



# CITY OF ANN ARBOR ENGINEERING

## MADISON ST & MADISON PL WATERMAIN REPLACEMENT

RFP No. 23-08, FILE No. 2022026

**NOTES:**

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, THE CONTRACTOR SHALL CALL 811 OR 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE 1994 EDITION OF THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, ITS DETAILS, WHICH ARE INCLUDED BY REFERENCE, AND THIS PROJECT'S CONTRACT DOCUMENTS. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTOR FROM THIS REQUIREMENT.

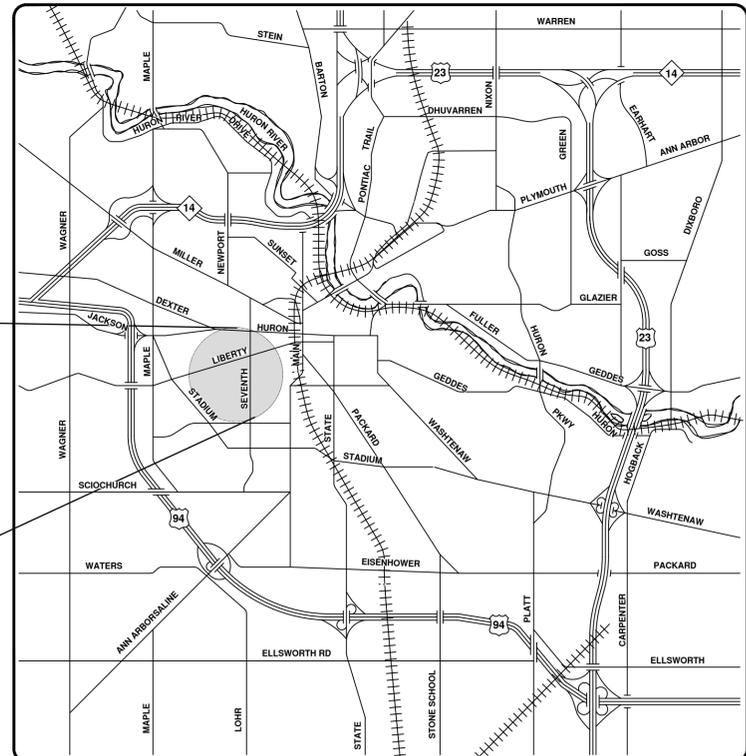
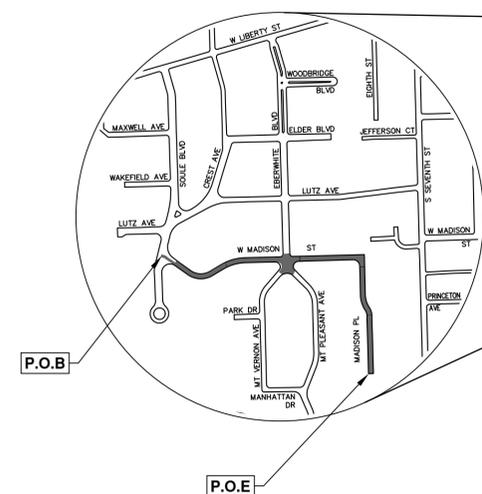


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| 00 | 2-28-2023 | EGLS PERMIT | DF/CC   |
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734.794.4410  
www.a2gov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
PROJECT DESCRIPTION AND LIMITS  
SCALE  
DRAWING No. 2022026-1  
SHEET No. 1 OF 31



VICINITY MAP

| SHEET LIST TABLE |                                 |
|------------------|---------------------------------|
| SHEET NUMBER     | SHEET TITLE                     |
| 1                | COVER SHEET                     |
| 2                | STANDARD NOTES                  |
| 3                | LEGEND                          |
| 4-7              | PEDESTRIAN ACCESS ROUTE DETAILS |
| 8-9              | TYPICAL SECTIONS                |
| 10-12            | DETAILS                         |
| 13               | TRAFFIC CONTROL                 |
| 14               | MADISON PLACE REMOVALS          |
| 15-16            | MADISON STREET REMOVALS         |
| 17-22            | WATER MAIN PLAN & PROFILE       |
| 23-25            | STORM SEWER PLAN & PROFILE      |
| 26-28            | INTERSECTION GRADING            |
| 29-30            | MADISON ST ROAD PLANS           |
| 31               | MADISON PLACE ROAD PLANS        |

PREPARED UNDER THE SUPERVISION OF  
  
 BRIAN SLIZEWSKI, P.E. - MI LICENSE No. 35654  
 PROJECT MANAGER  
 DATE 1/2023





**EXISTING LEGEND**

|               |  |                                                                                                            |
|---------------|--|------------------------------------------------------------------------------------------------------------|
| EX = EXISTING |  | WATER MAIN                                                                                                 |
|               |  | WATER MAIN ABANDONED                                                                                       |
|               |  | STORM SEWER                                                                                                |
|               |  | STORM SEWER ABANDONED                                                                                      |
|               |  | SANITARY SEWER                                                                                             |
|               |  | SANITARY SEWER ABANDONED                                                                                   |
|               |  | GAS MAIN                                                                                                   |
|               |  | GAS MAIN (DEAD)                                                                                            |
|               |  | ELECTRICAL OVER HEAD                                                                                       |
|               |  | ELECTRICAL UNDER GROUND                                                                                    |
|               |  | ELECTRICAL DUCT BANK                                                                                       |
|               |  | TELEPHONE OVER HEAD                                                                                        |
|               |  | TELEPHONE UNDER GROUND                                                                                     |
|               |  | TELEPHONE DUCT BANK                                                                                        |
|               |  | CABLE TV OVER HEAD                                                                                         |
|               |  | CABLE TV UNDER GROUND                                                                                      |
|               |  | FIBER OPTIC                                                                                                |
|               |  | FIBER OPTIC DUCT BANK                                                                                      |
|               |  | BOUNDARY                                                                                                   |
|               |  | BUILDING                                                                                                   |
|               |  | CENTERLINE OF DITCH                                                                                        |
|               |  | CENTERLINE/CROWN OF ROAD                                                                                   |
|               |  | CONTOUR MAJOR                                                                                              |
|               |  | CONTOUR MINOR                                                                                              |
|               |  | EDGE OF WATER                                                                                              |
|               |  | FLOODPLAIN                                                                                                 |
|               |  | FENCE                                                                                                      |
|               |  | GRAVEL                                                                                                     |
|               |  | GUARDRAIL                                                                                                  |
|               |  | STONE WALL                                                                                                 |
|               |  | R.O.W.                                                                                                     |
|               |  | TREELINE                                                                                                   |
|               |  | WETLAND                                                                                                    |
|               |  | EDGE OF BRUSH                                                                                              |
|               |  | HEDGE                                                                                                      |
|               |  | TREE (DECIDUOUS)                                                                                           |
|               |  | TREE (CONIFEROUS)                                                                                          |
|               |  | SHRUB (DECIDUOUS)                                                                                          |
|               |  | STUMP                                                                                                      |
|               |  | TREE TO REMAIN & PROTECT (DECIDUOUS)<br>CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREST HEIGHT (INCHES) X 10  |
|               |  | TREE TO REMAIN & PROTECT (CONIFEROUS)<br>CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREST HEIGHT (INCHES) X 10 |

**PROPOSED LEGEND**

|                 |  |                                 |
|-----------------|--|---------------------------------|
| PROP = PROPOSED |  | WATER MAIN                      |
|                 |  | STORM SEWER                     |
|                 |  | SANITARY SEWER                  |
|                 |  | FIBER OPTIC                     |
|                 |  | ELECTRICAL                      |
|                 |  | CENTERLINE OF DITCH             |
|                 |  | CENTERLINE OF ROAD              |
|                 |  | FENCE                           |
|                 |  | GRAVEL                          |
|                 |  | SILT FENCE                      |
|                 |  | PROTECTIVE FENCE                |
|                 |  | GUARDRAIL                       |
|                 |  | LOT/JUNIT                       |
|                 |  | CURB                            |
|                 |  | TEMPORARY GRADING PERMIT        |
|                 |  | CONTOUR MAJOR                   |
|                 |  | CONTOUR MINOR                   |
|                 |  | WATER EASEMENT                  |
|                 |  | STORM EASEMENT                  |
|                 |  | SANITARY EASEMENT               |
|                 |  | R.O.W.                          |
|                 |  | LIMITS OF CONSTRUCTION          |
|                 |  | LIMIT OF GRADING                |
|                 |  | STONE WALL                      |
|                 |  | DETECTABLE WARNING              |
|                 |  | ASPHALT                         |
|                 |  | CONCRETE                        |
|                 |  | SIDEWALK                        |
|                 |  | TREE (DECIDUOUS)                |
|                 |  | TREE (CONIFEROUS)               |
|                 |  | TREE TO BE REMOVED (DECIDUOUS)  |
|                 |  | TREE TO BE REMOVED (CONIFEROUS) |
|                 |  | STUMP TO BE REMOVED             |



|    |           |             |         |
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
MADISON ST & MADISON PL  
WATERMAIN REPLACEMENT  
LEGEND

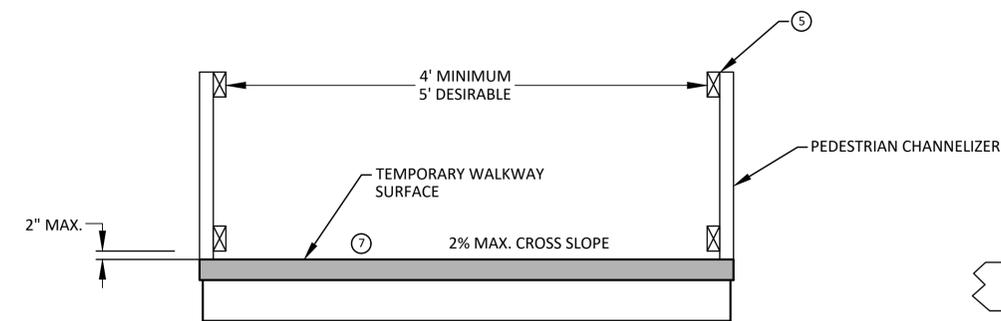
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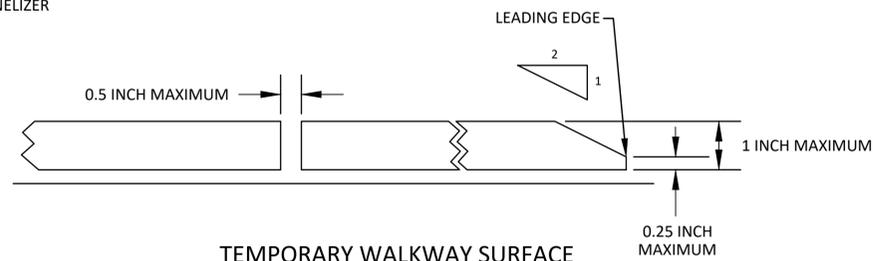
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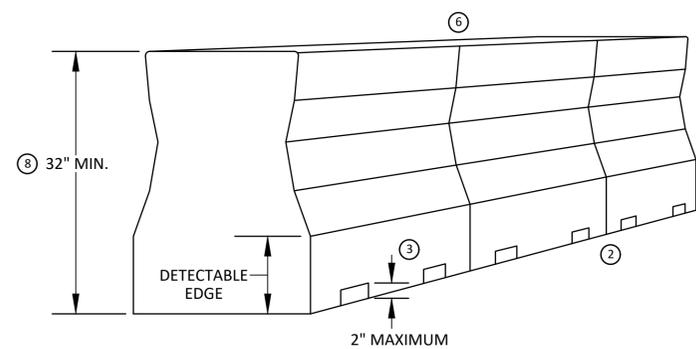
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
MADISON ST & MADISON PL  
WATERMAIN REPLACEMENT  
TPAR WALKWAY DEVICES



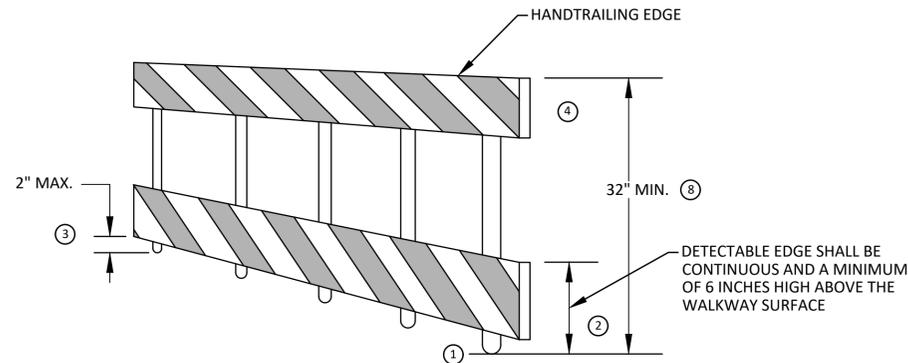
TEMPORARY PEDESTRIAN ACCESS



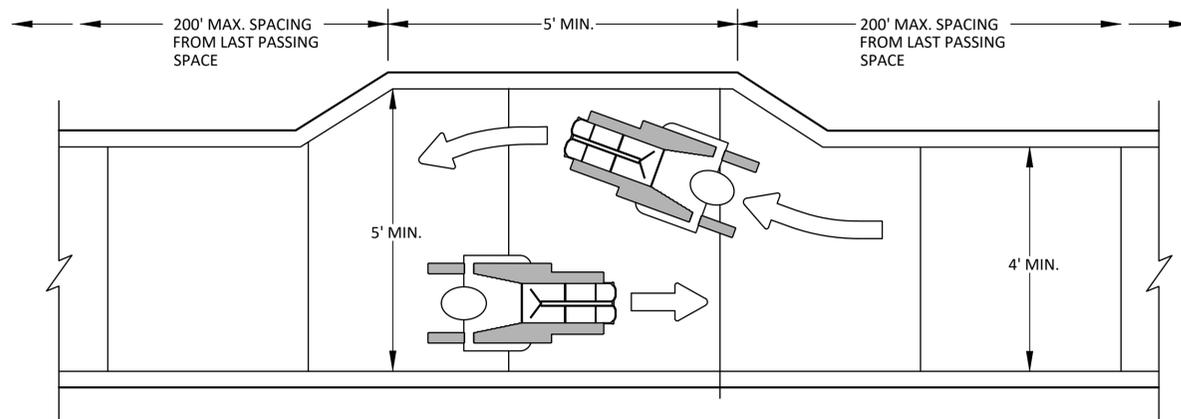
TEMPORARY WALKWAY SURFACE



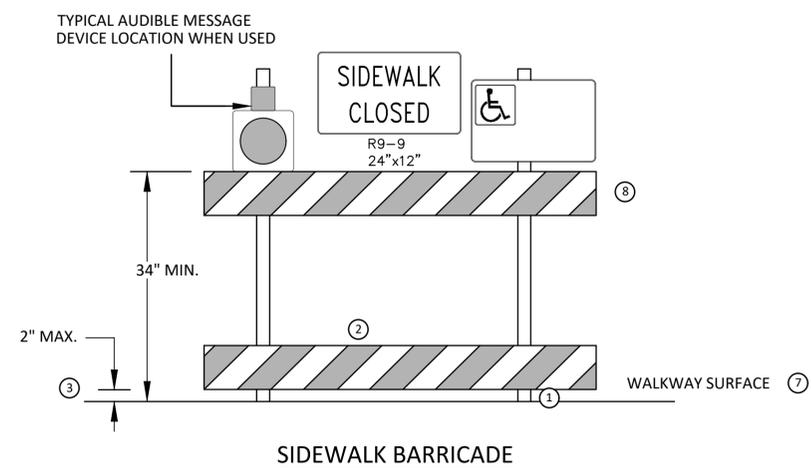
PEDESTRIAN CHANNELIZER USING A BARRIER (MINIMUM REQUIREMENTS)



PEDESTRIAN CHANNELIZER (MINIMUM REQUIREMENTS)



NARROW TEMPORARY PEDESTRIAN ACCESS ROUTE PASSING DETAIL



SIDEWALK BARRICADE

GENERAL NOTES

RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4 INCHES INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27 INCHES ABOVE THE WALKWAY SURFACE.

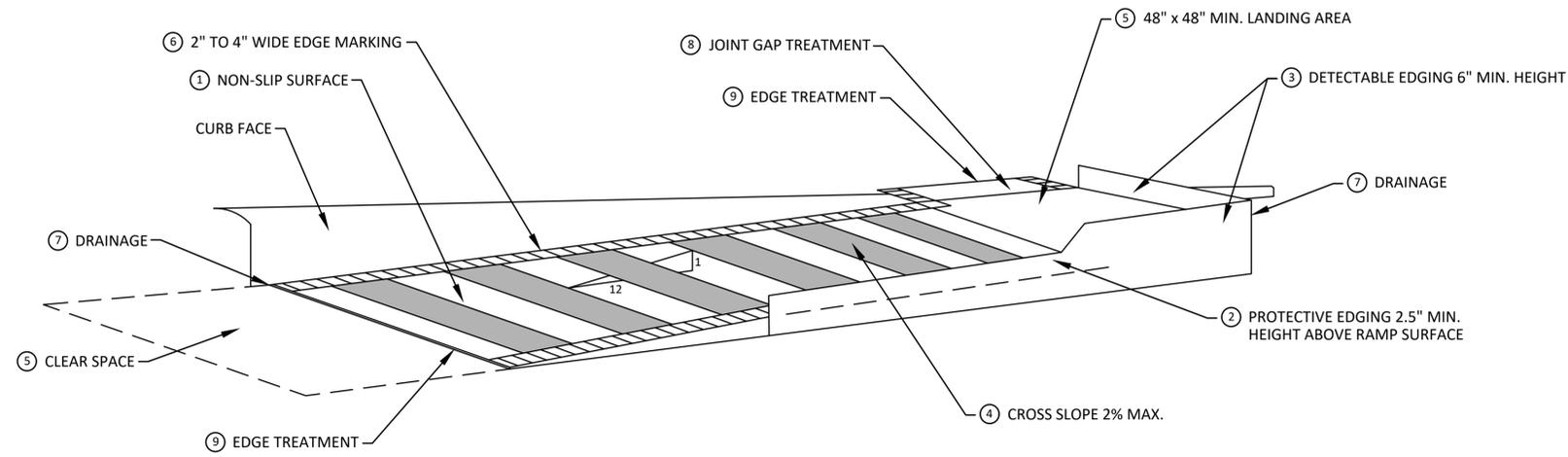
ANY PEDESTRIAN DEVICES USED TO PROVIDE POSITIVE PROTECTION FOR PEDESTRIANS OR WORKERS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS APPROPRIATE FOR THE BARRIER'S APPLICATION.

BARRICADES SHALL BE PLACED CONTINUOUSLY ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE BEING CLOSED.

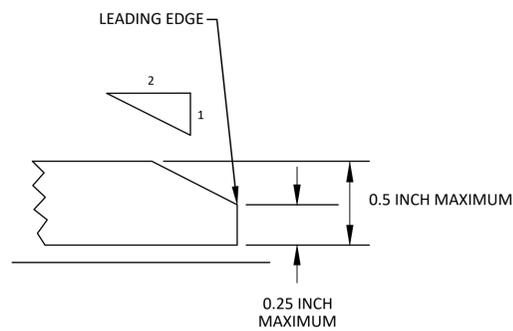
SPECIFIC NOTES

- ANY TRIPPING HAZARD IN THE WALKWAY NEEDS A DETECTABLE EDGE. BALLAST SHALL BE LOCATED BEHIND OR INTERNAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHALL NOT EXTEND INTO THE 48 INCH MINIMUM WALKWAY CLEAR SPACE AND SHALL NOT EXCEED 0.5 INCHES IN HEIGHT ABOVE THE WALKWAY SURFACE.
- DETECTABLE EDGES SHALL BE CONTINUOUS AND A MINIMUM OF 6 INCHES IN HEIGHT ABOVE WALKWAY SURFACE AND HAVE COLOR MARKINGS CONTRASTING WITH THE WALKWAY SURFACE.
- DEVICES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2 INCHES IS ALLOWED FOR DRAINAGE PURPOSES.
- PROVIDE A HANDRAIL ON BOTH SIDES OF THE RAMP IF THE RAMP IS NOT EXPOSED TO VEHICLE TRAFFIC AND HAS A TOTAL RISE GREATER THAN 6 INCHES, AND A LENGTH GREATER THAN 72 INCHES. - ENSURE THE HANDRAIL IS 1.25 AND 1.5 INCHES WIDE AND CONFIGURED TO BE A "GRASPABLE" CROSS-SECTION. SEE CONSTRUCTION SUBSECTION 2.A FOR ADDITIONAL DETAILS. WHEN THE RAMP IS EXPOSED TO TRAFFIC, IN LIEU OF HANDRAILS, USE A PROTECTIVE EDGE 2.5 INCHES MINIMUM HEIGHT ABOVE THE RAMP SURFACE OR 1:10 FLARE ON BOTH SIDES OF THE RAMP.
- ALL DEVICES SHALL BE FREE OF SHARP OR ROUGH EDGES, AND FASTENERS (BOLTS) SHALL BE ROUNDED TO PREVENT HARM TO HANDS, ARMS OR CLOTHING OF PEDESTRIANS.
- ALL DEVICES USED TO CHANNELIZE PEDESTRIAN FLOW SHOULD INTERLOCK SUCH THAT GAPS DO NOT ALLOW PEDESTRIANS TO STRAY FROM THE INTENDED CHANNELIZED PATH.
- A WALKWAY SURFACE SHALL BE FIRM, STABLE, AND SLIP RESISTANT. COMPACTED GRAVEL, AGGREGATE, OR SLAG MATERIALS ARE NOT ALLOWED.
- LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32 INCHES IN HEIGHT OR GREATER.

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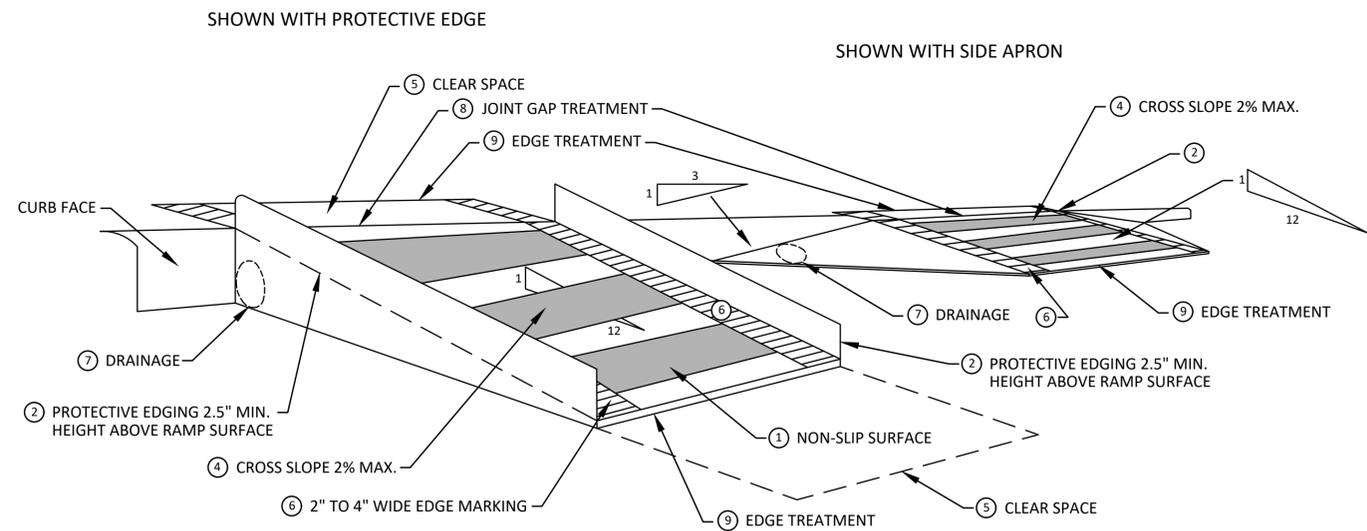
**TEMPORARY CURB RAMP  
PARALLEL TO CURB**



**EDGE TREATMENT**

**SPECIFIC NOTES**

- 1 CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. PROTECTIVE EDGING WITH A 2.5" MIN. HEIGHT ABOVE THE RAMP SHALL BE PLACED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3. PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- 2 DETECTABLE EDGING ANYTIME A HANDRAIL IS REQUIRED, AND ANYTIME THE PATH CHANGES DIRECTION. THIS INCLUDES A TURN ONTO THE RAMP FROM THE PATH. DETECTABLE EDGING MUST BEGIN A MAXIMUM OF 2.5" ABOVE THE RAMP SURFACE, AND EXTEND AT LEAST 6" ABOVE THE RAMP SURFACE. CONTRASTING COLOR SHALL BE PLACED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- 3 CURB RAMPS AND LANDINGS SHALL HAVE A 2% MAX. CROSS SLOPE.
- 4 CLEAR SPACE OF 48" x 48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- 5 THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR, 2" TO 4" WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
- 6 WATER FLOW IN THE GUTTER SYSTEM SHALL NOT BE IMPEDED.
- 7 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
- 8 CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHOULD BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2" HEIGHT.



