sensor 9-20' Mounting Height | 10KV 10KV Surge Protector |
| | | | | | PM24 Pendant Mount 24" *40" Leads | | WSC-40 Dimmable Motion Sensor 21-42' Mounting Height | 20KV 20KV Surge Protector |
| | | | | | PM36 Pendant Mount 36" *54" Leads | | | VWC Wireless Controls *Consult Factory |
| | | | | | | | | TPH Temp Proof Hardware |
| | | | | | | | | HB House Case Shield |

VISIONAIRE LIGHTING

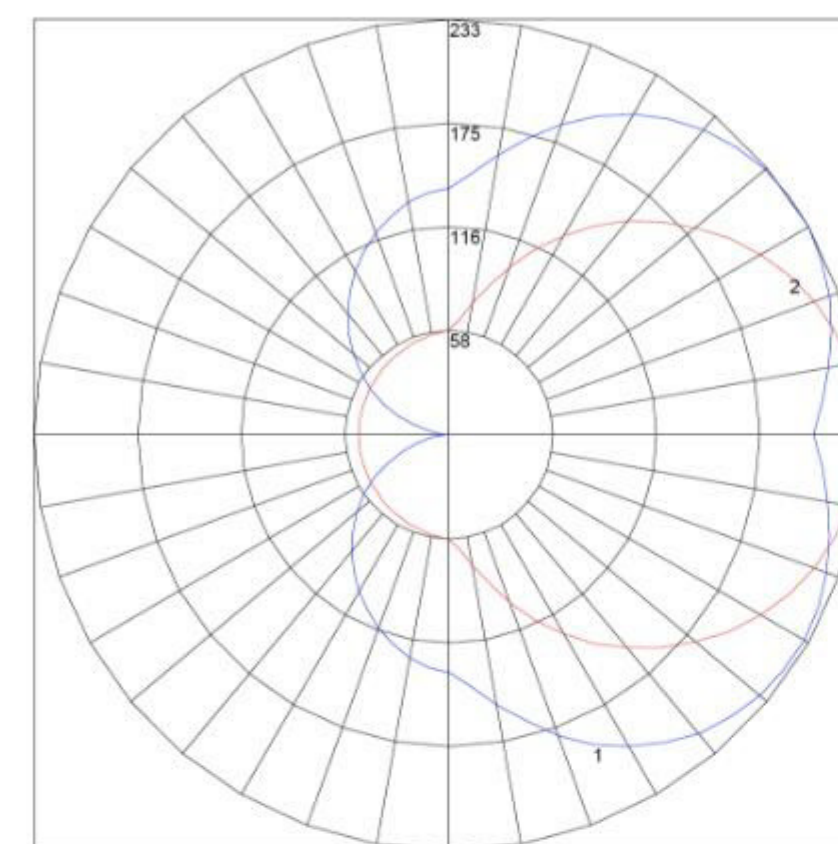
REV. 08.27.24

NATALIE

ARCHITECTURAL SCALE, WET-LISTED EXTERIOR WALL SCNCE

alva

PHOTOMETRIC REPORT



Maximum Candela = 232.79 Located At Horizontal Angle = 0, Vertical Angle = 120
 # 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
 # 2 - Horizontal Cone Through Vertical Angle (120) (Through Max. Cd.)



METAL POWDER COAT FINISH OPTIONS



Custom RAL colors supplied on special order

ORDER CODE:

| | | | |
|---------|----------------------------|--|--|
| NATALIE | | VERIFY | |
| MODEL | LENGTH | METAL TRIM | CCT |
| | 28 28" 43 43" 58 58" | ESN Enviro Satin Nickel EOB Enviro Oil-Rubbed Bronze GR Graphite DB Dark Bronze WHT White BLK Black | 3000 3000K 3500 3500K 4000 4000K |

| Symbol | Qty | Label | Arrangement | LLF | Description | Arr. Lum. Lumens | BUG Rating | Lum. Watts |
|--------|-----|-------|-------------|-------|---|------------------|------------|------------|
| | 3 | A | Single | 0.950 | VISIONAIRE VSX-II_T4L_15L_3K_HS SINGLE @ 20' MTG. HT. | 4190 | B0-U3-G3 | 102 |
| | 1 | B | Single | 0.950 | VISIONAIRE VSX-II_T4L_5L_3K_HS SINGLE @ 20' MTG. HT. | 1387 | B0-U3-G2 | 34 |
| | 8 | CM-B | Single | 0.900 | VISIONAIRE PRK_T5LS_25W_3K_VOLT CM @ 14' MG. HT. | 3164 | B2-U0-G1 | 25 |
| | 5 | D | Single | 0.900 | ALVA NATALIE-28 INCH-X-3K @ 6' 8 INCH MG. HT. | 1298 | B0-U4-G1 | 22.01 |

DRAWING NUMBER : **LS052024CL-PROPOSED GAS STATION-04**
 LAYOUT DESIGNER : **LS**
 DESIGNER EMAIL : **Lsalgado@visionairelighting.com**
 PROJECT DATE : **05/21/24**
 REVISION DATE : **09/18/24**
 REP : **CLARUS LIGHTING**
 NOTE/S: -

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VISIONAIRE
 L I G H T I N G
 PHOTOMETRIC STUDY

| ISSUED FOR | DATE |
|---------------|----------|
| SPA | 10/08/24 |
| SPA REVISIONS | 11/04/24 |
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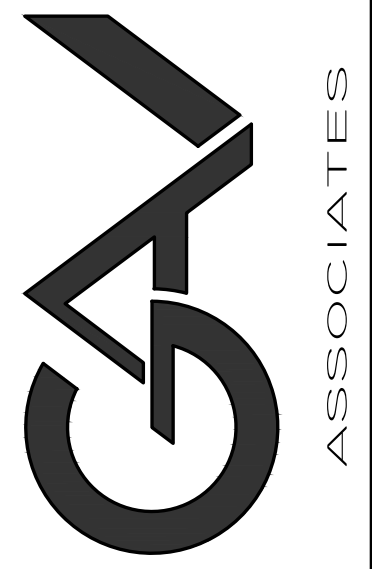


Use of non masonry products should be limited on all facades.
Use of masonry products should be aligned with surrounding buildings and abutting RH Village

ARCHITECTURAL DESIGN

RESIDENTIAL
COMMERCIAL
INDUSTRIAL

G.A.V. ASSOCIATES, INC
2401 ORCHARD LAKE RD. STE. 100A
FARMINGTON, MICHIGAN 48338
PH: (248) 986-9101
WEB: WWW.GAVASSOCIATES.COM



PROPOSED GASOLINE STATION
NEW CONSTRUCTION DRAWINGS
2480 WALTON BLVD.
ROCHESTER HILLS, MI 48309

| DRAWN: | DESIGNED: | CHECKED: |
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| AD | SA | SA |

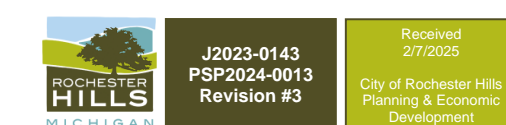
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FILE NAME :

JOB # : 23058

SHEET TITLE

SHEET #
A.100



GENERAL NOTES & CODE REVIEW:

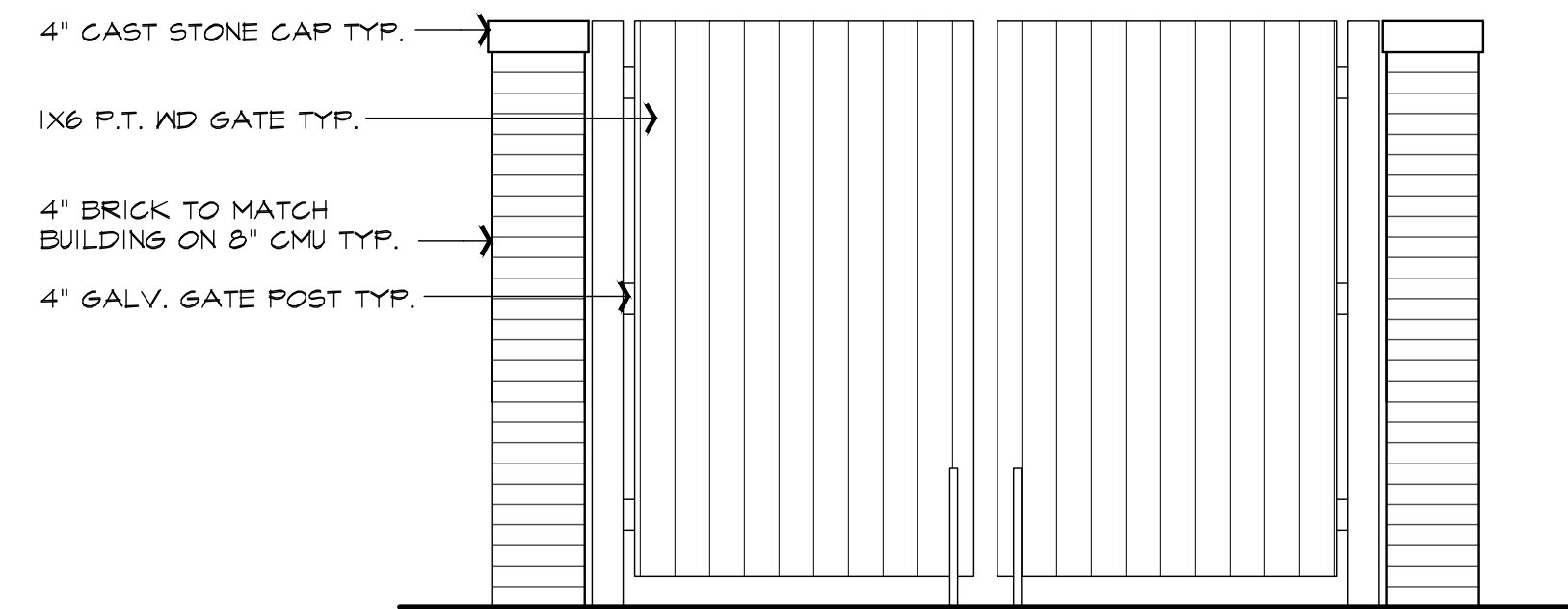
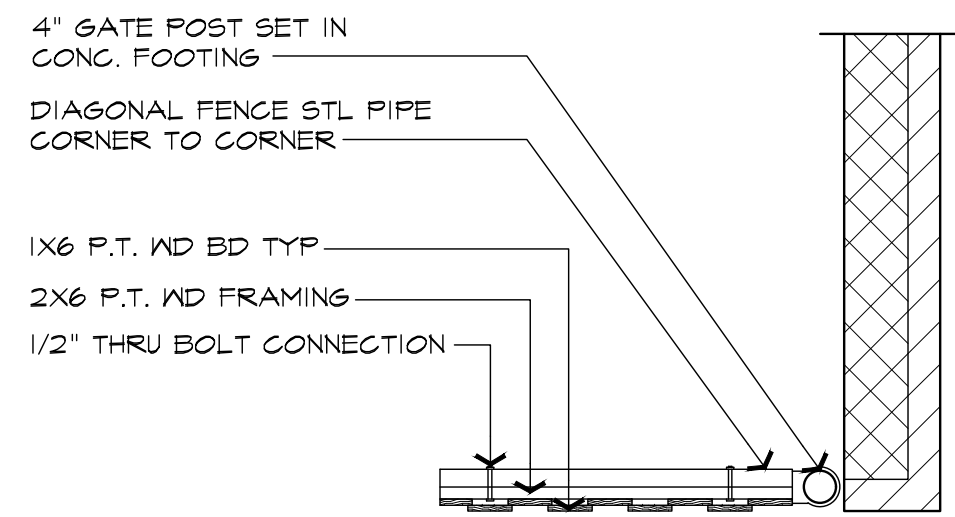
- GENERAL CONTR. TO COMPLY W/ ALL FEDERAL, STATE, CITY AND LOCAL CODES WHERE APPLICABLE
- MICHIGAN BUILDING CODE 2015
 - ICC/ANSI A117.1, 2009 & MICHIGAN BARRIER FREE DESIGN LAM OF PUBLIC ACT 1 OF 1966 AS AMENDED.
 - MICHIGAN MECHANICAL CODE 2021 (M.M.C.)
 - MICHIGAN PLUMBING CODE 2021 (M.P.C.)
 - INTERNATIONAL FUEL GAS CODE 2015 (I.F.G.C.)
 - FIRE CODE: IFG 2015 (INTERNATIONAL FIRE CODE 2015), AS REFERENCED IN THE 2015 MICHIGAN BUILDING CODE
 - FIRE SUPPRESSION: NFPA 13 (2013)
 - FIRE ALARM: NFPA 72 (2013)
 - ENERGY CODE: MEC 2015 (MICHIGAN BUILDING CODE 2015) - CHAPTER 13 & MEC 2015 (MICHIGAN ENERGY CODE 2015) - CHAPTER 4 & MICHIGAN ENERGY CODE PART 10a, RULES (ANSI/ASHRAE 90.1-2013)
 - MICHIGAN ELECTRICAL CODE BASED ON 2023 N.E.C. W/ PART B AMENDMENTS
 - PROJECT SHALL COMPLY W/ MEC 2015 CHP. 35 REFERENCE STANDARDS

PROJECT DATA:

USE GROUP: M - MERCANTILE & B - BUSINESS
CONSTRUCTION TYPE: 2B

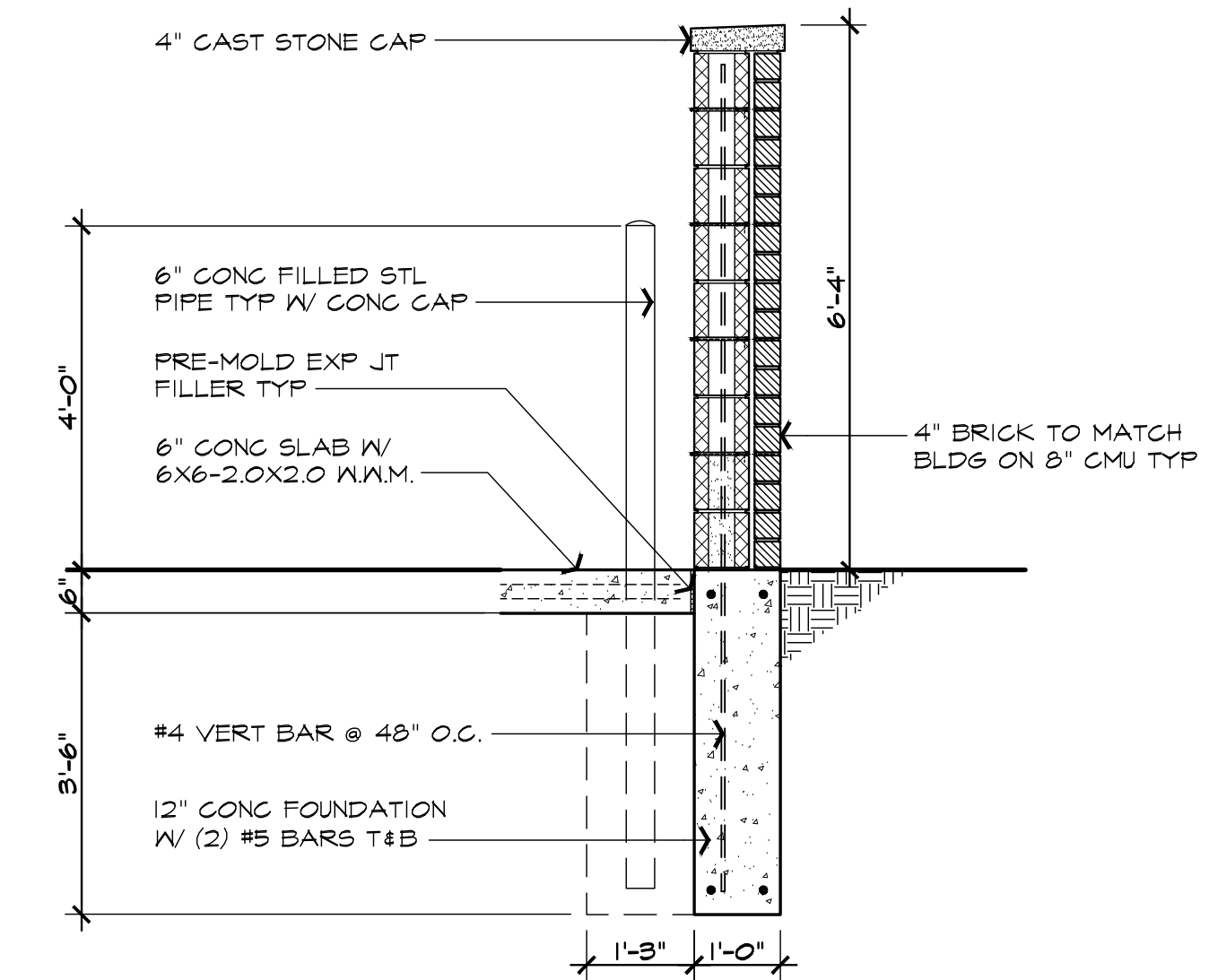
PROJECT DESCRIPTION

PROPOSED 1 STORY COMMERCIAL BUILDING, THE INTERIOR TO BE BUILT OUT INTO GAS STATION (CONVENIENCE/ RETAIL STORE) & TENANT.



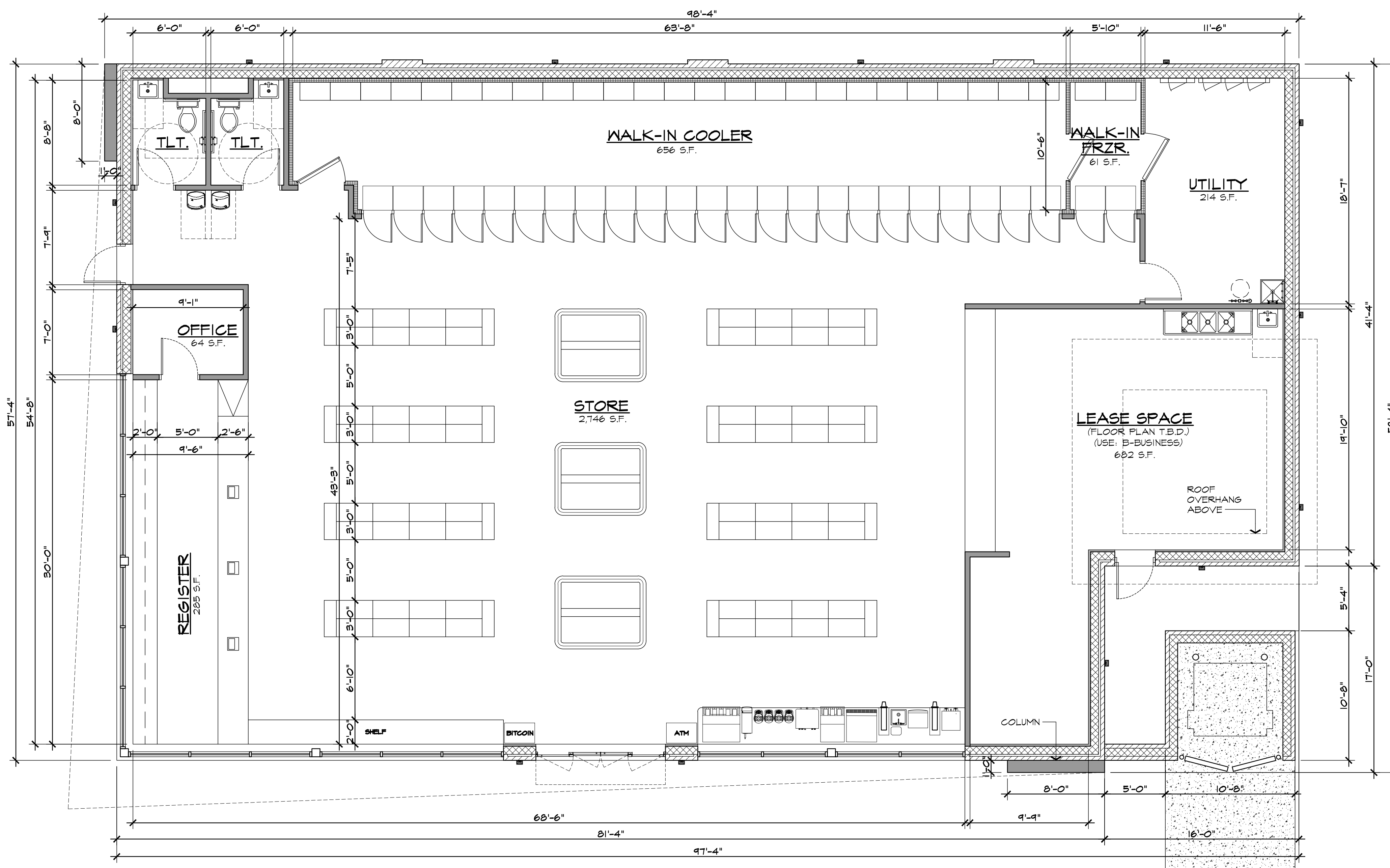
DUMPSTER ENCLOSURE GATE DETAIL & ELEVATION

SCALE: 1/2" = 1'-0"



DUMPSTER ENCLOSURE WALL SECTION

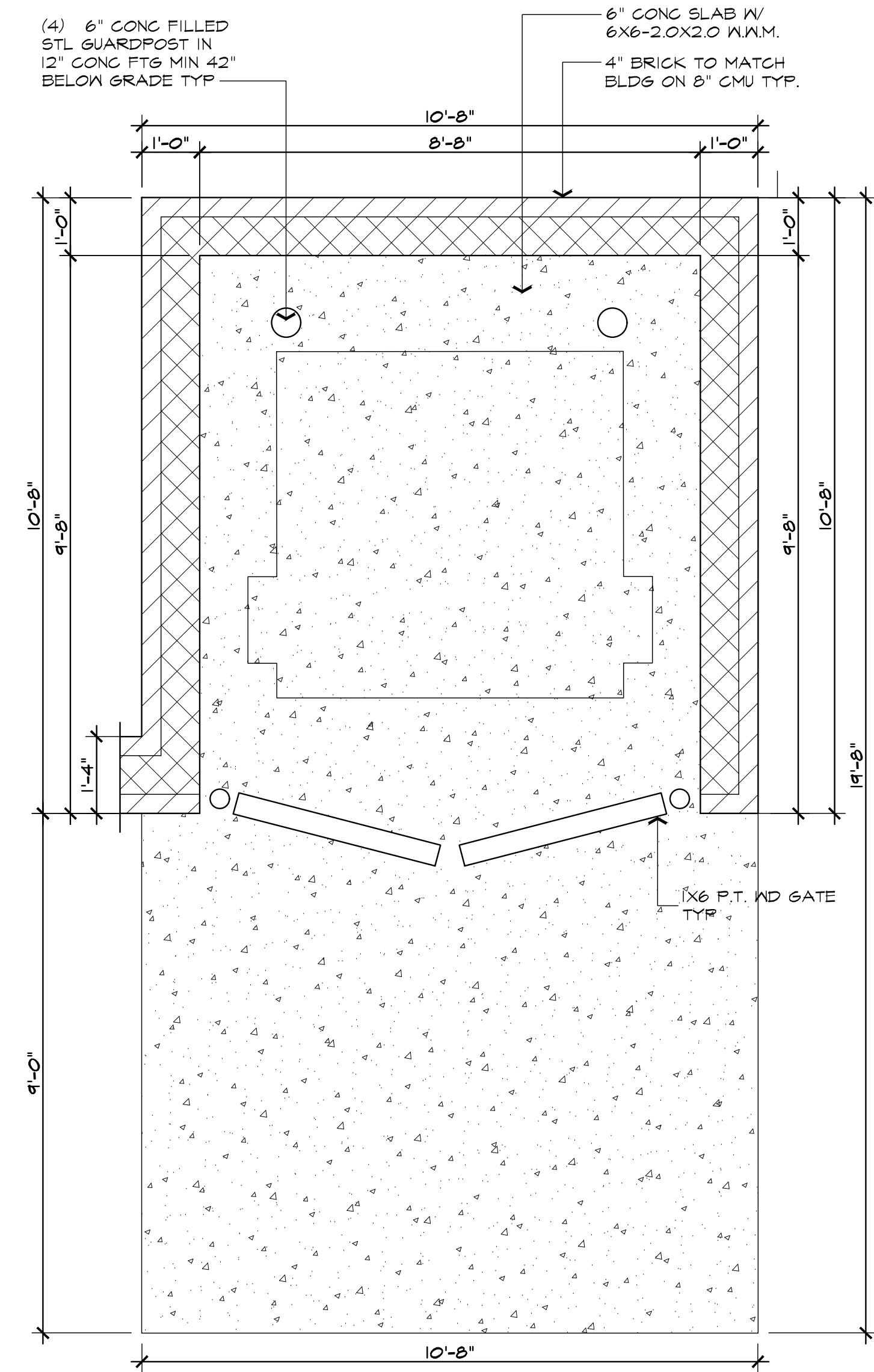
SCALE: 1/2" = 1'-0"



FLOOR PLAN

SCALE: 3/16" = 1'-0"

5,678 GROSS S.F.



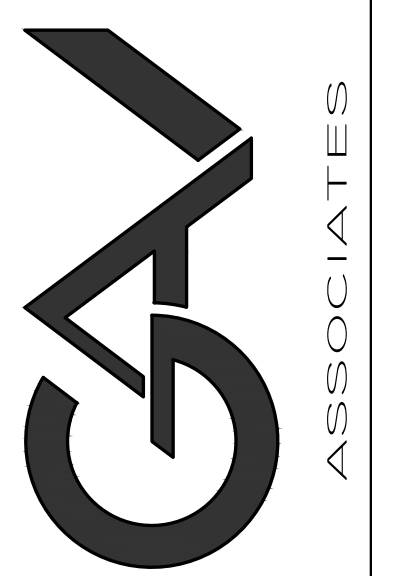
DUMPSTER ENCLOSURE PLAN

SCALE: 1/2" = 1'-0"

| ISSUED FOR | DATE |
|---------------|----------|
| SPA | 10/08/24 |
| SPA REVISIONS | 11/04/24 |
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INDUSTRIAL

G.A.V. ASSOCIATES, INC
2401 ORCHARD LAKE RD., STE. 100A
FARMINGTON, MICHIGAN 48338
PH: (248) 985-9101
WEB: WWW.GAVASSOCIATES.COM



PROPOSED GASOLINE STATION
NEW CONSTRUCTION DRAWINGS
2480 WALTON BLVD.
ROCHESTER HILLS, MI 48304

| DRAWN: | DESIGNED: | CHECKED: |
|--------|-----------|----------|
| AD | SA | GA |

SCALE : NOTED

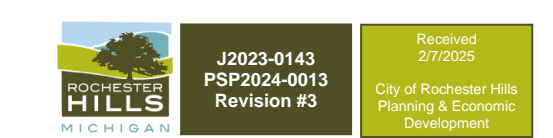
FILE NAME :

JOB # : 23058

SHEET TITLE
FLOOR PLAN

SHEET #

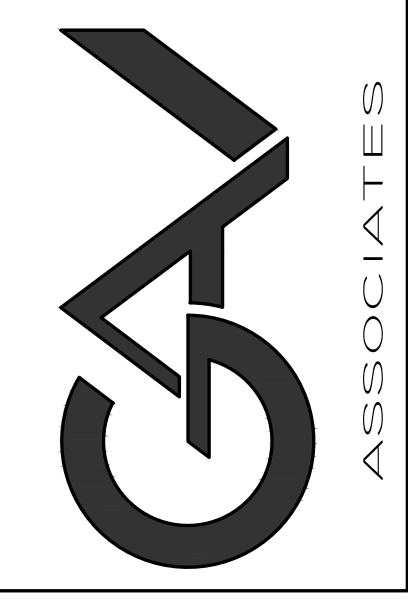
A.101



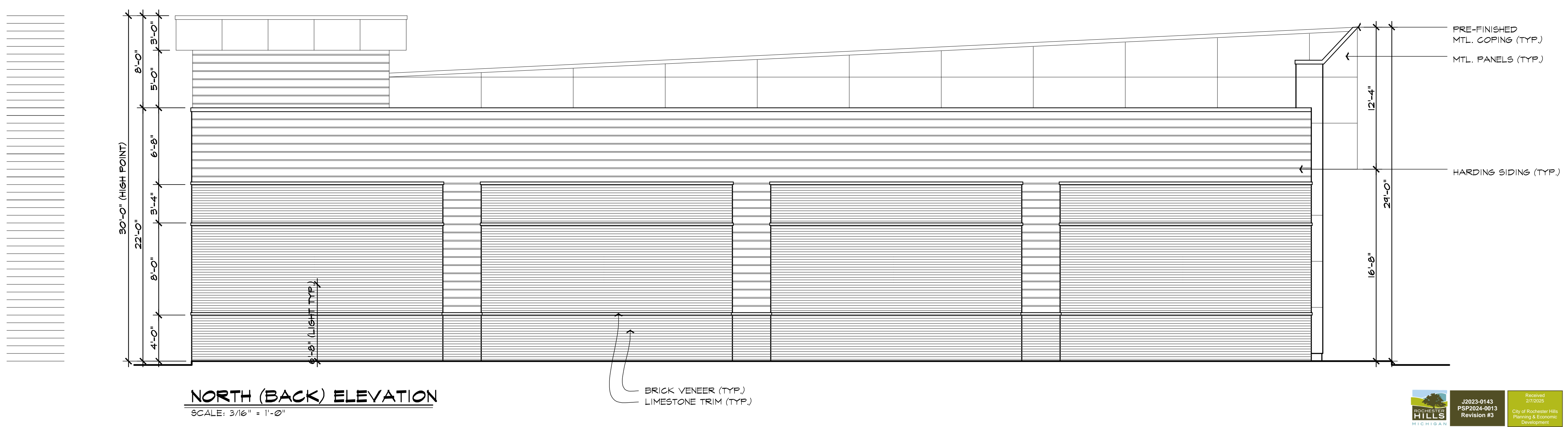
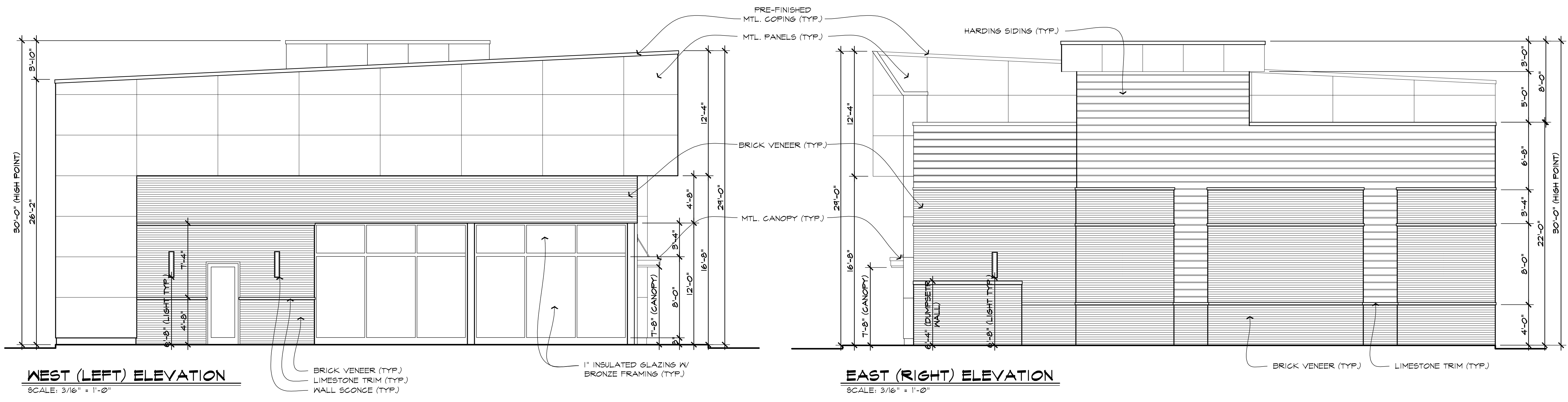
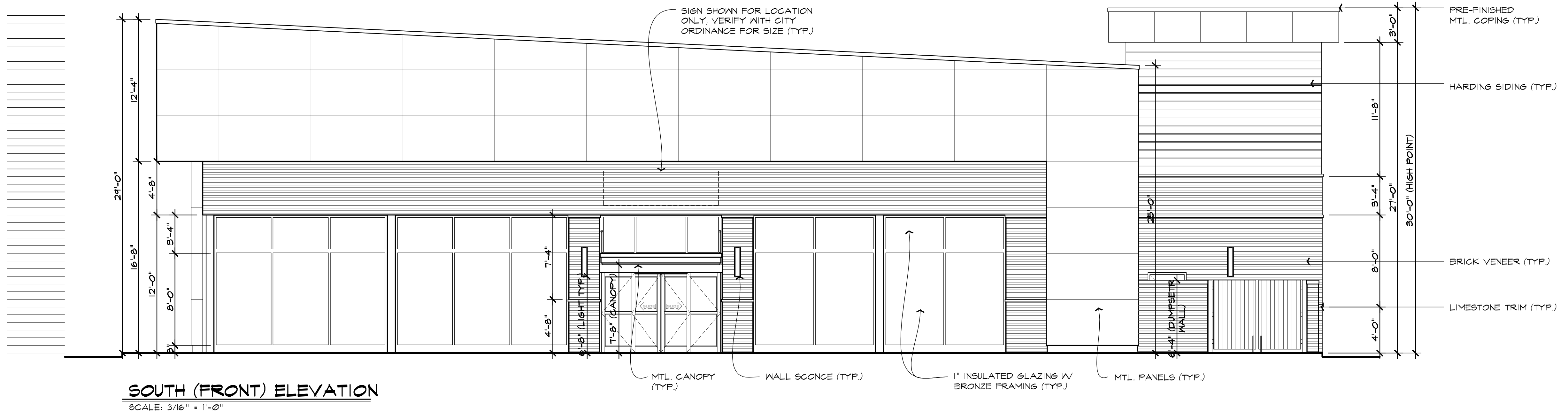
| ISSUED FOR | DATE |
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| SPA | 10/08/24 |
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RESIDENTIAL COMMERCIAL INDUSTRIAL

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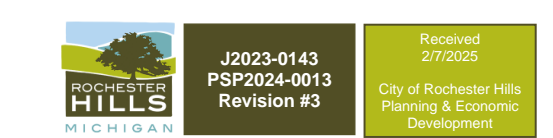


NOTE:
ALL BUILDING MECHANICAL EQUIPMENT SHALL BE SCREENED FROM VIEW WITH PARAPET
ALL SIGNS MUST MEET THE REQUIREMENTS OF THE CITY AND BE APPROVED UNDER SEPARATE PERMITS ISSUED BY THE BUILDING DEPARTMENT.



