State of Michigan
Department of Environmental Quality

Land and Water Management Division
301 E. Louis Glick Hwy.
Jackson MI, 49201-1535
517-780-7690

File No. 07-81-0092-P

Date: March 28, 2008

PUBLIC NOTICE

City of Ann Arbor, 100 North Fifth Avenue, Ann Arbor, Michigan, 48107, has applied to this office for a permit under authority of Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The applicant proposes to reconstruct Huron River Drive and replace existing storm culverts, to provide safe vehicular travel. Existing sanitary sewer within the roadway will be upsized to provide capacity for current and future sanitary flows. Thirteen new storm water pipes/culverts will be installed, with some discharging directly to wetland before discharging to the Huron River. A total of approximately 0.06 acres of wetland, in 10 wetland areas, will be impacted with the placement of a total of approximately 78.88 cubic yards of fill, and the excavation of a total of approximately 11.16 cubic yards of material. Excavation and fill activities are for the regarding of roadside slopes and the replacement of sewers and culverts. The project is located in T2S, R6E, Section 17 & 20, City of Ann Arbor, Washtenaw County, Michigan, in accordance with plans attached to this notice.

THIS NOTICE IS NOT A PERMIT

The proposed project may also be regulated by one or more additional parts of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, that are administered by the Land and Water Management Division (LWMD). The requirements of applicable parts are considered in determining if it is in the public interest to issue a permit.

When a permit application is received requesting authorization to work in or over the inland waters of the State of Michigan, pursuant to PART 301, INLAND LAKES AND STREAMS, OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED, the Act provides that the department submit copies for review to the department of public health, the city, village or township, and the county where the project is to be located, the local soil conservation district, any local watershed council organized under Part 311, and the local port commission. Additional notification is provided to certain persons as required by statute or determined by the department.

Those persons wanting to make comments on the proposed project shall furnish this office with their written comments no later than 20 days from the date of this notice. Written comments will be made part of the record and should reference the above file number. Objections must be factual, specific, and fully describe the reasons upon which any objection is founded. Unless a written request is filed with the department within the 20-day public comment period, the department may make a decision on the application without a public hearing. The determination as to whether a permit will be issued or a public hearing held will be based on evaluation of all relevant factors defined in Sections 30106 and 30311, or permit criteria defined by other appropriate Parts of the NREPA. These Sections address the effect of the proposed work on the public trust or interest including navigation, fish, wildlife, and water quality among other criteria. Public comments received will also be considered.

cc: DNR, Natural Heritage
DNR, Wildlife-Rose Lake
Washtenaw Co. Clerk
Washtenaw Co. Drain Comm.
City of Ann Arbor, applicant
DEQ, RRD site 81-24,25,93,94,530,547,560
DNR, Fisheries-Southfield
Washtenaw Co. Health Dept.
City of Ann Arbor Clerk
Washtenaw Soil Conservation Dist.
History Division
Huron River Watershed Council

US Army Corps of Engineers (USACE) | Michigan Department of Environmental Quality (MDEQ) DEQ

Land & Water Mgmt Div.

AGENCY USE				
	Previous USACE Permit or File Number	Date Received: DEC 26 2007 Permit Consolidation Unit	Land and Water Management Division, MDEQ File Number: 07-81-92-P	AGENCY USE
	USACE File Number		*Marina* Operating Permit Number	
	James Jackson: Sallee		Fee received $ 400 ck#0691193 100 - ck#588706	

- Complete all items in Sections 1 through 9 and those items in Sections 10 through 21 that apply to the project. Clear drawings and cross sections must be provided.

1 PROJECT LOCATION INFORMATION

- Refer to your property's legal description for the Township, Range, and Section information, and your property tax bill for your Property Tax Identification Number(s).

Address	Township Name(s)	Township(s)	Range(s)	Section(s)
Huron River Drive (Bird Road to N. Main Street)	Ann Arbor	T2S	R6E	0917SE/SW

City/Village	County(ies)	Property Tax Identification Number(s)
Ann Arbor	Washtenaw	n/a 20

Name of Waterbody	Project Name or Job Number	Subdivision/Plat	Lot Number	Private Claim
Huron River	Huron River Dr	n/a		

Project types (check all that apply): ☐ private ☑ public/government ☐ industrial ☐ commercial ☐ multi-family ☐ building addition ☐ new building or *structure* ☐ building renovation or restoration ☐ river restoration ☐ single-family ☐ other (explain)

The proposed project is on, within, or involves (check all that apply)

☐ a legally established County Drain (date established_____)

☐ a stream ☐ a pond (less than 5 acres) ☐ a Great Lake or *Section 10 Waters* ☐ a *natural river* ☐ a new marina
☐ a river ☐ a channel/canal ☐ a designated *high risk erosion area* ☐ a *dam* ☐ a *structure* removal
☐ a ditch or drain ☐ an *inland lake* (5 acres or more) ☐ a designated *critical dune area* ☑ a wetland ☑ a utility crossing
☐ a *floodway* area ☐ a *100-year floodplain* ☐ a designated *environmental area* ☑ 500 feet of an existing waterbody

2 DESCRIBE PROPOSED PROJECT AND ASSOCIATED ACTIVITIES, AND THE CONSTRUCTION SEQUENCE AND METHODS

- Attach separate sheets, as needed, including necessary drawings, sketches, photographs, aerials, or plans.

Reconstruction of the Huron River Drive within the current footprint as much as possible, upsizing of existing sanitary sewer within the road by pipe-bursting, and replacement of existing storm culverts. See attached Plan sheets and cover letter.

3 APPLICANT, AGENT/CONTRACTOR, AND PROPERTY OWNER INFORMATION

- The applicant can be either the property owner or the person or company that proposes to undertake the activity.
- If the applicant is a corporation, both the corporation and its owner must provide a written document authorizing the agent/contractor to act on their behalf.

Applicant (individual or corporate name)	Agent/Contractor (firm name and contact person)
X City of Ann Arbor	Elizabeth Rolla, P.E., Sr. Project Mgr
Mailing Address: 100 N. Fifth Ave	Address: same
City: Ann Arbor State: MI Zip Code: 48107	City State Zip Code
Daytime Phone Number with Area Code: (734) 994-6155 Cell Phone Number: (734) 323-7156	Daytime Phone Number with Area Code Cell Phone Number
Fax: (734) 994-1744 E-mail: erolla@a2gov.org	Fax E-mail

Is the applicant the sole owner of all property on which this project is to be constructed and all property involved or impacted by this project? ☐ No ☑ Yes

If No, provide a letter signed by the property owner authorizing the agent/contractor to act on his or her behalf or a copy of easements or right-of-ways. If multiple owners, attach all property owners' names, mailing addresses, and telephone numbers. Disclose any DEQ conservation easements or other easements, deed restrictions, leases, or any other encumbrance upon the property in the project area. A copy of the land restriction must be provided.

Property Owner's Name (If different from applicant)	Mailing Address
Daytime Phone Number with Area Code Cell Phone Number	City State Zip Code

4 PROPOSED PROJECT PURPOSE, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose must include any new development or expansion of an existing land use.
- Include a description of alternatives considered to avoid or minimize resource impacts. Include factors such as, but not limited to, alternative construction technologies; alternative project layout and design; alternative locations; local land use regulations and infrastructure; and pertinent environmental and resource issues.
- For utility crossings, include both alternative routes and alternative construction methods.

Rebuild road, within current footprint as much as possible, to provide safe vehicular travel. Also, upsize sanitary sewer to provide capacity for current and future sanitary flows. A cover letter is attached which describes all alternatives considered. The proposed road width is at the minimum, per AASHTO standards. See attached cover letter.

5 LOCATING YOUR PROJECT SITE

- Provide the requested information listed below to help staff locate your project site.
- Attach a copy of a map, such as a plat, county, or USGS topographic map, clearly showing the site location and include an arrow indicating the north direction.
- Project area must be staked at the time of application submittal.

Is there an access road to the project? ☐ No ☑ Yes (If Yes, type of road, check all that apply) ☐ private ☑ public ☑ improved ☐ unimproved

Name of roads at closest main intersection N. Main Street and M-14

Directions from main intersection Exit wb M-14 at Main Street ("Downtown Ann Arbor" exit). Immediately turn right (west) onto Huron River Dr at the bottom of the exit ramp

Style of house or other building on site ☐ ranch ☐ 2-story ☐ cape cod ☐ bi-level ☐ cottage/cabin ☐ pole barn ☑ none ☐ other (describe)

Color Color of adjacent property house and/or buildings

House number Address is visible on ☐ house ☐ garage ☐ mailbox ☐ sign ☐ other

Street name Fire lane number Lot number

How can your site be identified if there is no visible address?

Provide directions to the project site, with distances from the best and nearest visible landmark and waterbody

see above

Does project cross boundaries of two or more political jurisdictions? (City/Township, Township/Township, County/County, etc.)
☑ No ☐ Yes (If Yes, list jurisdiction names.)

6 List all other federal, interstate, state, or local agency authorizations required for the proposed activity, including all approvals or denials received.

Agency	Type approval	Identification number	Date applied	Date approved / denied	If denied, reason for denial

7 If a permit is issued, date activity will commence (M/D/Y) 05/05/2008 | Proposed completion date (M/D/Y) 10/31/2008

Has any construction activity commenced or been completed in a regulated area? ☑ No ☐ Yes
If Yes, identify the portion(s) underway or completed on drawings or attach project specifications and give completion date(s) (M/D/Y)

Were the regulated activities conducted under a MDEQ permit? ☐ No ☐ Yes
If Yes, list the MDEQ permit number

Are you aware of any unresolved violations of environmental law or litigation involving the property? ☑ No ☐ Yes (If Yes, explain)

8 PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all *adjacent and impacted property owners* and the lake association or established lake board, including the contact person's name.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Property Owner's Name	Mailing Address	City	State	Zip Code
All adjacent land is owned by the City of Ann Arbor.				

Name of ☐ Established Lake Board ☐ or Lake Association
and the Contact Person's name, phone number, and mailing address

9 APPLICANT'S CERTIFICATION READ CAREFULLY BEFORE SIGNING

I am applying for a permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application, that it is true and accurate, and, to the best of my knowledge, is in compliance with the State *Coastal Zone Management Program* and the *National Flood Insurance Program.* I understand that there are penalties for submitting false information and that any permit issued pursuant to this application may be revoked if information on this application is untrue. I certify that I have the authority to undertake the activities proposed in this application. By signing this application, I agree to allow representatives of the MDEQ, USACE, and/or their agents or contractors to enter upon said property in order to inspect the proposed activity site and the completed project. I understand that I must obtain all other necessary local, county, state, or federal permits and that the granting of other permits by local, county, state, or federal agencies does not release me from the requirements of obtaining the permit requested herein before commencing the activity. I understand that the payment of the application fee does not guarantee the issuance of a permit.

- All applicants must complete **all** of the items in Sections 1 through 9 on pages 1 and 2 of this application.
- Complete those items in Sections 10 through 21 that apply to the project. Submit only those pages where you have provided information.
- Your application will not be processed if the application form is not completely filled out.
- List here the application page numbers being submitted and a brief description of other attachments included with your application.
- Submit 8.5" by 11," 8.5" by 14" or 11" by 17" size drawings with 4 copies. The USACE requires one set of drawings on 8.5" x 11" paper, with all notations clearly legible. Larger copies may be submitted in addition to the standard size copies.
- A letter of authorization from the owner must be included if not signed below by the owner.

☑ Property Owner ☐ Agent/Contractor ☐ Corporation - Title	Elizabeth Rolla, P.E. Printed Name	E Rolla Signature	12/21/07 Date

Land & Water Mgt. Div.
DEC 2 6 2007
Permit Section

Revised

US Army Corps of Engineers (USACE) Michigan Department of Environmental Quality (MDEQ) DEQ

10 PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

- Check boxes A through N that may be applicable to your project and provide the requested information.
- If your project may affect wetlands, also complete Section 12. If your project may impact regulated *floodplains*, also complete Section 13.
- Provide an overall site plan showing existing lakes, streams, wetlands, and other water features; existing *structures*; and the location of all proposed *structures*, land change activities and *soil erosion and sedimentation control measures*. Review sample drawings for guidance in completing site-specific drawings for your project.
- Some projects on the Great Lakes require an application for conveyance prior to Joint Permit Application completeness.
- On a Great Lake use IGLD 85 ☐ surveyed ☐ converted from observed still water elevation. On inland waters, ☐ NGVD 29 ☐ local datum ☐ other _____ Observed water elevation (ft) , date of observation (M/D/Y)

☐ **A. PROJECTS REQUIRING FILL** (See All Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
- Attach both plan and *cross-section* views to scale showing maximum and average fill dimensions.

(Check all that apply) ☐ *floodplain* fill ☑ wetland fill ☐ *riprap* ☐ *seawall, bulkhead,* or *revetment* ☐ bridge or culvert
☐ boat launch ☐ off-shore swim area ☐ beach sanding ☐ boatwell ☐ crib *dock* ☐ other _____

Fill dimensions (ft) length width maximum depth	Total fill volume (cu yd)	Maximum water depth in fill area (ft)
Type of clean fill ☐ pea stone ☑ sand ☑ gravel ☐ wood chips ☐ other _____		Will *filter fabric* be used under proposed fill? ☐ No ☐ Yes (If Yes, type)
Source of clean fill ☐ on-site, If on-site, show location on site plan ☑ commercial ☐ other, If other, attach description of location		
Fill will extend _____ feet into the water from the *shoreline* and *upland* _____ feet out of the water.		Fill volume below OHWM (cu yd) _____

☐ **B. PROJECTS REQUIRING DREDGING OR EXCAVATION** (For dredging projects see Sample Drawing 7, for excavation see other applicable Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
- Attach both plan and *cross-section* views to scale showing maximum and average dredge or excavation dimensions.
- The applicant will be notified if sediment sampling is required.

(Check all that apply) ☐ *floodplain* excavation ☐ wetland dredge or draining ☐ *seawall, bulkhead, or revetment*
☐ navigation ☐ *boat well* ☐ boat launch ☑ other wetland excavation

Total dredge/excavation volume (cy)	Dimensions length see width att. depth	Dredge/excavation volume below OHWM (cu yd)	Method and equipment for dredging
11.2			
Has proposed dredge material been tested for contaminants? ☑ No ☐ Yes (If Yes, attach testing results)	Will dredged or excavated spoils be placed ☐ on-site ☑ off-site. Attach a detailed disposal area site plan, location map. If dispose off site, provide address and letter of authorization.		
Has this same area been previously dredged? ☑ No ☐ Yes (If Yes, provide date and permit number, if available) If Yes, are you proposing to enlarge the previously dredged area ☐ No ☐ Yes			
Is long-term maintenance dredging planned? ☑ No ☐ Yes (If Yes, when and how much?)			

☐ **C. PROJECTS REQUIRING RIPRAP** (See Sample Drawings 2, 3, 8, 12, 14, 17, 22, and 23. Others may apply)

Riprap waterward of the ☐ shoreline OR ☐ ordinary high water mark	Dimensions (ft) length width depth	Volume (cu yd)
Riprap landward of the ☑ *shoreline* OR ☐ *ordinary high water mark*	Dimensions (ft) length see Plans width depth	Volume (cu yd) 45
Type of *riprap* ☑ field stone ☐ angular rock ☐ other_____	Will *filter fabric* be used under proposed *riprap*? ☐ No ☐ Yes (If Yes, type) Mirafi Geotextile for Separation	

☐ **D. SHORE PROTECTION PROJECTS** (See Sample Drawings 2, 3, and 17)

(check all that apply) ☐ *riprap* – length (ft.) ____ ☐ *seawall/bulkhead* – length (ft.) ____ ☐ *revetment* – length (ft.) ____	Distances of project from both property lines (ft)

☐ **E. DOCK - PIER – MOORING PILINGS** (See Sample Drawing 10)

Type ☐ open pile ☐ filled ☐ crib	*Seasonal structure*? ☐ No ☐ Yes
Proposed *structure* dimensions (ft) length width	Dimensions of nearest adjacent *structures* (ft) length width

☐ **F. BOAT WELL** (No Sample Drawing available)

Type of bank stabilization ☐ wood ☐ steel ☐ concrete ☐ vinyl ☐ *riprap* ☐ other_____	
Boat well dimensions (ft) length width depth	Number of boats
Volume of backfill behind sidewall stabilization (cu yd)	Distances of *boat well* from adjacent property lines (ft)

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☐ **G. BOAT LAUNCH** (No Sample Drawing available) (check all that apply) ☐ new ☐ existing ☐ public ☐ private ☐ commercial ☐ replacement

Proposed overall boat launch dimensions (ft) length width depth	Type of material ☐ concrete ☐ wood ☐ stone ☐ other	
Existing overall boat launch dimensions (ft) length width depth	Boat launch dimensions (ft) below *ordinary high water mark* length width depth	
Distances of launch from both property lines (ft)	Number of skid *piers*	Skid *pier* dimensions (ft) width length

☐ **H. BOAT HOIST** (No Sample Drawing available)

(Check all that apply) ☐ *seasonal* ☐ permanent ☐ cradle ☐ side lifter ☐ other _____ located on ☐ *seawall* ☐ *dock* ☐ bottomlands

☐ **I. BOARDWALKS AND DECKS IN** ☐ **WETLANDS - OR -** ☐ **FLOODPLAINS** (See Sample Drawings 5 and 6. Provide table if necessary)

(Check all that apply) ☐ boardwalk ☐ deck	Boardwalk or deck is on ☐ fill ☐ *piling*	Dimensions (ft) length width

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10 Continued - PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

☐ **J. INTAKE PIPES** (See Sample Drawing 16) ☐ **OUTLET PIPES** (See Sample Drawing 22)

Type ☐ headwall ☐ end section ☐ pipe ☐ other_____	If outlet pipe, discharge is to ☐ wetland ☐ *inland lake* ☐ stream, drain, or river ☐ Great Lake ☐ other_____
Dimensions of headwall OR end section (ft) length width depth	Number of pipes / Pipe diameters and invert elevations

☐ **K. MOORING AND NAVIGATION BUOYS** (No Sample Drawing available)

- Provide an overall site plan showing the distances between each buoy, distances from the shore to each buoy, and depth of water at each buoy in feet.
- Provide cross-section drawing(s) showing anchoring system(s) and dimensions.

Number of buoys	Type of anchor system	Purpose of buoy ☐ mooring ☐ navigation ☐ swimming
Dimensions of buoys (ft) width height		Do you own the property along the *shoreline*? ☐ No ☐ Yes If No, you must provide an authorization letter from the property owner(s)

☐ **L. GROINS** (No Sample Drawing available)

- Provide an overall site plan showing the distances (ft) of the outermost *groins* from the property lines, distances between *groins*, length and width of each *groin*, and the distance from the existing toe of the bluff to the lakeward end of the *groins*.
- If existing *groins* are located on adjacent properties, provide distances (ft) from closest neighboring *groin* to your property lines on the site plan. Provide *cross-section* views showing the length and height of each *groin* and the height of *groin* ends above the observed water level (date and time). If step down type, show the height of each section above the observed water level.

Number of *groins*	Type of *groin* ☐ steel ☐ wood ☐ other _____	Will *groin* be placed on a foundation? ☐ No ☐ Yes (If Yes, dimensions of foundation (ft)) length width height

☐ **M. FENCES IN WETLANDS, STREAMS, OR FLOODPLAINS** (No Sample Drawing available)

- Provide an overall site plan showing the proposed fencing through wetlands, streams, or *floodplains*.
- Provide drawing of fence profile showing the design, dimension, post spacing, board spacing, and distance from ground to bottom of fence (if in a *floodplain*).

(check all that apply) ☐ wetlands ☐ streams ☐ *floodplains*	Total length (ft) of fence through wetlands _____ streams_____ *floodplains*_____	Fence height (ft)_____	Fence type and material

☐ **N. OTHER** - e.g., *structure* removal, *marine railway*, *low sand trap wall, breakwater,* and structural foundations in wetlands or *floodplains*

11 EXPANSION OF AN EXISTING OR CONSTRUCTION OF A NEW LAKE OR POND (See Sample Drawings 4 and 15)

Which best describes your proposed waterbody use (check all that apply)
☐ wildlife ☐ *stormwater retention basin* ☐ *stormwater detention basin* ☐ recreation ☐ wastewater basin ☐ other _____

Water source for lake/pond
☐ groundwater ☐ natural springs ☐ *Inland Lake or Stream* ☐ stormwater runoff ☐ pump ☐ sewage ☐ other_____

Location Of the lake/basin/pond ☐ floodplain ☐ wetland ☐ upland

Will project involve construction of a *dam*, dike, outlet control *structure*, or *spillway*? ☐ No ☐ Yes (If Yes, complete Section 17)

12 ACTIVITIES THAT MAY IMPACT WETLANDS (See Sample Drawings 8 & 9)

- For information on the MDEQ's *Wetland Assessment* Program, visit the LWMD website or call 517-373-1170.

(check all that apply) ☑ fill (Section 10A) ☑ dredge or excavation (Section 10B) ☐ boardwalk or deck (Section 10I) ☐ dewatering ☐ fences (Section 10M) ☐ bridges and culverts (Section 14) ☐ draining surface water ☐ other_____

Has a professional wetland delineation been conducted for this parcel? ☐ No ☑ Yes (If Yes, provide a copy; if federal method was used, supply data sheets)	Applicant purchased property ☐ before OR ☐ after October 1, 1980.

Is there a recorded DEQ easement on the property? ☑ No ☐ Yes (If Yes, provide the number _____)

Has the MDEQ conducted a *wetland assessment* for this parcel? ☑ No ☐ Yes (If Yes, provide a copy)

Describe the wetland impacts, proposed use or development, and efforts to avoid/minimize impacts. Describe the wetland alternatives and provide the type and amount of mitigation proposed if more than 1/3 acre is to be impacted.

The goal of the project is to rebuild the road within the current footprint as much as possible so as to avoid impacting wetlands. The proposed road cross section relies on geogrid to minimize the road cross section width and limit disturbance.

Is any grading or mechanized land clearing proposed? ☐ No ☑ Yes (If Yes, show locations on site plan)	Has any of the proposed grading or mechanized land clearing been completed? ☑ No ☐ Yes (If Yes, label and show locations on site plan)

- Complete the wetland dredge and wetland fill dimension information for each impacted wetland area.
- Attach additional sheets if necessary and label the impacted wetland areas on a site plan drawn to scale. Attach at least one typical *cross-section* for each wetland dredge and/or fill area. Also complete Section 10A for fill and Section 10B for dredge or excavation activities.
- If dredge material will be disposed of on site, show the location on site plan in an *upland* area and include *soil erosion and sedimentation control measures.*

Wetland dredge dimensions	maximum length (ft) see att.	maximum width (ft)	dredge area ☐ acres ☐ sq ft	average depth (ft)	dredge volume (cu yd)
Wetland fill dimensions	maximum length (ft) see att.	maximum width (ft)	fill area ☐ acres ☐ sq ft	average depth (ft)	fill volume (cu yd)

Total wetland dredge area ☐ acres ☐ sq ft see Plans	Total wetland dredge volume (cu yd) 11.2
Total wetland fill area ☐ acres ☐ sq ft	Total wetland fill volume (cu yd) 78.9

The proposed project will be serviced by ☐ public sewer ☐ private septic system (If septic system, show existing and new or expanded system on plans)	If septic system, has application been made to the County Health Department for a permit? ☐ No ☐ Yes	If Yes, has permit been issued? ☐ No ☐ Yes (If Yes, provide copy)

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16 DRAWDOWN OF AN IMPOUNDMENT

- If wetlands will be impacted, also complete Section 12.

Type of drawdown ☐ over winter ☐ temporary ☐ one-time event ☐ annual event ☐ permanent (*dam* removal) ☐ other_____

Reason for drawdown

Has there been a previous drawdown? ☐ No ☐ Yes (If Yes, provide date (M/Y))

Previous MDEQ permit number, if known

Does waterbody have established legal lake level? ☐ No ☐ Yes ☐ Not Sure

Dam ID Number, if known

Extent of vertical drawdown (ft)	*Impoundment* design head (ft)	Number of adjacent or impacted property owners
Date drawdown would start (M/D/Y)	Date drawdown would stop (M/D/Y)	Rate of drawdown (ft/day)
Date refilling would start (M/D/Y)	Date refill would end (M/D/Y)	Rate of refill (ft/day)
Type of outlet discharge *structure* to be used ☐ surface ☐ bottom ☐ mid-depth	*Impoundment* area at normal water level (acres)	Sediment depth behind *impoundment* discharge *structure* (ft)

17 DAM, EMBANKMENT, DIKE, SPILLWAY, OR CONTROL STRUCTURE ACTIVITIES (See Sample Drawing 15)

- If wetlands will be impacted, also complete Section 12.
- Attach site-specific conceptual plans for construction of a new *dam*, reconstruction of a *failed dam*, or enlargement of an existing *dam* for resource impact review. Detailed engineering plans are required once the activity has been determined to be permitable from an environmental standpoint.
- Attach detailed engineering plans for a *dam* repair, *dam alteration*, *dam abandonment*, or *dam* removal.

Which one best describes your project? ☐ new *dam* construction ☐ reconstruction of a *failed dam* ☐ enlargement of an existing *dam* ☐ *dam repair* ☐ *dam alteration* ☐ *dam abandonment* ☐ *dam* removal ☐ other_____

Dam ID Number If known	Type of outlet discharge *structure* ☐ surface ☐ bottom ☐ mid depth	Will proposed activities require a drawdown of the waterbody to complete the work? ☐ No ☐ Yes (If Yes, also complete Section 16)	
Riprap Volume (cu yd)	Dredging/excavation Volume (cu yd)	Fill volume (cu yd)	Does *structure* allow complete drainage of waterbody? ☐ No ☐ Yes

Benchmark elevation (ft) Datum used ☐ Local ☐ *NGVD 29* ☐ other_____ Describe benchmark and show on plans

Have you engaged the services of a Licensed Professional Engineer? ☐ No ☐ Yes (If Yes, name, registration number, and mailing address)

Will a water diversion during construction be required? ☐ No ☐ Yes (If Yes, describe how the stream flow will be controlled through the *dam* construction area during the proposed project activities)

- The following additional information is required for a new dam, reconstruction of a failed dam, or enlargement of an existing dam.

Describe the type of *dam* and how you will design the *dam* and embankment to control seepage through and underneath the *dam*.

Embankment top elevation (ft)	Streambed elevation at downstream embankment toe (ft)	Structural height (difference between embankment top elevation and streambed elevation at downstream embankment toe) (ft)	
Embankment length (ft)	Embankment top width (ft)	Embankment bottom width (ft)	Embankment *slopes* (vertical / horizontal) Upstream _____ Downstream _____
Proposed normal pool elevation (ft)	*Impoundment* flood elevation (ft)	Maximum vertical drawdown capability (ft) (attach operational procedure of the proposed *structure* if available)	

Have soil borings been taken at *dam* location? ☐ No ☐ Yes (If Yes, submit results with permit application)	Will a cold water *underspill* be provided? ☐ No ☐ Yes (If Yes, invert elevation (ft.) _____)	Do you have flowage rights to all proposed flooded property at the design flood elevation? ☐ No ☐ Yes

18 UTILITY CROSSINGS (See Sample Drawings 12 and 13)

- If side casting is required, complete Subsections 10A and 10B. If spoils will be placed in wetlands or wetlands may be impacted, complete Section 12.
- Attach additional sheets with the requested information as needed for multiple crossings.

What method will be used to construct the crossings? ☐ *flume* ☐ *plow* ☑ open trench ☐ jack and bore ☐ directional drilling

Crossing of ☐ *Inland Lake or Stream* ☐ *floodplain* ☐ international waters ☐ wetlands (also complete Section 12)

Type	Number of wetland crossings	Number of inland lake or stream crossings	Pipe diameter (in.)	Pipe length per crossing (ft.)	Distance below streambed or wetland (in.)	Trench width (ft.)
☐ sanitary sewer						
☑ storm sewer	see Plans		varies	varies	varies	
☐ watermain						
☐ cable						
☐ oil/gas pipeline						

Land & Water Mgt. Div.
DEC 9 3 2007
Permit Section

CITY OF ANN ARBOR, MICHIGAN

100 North Fifth Avenue, P.O. Box 8647, Ann Arbor, Michigan 48107-8647
http://www.ci.ann-arbor.mi.us

Public Services Area
Project Management Unit

December 21, 2007

MDEQ
LWMD-PCU
P.O. Box 30204
Lansing MI 48909-7704

To Whom It May Concern:

Enclosed is the Joint Permit Application for our Huron River Drive Reconstruction project. This project is necessary to replace a badly deteriorated roadway. The goal of the project is to rebuild the road with as little disruption as possible to the adjacent natural features.