**TEMPORARY CURB RAMP  
PERPENDICULAR TO CURB**



| REV. | DESCRIPTION | DATE      | BY    | CHKD. |
|------|-------------|-----------|-------|-------|
| 00   | EGLD PERMIT | 2-28-2023 | DF/CC | NB    |

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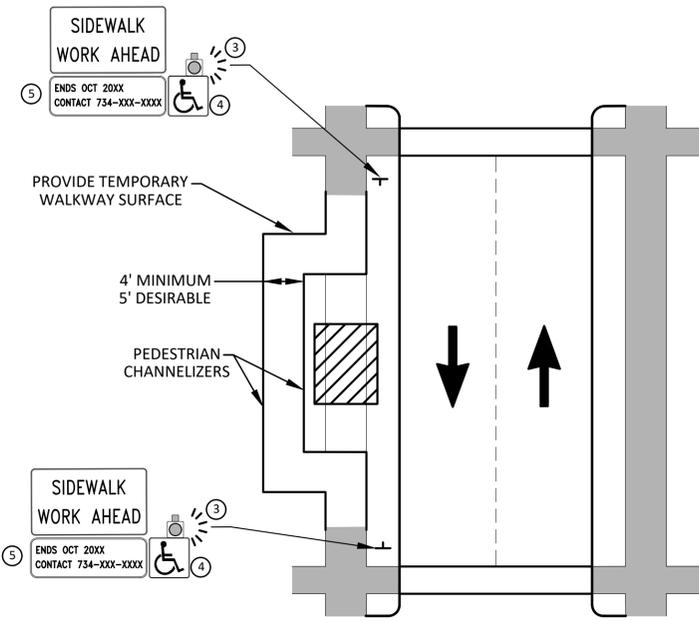


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
MADISON ST & MADISON PL  
WATERMAIN REPLACEMENT  
TPAR RAMPS

SCALE: N.T.S.  
DRAWING No. 2022026-5

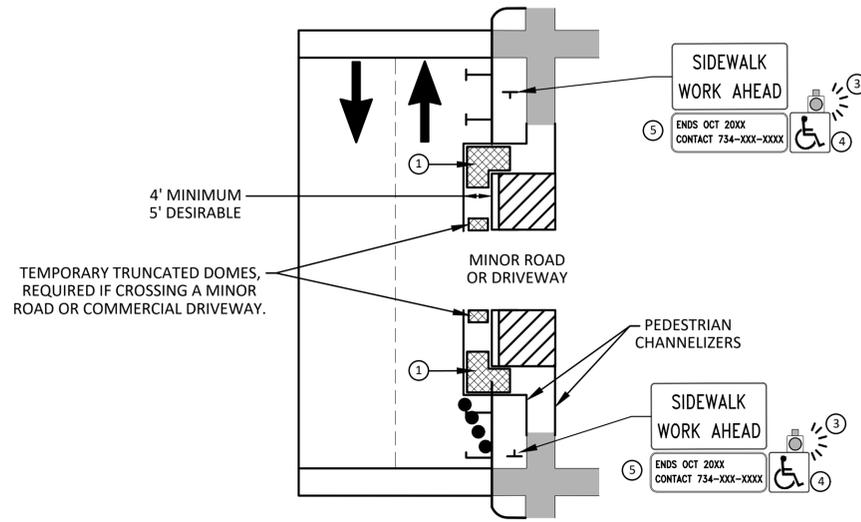
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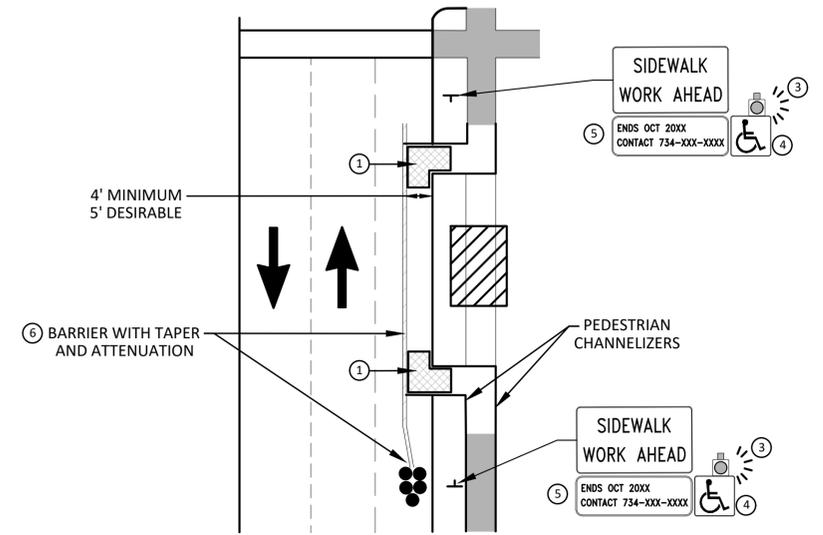


**BYPASS ON ADJACENT AVAILABLE  
RIGHT OF WAY  
BYPASS TYPE A**

NOTE: MAY ONLY BE USED ON ROADWAY WITH POSTED  
SPEED OF 45 MPH OR LESS.



**SIDEWALK BYPASS USING PARKING OR  
SHOULDER ON LOW SPEED ROADWAY  
BYPASS TYPE B**



**SIDEWALK BYPASS USING  
SHOULDER OR PARKING LANE ON  
HIGH SPEED ROADWAY  
BYPASS TYPE C**

**GENERAL NOTES**

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, THE CONTRACTOR SHALL PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. COMPACTED GRAVEL, AGGREGATE, OR SLAG MATERIALS ARE NOT ALLOWED. PROVIDE A FIRM, STABLE, AND SLIP RESISTANT TEMPORARY WALKWAY SURFACE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND.

THE PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED BY THE CITY OF ANN ARBOR. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE THIS WORK WITH THE ENGINEER A MINIMUM OF 72 HOURS (NOT INCLUDING WEEKENDS & HOLIDAYS) PRIOR TO THE BEGINNING OF WORK THAT REQUIRES A SIDEWALK CLOSURE.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN THE ENGINEER DETERMINES THAT THE CONTRACTOR'S OPERATIONS OR PLACEMENT OF TRAFFIC CONTROL DEVICES HAS CAUSED A SITUATION THAT THE VISIBILITY OF A TRAFFIC CONTROL DEVICE IS REDUCED ENOUGH TO CREATE A HAZARD, THE TRAFFIC CONTROL DEVICES SHALL BE DELINEATED WITH FLAGS OR OTHER ENGINEER-APPROVED DEVICES AT NO ADDITIONAL COST TO THE PROJECT.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS AS SHOWN ON THE PROJECT PLANS.

**SPECIFIC NOTES**

1. TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
2. S DEVICE TAPER 25 FEET LONG, RECOMMENDED WHEN THE CLOSED AREA WAS USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
3. AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE SHOULD BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.
4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHALL BE POSTED AND AN ALTERNATE ROUTE SHALL BE POSTED WHEN THE PRIMARY TEMPORARY PEDESTRIAN DETOUR IS NON-COMPLIANT TO TPAR STANDARDS.
5. TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHALL INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.
6. SEE MMUTCD FOR GUIDANCE ON PLACEMENT AND USAGE OF BARRIER.

**LEGEND**

- SIGN
- ▨ EXISTING PEDESTRIAN SURFACE
- ▩ WORK AREA
- ▤ PEDESTRIAN CHANNELIZATION DEVICE
- BARRIER
- SIDEWALK BARRICADE
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DEVICE



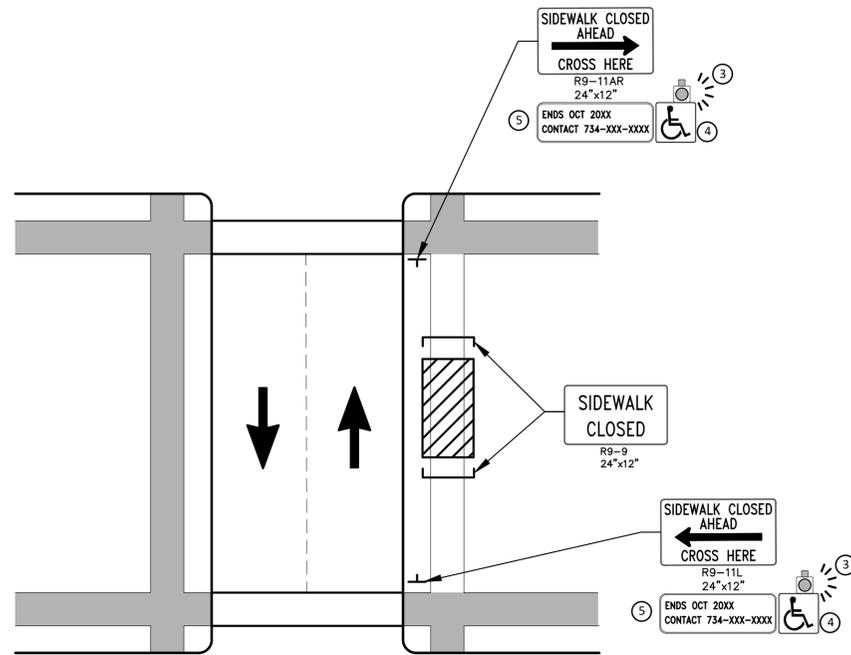
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| NO | DATE      | DESCRIPTION | REV.    |
| 00 | 2-28-2023 | DATE        | DRAWN   |
| 01 |           | DATE        | CHECKED |

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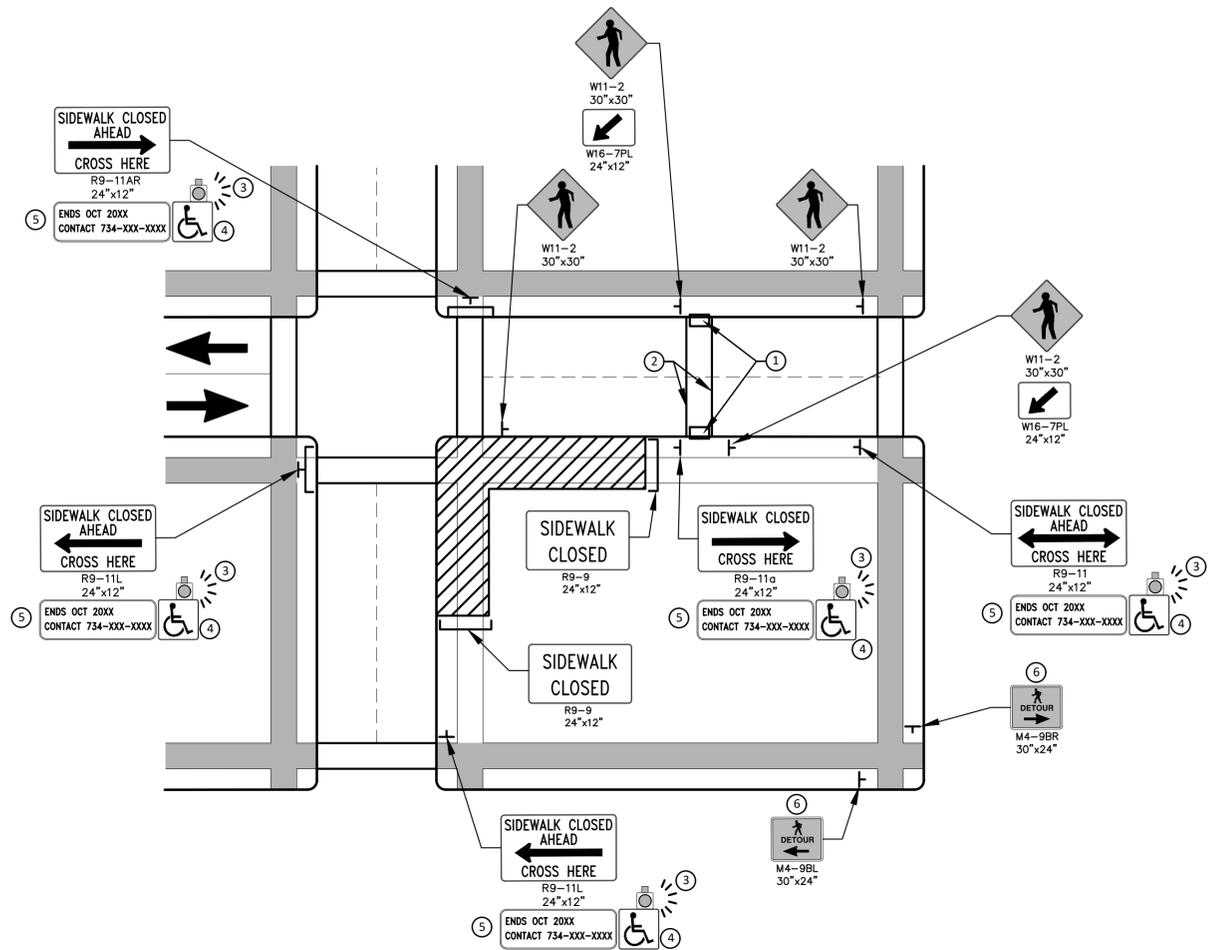


**CITY OF ANN ARBOR - ENGINEERING**  
**MADISON ST & MADISON PL**  
**WATERMAIN REPLACEMENT**  
ALTERNATE PEDESTRIAN ROUTE (APR) BYPASS

SCALE: N.T.S.  
DRAWING No. 2022026-6



PEDESTRIAN DETOUR USING OPPOSITE SIDE OF STREET



OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS  
(FOR CORNER SIDEWALK CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK)

**GENERAL NOTES**

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POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN THE ENGINEER DETERMINES THAT THE CONTRACTOR'S OPERATIONS OR PLACEMENT OF TRAFFIC CONTROL DEVICES HAS CAUSED A SITUATION THAT THE VISIBILITY OF IS REDUCED ENOUGH TO CREATE A HAZARD, THE TRAFFIC CONTROL DEVICES SHALL BE DELINEATED WITH FLAGS OR OTHER ENGINEER-APPROVED DEVICES AT NO ADDITIONAL COST TO THE PROJECT.

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3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS AS SHOWN ON THE PROJECT PLANS.

**SPECIFIC NOTES**

1. TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
2. TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
3. AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE SHALL BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.
4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHALL BE POSTED AND AN ALTERNATE ROUTE SHALL BE POSTED WHEN THE PRIMARY TEMPORARY PEDESTRIAN DETOUR IS NON-COMPLIANT TO TPAR STANDARDS.
5. TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHALL INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.
6. PEDESTRIAN DETOUR TRAILBLAZING SIGNS SHALL BE USED IF THE PEDESTRIAN DETOUR IS IN A LOCATION OTHER THAN ACROSS THE STREET FROM THE SIDEWALK CLOSURE.

**PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES**

1. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MMUTCD, PART 6.
2. PEDESTRIAN ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES, BUILDINGS, RESIDENCES AND COMMERCIAL PROPERTIES AT ALL TIMES. THIS MAY INCLUDE TEMPORARY WALKWAYS SPANNING THE CONSTRUCTION AREA.
3. IF SIDEWALKS ARE CLOSED, A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) SHALL BE PROVIDED ON THE SAME SIDE OF THE ROAD AS THE CLOSED SIDEWALK, IF POSSIBLE. SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE TPAR SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4 FEET. IF THE TPAR IS LESS THAN 5 FEET IN WIDTH, A 5 FOOT BY 5 FOOT PASSING SPACE SHALL BE PROVIDED AT LEAST EVERY 200 FEET. THE SURFACE OF THE TPAR SHALL BE SMOOTH AND CONTINUOUS FOR THE LENGTH OF THE TPAR. THE TPAR SHALL MAINTAIN THE SAME LEVEL OF ACCESSIBILITY AND DETECTABILITY AS THE FACILITY THAT IS BEING CLOSED. THE TPAR SHALL NOT LEAD PEDESTRIANS INTO CONFLICTS WITH VEHICLES, EQUIPMENT, OR CONSTRUCTION OPERATIONS.
4. IF THE TPAR IS ADJACENT TO MOVING TRAFFIC, CONSTRUCTION OPERATIONS/EQUIPMENT, OR DROP-OFFS, THEN CRASH WORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF NCHRP 350 AND THE MMUTCD SHALL BE USED.
5. THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION MATERIALS, EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.
6. THE CONTRACTOR'S OPERATIONS SHALL NOT OCCUPY SIDEWALKS EXCEPT WHERE PROPER PROTECTION AND A TPAR HAVE BEEN PROVIDED.
7. WHEN DIRECTED BY THE ENGINEER, OR STATED ON THE PLANS, THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN TRAFFIC CONTROL PLAN FOR REVIEW AND WRITTEN APPROVAL BY THE ENGINEER A MINIMUM OF THREE WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN ACCESS THROUGHOUT THE CONSTRUCTION AREA. THIS PLAN SHALL PROVIDE THE LOCATION AND DETAILS OF TEMPORARY CONSTRUCTION SIGNING, MARKINGS, BARRICADES, CHANNELIZING DEVICES, TPARS AND METHODS TO MAINTAIN ACCESS TO ADJACENT PROPERTIES, BUSINESSES, RESIDENCES, ETC. NO WORK SHALL BE ALLOWED TO BEGIN UNTIL THIS PLAN IS APPROVED BY THE ENGINEER IN WRITING.
8. PROVISION OF THE TPAR AND ALL OF ITS ELEMENTS, INCLUDING BUT NOT LIMITED TO, CREATION OF THE TEMPORARY PEDESTRIAN CONTROL PLAN, SIGNS, CHANNELIZING DEVICES, BARRICADES, TEMPORARY PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "MINOR TRAF DEVICES."

**LEGEND**

- SIGN
- EXISTING PEDESTRIAN SURFACE
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- BARRIER
- SIDEWALK BARRICADE
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DEVICE



|    |     |             |           |       |         |
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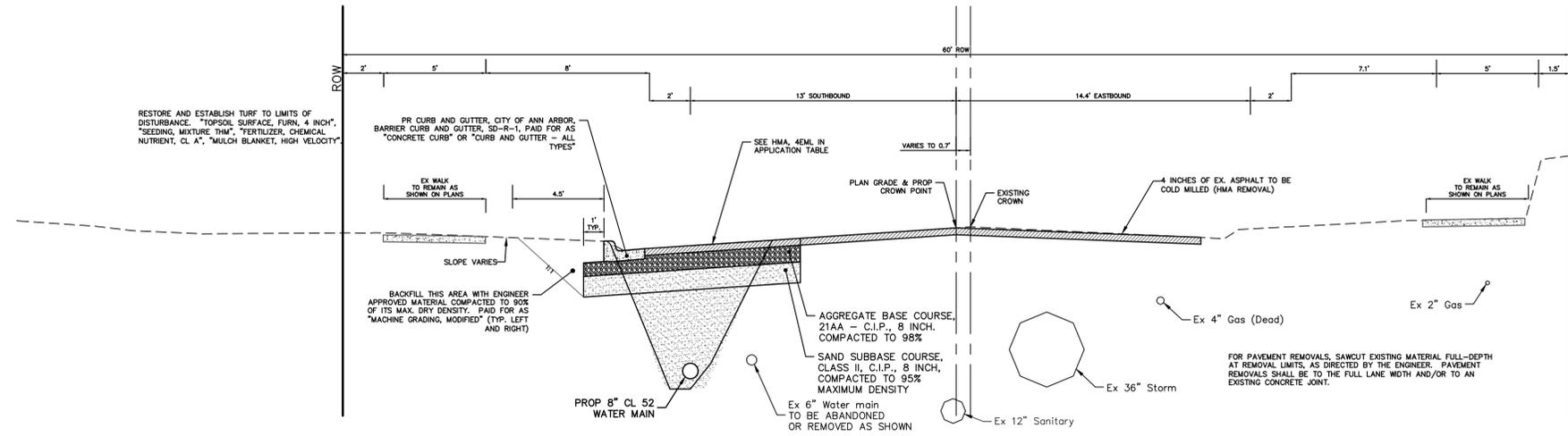
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MADISON ST & MADISON PL  
WATERMAIN REPLACEMENT  
ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR

SCALE: N.T.S.  
DRAWING No. 2022026-7

SHEET No.

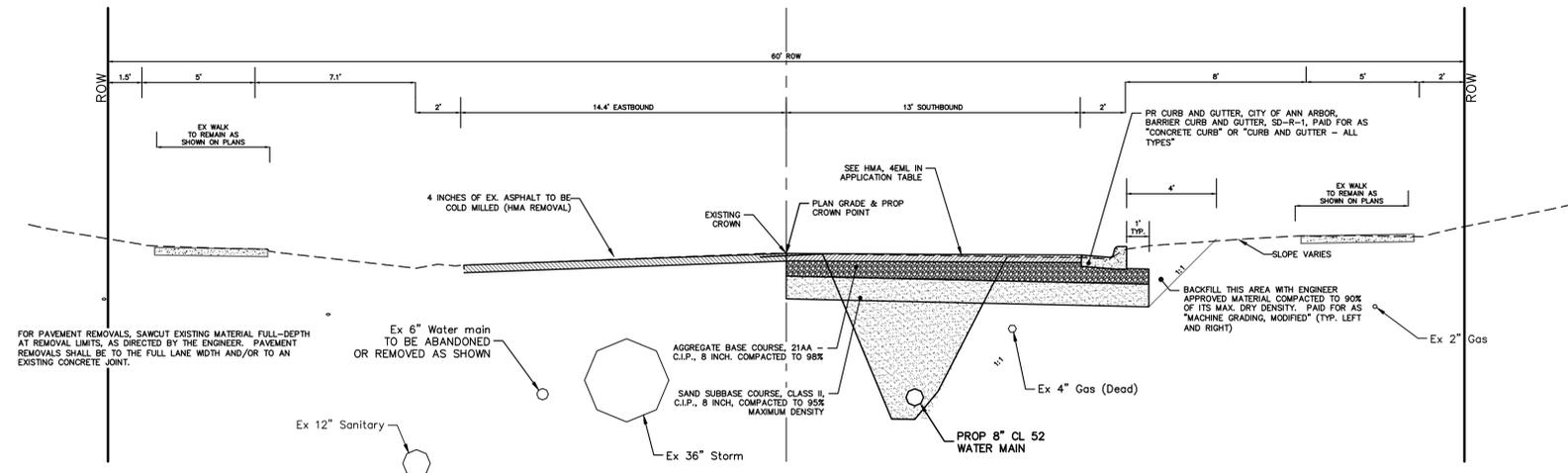


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**MADISON PLACE  
PROPOSED TYPICAL SECTION**  
STA. 35+54 TO STA. 38+08  
N.T.S.

| HMA APPLICATION ESTIMATE |         |                     |                    |            |          |                             |
|--------------------------|---------|---------------------|--------------------|------------|----------|-----------------------------|
| HMA PAVEMENT             | HMA MIX | RATE OF APPLICATION | THICKNESS (INCHES) | AWI (MIN.) | BINDER   | LOCATION/NOTES              |
| HMA PAVEMENT TOP         | 4EL     | 220 LB/SYD          | 2                  | 220 (TOP)  | PG 58-28 | TOP COURSE                  |
| HMA PAVEMENT LEVELING    | 4EL     | 220 LB/SYD          | 2                  | -          | PG 58-28 | LEVELING COURSE             |
| HMA APPROACH TOP         | 4EL     | 220 LB/SYD          | 2                  | 220 (TOP)  | PG 58-28 | TOP COURSE                  |
| HMA APPROACH LEVELING    | 4EL     | 220 LB/SYD          | 2                  | -          | PG 58-28 | LEVELING COURSE             |
| HAND PATCHING            | 4EL     | 0 - 440 LB/SYD      |                    |            | PG 58-28 | HAND PATCHING               |
| ASPHALT EMULSION         | SS-1h   | 0.05 - 0.15 GAL/SYD | -                  | -          | -        | INCLUDE IN COST OF HMA ITEM |



**MADISON PLACE  
TYPICAL SECTION**  
POB TO STA. 35+54  
N.T.S.



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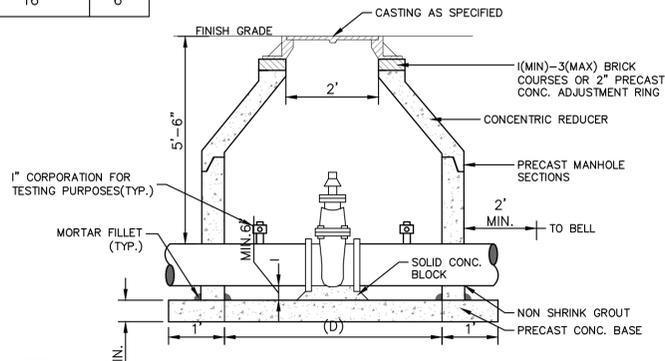
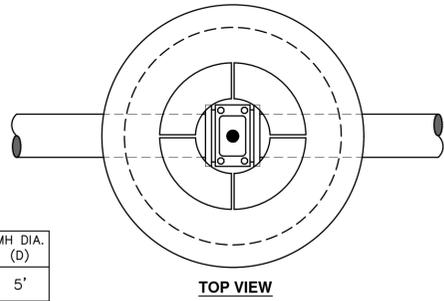
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WATERMAIN REPLACEMENT  
MADISON PLACE TYPICAL SECTIONS

SCALE PLAN: NTS  
DRAWING No. 2022026-9

| PIPE SIZE   | MH DIA. (D) |
|-------------|-------------|
| 12" OR LESS | 5'          |
| 16"         | 6'          |



- NOTES:
1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE
  2. ALL JOINTS SHALL BE MADE WATER TIGHT WITH RUBBER GASKET JOINTS
  3. NO STEPS ARE PERMITTED
  4. MANHOLE SECTIONS SHALL MEET ASTM C-478

**GATE WELL FOR MAIN 16" & SMALLER SD-W-3**

**MINIMUM STANDARDS**

THE MDOT GRADE PI OR P-NC CONCRETE AT THE FITTING FACE SHALL EXTEND TO WITHIN 2 INCHES OF THE BELL AND SHALL EXTEND FROM THE FITTING FACE A MINIMUM OF 2 FEET TO THE UNDISTURBED SOLID GROUND.