PROPOSED GASOLINE STATION
NEW CONSTRUCTION DRAWINGS
2480 WALTON BLVD.
ROCHESTER HILLS, MI 48304

| | | |
|---------------------------|-----------|----------|
| DRAWN: | DESIGNED: | CHECKED: |
| AD | GA | GA |
| SCALE : 3/16" = 1'-0" | | |
| FILE NAME : | | |
| JOB # : 23058 | | |
| SHEET TITLE ELEVATIONS | | |
| SHEET # A.201 | | |



| ISSUED FOR | DATE |
|---------------|----------|
| SPA | 10/08/24 |
| SPA REVISIONS | 11/04/24 |
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2480 WALTON BLVD.
ROCHESTER HILLS, MI 48304

| DRAWN: | DESIGNED: | CHECKED: |
|--------|-----------|----------|
| AD | GA | GA |

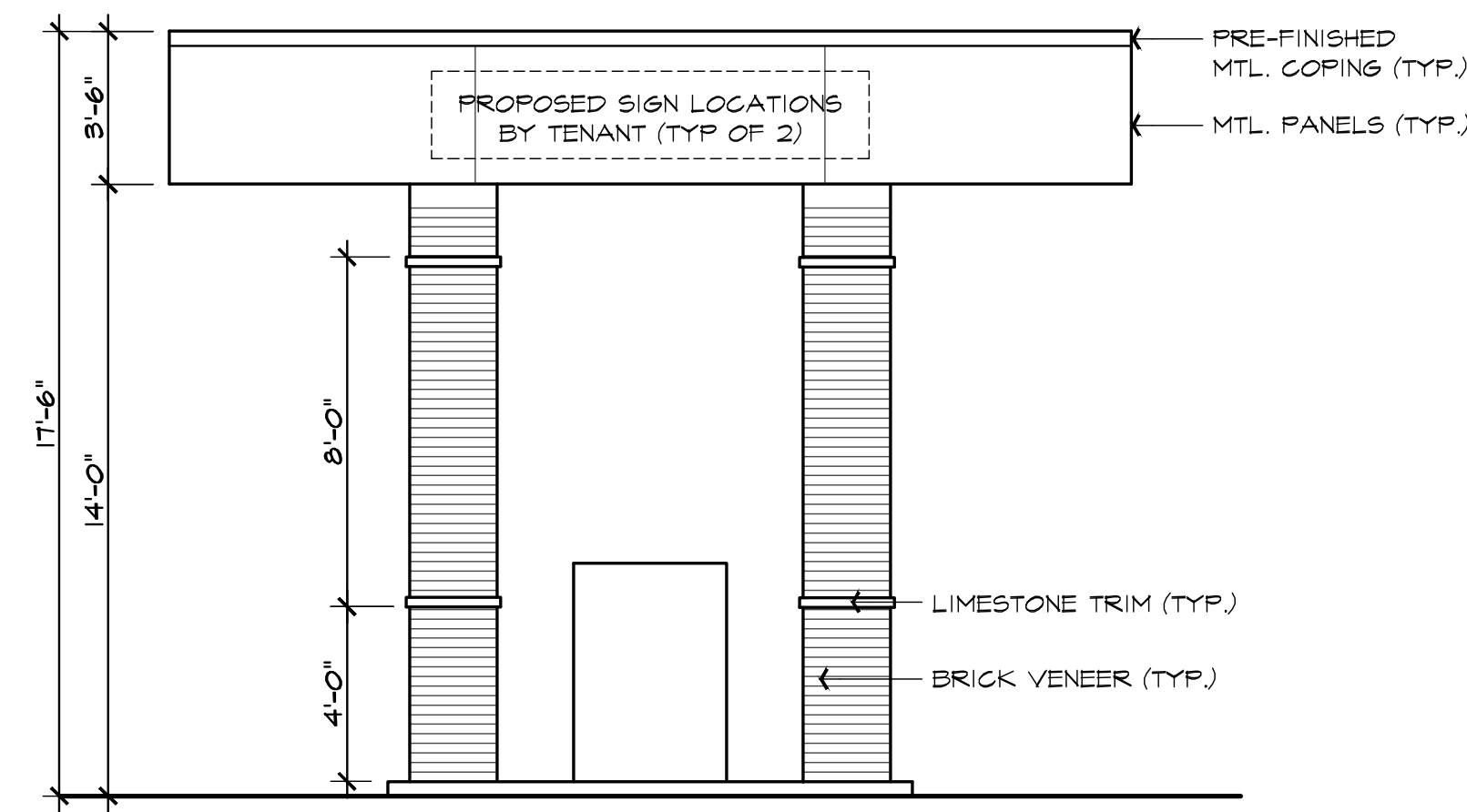
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FILE NAME:

JOB #: 23058

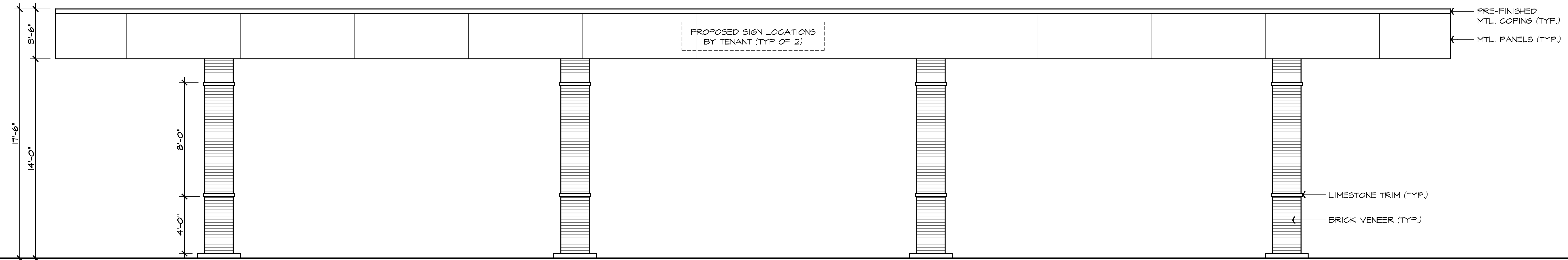
SHEET TITLE
CANOPY ELEVATIONS

SHEET #
A.202

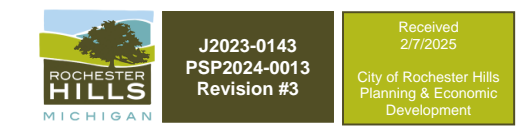


NOTE:
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CANOPY (SIDE) ELEVATION
SCALE: 1/4" = 1'-0"



CANOPY (FRONT) ELEVATION
SCALE: 1/4" = 1'-0"

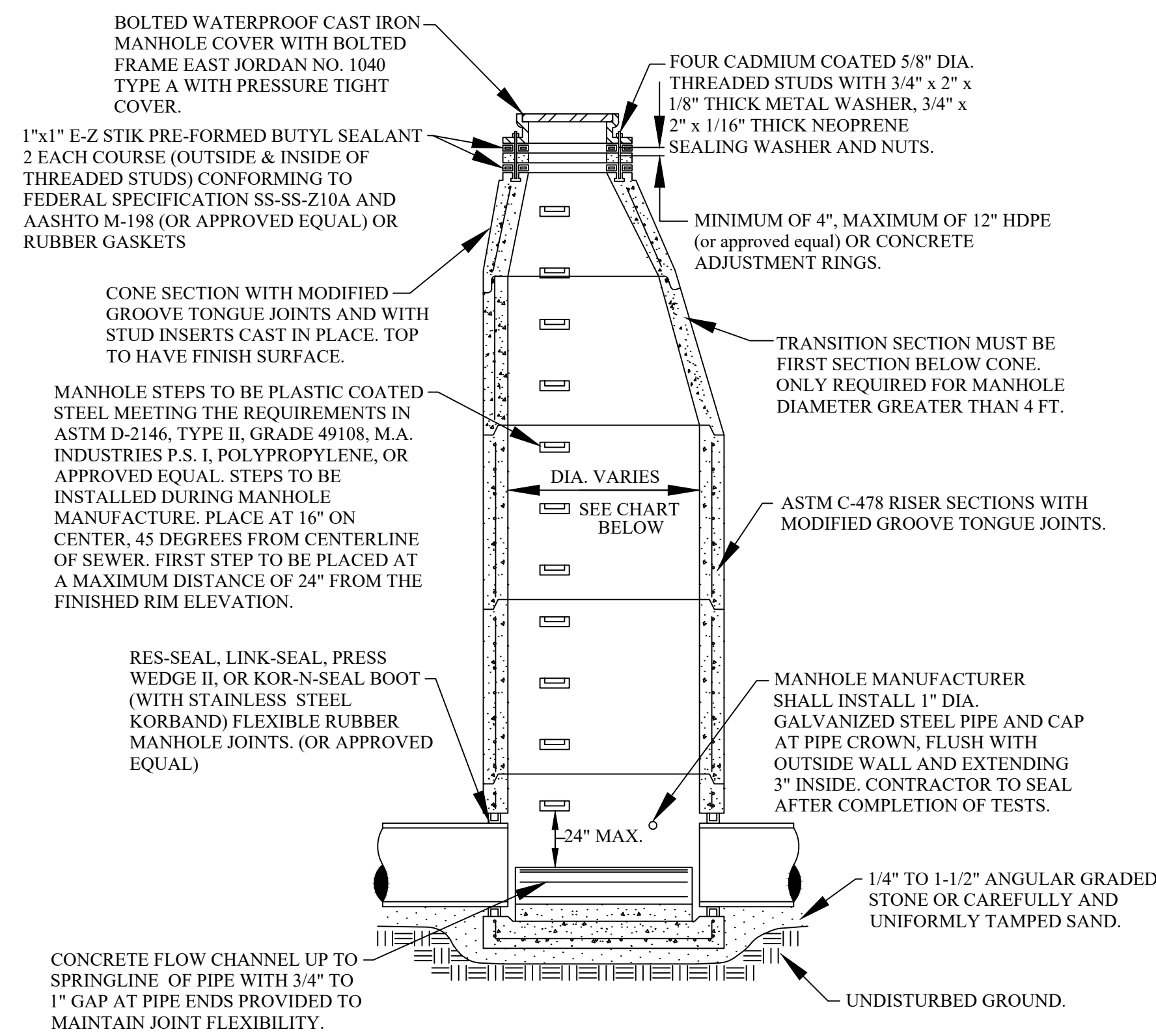


SANITARY SEWER CONSTRUCTION NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS AND THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER (OCWRC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY THE CITY OF ROCHESTER HILLS INSPECTION SERVICES.
- NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION EXCEEDING 100 GALLONS PER INCH DIAMETER PER MILE OF PIPE IN A 24 HOUR PERIOD, AND NO SINGLE RUN OF SEWER BETWEEN MANHOLES SHALL EXCEED 100 GALLONS PER INCH DIAMETER PER MILE. AIR TESTS IN LIEU OF INFILTRATION TESTS SHALL BE AS SPECIFIED IN THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER STANDARDS. PRELIMINARY-AIR TESTS ARE WITNESSED BY THE CITY AND FINAL AIR TESTS ARE WITNESSED BY BOTH THE CITY AND THE OCWRC. ONLY PIPE AND PIPE JOINTS APPROVED BY THE CITY MAY BE USED FOR SANITARY SEWER CONSTRUCTION.
- LOCATED IN THE FIRST MANHOLE UPSTREAM FROM THE POINT OF ALL CONNECTIONS TO AN EXISTING SEWER, OR EXTENSION, A TEMPORARY 12-INCH DEEP SUMP SHALL BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION WHICH WILL BE FILLED IN AFTER SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL. A WATERTIGHT BULKHEAD SHALL BE PROVIDED ON THE DOWNSTREAM SIDE OF THE SUMP MANHOLE.
- AT ALL TIMES WHEN LAYING OF NEW PIPE IS NOT ACTUALLY IN PROGRESS, THE UPSTREAM OPEN END OF THE PIPE SHALL BE CLOSED BY TEMPORARY WATERTIGHT PLUGS OR BY OTHER APPROVED MEANS. IF WATER IS IN THE TRENCH WHEN WORK IS RESUMED, THE PLUG SHALL NOT BE REMOVED UNTIL THE DANGER OF WATER ENTERING THE PIPE HAS PASSED. ALL MAIN LINE PIPE SHALL BE LAID WITH A PIPE LASER BEAM FOR LINE AND GRADE. A TARGET MUST BE INSTALLED AT THE END OF THE PIPE BEING LAID.
- SELF-LEVELING ACCESS ASSEMBLY STRUCTURES SHALL BE USED FOR ADJUSTING STRUCTURES WITHIN ASPHALT AND CONCRETE PAVEMENT.
- ALL SEWER PIPE SHALL BE INSTALLED IN CLASS "B" BEDDING OR BETTER.
- ALL NEW MANHOLES SHALL HAVE CITY APPROVED FLEXIBLE, WATERTIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRE CAST SECTIONS WITH MODIFIED GROOVE TONGUE AND BUTYL TYPE JOINTS. PRE CAST MANHOLE CONE SECTIONS SHALL BE CITY APPROVED MODIFIED ECCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS.
- AT ALL CONNECTIONS TO MANHOLES IN ALL SEWERS, OR EXTENSIONS, DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES.
- GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWN SPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL NOT BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
- PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT MISS DIG THREE (3) DAYS IN ADVANCE (811) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
- AN 18 INCH MINIMUM VERTICAL SEPARATION AND A 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND ALL OTHER UTILITIES.
- AS A MEANS OF INSURING PROPER INSTALLATION OF THE SANITARY SEWER PIPE, THE CONTRACTOR SHALL VIDEO INSPECT, ACCORDING TO THE CITY OF ROCHESTER HILLS VIDEO INSPECTION STANDARDS, 100% OF THE SANITARY SEWER PIPE. THE CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE TO THE CITY OF ROCHESTER HILLS PRIOR TO VIDEO INSPECTION, SO A REPRESENTATIVE MAY BE PRESENT. ROCHESTER HILLS WILL BE PROVIDED WITH A DIGITAL COPY OF THE VIDEO INSPECTION AND LOG IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS INSPECTION STANDARDS.

SANITARY SEWER MATERIALS

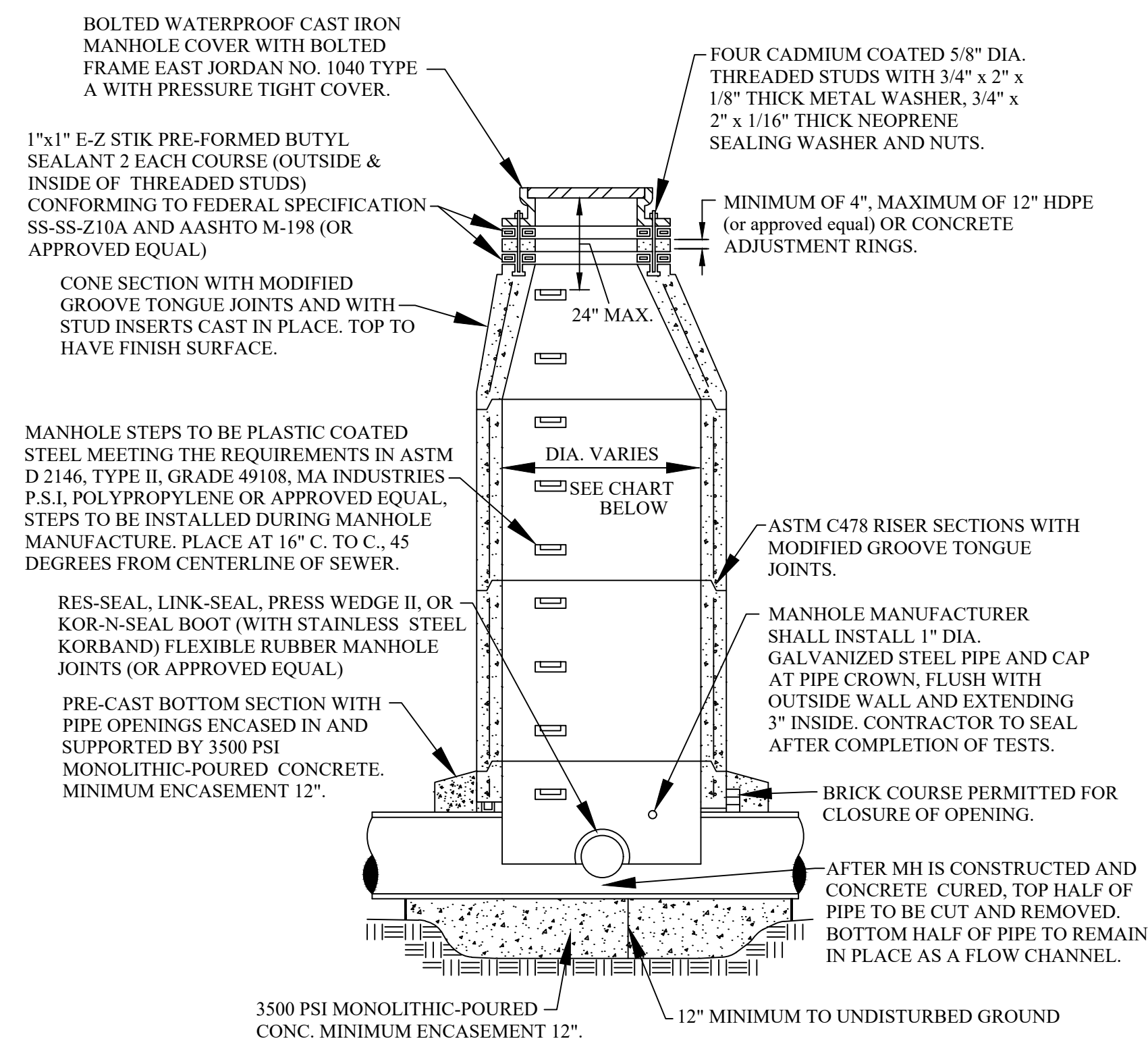
- THE FOLLOWING MATERIALS MAY BE USED FOR PUBLIC SANITARY SEWER CONSTRUCTION, APPROVED PIPE MATERIALS MUST CONFORM TO STANDARDS ADOPTED BY THE OFFICE OF THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER:
 - FOR SEWERS 8" TO 15" TO BE PVC TRUSS PIPE, ASTM D-2680, WITH GASKET JOINTS, OTHER TYPES OF PIPE AS APPROVED BY CITY ENGINEER.
 - FOR 6" SEWER LEADS SHALL BE SOLID WALLED PVC, SDR 23.5, ASTM D-3034 OR PVC SCHEDULE 40 SOLID WALLED, ASTM D-2665. PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 150 P.S.I., AND A MINIMUM DEFLECTION OF 15% AT FAILURE. THE SEWER LEAD MATERIAL SHALL BE COMPATIBLE WITH SEWER MAIN MATERIAL.
 - FOR SEWERS GREATER THAN 15" TO BE REINFORCED CONCRETE PIPE (RCP) SHALL CONFORM TO THE CURRENT ASTM D C76 WALL B. JOINTS SHALL BE SYNTHETIC RUBBER AND MEET OR EXCEED THE REQUIREMENTS ESTABLISHED BY ASTM 361.



STANDARD MANHOLE

MANHOLE SIZING CHART

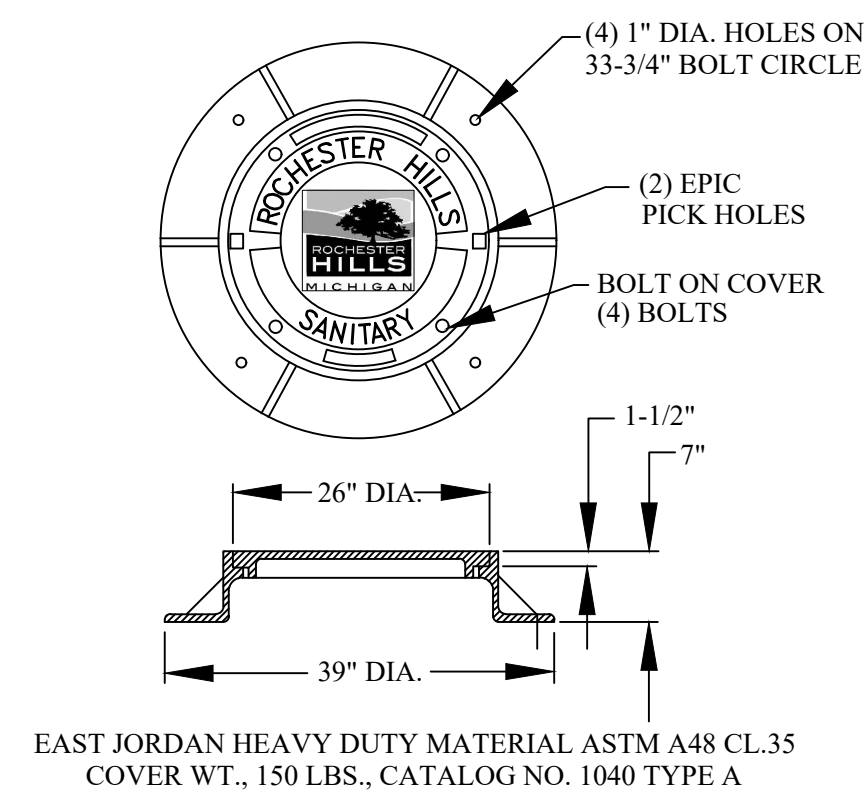
| MANHOLE DIAMETER | MAX. PIPE SIZE FOR STRAIGHT THRU INST. | MAX. PIPE SIZE FOR RIGHT ANGLE INST. |
|------------------|--|--------------------------------------|
| 4' | 24" | 18" |
| 5' | 36" | 24" |
| 6' | 42" | 36" |
| 7' | 60" | 42" |



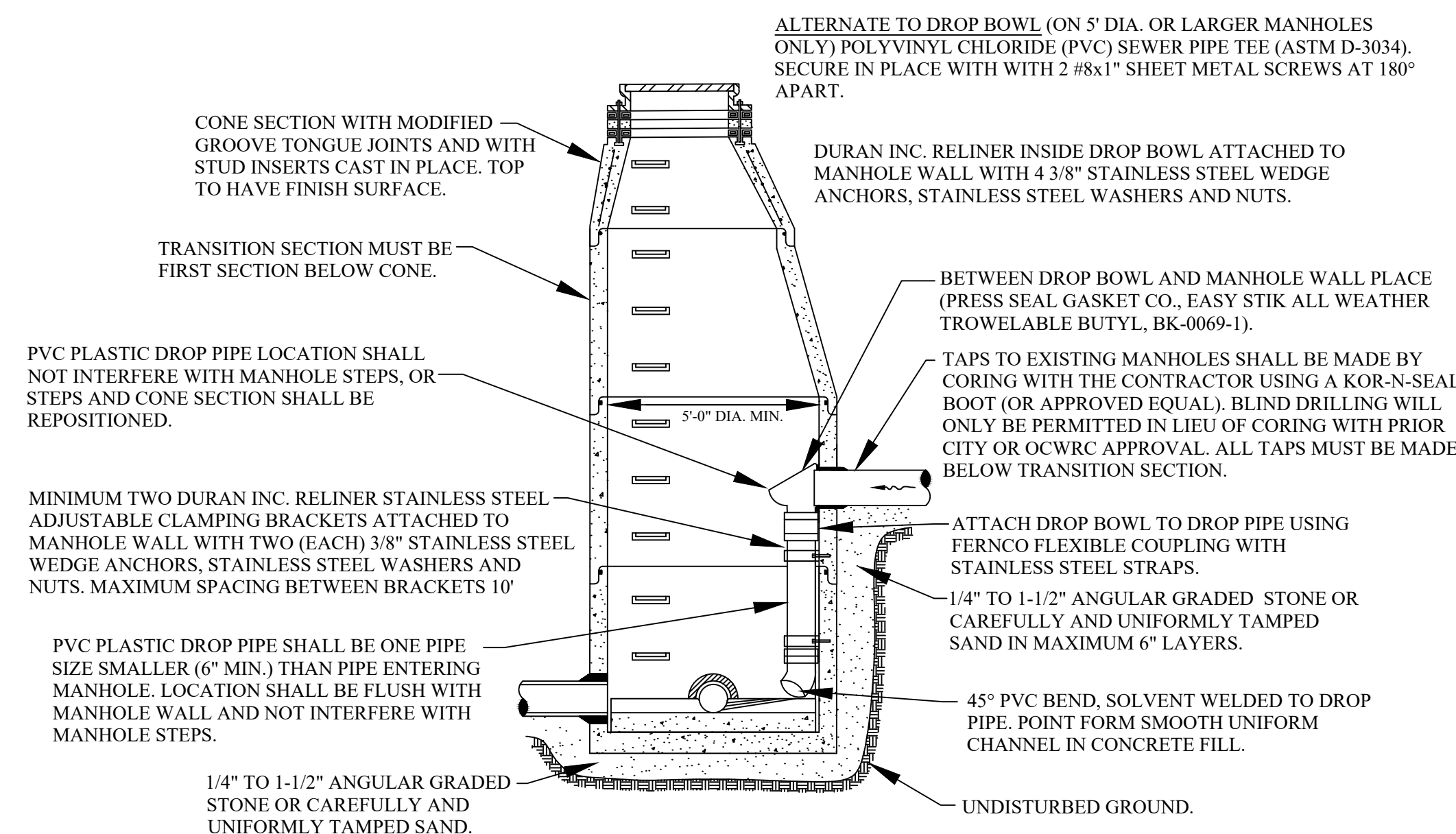
MANHOLE CONSTRUCTED OVER EXISTING SEWER

MANHOLE SIZING CHART

| MANHOLE DIAMETER | MAX. PIPE SIZE FOR STRAIGHT THRU INST. |
|------------------|--|
| 4' | 24" |
| 5' | 36" |
| 6' | 42" |
| 7' | 60" |



ROCHESTER HILLS MANHOLE COVER



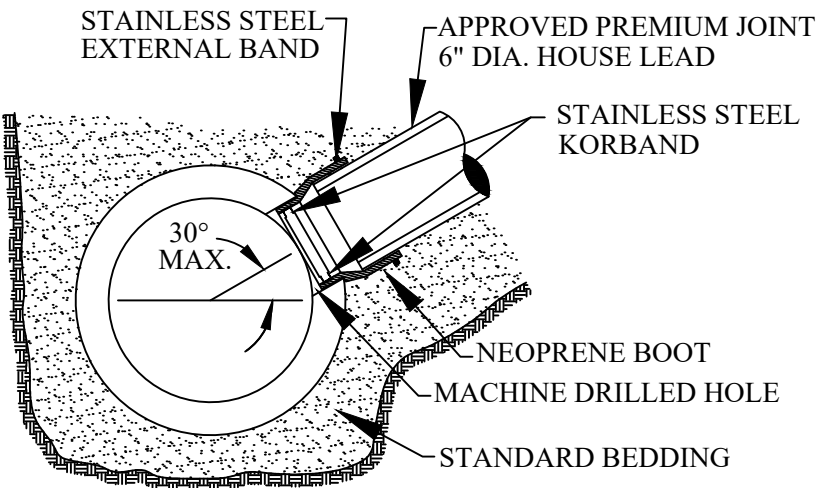
INTERIOR DROP CONNECTION

NOTE: INTERIOR DROP CONNECTION PERMITTED ONLY WHEN APPROVED BY CITY ENGINEER.

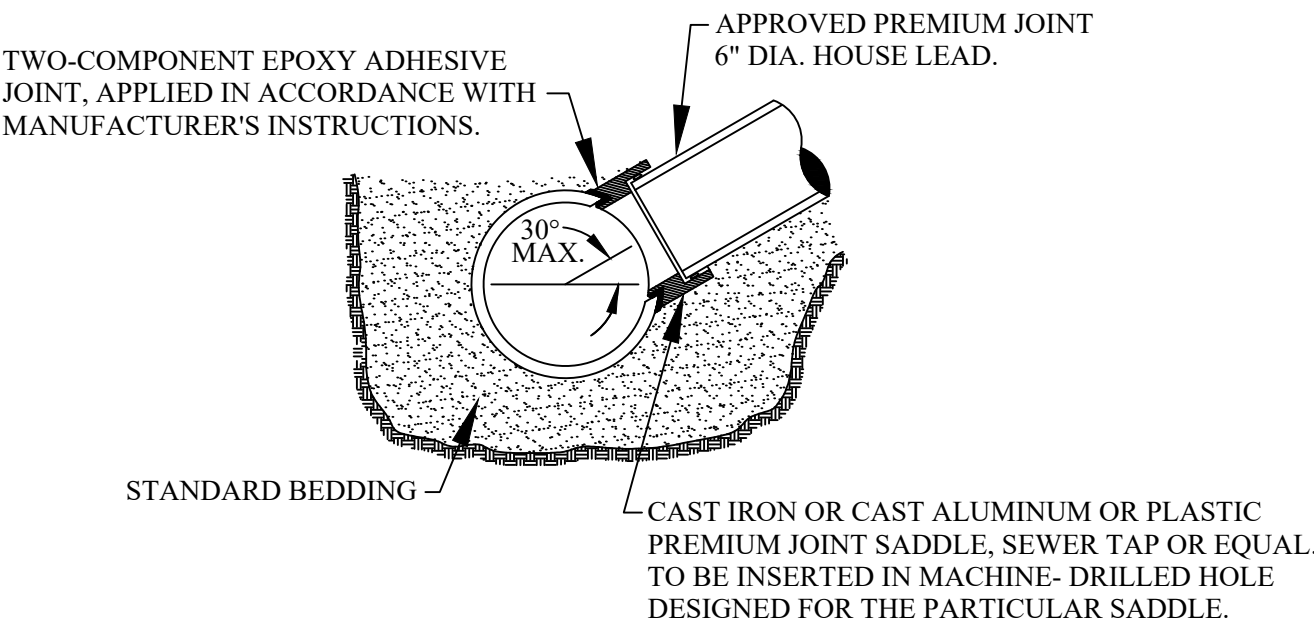


CITY OF ROCHESTER HILLS GRAVITY BUILDING LEAD REQUIREMENTS AND DETAILS

- ALL BUILDING LEAD WORK MUST BE PERFORMED UNDER THE CITY OF ROCHESTER HILLS INSPECTION.
- FOR ALL CITY OF ROCHESTER HILLS SYSTEMS CALL 248-841-2510 48-HOURS PRIOR TO SCHEDULING INSPECTION.
FOR ALL OCWRC-OPERATED SYSTEMS, CALL 248-858-1110 48-HOURS IN ADVANCE PRIOR TO SCHEDULING INSPECTION.
- SANITARY SEWER MAY NOT BE USED AS A DE-WATERING OUTLET.
- FITTINGS SHALL BE OF THE SAME MATERIAL AS THE PIPE. FERNCO STRONGBACK COUPLING (OR APPROVED EQUAL) IF DISSIMILAR PIPES ARE CONNECTED. IF DISSIMILAR FITTINGS MUST BE USED, TRANSITION CEMENT/GLUE IS REQUIRED.
- APPROVED BUILDING LEAD PIPE FOR GRAVITY SEWER LEADS:
 - PVC PLASTIC, ASTM D3034, SDR 23.5
 - SOLID WALL PVC SCHEDULE 40, ASTM D-2665
 - ANY DEVIATIONS FROM ABOVE SPECIFICATIONS REQUIRES APPROVAL BY CITY ENGINEER.
- FOR 6" LEADS A CLEANOUT MUST BE INSTALLED EVERY 100 FT. FOR 4" LEADS A CLEANOUT MUST BE INSTALLED EVERY 50 FT. 90° BENDS NOT ALLOWED EXCEPT FROM THE HORIZONTAL TO THE VERTICAL WITHIN 5 FEET OF THE BUILDING.