BACKGROUND

Huron River Drive is a winding two lane bituminous road that borders the Huron River to the north and the City-owned Bird Hills Park to the south. The vehicle lanes are approximately 11-feet wide. Steep slopes, dense vegetation, natural species, and wetlands characterize the land immediately adjacent to the roadway. In some stretches, there is no shoulder, but only a drop-off to the wetlands below. The road is a popular route for recreational bicyclists and motorists seeking a scenic drive. It is also a throughway for residents who live northwest of Ann Arbor and those traveling to the neighboring village of Dexter, Michigan. Based on recent traffic counts, approximately 2300 vehicles per day use the road.

The bituminous surface of the road is in poor condition. It was last surface treated in the 1990's and has not been resurfaced since.

Huron River Drive's continued deterioration required action. Because of its unique setting, an extensive public involvement process was conducted to gather the community's values. Due to the conflicting natures of the vehicular use, bicycle use, and adjacent natural features, the public involvement process led to the passage of a City Council resolution (R-373-8-07) which directed staff to "prepare design and construction documents and plans to improve Huron River Drive as recommended in the preferred alternative to rebuild the road as closely as possible to its current dimensions."

The proposed plans reflect the above described goal of rebuilding the road within the current dimensions as much as possible.

Project Features:

- The road work is necessary to maintain safe vehicular and bicycle travel.
- The road cross section is at a minimum allowable width, per AASHTO
- The cross section is designed to avoid draining the wetlands that have formed in the previously existing uphill ditch. There is no edge drain proposed.
- The existing culverts that provide water to downhill wetlands are failing (collapsing). The culverts are being replaced in the exact same location to preserve the hydrologic system downhill.
- The existing sanitary sewer that is within the roadway needs to be upsized. This work will be done using a trenchless pipe bursting method.
- The limits of construction grading are shown on the plans. A silt fence will be placed the entire length of construction to assure these limits are maintained.

Enclosed documents:

- Joint Permit Application
- $100 Check payable to State of Michigan
- Proposed Plans showing typical cross section, locations of natural features, and limits of disturbance
- Wetland Delineation Report, prepared by ASTI
- Huron River Drive Improvement Alternatives report which gives an overview of the site and describes the public involvement efforts
- Photos of the roadway
- Wetland disturbance calculations

Please feel free to contact me at 734-994-6155 or erolla@a2gov.org if you have any questions.

Very Truly Yours,
PROJECT MANAGEMENT

Elizabeth Rolla, P.E.
Senior Project Manager

Revised

TABLE 2
HURON RIVER DRIVE IMPROVEMENTS 07-81-0092-P
WETLAND SQUARE FOOT QUANTITIES

from station	to station	left or right	wetland designation	square ft.	total sf for each wetland	cyd for each wetland
5+95	6+14	R	N	225.00	225.00	48.98
12+10	12+63	L	A	42.58	42.58	0.23
21+90	21+98	R	C	37.76	37.76	0.00
21+82	22+00	L	B	167.03		
22+02	24+98	L	B	604.11		
25+28	26+49	L	B	87.65		
28+84	28+91	L	B	32.98	891.77	8.26
28+83	28+92	R	E	86.79	86.79	
Plunge Pool	R-19	R	E	included		-0.31
30+82	31+01	R	F	95.48	95.48	
Plunge Pool	R-21	R	F	included		-0.09
30+77	31+18	L	G	249.98		
32+18	33+00	L	G	28.24		
34+00	34+80	L	G	15.46		
35+65	37+66	L	G	295.80		
37+72	37+86	L	G	44.93	634.42	2.59
37+75	37+88	R	J	104.56	104.56	0.82
38+97	40+53	L	M	343.14	343.14	4.51
41+55	43+57	L	L	242.05		
44+25	44+43	L	L	20.65	262.70	2.74
			total sft	2724.2	2724.2	67.72

Revised tab 4

TABLE 1

HURON RIVER DRIVE IMPROVEMENTS

07-81-0092-P

WETLAND CUT / FILL QUANTITIES

station	scaled end fill area	actual end area	average end area	distance	fill volume	scaled end cut area	actual end area	distance	cut volume	Wetland Designation	fill volume cft	cut volume cft	Net volume cft	Net volume cyd
0+00	0	0				0	0							
0+25	0	0	0	25	0	0	0	25	0					
0+50	0	0	0	25	0	0	0	25	0					
0+75	0	0	0	25	0	0	0	25	0					
1+00	0	0	0	25	0	0	0	25	0					
1+25	0	0	0	25	0	0	0	25	0					
1+50	0	0	0	25	0	0	0	25	0					
1+75	0	0	0	25	0	0	0	25	0					
2+00	0	0	0	25	0	0	0	25	0					
2+25	0	0	0	25	0	0	0	25	0					
2+50	0	0	0	25	0	0	0	25	0					
2+75	0	0	0	25	0	0	0	25	0					
3+00	0	0	0	25	0	0	0	25	0					
3+25	0	0	0	25	0	0	0	25	0					
3+50	0	0	0	25	0	0	0	25	0					
3+75	0	0	0	25	0	0	0	25	0					
4+00	0	0	0	25	0	0	0	25	0					
4+25	0	0	0	25	0	0	0	25	0					
4+50	0	0	0	25	0	0	0	25	0					
4+75	0	0	0	25	0	0	0	25	0					
5+00	0	0	0	25	0	0	0	25	0					
5+25	0	0	0	25	0	0	0	25	0					
5+50	0	0	0	25	0	0	0	25	0					
5+75	0	0	0	25	0	0	0	25	0					
6+00	132.234	52.8936	26.4468	25	661.17	0	0	25	0	wetland N	1322.34	0	1322.34	48.98
6+25	0	0	26.4468	25	661.17	0	0	25	0					
6+50	0	0	0	25	0	0	0	25	0					
6+75	0	0	0	25	0	0	0	25	0					
7+00	0	0	0	25	0	0	0	25	0					
7+25	0	0	0	25	0	0	0	25	0					
7+50	0	0	0	25	0	0	0	25	0					
7+75	0	0	0	25	0	0	0	25	0					
8+00	0	0	0	25	0	0	0	25	0					
8+25	0	0	0	25	0	0	0	25	0					
8+50	0	0	0	25	0	0	0	25	0					
8+75	0	0	0	25	0	0	0	25	0					
9+00	0	0	0	25	0	0	0	25	0					
9+25	0	0	0	25	0	0	0	25	0					
9+50	0	0	0	25	0	0	0	25	0					
9+75	0	0	0	25	0	0	0	25	0					
10+00	0	0	0	25	0	0	0	25	0					
10+25	0	0	0	25	0	0	0	25	0					
10+50	0	0	0	25	0	0	0	25	0					
10+75	0	0	0	25	0	0	0	25	0					
11+00	0	0	0	25	0	0	0	25	0					
11+25	0	0	0	25	0	0	0	25	0					
11+50	0	0	0	25	0	0	0	25	0					
11+75	0	0	0	25	0	0	0	25	0					
12+00	0	0	0	25	0	0	0	25	0					
12+25	0.337	0.1348	0.0674	25	1.685	0	0	25	0					
12+50	0.288	0.1152	0.125	25	3.125	0	0	25	0	wetland A	6.25	0	6.25	0.23
12+75	0	0	0.0576	25	1.44	0	0	25	0					
13+00	0	0	0	25	0	0	0	25	0					
13+25	0	0	0	25	0	0	0	25	0					
13+50	0	0	0	25	0	0	0	25	0					
13+75	0	0	0	25	0	0	0	25	0					
14+00	0	0	0	25	0	0	0	25	0					
14+25	0	0	0	25	0	0	0	25	0					
14+50	0	0	0	25	0	0	0	25	0					
14+75	0	0	0	25	0	0	0	25	0					
15+00	0	0	0	25	0	0	0	25	0					
15+25	0	0	0	25	0	0	0	25	0					
15+50	0	0	0	25	0	0	0	25	0					
15+75	0	0	0	25	0	0	0	25	0					
16+00	0	0	0	25	0	0	0	25	0					
16+25	0	0	0	25	0	0	0	25	0					
16+50	0	0	0	25	0	0	0	25	0					

WETLAND CUT / FILL QUANTITIES

station	scaled end fill area	actual end area	average end area	distance	fill volume	scaled end cut area	actual end area	distance	cut volume	Wetland Designation	fill volume cft	cut volume cft	Net volume cft	Net volume cyd
16+75	0	0	0	25	0	0	0	25	0					
17+00	0	0	0	25	0	0	0	25	0					
17+25	0	0	0	25	0	0	0	25	0					
17+50	0	0	0	25	0	0	0	25	0					
17+75	0	0	0	25	0	0	0	25	0					
18+00	0	0	0	25	0	0	0	25	0					
18+25	0	0	0	25	0	0	0	25	0					
18+50	0	0	0	25	0	0	0	25	0					
18+75	0	0	0	25	0	0	0	25	0					
19+00	0	0	0	25	0	0	0	25	0					
19+25	0	0	0	25	0	0	0	25	0					
19+50	0	0	0	25	0	0	0	25	0					
19+75	0	0	0	25	0	0	0	25	0					
20+00	0	0	0	25	0	0	0	25	0					
20+25	0	0	0	25	0	0	0	25	0					
20+50	0	0	0	25	0	0	0	25	0					
20+75	0	0	0	25	0	0	0	25	0					
21+00	0	0	0	25	0	0	0	25	0					
21+25	0	0	0	25	0	0	0	25	0					
21+50	0	0	0	25	0	0	0	25	0					
21+75	0	0	0	25	0	0	0	25	0					
22+00	0	0	0	25	0	0	0	25	0					
22+25	0.527	0.2108	0.1054	25	2.635	0	0	25	0					
22+50	0.445	0.178	0.1944	25	4.86	0	0	25	0					
22+75	2.304	0.9216	0.5498	25	13.745	0	0	25	0					
23+00	2.691	1.0764	0.999	25	24.975	0	0	25	0					
23+25	3.174	1.2696	1.173	25	29.325	0	0	25	0					
23+50	2.82	1.128	1.1988	25	29.97	0	0	25	0					
23+75	2.209	0.8836	1.0058	25	25.145	0	0	25	0					
24+00	2.974	1.1896	1.0366	25	25.915	0	0	25	0					
24+25	2.46	0.984	1.0868	25	27.17	0	0	25	0					
24+50	1.023	0.4092	0.6966	25	17.415	0	0	25	0					
24+75	0.301	0.1204	0.2648	25	6.62	0	0	25	0					
25+00	0	0	0.0602	25	1.505	0	0	25	0					
25+25	0	0	0	25	0	0	0	25	0					
25+50	0.32	0.128	0.064	25	1.6	0	0	25	0					
25+75	0.654	0.2616	0.1948	25	4.87	0	0	25	0	wetland B	223.09	0	223.09	8.26
26+00	0.252	0.1008	0.1812	25	4.53	0	0	25	0					
26+25	0.155	0.062	0.0814	25	2.035	0	0	25	0					
26+50	0	0	0.031	25	0.775	0	0	25	0					
26+75	0	0	0	25	0	0	0	25	0					
27+00	0	0	0	25	0	0	0	25	0					
27+25	0	0	0	25	0	0	0	25	0					
27+50	0	0	0	25	0	0	0	25	0					
27+75	0	0	0	25	0	0	0	25	0					
28+00	0	0	0	25	0	0	0	25	0					
28+25	0	0	0	25	0	0	0	25	0					
28+50	0	0	0	25	0	0	0	25	0					
28+75	0	0	0	25	0	0	0	25	0					
29+00	0	0	0	25	0	0	0	25	0					
29+25	0	0	0	25	0	0	0	25	0					
29+50	0	0	0	25	0	0	0	25	0					
29+75	0	0	0	25	0	0	0	25	0					
30+00	0	0	0	25	0	0	0	25	0					
30+25	0	0	0	25	0	0	0	25	0					
30+50	0	0	0	25	0	0	0	25	0					
30+75	0	0	0	25	0	0	0	25	0					
31+00	6.245	2.498	1.249	25	8.32	10.645	4.258	25	106.45					
31+25	0	0	1.249	25	0	0	0	25	0					
31+50	0	0	0	25	0	0	0	25	0					
31+75	0	0	0	25	0	0	0	25	0					
32+00	0	0	0	25	0	0	0	25	0					
32+25	0.01	0.004	0.002	25	0.05	0	0	25	0					
32+50	0.203	0.0812	0.0426	25	1.065	0	0	25	0					
32+75	0.067	0.0268	0.054	25	1.35	0	0	25	0					
33+00	0	0	0.0134	25	0.335	0	0	25	0					
33+25	0	0	0	25	0	0	0	25	0					

WETLAND CUT / FILL QUANTITIES

station	scaled end fill area	actual end area	average end area	distance	fill volume	scaled end cut area	actual end area	distance	cut volume	Wetland Designation	fill volume cft	cut volume cft	Net volume cft	Net volume cyd
33+50	0	0	0	25	0	0	0	25	0					
33+75	0	0	0	25	0	0	0	25	0					
34+00	0	0	0	25	0	0	0	25	0					
34+25	0.005	0.002	0.001	25	0.025	0	0	25	0					
34+50	0.048	0.0192	0.0106	25	0.265	0	0	25	0					
34+75	0	0	0.0096	25	0.24	0	0	25	0					
35+00	0	0	0	25	0	0	0	25	0					
35+25	0	0	0	25	0	0	0	25	0					
35+50	0	0	0	25	0	0	0	25	0					
35+75	0.05	0.02	0.01	25	0.25	0	0	25	0					
36+00	1.742	0.6968	0.3584	25	8.96	0	0	25	0					
36+25	1.752	0.7008	0.6988	25	17.47	0	0	25	0					
36+50	2.415	0.966	0.8334	25	20.835	0	0	25	0	wetland G	176.41	106.45	69.96	2.59
36+75	2.738	1.0952	1.0306	25	25.765	0	0	25	0					
37+00	1.743	0.6972	0.8962	25	22.405	0	0	25	0					
37+25	0.313	0.1252	0.4112	25	10.28	0	0	25	0					
37+50	0.076	0.0304	0.0778	25	1.945	0	0	25	0					
37+75	5.647	2.2588	1.1446	25	28.615	0	0	25	0					
38+00	0	0	1.1294	25	28.235	0	0	25	0					
38+25	0	0	0	25	0	0	0	25	0					
38+50	0	0	0	25	0	0	0	25	0					
38+75	0	0	0	25	0	0	0	25	0					
39+00	0.217	0.0868	0.0434	25	1.085	0	0	25	0					
39+25	2.941	1.1764	0.6316	25	15.79	0	0	25	0					
39+50	4.465	1.786	1.4812	25	37.03	0	0	25	0					
39+75	4.503	1.8012	1.7936	25	44.84	5.038	2.0152	25	50.38					
40+00	4.123	1.6492	1.7252	25	43.13	5.495	2.198	25	54.95					
40+25	5.765	2.306	1.9776	25	49.44	0.077	0.0308	25	0.77	wetland M	227.83	106.1	121.73	4.51
40+50	0.769	0.3076	1.3068	25	32.67	0	0	25	0					
40+75	0	0	0.1538	25	3.845	0	0	25	0					
41+00	0	0	0	25	0	0	0	25	0					
41+25	0	0	0	25	0	0	0	25	0					
41+50	0	0	0	25	0	0	0	25	0					
41+75	4.643	1.8572	0.9286	25	23.215	0	0	25	0					
42+00	1.629	0.6516	1.2544	25	31.36	0	0	25	0	wetland L	74.00	0	74.00	2.74
42+25	0.481	0.1924	0.422	25	10.55	0	0	25	0					
42+50	0.225	0.09	0.1412	25	3.53	0	0	25	0					
42+75	0.129	0.0516	0.0708	25	1.77	0	0	25	0					
43+00	0.103	0.0412	0.0464	25	1.16	0	0	25	0					
43+25	0.177	0.0708	0.056	25	1.4	0	0	25	0					
43+50	0.013	0.0052	0.038	25	0.95	0	0	25	0					
43+75	0	0	0.0026	25	0.065	0	0	25	0					
44+00	0	0	0	25	0	0	0	25	0					
44+25	0	0	0	25	0	0	0	25	0					
44+50	0	0	0	25	0	0	0	25	0					
44+75	0	0	0	25	0	0	0	25	0					
45+00	0	0	0	25	0	0	0	25	0					
45+25	0	0	0	25	0	0	0	25	0					
45+50	0	0	0	25	0	0	0	25	0					
45+75	0	0	0	25	0	0	0	25	0					
46+00	0	0	0	25	0	0	0	25	0					
46+25	0	0	0	25	0	0	0	25	0					
46+50	0	0	0	25	0	0	0	25	0					
46+75	0	0	0	25	0	0	0	25	0					
47+00	0	0	0	25	0	0	0	25	0					
47+25	0	0	0	25	0	0	0	25	0					
47+50	0	0	0	25	0	0	0	25	0					
47+75	0	0	0	25	0	0	0	25	0					
48+00	0	0	0	25	0	0	0	25	0					
48+25	0	0	0	25	0	0	0	25	0					
48+50	0	0	0	25	0	0	0	25	0					
48+75	0	0	0	25	0	0	0	25	0					
49+00	0	0	0	25	0	0	0	25	0					
49+25	0	0	0	25	0	0	0	25	0					
49+50	0	0	0	25	0	0	0	25	0					
49+75	0	0	0	25	0	0	0	25	0					
50+00	0	0	0	25	0	0	0	25	0					

WETLAND CUT / FILL QUANTITIES

station	scaled end fill area	actual end area	average end area	distance	fill volume	scaled end cut area	actual end area	distance	cut volume
50+25	0	0	0	25	0	0	0	25	0
50+50	0	0	0	25	0	0	0	25	0
50+75	0	0	0	25	0	0	0	25	0
51+00	0	0	0	25	0	0	0	25	0
51+25	0	0	0	25	0	0	0	25	0
51+50	0	0	0	25	0	0	0	25	0
51+75	0	0	0	25	0	0	0	25	0
52+00	0	0	0	25	0	0	0	25	0
52+25	0	0	0	25	0	0	0	25	0
52+50	0	0	0	25	0	0	0	25	0
52+75	0	0	0	25	0	0	0	25	0
53+00	0	0	0	25	0	0	0	25	0
53+25	0	0	0	25	0	0	0	25	0
53+50	0	0	0	25	0	0	0	25	0
53+75	0	0	0	25	0	0	0	25	0
54+00	0	0	0	25	0	0	0	25	0
54+25	0	0	0	25	0	0	0	25	0
54+50	0	0	0	25	0	0	0	25	0
54+75	0	0	0	25	0	0	0	25	0
55+00	0	0	0	25	0	0	0	25	0
55+25	0	0	0	25	0	0	0	25	0
55+50	0	0	0	25	0	0	0	25	0
55+75	0	0	0	25	0	0	0	25	0
56+00	0	0	0	25	0	0	0	25	0
56+25	0	0	0	25	0	0	0	25	0
56+50	0	0	0	25	0	0	0	25	0
56+75	0	0	0	25	0	0	0	25	0
57+00	0	0	0	25	0	0	0	25	0

				Fill CFT	Fill CYD	Cut CFT	Cut CYD	Total Change
28+87	31+01	R	E	0.000	0			
Plunge Pool R-19			E			8.438	0.31	0.31

				Fill CFT	Fill CYD	Cut CFT	Cut CYD	Total Change
30+82	31+01	R	F	47.520	1.76			
Plunge Pool R-21			F			50.000	1.85	-0.09

37+75	37+88	R	J	52.380	1.94			
Plunge Pool R-23			J			30.375	1.13	0.82

Wetland Designation	fill volume cft	cut volume cft	Net volume cft	Net volume cyd
	0	8.44	-8.44	-0.31
	47.520	50.00	-2.48	-0.09
	52.380	30.375	22.01	0.82
total fill 67.72	2129.82	301.363	1828.46	
	78.88	11.16	67.72	67.72

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TABLE 4 - Plunge Pools Volumes

Pool	station	end area	average end area	distance	cut volume	Total Cut Volume CFT	Total Cut Volume CYD	Wetland Total Cut Volume CFT	Wetland Total Cut Volume CYD	Wetland Designation
R-19	0+00.00	0		0.0						
	0+02.50	6.75	3.375	2.5	8.438					
	0+04.50	6.75	6.75	2.0	13.500					
	0+07.00	0	3.375	2.5	8.438	30.375	1.13	8.438	0.313	E
R-21	0+00.00	0		0.0						
	0+03.00	10	5	3.0	15.000					
	0+05.00	10	10	2.0	20.000					
	0+08.00	0	5	3.0	15.000	50.000	1.85	50.000	1.852	F
R-23	0+00.00	0		0.0						
	0+02.50	6.75	3.375	2.5	8.438					
	0+04.50	6.75	6.75	2.0	13.500					
	0+07.00	0	3.375	2.5	8.438	30.375	1.13	30.375	1.125	E

Revised

HURON RIVER DRIVE IMPROVEMENTS 07-81-0092-P

TABLE 3 - SECTION 18 UTILITY (STORM SEWER) CROSSINGS

Road Station	Wetland Crossing	wetland designation	Lake or Stream crossing	PIPE DIA.	Pipe Length	Distance below streambed or wetland	Tench width
5+25	no		no	36"	58'	0"	5'
5+95	yes	N	no	36"	26'	0"	5'
8+04	no		no	24"	n/a	n/a	4'
16+36	no		no	23"x14"	68'	0"	4'
21+92	yes	B, C	no	24"	50'	0"	4'
28+87	yes	B, E	no	30"x19"	57'	0"	5'
30+96	yes	F, G	yes	45"x29"	49	10", 0"	5'
37+76	yes	G, J	no	23"x14"	50	0"	4'
41+46	no		no	23"x14"	37	0"	4'
44+36	yes	L	no	23"x14"	40'	0"	4'
45+89	no		no	23"x14"	40'	0"	4'
49+50	no		no	23"x14"	38'	0"	4'
55+50	no		no	23"x14"	40'	0"	4'

Revised Set

CITY OF ANN ARBOR
PROJECT MANAGEMENT

THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS AND ITS DETAILS, WHICH ARE INCLUDED BY REFERENCE.

HURON RIVER DRIVE IMPROVEMENTS
APRIL 2008

PERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR THESE PERMIT FEES.

PERMIT	ISSUING AUTHORITY
LANE CLOSURE PERMIT	CITY OF ANN ARBOR PROJECT MANAGEMENT SERVICES UNIT
GRADING/ SOIL EROSION & SEDIMENTATION CONTROL PERMIT	CITY OF ANN ARBOR PLANNING AND DEVELOPMENT SERVICES UNIT
ROW PERMIT	CITY OF ANN ARBOR PLANNING AND DEVELOPMENT SERVICES UNIT
WASHTENAW COUNTY ROAD COMMISSION CONSTRUCTION PERMIT	WASHTENAW COUNTY ROAD COMMISSION

PERMITS REQUIRED TO BE OBTAINED BY THE CITY OF ANN ARBOR PRIOR TO THE BEGINNING OF CONSTRUCTION. CITY IS RESPONSIBLE FOR THESE PERMIT FEES.

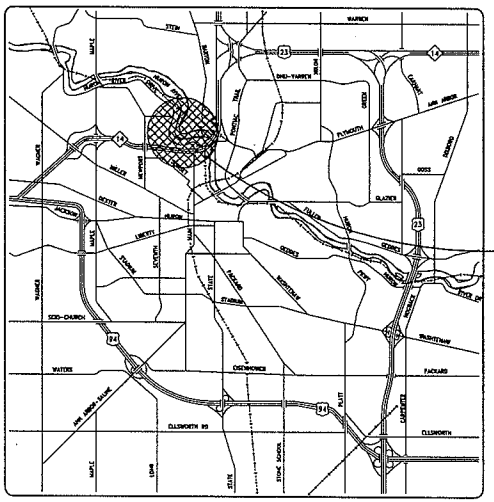
PERMIT	ISSUING AUTHORITY
MDEQ SANITARY SEWER CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
MDEQ ENWD JOINT PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

TRAFFIC DATA	
PRESENT ADT	2,300 (2007)
FUTURE ADT	3,400 (2027)
% COMMERCIAL	1.0% (2007)
% COMMERCIAL	1.0% (2027)
POSTED SPEED	35 MPH *1
DESIGN SPEED	40 MPH *2

*1. EXCEPT AS NOTED ON PERMANENT PAVEMENT MARKINGS AND SIGNING PLAN
*2. EXCEPT AT CERTAIN HORIZONTAL CURVES WHICH ARE SIGNED FOR ADVISORY SPEED

SHEET INDEX

SHEET NO.	DRAWING NO.	TITLE
1	2006051-C	COVER SHEET
2	2006051-TCS1	TYPICAL CROSS SECTIONS
3	2006051-TCS2	TYPICAL CROSS SECTIONS
4	2006051-GR1	GRADING LIMITS & WETLAND DISTURBANCE AREA (POB-STA. 5+00)
5	2006051-GR2	GRADING LIMITS & WETLAND DISTURBANCE AREA (STA. 5+00-STA. 9+00)
6	2006051-GR3	GRADING LIMITS & WETLAND DISTURBANCE AREA (STA. 9+00-STA. 21+00)
7	2006051-GR4	GRADING LIMITS & WETLAND DISTURBANCE AREA (STA. 21+00-STA. 32+00)
8	2006051-GR5	GRADING LIMITS & WETLAND DISTURBANCE AREA (STA. 32+00-STA. 45+00.)
9	2006051-GR6	GRADING LIMITS & WETLAND DISTURBANCE AREA (STA. 45+00-P.O.E.)
10	2006051-R1	STORM SEWER PLAN AND PROFILE (R-1 THRU R-5)
11	2006051-R2	STORM SEWER PLAN AND PROFILE (R-3, R-6, R-7)
12	2006051-R3	STORM SEWER PLAN AND PROFILE (R-8 THRU R-14)
13	2006051-R4	CULVERTS (R-15 THRU R-20)
14	2006051-R5	CULVERTS (R-21 THRU R-24)
15	2006051-R6	CULVERTS (R-25 THRU R-28)
16	2006051-R7	CULVERTS (R-29 THRU R-34)
17	2006051-S1	SANITARY SEWER PLAN AND PROFILE (STA. 0+00-STA. 9+00)
18	2006051-S2	SANITARY SEWER PLAN AND PROFILE (STA. 9+00-STA. 21+00)
19	2006051-S3	SANITARY SEWER PLAN AND PROFILE (STA. 21+00-STA. 33+00)
20	2006051-S4	SANITARY SEWER PLAN AND PROFILE (STA. 33+00-STA. 45+00)
21	2006051-S5	SANITARY SEWER PLAN AND PROFILE (STA. 45+00-STA. 53+81)
22	2006051-T1	TREE TAG DATABASE (1 THRU 577)
23	2006051-T2	TREE TAG DATABASE (578 THRU 1160)
24	2006051-T3	TREE TAG DATABASE (1161 THRU 1707)



CITY DEPARTMENTAL REVIEW						
SENIOR SURVEYOR	REVIEW ENGINEER	FIELD OPERATIONS	C.E.S. SUPERVISOR	TRAFFIC	SOIL EROSION	
GMD	MH		DAC	PMC		

3 WORKING DAYS! BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, THE CONTRACTOR SHALL DIAL 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.