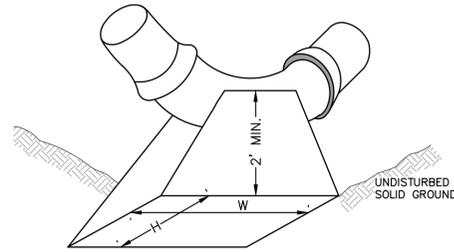
THE DIMENSIONS OF THE THRUST BLOCK AT THE FACE OF THE UNDISTURBED SOLID GROUND SHALL BE AS SHOWN IN THE TABLE BELOW.

IF THERE ISN'T SUFFICIENT SPACE FOR THE INSTALLATION OF THE THRUST BLOCK WITHOUT INTERFERENCE WITH OTHER SERVICES, ANOTHER ARRANGEMENT SATISFACTORY TO THE ENGINEER SHALL BE USED.

| FITTINGS I.D. | PLUG TEE CROSS |     | BENDS |     |     |     |      |     |      |     | HYDRANT |     |
|---------------|----------------|-----|-------|-----|-----|-----|------|-----|------|-----|---------|-----|
|               | W              | H   | 90°   |     | 45° |     | 22½° |     | 11¼° |     | W       | H   |
| 4             | 1.0            | 1.0 | 1.0   | 1.0 | 1.0 | 1.0 | 1.0  | 1.0 | 1.0  | 1.0 | 2.0     | 1.5 |
| 6             | 2.0            | 1.5 | 2.0   | 2.0 | 2.0 | 2.0 | 1.0  | 1.0 | 1.0  | 1.0 | 2.5     | 2.0 |
| 8             | 2.5            | 2.0 | 3.5   | 2.0 | 2.0 | 2.0 | 2.0  | 1.0 | 1.0  | 1.0 | 2.5     | 2.0 |
| 12            | 3.5            | 3.0 | 5.5   | 3.0 | 3.5 | 2.5 | 2.0  | 2.0 | 2.0  | 1.0 |         |     |
| 16            | 6.0            | 3.5 | 6.0   | 4.0 | 5.0 | 3.0 | 3.5  | 2.5 | 2.0  | 2.0 |         |     |

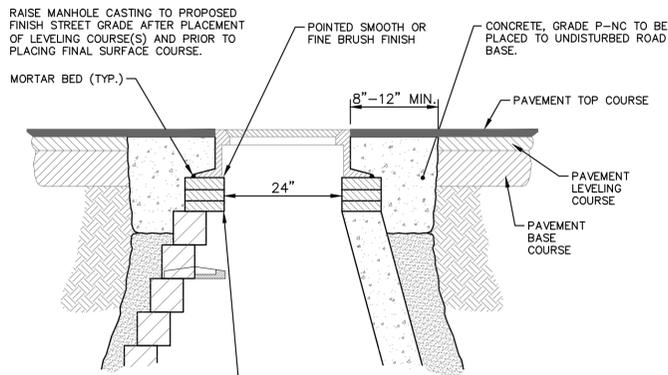
FOR FITTING SIZES LARGER THAN 16", THRUST BLOCK DIMENSIONS SHALL BE AS SPECIFIED BY ENGINEER.

W = WIDTH IN FEET  
H = HEIGHT IN FEET



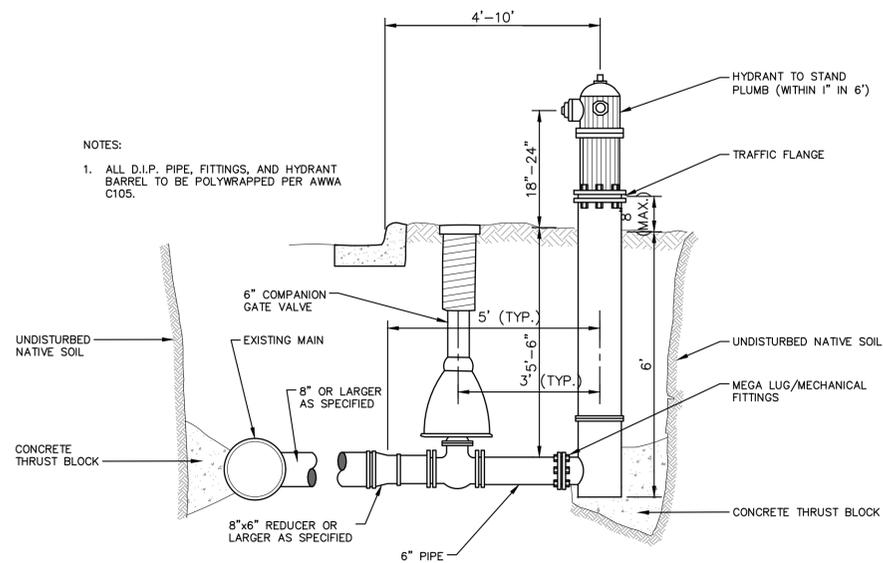
- NOTE:
- THESE ARE MINIMUM STANDARDS. WHERE SOIL CONDITIONS DICTATE, ADJUSTMENTS IN SIZE SHALL BE MADE AS DIRECTED BY THE PUBLIC SERVICES AREA ADMINISTRATOR.

**THRUST BLOCK SD-W-2**



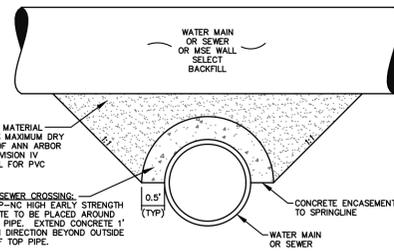
- NOTE:
- IF MANHOLE WILL BE PLACED IN GRAVEL ROAD, CASTING TO BE SET 6" TO 8" BELOW ROADWAY GRADE. ALL CONSTRUCTION METHODS SHALL REMAIN AS SHOWN ABOVE.

**MANHOLE CASTING ADJUSTMENT SD-GU-6**



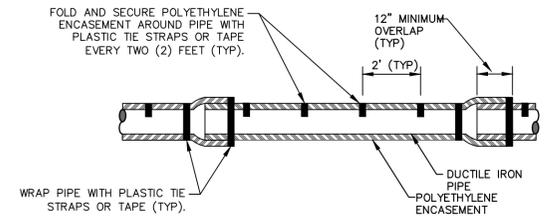
- NOTES:
1. ALL D.I.P. PIPE, FITTINGS, AND HYDRANT BARREL TO BE POLYWRAPPED PER AWWA C105.

**FIRE HYDRANT ASSEMBLY**



APPLIES TO: WATER AND/OR SEWER CROSSINGS WITH LESS THAN 1.5' OF VERTICAL CLEARANCE

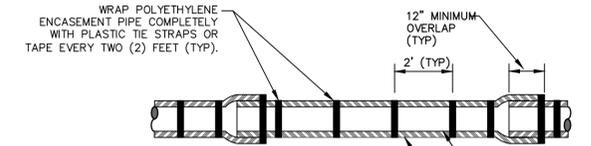
**CONCRETE UTILITY SADDLE**



- NOTE: FOLLOW ANSI/AWWA C105/A21.5-05 REVISION OF ANSI/AWWA C105/A21.5-99 FOR CONSTRUCTION AND INSTALLATION METHODS. USE MODIFIED METHOD A

APPLIES TO: POLYETHYLENE WRAPPED D.I. WATERMAIN SEE PLANS FOR LOCATIONS

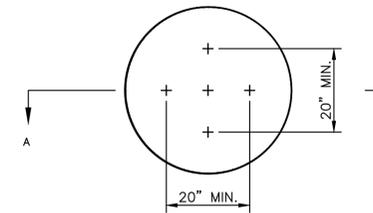
**POLYETHYLENE ENCASEMENT (DRY INSTALLATION)**



- NOTE: FOLLOW ANSI/AWWA C105/A21.5-05 REVISION OF ANSI/AWWA C105/A21.5-99 FOR CONSTRUCTION AND INSTALLATION METHODS. USE MODIFIED METHOD A

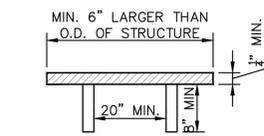
APPLIES TO: POLYETHYLENE WRAPPED D.I. WATERMAIN SEE PLANS FOR LOCATIONS

**POLYETHYLENE ENCASEMENT (WET INSTALLATION)**



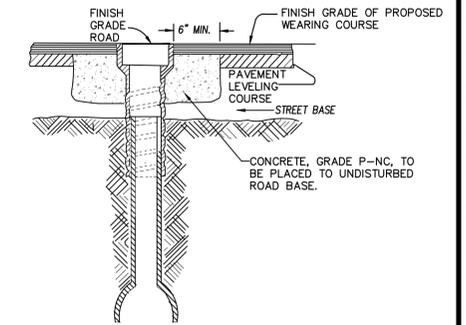
NOTE: PLATE MAY BE CIRCULAR, SQUARE OR RECTANGULAR

SECTION A - A



1/4" MIN. THICKNESS AND SUFFICIENT TO CARRY THE CONSTRUCTION LOAD.

**STRUCTURE PLATE SD-GU-8**



- NOTE:
- RAISE CASTING TO PROPOSED FINISH STREET GRADE AFTER PLACEMENT OF LEVELING COURSE(S) AND PRIOR TO PLACING FINAL SURFACE COURSE

**WATER VALVE BOX ADJUSTMENT**

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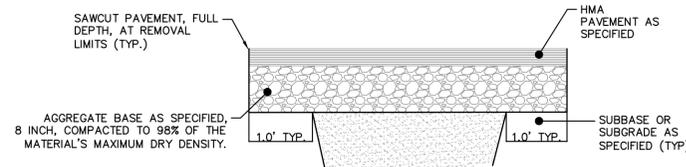
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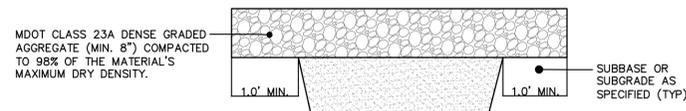
SCALE: N.T.S.  
DRAWING No. 2022026-10  
SHEET No. 10 OF 31

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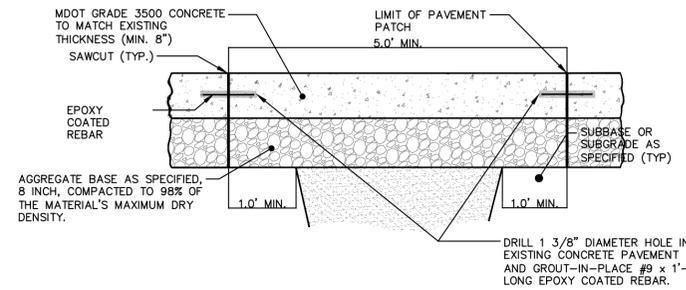
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**BITUMINOUS PAVEMENT RESTORATION**

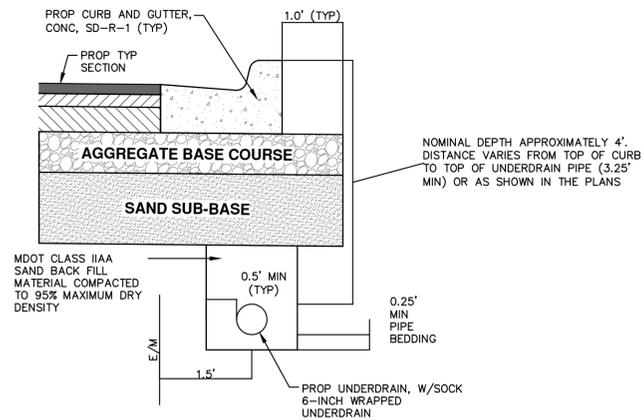


**GRAVEL ROAD / PARKING**



**CONCRETE PAVEMENT**

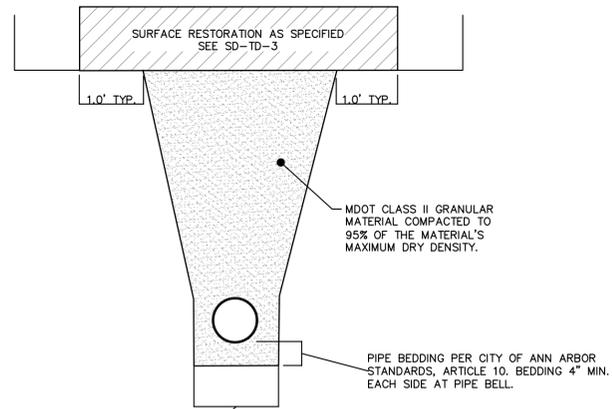
**UTILITY TRENCH SURFACE RESTORATION - SD-TD-3A**



**NOTES:**

1. IN AREAS WHERE EDGE DRAIN CANNOT BE INSTALLED IN ACCORDANCE WITH THE DETAIL, THE EDGE DRAIN SHALL BE INSTALLED AT THE DEPTH AS INDICATED ON THE PLANS, OR AS DIRECTED BY ENGINEER. IN NO CASE SHALL THE EDGE DRAIN BE INSTALLED AT A GRADE LESS THAN 0.50% OR AT A DEPTH OF LESS THAN 2' BELOW TOP OF PROPOSED PAVEMENT.
2. FOR PAVEMENT BASE AND SUBBASE THICKNESS, SEE TYPICAL PAVEMENT CROSS-SECTION(S)
3. TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION ONLY
4. ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS
5. EDGE DRAINS SHALL BE CONNECTED TO A DRAINAGE STRUCTURE AND WILL EXTEND A MINIMUM OF 100 FEET UPSLOPE FROM THE STRUCTURE.
6. ADDITIONAL LENGTHS OF EDGE DRAIN MAY BE REQUIRED BY THE ENGINEER BASED ON EXISTING SITE CONDITIONS, INCLUDING CONDITION OF THE SUBGRADE.

**TYPICAL EDGE DRAIN TRENCH - SD-ST-2**

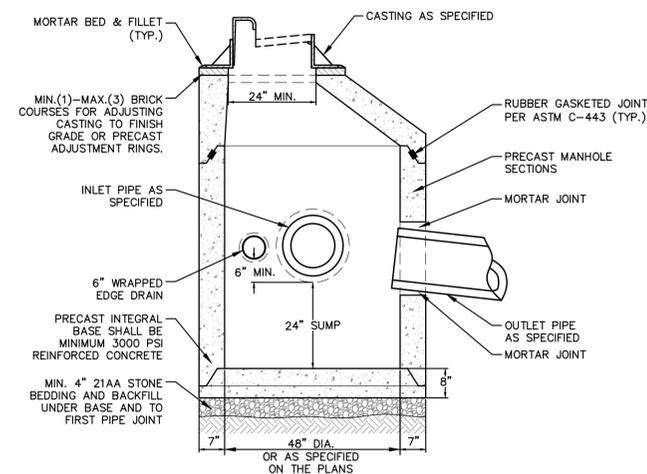


MINIMUM TRENCH WIDTH PER CITY OF ANN ARBOR STANDARDS, ARTICLE 10, BEDDING TO EXTEND 6" MIN. EACH SIDE OF PIPE BARREL.

**NOTES:**

1. ALL TRENCH EXCAVATION, BEDDING, BACKFILLING, AND SURFACE RESTORATION SHALL COMPLY WITH CITY OF ANN ARBOR STANDARDS, ARTICLE 10.
2. TRENCH DETAILS SHOW TYPE OF BACKFILL AND TRENCHING REQUIREMENTS ONLY.
3. ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. AND CITY STANDARDS.
4. PIPE BEDDING THICKNESS UNDER CONCRETE PIPE 66" OR LARGER SHALL BE INCREASED TO 6".
5. SEE SD-TD-18 FOR SANITARY BEDDING AREA DETAIL. SEE SD-TD-4 FOR EDGE DRAIN BEDDING AND BACKFILL.
6. SURFACE RESTORATION SHALL NOT BE INCLUDED IN THE UNIT PRICE FOR PIPE AND WILL BE PAID FOR SEPARATELY.

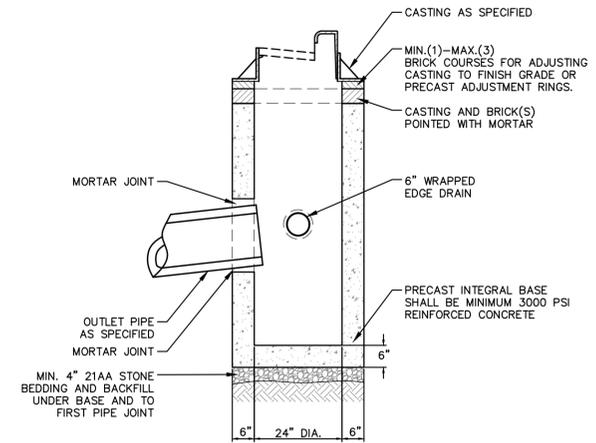
**UTILITY TRENCH - TYPE IA EXCLUDING SANITARY - SD-TD-1A**



**NOTES:**

1. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)

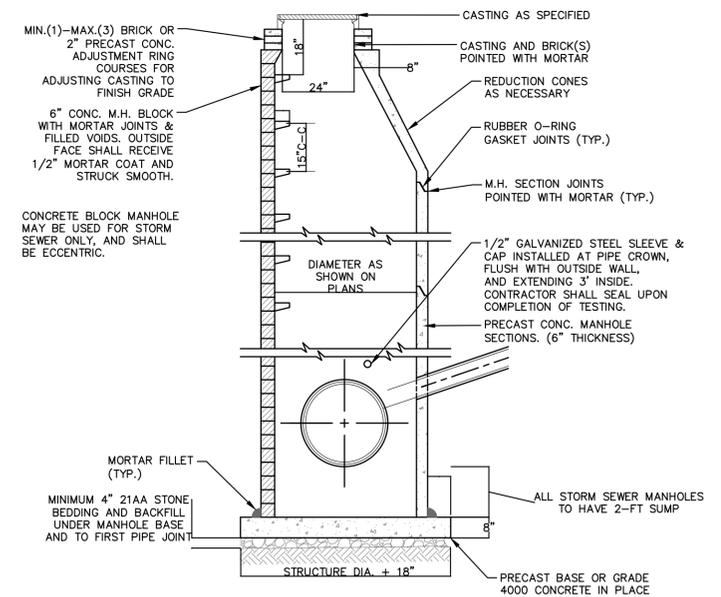
**PRECAST JUNCTION INLET - SD-ST-2**



**NOTES:**

1. MAY BE USED WITH SINGLE OUTLET PIPE AND SINGLE INLET PIPE.
2. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)

**PRECAST SINGLE INLET - SD-ST-3**



**NOTES:**

1. ALL STORM MANHOLES MAY BE PRECAST CONCRETE OR MANHOLE BLOCK.
2. ALL MANHOLES MUST HAVE ECCENTRIC CONES.
3. ALL MANHOLE SECTIONS SHALL BE REINFORCED PER ASTM-185.
4. ALL STORM SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS PER ASTM C-923.
5. 2' SUMP REQUIRED ON ALL DRAINAGE STRUCTURES.
6. IF A FLAT TOP IS REQUIRED, THEN IT SHALL BE REINFORCED IN BOTH DIRECTIONS TO MEET ASTM C-615.

**STANDARD STORM MANHOLE - SD-ST-1A (SEPARATE BASE)**



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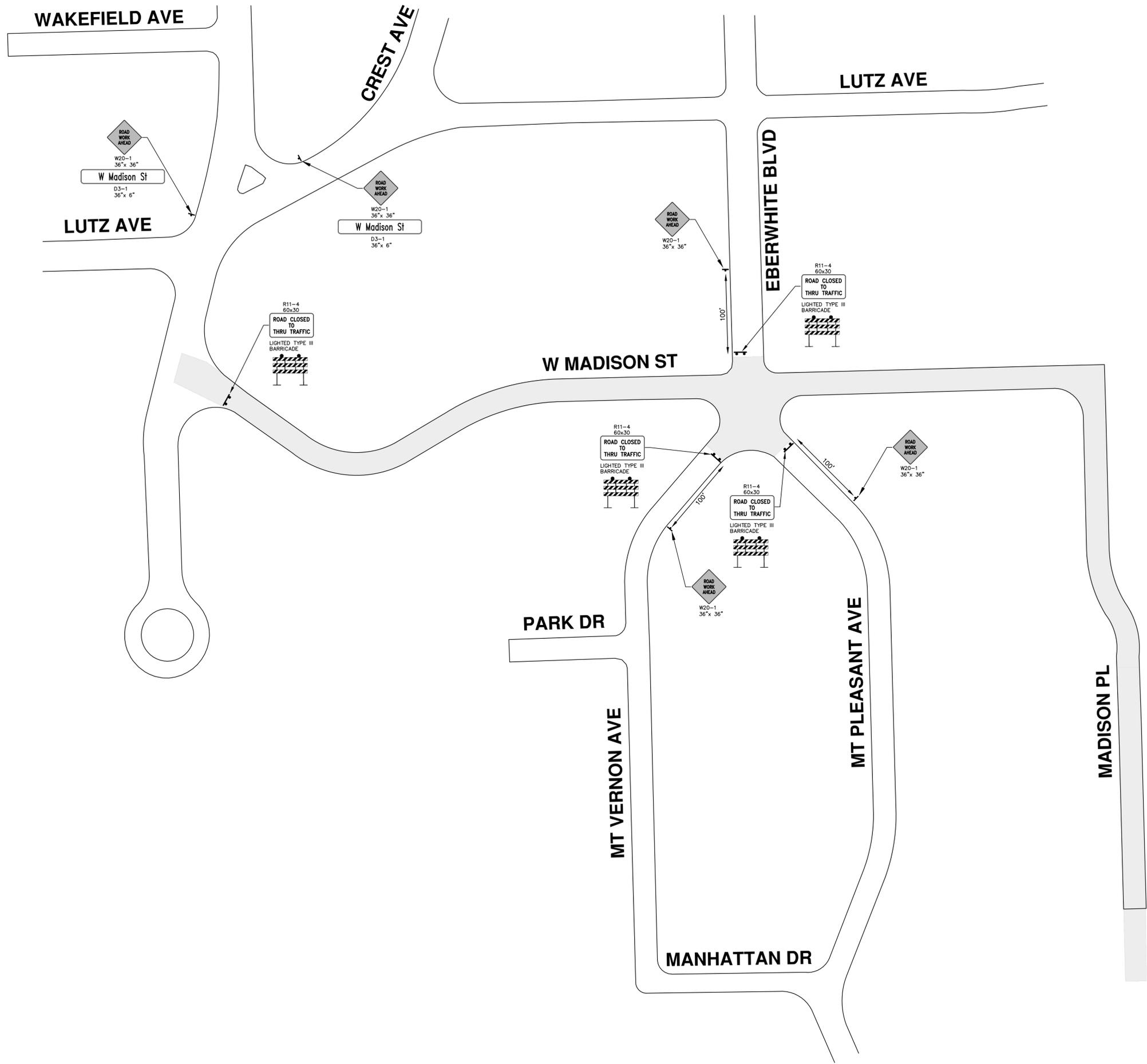
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STORM SEWER AND TRENCH DETAILS

SCALE: N.T.S.  
DRAWING No. 2022026-11

SHEET No.