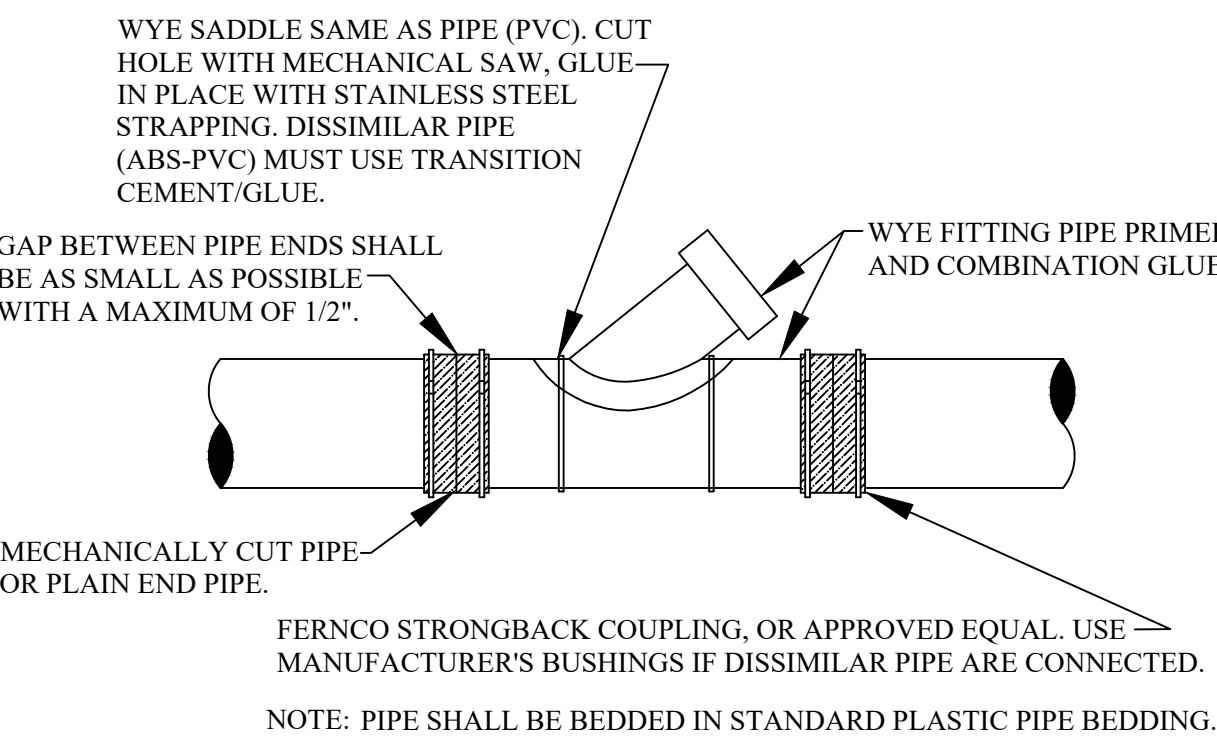


KOR-N-TEE TAP FOR CONCRETE PIPE

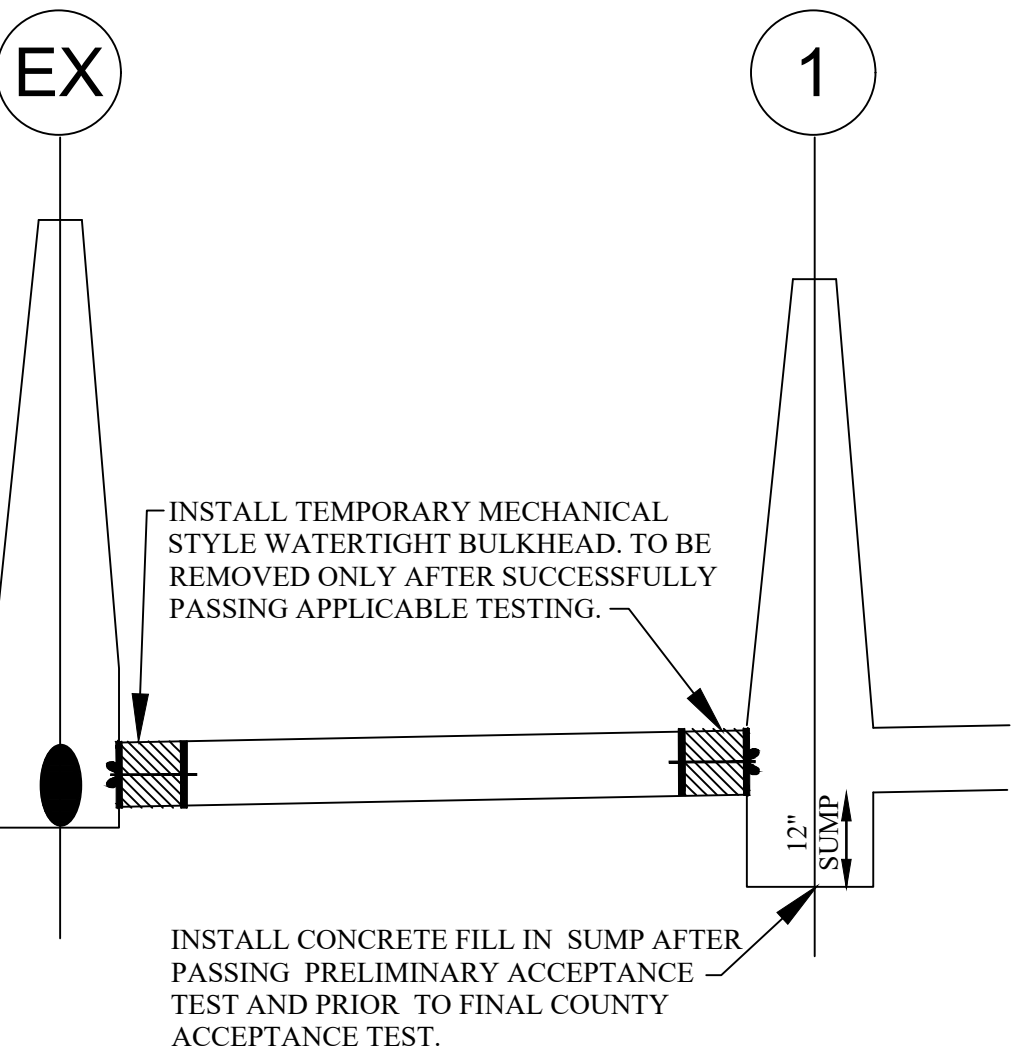


NOTE: SURFACE OF MAIN SEWER SHALL BE CLEANED WITH AN ABRASIVE GRINDER PRIOR TO EPOXY APPLICATION. DUE TO VARIATION OF SET-UP TIME OF EPOXY ADHESIVE WITH TEMPERATURE, ANCHOR STRAPS SHALL BE USED TO SECURE SADDLE IN POSITION IN COLD WEATHER OR WHENEVER WORK IS TO PROCEED PRIOR TO COMPLETE CURE OF EPOXY.

SEWER TAP-OVER 12" MAIN SEWER PIPES VITRIFIED CLAY



WYE SADDLE OR WYE PIPE INSERTION WITH FLEXIBLE COUPLINGS (RIGID PIPE)



PROFILE OF BULKHEADS AND ONE FOOT SUMP

- THE MAXIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
- THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
- THE SIZE, MANUFACTURER AND MODEL NUMBERS OF ALL VALVES AND PUMPS INSTALLED SHALL BE INDICATED.
- A TOTAL AS-BUILT DRAWING QUANTITY LIST SHALL BE INCLUDED.
- THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
- THE OFFSET OF THE SANITARY MAIN FROM PROPERTY LINES SHALL BE INDICATED.
- ALL MANHOLES, VALVE WELLS, PUMPS AND ALL SANITARY SYSTEM APPURTENANCES SHALL BE LOCATED FROM TWO FIXED OBJECTS (MANHOLES, BUILDING CORNERS ETC.).
- ALL UNDERGROUND APPURTENANCES, SUCH AS TFC/ARV WELLS, METER PITS, GRINDER PUMPS AND PUMP STATION PITS, ETC. SHALL BE LOCATED FROM THE NEAREST MANHOLE THAT IS CONNECTED TO THE SAME SANITARY MAIN AS THE APPURTENANCE.
- THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE VERTICAL SEPARATION IS LESS THAN 18" SHALL BE NOTED.
- AS-BUILTS SHALL BE PREPARED IN ACCORDANCE WITH CITY OF ROCHESTER HILLS AS-BUILT GUIDELINES AS PROVIDED AT THE PRE-CONSTRUCTION MEETING.

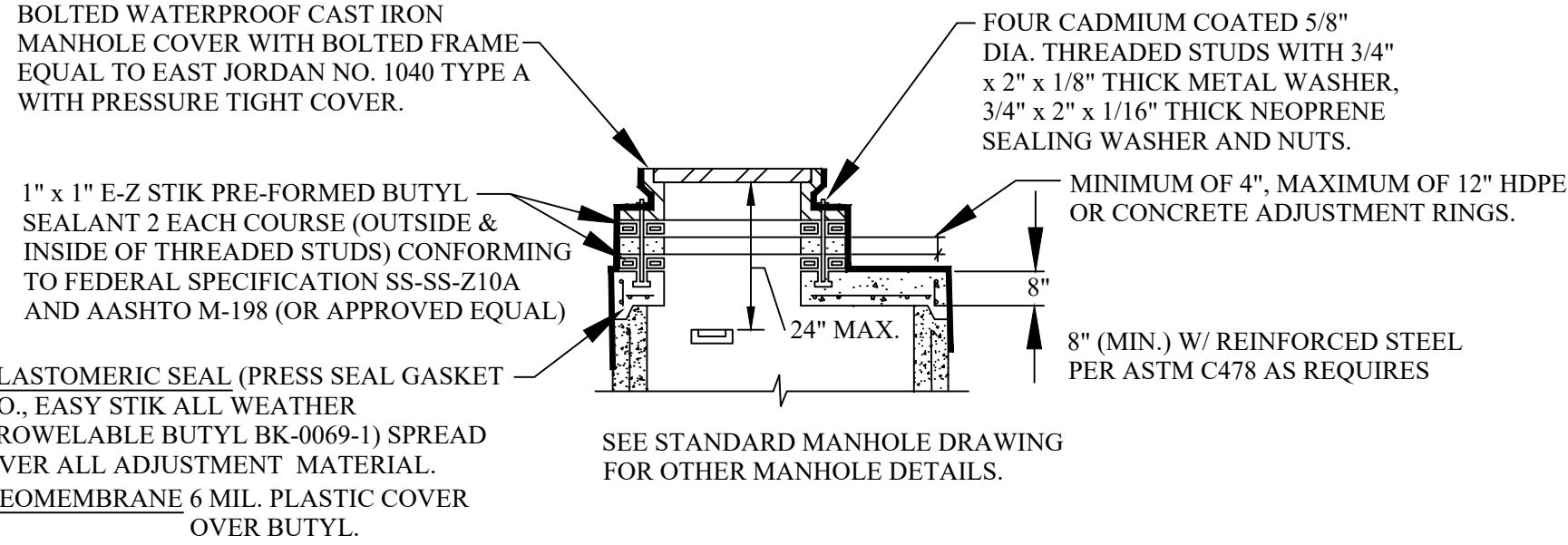
I HEREBY CERTIFY THAT OUR FIRM HAS PREPARED THESE AS-BUILT DRAWINGS OF THE IMPROVEMENTS AS CONSTRUCTED, AND THAT TO THE BEST OF MY KNOWLEDGE THOSE IMPROVEMENTS NOTED AS "AS BUILT" WERE CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS, AND ALSO THAT THE SANITARY SEWER AND STRUCTURES,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

(COMPANY NAME)

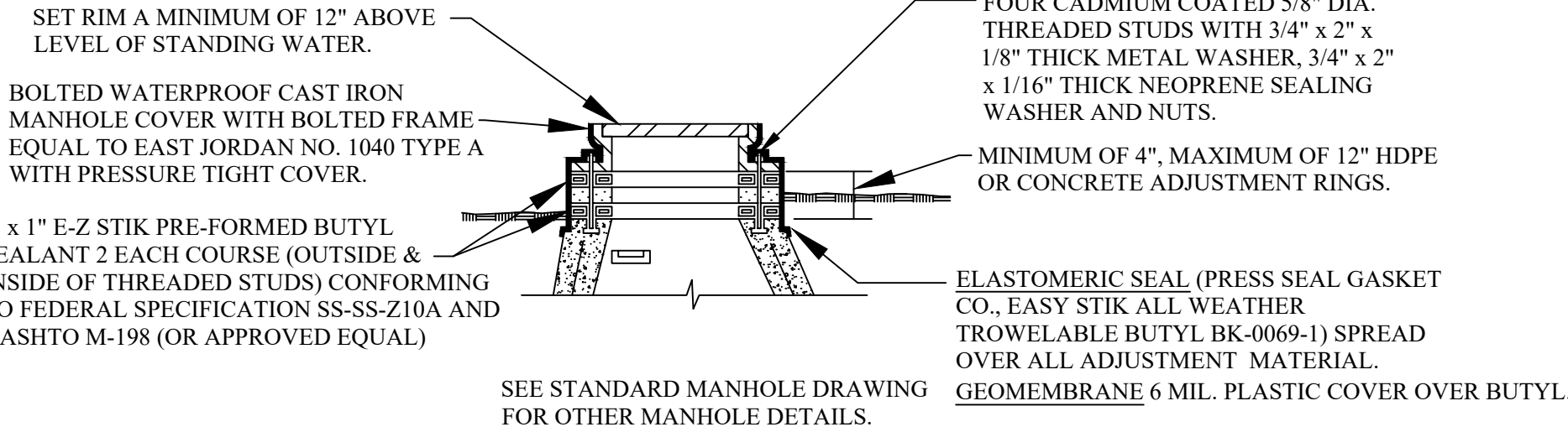
(ENGINEER'S SIGNATURE)

PROFESSIONAL ENGINEER NO. _____

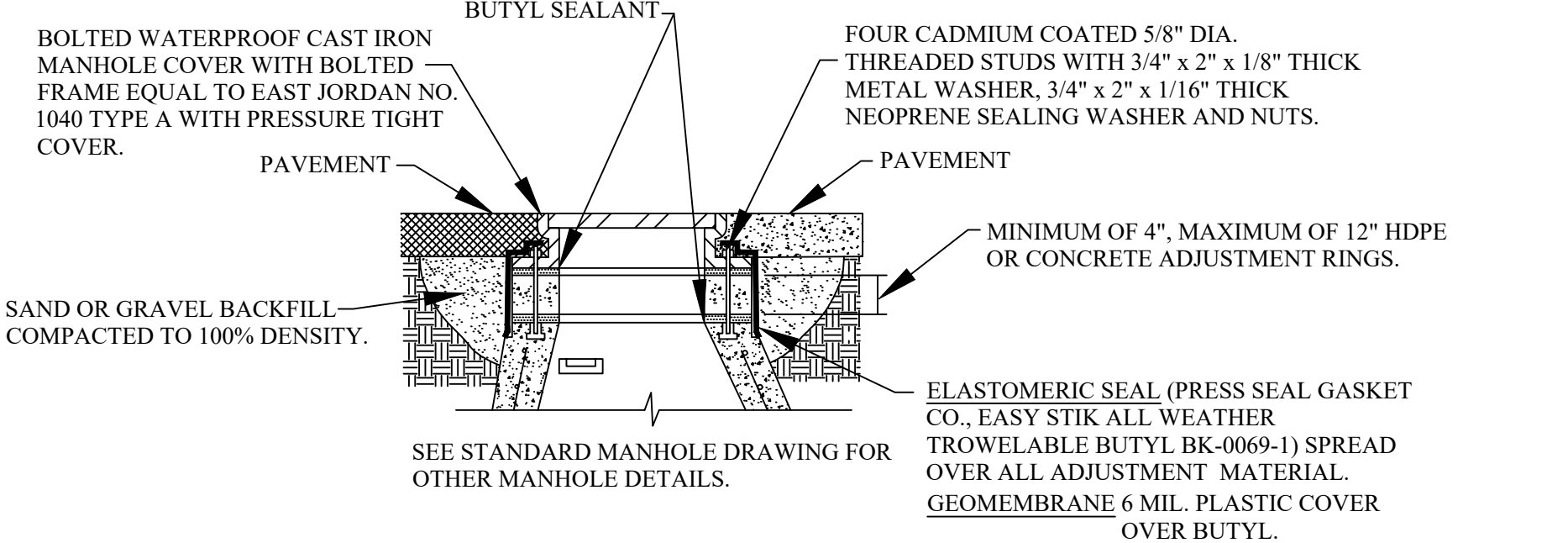
ENGINEER SEAL



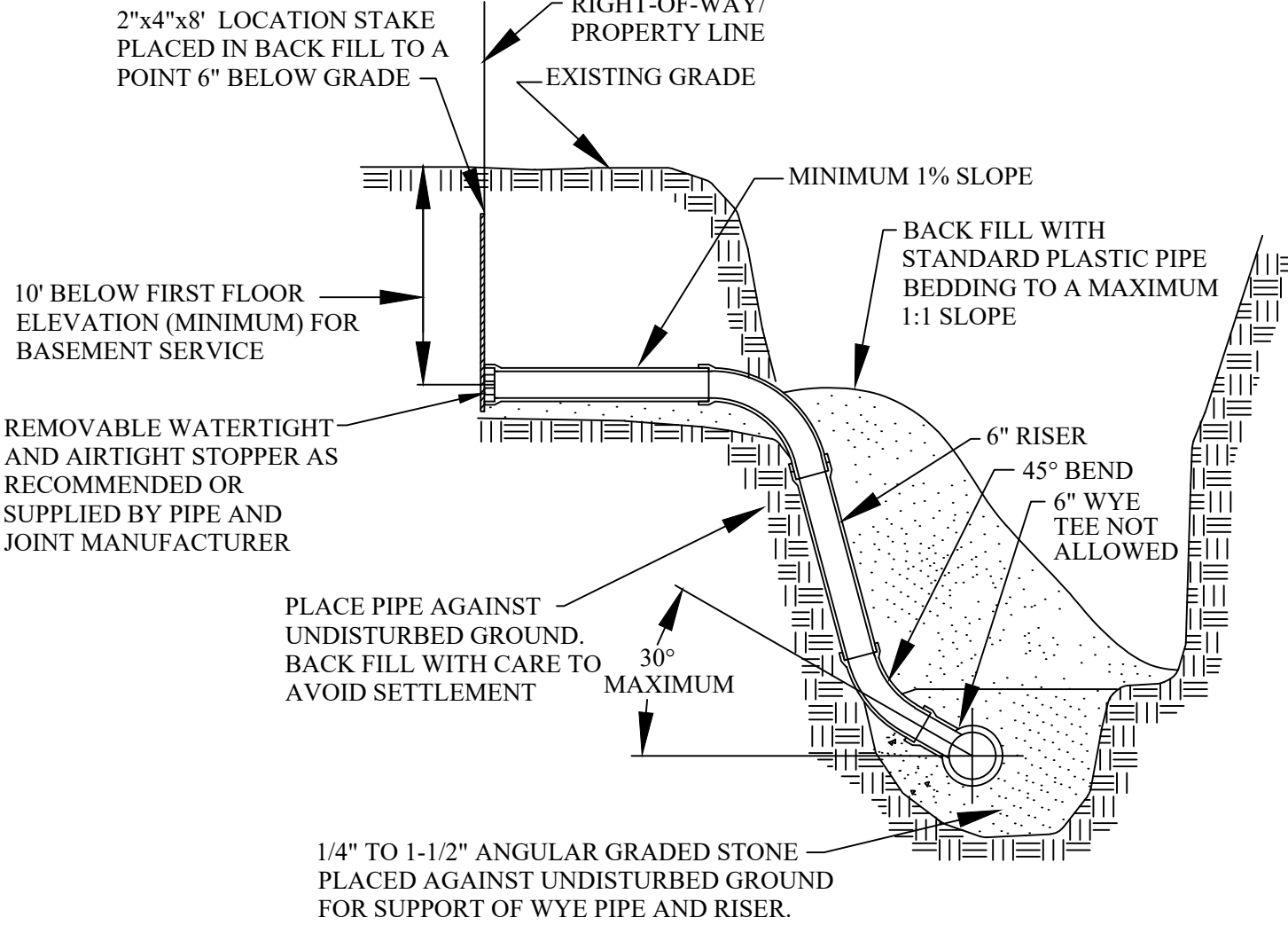
FLAT TOP MANHOLE



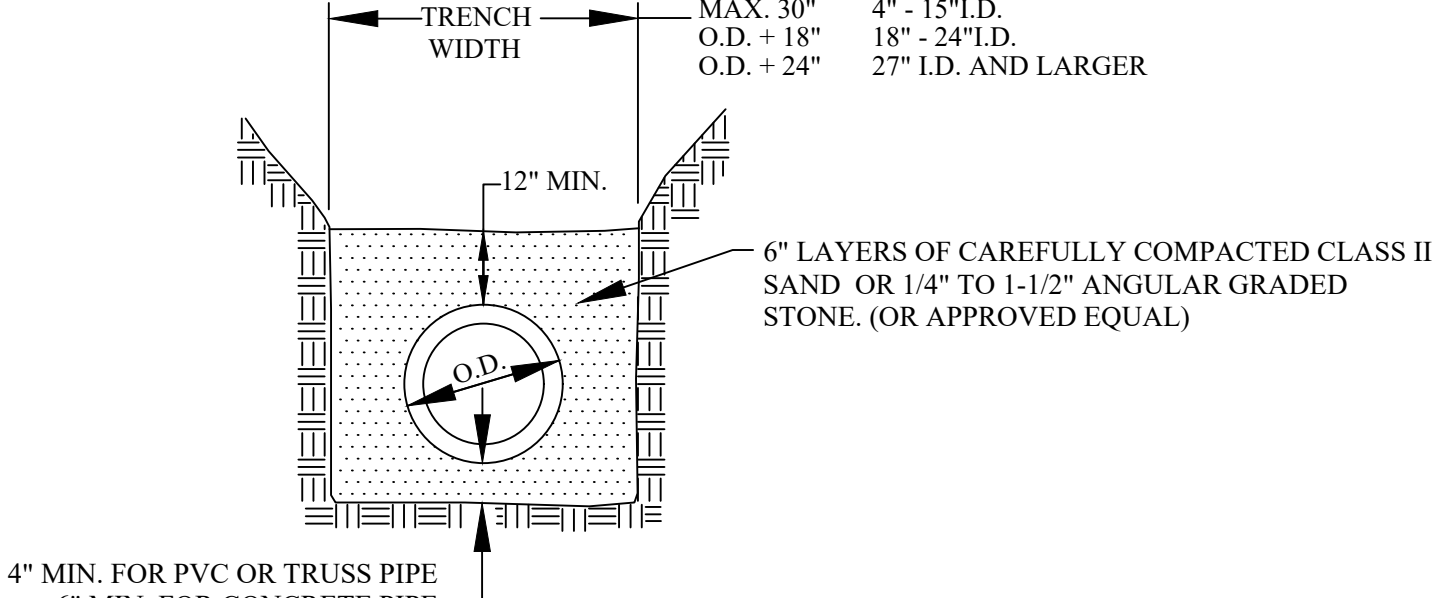
ADJUSTMENT DETAIL FOR MANHOLE TOPS WITHIN FLOOD PRONE AREAS



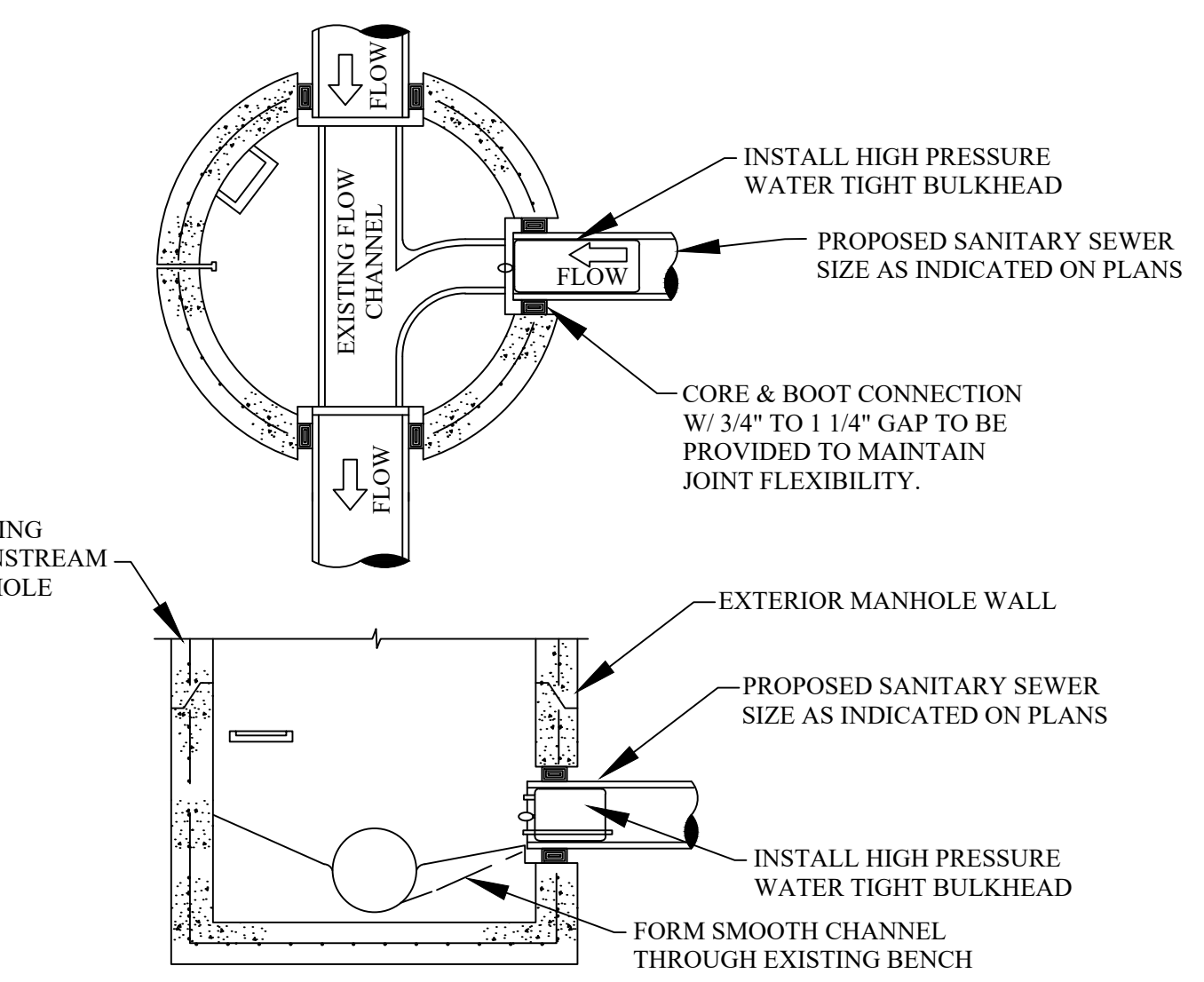
ADJUSTMENT DETAIL MANHOLE TOPS WITHIN PAVEMENT AREAS



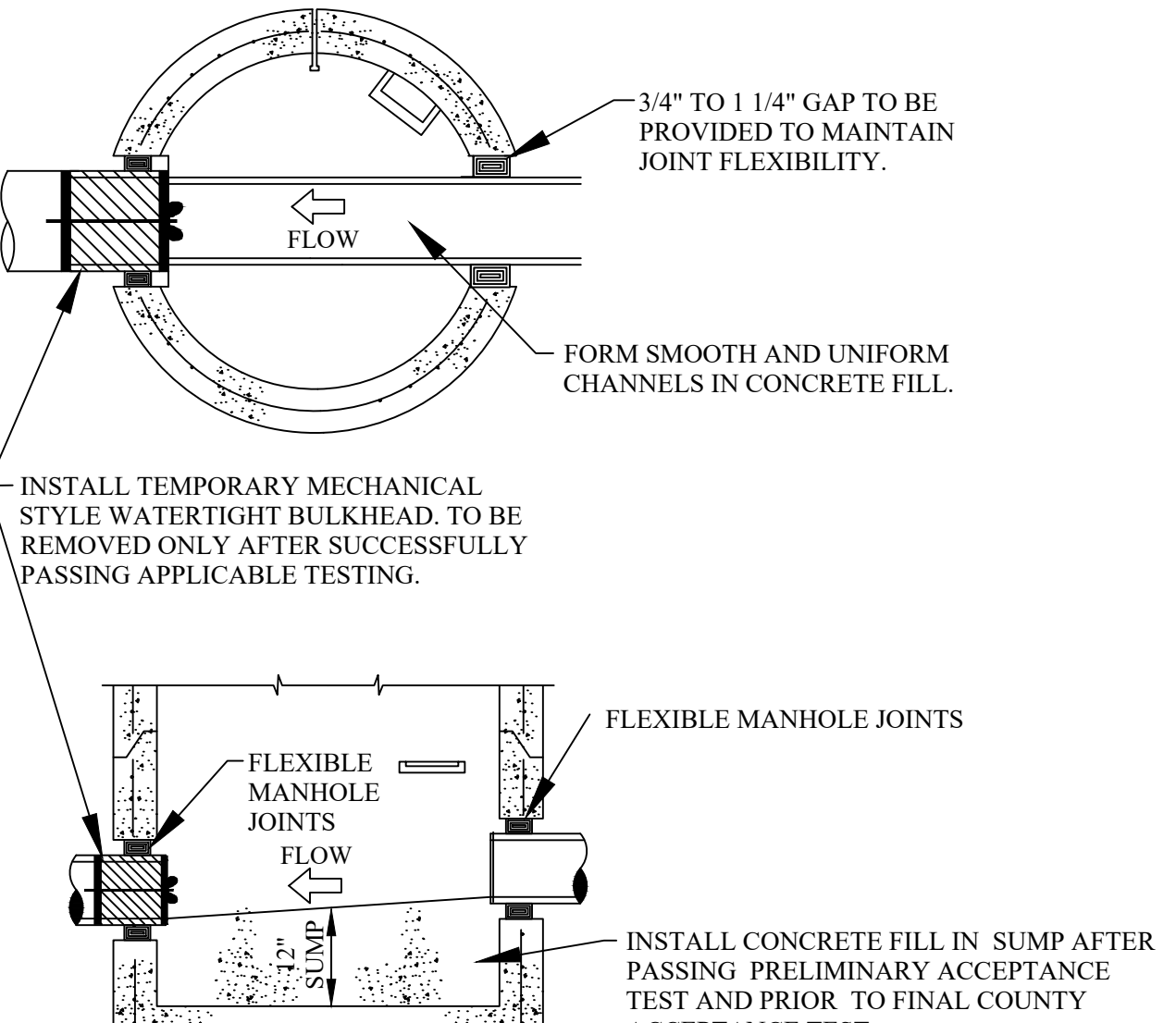
HOUSE LEAD DETAIL



STANDARD BEDDING (CLASS B)



TESTING BULKHEAD IN EXISTING MANHOLE



FIRST MANHOLE UPSTREAM FROM SANITARY TAP

| REVISIONS | DATE | APPROVED BY |
|---|----------|--|
| WYE SADDLE REVISION | 12-22-22 | CITY COUNCIL, DATE: SEPTEMBER 23, 2019 |
| PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES | | |

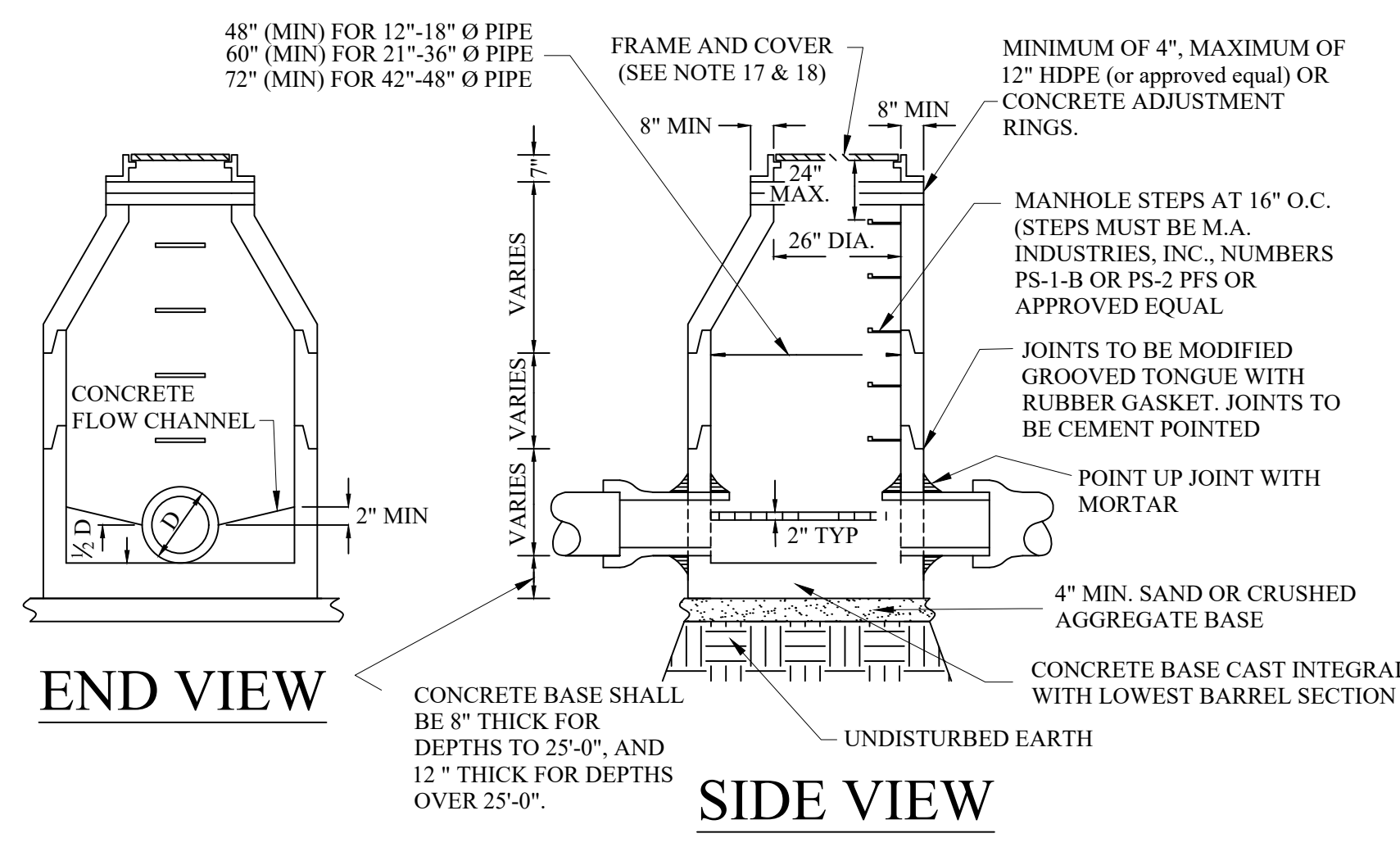
NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION

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

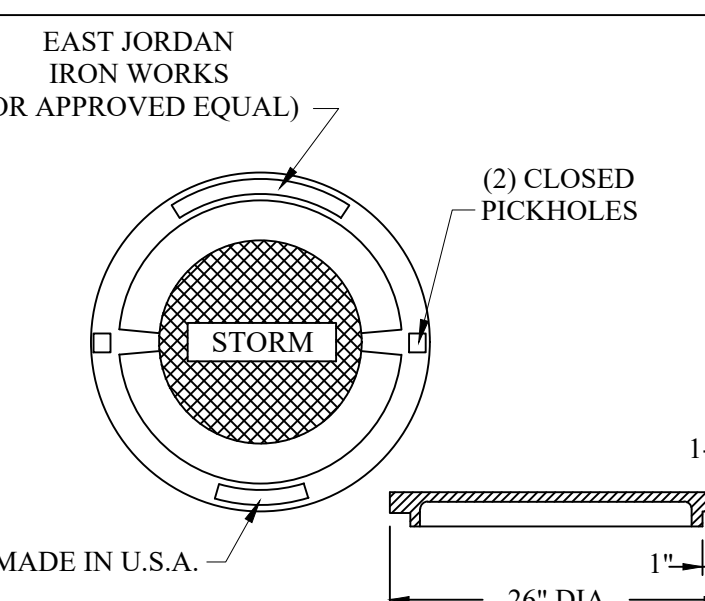
SANITARY SEWER STANDARD DETAILS

NOT TO SCALE DATE: 1/10/2019
SHEET 2 OF 2





PRE-CAST STORM MANHOLE



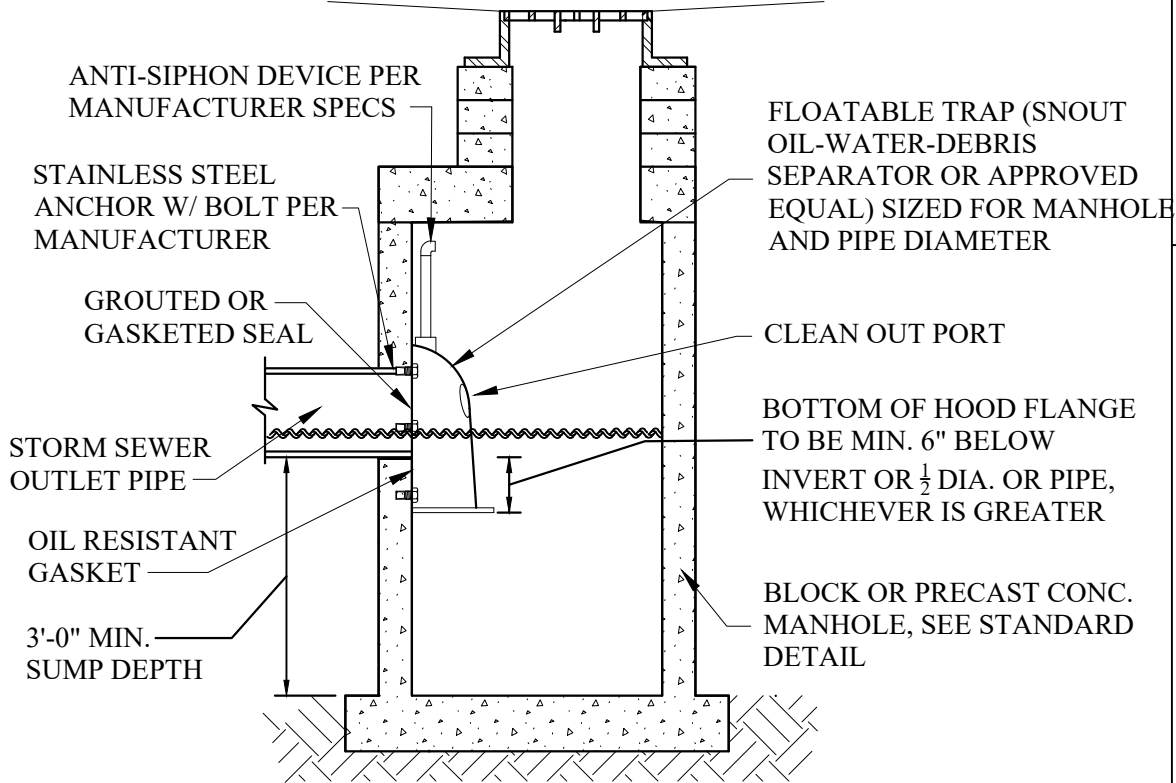
EAST JORDAN IRON WORKS (OR APPROVED EQUAL)

MADE IN U.S.A.