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Land & Water Mgt. Div.
Permit Consolidation Unit

HOMAYOON PIROOZ, P.E./ PROJECT MANAGEMENT MANAGER — DATE 3/14/2008

PREPARED UNDER THE SUPERVISION OF

ELIZABETH ROLLA, P.E., MICHIGAN NO. 40106 — DATE 3/14/08

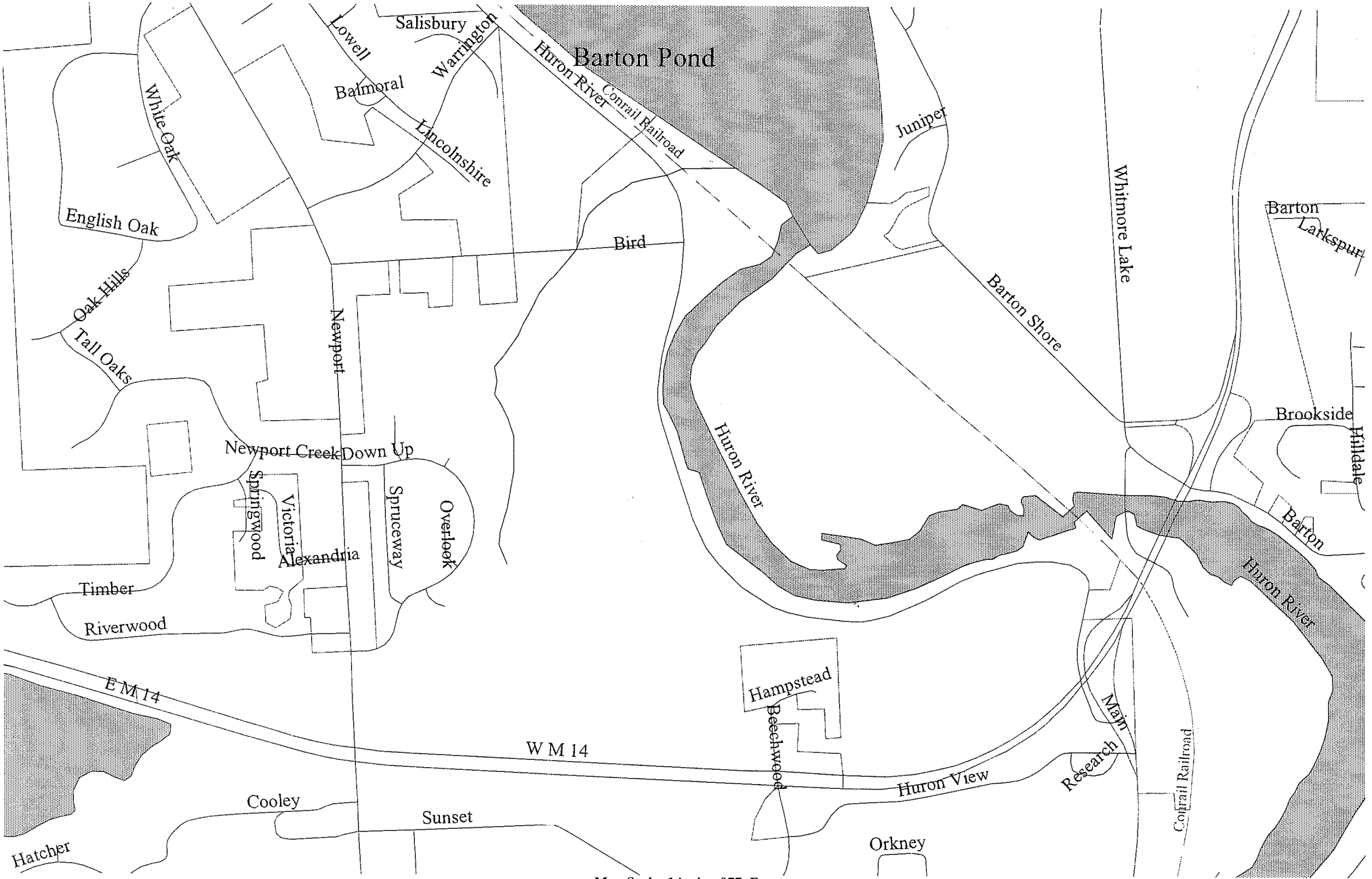
SEAL: STATE OF MICHIGAN · ELIZABETH ROLLA · ENGINEER · No. 40106 · LICENSED PROFESSIONAL ENGINEER

DRAWING NO. 2006051 - C

SHEET 1 OF 24

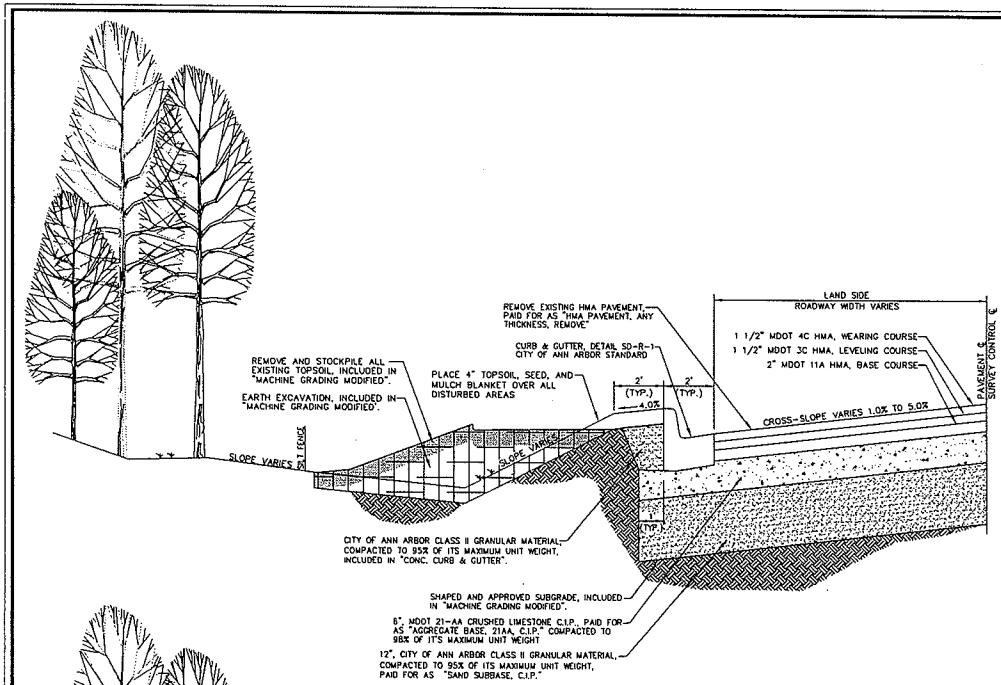
HURON RIVER DRIVE IMPROVEMENTS; BID NO. ITB-3932, FILE NO. 2006051

File 07-81-0092-P

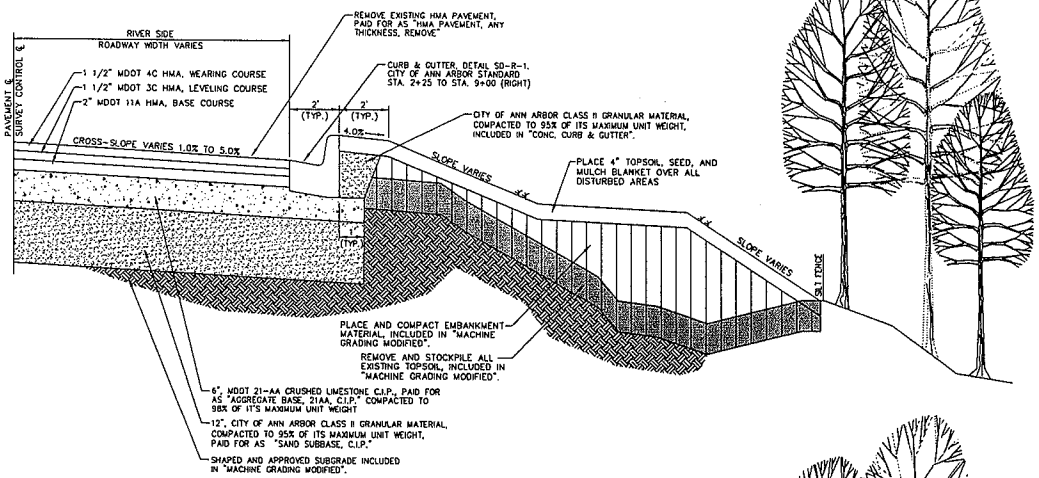


Map Scale: 1 inch = 877. Feet

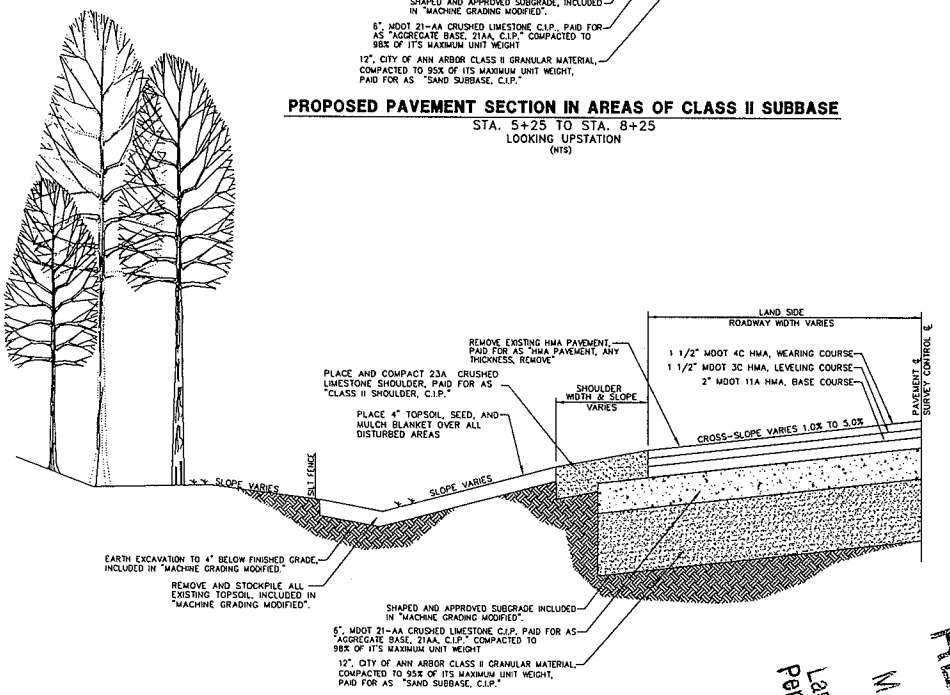
3/3/2008 11:34:13 AM



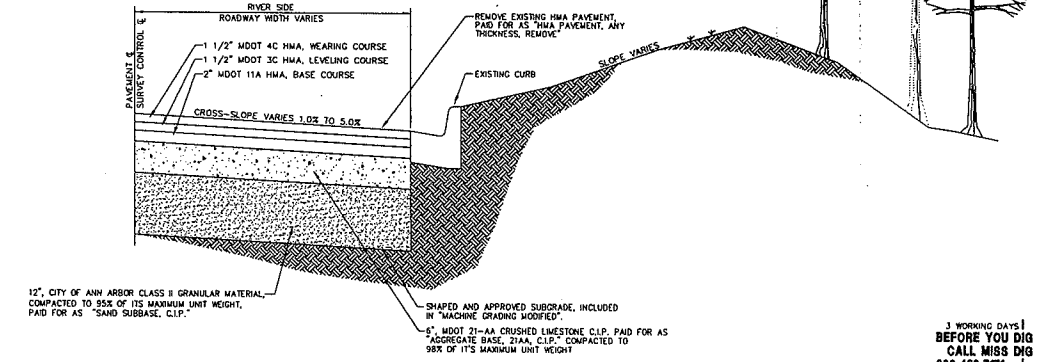
PROPOSED PAVEMENT SECTION IN AREAS OF CLASS II SUBBASE
STA. 5+25 TO STA. 8+25
LOOKING UPSTATION
(NTS)



PROPOSED PAVEMENT SECTION IN AREAS OF CLASS II SUBBASE
STA. 2+25 TO STA. 9+00
LOOKING UPSTATION
(NTS)



PROPOSED PAVEMENT SECTION IN AREAS OF CLASS II SUBBASE
STA. 0+50 TO STA. 5+25
STA. 8+25 TO STA. 9+00
LOOKING UPSTATION
(NTS)



PROPOSED PAVEMENT SECTION IN AREAS OF CLASS II SUBBASE
STA. 0+50 TO STA. 2+25
LOOKING UPSTATION
(NTS)

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N/A	1091						
BENCH MARK	SURVEY BOOK	REV. NO.	ORIGINAL ISSUE / DESCRIPTION	3/08 DATE	OPF DR.BY	GFD CH.BY	

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

TYPICAL CROSS SECTIONS

SCALE N/A INCH

DRAWING NO. 2006051-TCS1

SHEET NO. 2 OF 24

R.O.W. WIDTH VARIES THROUGHOUT THIS PROJECT, REFER TO 2006051-SC FOR LOCATIONS (WHERE APPLICABLE). THE MAJORITY OF THIS PROJECT IS WITHIN CITY OWNED PROPERTY.

LEGEND:

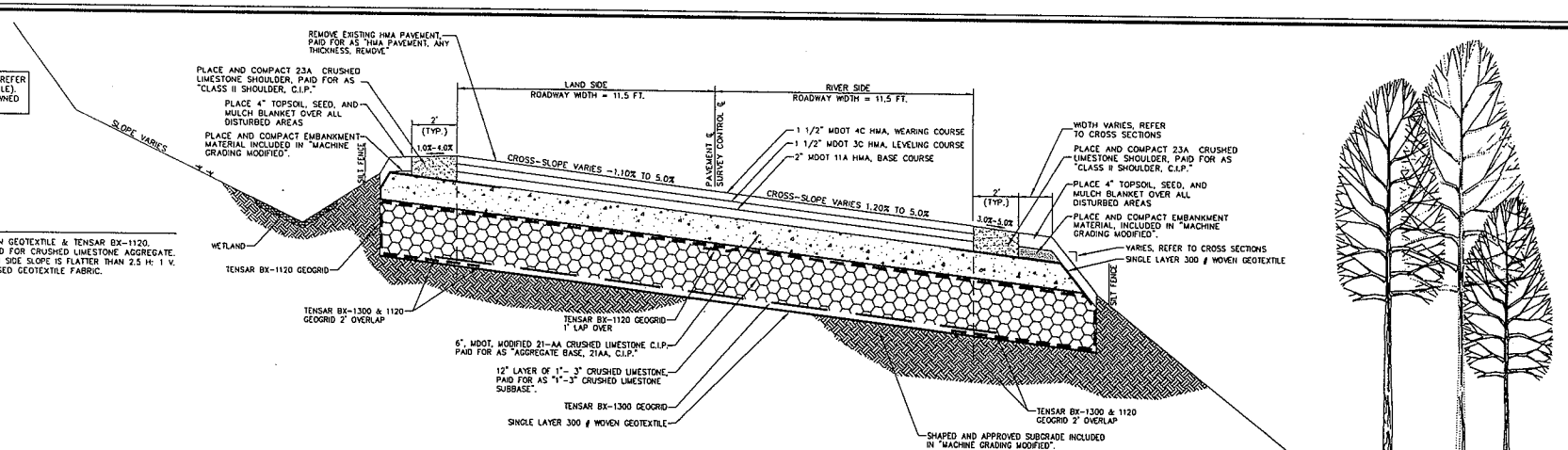
TENSAR BX-1300 GEOGRID

TENSAR BX-1120 GEOGRID

SINGLE LAYER 300 # WOVEN GEOTEXTILE

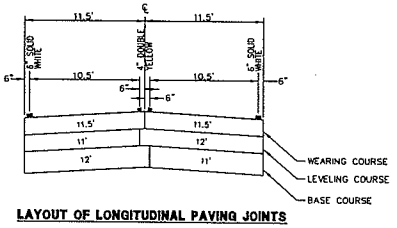
NOTES:

1. MINIMUM LAP DISTANCE OF 5' FOR 300 # WOVEN GEOTEXTILE & TENSAR BX-1120.
2. CRUSHED CONCRETE SHALL NOT BE SUBSTITUTED FOR CRUSHED LIMESTONE AGGREGATE.
3. OMIT LAP OVER OF WOVEN GEOTEXTILE WHERE DITCH SIDE SLOPE IS FLATTER THAN 2.5 H: 1 V.
4. PROVIDE CARBON BLACK TREATMENT FOR EXPOSED GEOTEXTILE FABRIC.



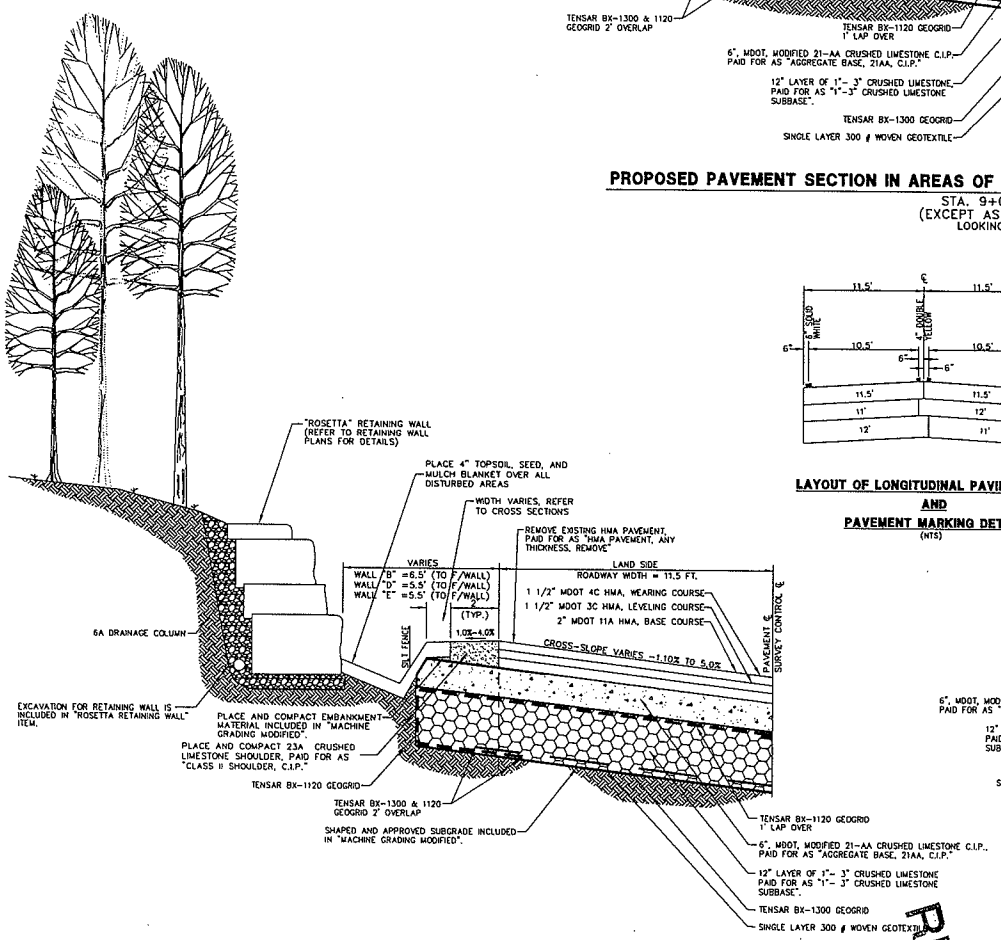
PROPOSED PAVEMENT SECTION IN AREAS OF 1"-3" CRUSHED LIMESTONE AGGREGATE SUBBASE

STA. 9+00 TO P.O.E.
(EXCEPT AS NOTED BELOW)
LOOKING UPSTATION
(NTS)



LAYOUT OF LONGITUDINAL PAVING JOINTS AND PAVEMENT MARKING DETAIL

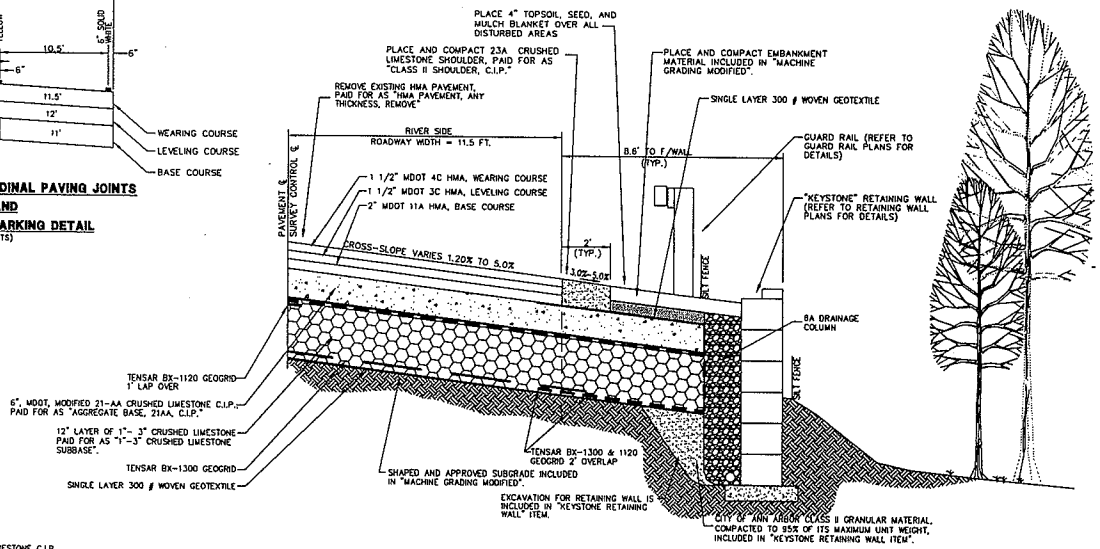
(NTS)



PROPOSED PAVEMENT SECTION IN AREAS OF 1"-3" CRUSHED LIMESTONE AGGREGATE SUBBASE

(ADJACENT TO LAND SIDE RETAINING WALLS)
WALL "B" STA. 39+55 TO STA. 40+10
WALL "D" STA. 50+25 TO STA. 51+50
WALL "E" STA. 51+90 TO STA. 53+00

LOOKING UPSTATION
(NTS)



PROPOSED PAVEMENT SECTION IN AREAS OF 1"-3" CRUSHED LIMESTONE AGGREGATE SUBBASE

(ADJACENT TO RIVER SIDE RETAINING WALLS)
WALL "A" STA. 32+45 TO STA. 34+85
WALL "C" STA. 47+70 TO STA. 49+05

LOOKING UPSTATION
(NTS)

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			ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

TYPICAL CROSS SECTIONS

SCALE N/A | INCH

DRAWING NO. 2006051-TCS2

SHEET NO. 3 OF 24

BENCHMARKS:

29	807.45	STEAMER VALVE ON FIRE HYDRANT AT GIRL SCOUTS ENTRANCE SPIKE IN E. SIDE OF 12" AMERICAN ELM ON W. SIDE OF HRD
30	815.40	BETWEEN TP30 & TP31, TAG 1086

TREE REMOVALS

TAG	SIZE	CODE	TYPE	CONDITION
1460	8	297	DEAD TREE	REMOVE
1461	TW 8	297	DEAD TREE	REMOVE

CONTRACTOR TO INSTALL AND MAINTAIN SILT FENCE ALONG THE GRADING LIMITS THROUGHOUT THE COURSE OF CONSTRUCTION. THE CONTRACTOR IS TO STRICTLY LIMIT ACTIVITIES WITHIN THE WORK ZONE.

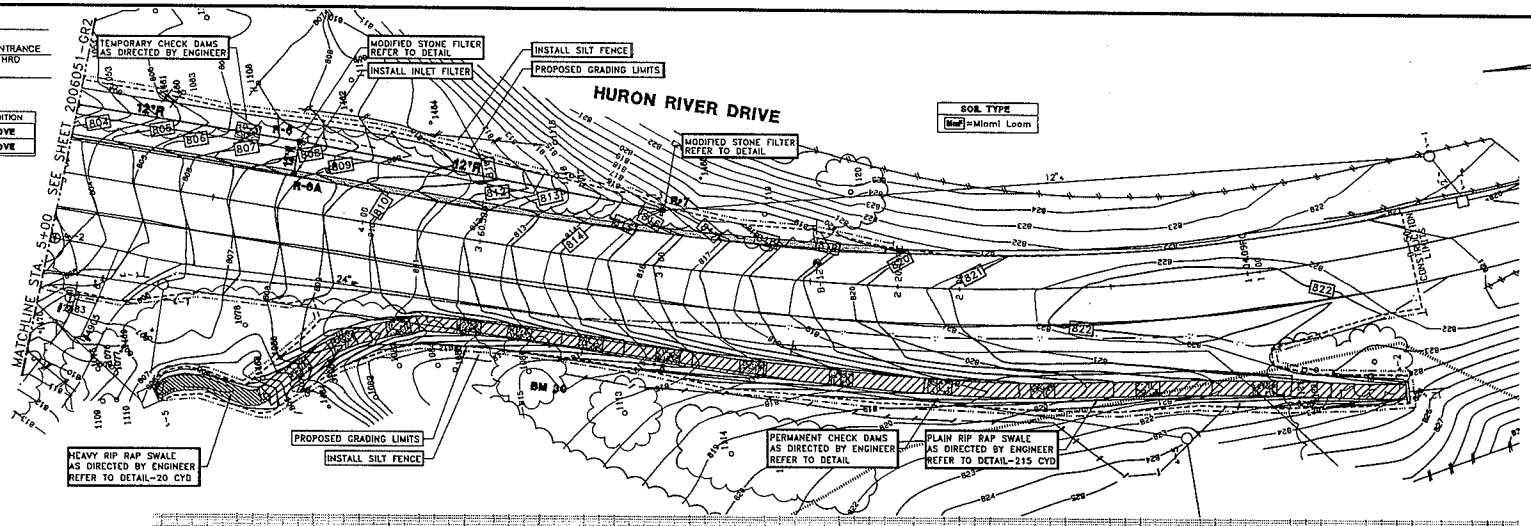
REFER TO 2006051-ECD FOR RIP-RAP, PLUNGE POOL, CHECK DAM, AND STONE FILTER DETAILS

PROTECTIVE FENCING TO BE PLACED AT GRADING LIMITS (TYP.)

TREE REPLACEMENT CALCULATIONS

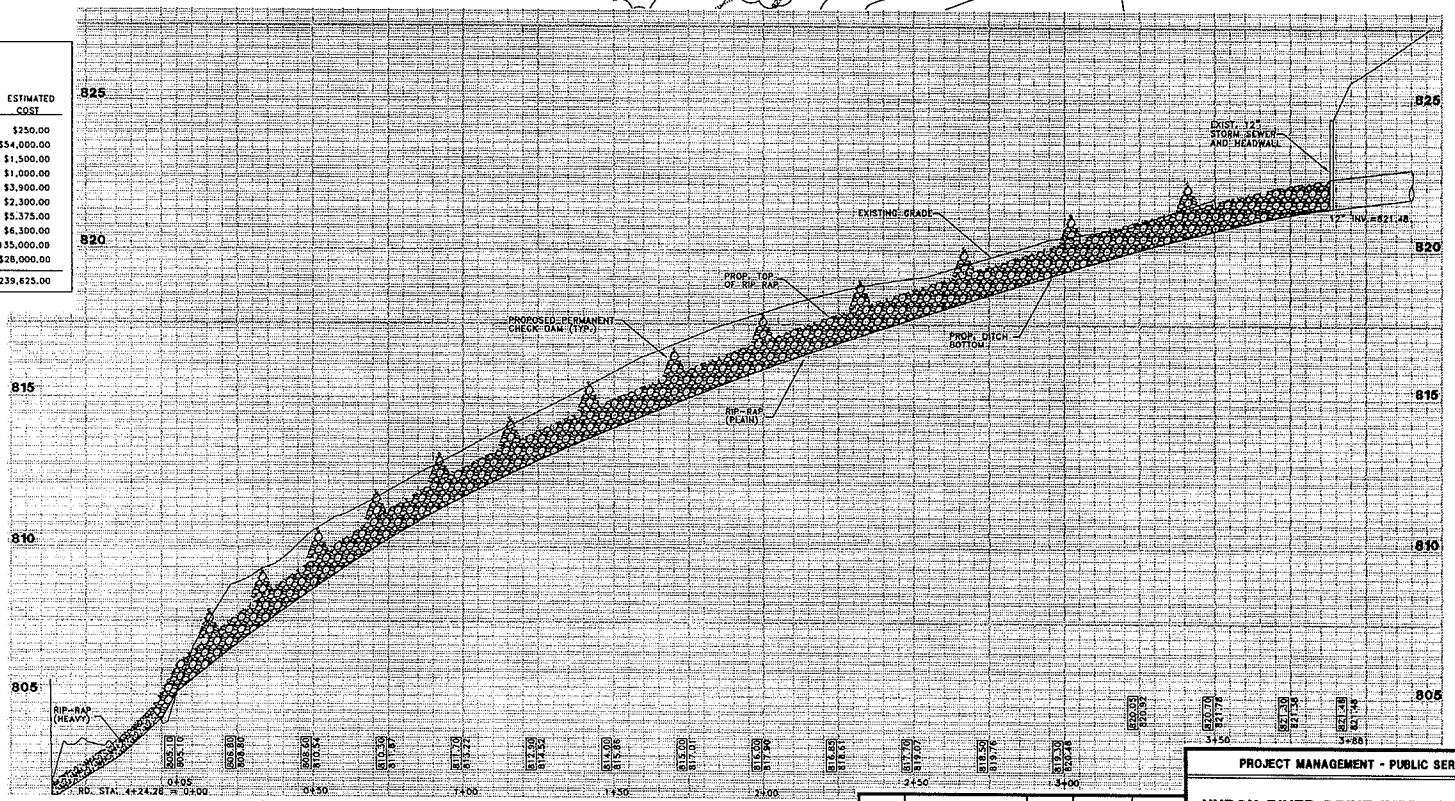
TOTAL DBH OF TREES REMOVED = 108 INCHES

TREE REPLACEMENT REQUIRED
(MIN. 50% OF TOTAL DBH REMOVED = 54 INCHES
TOTAL TREE REPLACEMENT PROVIDED = 57 INCHES



EROSION CONTROL QUANTITIES
(ENTIRE PROJECT)

ITEM	UNIT	QUANTITY	ESTIMATED UNIT PRICE	ESTIMATED COST
EROSION CONTROL INLET FILTERS	EA	5	$50.00	$250.00
EROSION CONTROL SILT FENCE	LF	13,500	$4.00	$54,000.00
STONE INLET FILTERS	EA	15	$100.00	$1,500.00
TEMPORARY CHECK DAMS	EA	10	$100.00	$1,000.00
PERMANENT CHECK DAMS	EA	13	$300.00	$3,900.00
PLUNGE POOL	SY	23	$100.00	$2,300.00
RIP RAP (PLAIN)	SY	215	$25.00	$5,375.00
RIP RAP (HEAVY)	SY	63	$100.00	$6,300.00
FENCE, PROTECTIVE	LF	13,500	$10.00	$135,000.00
MULCH BLANKET	SY	7,000	$4.00	$28,000.00
			TOTAL	$239,625.00



NOTE:

1. STAGING, AND STOCKPILING OF ALL MATERIALS WILL NOT BE ALLOWED OUTSIDE OF GRADING LIMITS. CONTRACTOR TO CONTAIN ALL OPERATIONS TO WITHIN GRADING LIMITS.
2. ALL EROSION CONTROL DEVICES SHALL BE INSTALLED (AND APPROVED BY ENGINEER), PRIOR TO THE COMMENCEMENT OF ANY OTHER WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DAILY INSPECTION (AND CORRECTION MEASURES) OF THE EROSION CONTROL DEVICES.
4. REFER TO DETAILED SPECIFICATIONS FOR CONSTRUCTION SEQUENCING AND ADDITIONAL SOIL EROSION CONTROL REQUIREMENTS.
5. AS PART OF THE INITIAL PHASING SEQUENCE, THE PERIMETER SILT FENCE WILL BE INSTALLED ADJACENT TO THE GRADING LIMITS. DURING THE CULVERT INSTALLATION PROCESS, IT WILL BE NECESSARY TO TEMPORARILY REMOVE A PORTION OF THIS FENCE. AT THE COMPLETION OF THE RESTORATION FOR THE CULVERT WORK, THIS SILT FENCE WILL BE REINSTALLED AT IT'S ORIGINAL LOCATION. COST OF THIS WORK SHALL BE INCLUDED IN THE CULVERT OR STORM SEWER INSTALLATION ITEMS.
6. TO HELP PROTECT THE SENSITIVE AREAS ADJACENT TO THIS PROJECT, IT IS THE INTENT TO EXPEDITE THE COMPLETION OF THE CULVERT AND STORM SEWER INSTALLATION PROCESS. THIS INCLUDES REMOVING AND REPLACING THE PIPE, PLACING RIP-RAP, CONSTRUCTING PLUNGE POOLS, PLACING BACK FILL, EMBANKMENT MATERIAL, TOPSOIL, SEED AND PLACING MULCH BLANKETS.
   COMPLETION TIME OF THIS WORK SHALL BE KEPT TO A MINIMUM AND IN MOST CASES, IT IS ANTICIPATED TO BE COMPLETED WITHIN 1 TO 2 DAYS.
7. IF DURING CULVERT AND STORM SEWER INSTALLATION, SLOPE RESTORATION HAS NOT BEEN COMPLETED BY DAYS END, THE PERIMETER FENCE SHALL BE TEMPORARILY PLACED AT IT'S ORIGINAL LOCATION UNTIL THE WORK HAS RESUMED. COST OF THIS WORK SHALL BE INCLUDED IN THE CULVERT OR STORM SEWER INSTALLATION ITEMS.