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**ADDITIONAL SIGNAGE FOR WATER MAIN TIE-INS AT STREET INTERSECTIONS**

| SIGN                                                  | NUMBER           | QUANTITY |
|-------------------------------------------------------|------------------|----------|
| ROAD CLOSED                                           | R11-2<br>48"x30" | 4        |
| BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED - 8 EACH |                  |          |

- NOTES:**
1. FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE AS DIRECTED BY ENGINEER.
  2. UTILIZE PLASTIC DRUMS AND PROTECTIVE FENCING WITHIN WORK ZONE TO DELINEATE OPEN TRENCHES AS DIRECTED BY ENGINEER.
  3. MAINTAIN PEDESTRIAN ACCESS DURING CONSTRUCTION.
  4. COVER CONFLICTING SIGNS AS NEEDED OR AS DIRECTED BY ENGINEER.
  5. REMOVE CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
  6. CONTRACTOR SHALL PLACE PORTABLE, CHANGEABLE MESSAGE SIGNS A MINIMUM OF ONE (1) WEEK PRIOR TO THE START OF CONSTRUCTION IN LOCATIONS INDICATED BY ENGINEER. MESSAGE TO BE PROVIDED BY THE ENGINEER.

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**MADISON ST & MADISON PL WATERMAIN REPLACEMENT**

TRAFFIC CONTROL

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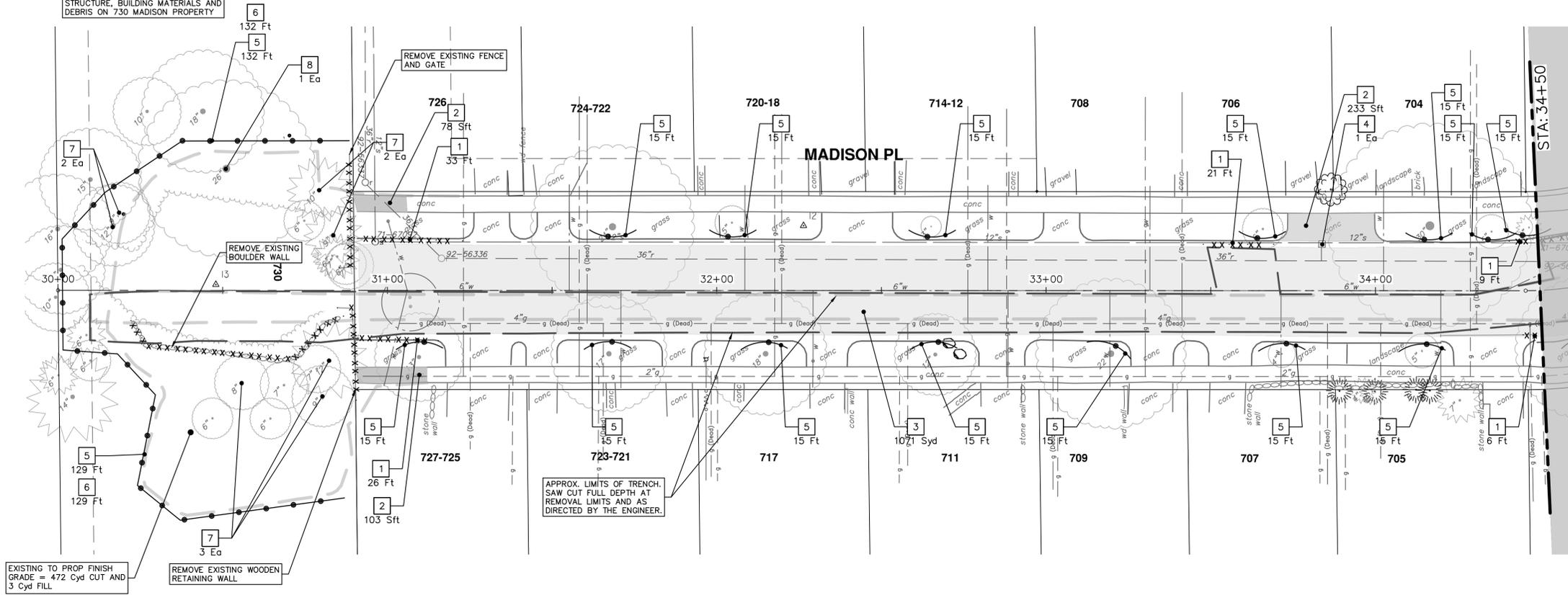
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AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF THE EXISTING STRUCTURE, BUILDING MATERIALS AND DEBRIS ON 730 MADISON PROPERTY



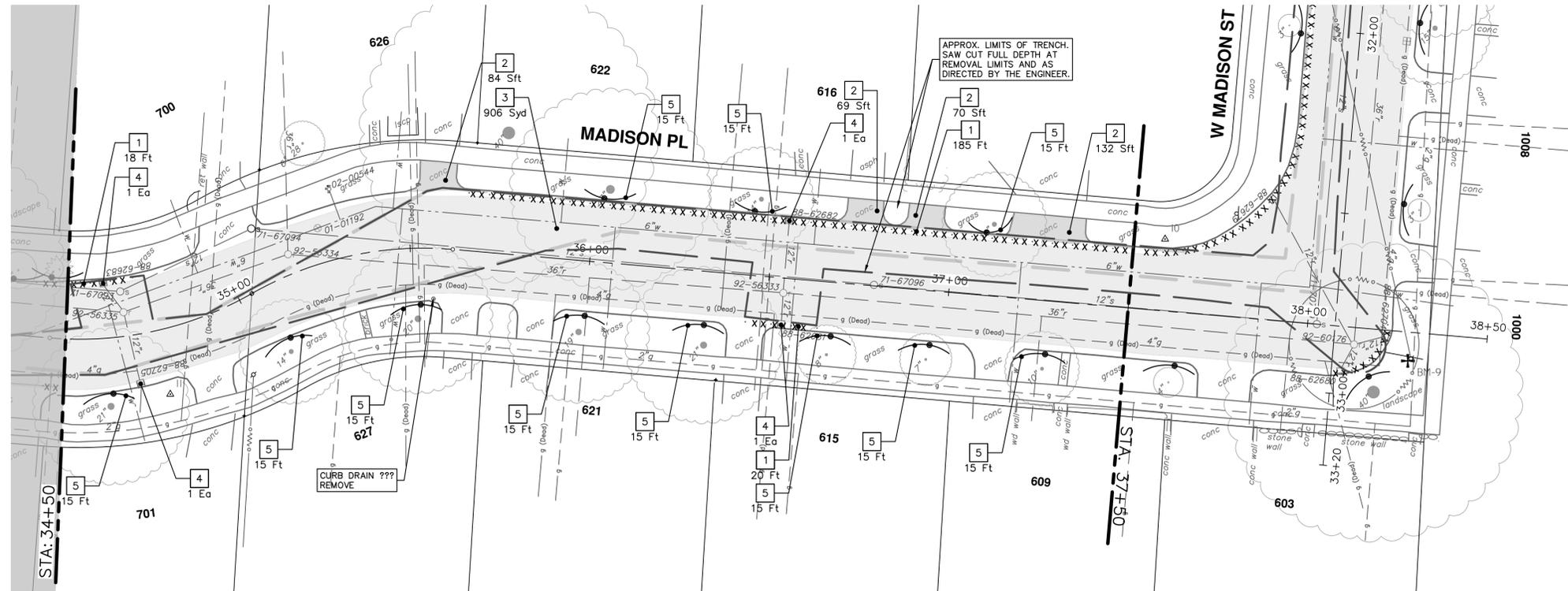
EXISTING TO PROP FINISH GRADE = 472 Cyd CUT AND 3 Cyd FILL

REMOVE EXISTING WOODEN RETAINING WALL

APPROX. LIMITS OF TRENCH. SAW CUT FULL DEPTH AT REMOVAL LIMITS AND AS DIRECTED BY THE ENGINEER.

| REMOVAL KEY |                                                          |
|-------------|----------------------------------------------------------|
| KEY         | DESCRIPTION                                              |
| 1           | REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE          |
| 2           | REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS |
| 3           | HMA PAVEMENT REMOVAL, ANY DEPTH*                         |
| 4           | INLET FILTER                                             |
| 5           | PROTECTIVE FENCING                                       |
| 6           | SILT FENCE                                               |
| 7           | TREE REMOVAL, 6 IN. TO 18 IN.                            |
| 8           | TREE REMOVAL, 19 IN. TO 36 IN.                           |

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS



APPROX. LIMITS OF TRENCH. SAW CUT FULL DEPTH AT REMOVAL LIMITS AND AS DIRECTED BY THE ENGINEER.

CURB DRAIN ??? REMOVE

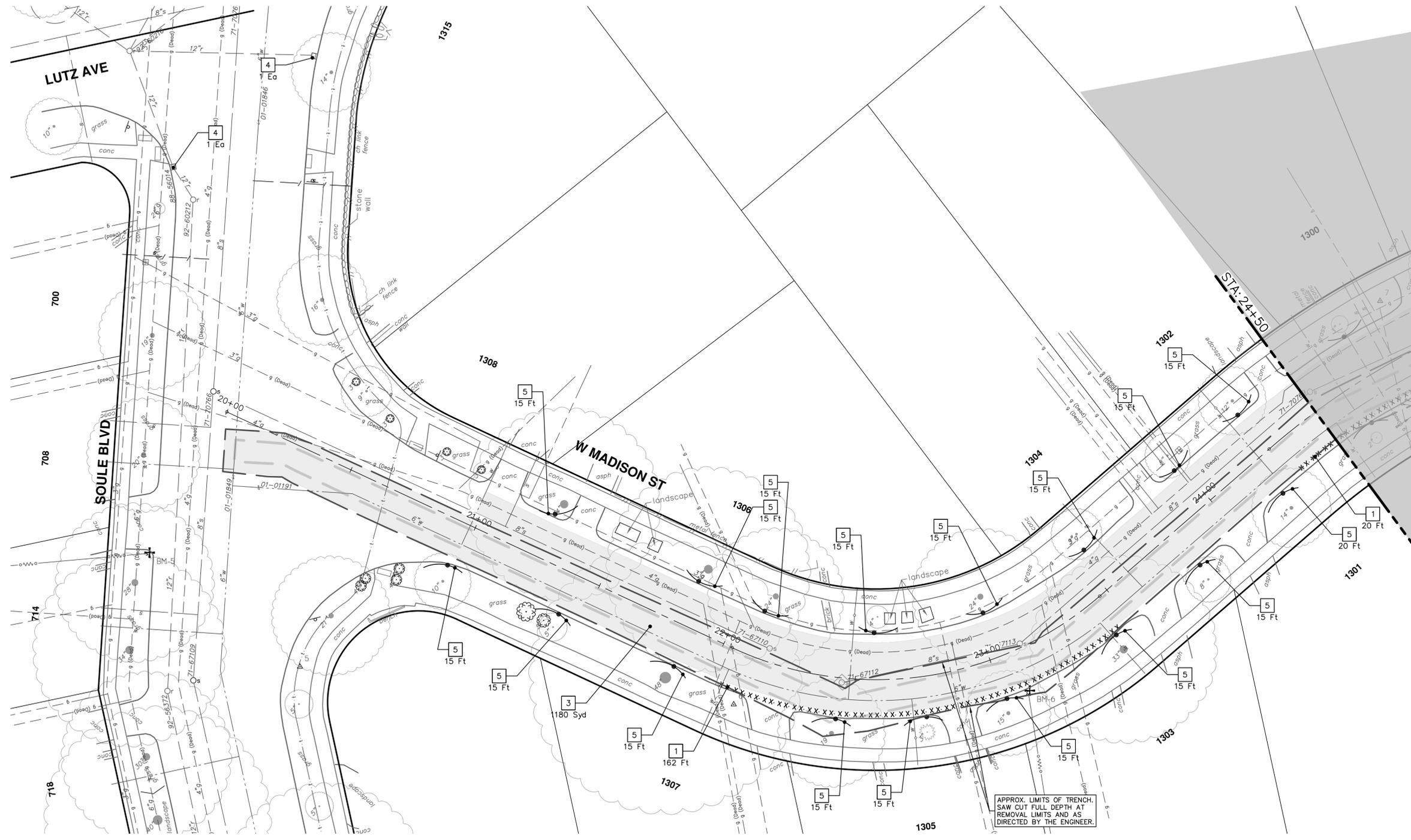
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**MADISON ST & MADISON PL**  
**WATERMAIN REPLACEMENT**  
MADISON PLACE REMOVALS  
STA. 30+00 - STA. 38+50

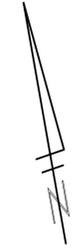
SHEET No. 14 OF 31

DRAWING No. 2022026-14



| REMOVAL KEY |                                                          |
|-------------|----------------------------------------------------------|
| KEY         | DESCRIPTION                                              |
| 1           | REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE          |
| 2           | REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS |
| 3           | HMA PAVEMENT REMOVAL, ANY DEPTH*                         |
| 4           | INLET FILTER                                             |
| 5           | PROTECTIVE FENCING                                       |
| 6           | SILT FENCE                                               |
| 7           | TREE REMOVAL, 6 IN. TO 18 IN.                            |
| 8           | TREE REMOVAL, 19 IN. TO 36 IN.                           |

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS



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**MADISON ST & MADISON PL WATERMAIN REPLACEMENT**

W MADISON STREET REMOVALS  
STA. 20+00 - STA. 24+50

SHEET No. **15 OF 31**

SCALE: 1" = 20'

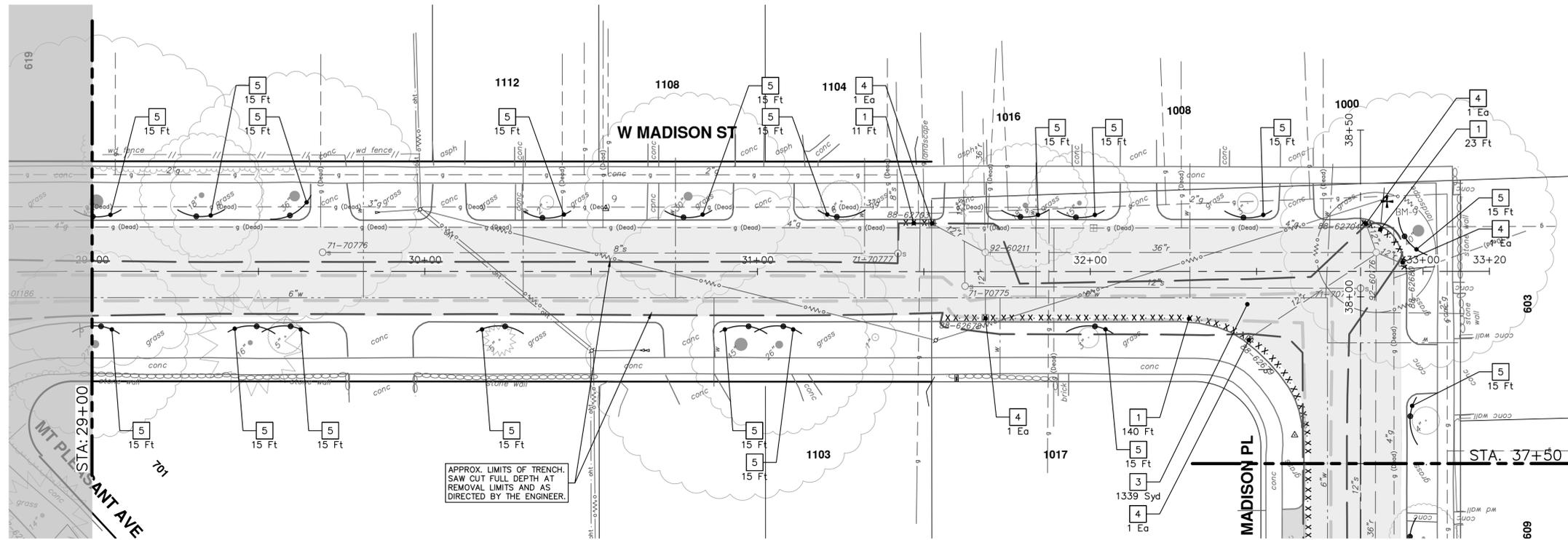
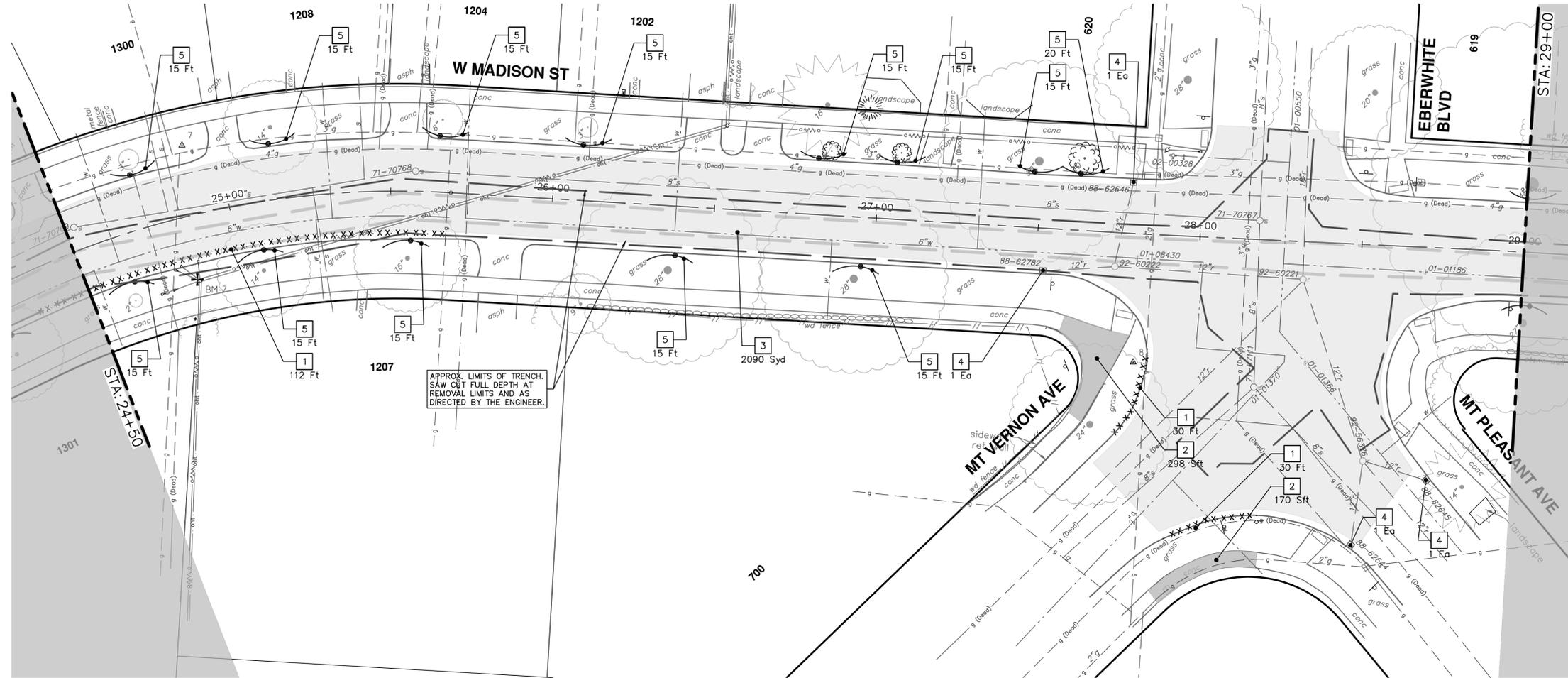
DRAWING No. **2022026-15**

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| REMOVAL KEY |                                                          |
|-------------|----------------------------------------------------------|
| KEY         | DESCRIPTION                                              |
| 1           | REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE          |
| 2           | REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS |
| 3           | HMA PAVEMENT REMOVAL, ANY DEPTH*                         |
| 4           | INLET FILTER                                             |
| 5           | PROTECTIVE FENCING                                       |
| 6           | SILT FENCE                                               |
| 7           | TREE REMOVAL, 6 IN. TO 18 IN.                            |
| 8           | TREE REMOVAL, 19 IN. TO 36 IN.                           |