26" DIA.

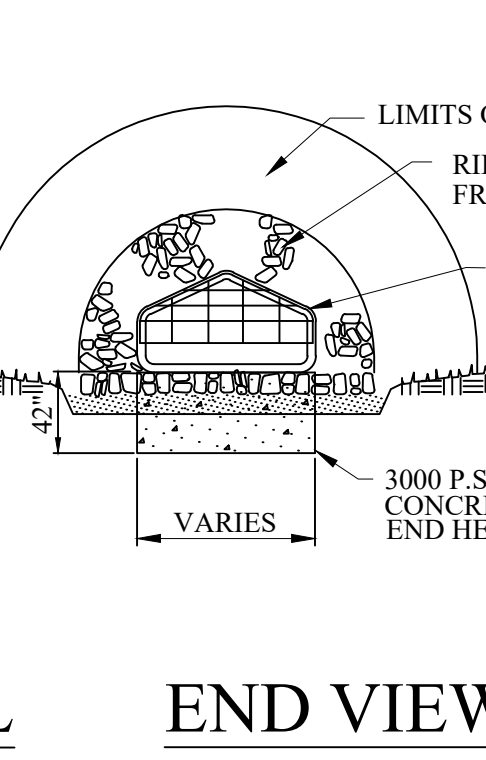
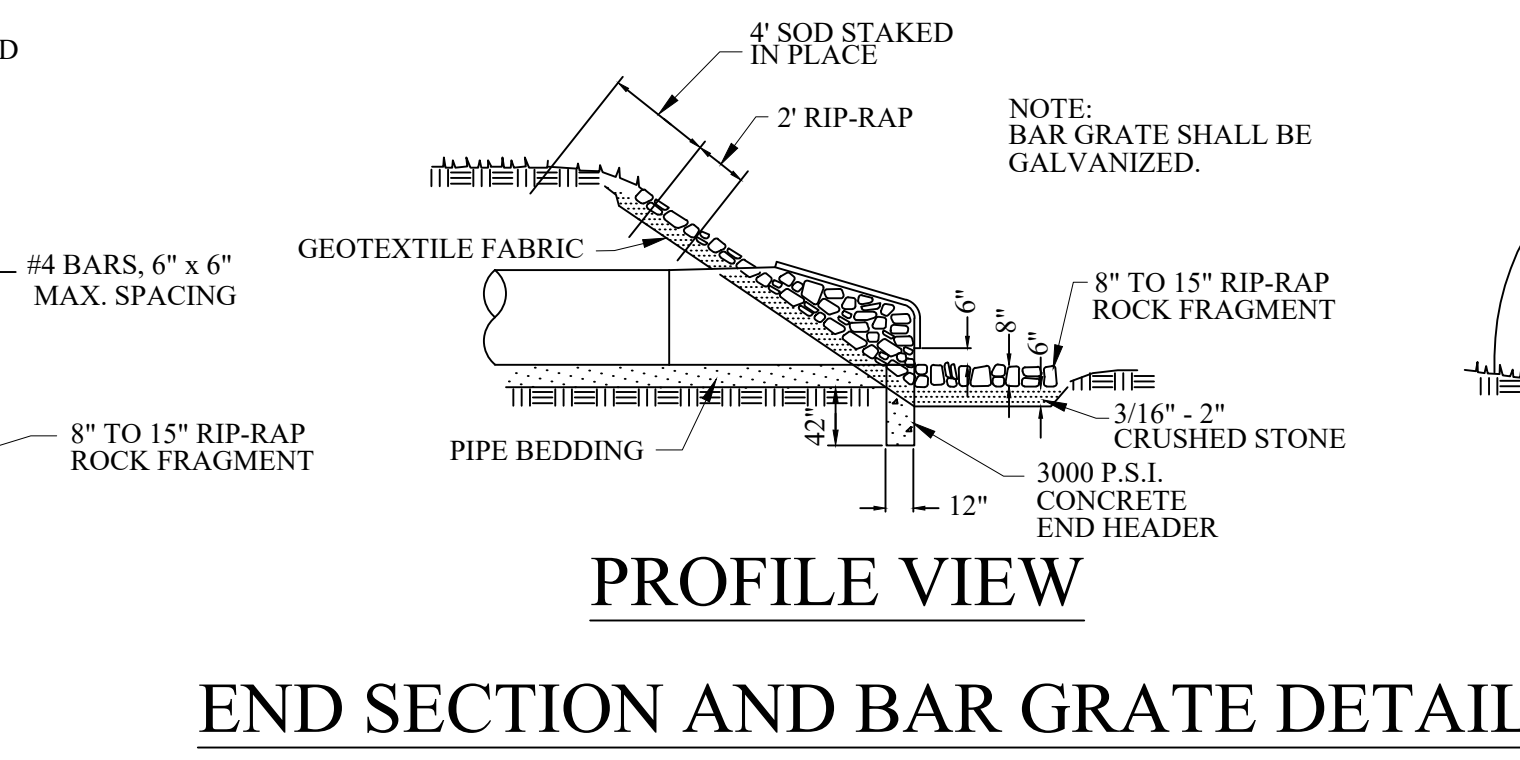
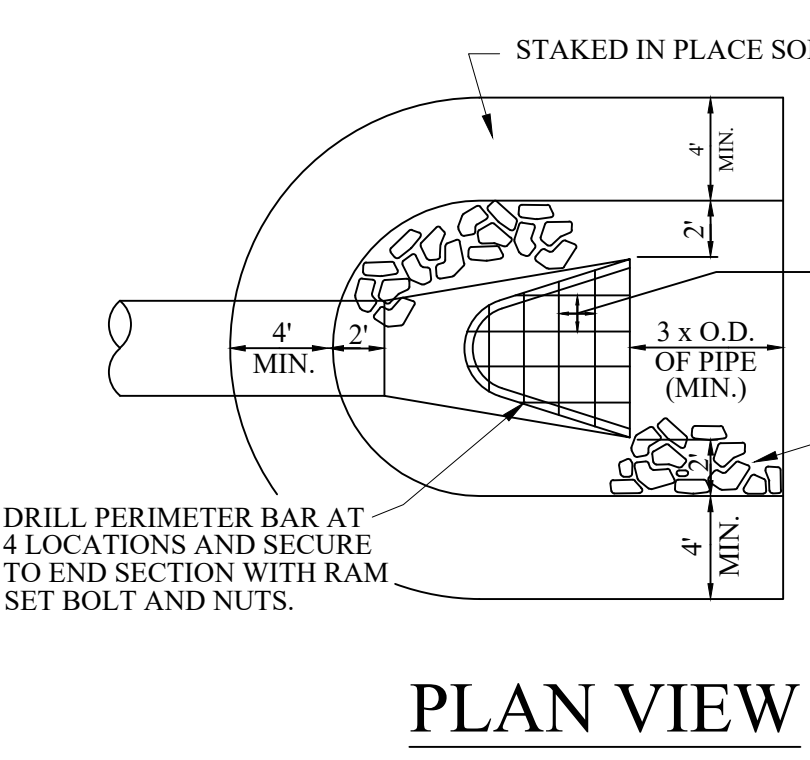
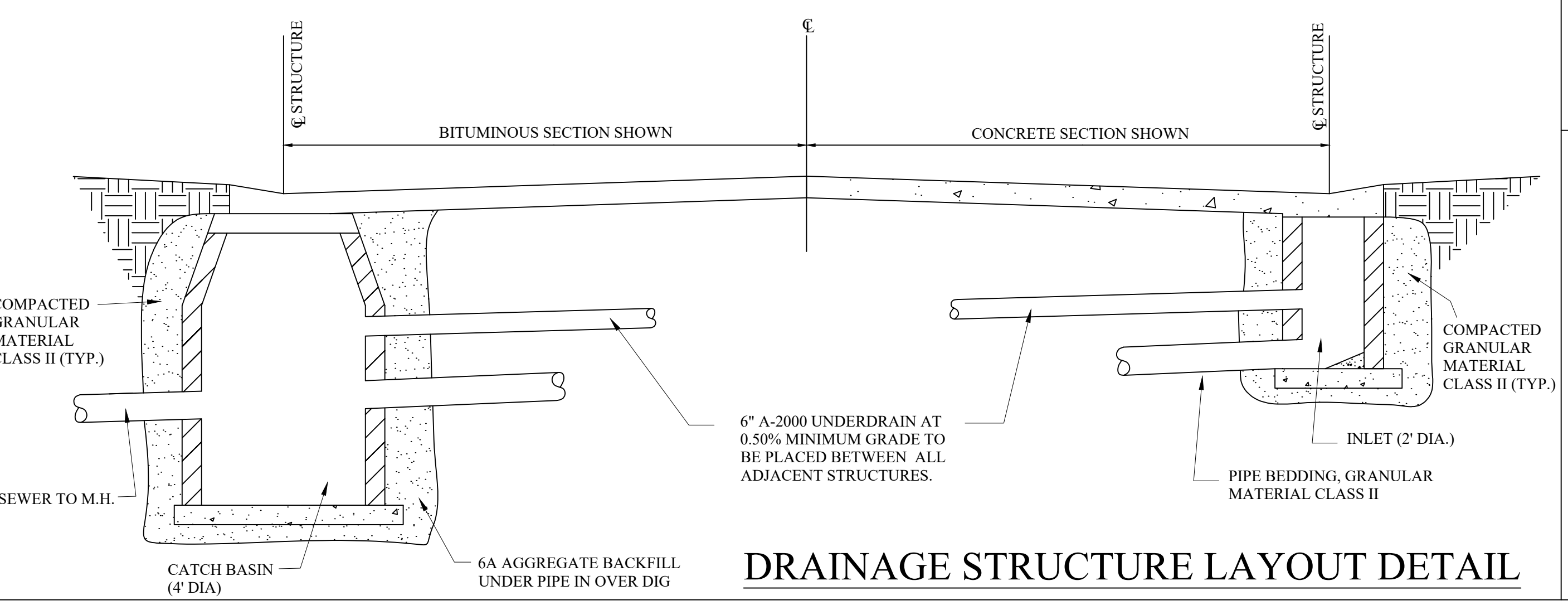
LETTERED MANHOLE COVER

EAST JORDAN HEAVY DUTY MATERIAL ASTM A48 CL.35 COVER WT. 150 LBS., CATALOG NO. 1040A PATTERN NO. 1040A, PRODUCT NO. 1040XX OAKCASTD. 2" RAISED LETTERS, 1" RAISED LETTERS ALL RECESSED FLUSH



NOTE: QUANTITY OF FLOATABLE TRAPS REQUIRED FOR A SITE IS DEPENDENT ON TRAFFIC AND EXPECTED POLLUTANT LOAD. MINIMUM SUMP DEPTH TO BE 2 1/2 TIMES OUTLET PIPE DIAMETER OR 3 FEET, WHICHEVER IS GREATER. FLOATABLE TRAP AND ANTI-SIPHON DEVICE TO BE SIZED TO MANHOLE STRUCTURE.

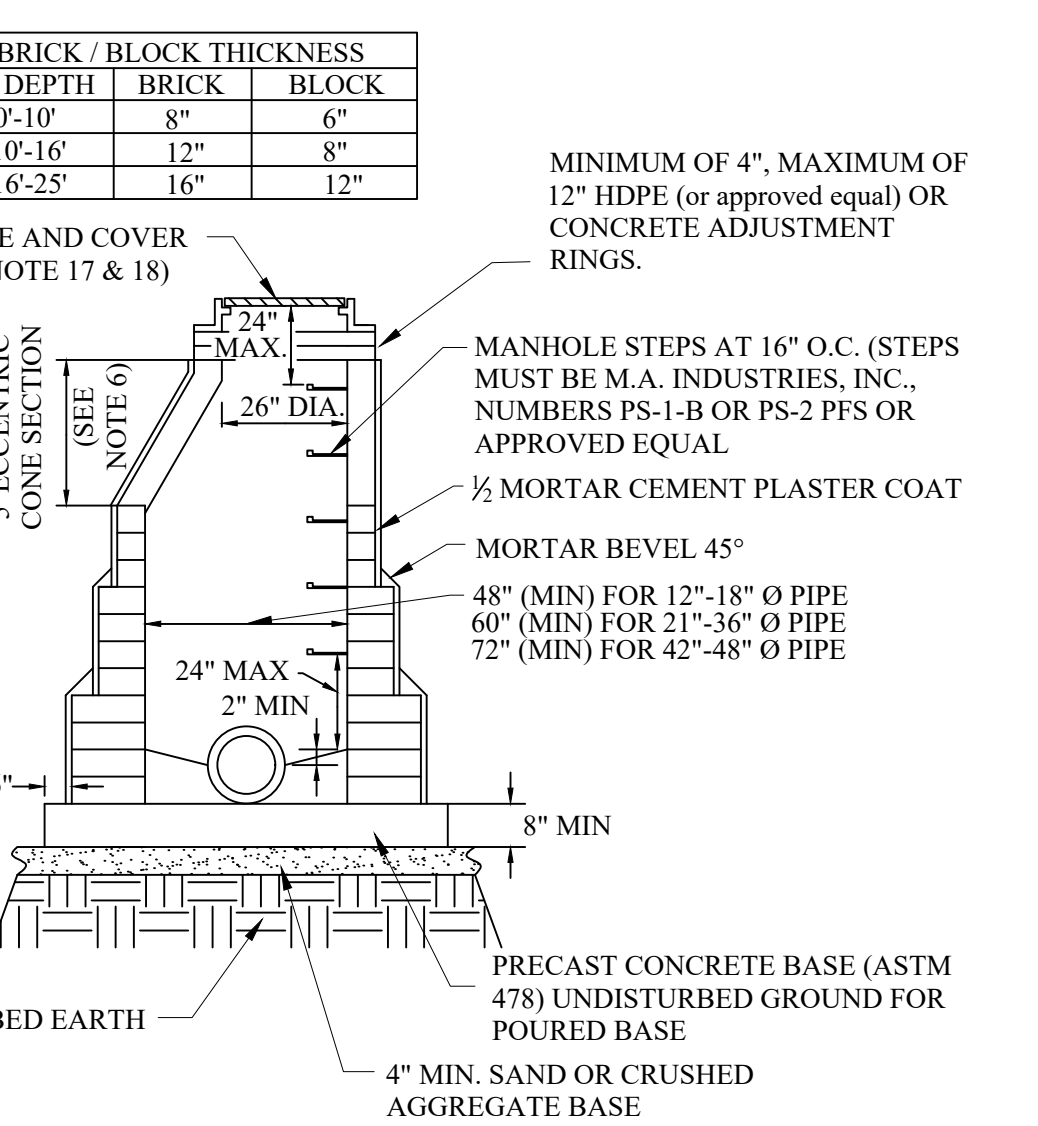
CATCH BASIN WITH FLOATABLE TRAP



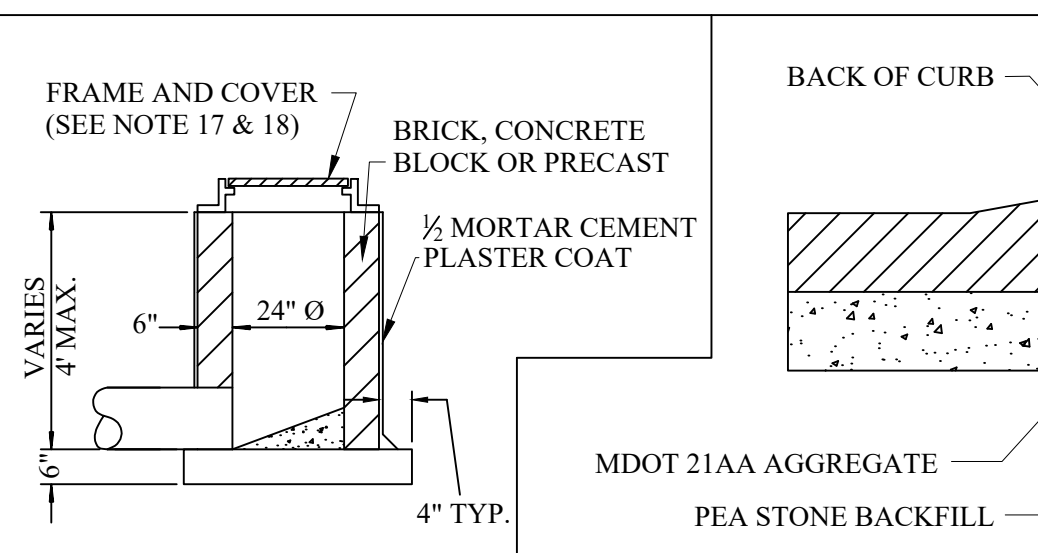
| REVISIONS | DATE | APPROVED BY |
|-----------|------|-------------|
| | | |

DATE: _____
 APPROVED BY: _____
 CITY COUNCIL, DATE: _____
 PREPARED BY: ENGINEERING DIVISION
 DEPARTMENT OF PUBLIC SERVICES

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

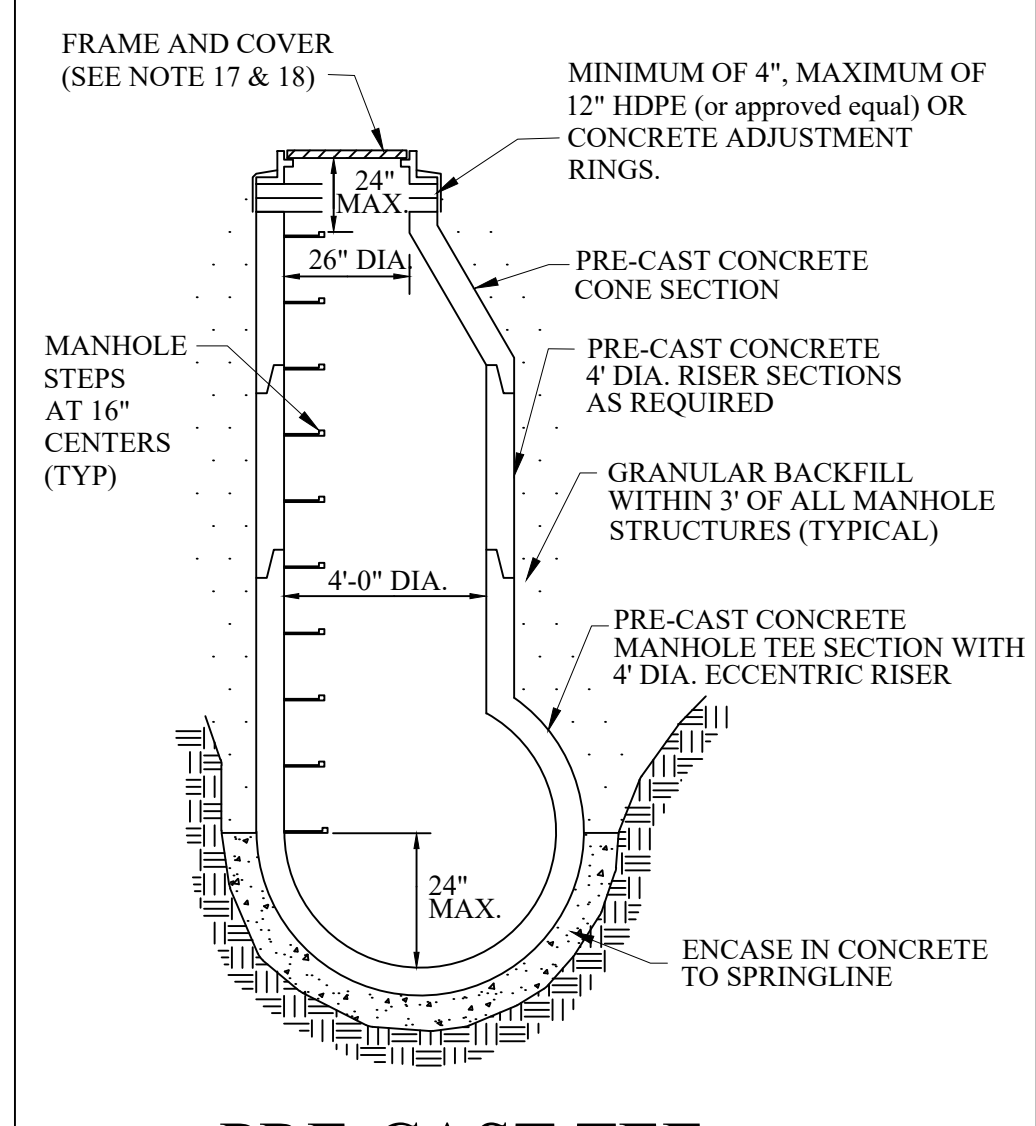


BRICK OR BLOCK MANHOLE

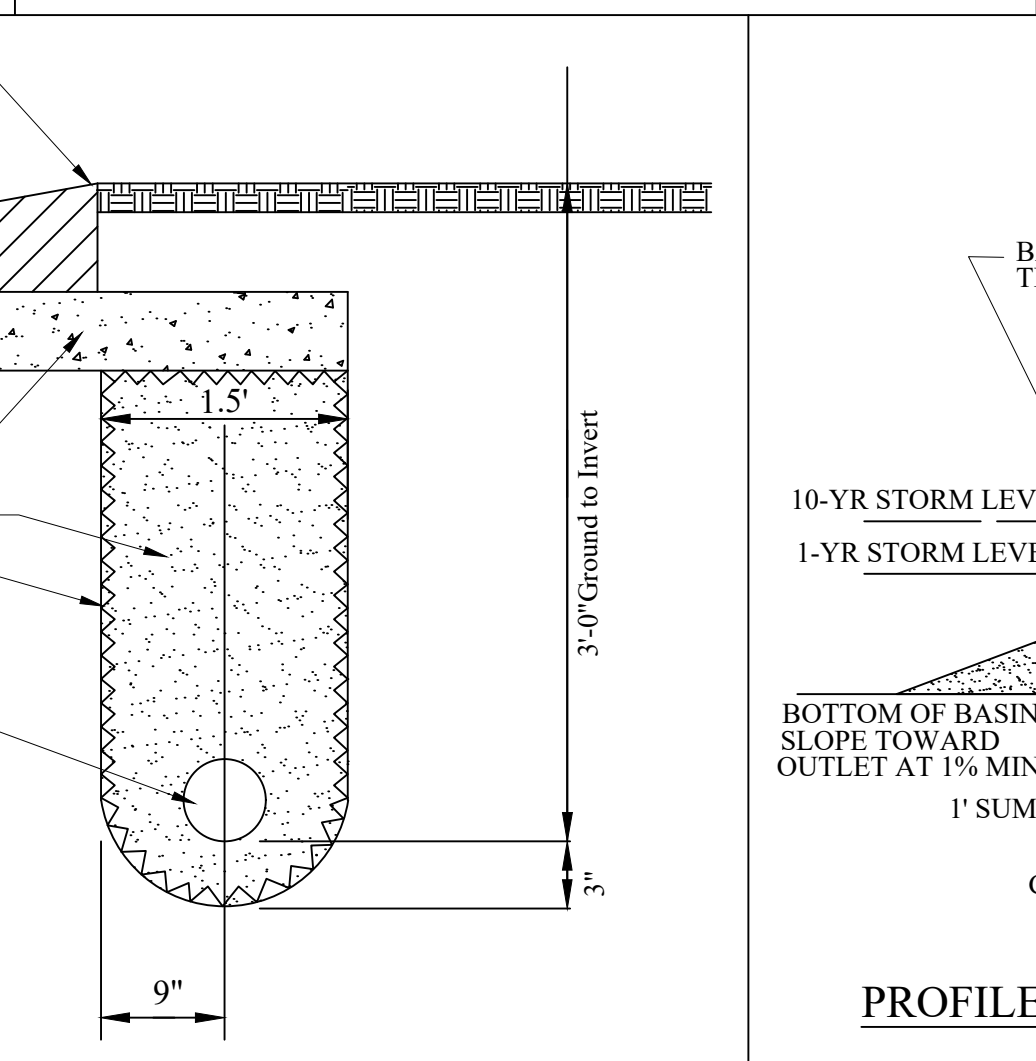


(NOTE: PERMITTED BY CITY ONLY FOR SPECIAL CIRCUMSTANCES)