LEGEND

EXISTING FENCE, CONTOUR, STORM SEWER & CAT. BAS., WATER MAIN & VALVE-IN-WELL, WATER MAIN & VALVE-IN-BOX, EXISTING SANITARY SEWER & MANHOLE, UTILITY POLE & GUY, FIRE HYDRANT ASSEMBLY, LIGHT POLE, END SECTION, EXISTING TELEPHONE, GAS LINE, CABLE T.V., ELECTRIC, SIGN, EXISTING RD. & GRADE, LEFT EDGE/RD. GRADE, RIGHT EDGE/RD. GRADE, CURB & GUTTER, EDGE/GRAVEL, PROPOSED SANITARY SEWER & MANHOLE, STORM SEWER & CAT. BAS., WATER MAIN W/F.H. ASSEM., CONTOUR, ROAD & GRADE, PROPOSED CURB & GUTTER

BENCH MARK	SURVEY BOOK
SEE ABOVE	1091

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
	ORIGINAL ISSUE	3/08	DPF	CFD

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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

GRADING LIMITS & WETLAND DISTURBANCE
ROAD STA. 0+50 - STA. 5+00

SCALE: HORIZ. 1"=20' VERT. 1"=2' — INCH

DRAWING NO. 2006051-GR1

SHEET NO. 4 OF 24

TREE REMOVALS

TAG	SIZE	CODE	TYPE	CONDITION
1454	QUAD 4,4,4,10	287	DEAD TREE	REMOVE
1456	TW 8	287	DEAD TREE	REMOVE
1016	12	213	AMERICAN ELM	REMOVE

BENCHMARKS:

27	791.52	NAIL IN S. SIDE OF 27" COTTONWOOD, NORTHSIDE OF HRD ADJ. TO TP 27, TAG 987
28	793.75	PK NAIL IN N. SIDE OF 12" WHITE OAK ON W. SIDE OF HRD ADJ. TO TP 28, TAG 1036
29	807.45	STEAMER VALVE ON FIRE HYDRANT AT GIRL SCOUTS ENTRANCE
30	815.40	SPIKE IN E. SIDE OF 12" AMERICAN ELM ON W. SIDE OF HRD BETWEEN TP30 & TP31, TAG 1086

CONTRACTOR TO INSTALL AND MAINTAIN SILT FENCE ALONG THE GRADING LIMITS THROUGHOUT THE COURSE OF CONSTRUCTION. THE CONTRACTOR IS TO STRICTLY LIMIT ACTIVITIES WITHIN THE WORK ZONE.

REFER TO 2006051-ECD FOR RIP-RAP, PLUNGE POOL, CHECK DAM, AND STONE FILTER DETAILS

PROTECTIVE FENCING TO BE PLACED AT GRADING LIMITS (TYP.)

NOTE:

1. STAGING, AND STOCKPILING OF ALL MATERIALS WILL NOT BE ALLOWED OUTSIDE OF GRADING LIMITS. CONTRACTOR TO CONTAIN ALL OPERATIONS TO WITHIN GRADING LIMITS.
2. ALL EROSION CONTROL DEVICES SHALL BE INSTALLED (AND APPROVED BY ENGINEER), PRIOR TO THE COMMENCEMENT OF ANY OTHER WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DAILY INSPECTION (AND CORRECTION MEASURES) OF THE EROSION CONTROL DEVICES.
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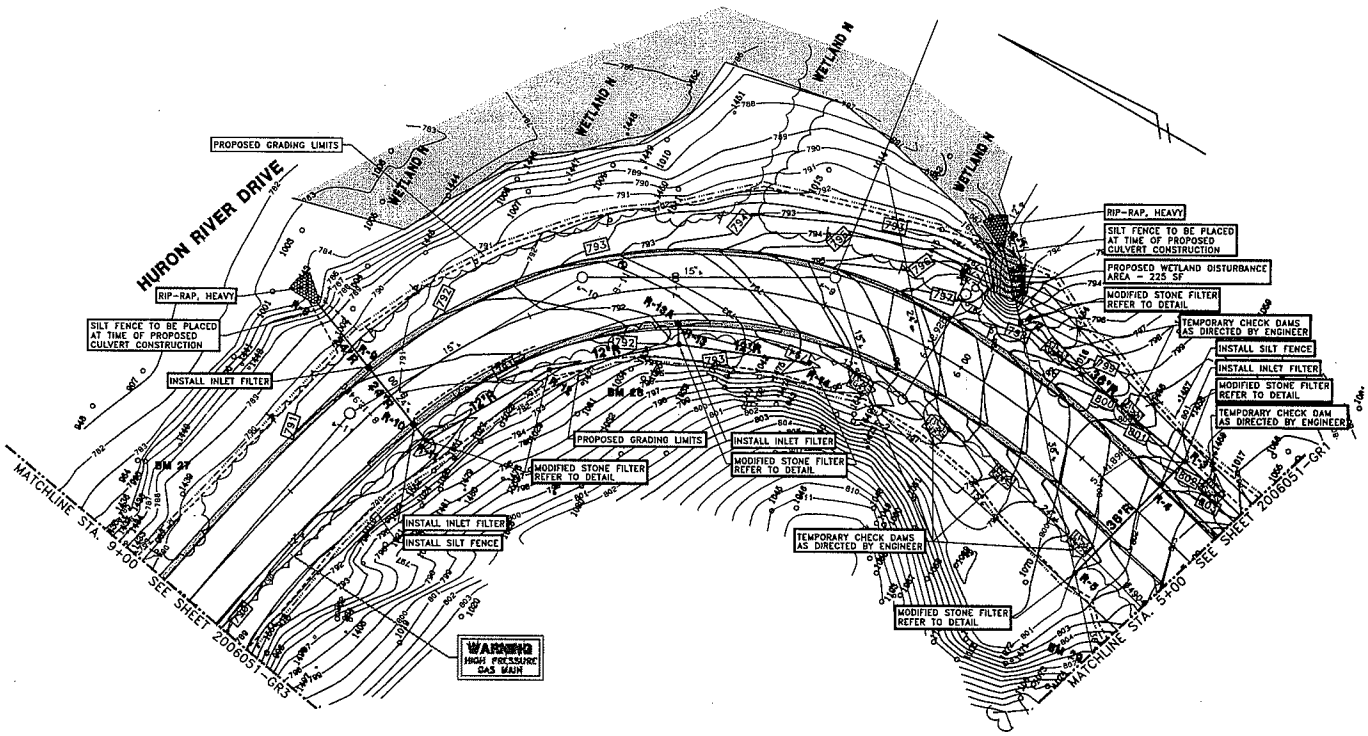

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MAR 24 2008
Land & Water Mgt. Div.
Permit Consolidation Unit

3 WORKING DAYS!
BEFORE YOU DIG
CALL MISS DIG
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! TOLL FREE !

LEGEND

EXISTING FENCE; CONTOUR; STORM SEWER & CAT. BAS.; WATER MAIN & VALVE-IN-WELL; WATER MAIN & VALVE-IN-BOX
EXISTING SANITARY SEWER & MANHOLE; UTILITY POLE & GUY; FIRE HYDRANT ASSEMBLY; LIGHT POLE; END SECTION
EXISTING TELEPHONE; GAS LINE; CABLE T.V.; ELECTRIC; SIGN
EXISTING RD. & GRADE; LEFT EDGE/RD. GRADE; RIGHT EDGE/RD. GRADE; CURB & GUTTER; EDGE/GRAVEL
PROPOSED SANITARY SEWER & MANHOLE; STORM SEWER & CAT. BAS.; WATER MAIN W/F.H. ASSEM.; CONTOUR; ROAD & GRADE
PROPOSED CURB & GUTTER

BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
SEE ABOVE	1091		ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

GRADING LIMITS & WETLAND DISTURBANCE
STA. 5+00 - STA. 9+00

SCALE 1"=20' INCH
DRAWING NO. 2006051-GR2
SHEET NO. 3 OF 24

BENCHMARKS:

22	793.80	NAIL IN N. SIDE OF 24" DEAD TREE, S. SIDE OF HRD ADJ. TO TP20, TAG 690
23	791.37	NAIL IN N. SIDE OF 40" WHITE OAK, S. SIDE OF HRD BETWEEN TP20 & TP21, APPROX. 30' WESTERLY OF TP21, TAG 654
24	789.51	TP23
25	790.83	NAIL IN S. SIDE OF 18" AMERICAN ELM ON N. SIDE OF HRD BETWEEN TP24 & TP25, TAG 864
26	787.33	TOP OF CONCRETE, SW CORNER OF BRIDGE TO BARTON NATURE AREA, APPROX 40' NORTHERLY OF TP28

HURON RIVER DRIVE

EDGE OF RIVER

PROPOSED GRADING LIMITS
INSTALL SILT FENCE

PROPOSED WETLAND DISTURBANCE AREA = 42.58 SF

WETLAND A

BM 25

MATCHLINE STA. 15+00
SEE BELOW RIGHT

SEE SHEET 2006051-GR2
MATCHLINE STA. 9+00

WARNING
HIGH PRESSURE GAS MAIN

CONTRACTOR TO INSTALL AND MAINTAIN SILT FENCE ALONG THE GRADING LIMITS THROUGHOUT THE COURSE OF CONSTRUCTION. THE CONTRACTOR IS TO STRICTLY LIMIT ACTIVITIES WITHIN THE WORK ZONE.

REFER TO 2006051-ECD FOR RIP-RAP, PLUNGE POOL, CHECK DAM, AND STONE FILTER DETAILS

PROTECTIVE FENCING TO BE PLACED AT GRADING LIMITS (TYP.)

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3 WORKING DAYS
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HURON RIVER DRIVE

INSTALL SILT FENCE
PROPOSED GRADING LIMITS

EDGE OF RIVER

PROPOSED GRADING LIMITS
SILT FENCE TO BE PLACED AT TIME OF PROPOSED CULVERT CONSTRUCTION

RIP-RAP, HEAVY

SEE SHEET 2006051-GR4
MATCHLINE STA. 21+00

BM 22
BM 25
BM 24

SEE ABOVE LEFT
MATCHLINE STA. 15+00

WARNING
HIGH PRESSURE GAS MAIN

PROPOSED GRADING LIMITS
INSTALL SILT FENCE

STATE SPECIAL CONCERN SPECIES

SILT FENCE TO BE PLACED AT TIME OF PROPOSED CULVERT CONSTRUCTION

LEGEND

EXISTING FENCE
- CONTOUR
- STORM SEWER & CAT. BAS.
- WATER MAIN & VALVE-IN-WELL
- WATER MAIN & VALVE-IN-BOX

EXISTING SANITARY SEWER & MANHOLE
- UTILITY POLE & GUY
- FIRE HYDRANT ASSEMBLY
- LIGHT POLE
- END SECTION

EXISTING TELEPHONE
- GAS LINE
- CABLE T.V.
- ELECTRIC
- SIGN

EXISTING RD. & GRADE
- LEFT EDGE/RD. GRADE
- RIGHT EDGE/RD. GRADE
- CURB & GUTTER
- EDGE/GRAVEL

PROPOSED SANITARY SEWER & MANHOLE
- STORM SEWER & CAT. BAS.
- WATER MAIN W/F.H. ASSEM.
- CONTOUR
- ROAD & GRADE

PROPOSED CURB & GUTTER

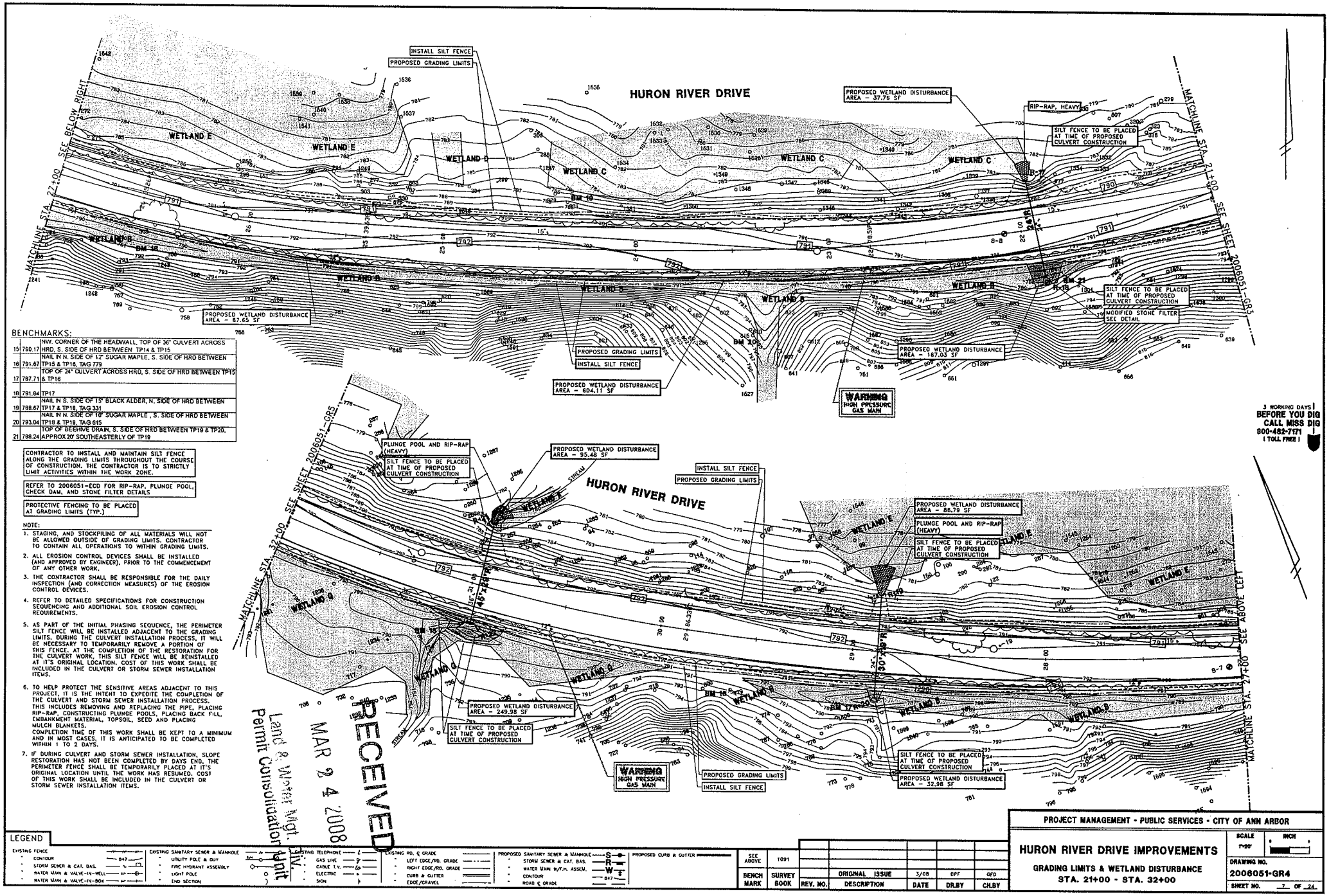
BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
SEE ABOVE	1091		ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

GRADING LIMITS & WETLAND DISTURBANCE
STA. 9+00 - STA. 21+00

SCALE 1"=20' | INCH
DRAWING NO. 2006051-GR3
SHEET NO. 6 OF 24



BENCHMARKS:

15	790.17	NW. CORNER OF THE HEADWALL, TOP OF 36" CULVERT ACROSS HRD, S. SIDE OF HRD BETWEEN TP14 & TP15
16	791.67	NAIL IN N. SIDE OF 12" SUGAR MAPLE, S. SIDE OF HRD BETWEEN TP15 & TP16, TAG 779
17	787.71	TOP OF 24" CULVERT ACROSS HRD, S. SIDE OF HRD BETWEEN TP15 & TP16
18	791.84	TP17
19	788.67	NAIL IN S. SIDE OF 15" BLACK ALDER, N. SIDE OF HRD BETWEEN TP17 & TP18, TAG 331
20	793.04	NAIL IN N. SIDE OF 10" SUGAR MAPLE, S. SIDE OF HRD BETWEEN TP18 & TP19, TAG 615
21	788.24	TOP OF BEEHIVE DRAIN, S. SIDE OF HRD BETWEEN TP19 & TP20, APPROX 20' SOUTHEASTERLY OF TP19

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Permit Coordination Unit

LEGEND

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SEE ABOVE	1091
BENCH MARK	SURVEY BOOK

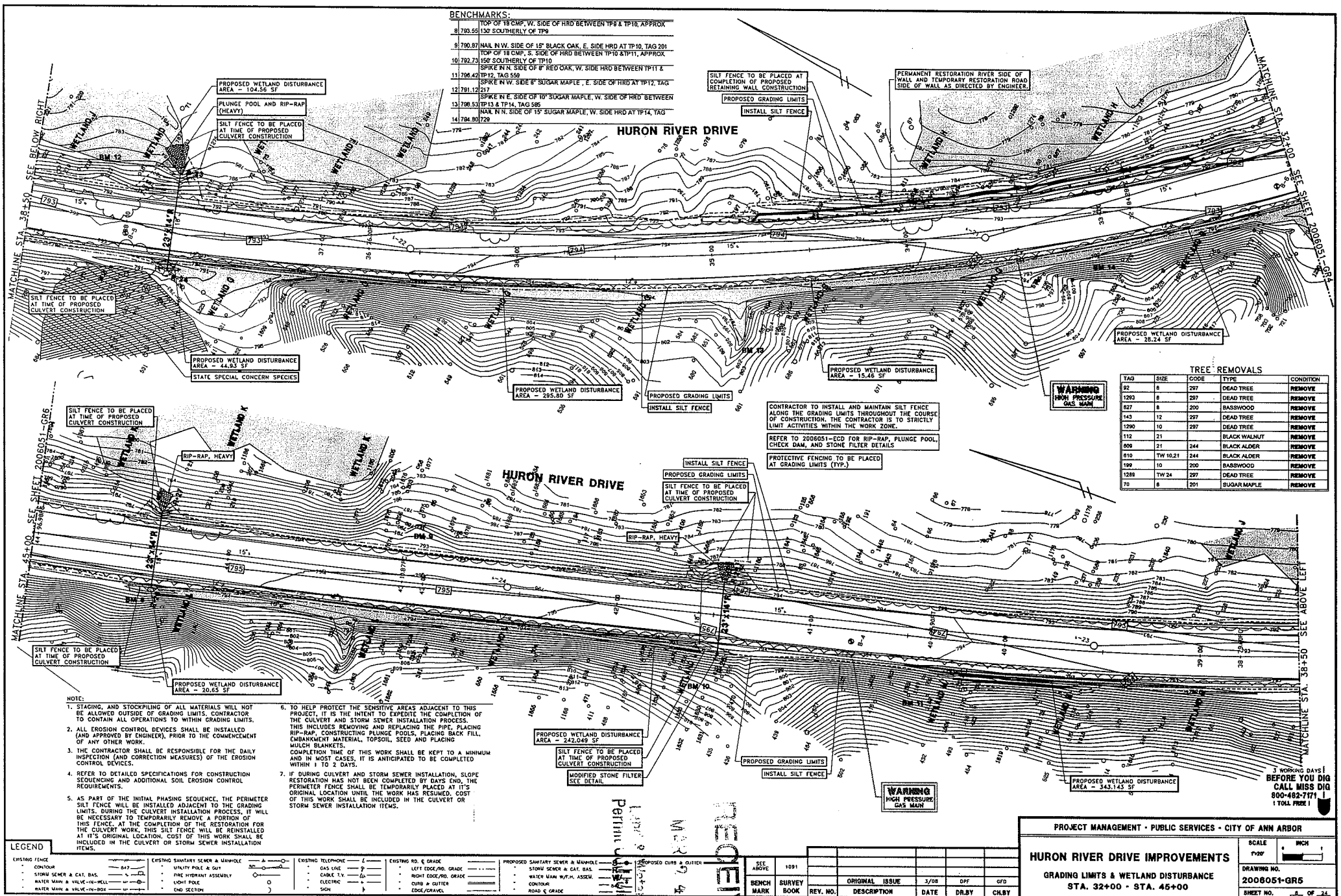
REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
	ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

GRADING LIMITS & WETLAND DISTURBANCE
STA. 21+00 - STA. 32+00

SCALE 1"=20' | INCH
DRAWING NO. 2006051-GR4
SHEET NO. 7 OF 24



TREE REMOVALS

TAG	SIZE	CODE	TYPE	CONDITION
92	8	297	DEAD TREE	REMOVE
1293	8	297	DEAD TREE	REMOVE
827	8	200	BASSWOOD	REMOVE
143	12	297	DEAD TREE	REMOVE
1290	10	297	DEAD TREE	REMOVE
112	21		BLACK WALNUT	REMOVE
809	21	244	BLACK ALDER	REMOVE
810	TW 10,21	244	BLACK ALDER	REMOVE
199	10	200	BASSWOOD	REMOVE
1289	TW 24	297	DEAD TREE	REMOVE
70	8	201	SUGAR MAPLE	REMOVE

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BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
SEE ABOVE	1091		ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

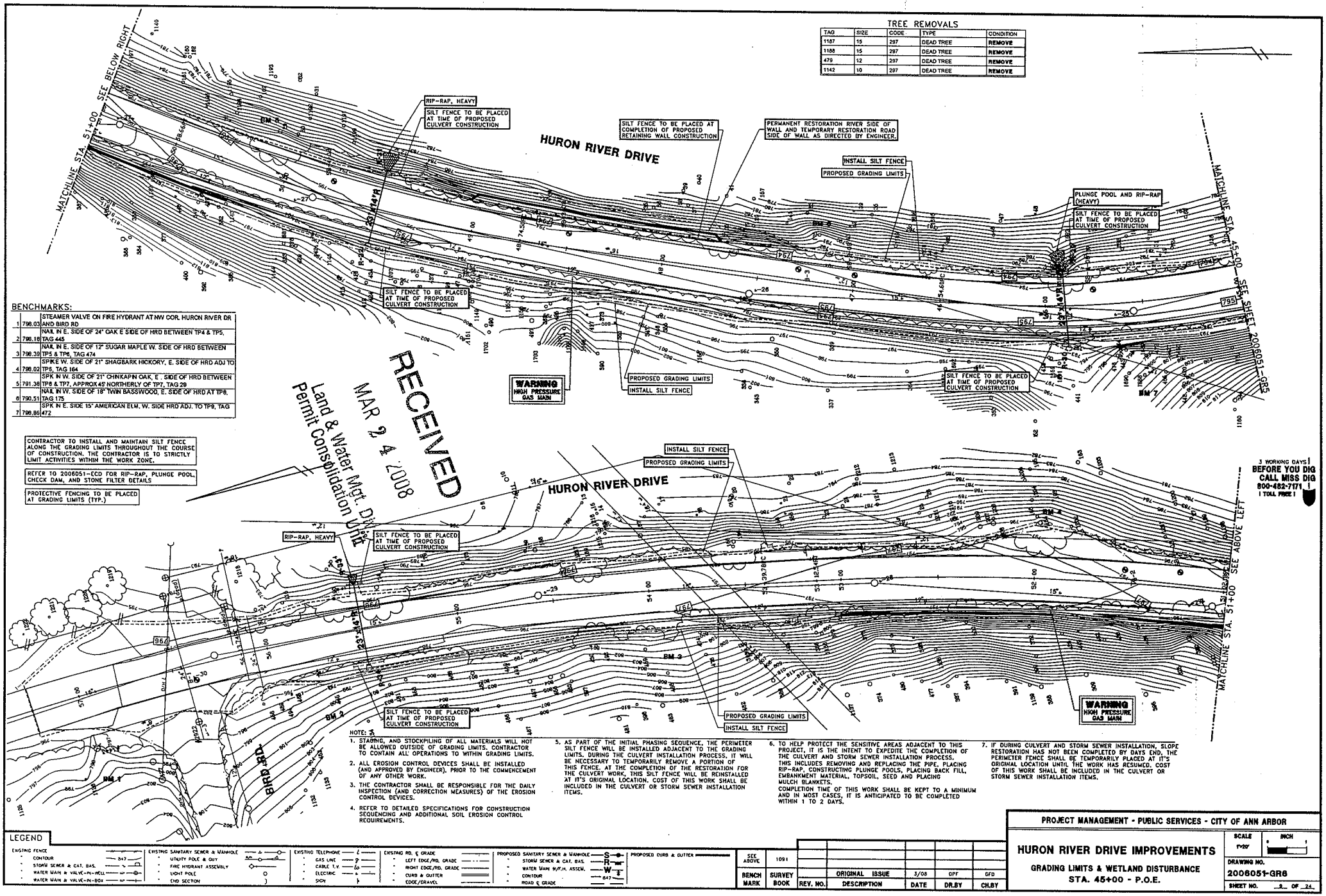
HURON RIVER DRIVE IMPROVEMENTS

GRADING LIMITS & WETLAND DISTURBANCE
STA. 32+00 - STA. 45+00

SCALE 1"=20' INCH

DRAWING NO. 2006051-GR5

SHEET NO. 8 OF 24



TREE REMOVALS

TAG	SIZE	CODE	TYPE	CONDITION
1187	15	297	DEAD TREE	REMOVE
1188	15	297	DEAD TREE	REMOVE
479	12	297	DEAD TREE	REMOVE
1142	10	297	DEAD TREE	REMOVE

BENCHMARKS:

1	796.03	STEAMER VALVE ON FIRE HYDRANT AT NW COR. HURON RIVER DR AND BIRD RD
2	796.18	NAIL IN E. SIDE OF 24" OAK E SIDE OF HRD BETWEEN TP4 & TP5, TAG 445
3	796.39	NAIL IN E. SIDE OF 12" SUGAR MAPLE W. SIDE OF HRD BETWEEN TP5 & TP6, TAG 474
4	796.02	SPIKE W. SIDE OF 21" SHAGBARK HICKORY, E. SIDE OF HRD ADJ TO TP6, TAG 164
5	791.38	SPK IN W. SIDE OF 21" CHINKAPIN OAK, E. SIDE OF HRD BETWEEN TP8 & TP7, APPROX 45' NORTHERLY OF TP7, TAG 29
6	790.51	NAIL IN W. SIDE OF 18" TWIN BASSWOOD, E. SIDE OF HRD AT TP8, TAG 175
7	796.86	SPK IN E. SIDE 15" AMERICAN ELM, W. SIDE HRD ADJ. TO TP8, TAG 472

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SEE ABOVE	1091					
BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
			ORIGINAL ISSUE	3/08	OPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

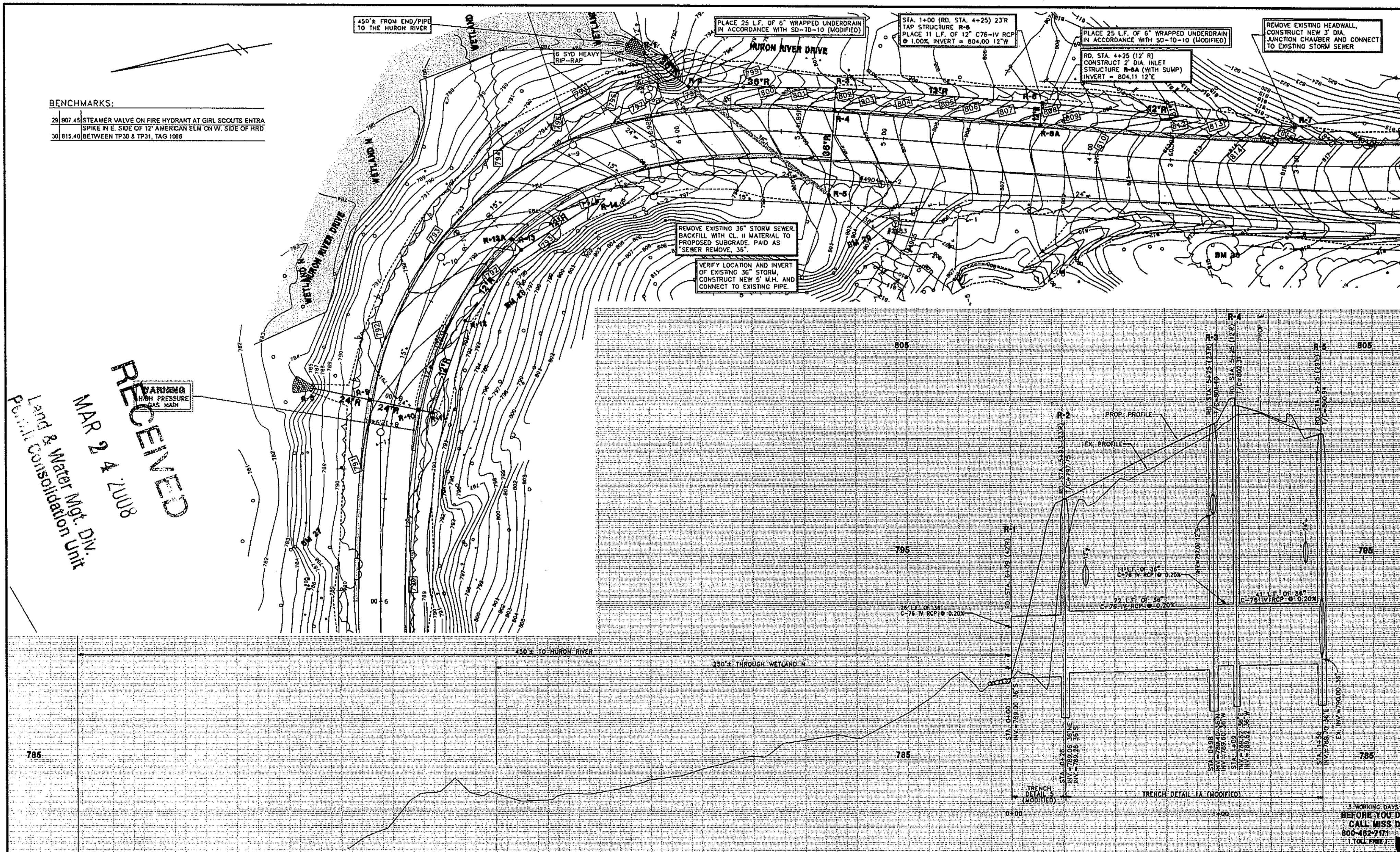
HURON RIVER DRIVE IMPROVEMENTS

GRADING LIMITS & WETLAND DISTURBANCE
STA. 45+00 - P.O.E.

SCALE 1"=20' | INCH

DRAWING NO. 2006051-GR6

SHEET NO. 9 OF 24



BENCHMARKS:

29	807.45	STEAMER VALVE ON FIRE HYDRANT AT GIRL SCOUTS ENTRA
30	815.40	SPIKE IN E. SIDE OF 12" AMERICAN ELM ON W. SIDE OF HRD BETWEEN TP30 & TP31, TAG 1088

LEGEND

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BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
SEE ABOVE	1091		ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

STORM SEWER PLAN AND PROFILE
R-1 THRU R-5

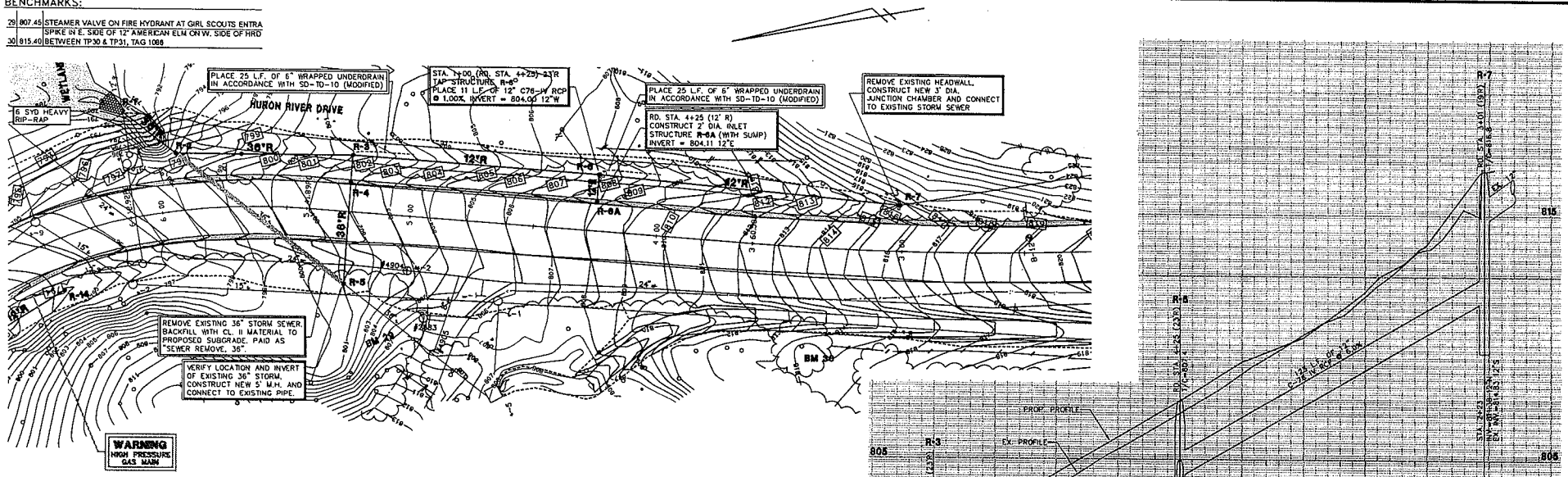
SCALE HORZ. 1"=20' VERT. 1"=2' INCH

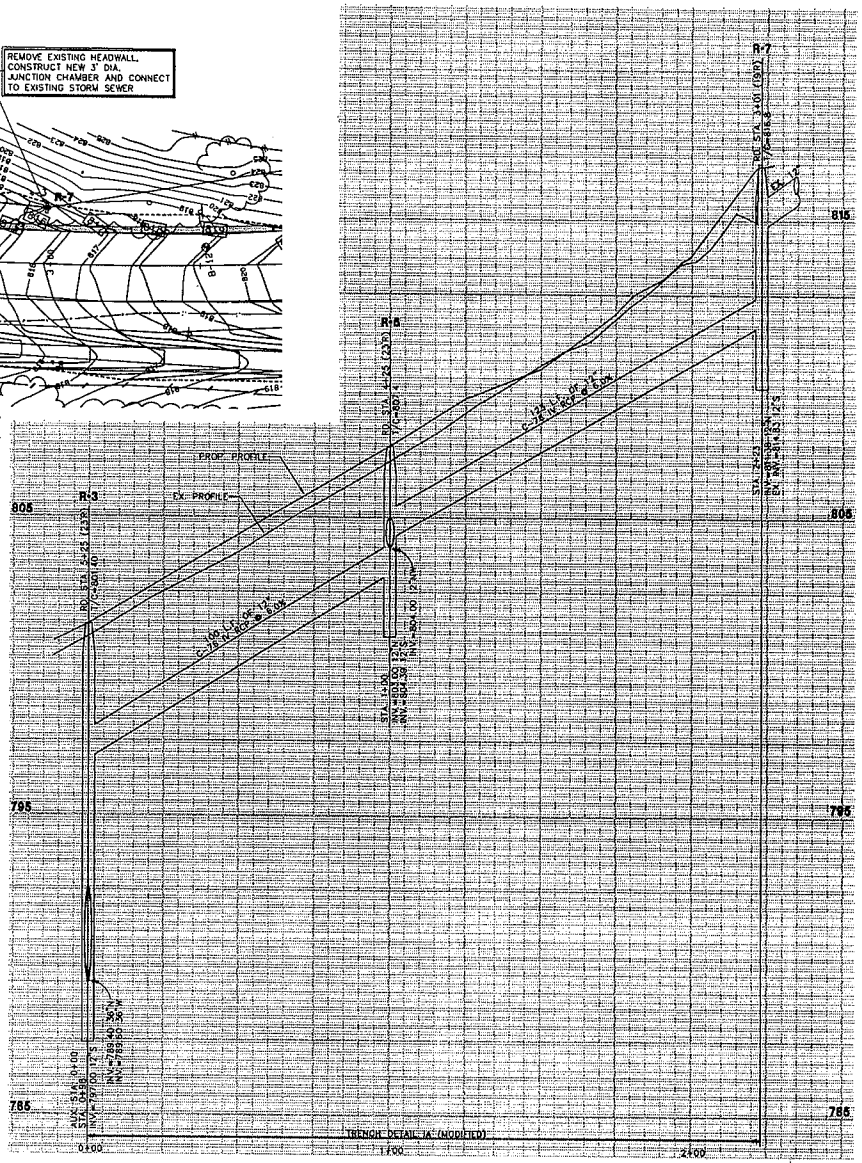
DRAWING NO. 2006051-R1

SHEET NO. 10 OF 24

BENCHMARKS:

29	807.45	STEAMER VALVE ON FIRE HYDRANT AT GIRL SCOUTS ENTRA
		SPIKE IN E. SIDE OF 12" AMERICAN ELM ON W. SIDE OF HRD
30	815.40	BETWEEN TP30 & TP31, TAG 1088





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800-482-7171
TOLL FREE

LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	

SEE ABOVE	1091					
BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
			ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

STORM SEWER PLAN AND PROFILE
R-3, R-6, R-7

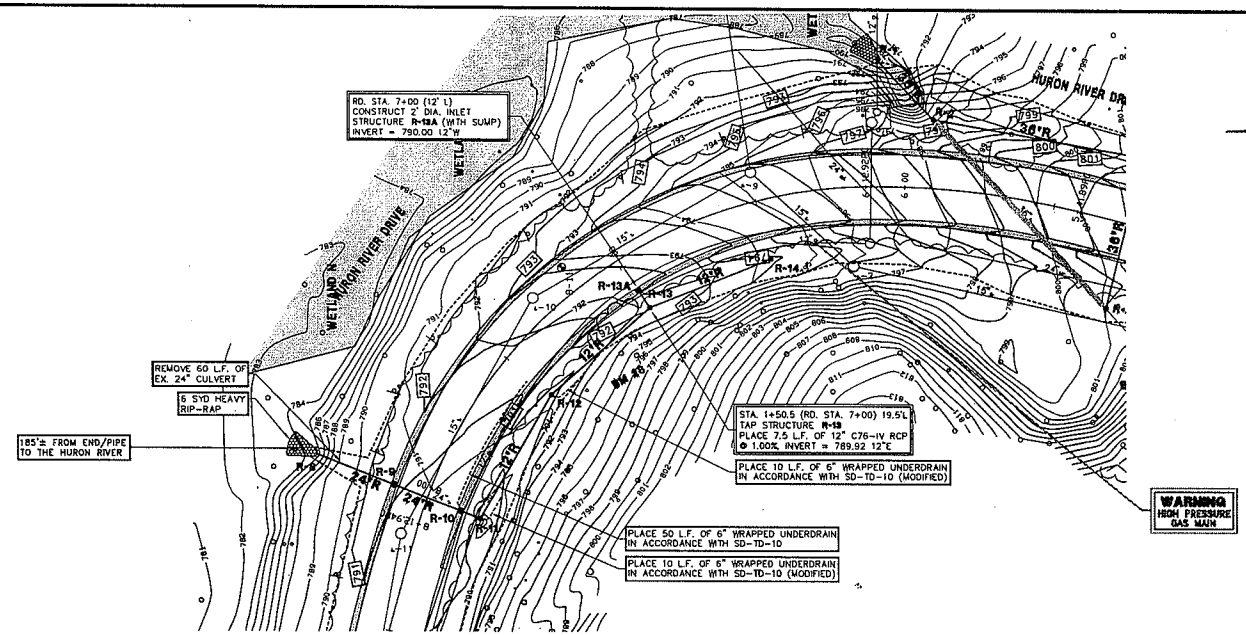
SCALE HORIZ. 1"=50' VERT. 1"=2' — INCH

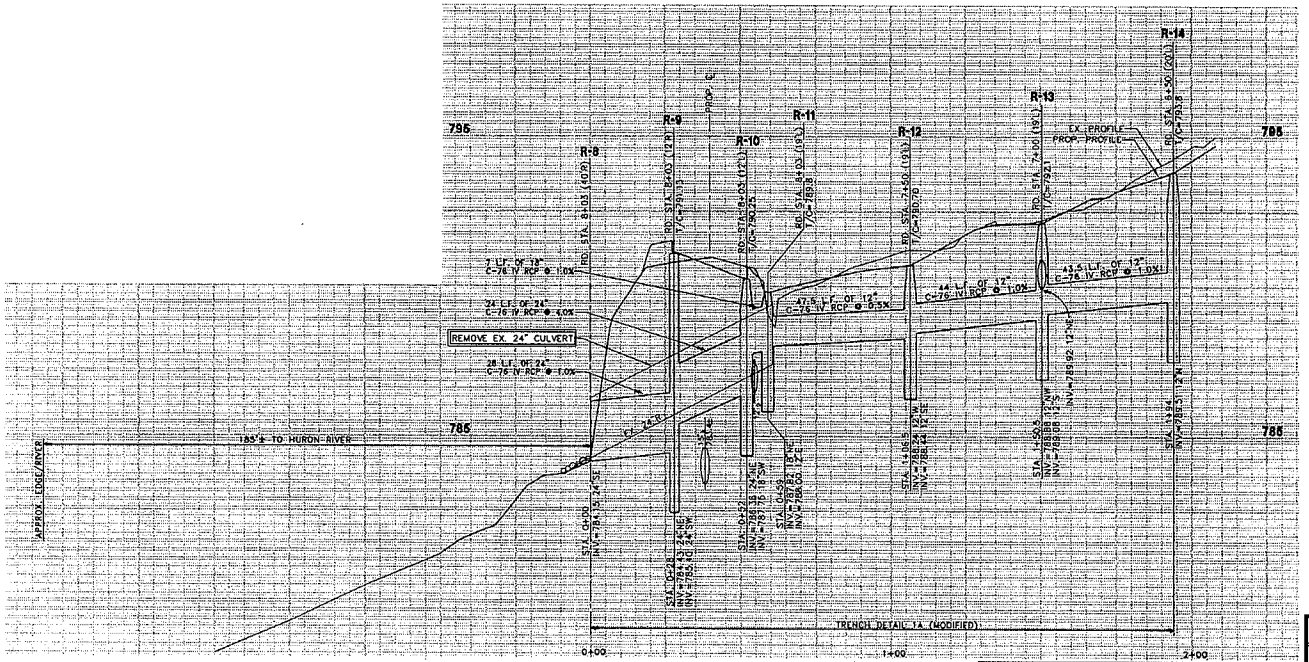
DRAWING NO. 2008051-R2

SHEET NO. 11 OF 24

BENCHMARKS:

28	PK NAIL IN N. SIDE OF 12" WHITE OAK ON W. SIDE OF HRD ADJ. TO 793.75 TP 28, TAG 1036





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Permit Consolidation Unit

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LEGEND

EXISTING FENCE	EXISTING SANITARY SEWER & MANHOLE	EXISTING TELEPHONE	EXISTING RD. & GRADE	PROPOSED SANITARY SEWER & MANHOLE	PROPOSED CURB & GUTTER		
CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.			
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.			
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR			
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD ℄ GRADE			

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BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
			ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

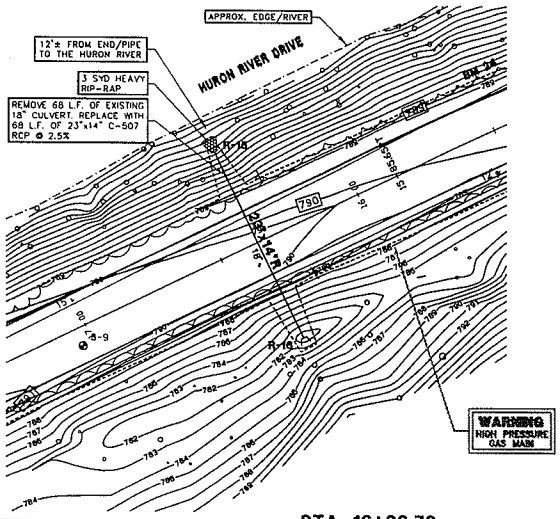
HURON RIVER DRIVE IMPROVEMENTS

STORM SEWER PLAN AND PROFILE
R-8 THRU R-14

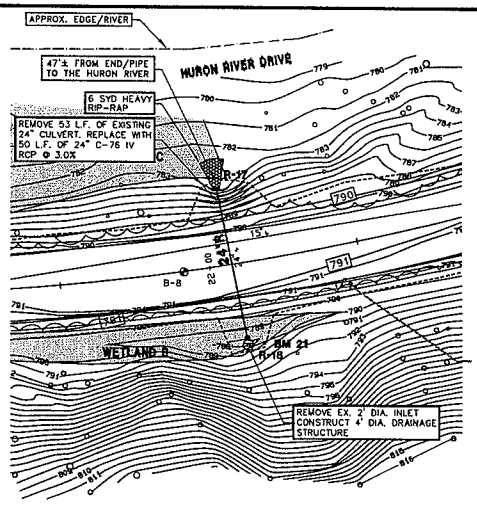
SCALE
HORIZ. 1"=50'
VERT. 1"=5'
INCH

DRAWING NO.
2006051-R3

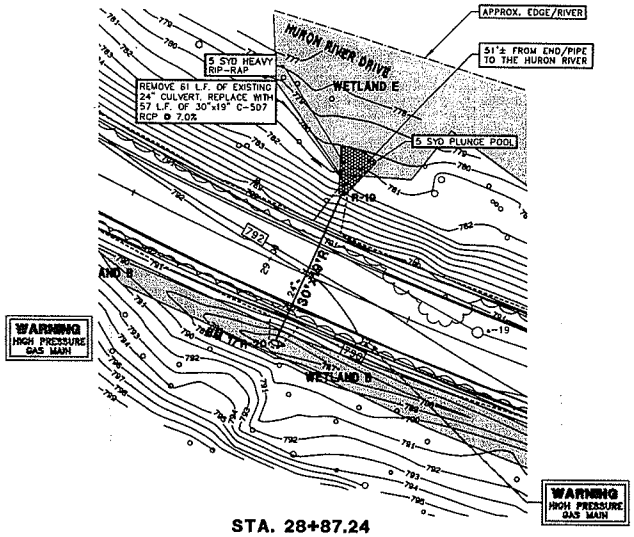
SHEET NO. 12 OF 24



STA. 16+36.79



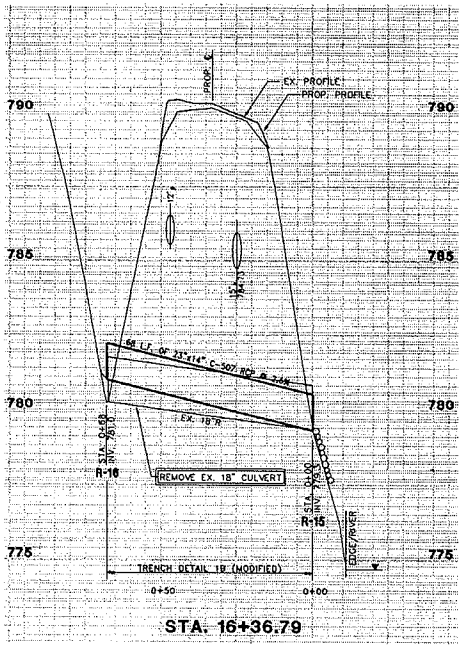
STA. 21+92.59



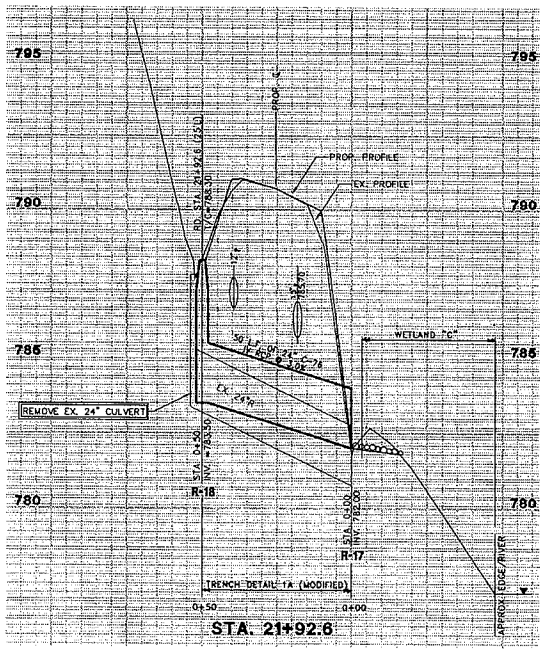
STA. 28+87.24

BENCHMARKS:

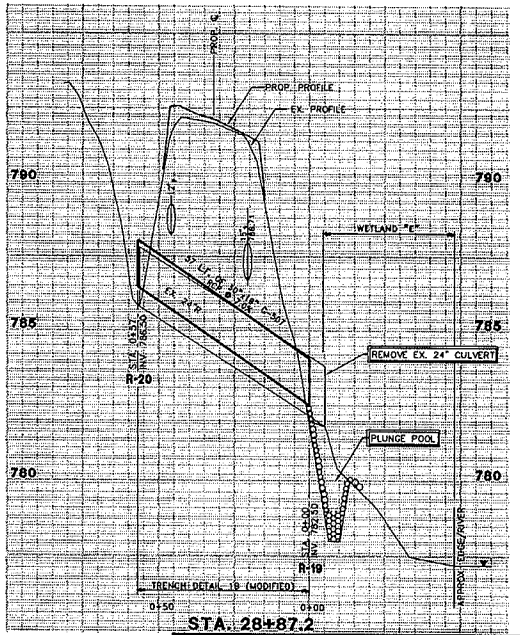
17	787.71	TOP OF 24" CULVERT ACROSS HRD, S. SIDE OF HRD BETWEEN TP15 & TP16
21	788.24	TOP OF BEEHIVE DRAIN, S. SIDE OF HRD BETWEEN TP19 & TP20, APPROX 20' SOUTHEASTERLY OF TP19
24	789.51	TP23



STA. 16+36.79



STA. 21+92.6



STA. 28+87.2

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LEGEND

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EXISTING SANITARY SEWER & MANHOLE; UTILITY POLE & GUY; FIRE HYDRANT ASSEMBLY; LIGHT POLE; END SECTION
EXISTING TELEPHONE; GAS LINE; CABLE T.V.; ELECTRIC; SIGN
EXISTING RD. ℄ GRADE; LEFT EDGE/RD. GRADE; RIGHT EDGE/RD. GRADE; CURB & GUTTER; EDGE/GRAVEL
PROPOSED SANITARY SEWER & MANHOLE; STORM SEWER & CAT. BAS.; WATER MAIN W/F.H. ASSEM.; CONTOUR; ROAD ℄ GRADE
PROPOSED CURB & GUTTER

BENCH MARK	SURVEY BOOK
SEE ABOVE	1091

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
	ORIGINAL ISSUE	3/08	DPF	DFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

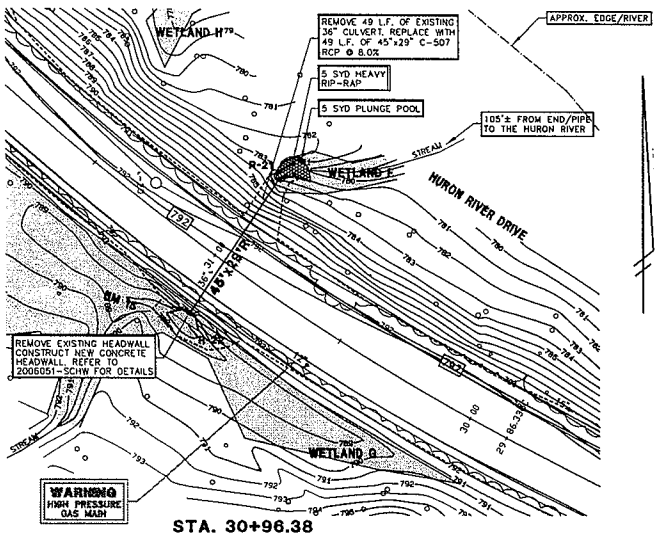
HURON RIVER DRIVE IMPROVEMENTS

CULVERTS R-15 THRU R-20

SCALE HORIZ. 1"=50' VERT. 1"=5' — INCH

DRAWING NO. 2008051-R4

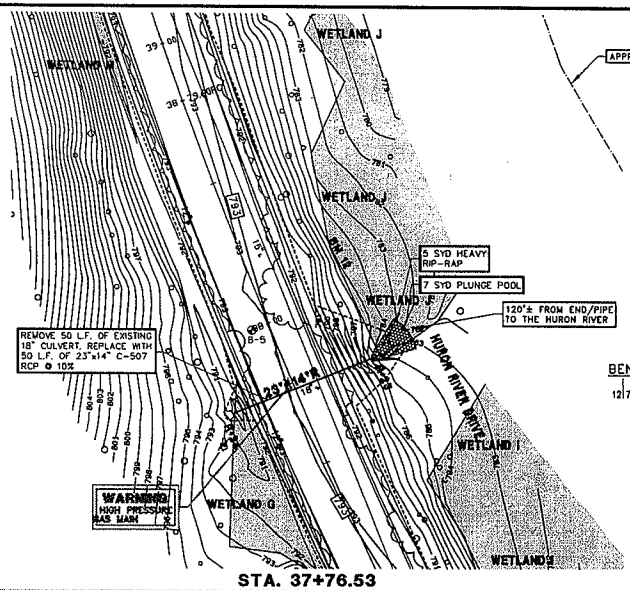
SHEET NO. 13 OF 24



STA. 30+96.38

BENCHMARKS:

15	790.17	NW. CORNER OF THE HEADWALL, TOP OF 36" CULVERT ACROSS HRD, S. SIDE OF HRD BETWEEN TP14 & TP15

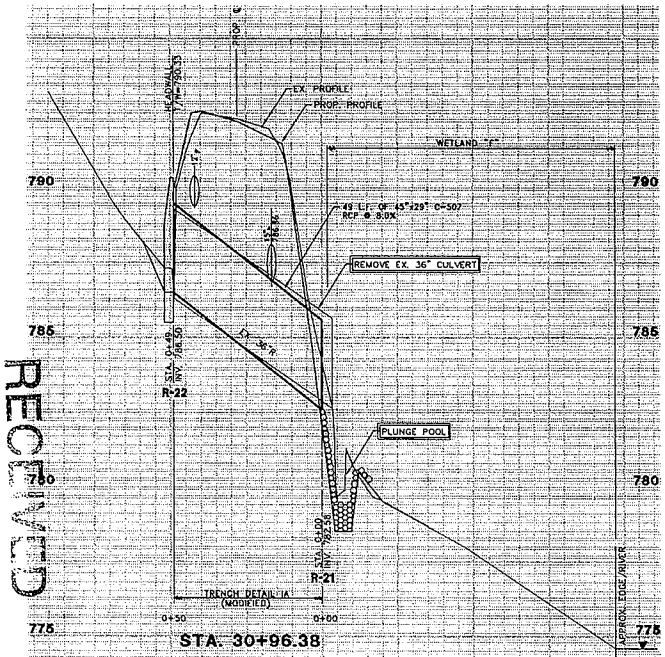


STA. 37+76.53

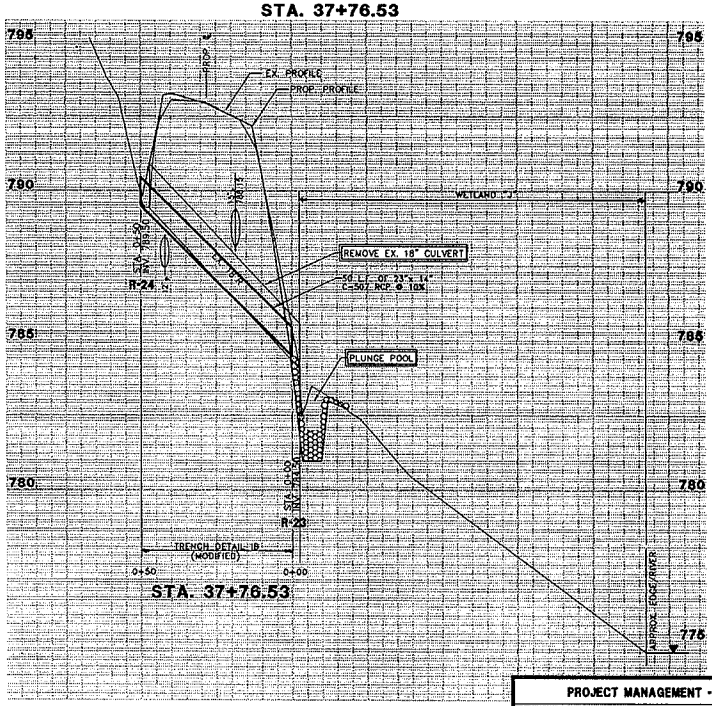
BENCHMARKS:

1		SPIKE IN W. SIDE 8" SUGAR MAPLE, E. SIDE OF HRD AT TP12, TAG 12|791.12|217

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)



STA. 30+96.38



STA. 37+76.53

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LEGEND

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CONTOUR	UTILITY POLE & GUY	GAS LINE	LEFT EDGE/RD. GRADE	STORM SEWER & CAT. BAS.	
STORM SEWER & CAT. BAS.	FIRE HYDRANT ASSEMBLY	CABLE T.V.	RIGHT EDGE/RD. GRADE	WATER MAIN W/F.H. ASSEM.	
WATER MAIN & VALVE-IN-WELL	LIGHT POLE	ELECTRIC	CURB & GUTTER	CONTOUR	
WATER MAIN & VALVE-IN-BOX	END SECTION	SIGN	EDGE/GRAVEL	ROAD & GRADE	

BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

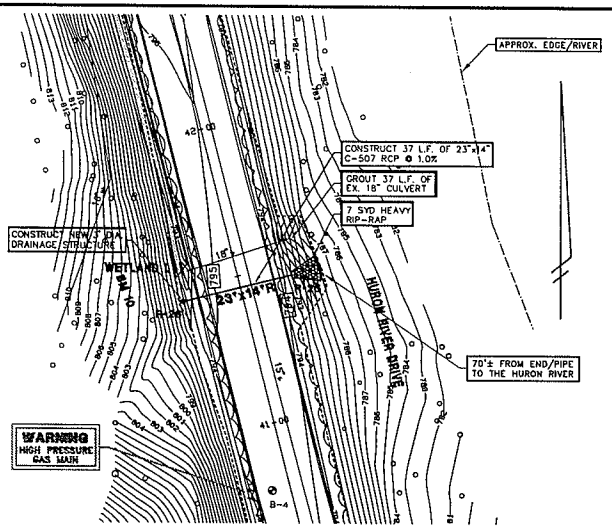
HURON RIVER DRIVE IMPROVEMENTS

CULVERTS R-21 THRU R-24

SCALE HORZ. 1"=20' VERT. 1"=2' | INCH

DRAWING NO. 2006051-R5

SHEET NO. 14 OF 24



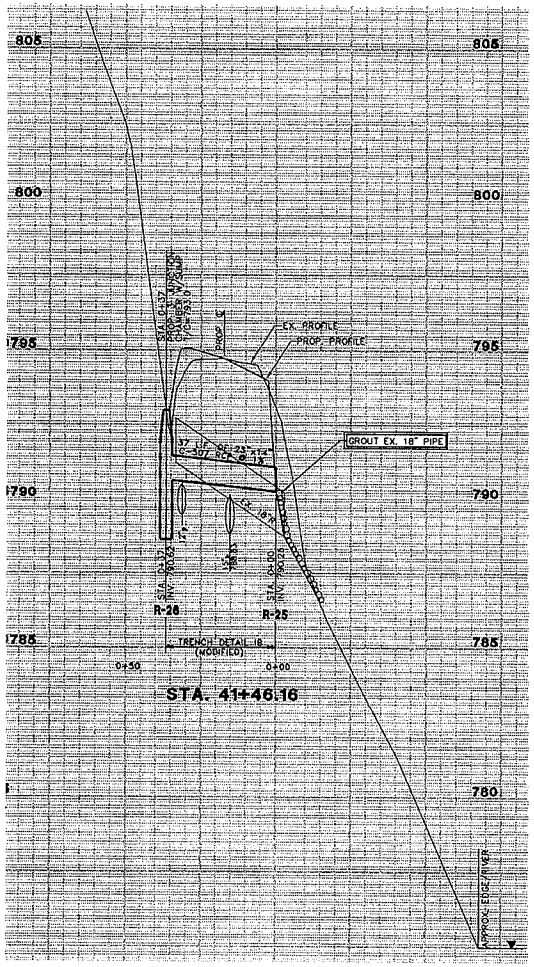
STA. 41+46.16

BENCHMARKS:

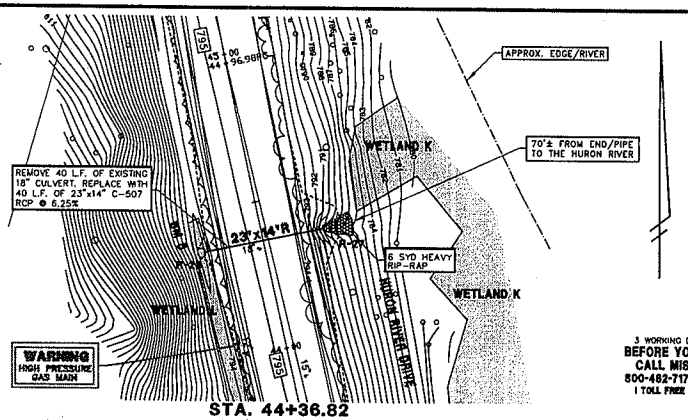
10	792.73	TOP OF 18 CMP, S. SIDE OF HRD BETWEEN TP10 &TP11, APPROX 150' SOUTHERLY OF TP10

BENCHMARKS:

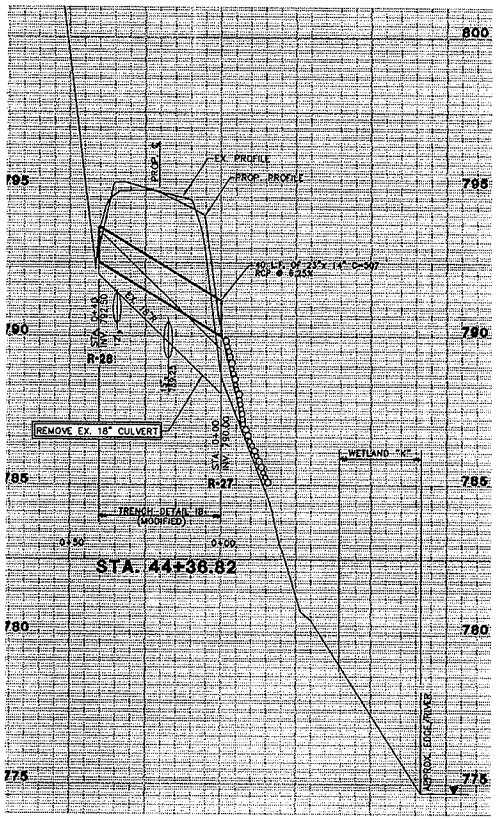
8	793.55	TOP OF 18 CMP, W. SIDE OF HRD BETWEEN TP9 & TP10, APPROX 130' SOUTHERLY OF TP9



STA. 41+46.16



STA. 44+36.82



STA. 44+36.82

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LEGEND

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EXISTING SANITARY SEWER & MANHOLE; UTILITY POLE & GUY; FIRE HYDRANT ASSEMBLY; LIGHT POLE; END SECTION
EXISTING TELEPHONE; GAS LINE; CABLE T.V.; ELECTRIC; SIGN
EXISTING RD. & GRADE; LEFT EDGE/RD. GRADE; RIGHT EDGE/RD. GRADE; CURB & GUTTER; EDGE/GRAVEL
PROPOSED SANITARY SEWER & MANHOLE; STORM SEWER & CAT. BAS.; WATER MAIN W/FH. ASSEM.; CONTOUR; ROAD & GRADE
PROPOSED CURB & GUTTER

SEE ABOVE	1091
BENCH MARK	SURVEY BOOK

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
	ORIGINAL ISSUE	3/08	DPF	CFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

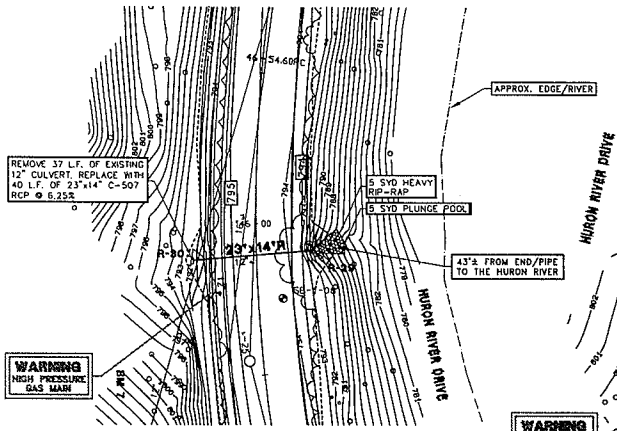
HURON RIVER DRIVE IMPROVEMENTS

CULVERTS R-25 THRU R-28

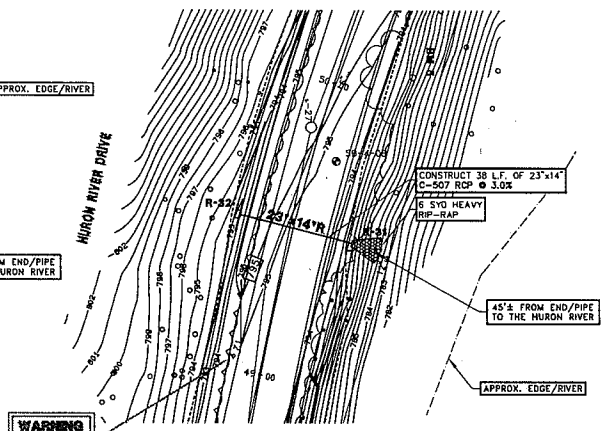
SCALE HORIZ. 1"=50' VERT. 1"=2' — INCH

DRAWING NO. 2006051-R6

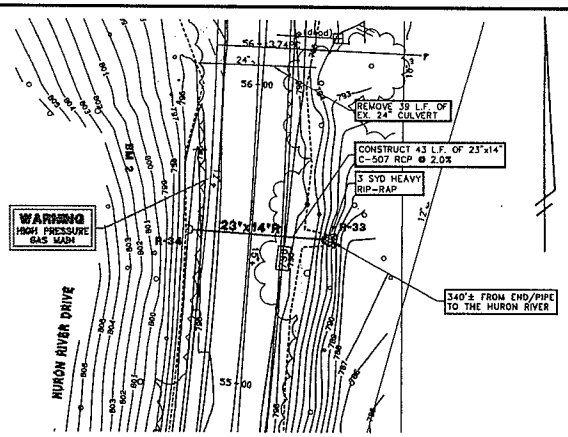
SHEET NO. 15 OF 24



STA. 45+89.73



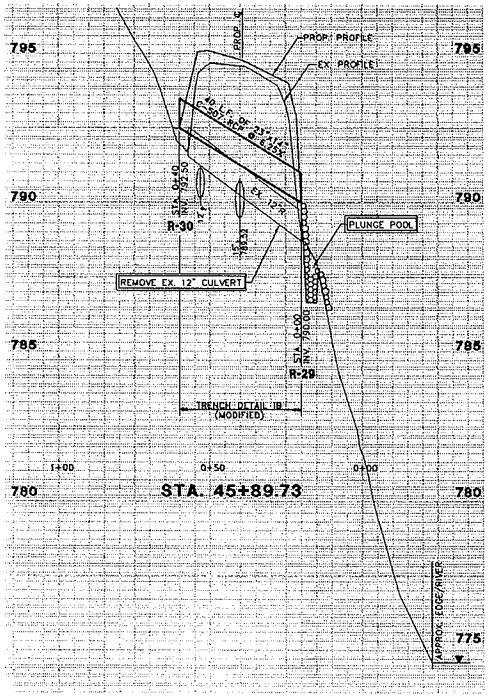
STA. 49+50



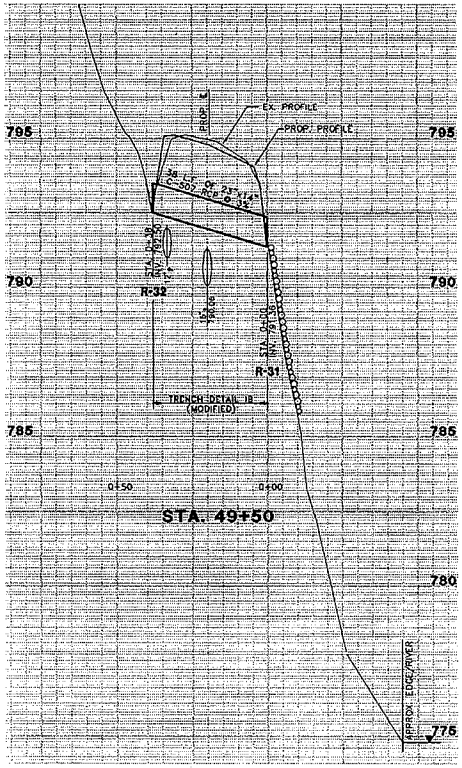
STA. 55+50

BENCHMARKS:

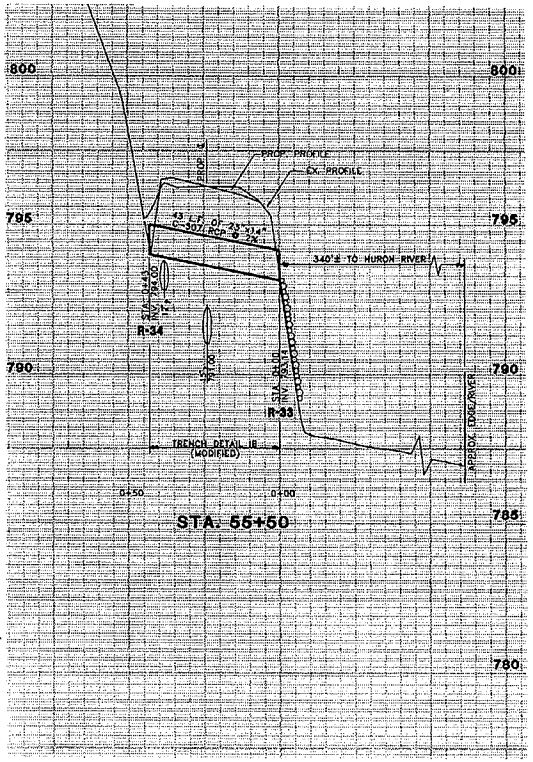
2	798.18	MAG IN E. SIDE OF 24" OAK E SIDE OF HRD BETWEEN TP4 & TP5, TAG 445
5	791.38	SPK IN W. SIDE OF 21" CHINKAPIN OAK, E. SIDE OF HRD BETWEEN TP8 & TP7, APPROX 45' NORTHERLY OF TP7, TAG 29
7	798.86	SPK IN E. SIDE 15" AMERICAN ELM, W. SIDE HRD ADJ. TO TP9, TAG 472



STA. 45+89.73



STA. 49+50



STA. 55+50

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EXISTING SANITARY SEWER & MANHOLE; UTILITY POLE & GUY; FIRE HYDRANT ASSEMBLY; LIGHT POLE; END SECTION
EXISTING TELEPHONE; GAS LINE; CABLE T.V.; ELECTRIC; SIGN
EXISTING RD. & GRADE; LEFT EDGE/RD. GRADE; RIGHT EDGE/RD. GRADE; CURB & GUTTER; EDGE/GRAVEL
PROPOSED SANITARY SEWER & MANHOLE; STORM SEWER & CAT. BAS.; WATER MAIN W/F.H. ASSEM.; CONTOUR; ROAD & GRADE
PROPOSED CURB & GUTTER

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			ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

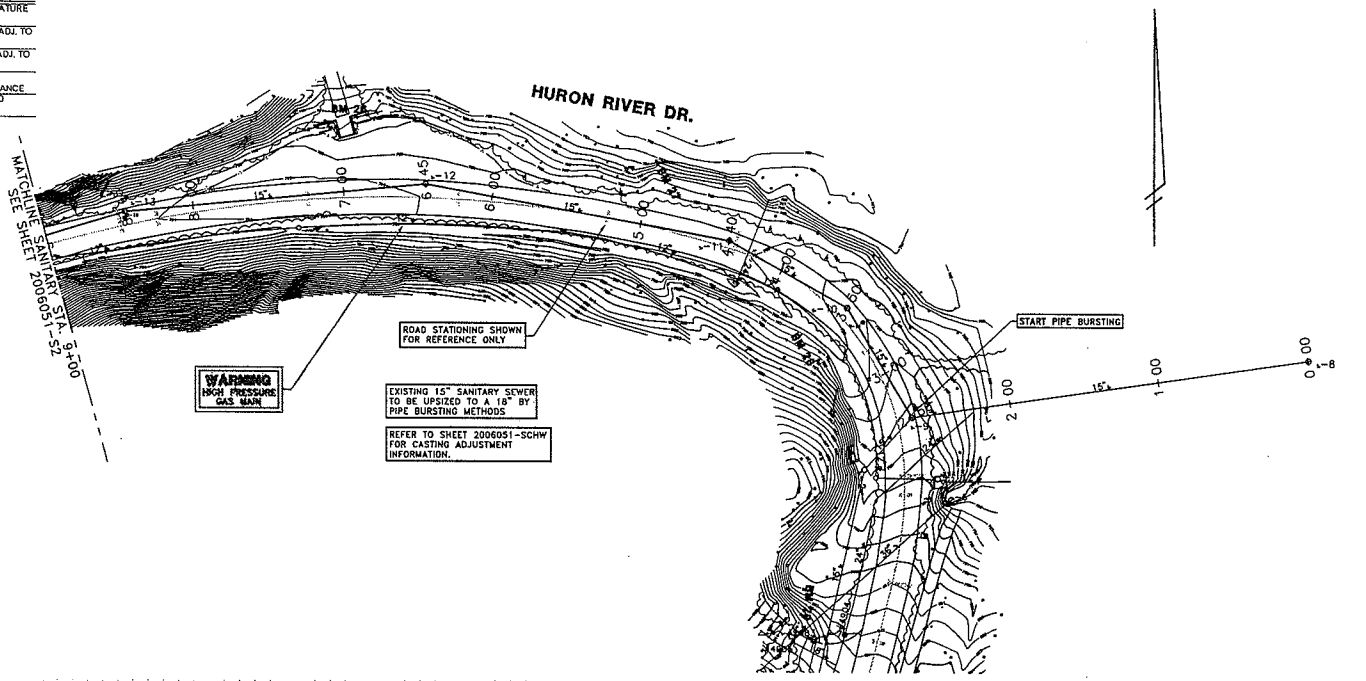
HURON RIVER DRIVE IMPROVEMENTS

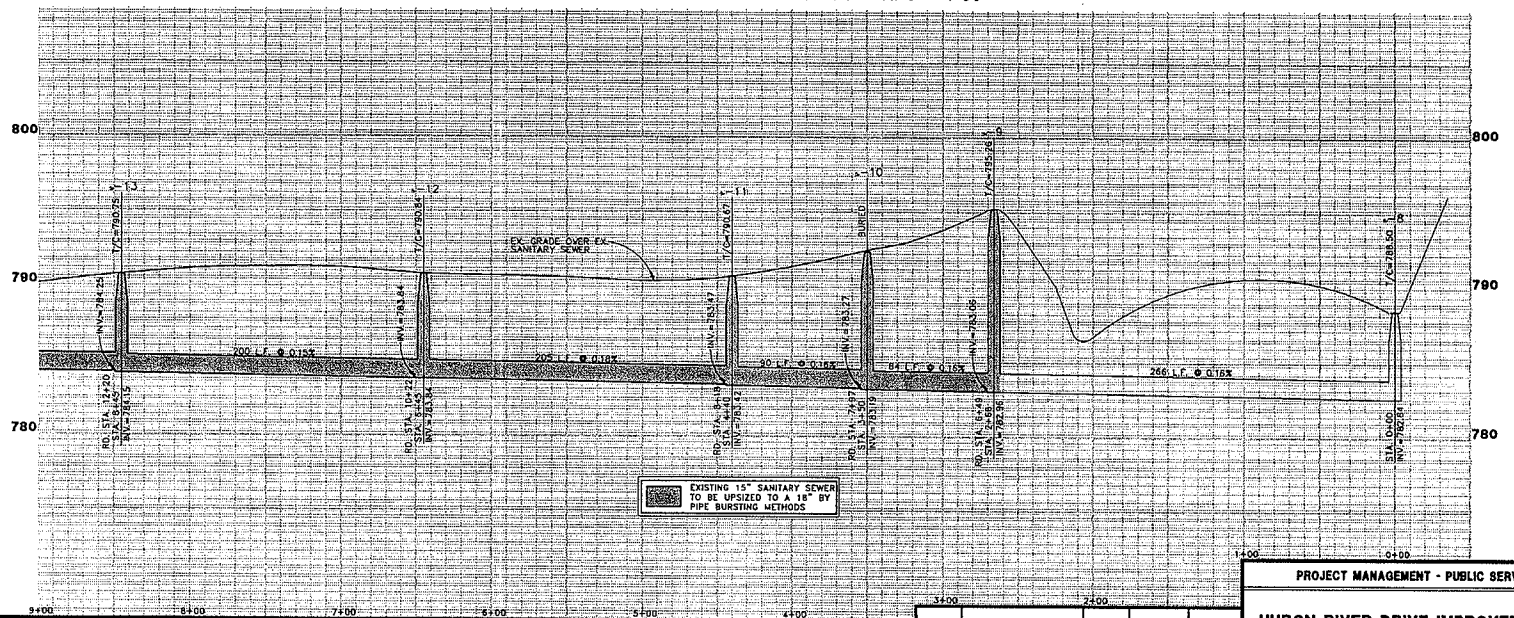
CULVERTS R-29 THRU R-34

SCALE HORIZ. 1"=20' VERT. 1"=2' | INCH
DRAWING NO. 2006051-R7
SHEET NO. 16 OF 24

BENCHMARKS:

26	787.33	TOP OF CONCRETE, SW CORNER OF BRIDGE TO BARTON NATURE AREA, APPROX 40' NORTHERLY OF TP26
27	791.52	NAIL IN S. SIDE OF 27" COTTONWOOD, NORTHSIDE OF HRD ADJ. TO TP27, TAG 987
28	793.75	PK NAIL IN N. SIDE OF 12" WHITE OAK ON W. SIDE OF HRD ADJ. TO TP28, TAG 1036
29	807.45	STEAMER VALVE ON FIRE HYDRANT AT GIRL SCOUTS ENTRANCE
30	815.40	SPIKE N E. SIDE OF 12" AMERICAN ELM ON W. SIDE OF HRD BETWEEN TP30 & TP31, TAG 1096





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EXISTING FENCE
CONTOUR
STORM SEWER & CAT. BAS.
WATER MAIN & VALVE-IN-WELL
WATER MAIN & VALVE-IN-BOX
EXISTING SANITARY SEWER & MANHOLE
UTILITY POLE & GUY
FIRE HYDRANT ASSEMBLY
LIGHT POLE
END SECTION
EXISTING TELEPHONE
GAS LINE
CABLE T.V.
ELECTRIC
SIGN
EXISTING RD. ℄ GRADE
LEFT EDGE/RD. GRADE
RIGHT EDGE/RD. GRADE
CURB & GUTTER
EDGE/GRAVEL
PROPOSED SANITARY SEWER & MANHOLE
STORM SEWER & CAT. BAS.
WATER MAIN W/T.H. ASSEM.
CONTOUR
ROAD ℄ GRADE
PROPOSED CURB & GUTTER

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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

SANITARY SEWER PLAN AND PROFILE
SANITARY SEWER STA. 0+00 - STA. 9+00

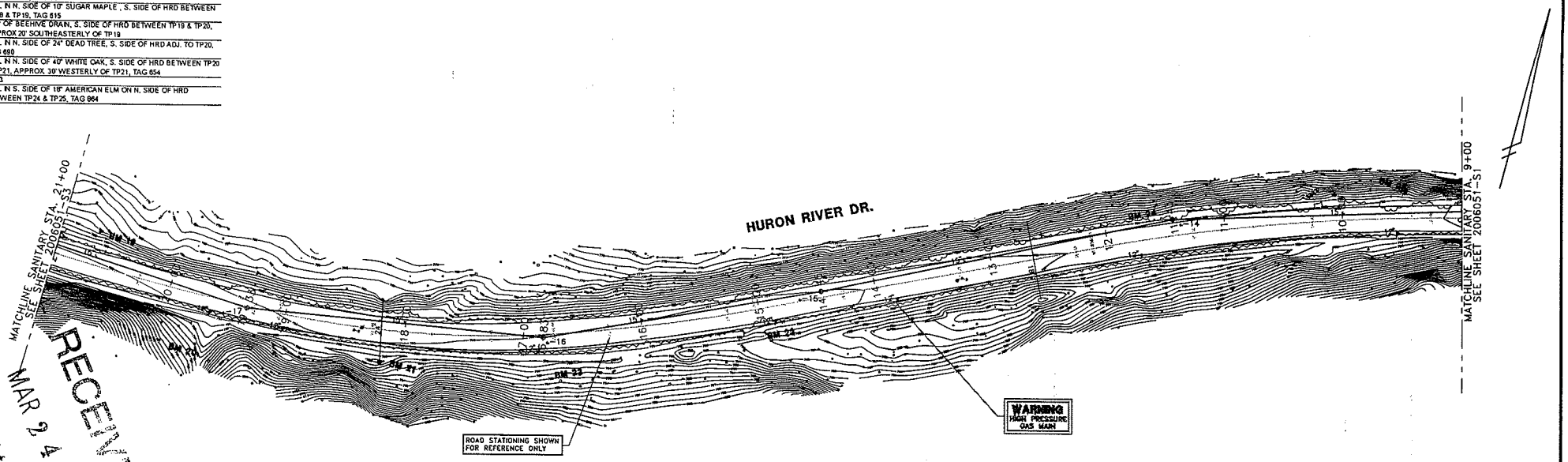
SCALE HORIZ. 1"=40' VERT. 1"=4'

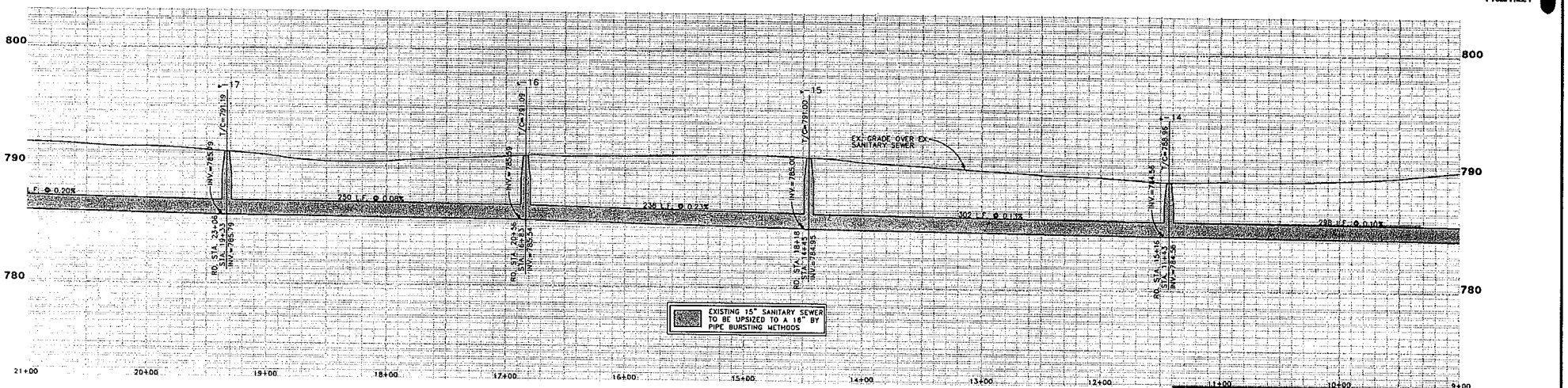
DRAWING NO. 2006051-S1

SHEET NO. 17 OF 24

BENCHMARKS:

19	786.67	NAIL IN S. SIDE OF 15" BLACK ALDER, N. SIDE OF HRD BETWEEN TP17 & TP18, TAG 331
20	793.04	NAIL IN N. SIDE OF 10" SUGAR MAPLE , S. SIDE OF HRD BETWEEN TP18 & TP19, TAG 515
21	786.24	TOP OF BEEHIVE DRAIN, S. SIDE OF HRD BETWEEN TP19 & TP20, APPROX 20' SOUTHEASTERLY OF TP 19
22	793.80	NAIL IN N. SIDE OF 24" DEAD TREE, S. SIDE OF HRD ADJ. TO TP20, TAG 690
23	791.37	NAIL IN N. SIDE OF 40" WHITE OAK, S. SIDE OF HRD BETWEEN TP20 & TP21, APPROX. 39' WESTERLY OF TP21, TAG 654
24	788.51	TP 23
25	790.83	NAIL IN S. SIDE OF 18" AMERICAN ELM ON N. SIDE OF HRD BETWEEN TP24 & TP25, TAG 864





LEGEND

EXISTING FENCE; CONTOUR; STORM SEWER & CAT. BAS.; WATER MAIN & VALVE-IN-WELL; WATER MAIN & VALVE-IN-BOX; EXISTING SANITARY SEWER & MANHOLE; UTILITY POLE & GUY; FIRE HYDRANT ASSEMBLY; LIGHT POLE; END SECTION; EXISTING TELEPHONE; GAS LINE; CABLE T.V.; ELECTRIC; SIGN; EXISTING RD. ℄ GRADE; LEFT EDGE/RD. GRADE; RIGHT EDGE/RD. GRADE; CURB & GUTTER; EDGE/GRAVEL; PROPOSED SANITARY SEWER & MANHOLE; STORM SEWER & CAT. BAS.; WATER MAIN W/F.H. ASSEM.; CONTOUR; ROAD ℄ GRADE; PROPOSED CURB & GUTTER

BENCH MARK	SURVEY BOOK	REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

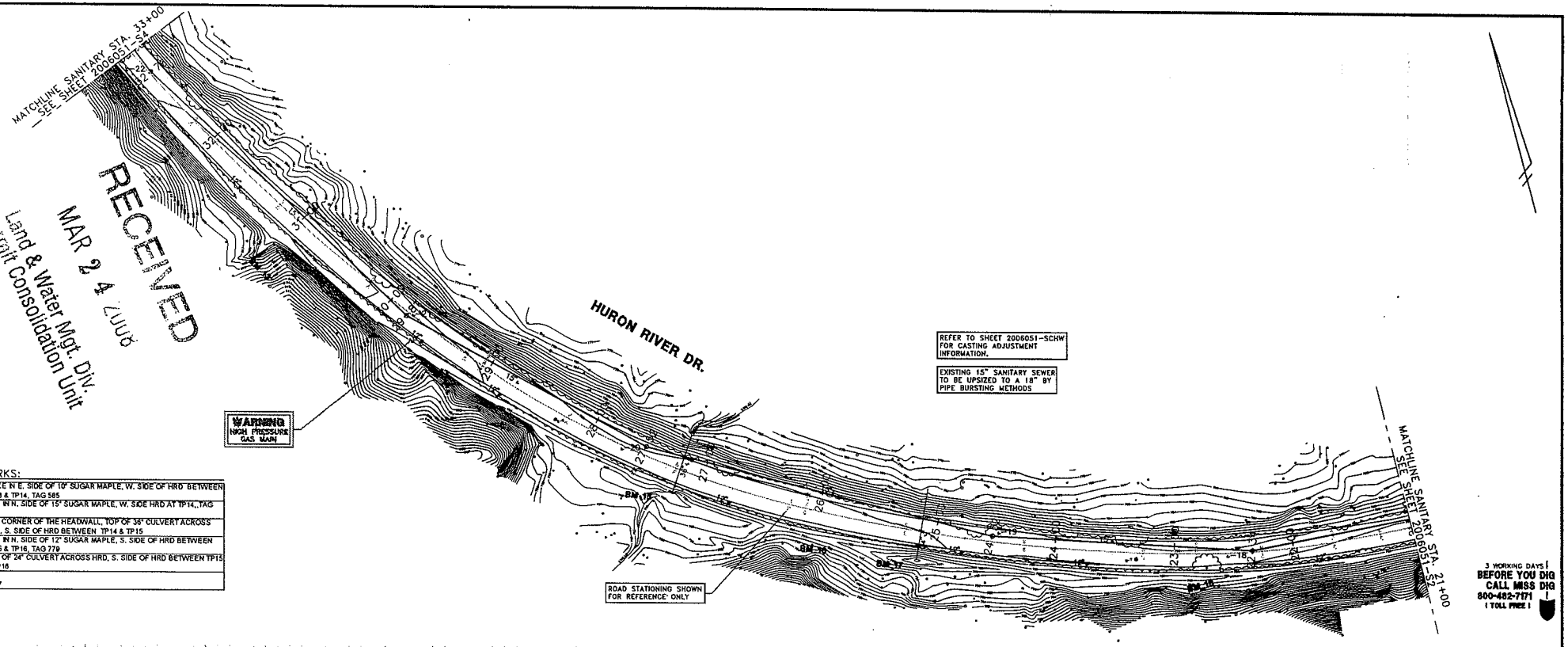
HURON RIVER DRIVE IMPROVEMENTS

SANITARY SEWER PLAN AND PROFILE
SANITARY SEWER STA. 9+00 - STA. 21+00

SCALE HORZ. 1"=40' VERT. 1"=4' — 0 INCH 1

DRAWING NO. 2006051-S2

SHEET NO. 18 OF 24

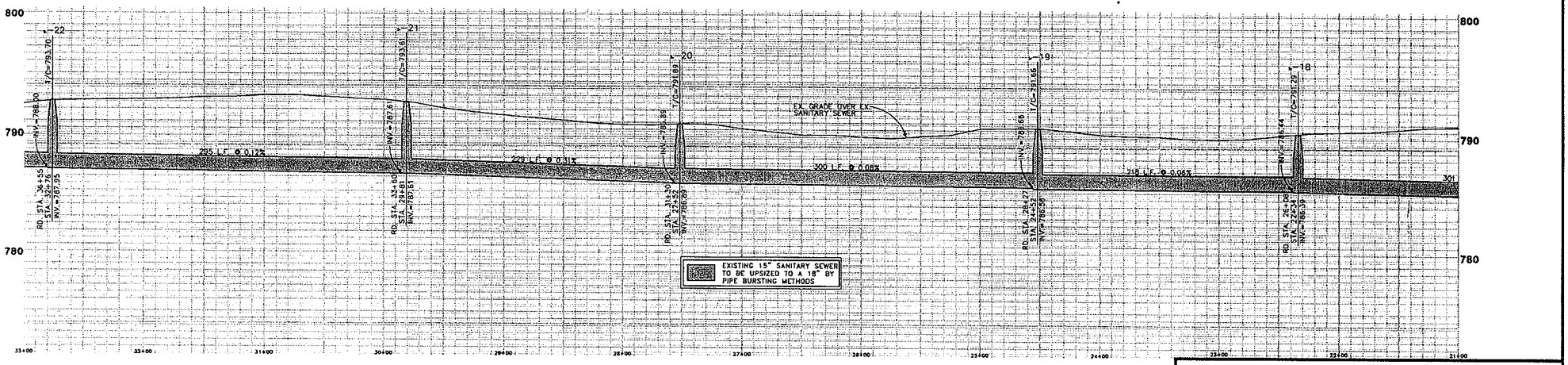


RECEIVED
MAR 24 2006
Land & Water Mgt. Div.
Permit Consolidation Unit

BENCHMARKS:

13	798.53	SPIKE IN E. SIDE OF 10" SUGAR MAPLE, W. SIDE OF HRD BETWEEN TP13 & TP14, TAG 585
14	794.80	NAIL IN N. SIDE OF 15" SUGAR MAPLE, W. SIDE HRD AT TP14, TAG 729
15	790.17	NW. CORNER OF THE HEADWALL, TOP OF 36" CULVERT ACROSS HRD, S. SIDE OF HRD BETWEEN TP14 & TP15
16	791.67	NAIL IN N. SIDE OF 12" SUGAR MAPLE, S. SIDE OF HRD BETWEEN TP15 & TP16, TAG 779
17	787.71	TOP OF 24" CULVERT ACROSS HRD, S. SIDE OF HRD BETWEEN TP15 & TP16
18	791.84	TP17

3 WORKING DAYS!
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
! TOLL FREE !



LEGEND

EXISTING FENCE; CONTOUR; STORM SEWER & CAT. BAS.; WATER MAIN & VALVE-IN-WELL; WATER MAIN & VALVE-IN-BOX
EXISTING SANITARY SEWER & MANHOLE; UTILITY POLE & GUY; FIRE HYDRANT ASSEMBLY; LIGHT POLE; END SECTION
EXISTING TELEPHONE; GAS LINE; CABLE T.V.; ELECTRIC; SIGN
EXISTING RD. ℄ GRADE; LEFT EDGE/RD. GRADE; RIGHT EDGE/RD. GRADE; CURB & GUTTER; EDGE/GRAVEL
PROPOSED SANITARY SEWER & MANHOLE; STORM SEWER & CAT. BAS.; WATER MAIN W/F.H. ASSEM.; CONTOUR; ROAD ℄ GRADE
PROPOSED CURB & GUTTER

BENCH MARK	SURVEY BOOK
SEE ABOVE	1091

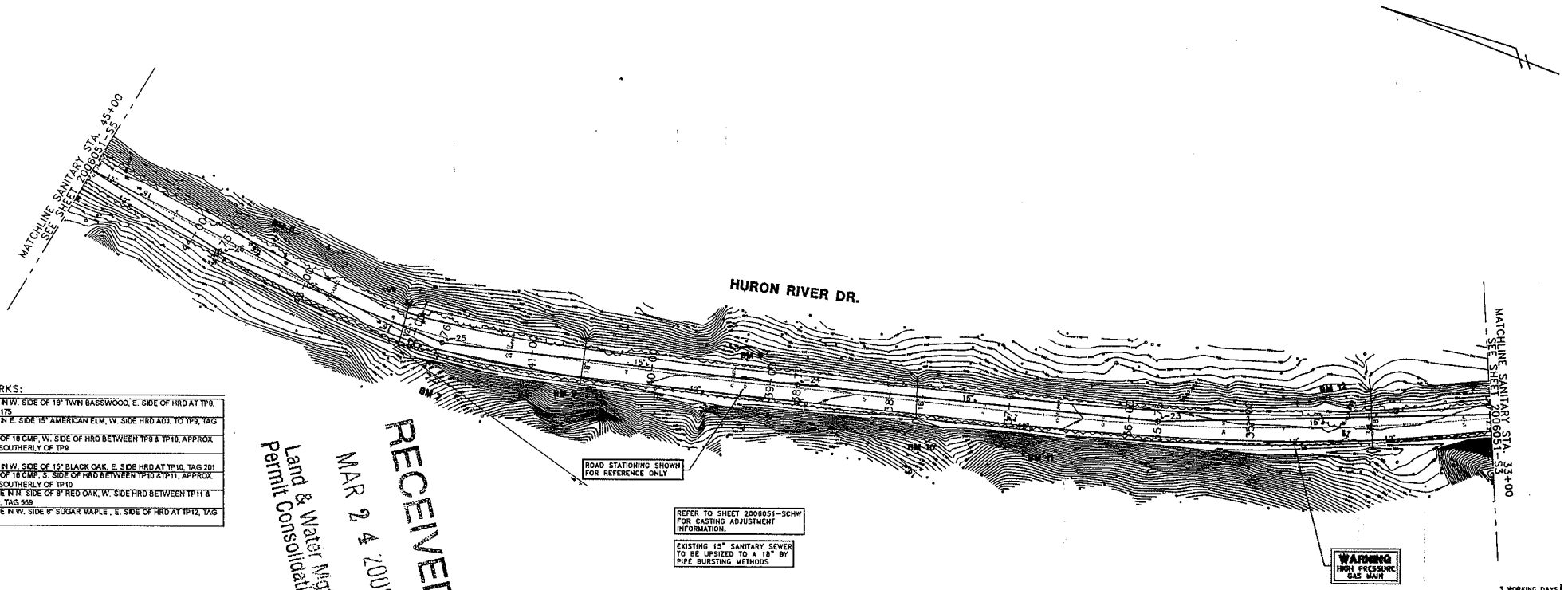
REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
	ORIGINAL ISSUE	3/06	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

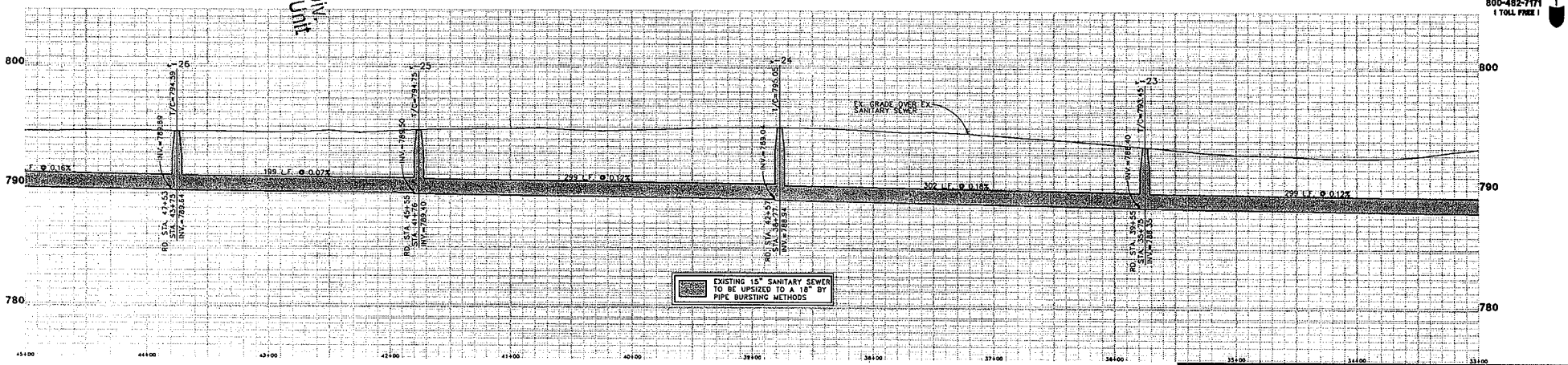
SANITARY SEWER PLAN AND PROFILE
SANITARY SEWER STA. 21+00 - STA. 33+00

SCALE HORIZ. 1"=40' VERT. 1"=4' — INCH
DRAWING NO. 2006051-S3
SHEET NO. 18 OF 24



BENCHMARKS:

6	790.51	NAIL IN W. SIDE OF 18" TWIN BASSWOOD, E. SIDE OF HRD AT TP8, TAG 175
7	798.86	SPK IN E. SIDE 15" AMERICAN ELM, W. SIDE HRD ADJ. TO TP9, TAG 472
8	793.55	TOP OF 18 CMP, W. SIDE OF HRD BETWEEN TP9 & TP10, APPROX. 130' SOUTHERLY OF TP9
9	790.87	NAIL IN W. SIDE OF 15" BLACK OAK, E. SIDE HRD AT TP10, TAG 201
10	792.73	TOP OF 18 CMP, S. SIDE OF HRD BETWEEN TP10 &TP11, APPROX. 150' SOUTHERLY OF TP10
11	796.42	SPIKE IN N. SIDE OF 8" RED OAK, W. SIDE HRD BETWEEN TP11 & TP12, TAG 559
12	791.12	SPIKE IN W. SIDE 6" SUGAR MAPLE , E. SIDE OF HRD AT TP12, TAG 217



LEGEND

EXISTING FENCE
CONTOUR — 847
STORM SEWER & CAT. BAS.
WATER MAIN & VALVE-IN-WELL
WATER MAIN & VALVE-IN-BOX

EXISTING SANITARY SEWER & MANHOLE
UTILITY POLE & GUY
FIRE HYDRANT ASSEMBLY
LIGHT POLE
END SECTION

EXISTING TELEPHONE
GAS LINE
CABLE T.V.
ELECTRIC
SIGN

EXISTING RD. & GRADE
LEFT EDGE/RD. GRADE
RIGHT EDGE/RD. GRADE
CURB & GUTTER
EDGE/GRAVEL

PROPOSED SANITARY SEWER & MANHOLE
STORM SEWER & CAT. BAS.
WATER MAIN W/F.H. ASSEM.
CONTOUR — 847
ROAD & GRADE

PROPOSED CURB & GUTTER

SEE ABOVE	1091
BENCH MARK	SURVEY BOOK

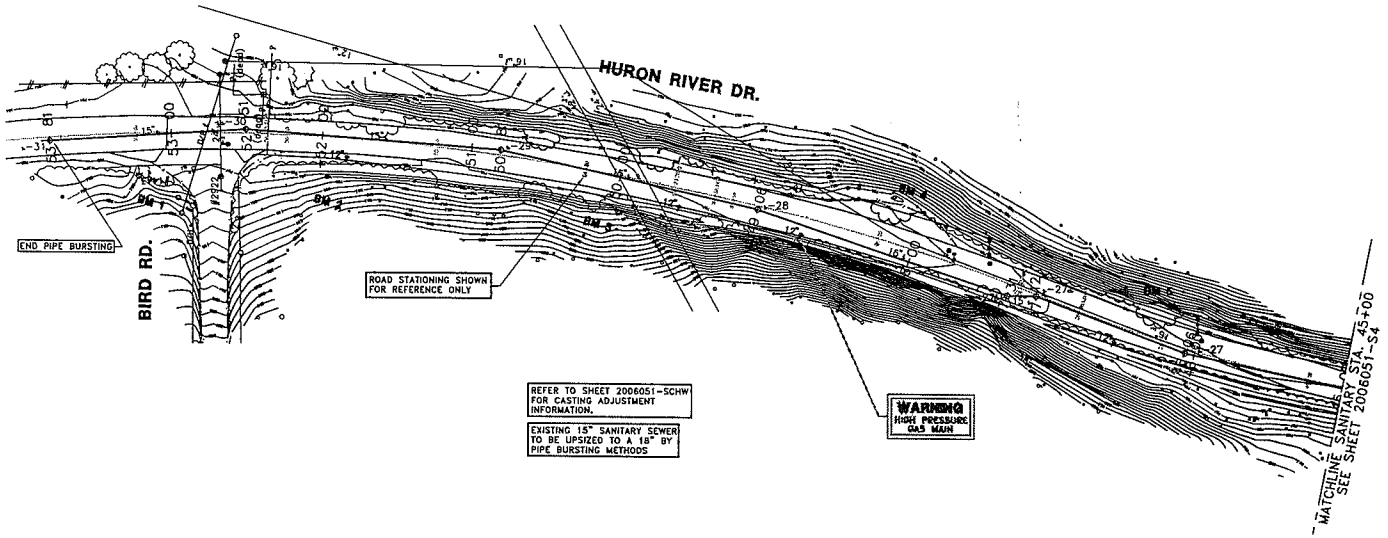
REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
	ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

SANITARY SEWER PLAN AND PROFILE
SANITARY SEWER STA. 33+00 - STA. 45+00

SCALE: HORIZ. 1"=40' VERT. 1"=4'
DRAWING NO. 2006051-S4
SHEET NO. 20 OF 24



BENCHMARKS:

1	798.03	STEAMER VALVE ON FIRE HYDRANT AT NW COR. HURON RIVER DR AND BIRD RD
2	799.18	NAIL IN E. SIDE OF 24" OAK E SIDE OF HRD BETWEEN TP4 & TP5, TAG 445
3	798.39	NAIL IN E. SIDE OF 12" SUGAR MAPLE W. SIDE OF HRD BETWEEN TP5 & TP6, TAG 474
4	799.02	SPIKE W. SIDE OF 21" SHAGBARK HICKORY, E. SIDE OF HRD ADJ TO TP6, TAG 164
5	791.38	SPK IN W. SIDE OF 21" CHINKAPIN OAK, E. SIDE OF HRD BETWEEN TP6 & TP7, APPROX 45' NORTHERLY OF TP7, TAG 29

3 WORKING DAYS
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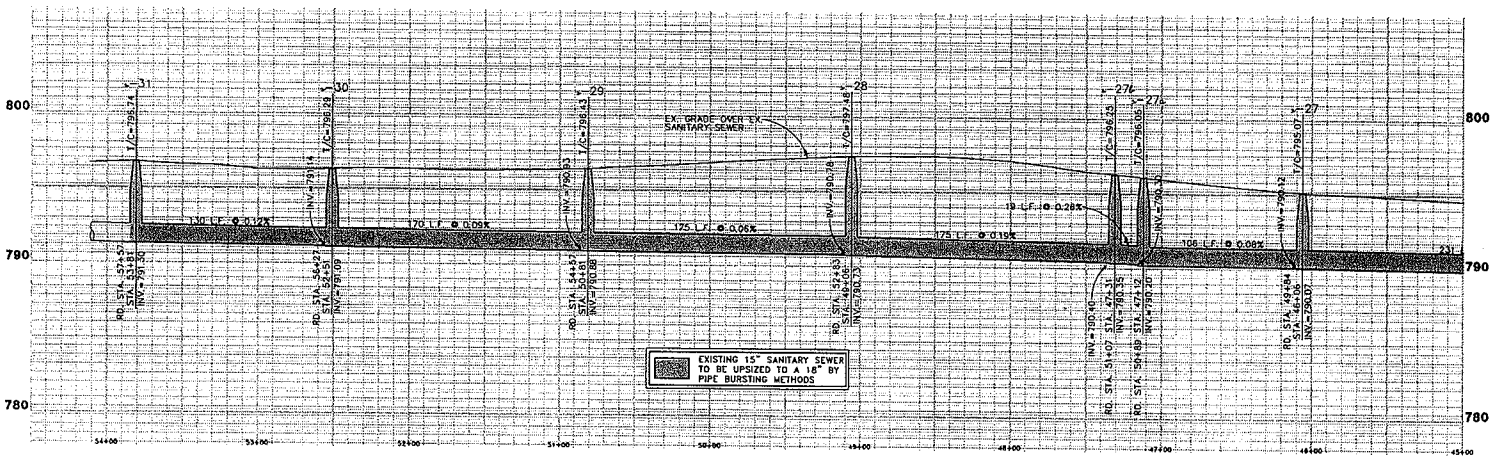
CALL MISS DIG
800-482-7171
(TOLL FREE)



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Permit Consolidation Unit

LEGEND

EXISTING FENCE; CONTOUR; STORM SEWER & CAT. BAS.; WATER MAIN & VALVE-IN-WELL; WATER MAIN & VALVE-IN-BOX
EXISTING SANITARY SEWER & MANHOLE; UTILITY POLE & GUY; FIRE HYDRANT ASSEMBLY; LIGHT POLE; END SECTION
EXISTING TELEPHONE; GAS LINE; CABLE T.V.; ELECTRIC; SIGN
EXISTING RD. ℄ GRADE; LEFT EDGE/RD. GRADE; RIGHT EDGE/RD. GRADE; CURB & GUTTER; EDGE/GRAVEL
PROPOSED SANITARY SEWER & MANHOLE; STORM SEWER & CAT. BAS.; WATER MAIN W/F.H. ASSEM.; CONTOUR; ROAD ℄ GRADE
PROPOSED CURB & GUTTER

BENCH MARK	SURVEY BOOK
SEE ABOVE	1091

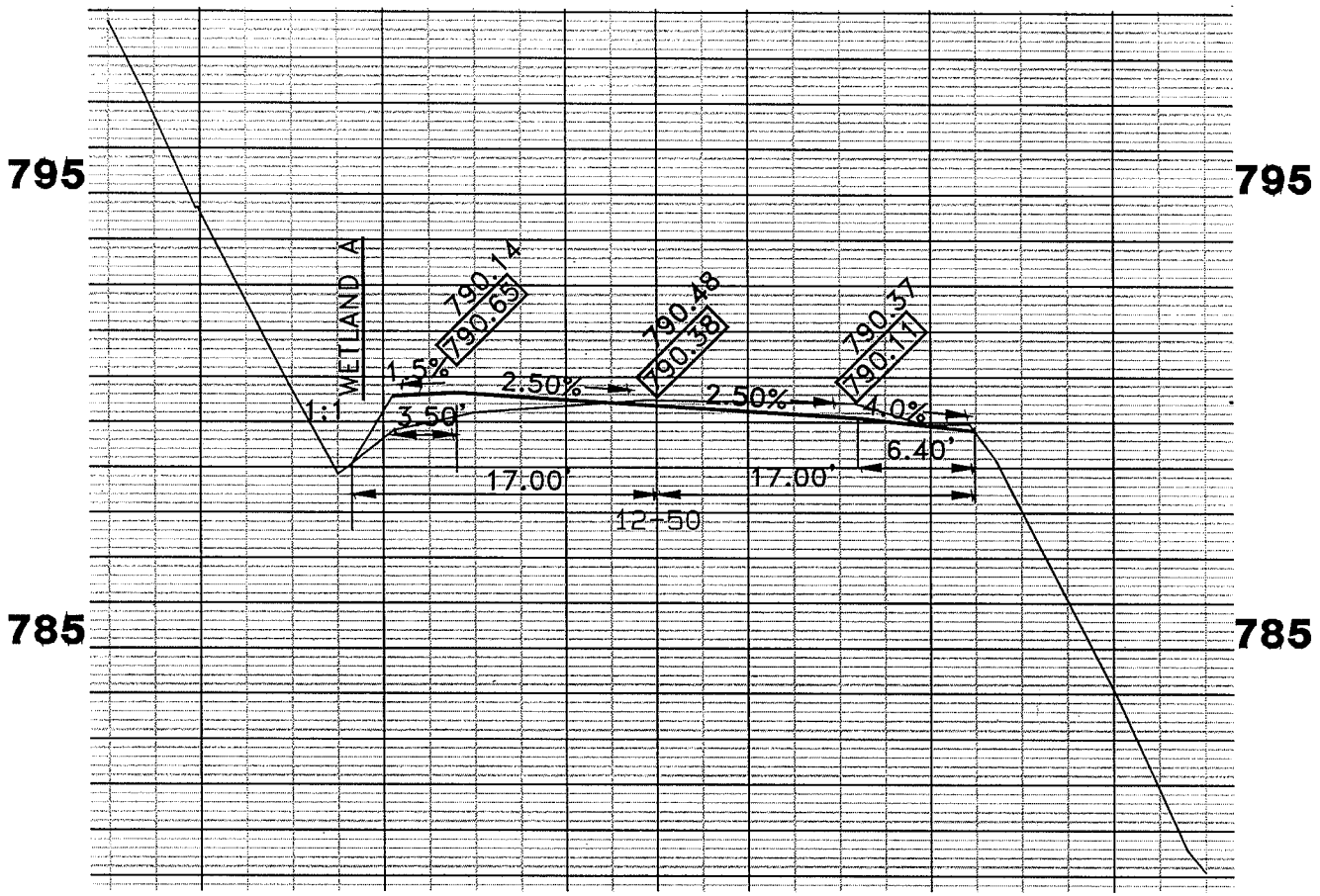
REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
	ORIGINAL ISSUE	3/08	DPF	GFD