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS



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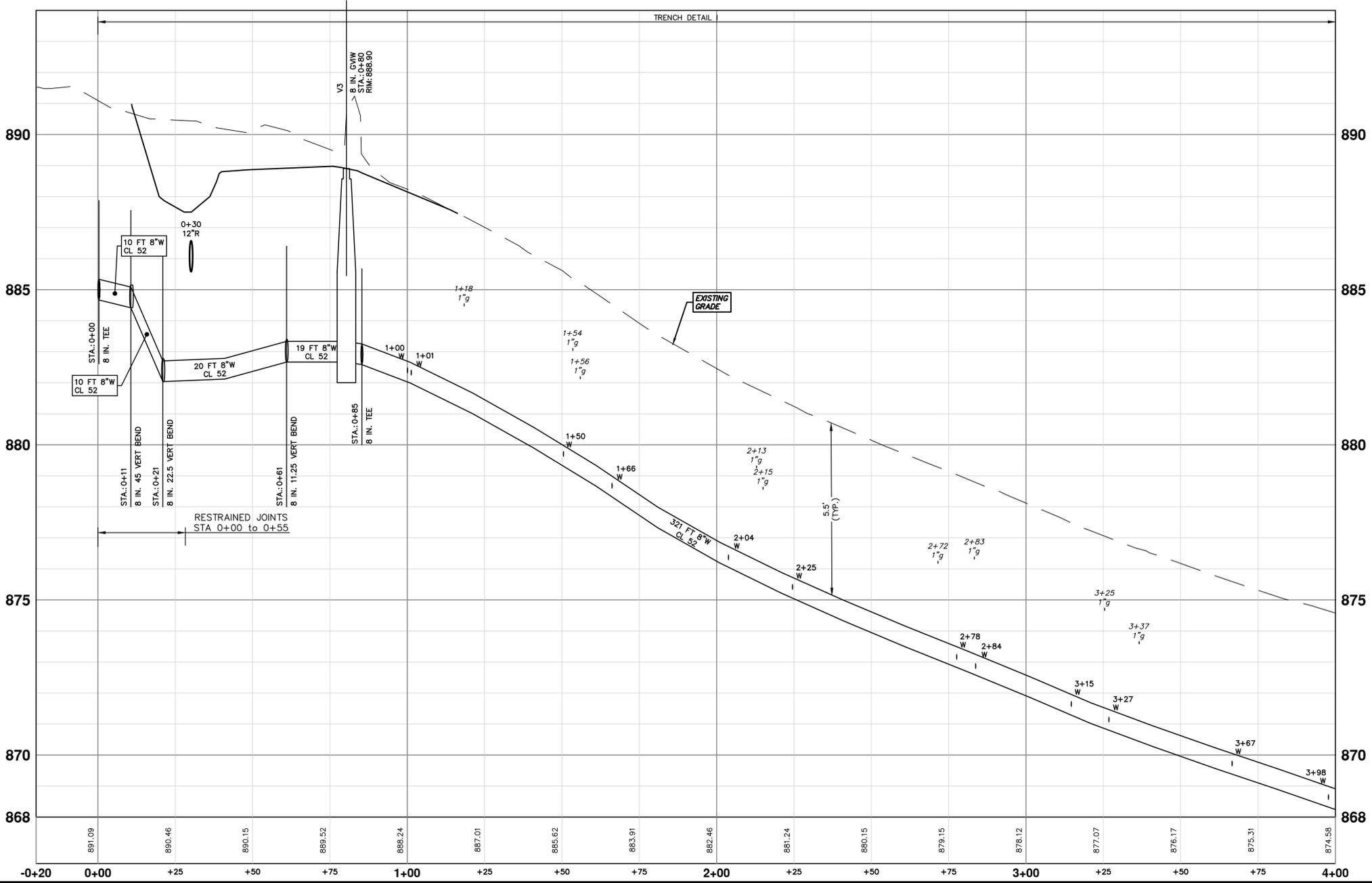
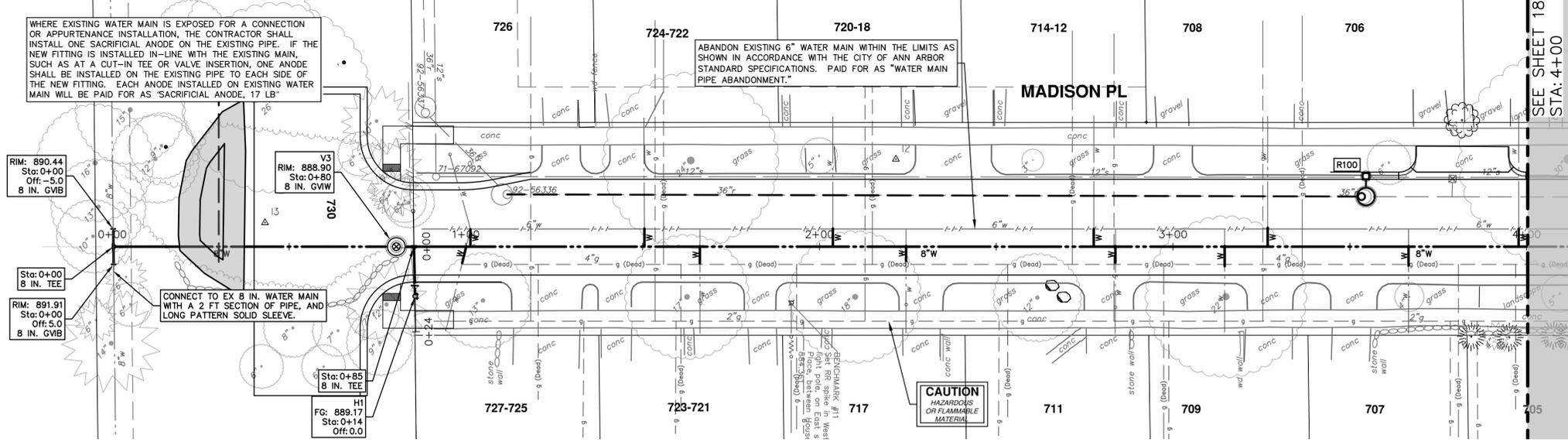


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**WATERMAIN REPLACEMENT**  
W MADISON STREET REMOVALS  
STA. 24+50 - STA. 33+00

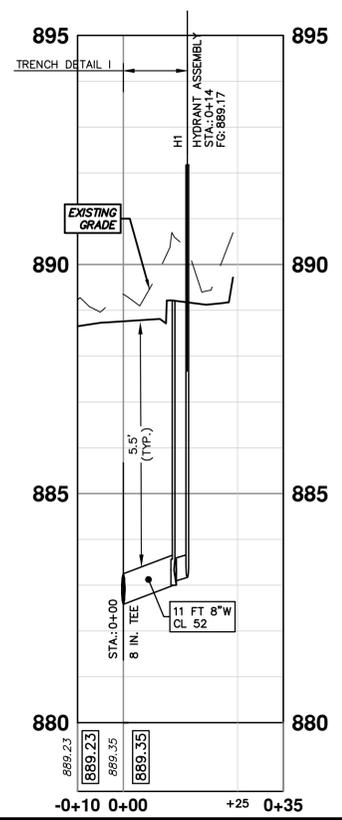
SCALE: 1"=20'  
DRAWING NO. 2022026-16

SHEET No.

| REV. | DESCRIPTION                         | DATE | BY | CHECKED |
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| WATER MAIN STRUCTURE TABLE |                  |         |        |       |
|----------------------------|------------------|---------|--------|-------|
| STRUCTURE                  | TYPE             | STATION | RIM    | DEPTH |
| V1                         | 8 in. GVB        | 0+00    | 890.44 | 6.94  |
| V2                         | 8 in. GVB        | 0+00    | 891.91 | 6.14  |
| H1                         | HYDRANT ASSEMBLY | 0+14    | 889.17 | 6.00  |
| V3                         | 8 in. GVB        | 0+80    | 888.90 | 6.24  |



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**MADISON ST & MADISON PL**

**WATERMAIN REPLACEMENT**

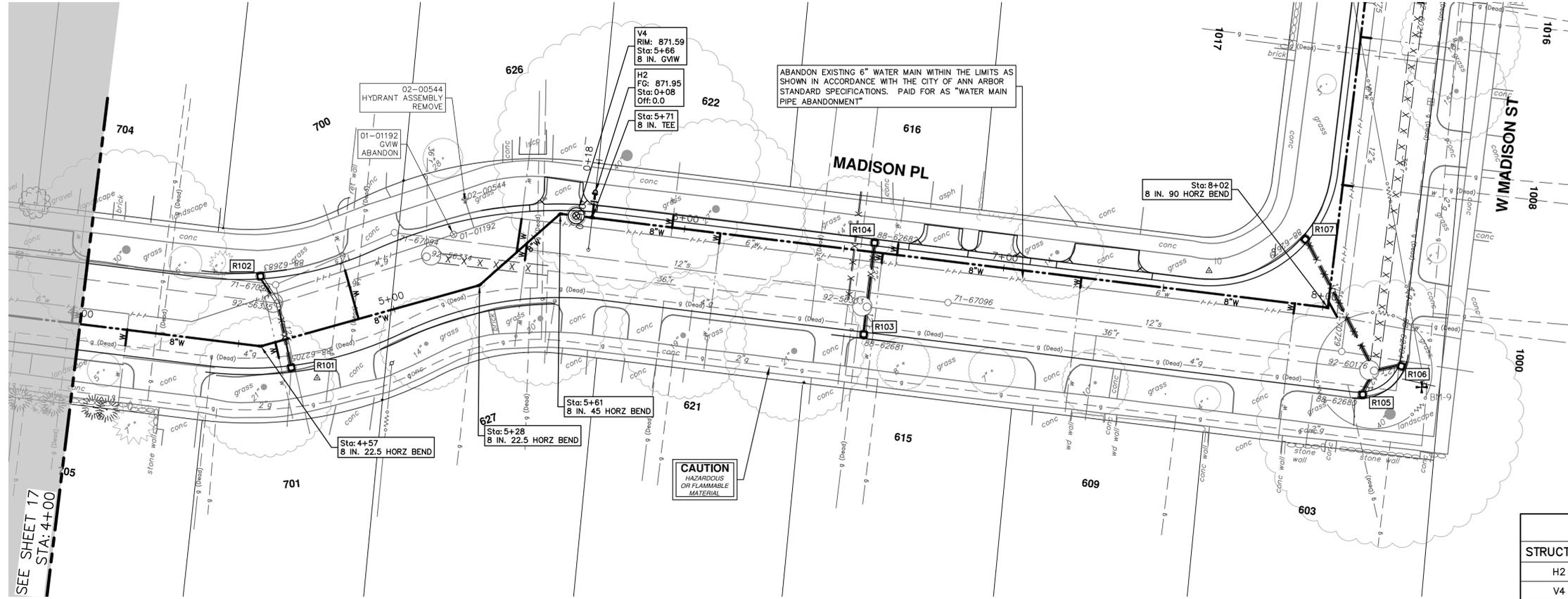
MADISON PLACE WATER MAIN  
STA. 0+00 - STA. 4+00

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'

DRAWING No.  
**2022026-17**

SHEET No.  
**17 OF 31**

| REV. | DESCRIPTION                         | DATE | BY | CHECKED |
|------|-------------------------------------|------|----|---------|
| 00   | COPY TO NEXT LINE AND EDIT THE TEXT |      |    |         |

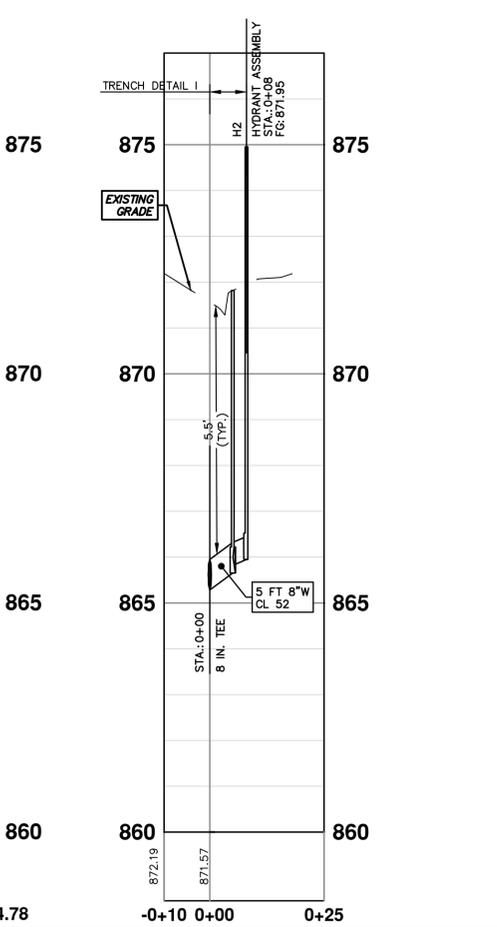
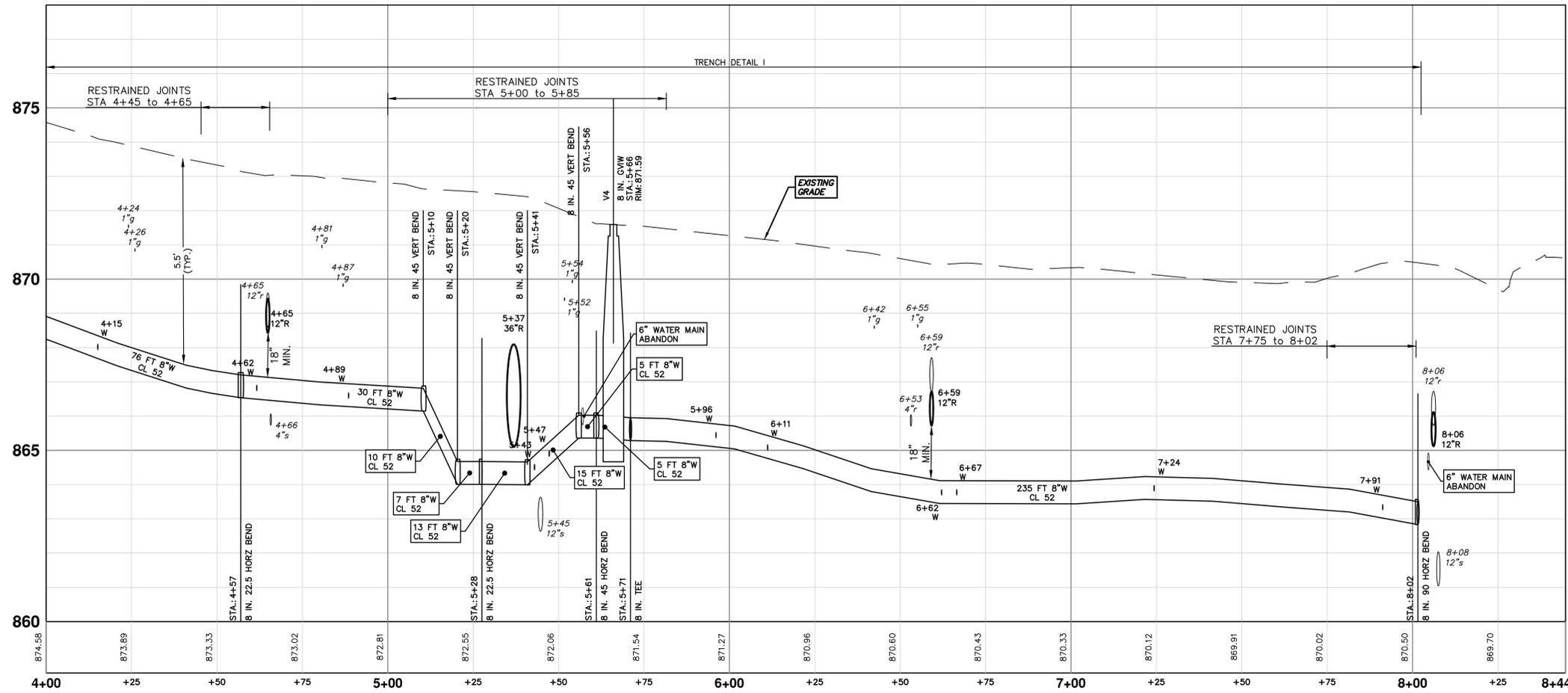


SEE SHEET 17  
STA: 4+00

ABANDON EXISTING 6" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN PIPE ABANDONMENT"

CAUTION  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

| STRUCTURE | TYPE             | STATION | RIM    | DEPTH |
|-----------|------------------|---------|--------|-------|
| H2        | HYDRANT ASSEMBLY | 0+08    | 871.95 | 6.00  |
| V4        | 8 in. GVIW       | 5+66    | 871.59 | 6.26  |



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MADISON ST & MADISON PL  
WATERMAIN REPLACEMENT  
MADISON PLACE WATER MAIN  
STA. 4+00 - STA. 8+03

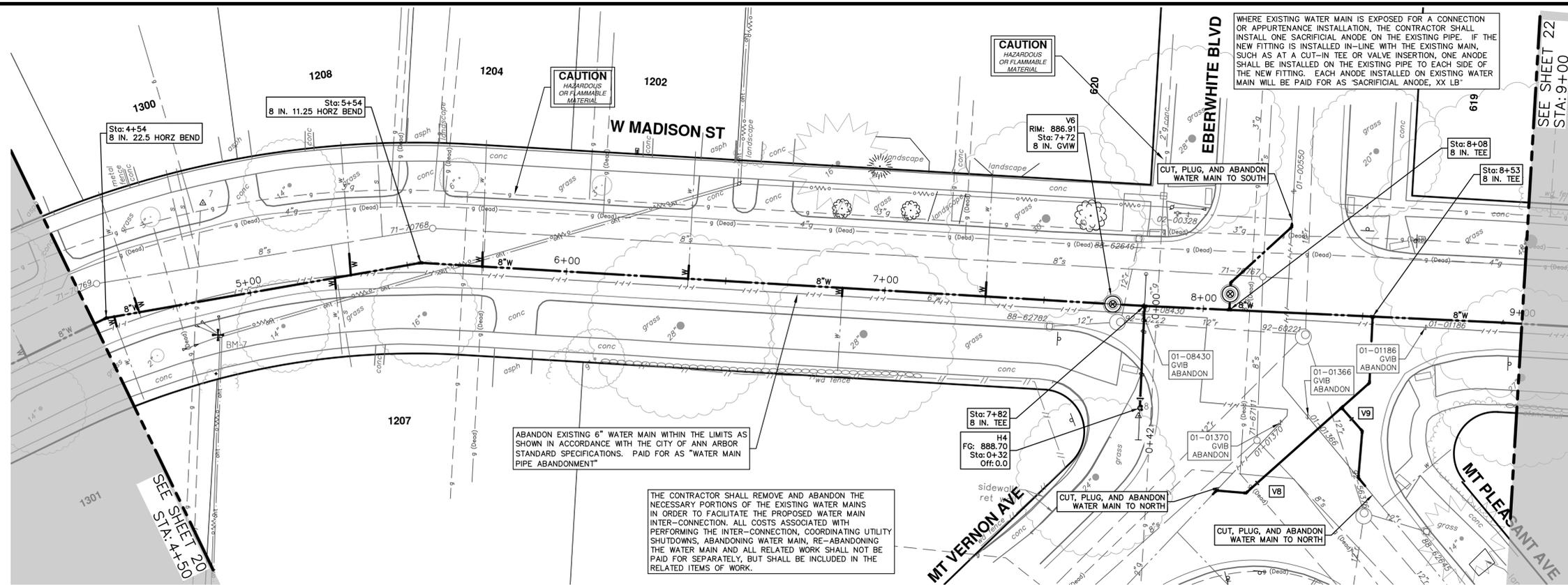
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING NO.  
2022026-18

SHEET NO. 18 OF 31



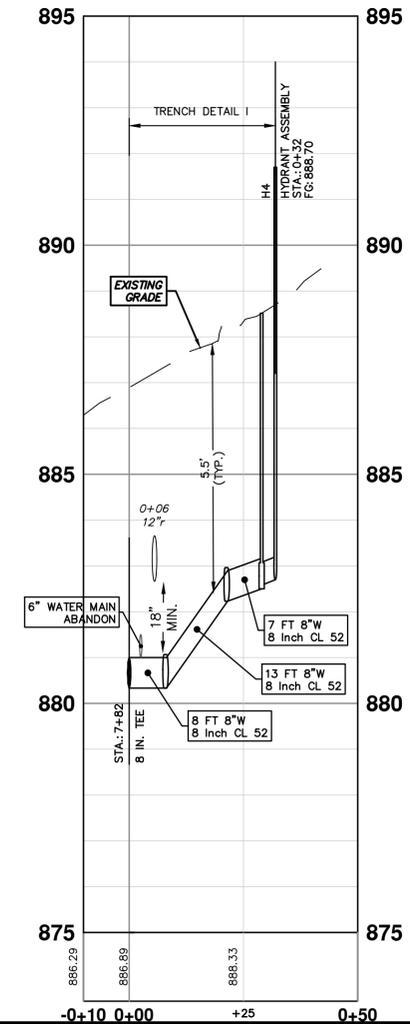
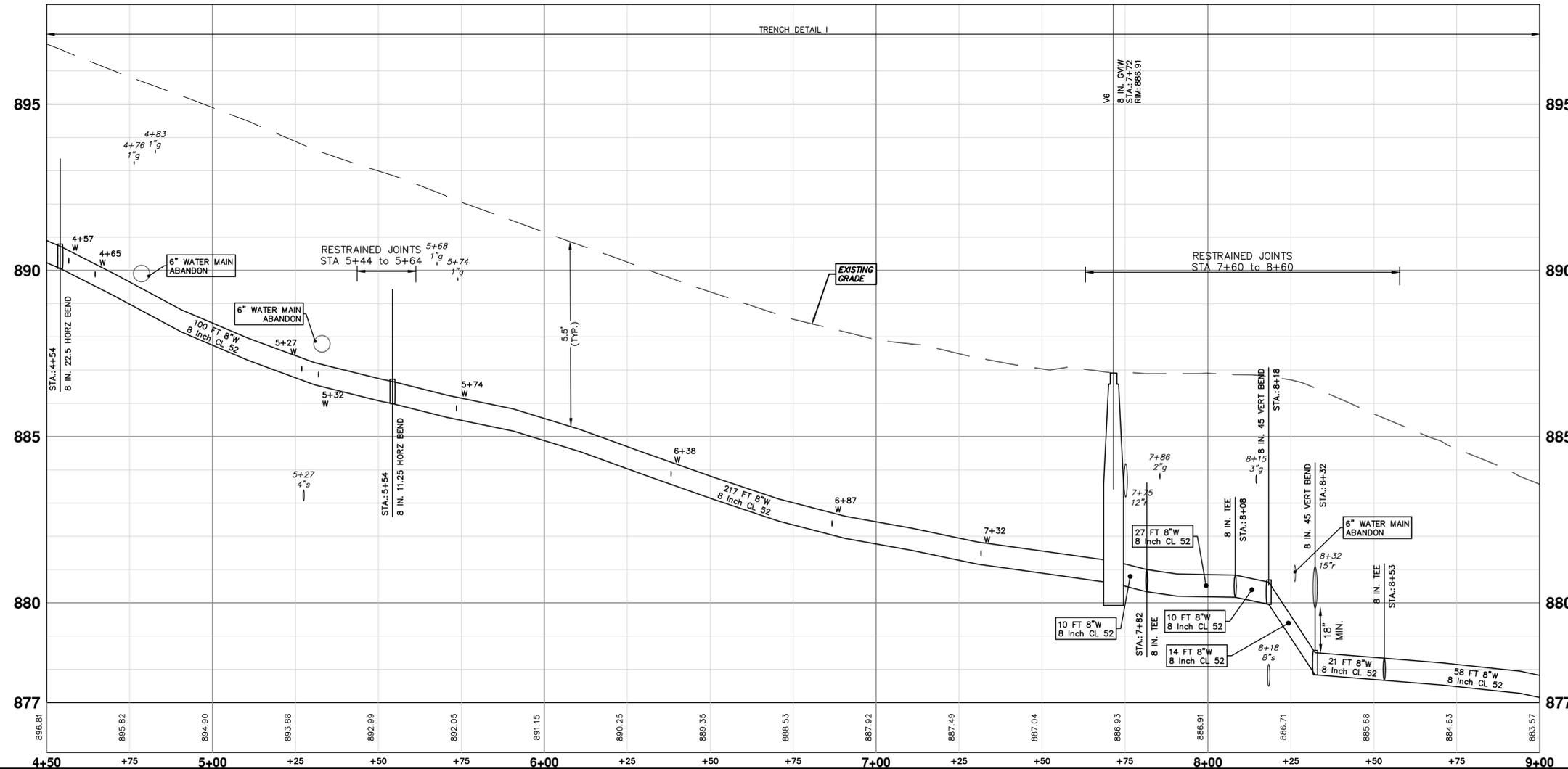


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**WATER MAIN STRUCTURE TABLE**

| STRUCTURE | TYPE             | STATION | RIM    | DEPTH |
|-----------|------------------|---------|--------|-------|
| H4        | HYDRANT ASSEMBLY | 0+32    | 888.70 | 6.00  |
| V6        | 8 in. GVIW       | 7+72    | 886.91 | 6.32  |