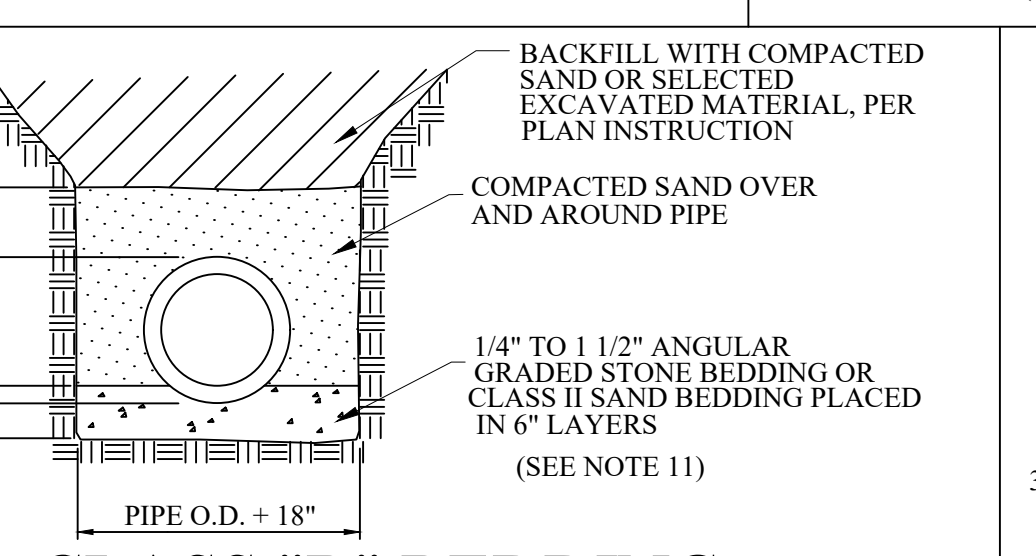
INLET DETAIL



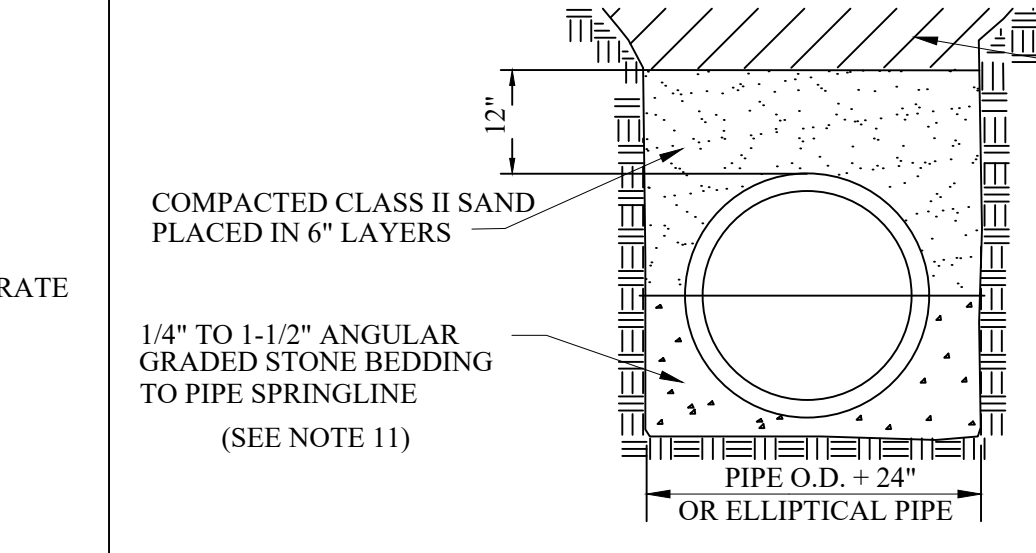
PRE-CAST TEE MANHOLE DETAIL



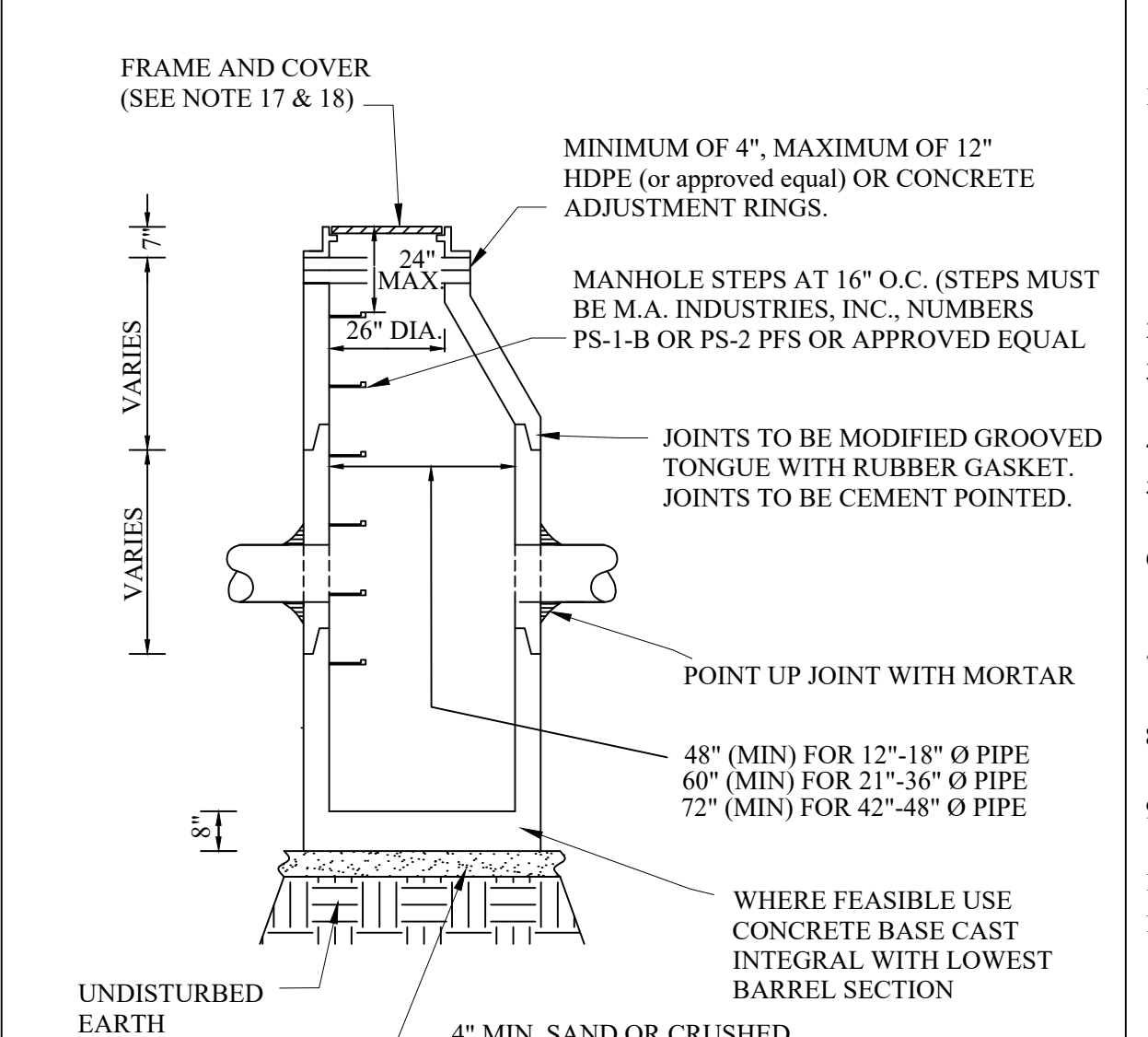
EDGE DRAIN DETAIL



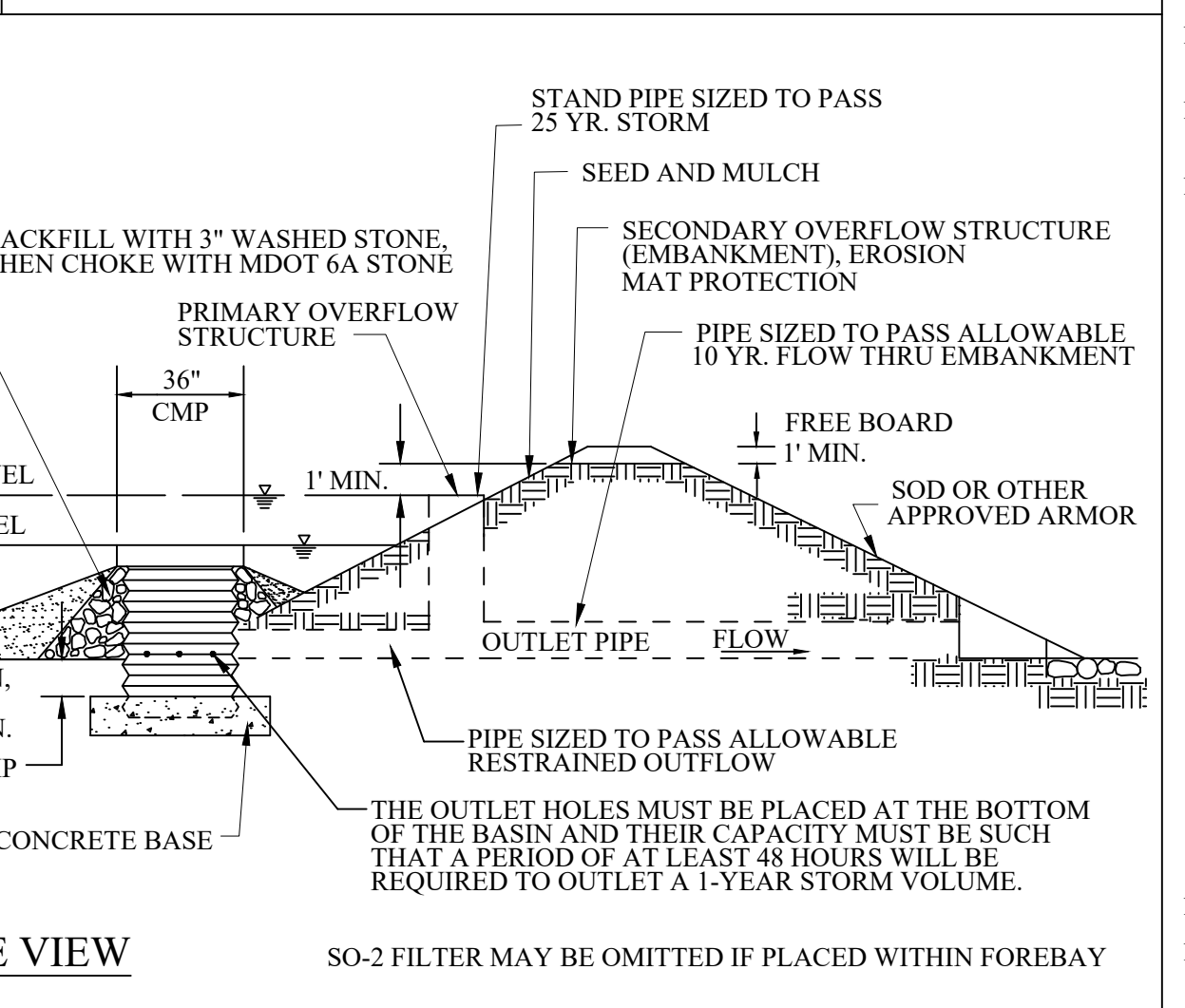
CLASS "B" BEDDING TRENCH DETAIL FOR 24" DIAMETER AND SMALLER PIPE (CONCRETE OR METAL)



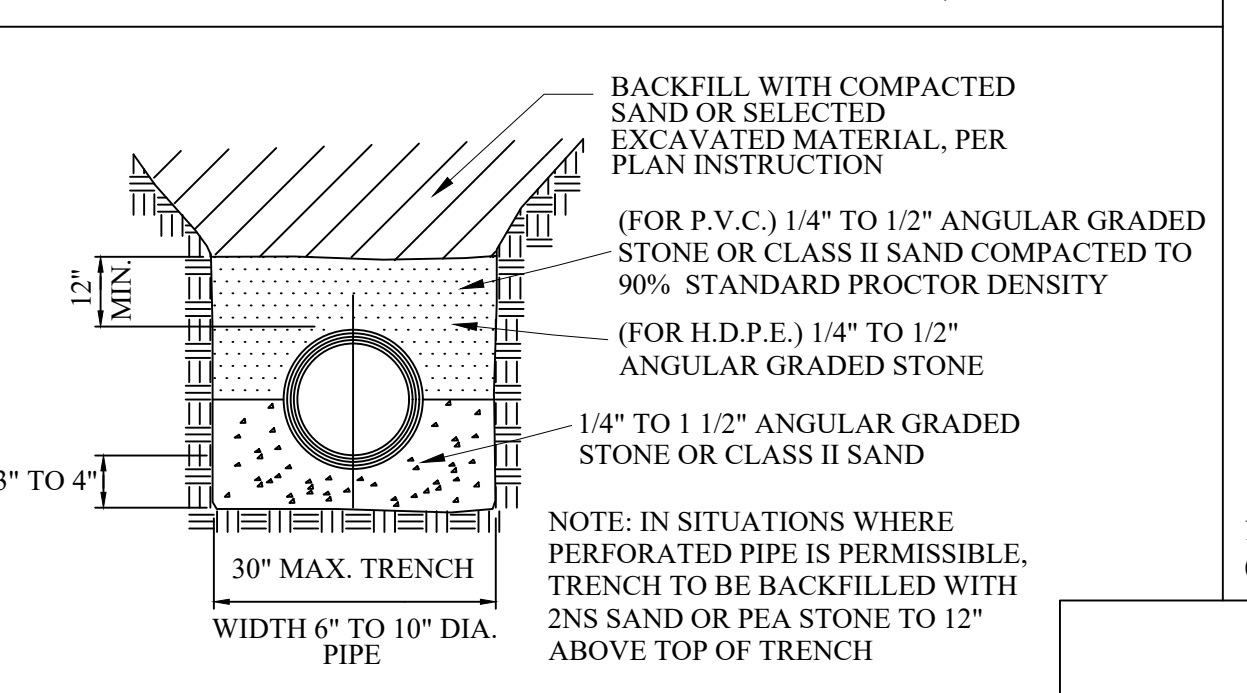
CLASS "B" BEDDING TRENCH DETAIL FOR ELLIPTICAL OR 27" DIA. AND LARGER PIPE (CONCRETE OR METAL)



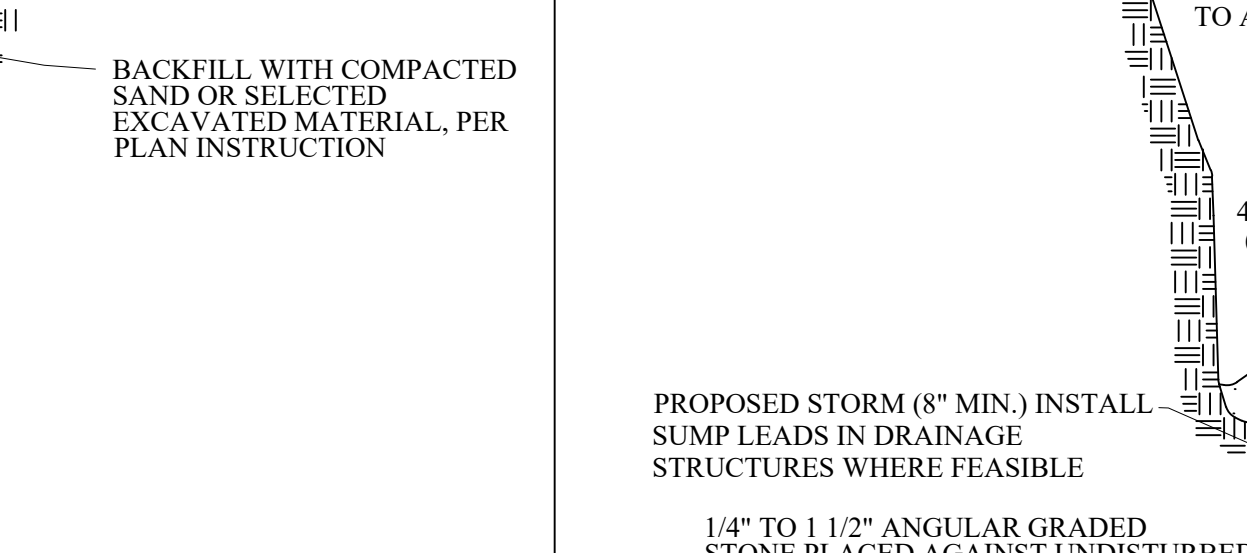
PRECAST STORM CATCH BASIN



SO-2 FOREBAY OUTLET FILTER (CMP)



H.D.P.E. OR P.V.C. BEDDING DETAIL

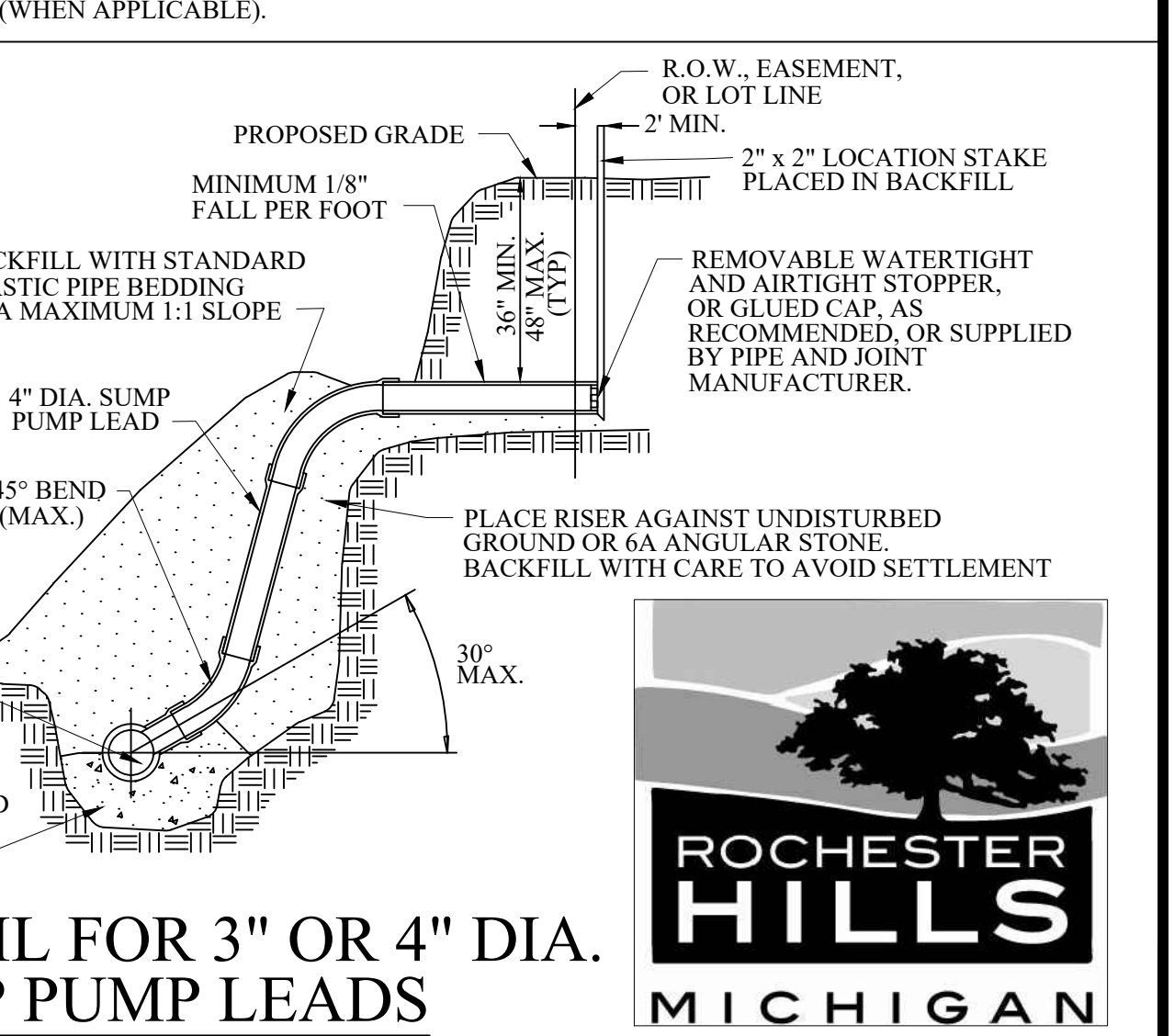


HOUSE LEAD DETAIL FOR 3" OR 4" DIA. PLASTIC SUMP PUMP LEADS

- GENERAL NOTES:**
- ALL EXISTING AND NEW STORM SYSTEMS SHALL BE CLEANED AND FLUSHED ONCE SITE IS 90% BUILT OUT AND VEGETATED. SEDIMENT, ROCK, AND OTHER DEBRIS SHALL BE COLLECTED AND DISPOSED OF IN A PROPER MANNER. IN NO CASE SHALL DEBRIS BE FLUSHED DOWN A STORM OR SANITARY SEWER FOR DISPOSAL. ALL DAMAGED IRRIGATION AND HOUSE DRAINAGE PIPE, DRAIN TILES, SEWER LATERALS AND CULVERTS SHALL BE REPAIRED EXPEDITIOUSLY. DEBRIS COLLECTED SHALL BE DISPOSED IN A COMMERCIAL LANDFILL OR OTHER APPROVED LOCATION.
 - STORM SEWER PIPE SHALL BE OF SIZE AND TYPE NOTED ON THE APPROVED PLANS.
 - REINFORCED CONCRETE PIPE (RCP) SHALL BE MODIFIED GROOVED TONGUE JOINTS WITH O-RING TYPE RUBBER GASKET, PER ASTM C443.
 - ALL CATCH BASIN LEADS AND INLET LEADS SHALL BE ASTM C76-CLASS IV PIPE.
 - MINIMUM PIPE SIZE FOR SEWERS, CATCH BASIN LEADS, AND INLET LEADS SHALL BE 12" NOMINAL INTERNAL DIAMETER.
 - ECCENTRIC CONES SHALL BE PROVIDED ON ALL STRUCTURES, REGARDLESS OF THE MATERIAL USED. PRECAST REINFORCED CONCRETE MANHOLE, BLOCK, OR BRICK TO PROVIDE A TRUE VERTICAL FACE FOR PLACEMENT OF MANHOLE STEPS.
 - THE INSIDE JOINTS OF PIPES SIZES 42" AND LARGER DIAMETER SHALL BE POINTED UP WITH MORTAR UPON COMPLETION OF BACKFILLING OPERATIONS.
 - ALL PIPES SHALL HAVE CLASS, LOT NUMBER, AND DATE OF MANUFACTURE CONSPICUOUSLY MARKED ON EACH LENGTH BY MANUFACTURER.
 - ALL END SECTIONS 18" AND LARGER SHALL BE PROVIDED WITH A GALVANIZED BAR SCREEN.
 - PRECAST REINFORCED CONCRETE SECTIONS SHALL CONFORM TO ASTM 2478.
 - IN DRY, STABLE SOILS, PEASTONE (EQUIVALENT TO M.D.O.T. 34R SPECIFICATIONS) MAY BE SUBSTITUTED FOR THE STANDARD BEDDING. IF THE TRENCH IS WET OR UNSTABLE A GEOTEXTILE FABRIC MUST BE USED TO LINE THE TRENCH PRIOR TO THE PLACEMENT OF THE 2NS SAND, PEASTONE, OR 1/4" - 1-1/2" ANGULAR GRADED STONE.
 - SCHEDULE INSPECTIONS 48 HOURS PRIOR TO START OF CONSTRUCTION BY CALLING THE CITY'S INSPECTION LINE AT 248-841-2510. FULL TIME INSPECTION SHALL BE REQUIRED FOR ALL UNDERGROUND STORM SEWER CONSTRUCTION.
 - THE CONTRACTOR SHALL CONTACT MISS DIG 72 HOURS BEFORE CONSTRUCTION AT (811) TO LOCATE EXISTING UNDERGROUND UTILITIES.
 - PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY THE OCWRC.
 - MINIMUM SUMP DEPTH IS 2' FOR CATCH BASINS, MINIMUM SUMP DEPTH IS 3' FOR CATCH BASINS WITH FLOATABLE TRAP INSTALLATIONS.
 - AS A MEANS OF INSURING PROPER INSTALLATION OF THE STORM SEWER PIPE, AT THE DISCRETION OF THE CITY ENGINEER, THE CONTRACTOR SHALL VIDEO INSPECT, ACCORDING TO THE CITY OF ROCHESTER HILLS VIDEO INSPECTION STANDARDS, 100% OF THE STORM SEWER PIPE 12" AND LARGER IN DIAMETER. IF VIDEO INSPECTION IS REQUIRED BY THE CITY ENGINEER THE CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE TO THE CITY OF ROCHESTER HILLS PRIOR TO VIDEO INSPECTION, SO A REPRESENTATIVE MAY BE PRESENT. ROCHESTER HILLS WILL BE PROVIDED WITH A DIGITAL COPY OF THE VIDEO INSPECTION AND LOG IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS VIDEO INSPECTION STANDARDS.
- PROJECTS THAT THE CITY ENGINEER MAY IMPOSE THESE REQUIREMENTS ARE:
- ALL PUBLIC PROJECTS OR PROJECTS BEING CONSTRUCTED ON PUBLIC PROPERTY.
 - ANY PROJECT INVOLVING A DEVELOPMENT, SUBDIVISION, SITE CONDOMINIUM, CONDOMINIUM, OR ASSOCIATION.
 - ANY PROJECT THAT WILL RESULT IN MORE THAN ONE OWNER RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE COMPLETE STORM DRAINAGE SYSTEM.

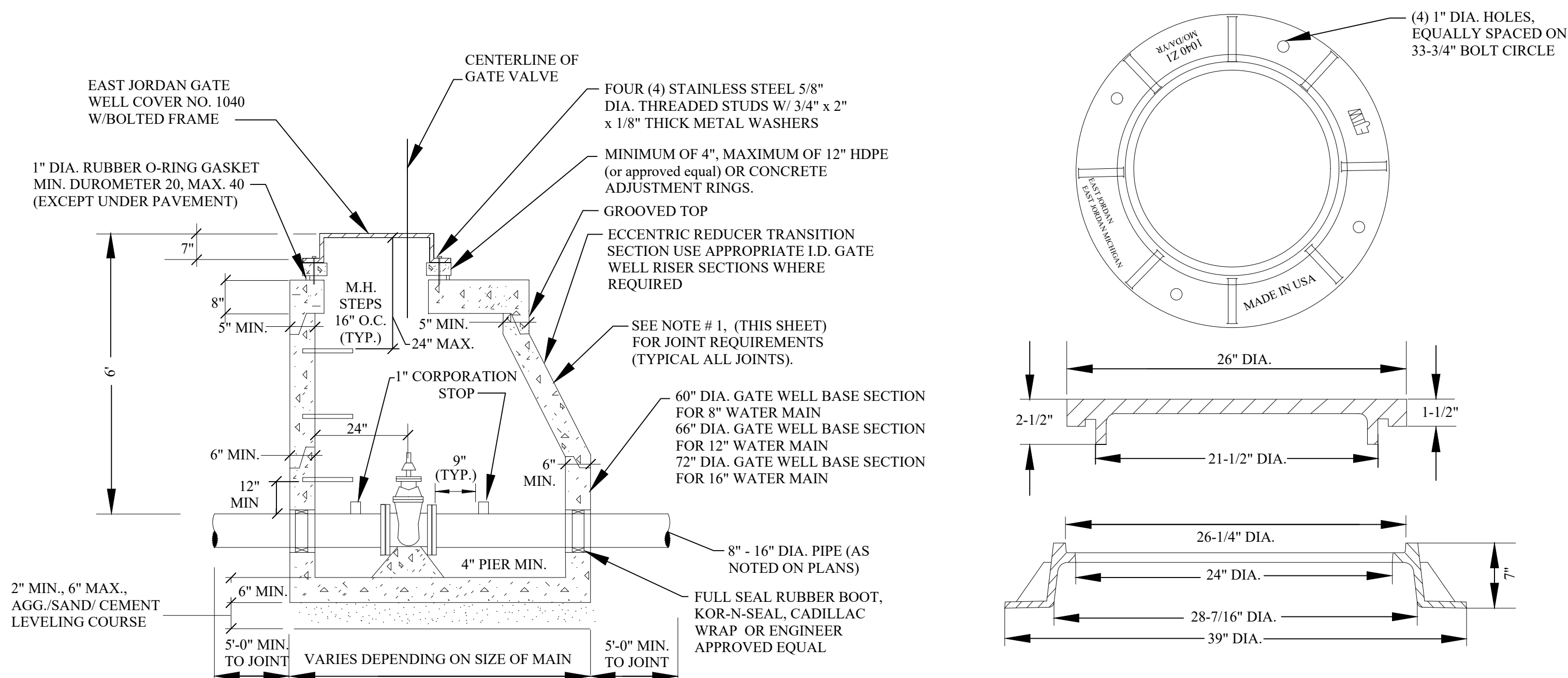
COVERS FOR MANHOLES, CATCH BASINS, AND INLETS

- MANHOLE FRAME AND COVER SHALL BE EJ 1040, TYPE A COVER OR EQUIVALENT.
 - CATCH BASINS AND INLET FRAME AND COVER SHALL BE AS FOLLOWS:
 - EJ 7045 WITH TYPE M1 GRATE AND 7050 T2 ADJUSTABLE BACK, OR EQUAL, FOR USE WITH CONCRETE CURB AND GUTTER, (STRAIGHT CURB/M.D.O.T. F CURB) AND WITH CONCRETE PAVEMENT WITH INTEGRAL CURB.
 - EJ 7085 WITH TYPE M1 GRATE OR EQUAL, FOR USE WITH CONCRETE B-2 MODIFIED CURB AND GUTTER, AND WITH CONCRETE WITH B-2 MODIFIED INTEGRAL CURB.
 - EJ 7065 WITH TYPE M1 GRATE AND 7060 T1 DRIVE OVER CURB BACK, OR EQUAL, FOR USE WITH MOUNTABLE CURB AND GUTTER, AND WITH CONCRETE PAVEMENT WITH MOUNTABLE INTEGRAL CURB.
 - EJ FRAME 1040 WITH TYPE N OVAL GRATE OR TYPE O2 BEEHIVE GRATE, OR EQUAL, FOR USE ON OPEN DITCH STRUCTURES AND ON CATCH BASINS LOCATED IN SWALES, AND IN EASEMENTS OUTSIDE THE PUBLIC STREET RIGHT-OF-WAY.
 - EJ FRAME 7045Z WITH TYPE M4 VANE STYLE INLET GRATE (RIGHT HAND FLOW OR LEFT HAND FLOW) AND 7060 T1 BACK OR 7050 T2 BACK DEPENDING ON CURB STYLE, OR EQUAL, FOR USE WITH RELIEF BASINS WHICH ARE ON LONGITUDINAL ROAD SLOPES OF 4% OR GREATER.
 - EJ FRAME 5100 WITH TYPE M1 SINUSOIDAL GRATE, OR EQUAL, FOR USE IN NON-CURB PAVEMENT AREAS.
- NOTE: COVERS MUST HAVE THE "DUMP NO WASTE! DRAINS TO WATERWAY" LETTERING (WHEN APPLICABLE).



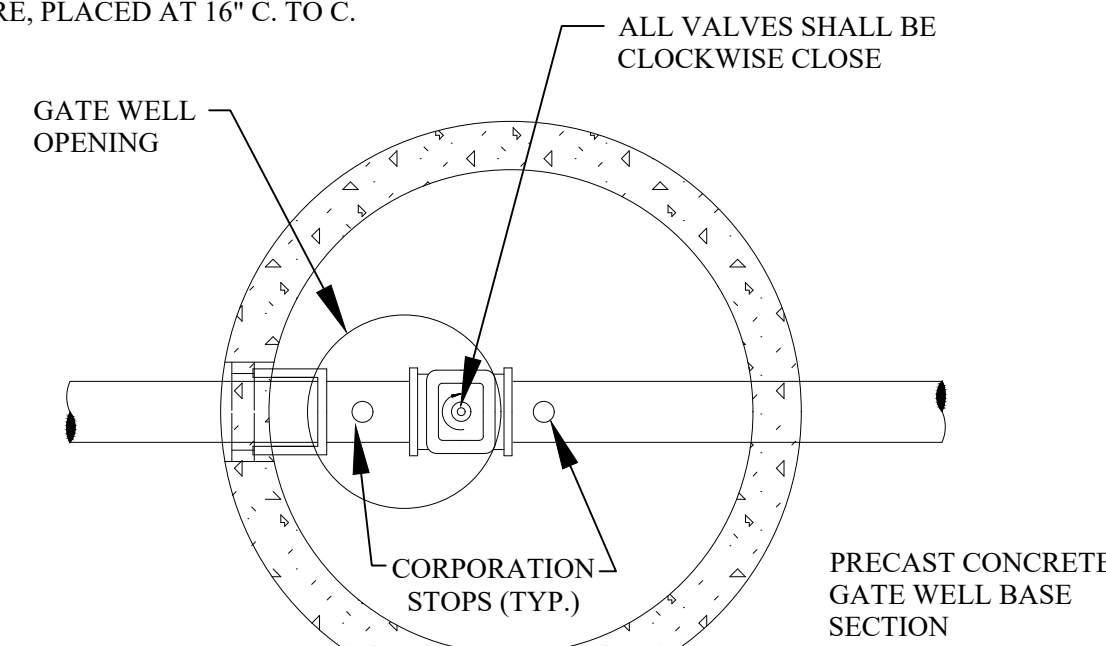
City of Rochester Hills
 1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

STORM SYSTEM STANDARD DETAILS

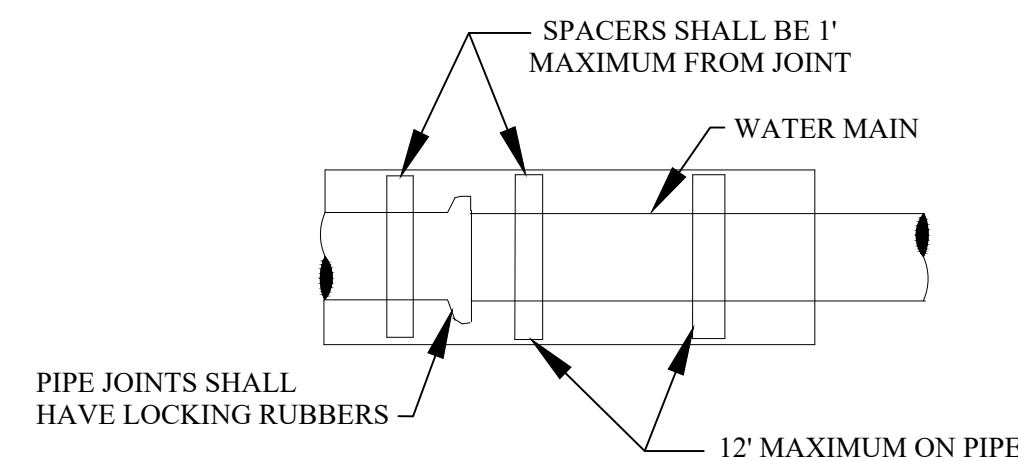


ALL GATE WELLS

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)

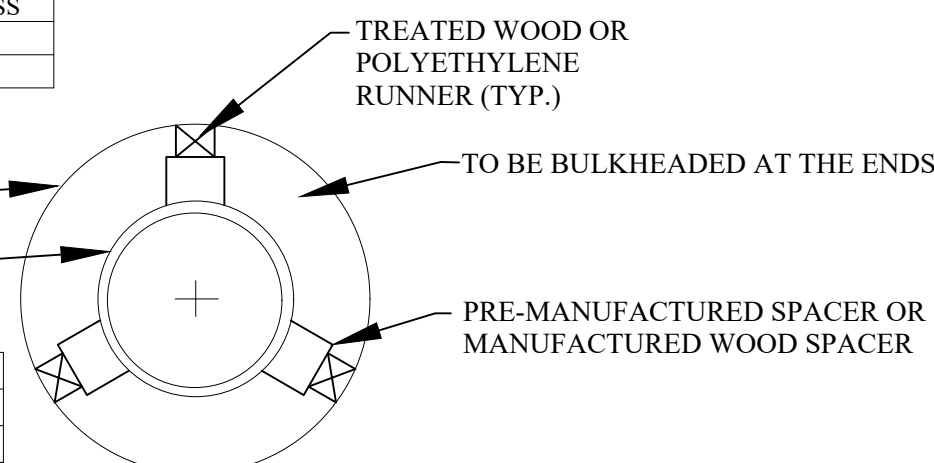


UNLESS OTHERWISE SPECIFIED, MINIMUM CASING PIPE SHALL BE ASTM A-139 GRADE B, WALL THICKNESS AS FOLLOWS:

| NOMINAL SIZE | MINIMUM WALL THICKNESS |
|--------------|------------------------|
| 8" - 42" | 0.375 |
| 48" - 60" | 0.500 |

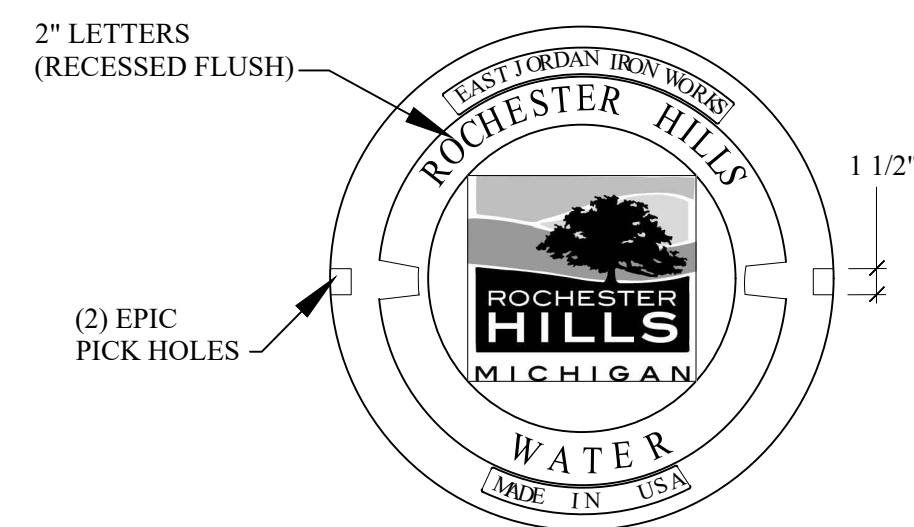
CASING SHOULD BE A MINIMUM OF 1 1/2 TIMES THE PIPE SIZE

| WATER PIPE | REQUIRED QUANTITY OF RUNNERS IN ACCORDANCE WITH SIZE |
|-----------------|--|
| TO 14" DIA. | 3 RUNNERS |
| 16" TO 36" DIA. | 6 RUNNERS |
| 38" TO 48" DIA. | 8 RUNNERS |