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

HURON RIVER DRIVE IMPROVEMENTS

SANITARY SEWER PLAN AND PROFILE
SANITARY SEWER STA. 45+00 - STA. 53+81

SCALE HORIZ. 1"=40' VERT. 1"=4' INCH
DRAWING NO. 2006051-S5
SHEET NO. 21 OF 24



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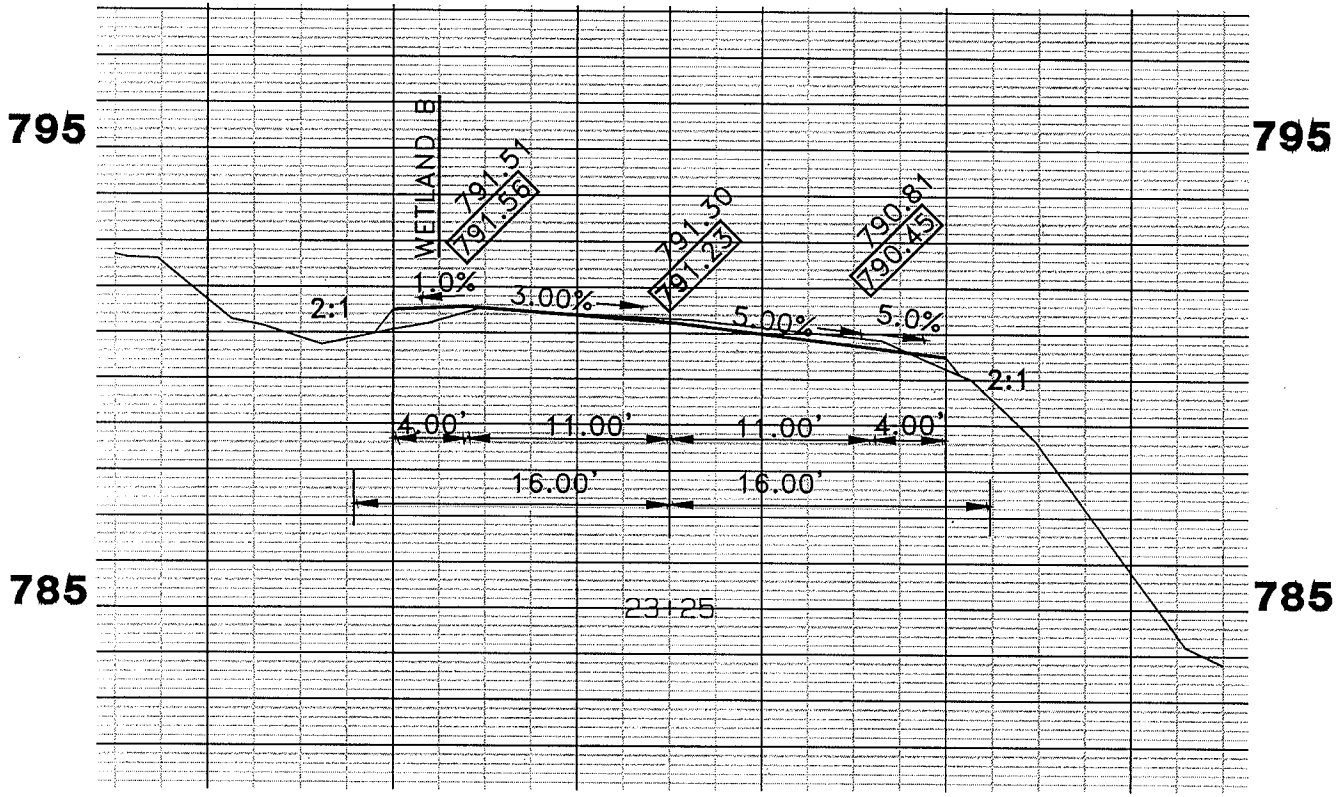
MAR 24 2008
Land & Water Mgt. Div.
Permit Consolidation Unit

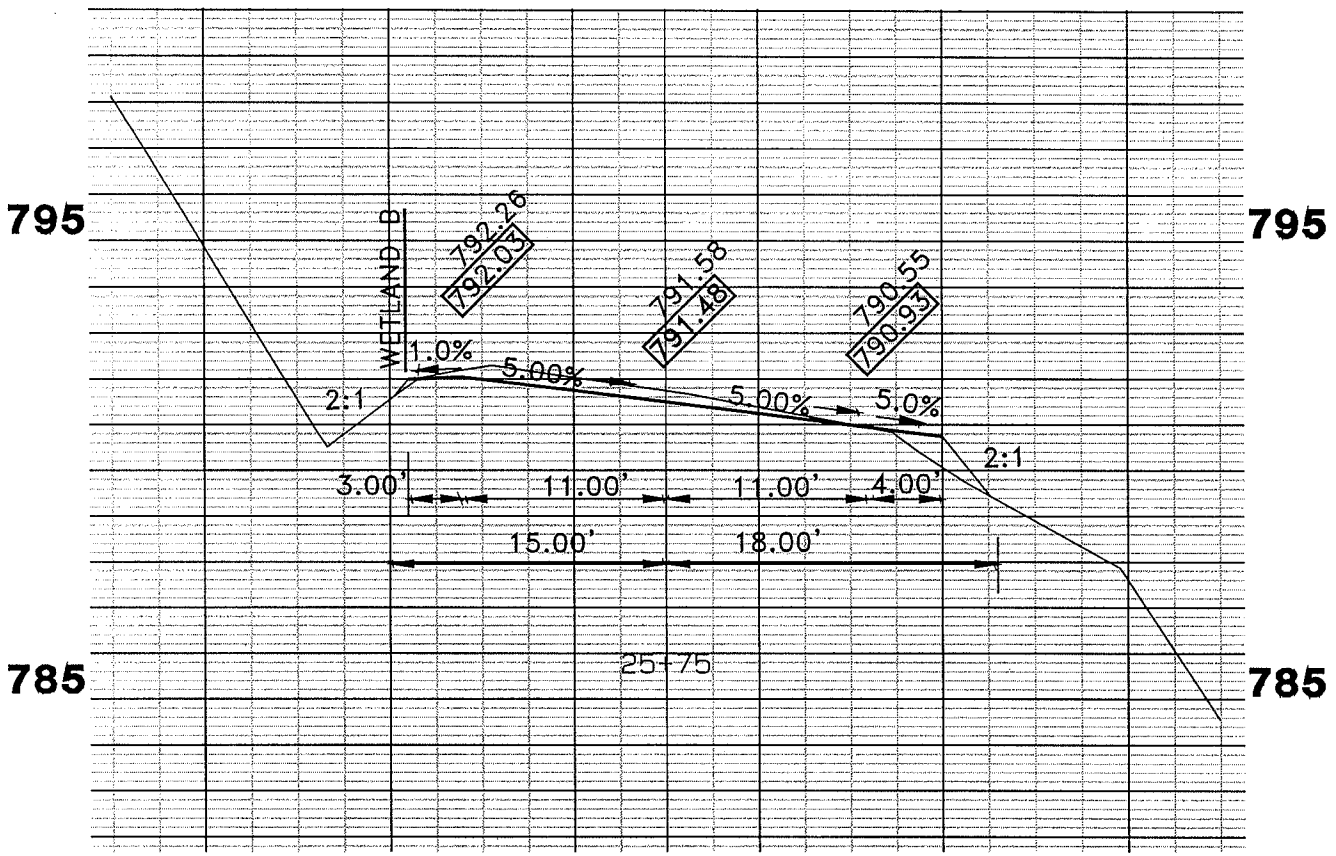
PUBLIC SERVICES DEPARTMENT CITY OF ANN ARBOR		
HURON RIVER DRIVE IMPROVEMENTS WETLAND A – STA. 12+50 LT.		
DR. BY DPF	CH. BY GFD	DRAWING NO. 2006051-2
SCALE 1"=10'	DATE 1-15-08	
INCH 0 1		SHEET NO. 2 OF 8

MDEQ File 07-81-0092-P



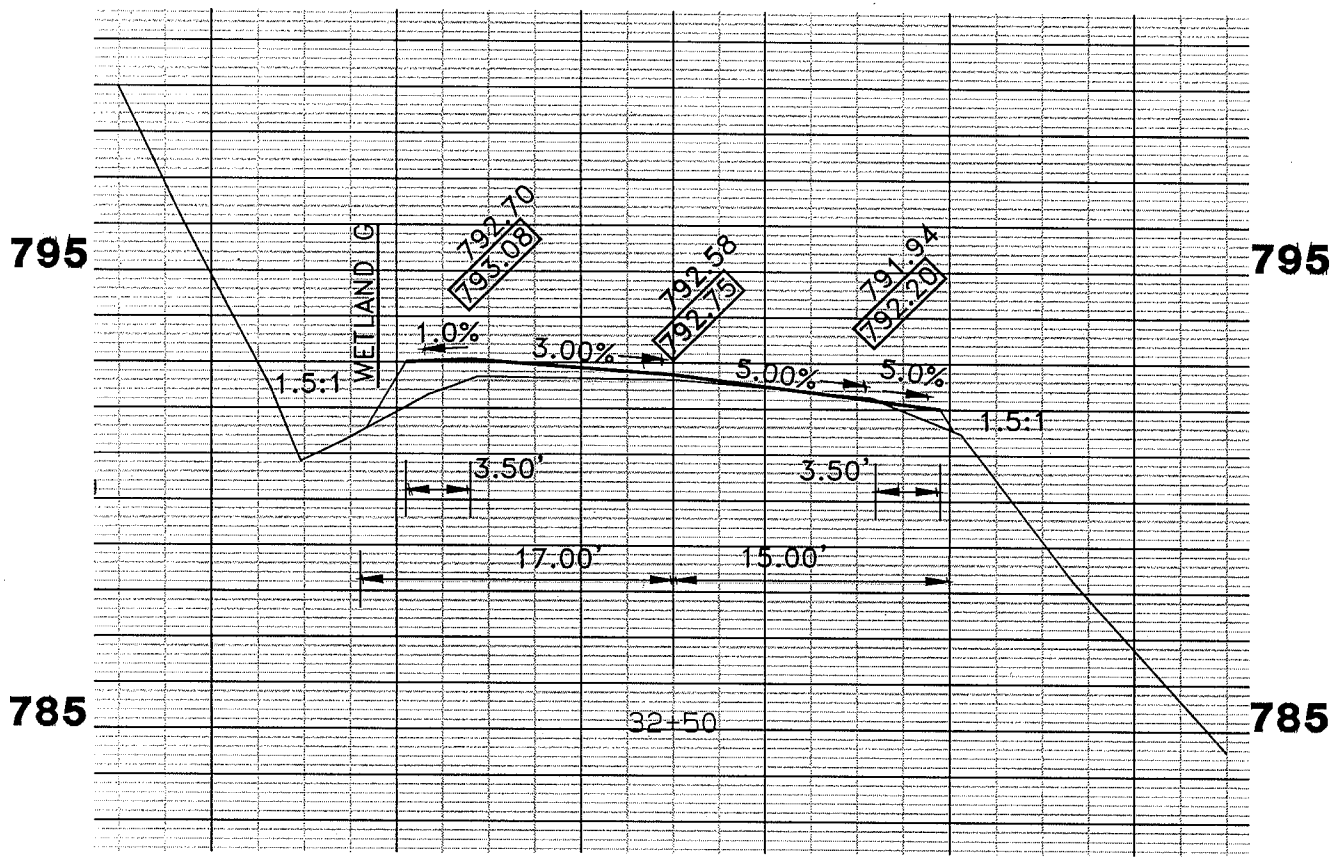
PUBLIC SERVICES DEPARTMENT CITY OF ANN ARBOR		
HURON RIVER DRIVE IMPROVEMENTS WETLAND B – STA. 23+25 LT.		
DR. BY DPF	CH. BY GFD	DRAWING NO. 2006051-3
SCALE 1"=10'	DATE 1-15-08	
INCH 0 1		SHEET NO. 3 OF 8

07-81-0092 P



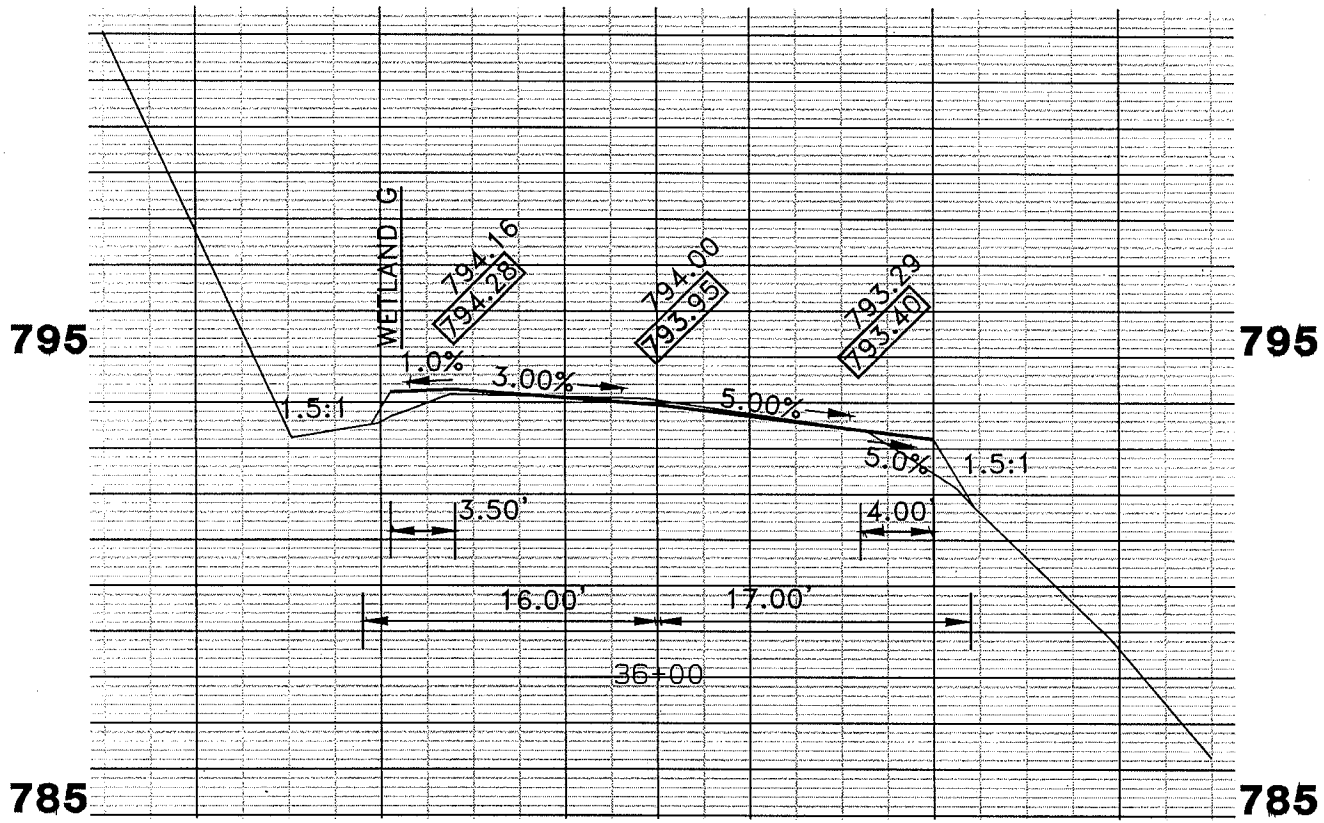
PUBLIC SERVICES DEPARTMENT CITY OF ANN ARBOR		
HURON RIVER DRIVE IMPROVEMENTS WETLAND B – STA. 25+75 LT.		
DR. BY DPF	CH. BY GFD	DRAWING NO.
SCALE 1"=10'	DATE 1-15-08	2006051-4
INCH 0 1		SHEET NO. 4 OF 8

07-81-0092 P



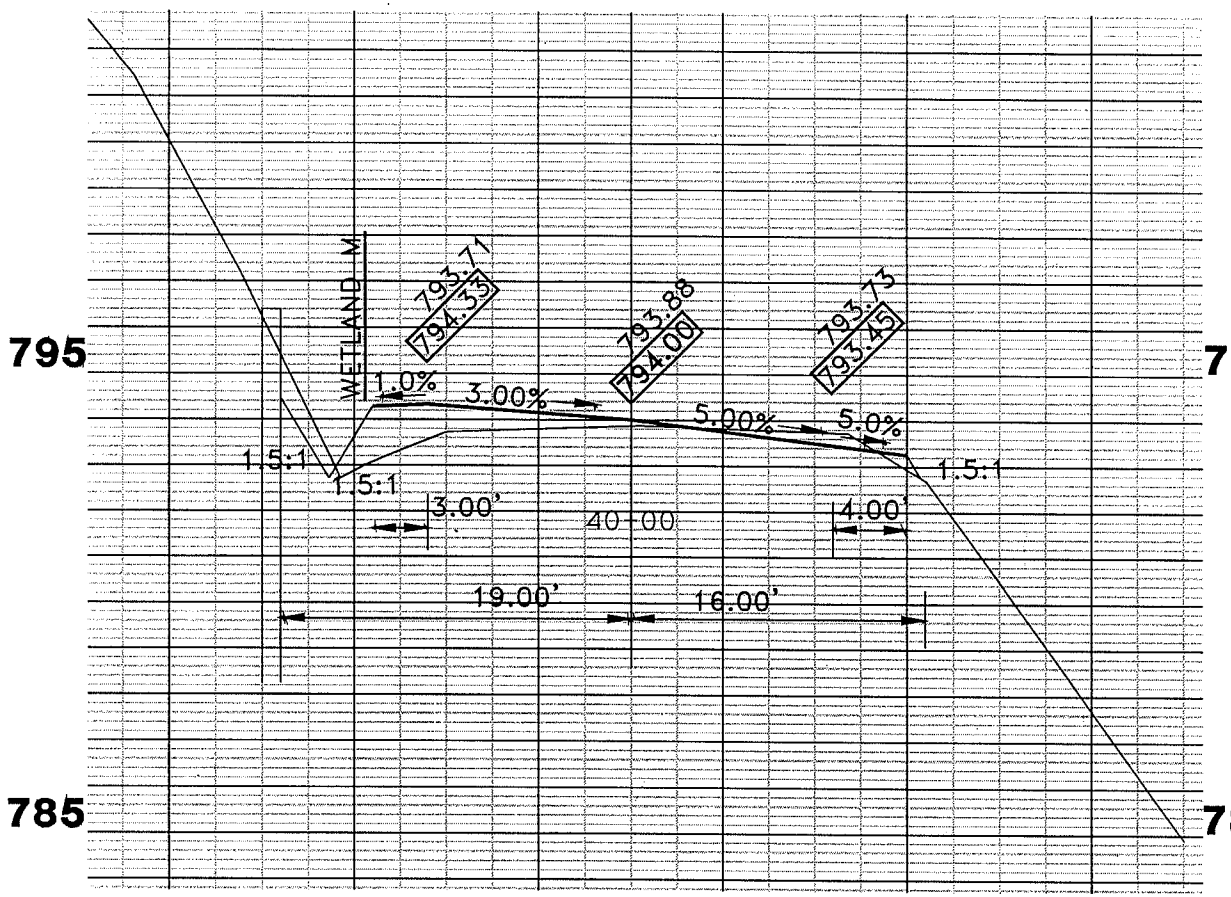
PUBLIC SERVICES DEPARTMENT CITY OF ANN ARBOR		
HURON RIVER DRIVE IMPROVEMENTS WETLAND G – STA. 32+50 LT.		
DR. BY DPF	CH. BY GFD	DRAWING NO. 2006051–5
SCALE 1"=10'	DATE 1–15–08	
INCH 0 1		SHEET NO. 5 OF 8

07-81-0092 P



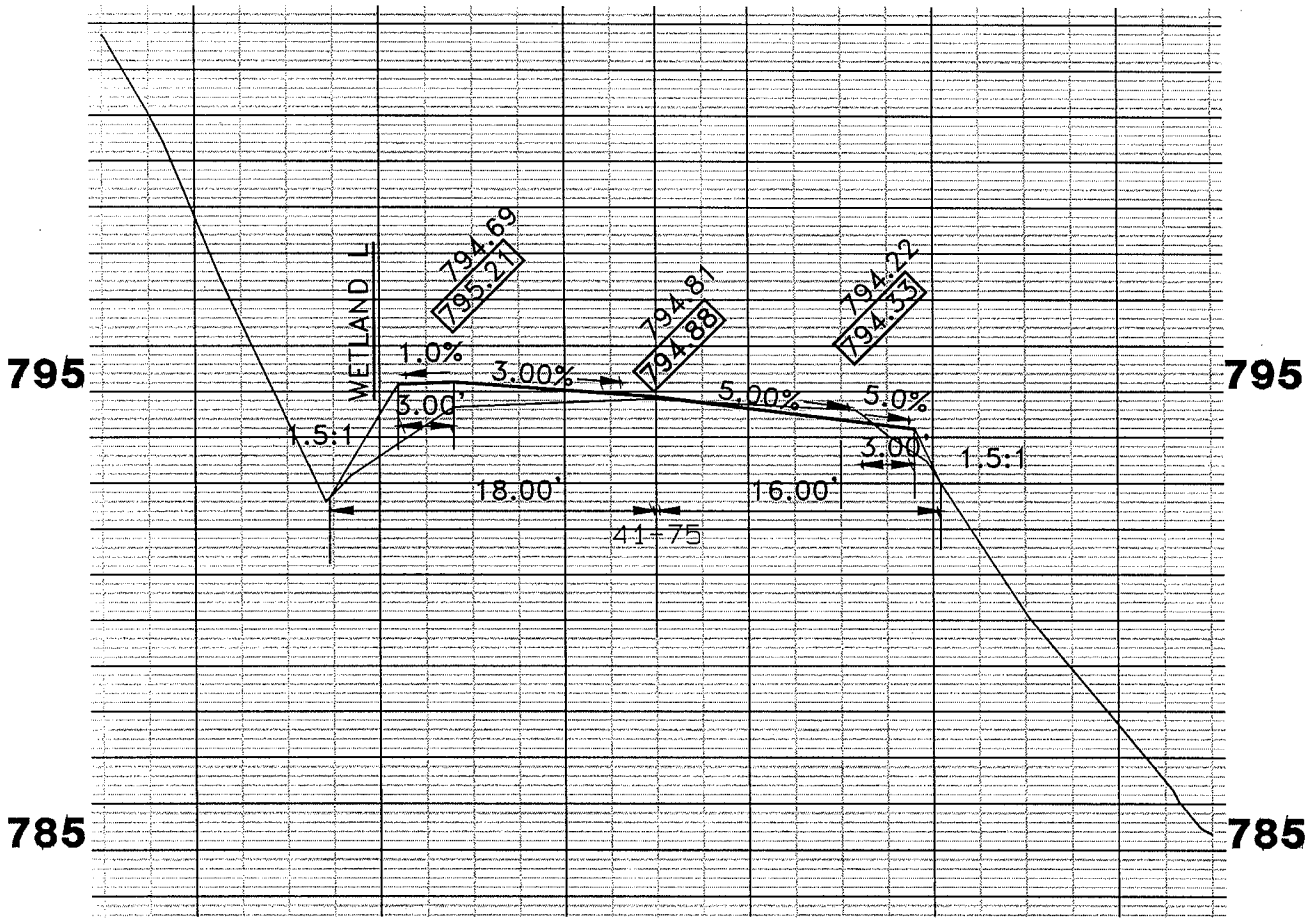
PUBLIC SERVICES DEPARTMENT CITY OF ANN ARBOR		
HURON RIVER DRIVE IMPROVEMENTS WETLAND G – STA. 36+00 LT.		
DR. BY DPF	CH. BY GFD	DRAWING NO. 2006051-6
SCALE 1"=10'	DATE 1-15-08	
INCH 0 1		SHEET NO. 6 OF 8

07-81-0092 P



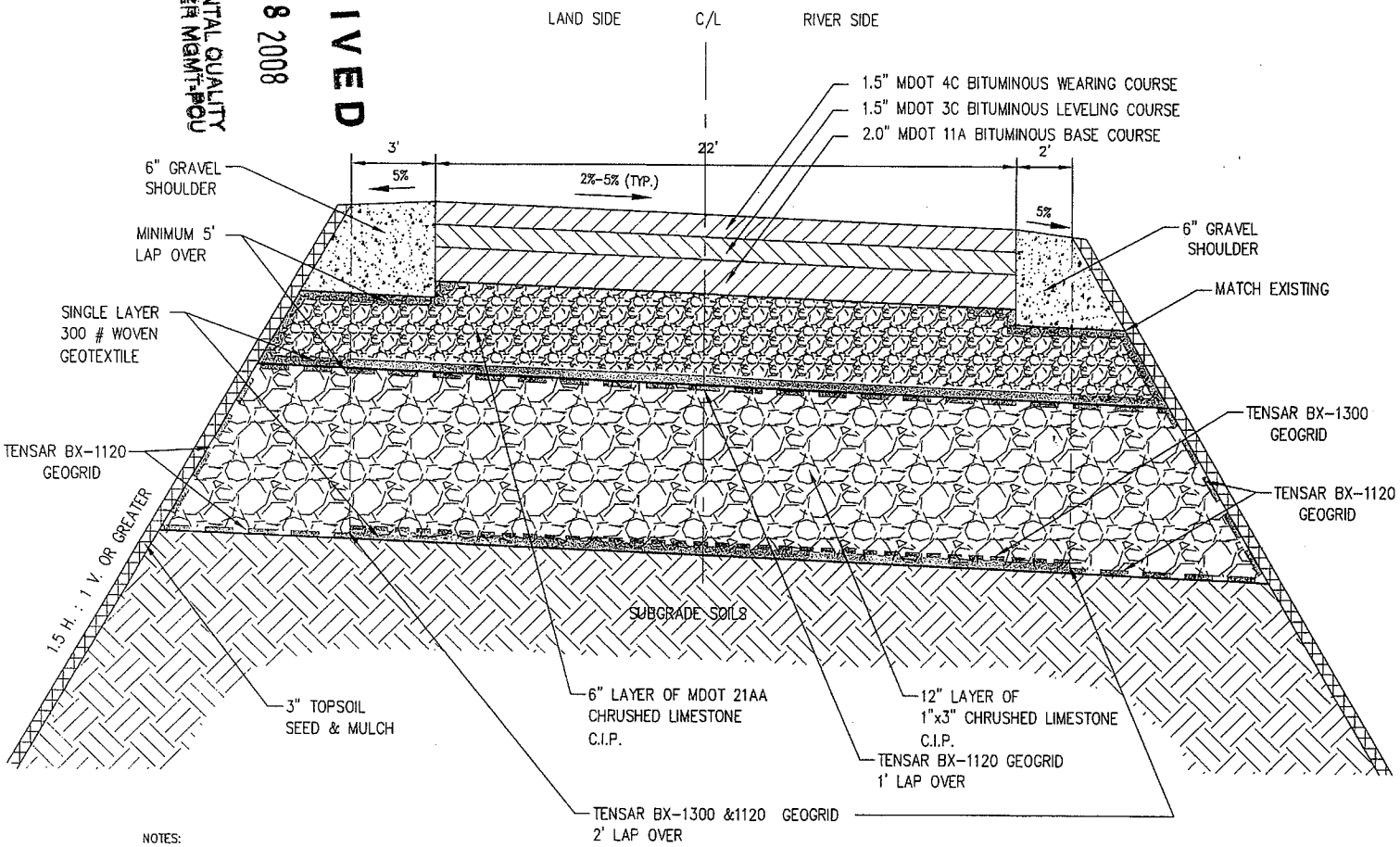
PUBLIC SERVICES DEPARTMENT CITY OF ANN ARBOR		
HURON RIVER DRIVE IMPROVEMENTS WETLAND M – STA. 40+00 LT.		
DR. BY DPF	CH. BY GFD	DRAWING NO.
SCALE 1"=10'	DATE 1-15-08	2006051-7
INCH 0 1		SHEET NO. 7 OF 8

07-81-0092 P



PUBLIC SERVICES DEPARTMENT CITY OF ANN ARBOR		
HURON RIVER DRIVE IMPROVEMENTS WETLAND L – STA. 41+75 LT.		
DR. BY DPF	CH. BY GFD	DRAWING NO.
SCALE 1"=10'	DATE 1-15-08	2006051-8
INCH 0 1		SHEET NO. 8 OF 8

07-81-0092.P



NOTES:

1. MINIMUM LAP DISTANCE OF 5' FOR 300 # WOVEN GEOTEXTILE & TENSAR BX-1120.
2. CRUSHED CONCRETE SHALL NOT BE SUBSTITUTED FOR CRUSHED LIMESTONE AGGREGATE.
3. OMIT LAP OVER OF WOVEN GEOTEXTILE WHERE DITCH SIDE SLOPE IS FLATTEN THAN 2.5 H.:1 V..
4. PROVIDE CARBON BLACK TREATMENT FOR EXPOSED GEOTEXTILE FABRIC.

T E S
Consultants, P.C.
Consulting Engineers – Geotechnical, Geoenvironmental & Construction Material Testing & Inspection Services – Surveying
23943 Industrial Park Drive (248) 615-3000
Farmington Hills, MI 48335 FAX: (248) 615-3512

HURON RIVER DRIVE IMPROVEMENTS

PROPOSED FLEXIBLE PAVEMENT CROSS-SECTION
ANN ARBOR, WASHTENAW COUNTY, MICHIGAN

TES PROJECT No: 07-1281 SCALE: NO SCALE PAGE: 1 of 2

TES CAD FILE: C:/PROJECT DWGS/2007/07-1281.DWG

07-81-0092 P