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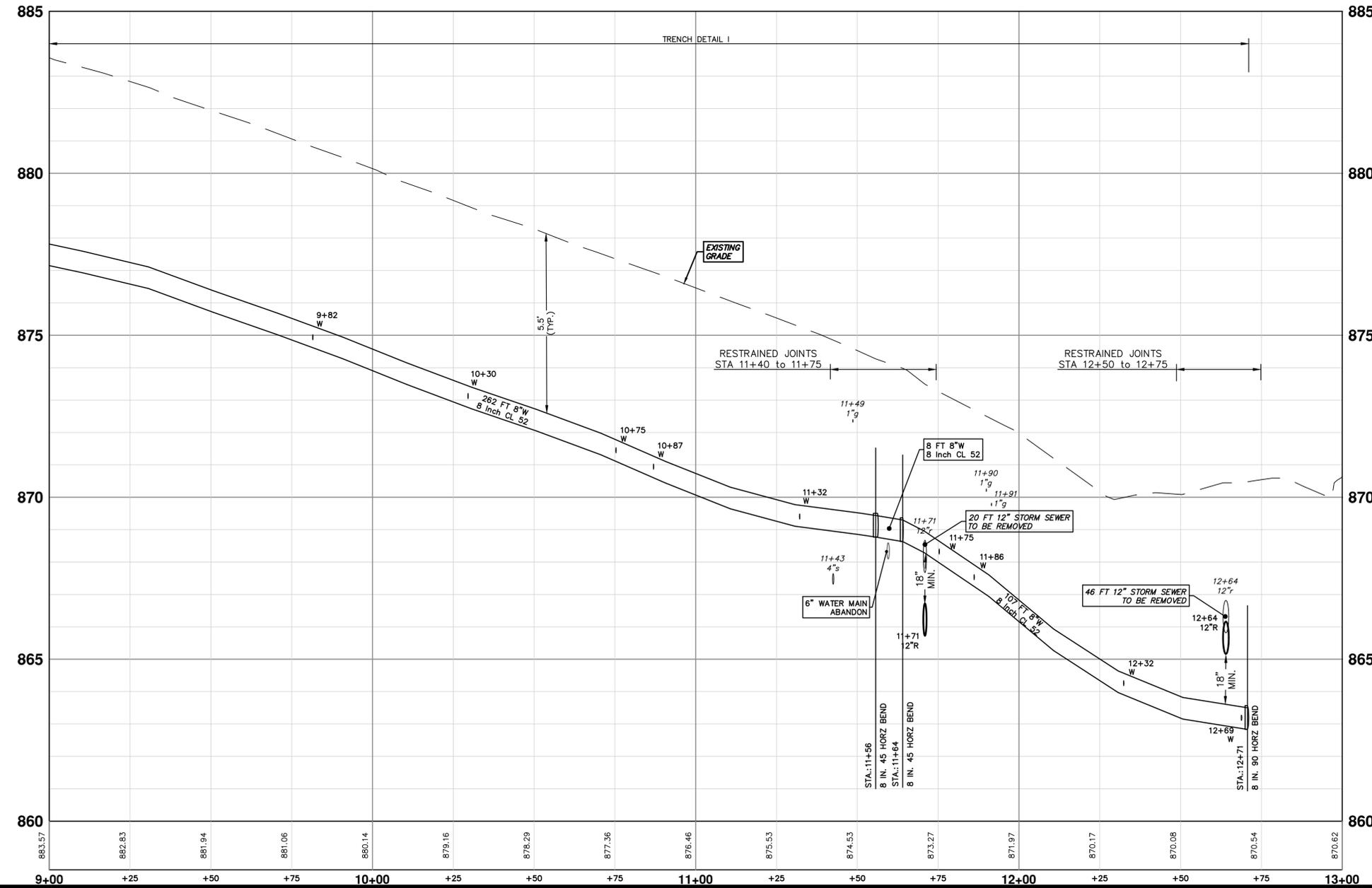
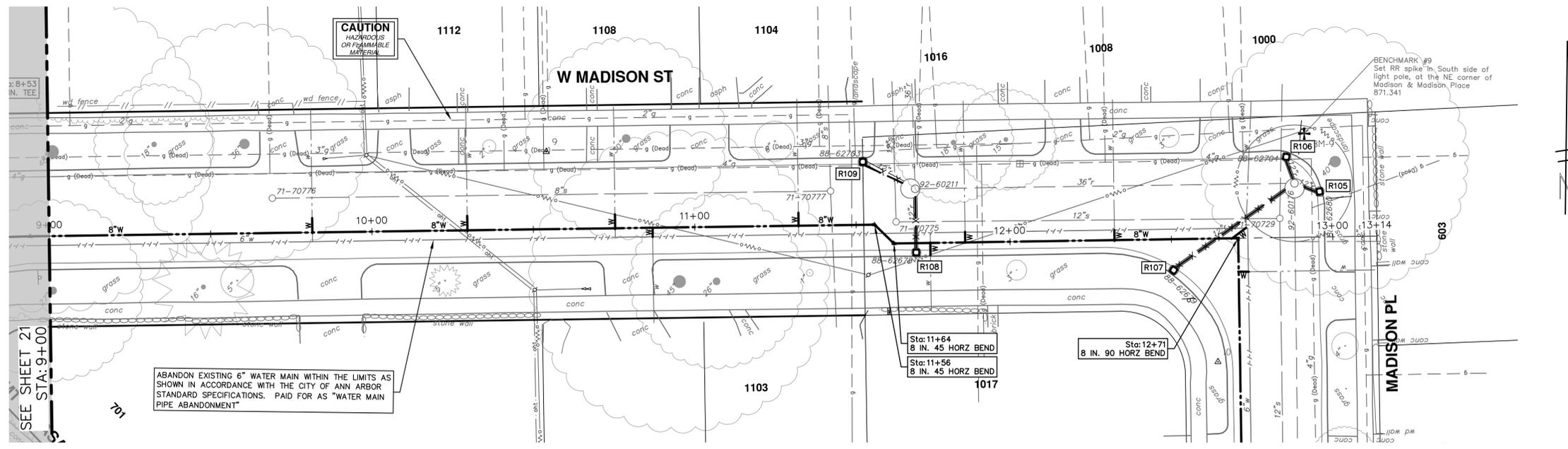
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**WATERMAIN REPLACEMENT**  
W MADISON STREET WATER MAIN  
STA. 4+50 - STA. 9+00

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'

DRAWING No.  
**2022026-21**

SHEET No.  
**21 OF 31**

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| REV. | DESCRIPTION | DATE | BY | CHECKED |
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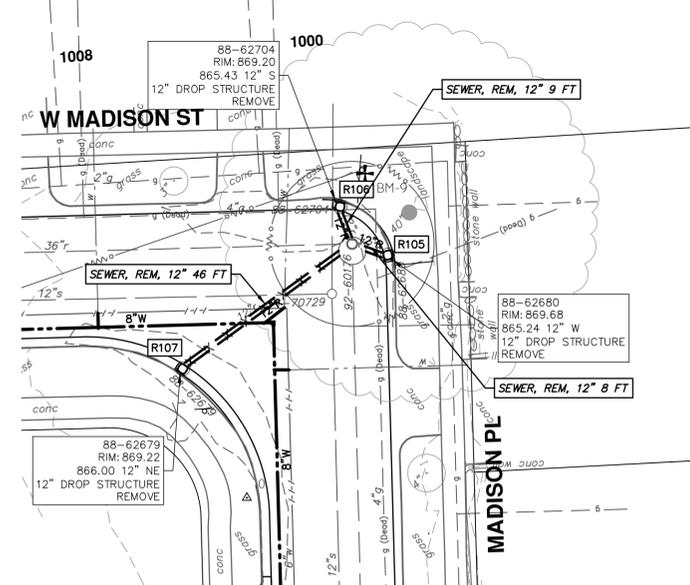
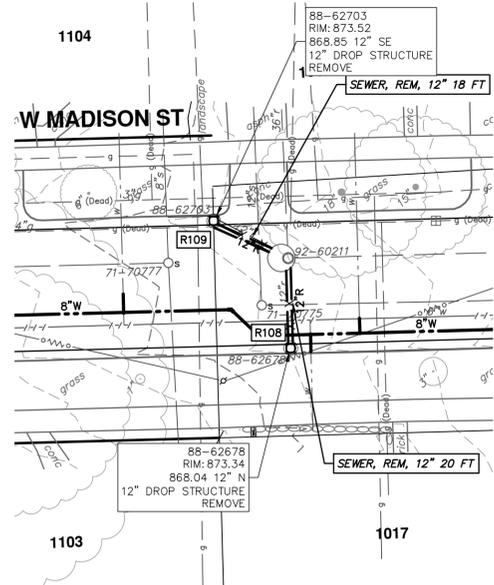
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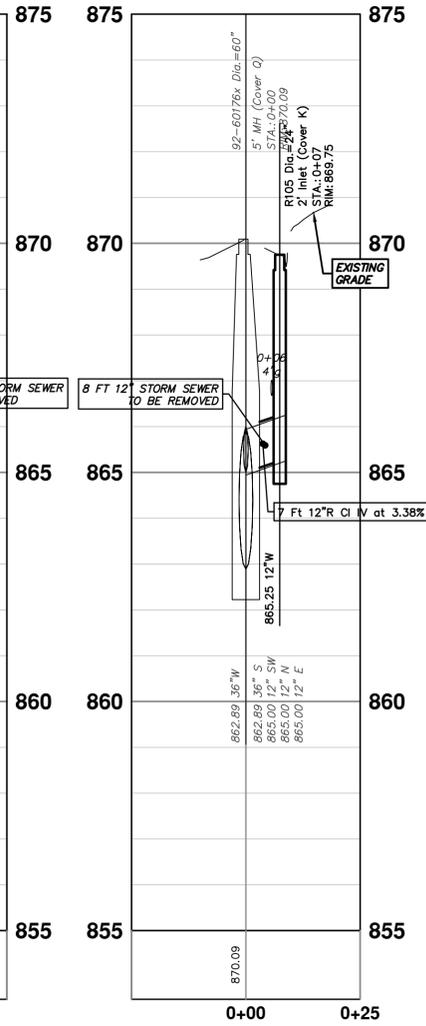
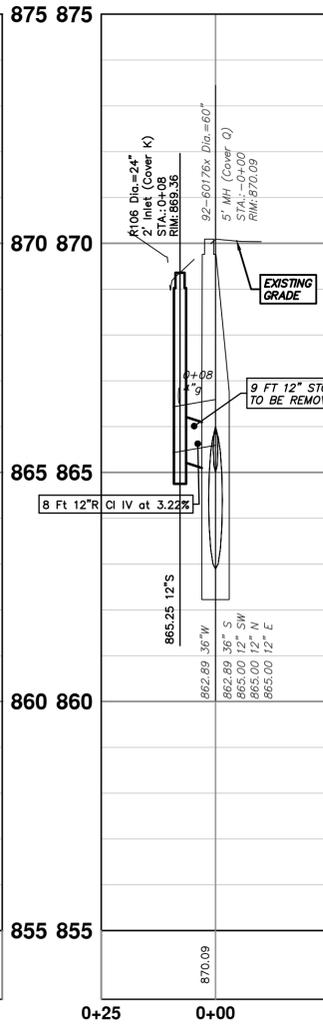
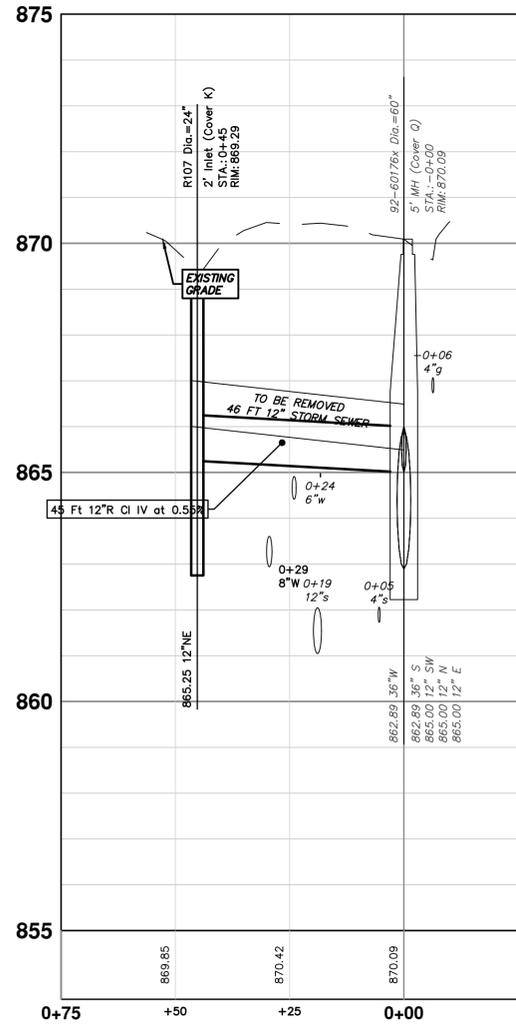
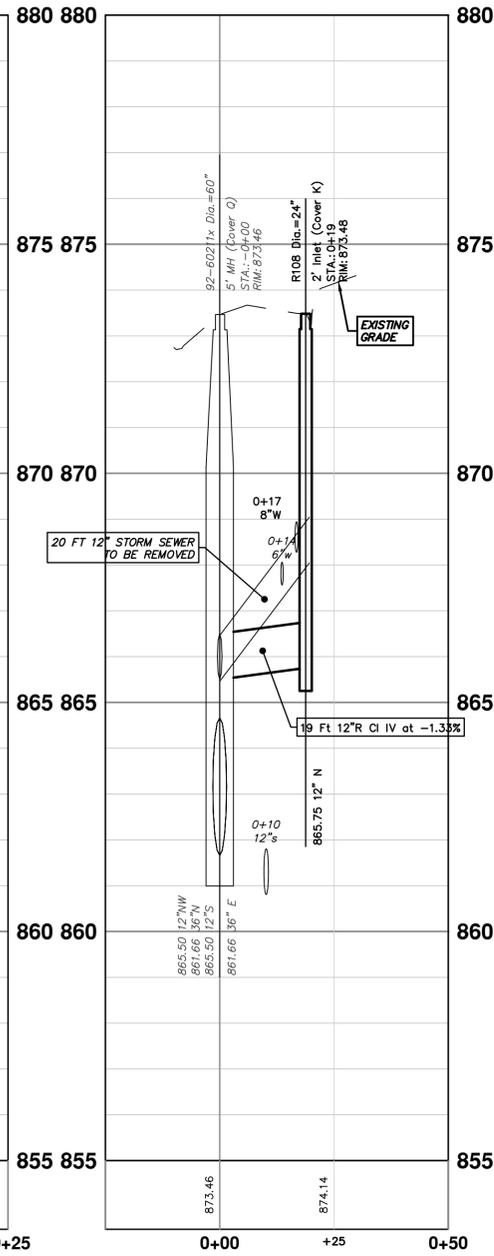
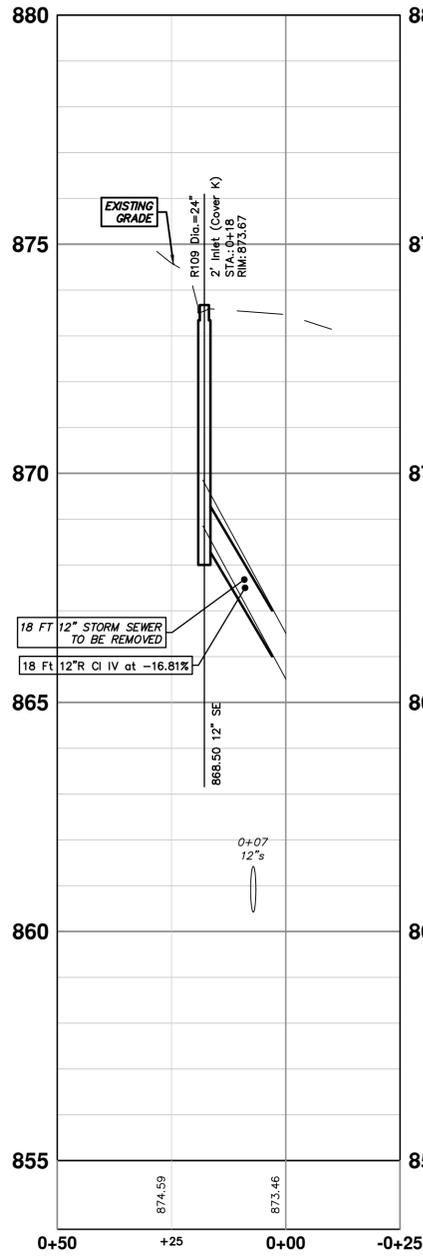
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**WATERMAIN REPLACEMENT**  
W MADISON STREET WATER MAIN  
STA. 9+00 - STA. 12+71

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING No.  
2022026-22

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| STORM STRUCTURE TABLE |                    |        |              |                       |      |
|-----------------------|--------------------|--------|--------------|-----------------------|------|
| STRUCTURE             | TYPE               | RIM    | INVERTS      | PIPE                  | SUMP |
| R105                  | 2' Inlet (Cover K) | 869.75 | 12"W 865.25  | 7 LF OF 12" @ 3.38%   | 0'   |
| R106                  | 2' Inlet (Cover K) | 869.36 | 12"S 865.25  | 8 LF OF 12" @ 3.22%   | 0'   |
| R107                  | 2' Inlet (Cover K) | 869.29 | 12"NE 865.25 | 45 LF OF 12" @ 0.55%  | 2'   |
| R108                  | 2' Inlet (Cover K) | 873.48 | 12"N 865.75  | 19 LF OF 12" @ 1.33%  | 0'   |
| R109                  | 2' Inlet (Cover K) | 873.67 | 12"SE 868.50 | 18 LF OF 12" @ 16.81% | 0'   |



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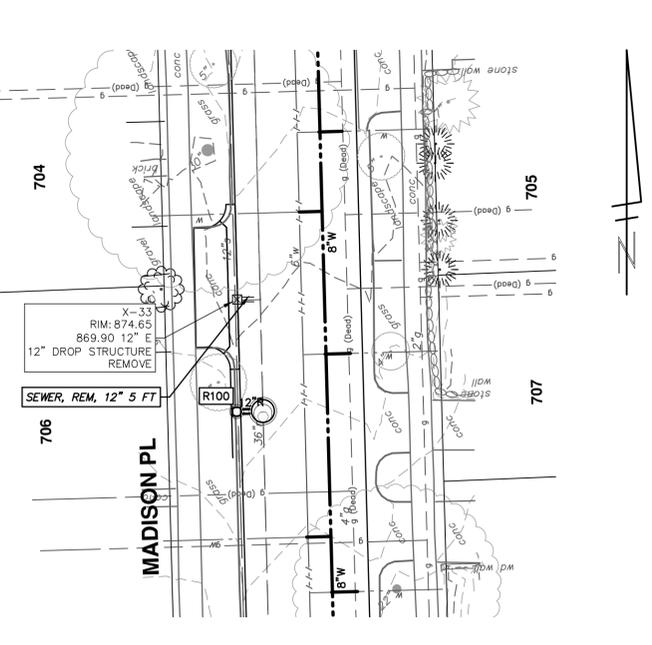
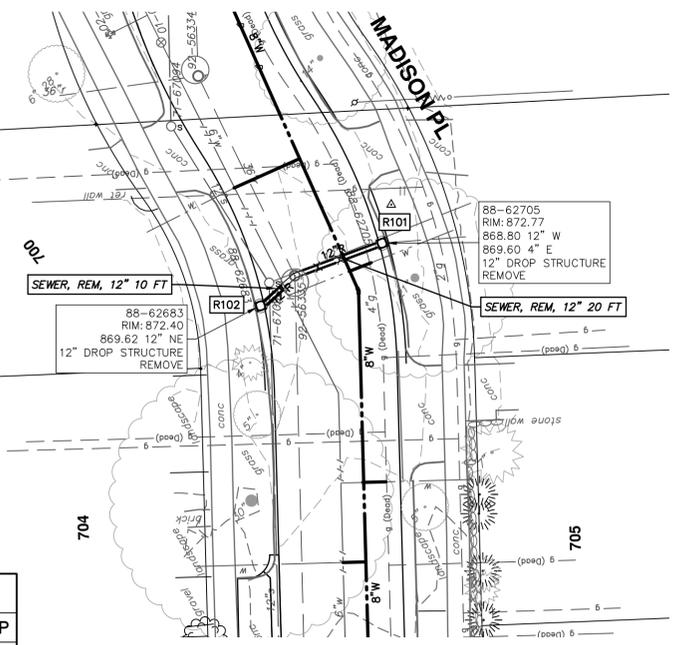
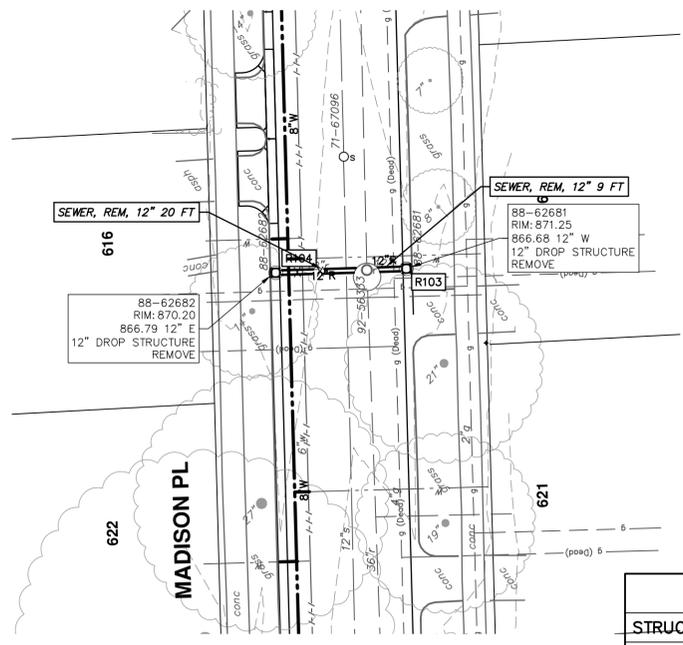
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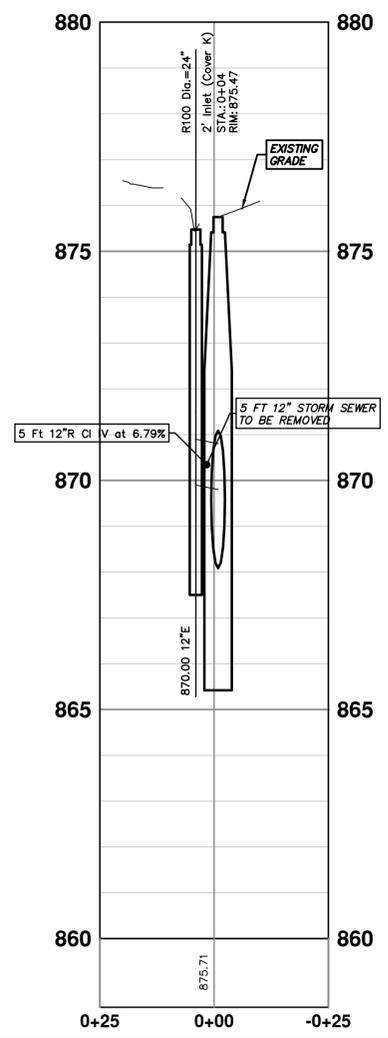
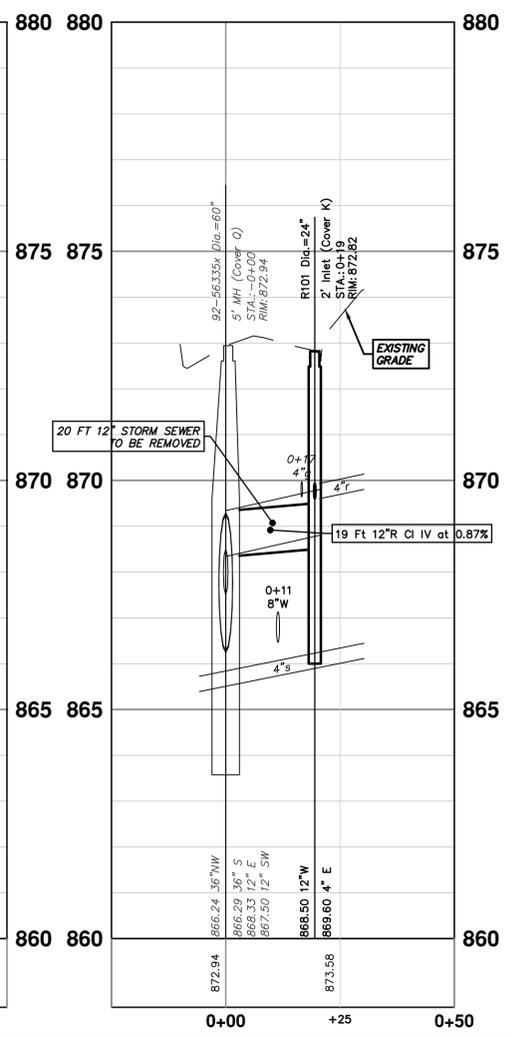
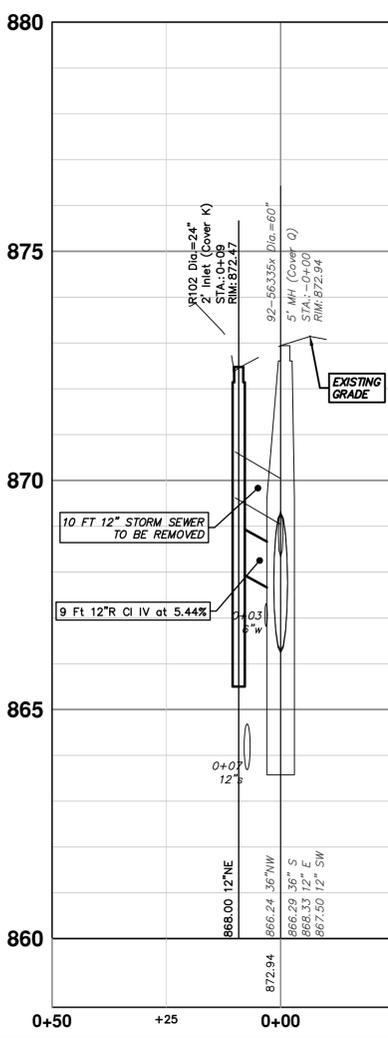
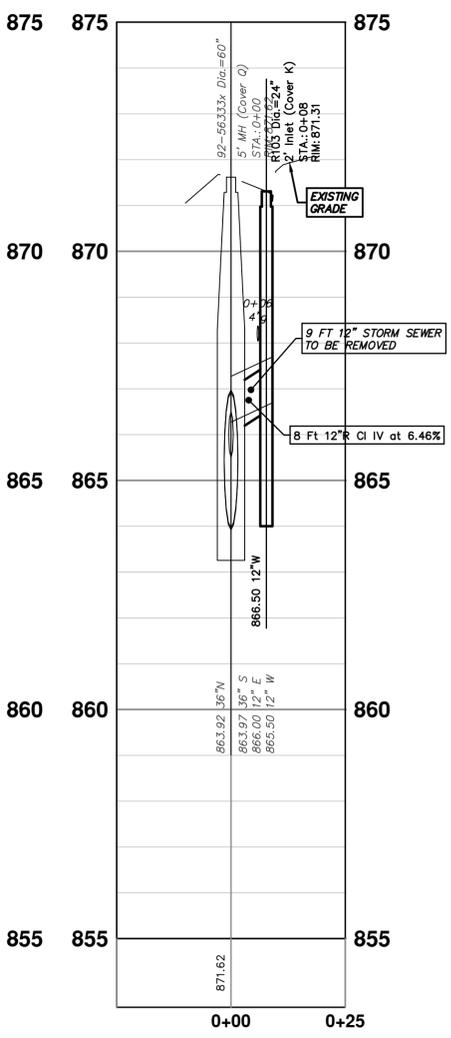
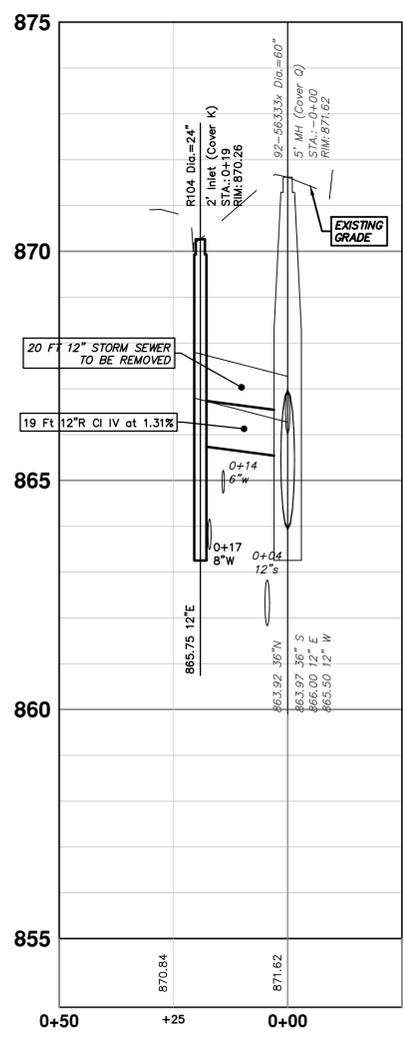
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STORM SEWER  
R1 - R5