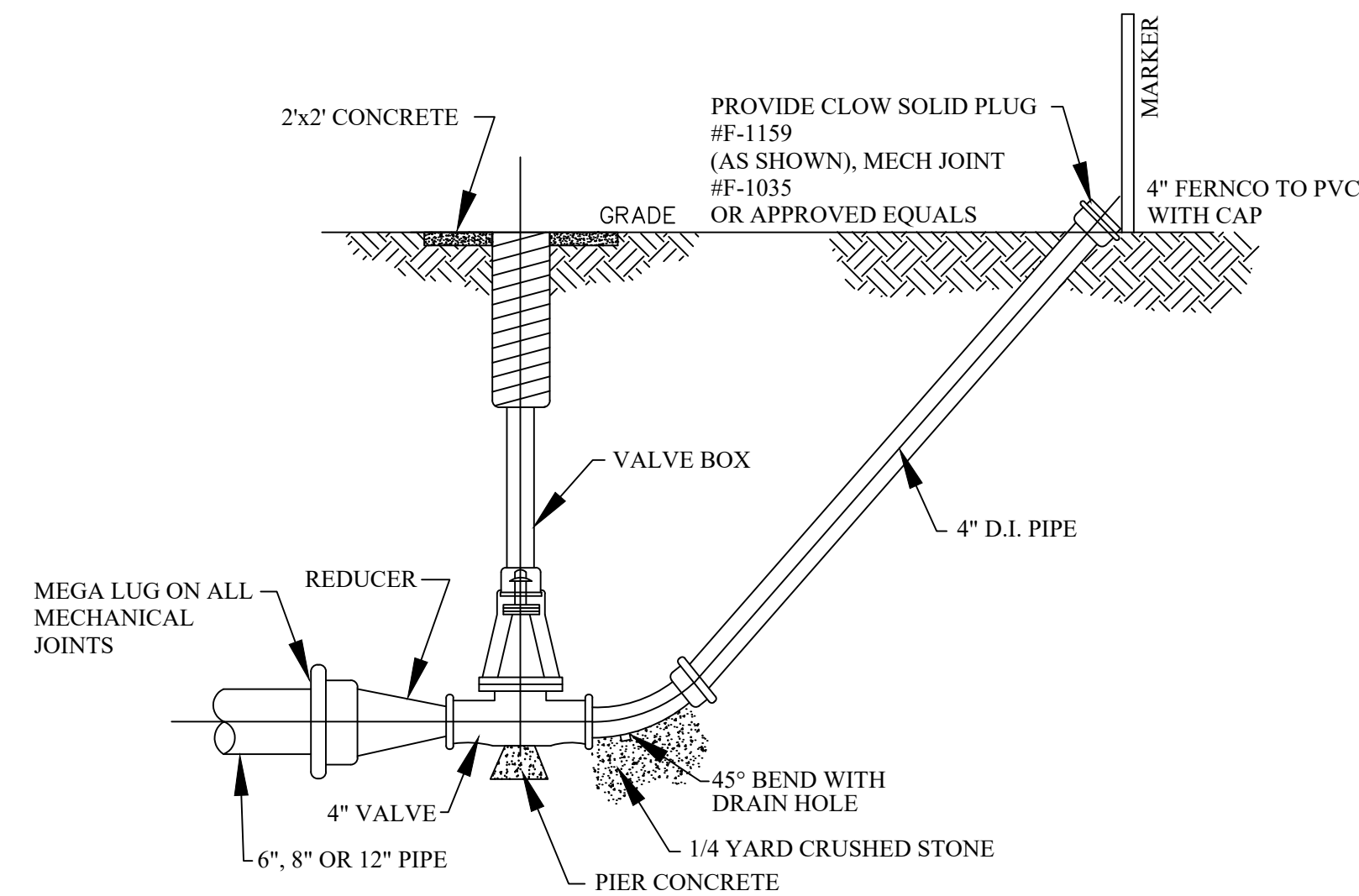


SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING PIPE

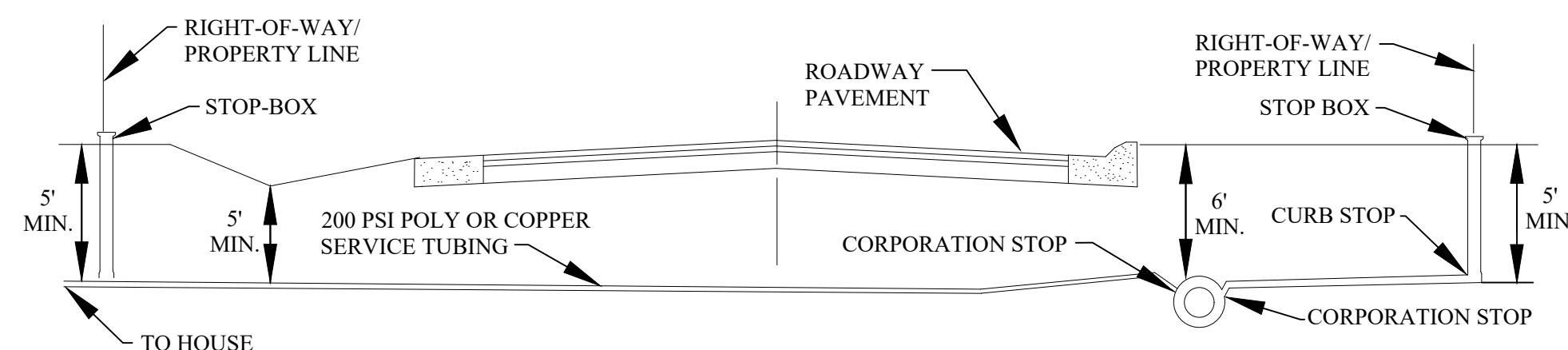
FRAME



LETTERING LAYOUT FOR GATE WELL COVERS

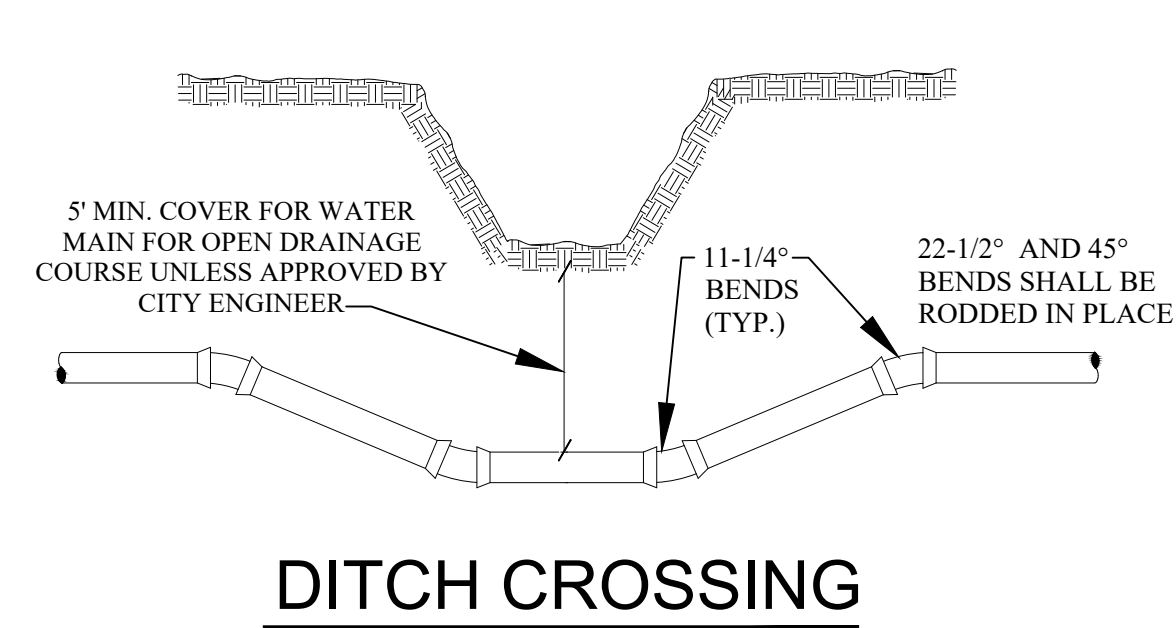


DETAIL OF 4" BLOWOFF

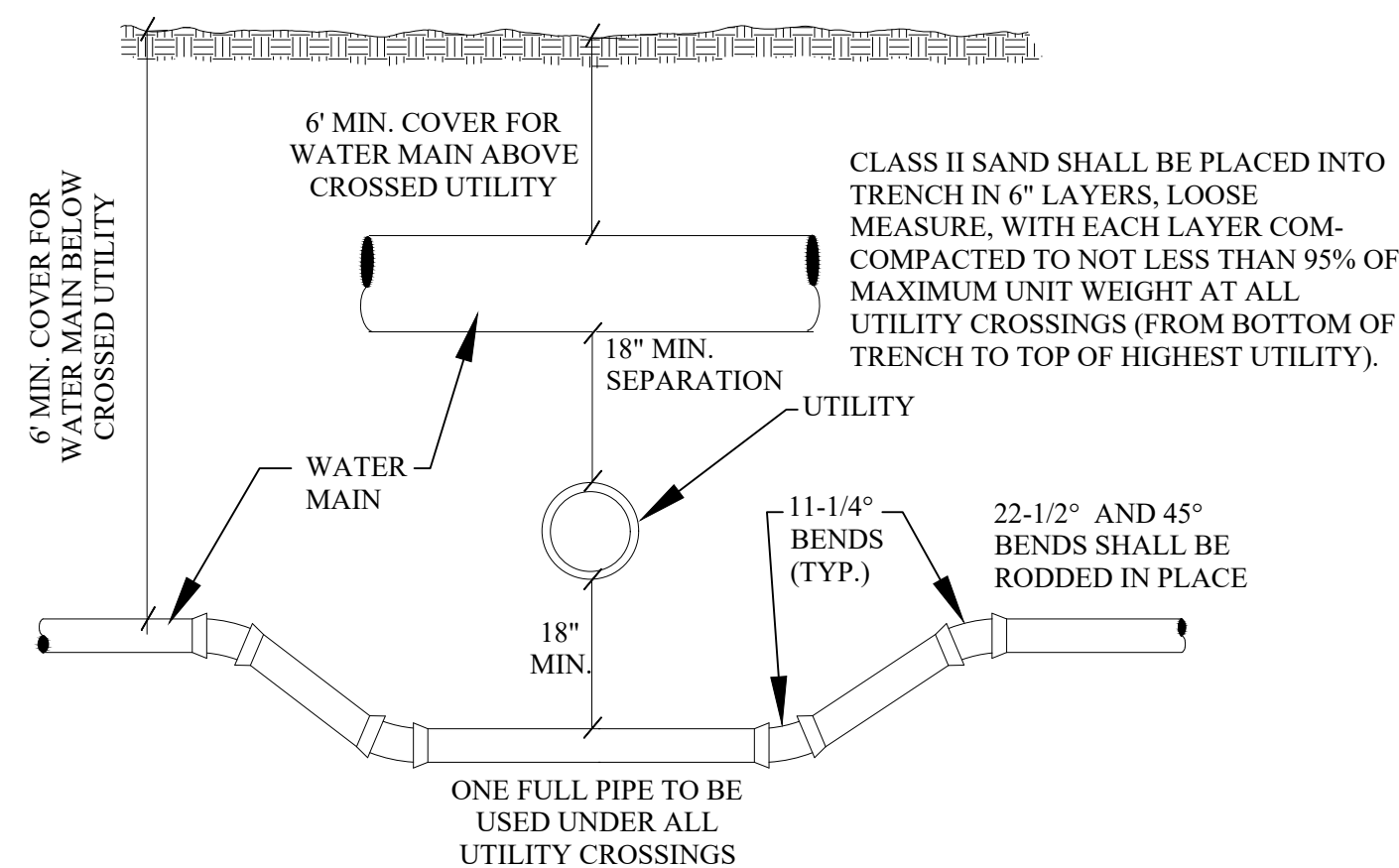


NOTES:
1. WATER SERVICE SHUT-OFF TO BE PLACED AT PROPERTY LINE.
2. LATERAL LOCATION SHALL BE AS REQUESTED BY THE ABUTTING PROPERTY OWNER.
3. ROCHESTER HILLS DPS PERFORMS SERVICE LEAD TAPS UP TO 2" DIAMETER.

TYPICAL PUBLIC ROAD WATER SERVICE CONNECTION

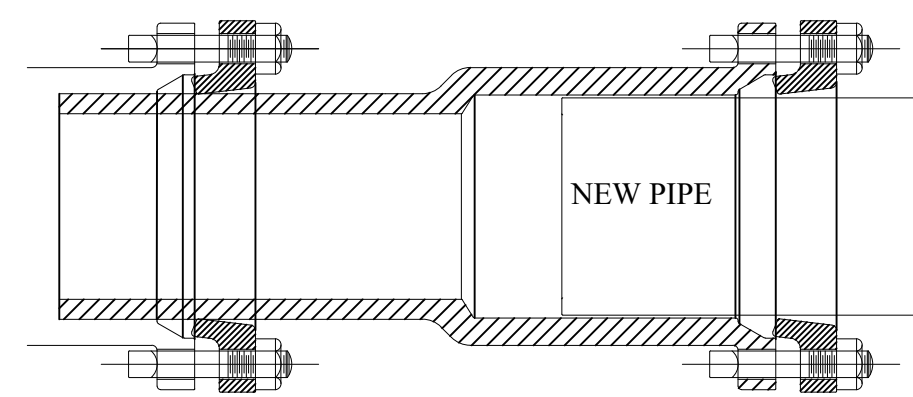


DITCH CROSSING

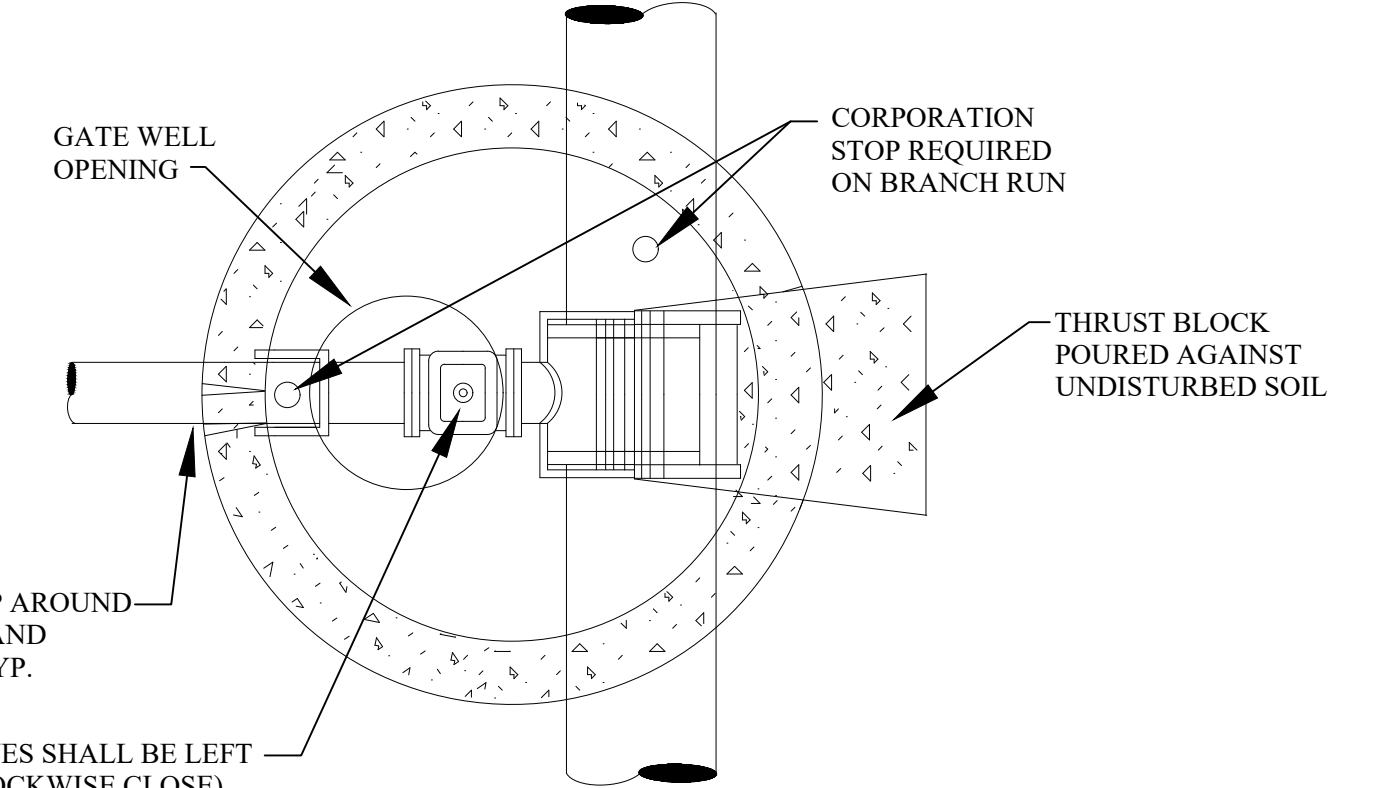


UTILITY CROSSING

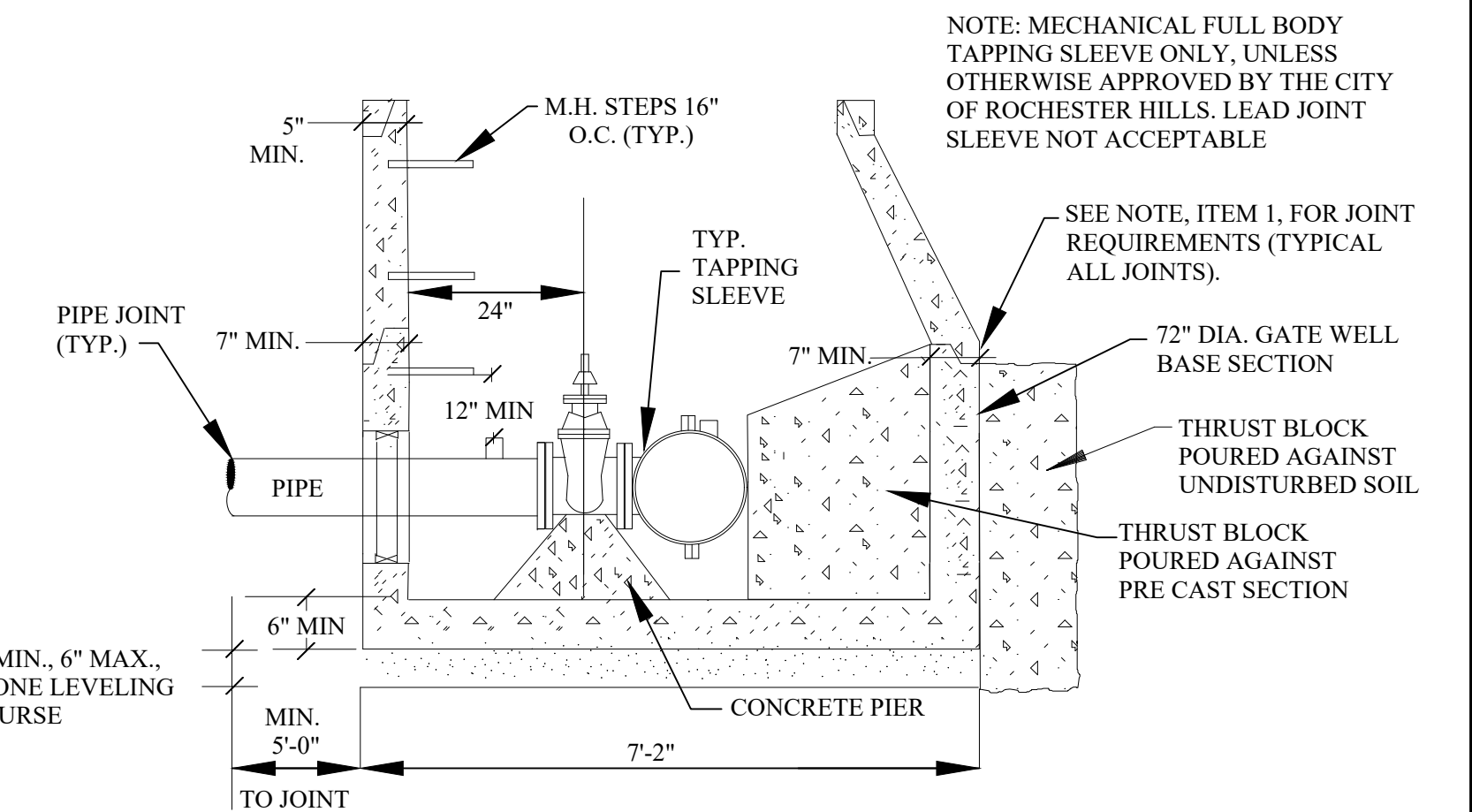
EAST JORDAN MJ x PE DUAL-PURPOSE CUTTING-IN SLEEVE OR APPROVED EQUAL



BOTTLE SLEEVE



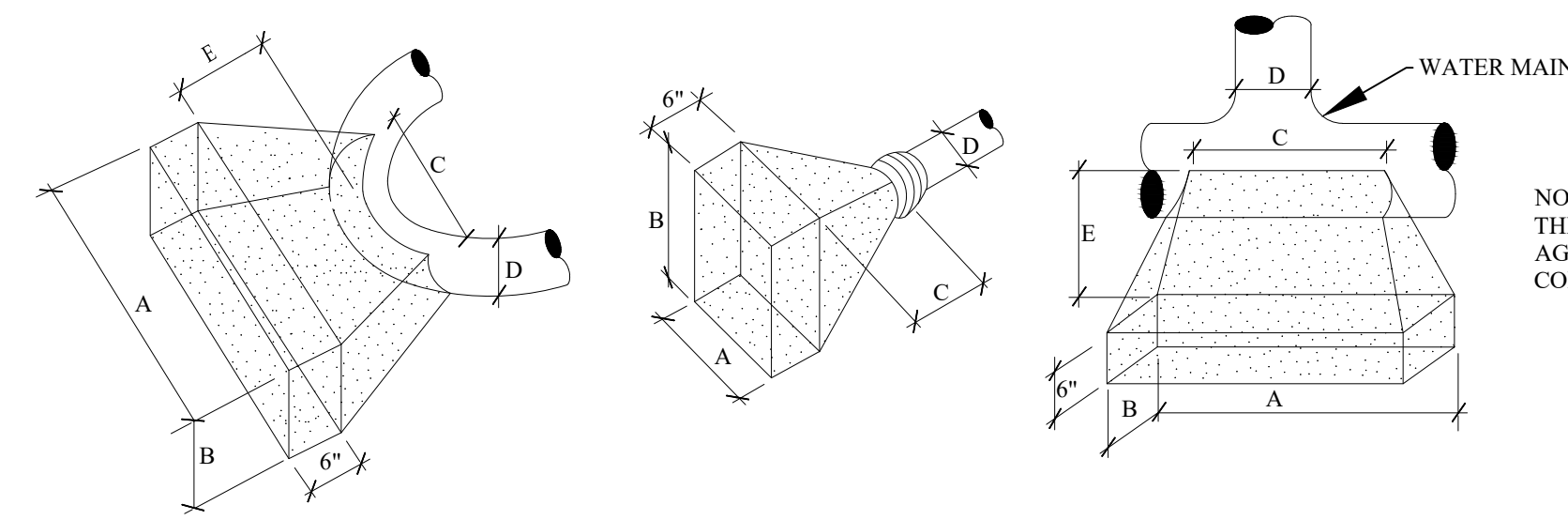
PLAN TAPPING SLEEVE VALVE & WELL (TYPICAL)



TAPPING SLEEVE, VALVE AND WELL (TYPICAL)

NOTES:

- 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.
- CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 16.c. 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.
- 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.
- FOR ALL PIPE USE A 1" CORPORATION STOP. NO CORPS SHALL BE USED IN CONCRETE PRESSURE PIPE.
- 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



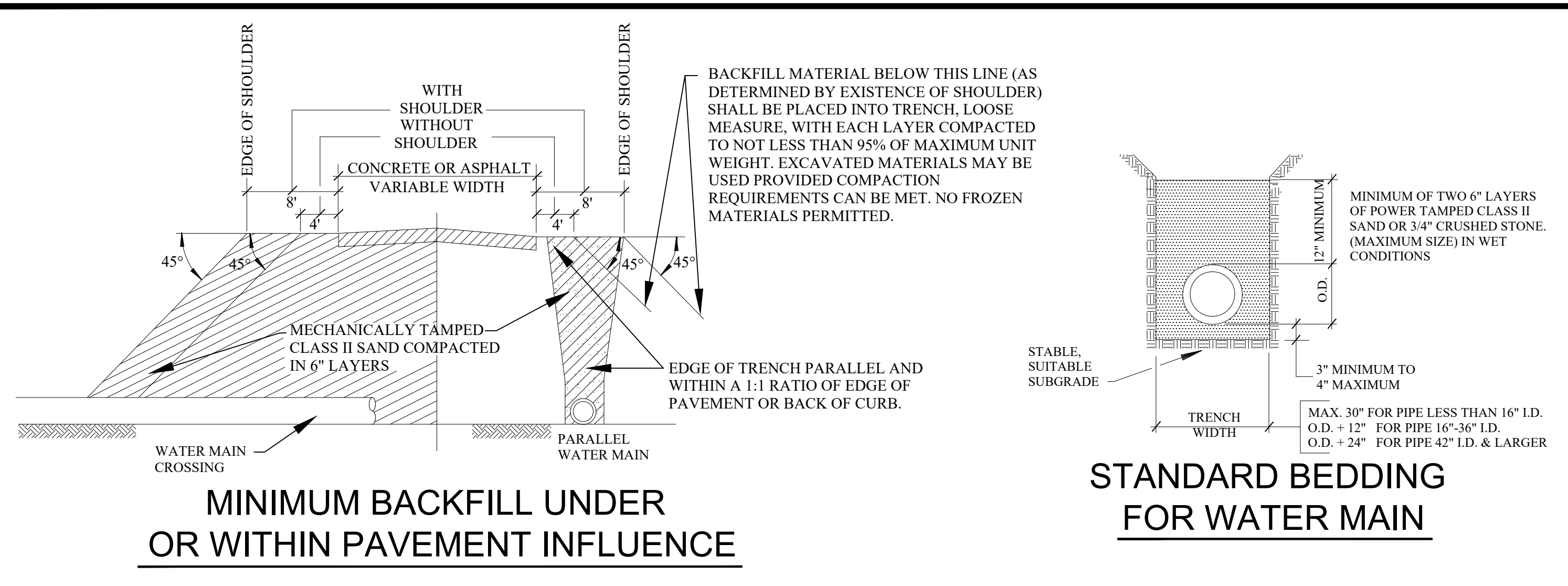
| REVISIONS | DATE | APPROVED BY |
|-----------|------|--|
| | | CITY COUNCIL, DATE: SEPTEMBER 23, 2019 |
| | | PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES |

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

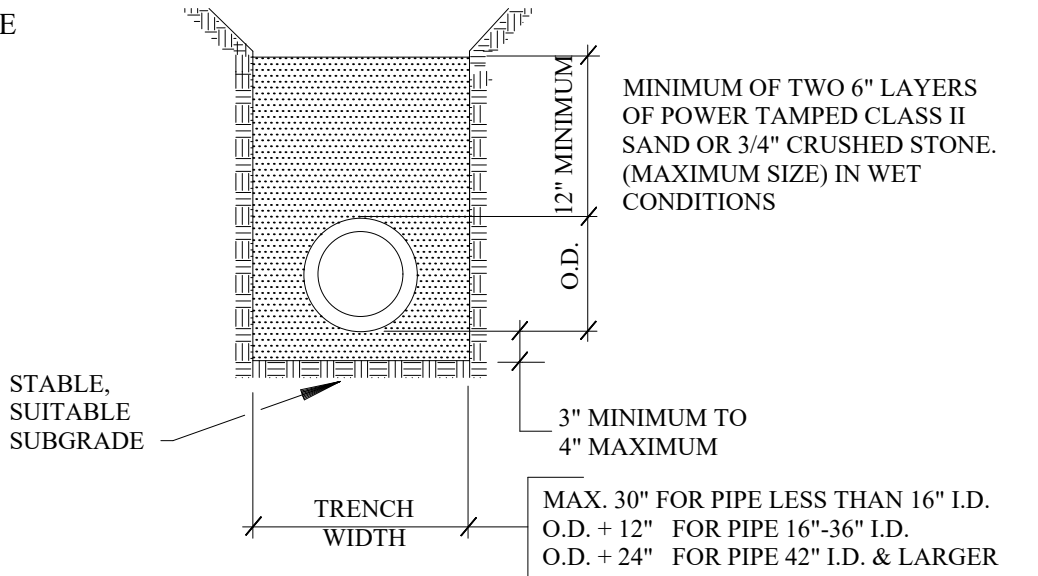
City of Rochester Hills
1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

WATER MAIN STANDARD DETAILS

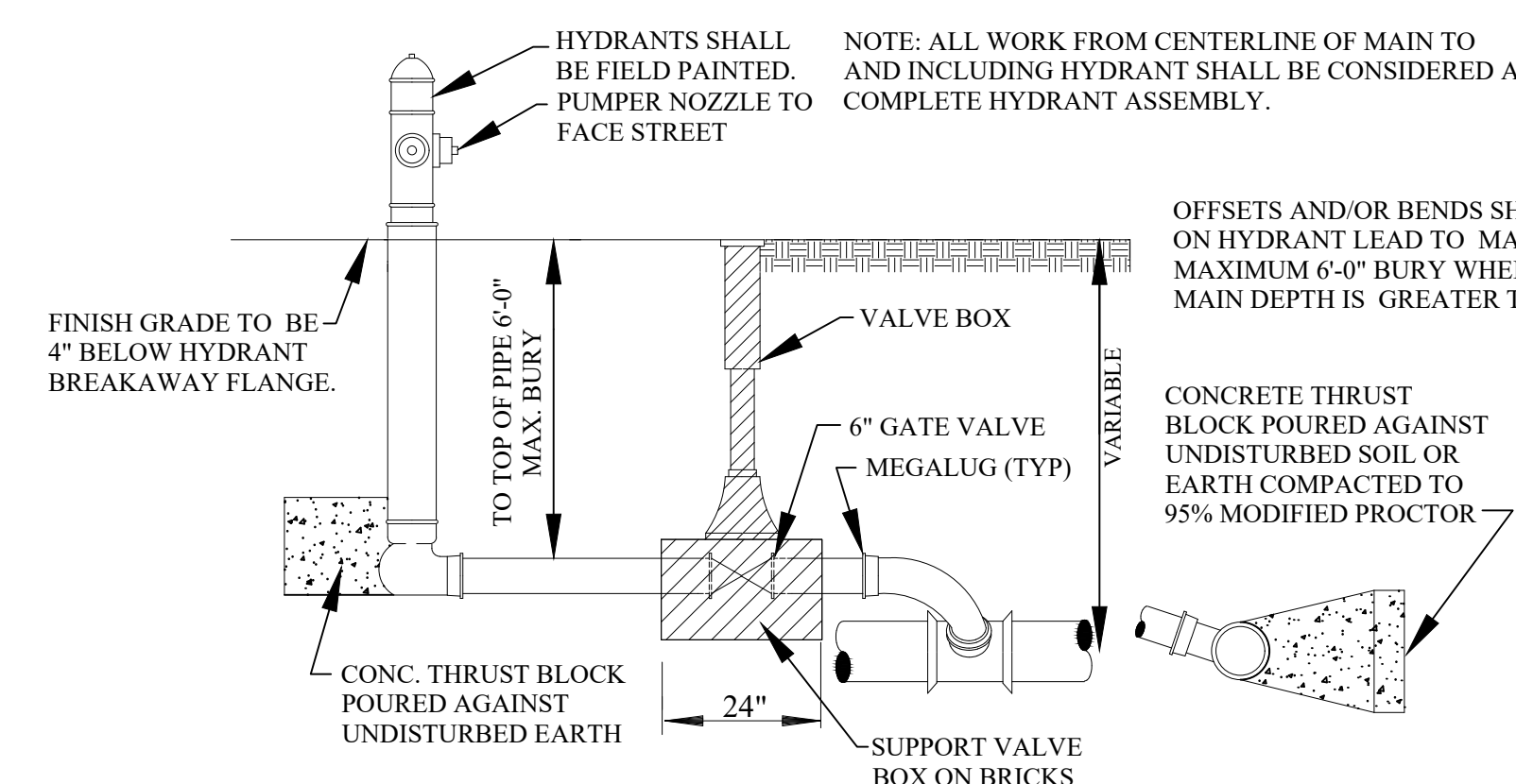
| | |
|--------------|-----------------|
| NOT TO SCALE | DATE: 1/10/2018 |
| SHEET 1 OF 2 | REV 04/22/2022 |



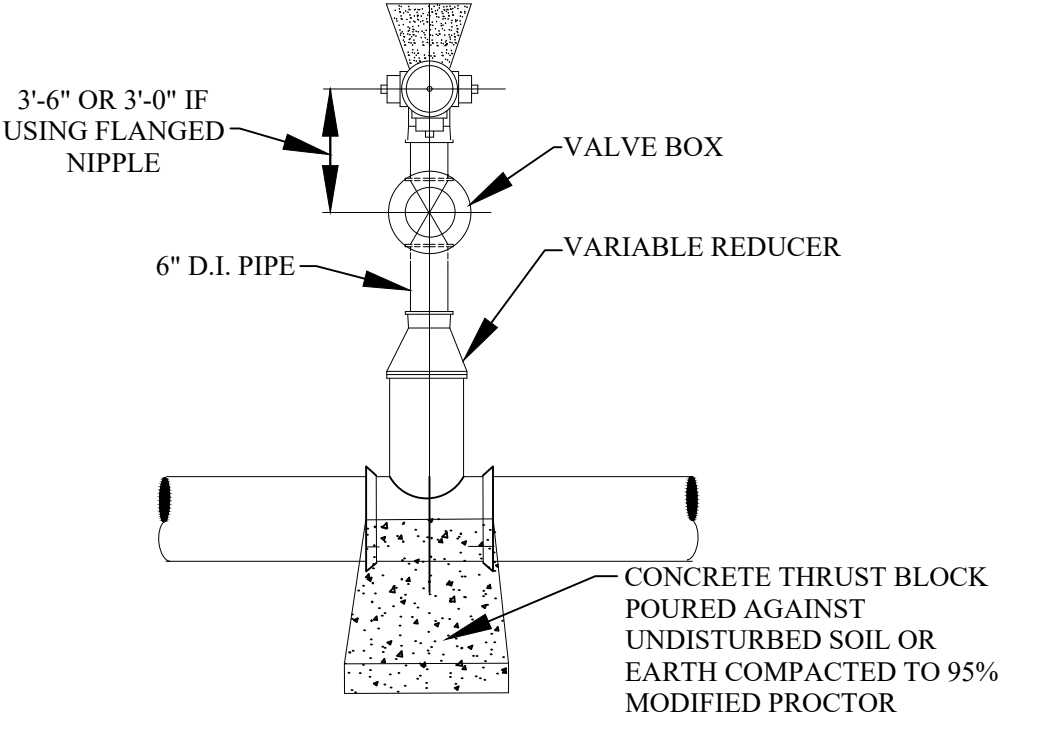
MINIMUM BACKFILL UNDER OR WITHIN PAVEMENT INFLUENCE



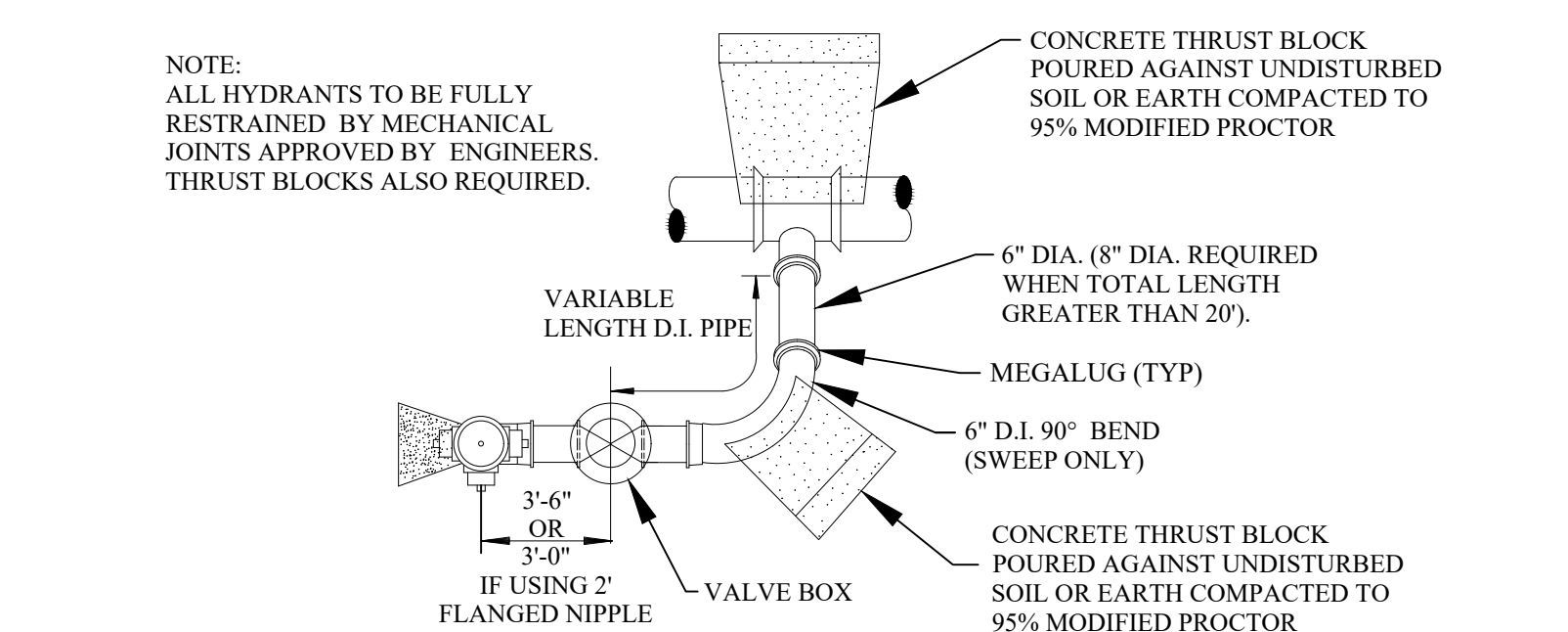
STANDARD BEDDING FOR WATER MAIN



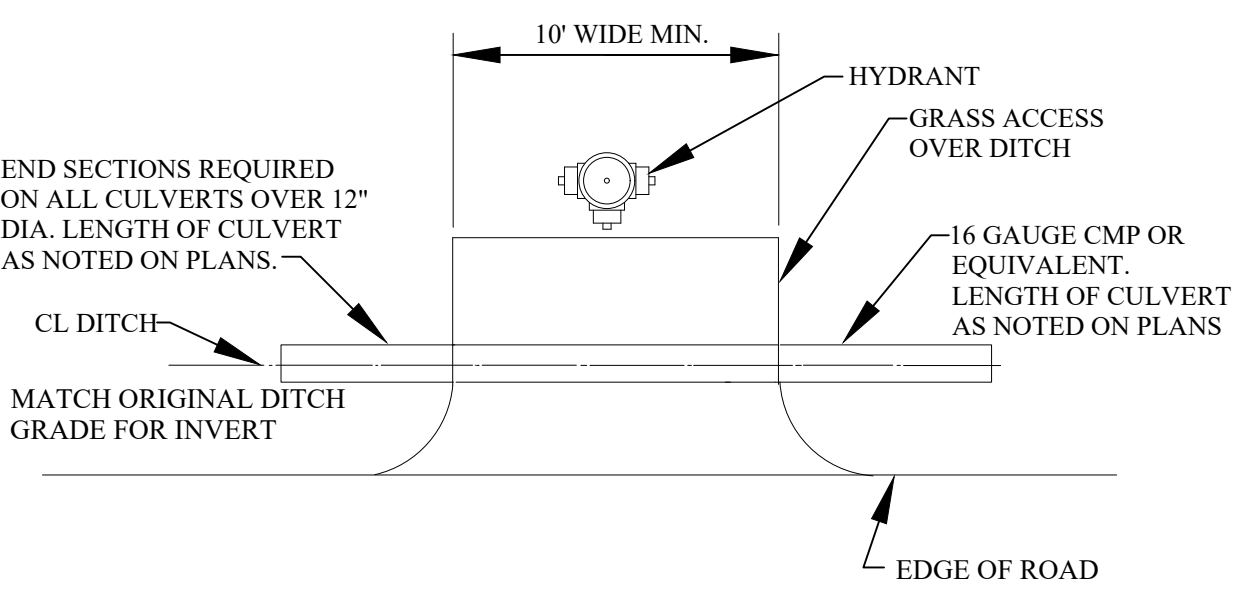
HYDRANT SIDE OUTLET OPTION



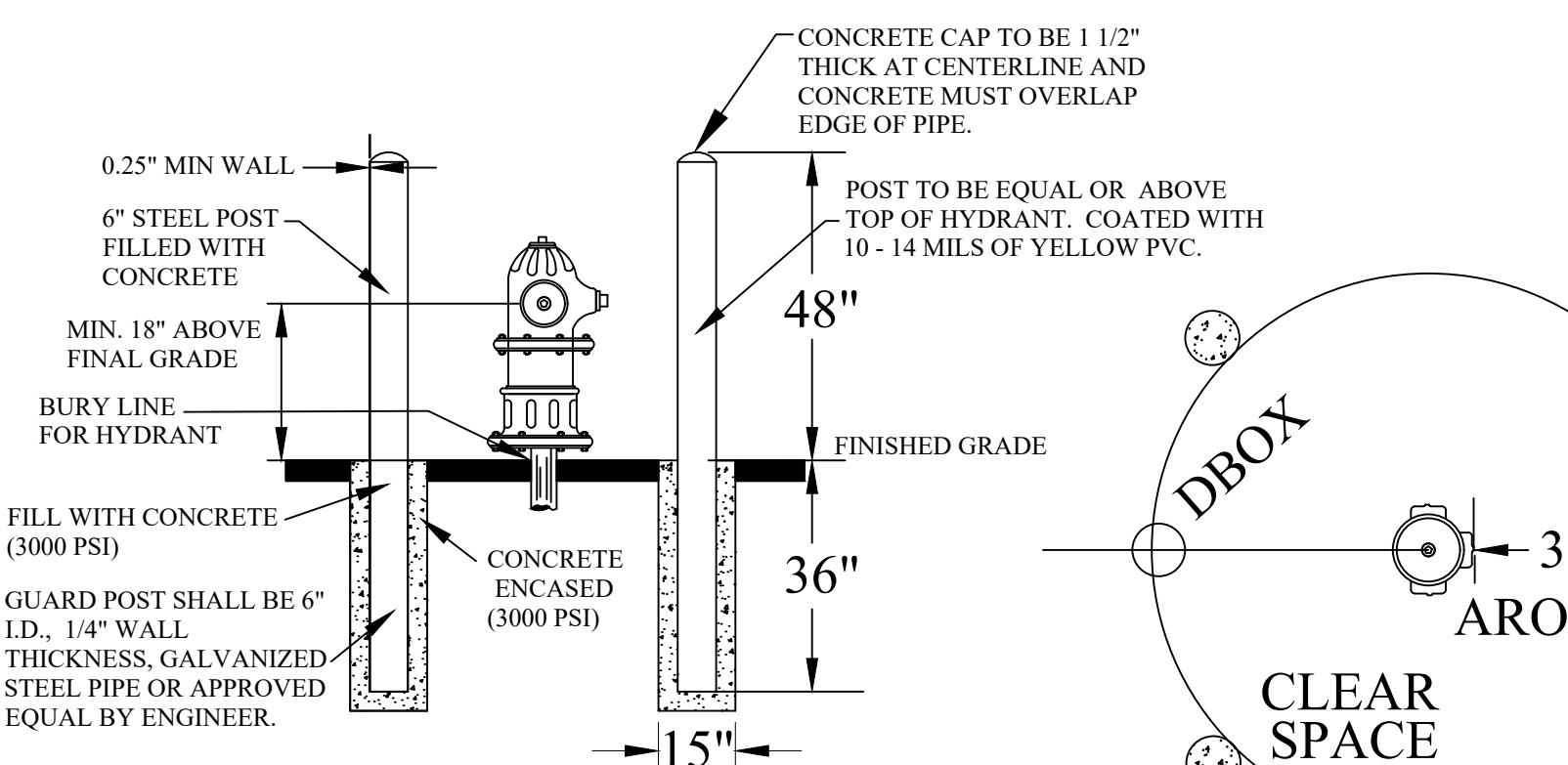
HYDRANT CONNECTION (TYPICAL)



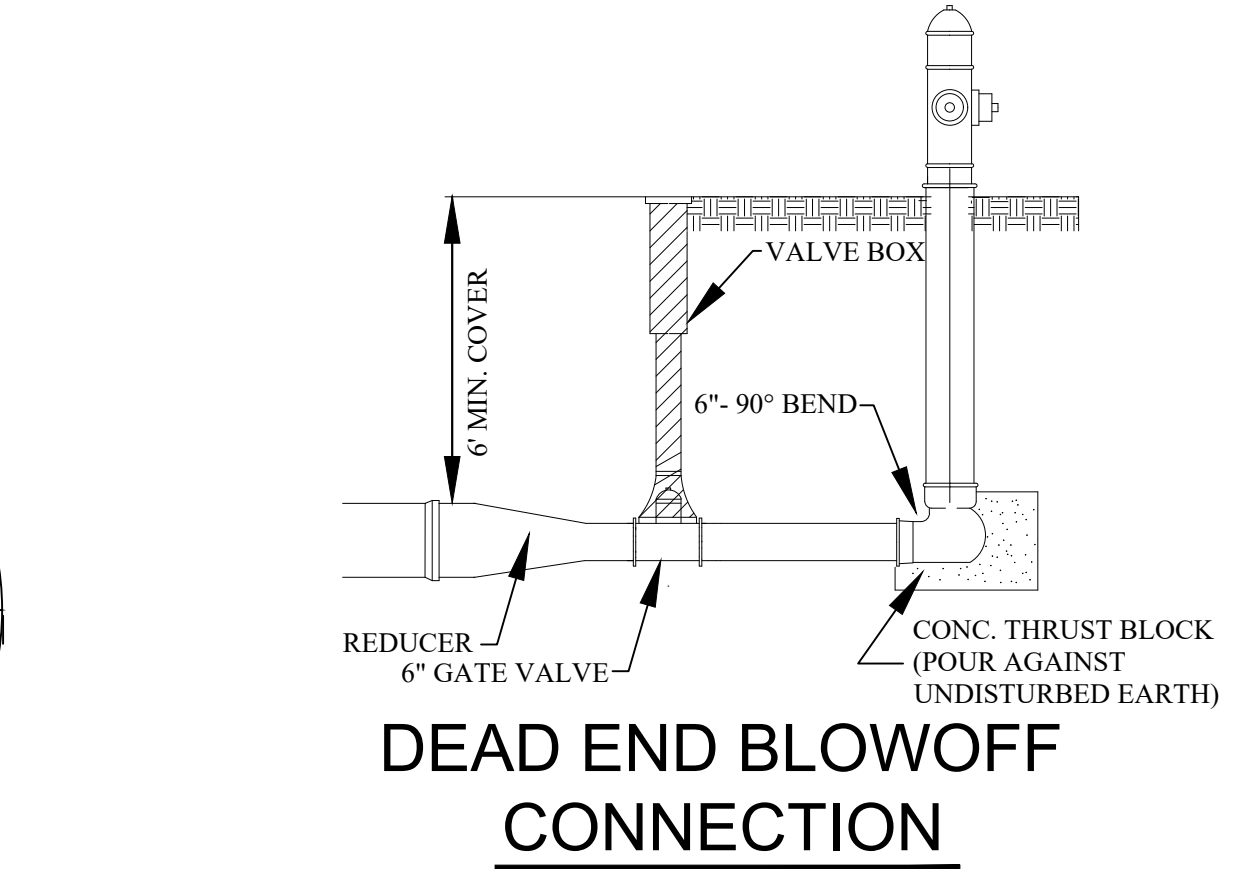
HYDRANT SIDE OUTLET OPTION



DITCH ENCLOSURE AT HYDRANT/ GATE WELL



GUARD POST



HYDRANT & BLOWOFF DETAILS

GENERAL NOTES

- ALL CONSTRUCTION PROCEDURES AND MATERIALS SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS.
- A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED BY THE CITY OF ROCHESTER HILLS AND HELD PRIOR TO THE START OF CONSTRUCTION.
- 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.
- ALL WATER MAIN EASEMENTS SHALL BE PROVIDED PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM.
- WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 6 FEET BELOW FINISHED GRADES, INCLUDING OPEN DRAINAGE COURSES.
- 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).
- WHERE TWO UTILITIES CROSS, PROVIDE CLASS II BACKFILL MATERIAL IN SIX (6) INCH COMPACTED LAYERS TO TOP OF HIGHEST UTILITY.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- FOR ANY DIRECT TAPPING OF ASBESTOS CEMENT WATER MAIN, THE CLOSEST DOWNSTREAM HYDRANT SHALL BE FLUSHED DURING THE TAPPING PROCEDURE.

WATER MAIN MATERIALS NOTES

- TEMPORARY CONNECTIONS, WHICH MAY BE MADE FOR CHLORINATING AND FLUSHING PURPOSES, SHALL INCLUDE A TESTABLE DOUBLE CHECK VALVE BACKFLOW PREVENTER WITH CURRENT CERTIFICATION.
- 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.
- 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.
- 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).
- 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.
- 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.
- MECHANICAL JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C111 (ANSI A21.11).
- FLANGE JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C110 (ANSI A21.10).
- 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.
- 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

- 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)
- 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.
- ALL GATE WELL COVERS SHALL BE CITY OF ROCHESTER HILLS STANDARD AS DETAILED.
- 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.
- 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.
- 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.
- 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

- 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.
- ALL HYDRANTS SHALL BE EAST JORDAN NO. 4-BR-250 TRAFFIC MODEL, OR CITY APPROVED EQUAL. SELF-DRAINING HYDRANTS SHALL NOT BE USED. HYDRANTS SHALL HAVE BREAKAWAY FLANGE.
- 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.
- ALL FIRE HYDRANT JOINTS SHALL BE TOTALLY RESTRAINED BY THE USE OF RESTRAINED JOINT. THRUST BLOCKS ARE ALSO REQUIRED.
- REFER TO AWWA C502 FOR ALL PROPOSED FIRE HYDRANTS.

ACCEPTANCE OF NEW WATER MAINS

- 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.
- 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.
- 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.
- 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.
- 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:

- 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.
- 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).
- 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

- THE MAXIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
- THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
- THE SIZE, BRAND AND MODEL NUMBERS OF ALL VALVES AND HYDRANTS INSTALLED SHALL BE INDICATED.
- A TOTAL AS-BUILT DRAWING QUANTITY LIST SHALL BE INCLUDED, AS WELL AS AN AS-BUILT DRAWING QUANTITY LIST ON EACH INDIVIDUAL SHEET.
- THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
- THE OFFSET OF THE WATER MAIN FROM PROPERTY LINES SHALL BE INDICATED.
- ALL GATE VALVE WELLS, HYDRANTS AND ALL WATER SYSTEM APPURTENANCES SHALL BE LOCATED FROM TWO FIXED OBJECTS (MANHOLES, BUILDING CORNERS ECT.).
- 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.
- THE LOCATION AND SIZE OF EVERY RESTRAINED JOINT SHALL BE NOTED.
- THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE VERTICAL SEPARATION, IS LESS THAN 18" SHALL BE NOTED.
- AS-BUILT SHALL BE PREPARED IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS AS-BUILT GUIDELINES AS PROVIDED AT THE PRE-CONSTRUCTION MEETING.

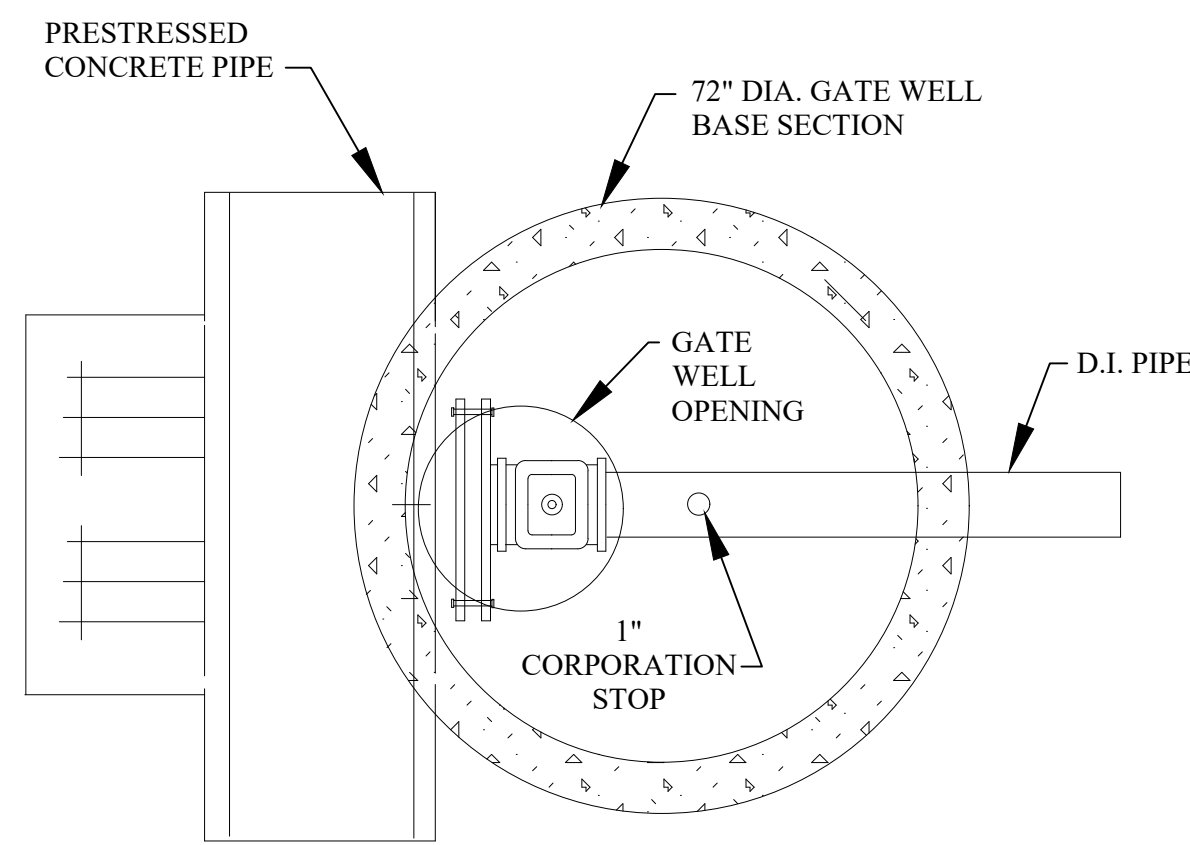
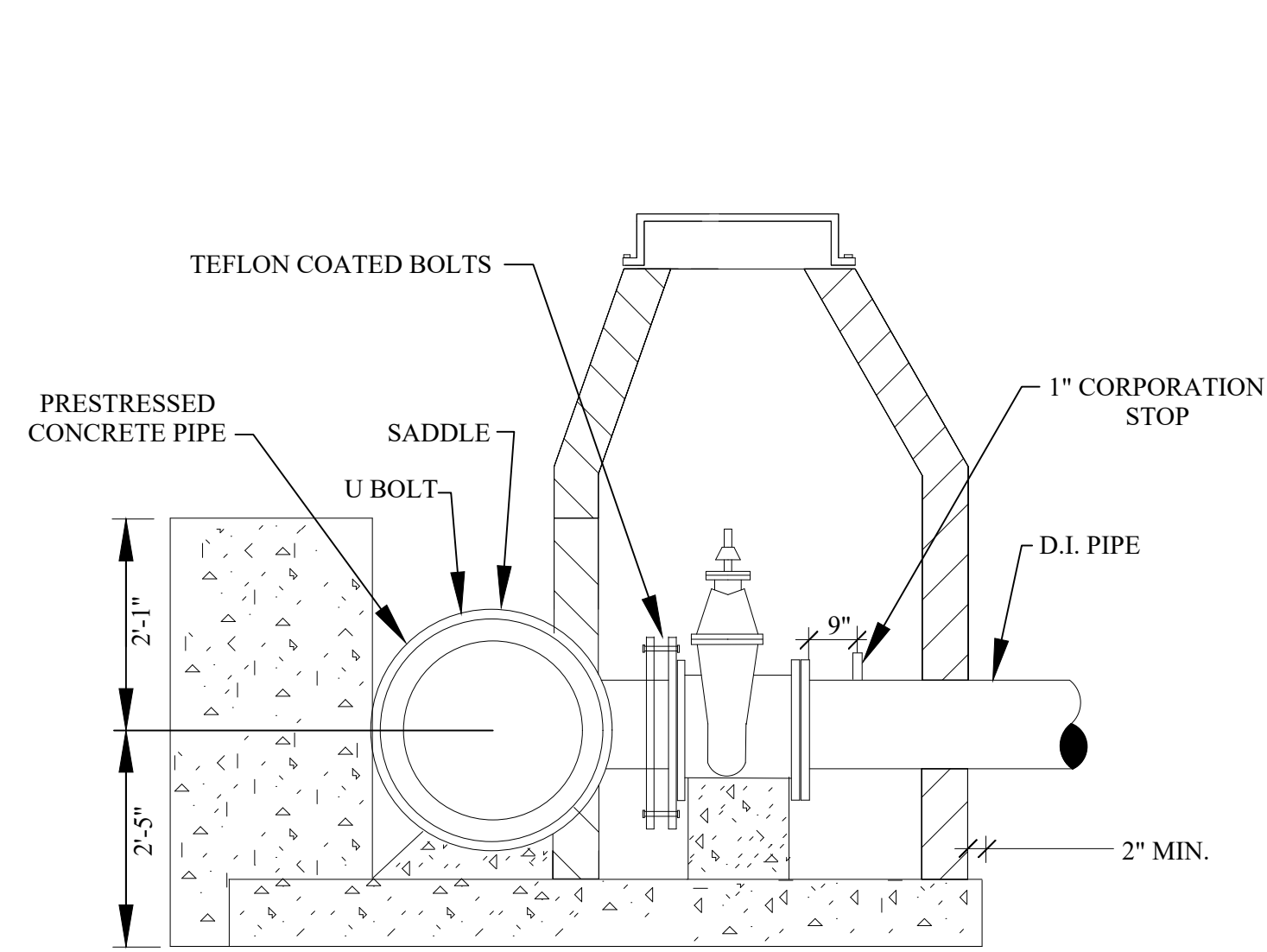


| REVISIONS | DATE | APPROVED BY | NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION |
|------------------------------------|------------|--|---|
| REVISION TO FIRE HYDRANT PER EGLE | 10-23-2023 | CITY COUNCIL, DATE: SEPTEMBER 23, 2019 | |
| REV. ADDED #14 UNDER GENERAL NOTES | 12-12-2023 | PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES | |

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

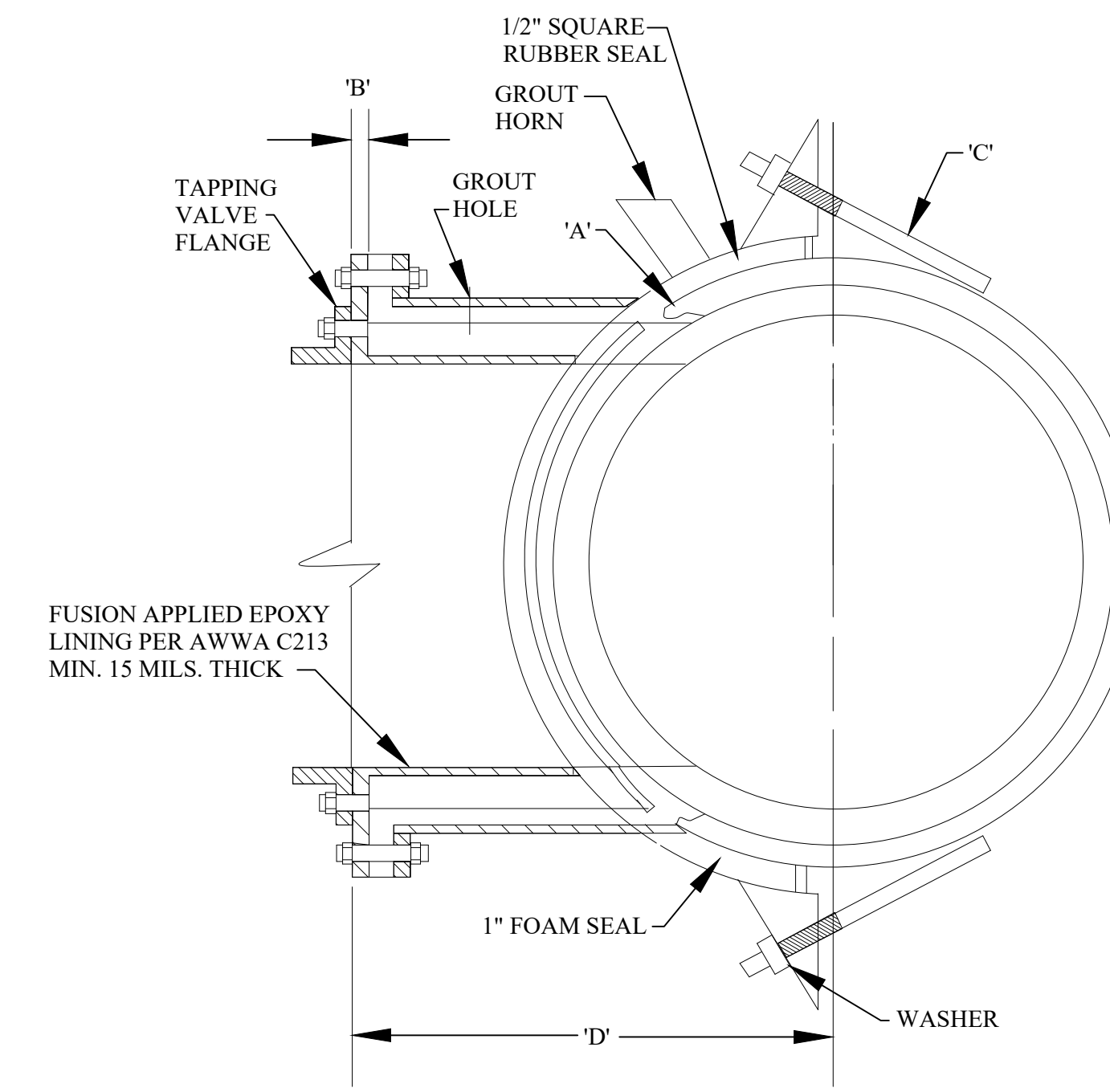
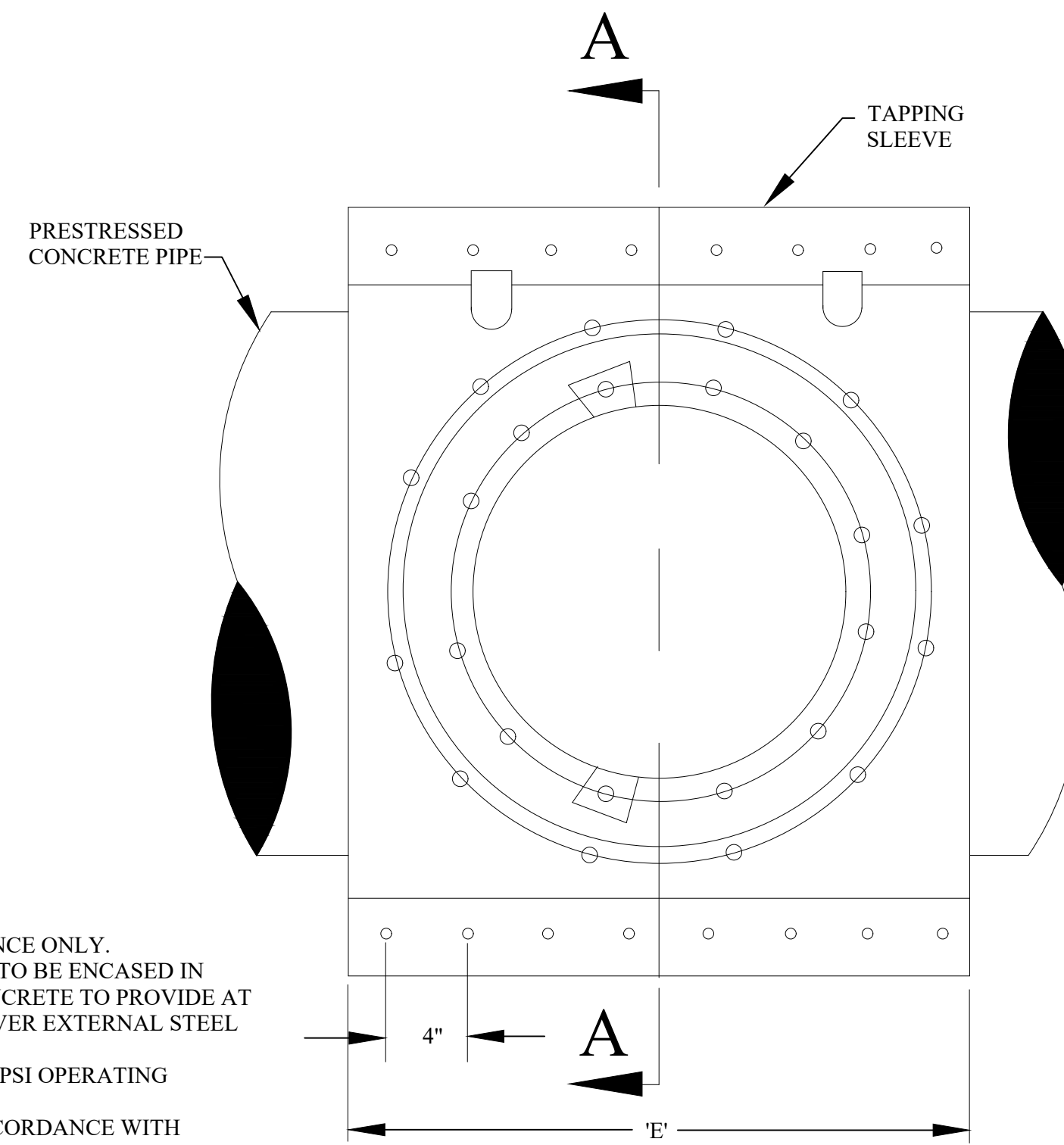
WATER MAIN STANDARD DETAILS

| | |
|--------------|-----------------|
| NOT TO SCALE | DATE: 1/10/2019 |
| SHEET 2 OF 2 | |



- 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.