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
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| STORM STRUCTURE TABLE |                    |        |                           |                                             |      |
|-----------------------|--------------------|--------|---------------------------|---------------------------------------------|------|
| STRUCTURE             | TYPE               | RIM    | INVERTS                   | PIPE                                        | SUMP |
| R100                  | 2' Inlet (Cover K) | 875.47 | 12"E 870.00               | 5 LF OF 12" @ 6.79%                         | 2'   |
| R101                  | 2' Inlet (Cover K) | 872.82 | 12"W 868.50<br>4"E 869.60 | 19 LF OF 12" @ 0.87%<br>19 LF OF 4" @ 9.33% | 2'   |
| R102                  | 2' Inlet (Cover K) | 872.47 | 12"NE 868.00              | 9 LF OF 12" @ 5.44%                         | 2'   |
| R103                  | 2' Inlet (Cover K) | 871.31 | 12"W 866.50               | 8 LF OF 12" @ 6.46%                         | 2'   |
| R104                  | 2' Inlet (Cover K) | 870.26 | 12"E 865.75               | 19 LF OF 12" @ 1.31%                        | 2'   |



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**MADISON ST & MADISON PL**

**WATERMAIN REPLACEMENT**

STORM SEWER  
R6 - R10

SHEET No. **24 OF 31**

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'

DRAWING No. **2022026-24**

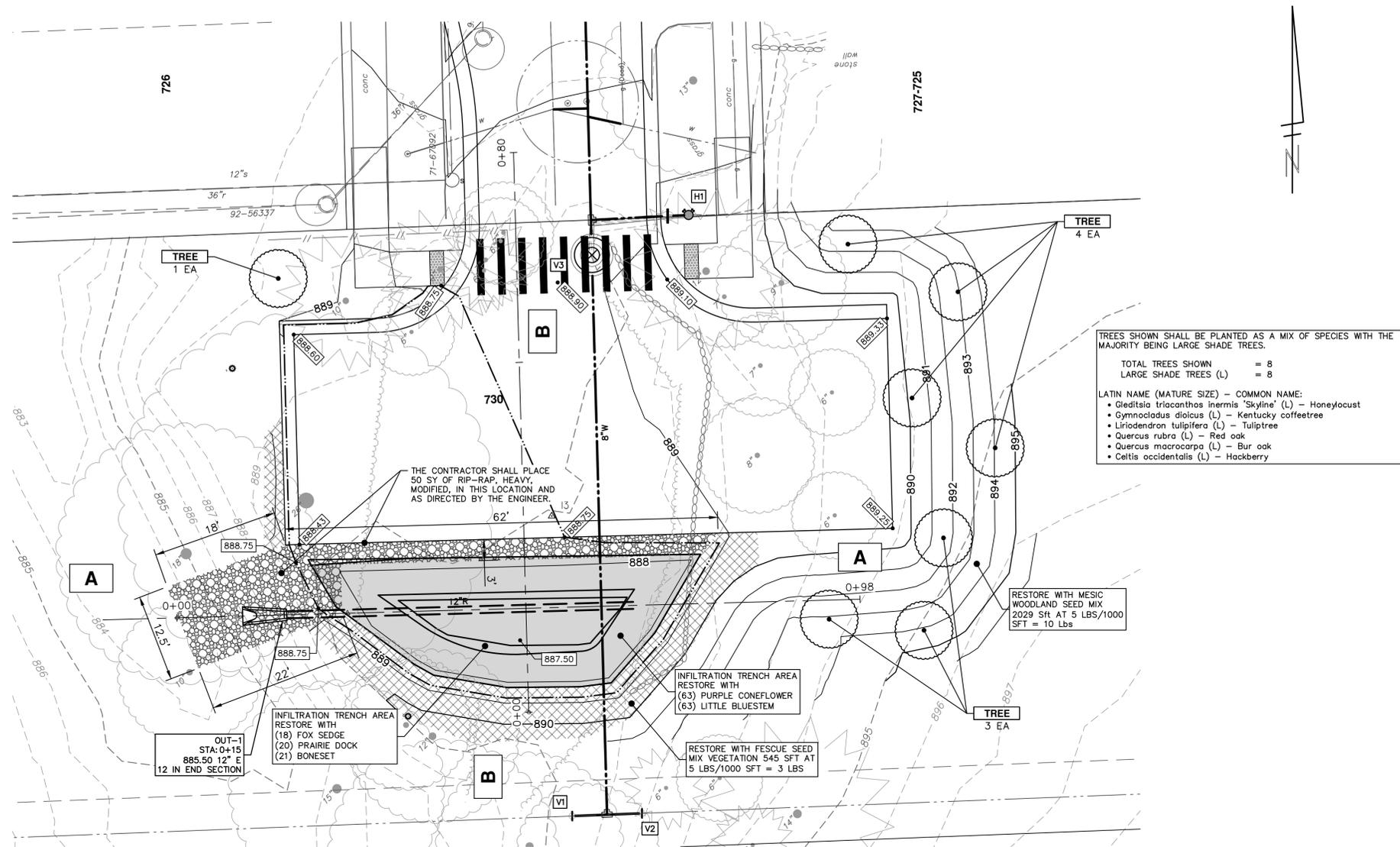
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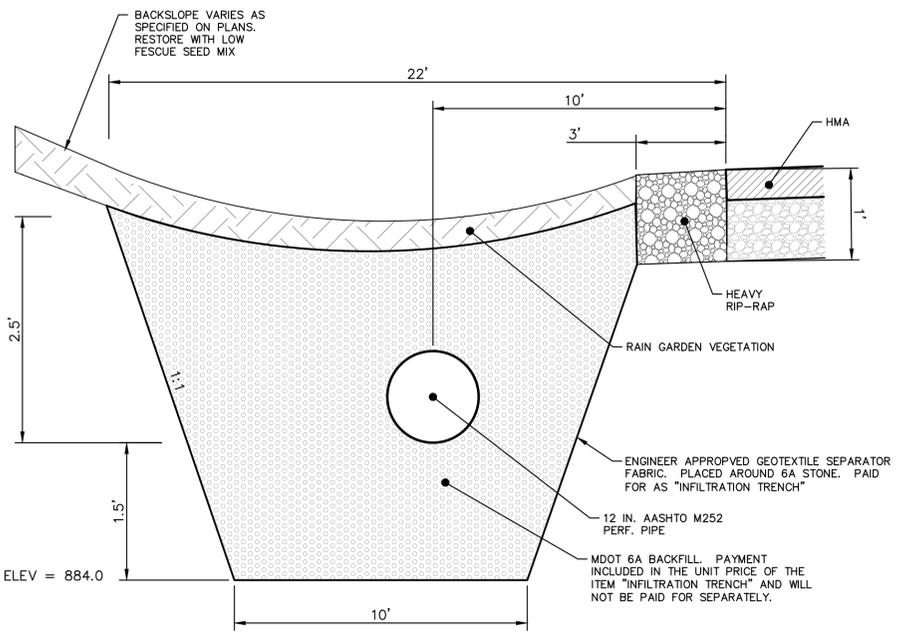


**A. PLANT SCHEDULE**  
RAIN GARDEN VEGETATION

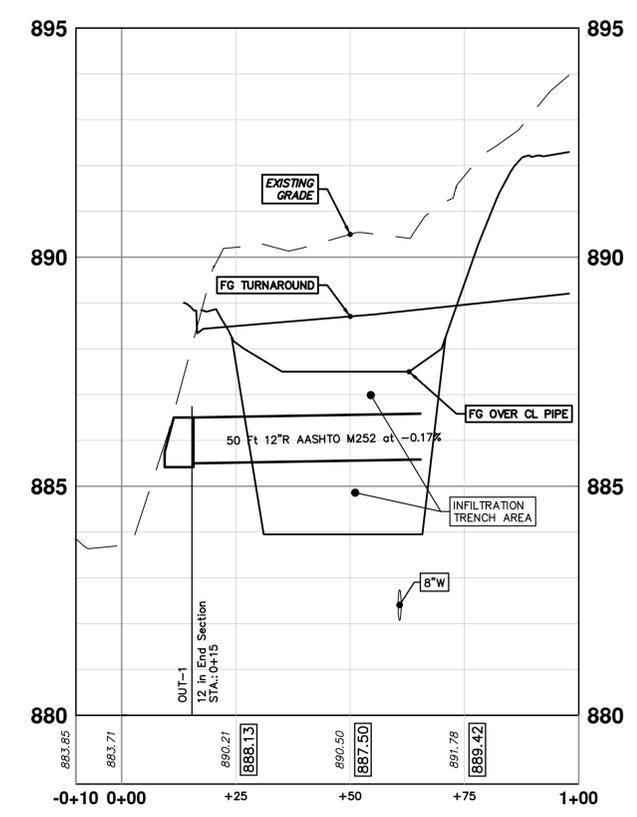
| QTY | Botanical Name           | Common Name          | Size  | Spacing  | Condition |
|-----|--------------------------|----------------------|-------|----------|-----------|
| 18  | CAREX VULPINOIDEA        | FOX SEDGE            | PLUGS | 24" o.c. |           |
| 63  | ECHINACEA PURPUREA       | PURPLE CONEFLOWER    | PLUGS | 24" o.c. |           |
| 21  | EUPATORIUM PERFOLIATUM   | BONE SET             | PLUGS | 24" o.c. |           |
| -   | ANEMONE CANADENSIS L.    | CANADIAN ANEMONE     | PLUGS | 24" o.c. |           |
| -   | OLIGONEURON RIDDELLII    | RIDDELL'S GOLDEN ROD | PLUGS | 24" o.c. |           |
| -   | LIATRIS SPICATA          | BLAZING STAR         | PLUGS | 24" o.c. |           |
| -   | PENSTEMON DIGITALIS      | BEARDTONGUE          | PLUGS | 24" o.c. |           |
| -   | RATIBIDA PINNATA         | YELLOW CONEFLOWER    | PLUGS | 24" o.c. |           |
| -   | RUDBECKIA FULGIDA        | BLACK EYED SUSAN     | PLUGS | 24" o.c. |           |
| 63  | SCHIZACHYRIUM SCOPARIUM  | LITTLE BLUESTEM      | PLUGS | 24" o.c. |           |
| -   | SILPHIUM PERFIATU        | CUP PLANT            | PLUGS | 24" o.c. |           |
| 20  | SILPHIUM TERBINTHINACEUM | PRAIRIE DOCK         | PLUGS | 24" o.c. |           |
| -   | VERBENA HASTATA          | BLUE VERVAIN         | PLUGS | 24" o.c. |           |

**B. LOW FESCUE SEED MIX**

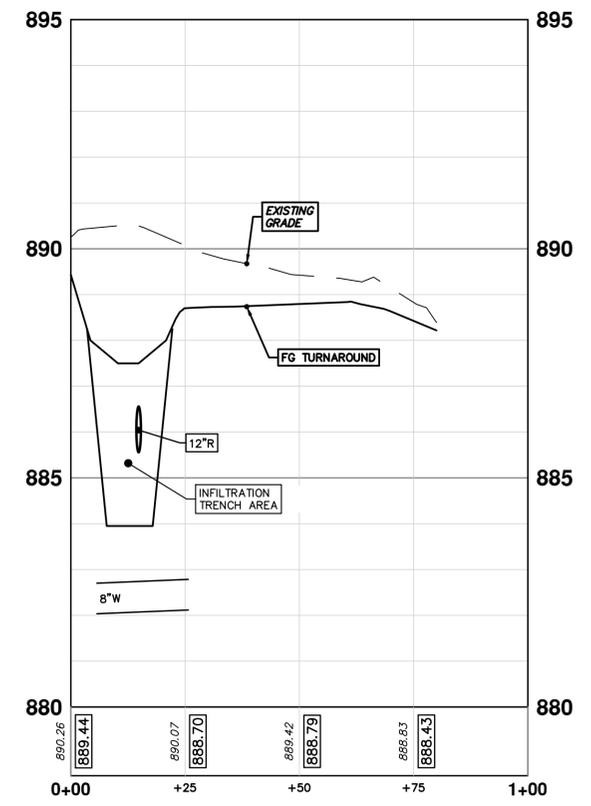
| Botanical Name                                | Common Name         | Mix Proportions (%) | Min. Purity (%) | Min. Germination (%) |
|-----------------------------------------------|---------------------|---------------------|-----------------|----------------------|
| 0.9 LBS FESTUCA RUBRA VAR CUMMUTATA "SRS 100" | CHEWINGS FESCUS     | 31                  | 98              | 85                   |
| 0.9 LBS FESTUCA OVINA                         | SHEEP FESCUE        | 30                  | 98              | 85                   |
| 0.5 LBS FESTUCA RUBRA "DAWSON"                | SAWSON RED FESCUE   | 16                  | 98              | 85                   |
| 0.5 LBS FESTUCA RUBRA                         | CREEPING RED FESCUS | 16                  | 98              | 85                   |
| 0.2 LBS LOLIUM MULTIFORUM                     | ANNUAL RYE GRASS    | 7                   | 98              | 95                   |



**INFILTRATION TRENCH DETAIL**  
NOT TO SCALE



**A-A**



**B-B**



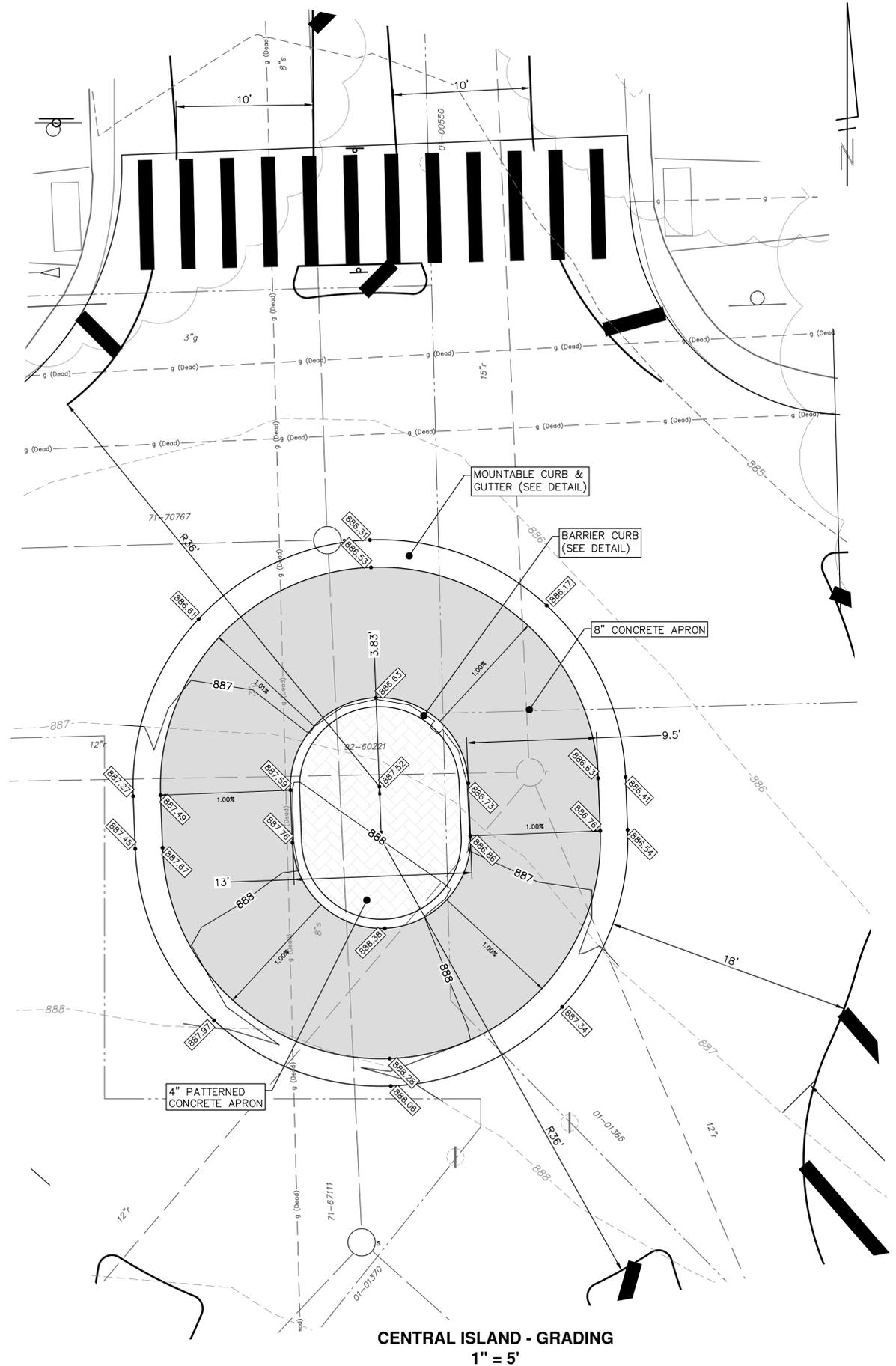
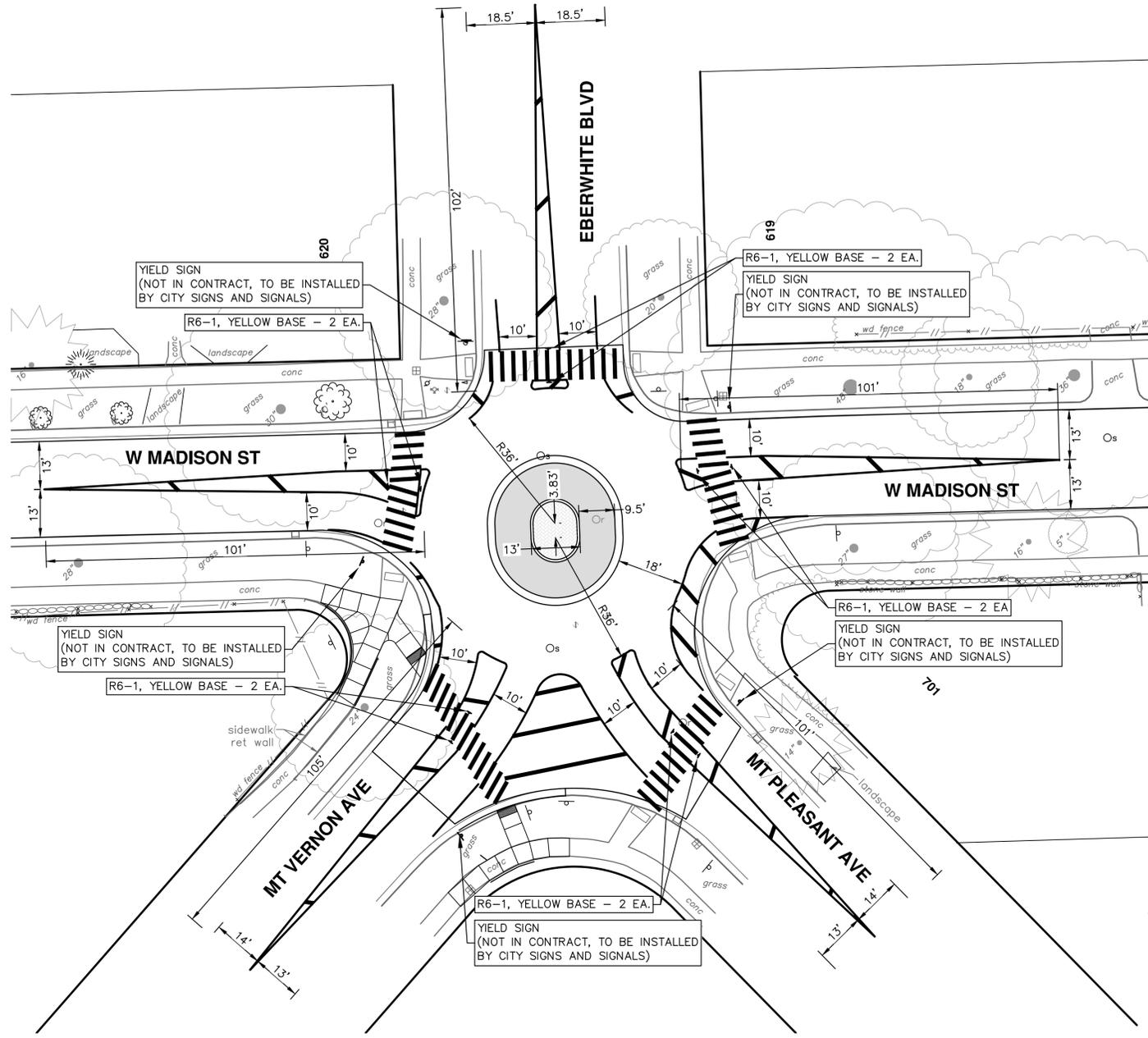
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WATERMAIN REPLACEMENT  
STORM SEWER  
TURNAROUND

SCALE PLAN: 1" = 10'  
DRAWING NO. 2022026-25  
SHEET NO.

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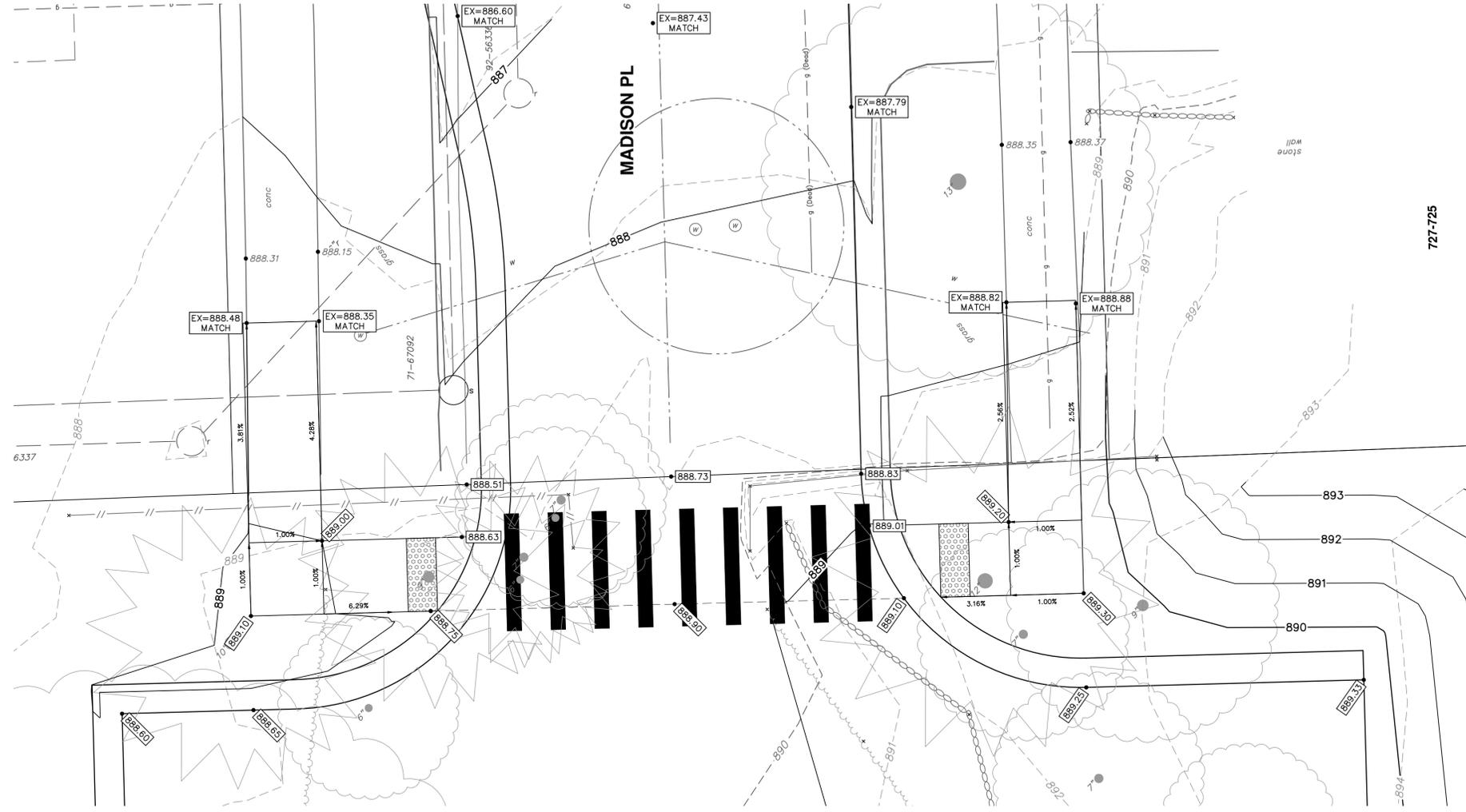
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MADISON ST & MADISON PL  
WATERMAIN REPLACEMENT  
INTERSECTIONS  
MADISON INTERSECTION IMPROVEMENTS

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MADISON ST & MADISON PL  
WATERMAIN REPLACEMENT  
INTERSECTIONS  
MADISON INTERSECTION IMPROVEMENTS

SCALE PLAN: 1" = 20'  
DRAWING No. 2022026-26  
SHEET No. 26 OF 31





CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 SCALE PLAN: #####  
 DRAWING No. 2022026-28

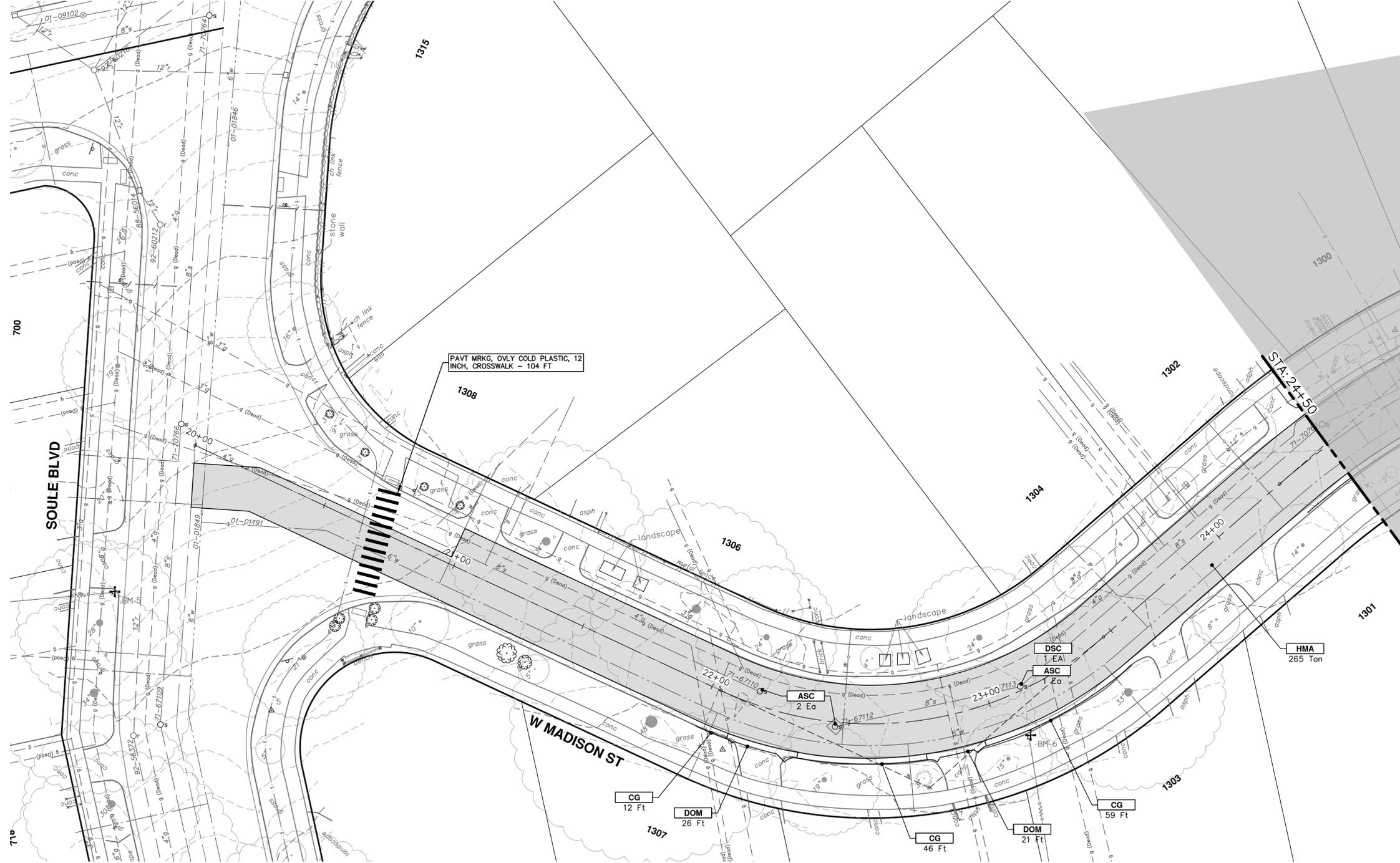
**MADISON ST & MADISON PL  
 WATERMAIN REPLACEMENT**  
 INTERSECTIONS  
 MADISON PLACE IG



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| REV. | DESCRIPTION                         | DATE | BY | CHECKED |
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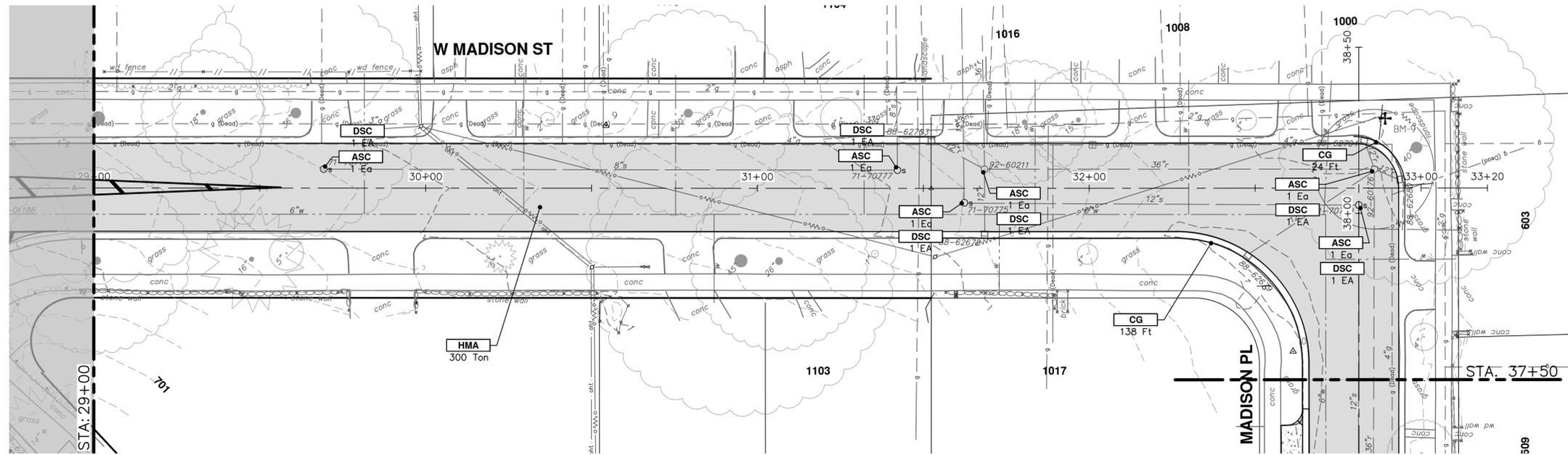
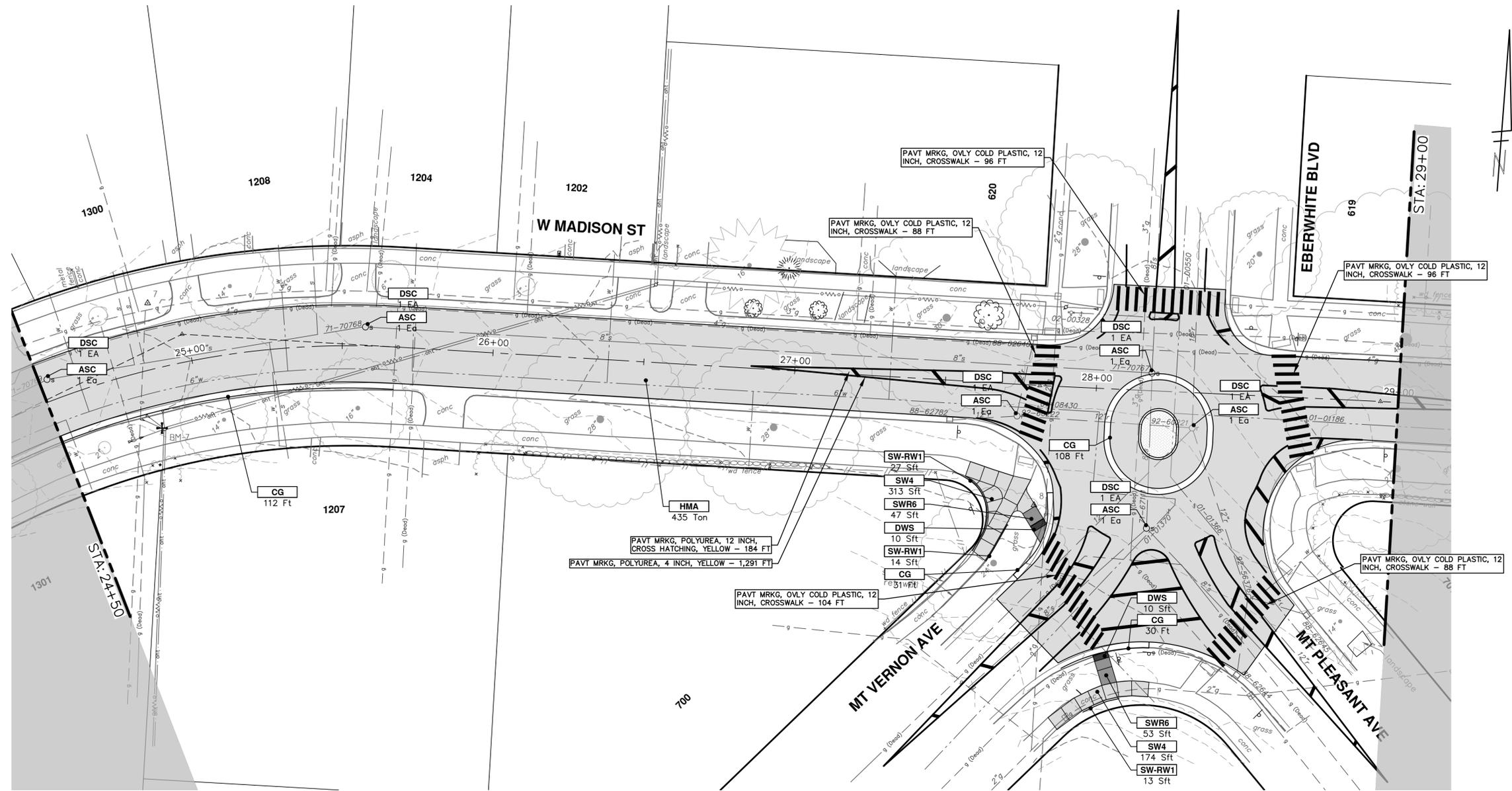
| CONSTRUCTION KEY |                                              |
|------------------|----------------------------------------------|
| KEY              | DESCRIPTION                                  |
| HMA              | SURFACE AREA FOR HMA                         |
| CG               | CONCRETE CURB OR CURB & GUTTER, ANY TYPE     |
| SW4              | 4" CONCRETE SIDEWALK                         |
| SW6              | 6" CONCRETE SIDEWALK                         |
| SW6-HE           | 6" CONCRETE SIDEWALK - HIGH EARLY            |
| SWR6             | 6" CONCRETE RAMP                             |
| SWR6-HE          | 6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY |
| SW-RW1           | INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"  |
| DOM              | CONCRETE TYPE M DRIVE OPENING- HIGH EARLY    |
| DOL              | CONCRETE TYPE L DRIVE OPENING- HIGH EARLY    |
| DWS              | DETECTABLE WARNING, CAST IN PLACE            |
| ASC              | ADJUST STRUCTURE COVER                       |
| ABM              | ADJUST MONUMENT BOX OR GATE VALVE BOX        |
| ABO              | ADJUST BY OTHERS                             |
| DSC              | STRUCTURE COVER                              |



| NO. | DATE | DESCRIPTION | BY | CHECKED |
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| CONSTRUCTION KEY |                                              |
|------------------|----------------------------------------------|
| KEY              | DESCRIPTION                                  |
| HMA              | SURFACE AREA FOR HMA                         |
| CG               | CONCRETE CURB OR CURB & GUTTER, ANY TYPE     |
| SW4              | 4" CONCRETE SIDEWALK                         |
| SW6              | 6" CONCRETE SIDEWALK                         |
| SW6-HE           | 6" CONCRETE SIDEWALK - HIGH EARLY            |
| SWR6             | 6" CONCRETE RAMP                             |
| SWR6-HE          | 6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY |
| SW-RW1           | INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"  |
| DOM              | CONCRETE TYPE M DRIVE OPENING- HIGH EARLY    |
| DOL              | CONCRETE TYPE L DRIVE OPENING- HIGH EARLY    |
| DWS              | DETECTABLE WARNING, CAST IN PLACE            |
| ASC              | ADJUST STRUCTURE COVER                       |
| ABM              | ADJUST MONUMENT BOX OR GATE VALVE BOX        |
| ABO              | ADJUST BY OTHERS                             |
| DSC              | STRUCTURE COVER                              |



Know what's below. Call before you dig.

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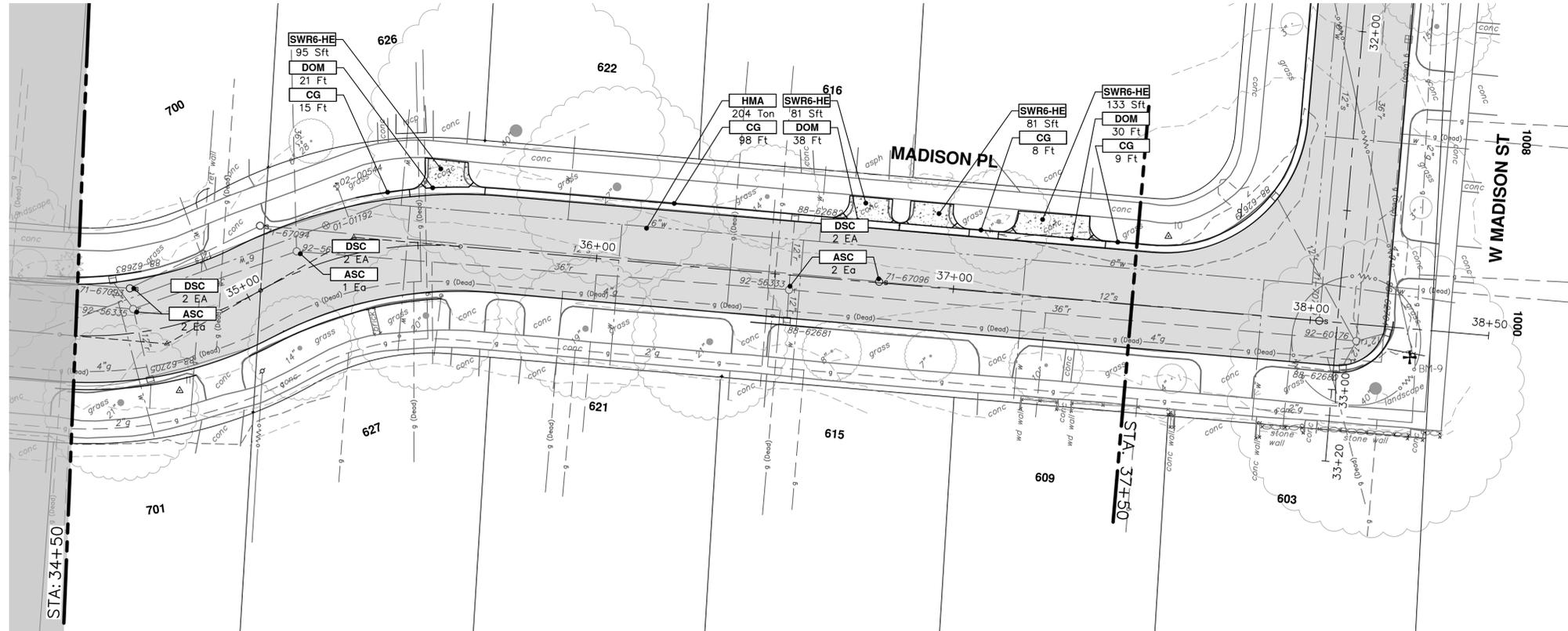
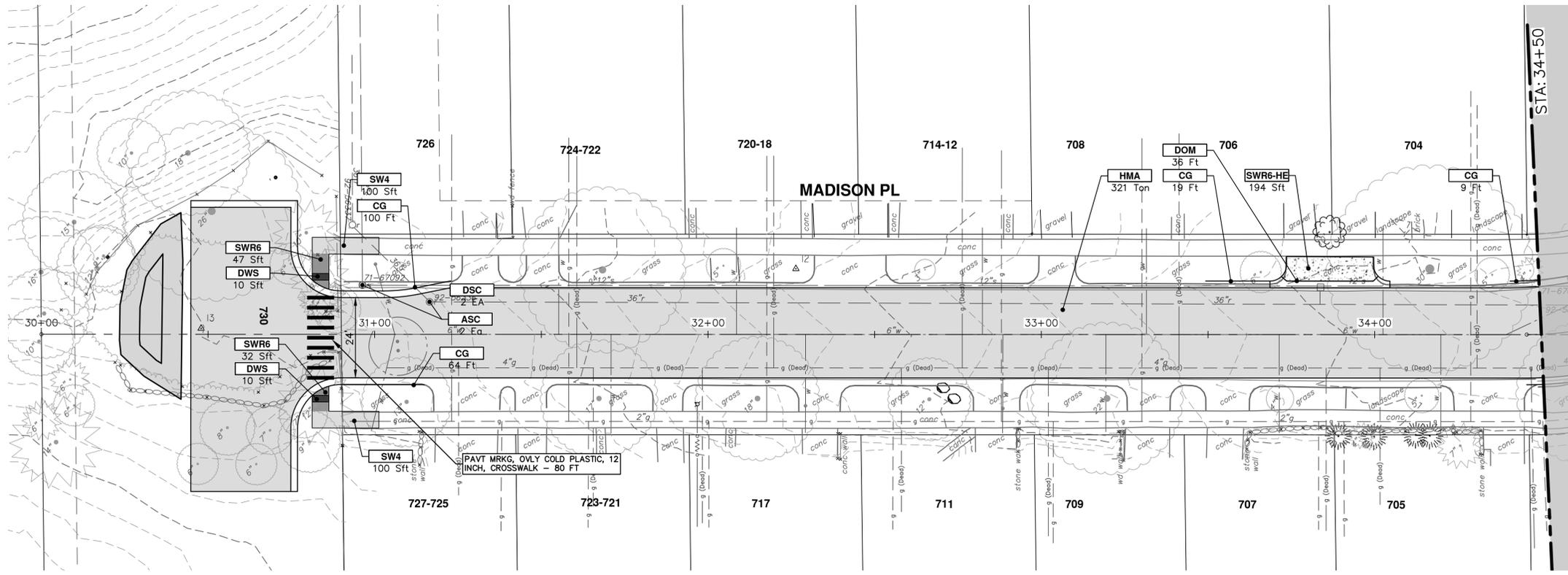
SCALE: 1" = 20'  
DRAWING No. 2022026-30

SHEET No.

30 OF 31

| NO | DATE | BY | CHECKED | DESCRIPTION |
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| CONSTRUCTION KEY |                                               |
|------------------|-----------------------------------------------|
| KEY              | DESCRIPTION                                   |
| HMA              | SURFACE AREA FOR HMA                          |
| CG               | CONCRETE CURB OR CURB & GUTTER, ANY TYPE      |
| SW4              | 4" CONCRETE SIDEWALK                          |
| SW6              | 6" CONCRETE SIDEWALK                          |
| SW6-HE           | 6" CONCRETE SIDEWALK - HIGH EARLY             |
| SWR6             | 6" CONCRETE RAMP                              |
| SWR6-HE          | 6" CONCRETE RAMP, DRIVE APPROACH - HIGH EARLY |
| SW-RW1           | INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"   |
| DOM              | CONCRETE TYPE M DRIVE OPENING - HIGH EARLY    |
| DOL              | CONCRETE TYPE L DRIVE OPENING - HIGH EARLY    |
| DWS              | DETECTABLE WARNING, CAST IN PLACE             |
| ASC              | ADJUST STRUCTURE COVER                        |
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MADISON PLACE  
STA. 30+00 - STA. 38+50

DRAWING No.  
2022026-31