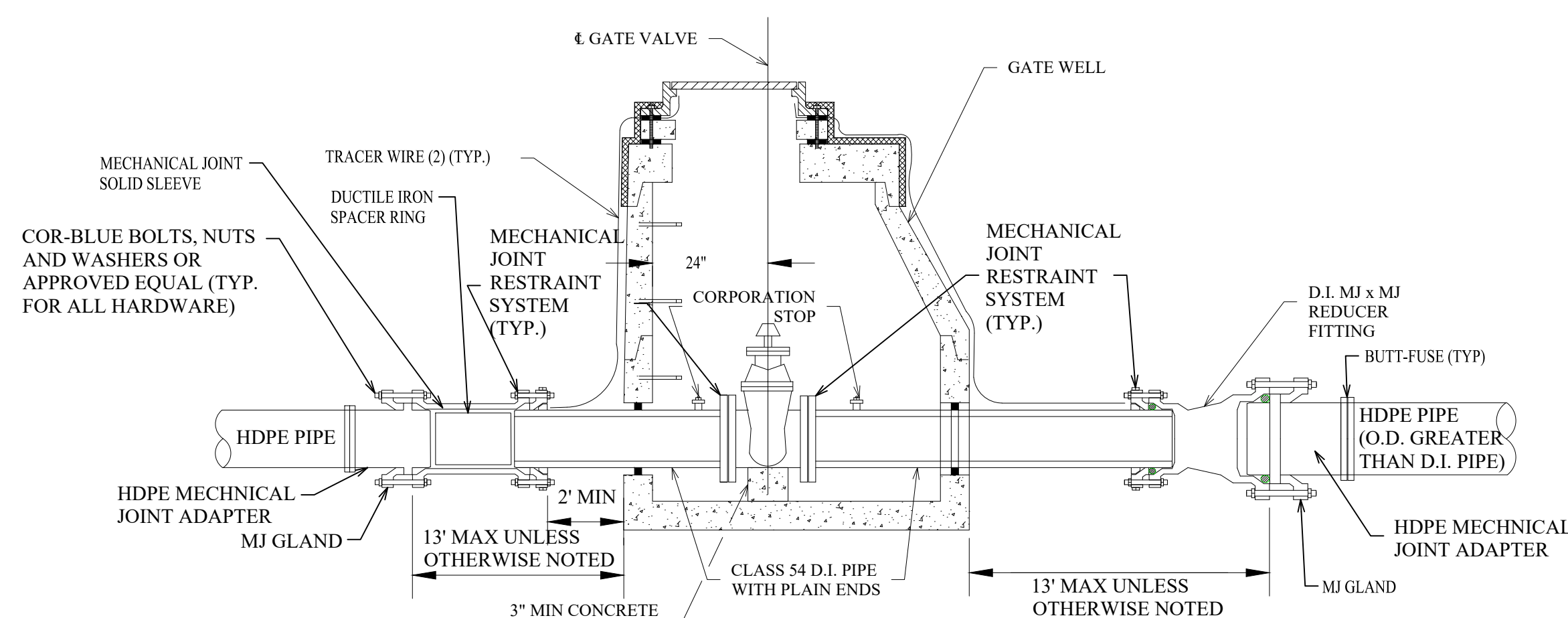
CONCRETE PRESSURE TAP VALVE & WELL ASSEMBLY W/ CONCRETE ENCASEMENT



SECTION A-A

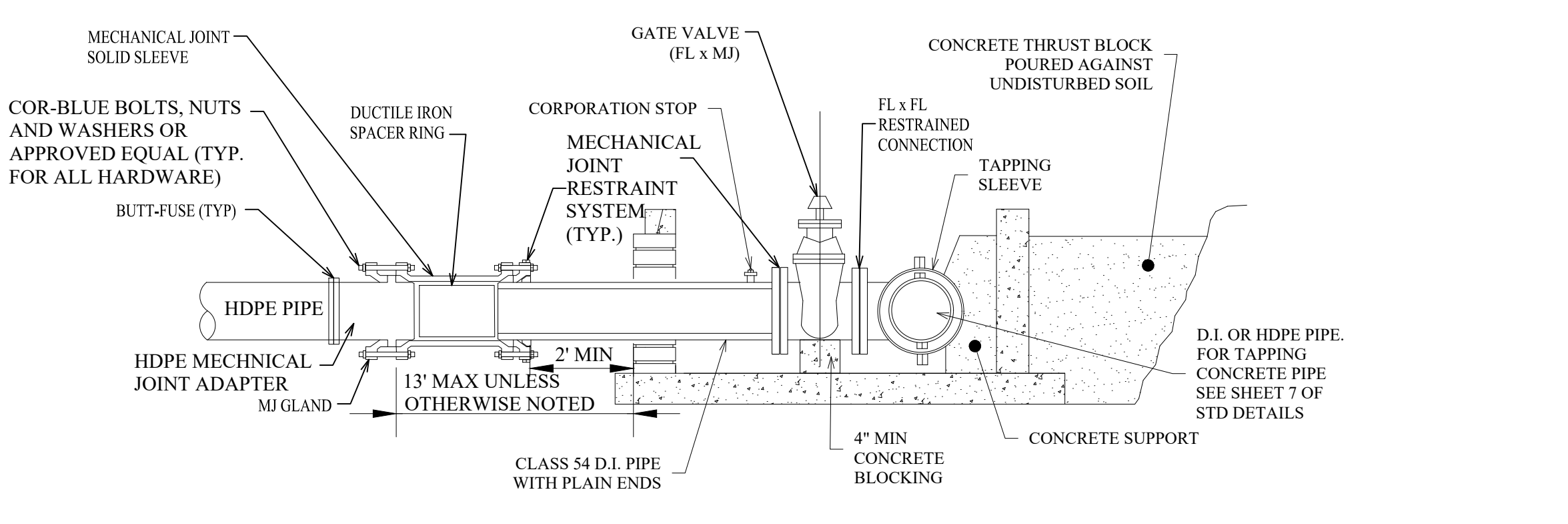
| PIPE SIZE X TAP SIZE | A | B | C | D | E |
|----------------------|------|--------|----|----------|-----|
| 16" X 4" | 1/4" | 7/8" | 6 | 14-1/16" | 24" |
| 16" X 6" | 1/4" | 1-1/8" | 6 | 14-5/16" | 24" |
| 16" X 8" | 1/4" | 1-1/8" | 6 | 14-5/16" | 24" |
| 16" X 10" | 1/4" | 1-3/8" | 7 | 14-9/16" | 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" |

CONCRETE TAPPING SLEEVE DETAILS



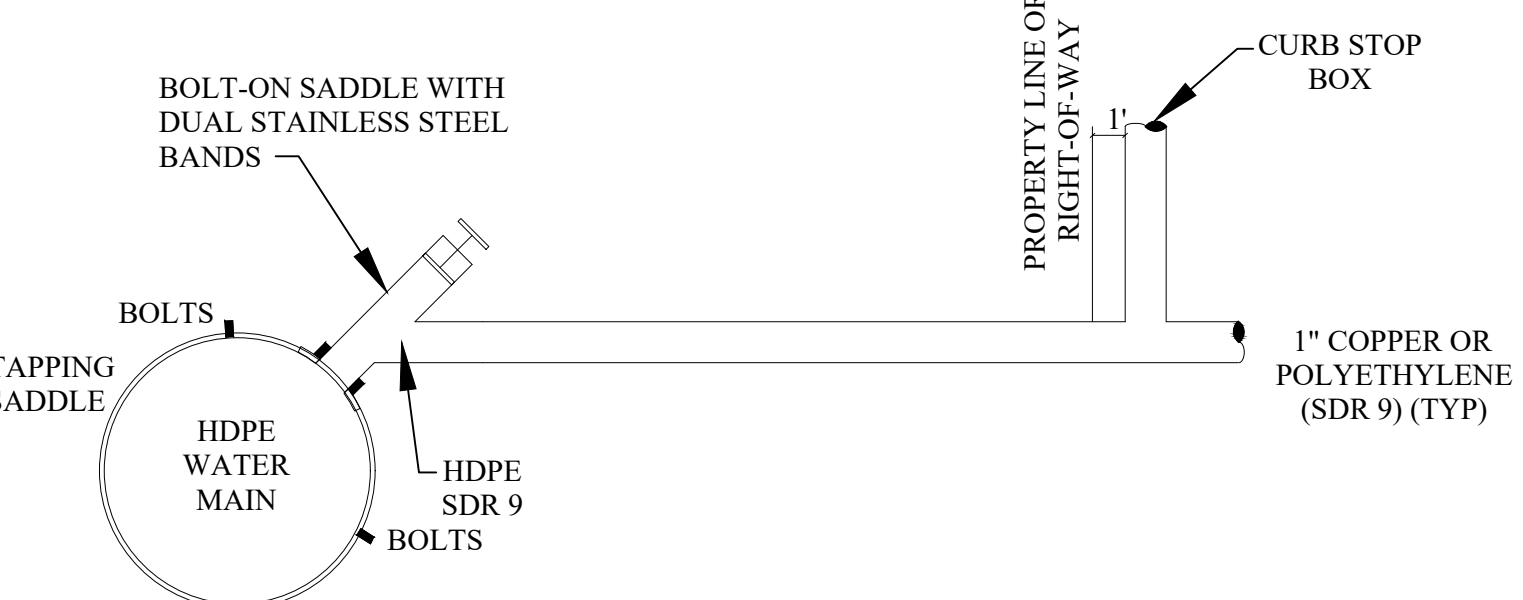
TYPICAL HDPE CONNECTION TO GATE VALVE

- 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.

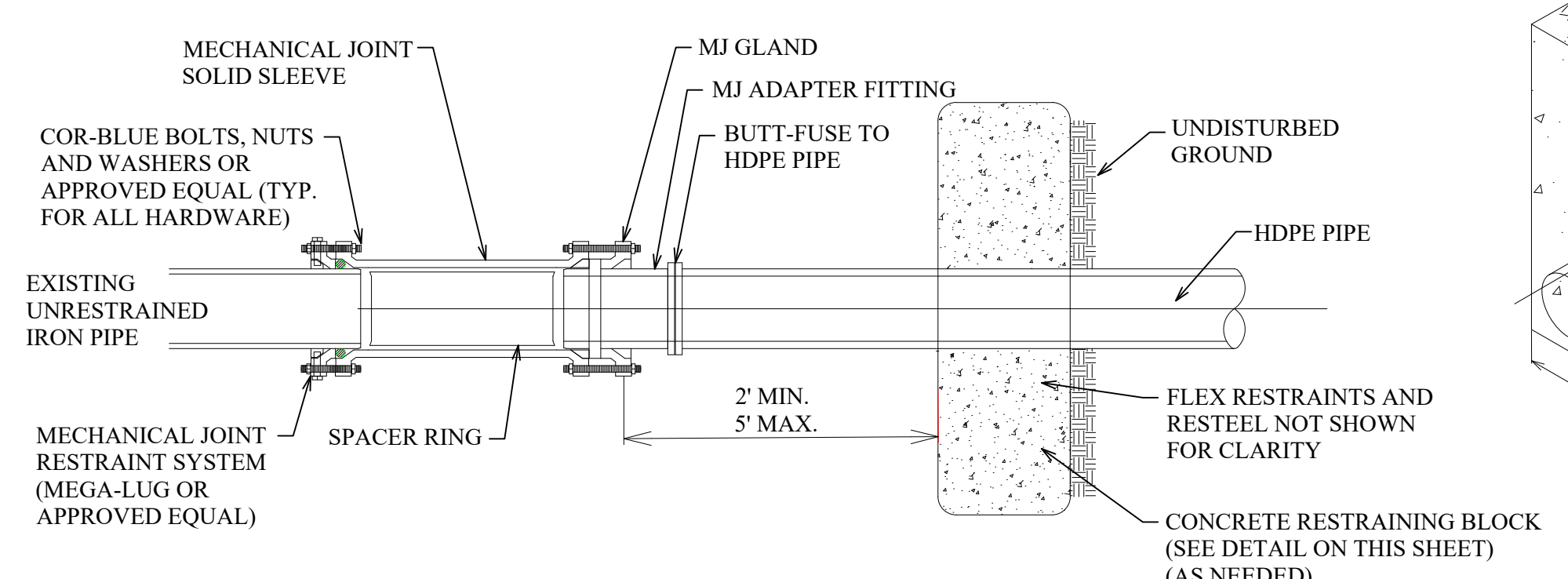


HDPE TAPPING SLEEVE, VALVE & WELL

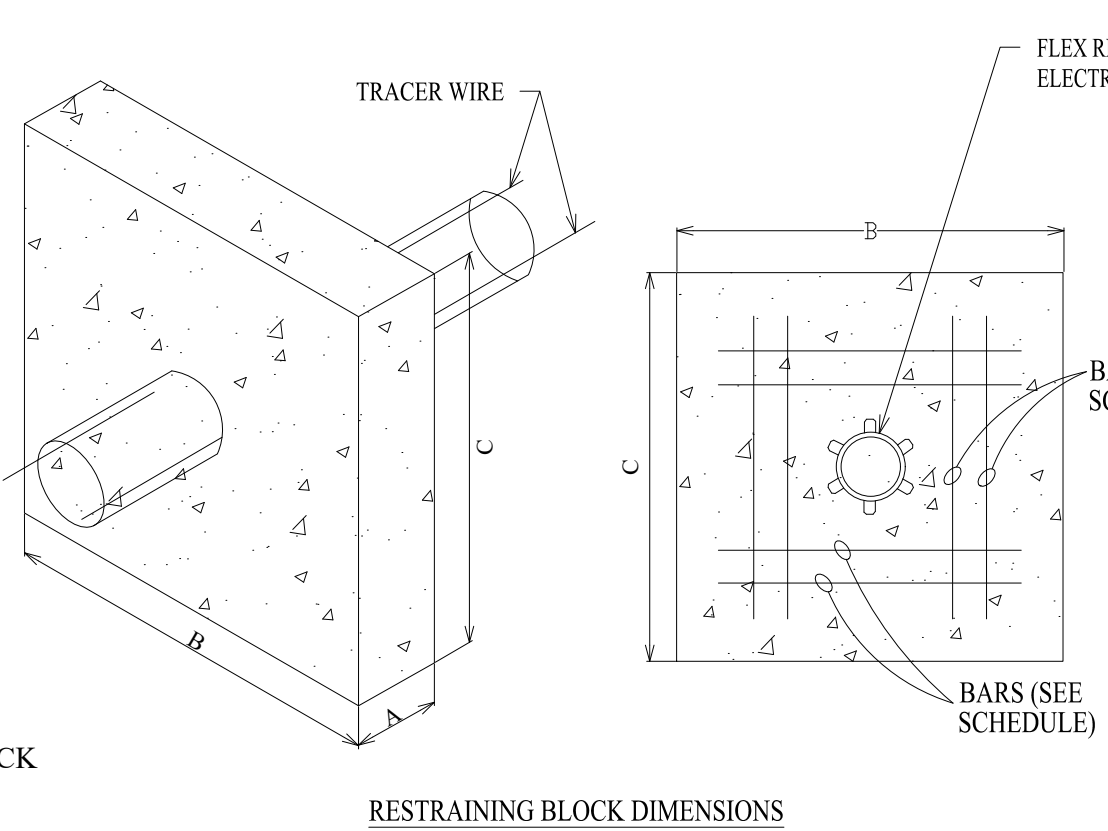
- NOTES:
 1. SEE SHEET 1 OF THE WATER MAIN STANDARD DETAIL SHEETS FOR GENERAL TAPPING SLEEVE VALVE AND WELL DETAILS.
 2. TAPPING SLEEVES FOR HDPE PIPE REQUIRE AN OUTLET SEAL GASKET AND SPRING WASHERS IN ADDITION TO THE REQUIREMENTS DETAILED IN SHEET 2 (JCM 452, ROMAC S8TH OR APPROVE EQUAL).



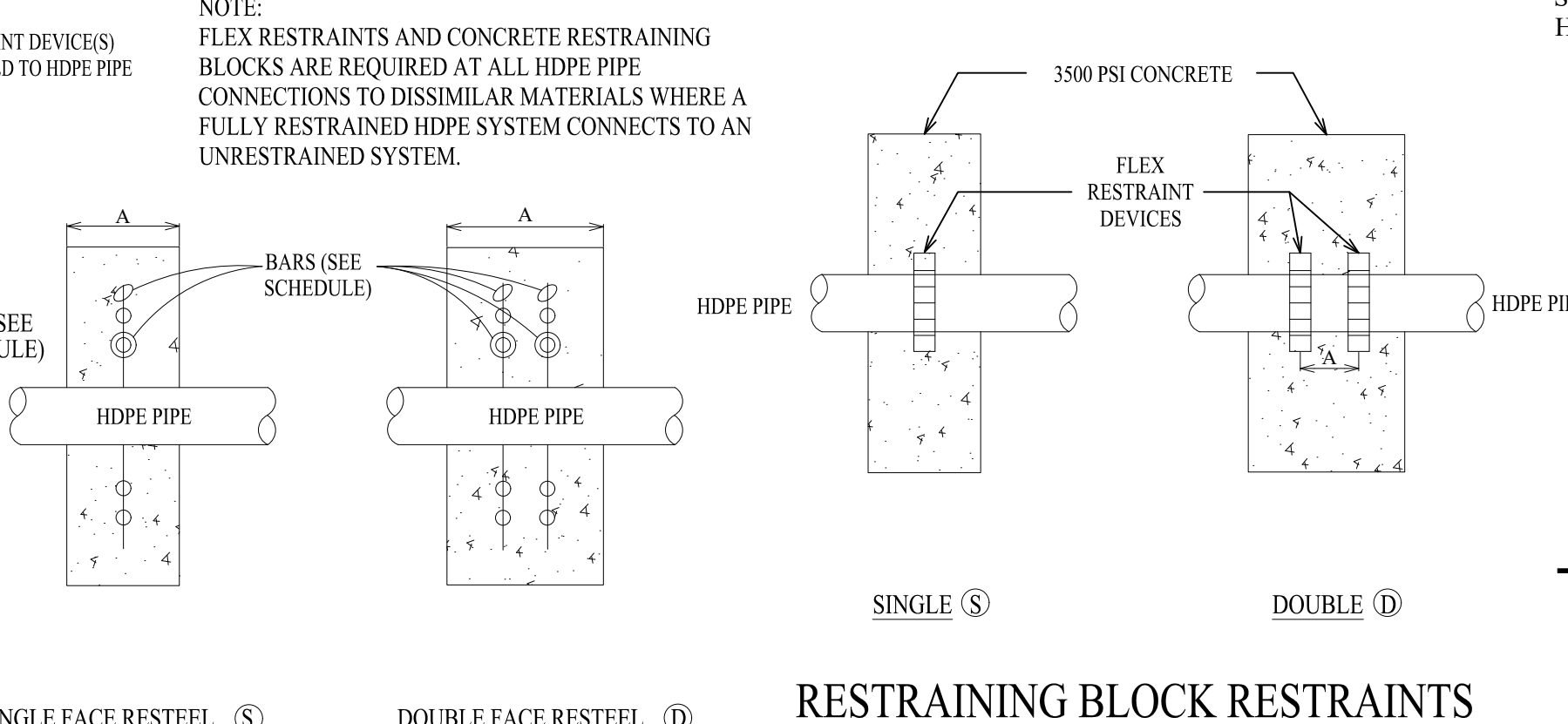
HOUSE LEAD DETAIL HDPE TO COPPER OR POLYETHYLENE (SDR 9)



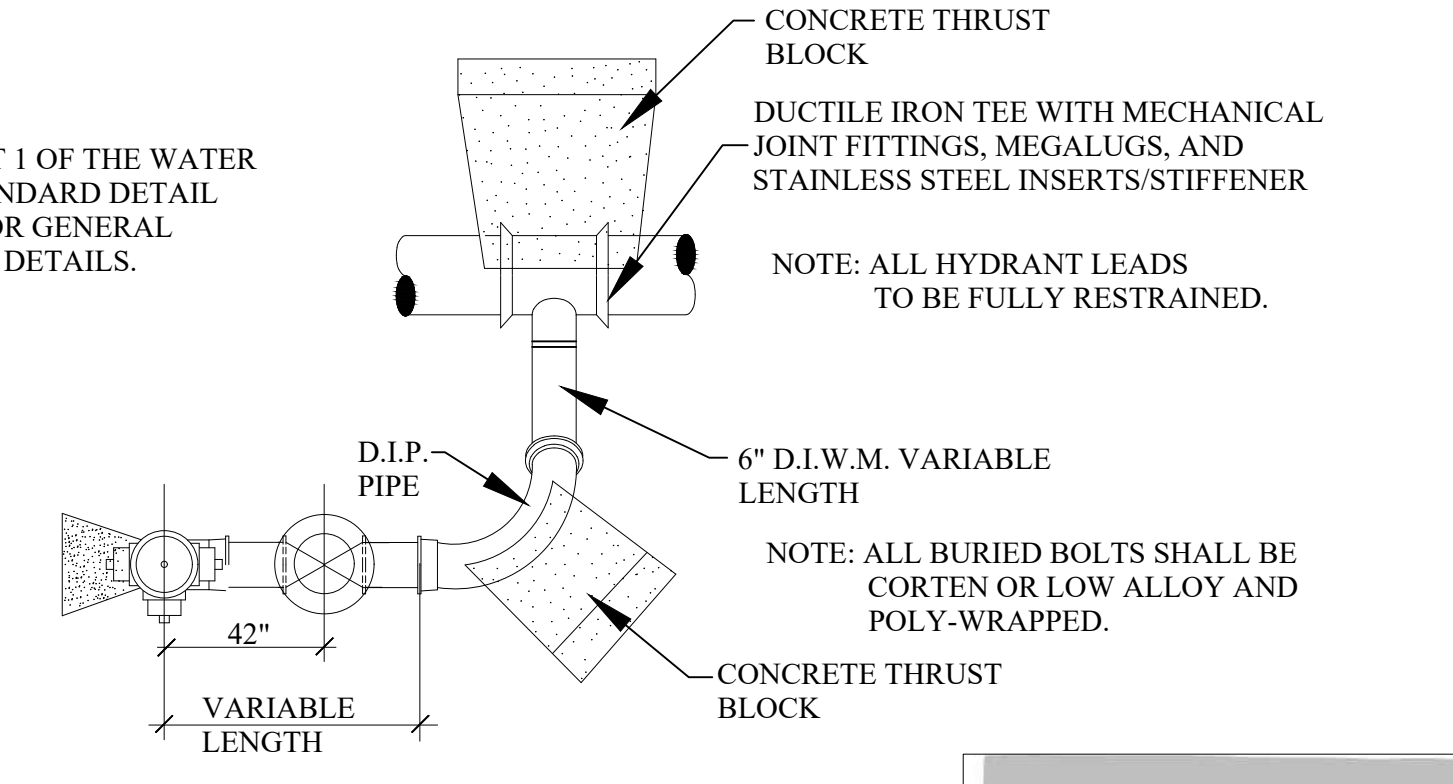
HDPE TO EXISTING WATER MAIN TRANSITION



RESTRAINING BLOCK RESTEEL



RESTRAINING BLOCK RESTRAINTS



PLAN HYDRANT SIDE OUTLET

- NOTE: SEE SHEET 1 OF THE WATER MAIN STANDARD DETAIL SHEETS FOR GENERAL HYDRANT DETAILS.
 NOTE: ALL HYDRANT LEADS TO BE FULLY RESTRAINED.
 NOTE: ALL BURIED BOLTS SHALL BE CORTEN OR LOW ALLOY AND POLY-WRAPPED.

| REVISIONS | DATE | APPROVED BY | NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION |
|-----------------------------------|-----------|--|---|
| REVISED HDPE TO EX. WM TRANSITION | 3/28/2023 | SEPTEMBER 23, 2019 PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES | |

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 |



site plan UPDATED.pdf Markup Summary

(2)

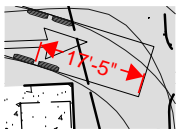
TS AND OTHER
PER CITY OF ANN
OFFIC CONTROL

Subject: Underground Utilities
Author: Angie
Date: 2/13/2025 9:06:52 AM
Status:

8. THE CONT
TRAFFIC C
ARBOR RE
DEVICES (

Subject: Underground Utilities
Author: Angie
Date: 2/13/2025 9:06:32 AM
Status:

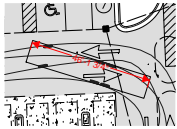
17'-5" (1)



Subject: Fire Department
Author: Ann Echols
Date: 2/10/2025 12:48:59 PM
Status:

17'-5"

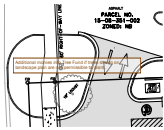
46'-1 3/4" (1)



Subject: Fire Department
Author: Ann Echols
Date: 2/10/2025 12:48:55 PM
Status:

46'-1 3/4"

Additional monies into Tree Fund if trees shown on landscape plan are not permissible to plant. (1)



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:31:38 PM
Status:

Additional monies into Tree Fund if trees shown on landscape plan are not permissible to plant.

Assessing

Yes (1)

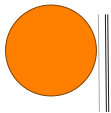


Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:33:52 PM
Status:

Assessing

Yes

BP (1)



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:01:38 PM
Status:

BP

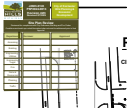
City File #23-0143 Section #08 in the lower right hand corner of each sheet (1)



Subject: Engineering Department
Author: Jason Boughton
Date: 2/10/2025 2:02:36 PM
Status:

City File #23-0143 Section #08 in the lower right hand corner of each sheet

City of Rochester Hills Planning & Economic Development (1)



Subject: Group
Author: macdonaldj
Date: 2/7/2025 11:09:31 AM
Status:

City of Rochester Hills Planning & Economic Development

For all conditional uses, a "Conditional Use Proposed Sign" shall be placed onsite no less than fifteen (15) days prior to the public



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:16:32 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 placed onsite by City Staff when the public hearing date/meeting has been confirmed by PED Staff.

Gasoline service stations require minimum of one (1) acre for development, gasoline station is existing (1)



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:17:21 PM
Status:

Gasoline service stations require minimum of one (1) acre for development, gasoline station is existing

Jason Rhoades 248-841-2435 RhoadesJa@RochesterHills.org (1)



Subject: Building Department
Author: J Rhoades
Date: 2/21/2025 11:38:22 AM
Status:

Jason Rhoades 248-841-2435
RhoadesJa@RochesterHills.org

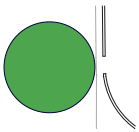
Landscape Bond - \$29,185 plus landscape inspections fees (1)



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:26:36 PM
Status:

Landscape Bond - \$29,185 plus landscape inspections fees

LB (1)



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:01:42 PM
Status:

LB

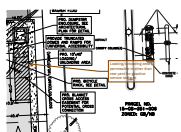
LIP (1)



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:01:32 PM
Status:

LIP

Loading/unloading area permissible in other than rear yard for gasoline service stations (1)



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:20:42 PM
Status:

Loading/unloading area permissible in other than rear yard for gasoline service stations

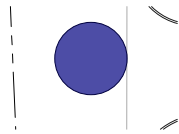
Maintenance. The owner, tenant, occupant or person responsible for any property which was the subject of an approved site plan s



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:14:54 PM
Status:

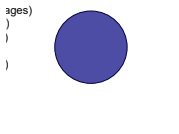
Maintenance. The owner, tenant, occupant or person responsible for any property which was the subject of an approved site plan shall maintain the property and the improvements thereon in accordance with the approved site plan or an approved amendment thereof. This responsibility shall include the duty to maintain in a condition substantially similar as approved, including the duty to replace, if necessary, all improvements such as, but not by way of limitation, all greenbelts, planting, walls, fences, paving, trash receptacles, handicapped parking areas, etc.

PCM (4)



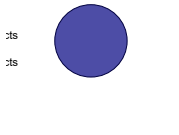
Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:01:48 PM
Status:

PCM



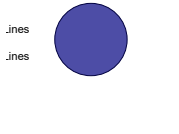
Subject: Group
Author: C.McLeod
Date: 2/24/2025 2:22:06 PM
Status:

PCM



Subject: Group
Author: C.McLeod
Date: 2/24/2025 2:22:10 PM
Status:

PCM



Subject: Group
Author: C.McLeod
Date: 2/24/2025 2:22:15 PM
Status:

PCM

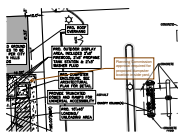
Planning Commission (1)



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 1:03:41 PM
Status:

Planning Commission

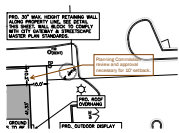
Planning Commission approval required for proposed dumpster location in side yard. (1)



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:21:20 PM
Status:

Planning Commission approval required for proposed dumpster location in side yard.

Planning Commission review and approval necessary for 10' setback. (1)



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:19:53 PM
Status:

Planning Commission review and approval necessary for 10' setback.

Received 2/7/2025 City of Rochester Hills Planning & Economic Development (16)



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:06:04 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:06:15 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:06:21 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:06:29 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:06:35 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:06:41 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:06:46 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:06:51 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:06:56 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:07:00 PM
Status:

Received
2/7/2025

City of Rochester Hills Planning & Economic
Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:07:05 PM
Status:

Received
 2/7/2025

City of Rochester Hills Planning & Economic
 Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:07:46 PM
Status:

Received
 2/7/2025

City of Rochester Hills Planning & Economic
 Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:07:38 PM
Status:

Received
 2/7/2025

City of Rochester Hills Planning & Economic
 Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:07:31 PM
Status:

Received
 2/7/2025

City of Rochester Hills Planning & Economic
 Development



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:07:26 PM
Status:

Received
 2/7/2025

City of Rochester Hills Planning & Economic
 Development

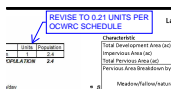


Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:07:20 PM
Status:

Received
 2/7/2025

City of Rochester Hills Planning & Economic
 Development

REVISE TO 0.21 UNITS PER OCWRC SCHEDULE (1)



Subject: Underground Utilities
Author: Angie
Date: 2/13/2025 9:40:10 AM
Status:

REVISE TO 0.21 UNITS PER OCWRC
 SCHEDULE

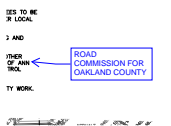
REVISE TO 944.0 SO THAT STRUCTURE IS MINIMUM 1 FT. BELOW FG AT CORNER OF LOT. (1)



Subject: Underground Utilities
Author: Angie
Date: 2/13/2025 9:38:36 AM
Status:

REVISE TO 944.0 SO THAT STRUCTURE IS
 MINIMUM 1 FT. BELOW FG AT CORNER OF
 LOT.

ROAD COMMISSION FOR OAKLAND COUNTY (1)



Subject: Underground Utilities
Author: Angie
Date: 2/13/2025 9:02:52 AM
Status:

ROAD COMMISSION FOR OAKLAND COUNTY

ROW Plantings will Require a RCOC Permit. If the Permit is Not Granted, the Value of Required Trees Shall be Placed in the City



Subject: Contractor
Author: C.McLeod
Date: 2/24/2025 2:23:59 PM
Status:

ROW Plantings will Require a RCOC Permit. If the Permit is Not Granted, the Value of Required Trees Shall be Placed in the City Tree Fund

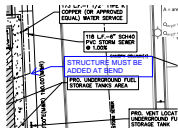
SP (1)



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:01:15 PM
Status:

SP

STRUCTURE MUST BE ADDED AT BEND (1)



Subject: Underground Utilities
Author: Angie
Date: 2/13/2025 9:40:47 AM
Status:

STRUCTURE MUST BE ADDED AT BEND

The applicant will need to submit a Land Improvement Permit (LIP) application with engineer's estimate, fee and construction plans



Subject: Engineering Department
Author: Jason Boughton
Date: 2/10/2025 2:02:36 PM
Status:

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

THERE IS A RESTRICTIVE COVENANT FROM 2006 ON THIS PROPERTY RECORDED AS LIBER 37796 PAGE 033 AS A RES



Subject: Underground Utilities
Author: Angie
Date: 2/13/2025 9:36:13 AM
Status:

THERE IS A RESTRICTIVE COVENANT FROM 2006 ON THIS PROPERTY RECORDED AS LIBER 37796 PAGE 033 AS A RESULT OF A UST LEAK. SIX (6) MONITORING WELLS WERE INSTALLED PER THE PLAN TO MONITOR THE CONTAMINATION. UNLESS DOCUMENTATION CAN BE PROVIDED THAT INDICATES A FULL REMEDIATION OF THE SITE HAS OCCURED IN ACCORDANCE WITH AN APPROVED CORRECTIVE ACTION PLAN, AND EGLE HAS ALLOWED FOR THE MONITORING WELLS TO BE REMOVED, THE LAND USE AND RESOURCE LIMITATIONS OUTLINED IN THE RESTRICTIVE COVENANT WILL APPLY AND SHALL BE ADHERED TO DURING CONSTRUCTION. A DUE CARE PLAN MAY BE REQUIRED AT TIME OF CONSTRUCTION PLAN REVIEW.

Total modification request of 19 trees. 8 Shade Trees 11 Ornamental Trees (1)



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:22:51 PM
Status:

Total modification request of 19 trees. 8 Shade Trees 11 Ornamental Trees

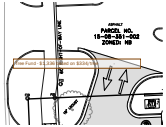
Total modification request of 19 trees. 8 Shade Trees 11 Ornamental Trees as a result of modification requests for perimeter parking



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:33:11 PM
Status:

Total modification request of 19 trees. 8 Shade Trees 11 Ornamental Trees as a result of modification requests for perimeter parking lot landscape and right of way landscaping along Walton and Adams Road.

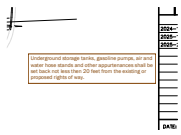
Tree Fund - \$1,336 based on \$334/tree (1)



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:31:34 PM
Status:

Tree Fund - \$1,336 based on \$334/tree

Underground storage tanks, gasoline pumps, air and water hose stands and other appurtenances shall be set back not less then 20



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:18:42 PM
Status:

Underground storage tanks, gasoline pumps, air and water hose stands and other appurtenances shall be set back not less then 20 feet from the existing or proposed rights of way.

Use of non masonry products should be limited on all facades. Use of masonry products should be aligned with surrounding building



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:25:19 PM
Status:

Use of non masonry products should be limited on all facades. Use of masonry products should be aligned with surrounding buildings and abutting RH Village

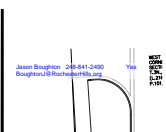
Yes (1)

Yes

Subject: Building Department
Author: J Rhoades
Date: 2/21/2025 11:38:12 AM
Status:

Yes

(9)



Subject: Engineering Department
Author: Jason Boughton
Date: 2/10/2025 2:04:48 PM
Status:



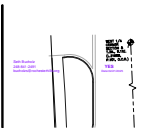
Subject: Fire Department
Author: Ann Echols
Date: 2/11/2025 3:22:06 PM
Status:



Subject: Natural Resources
Author: Matt Einheuser
Date: 2/12/2025 2:19:40 PM
Status:



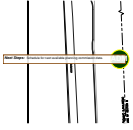
Subject: Traffic
Author: Keith
Date: 2/21/2025 9:40:38 AM
Status:



Subject: Jenny McGuckin - YES
Author: Seth Bucholz
Date: 2/21/2025 11:05:40 AM
Status:



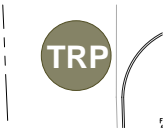
Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:01:19 PM
Status:



Subject: Group
Author: C.McLeod
Date: 2/24/2025 1:01:57 PM
Status:



Subject: Planning Department
Author: C.McLeod
Date: 2/24/2025 2:25:31 PM
Status:



Subject: Group
Author: C.McLeod
Date: 2/24/2025 2:31:03 PM
Status: