CITY OF ANN ARBOR, MICHIGAN
WTP LIME RESIDUAL REMOVAL
CONTRACT NO.2 - DREDGING AND HAULING

710 AVIS DRIVE, SUITE 100
ANN ARBOR, MI 48108
Tel. 734.665.6000 Fax. 734.213.3003
www.tetratech.com

TETRA TECH

PROJECT LOCATION:
919 SUNSET RD
ANN ARBOR, MI 48103

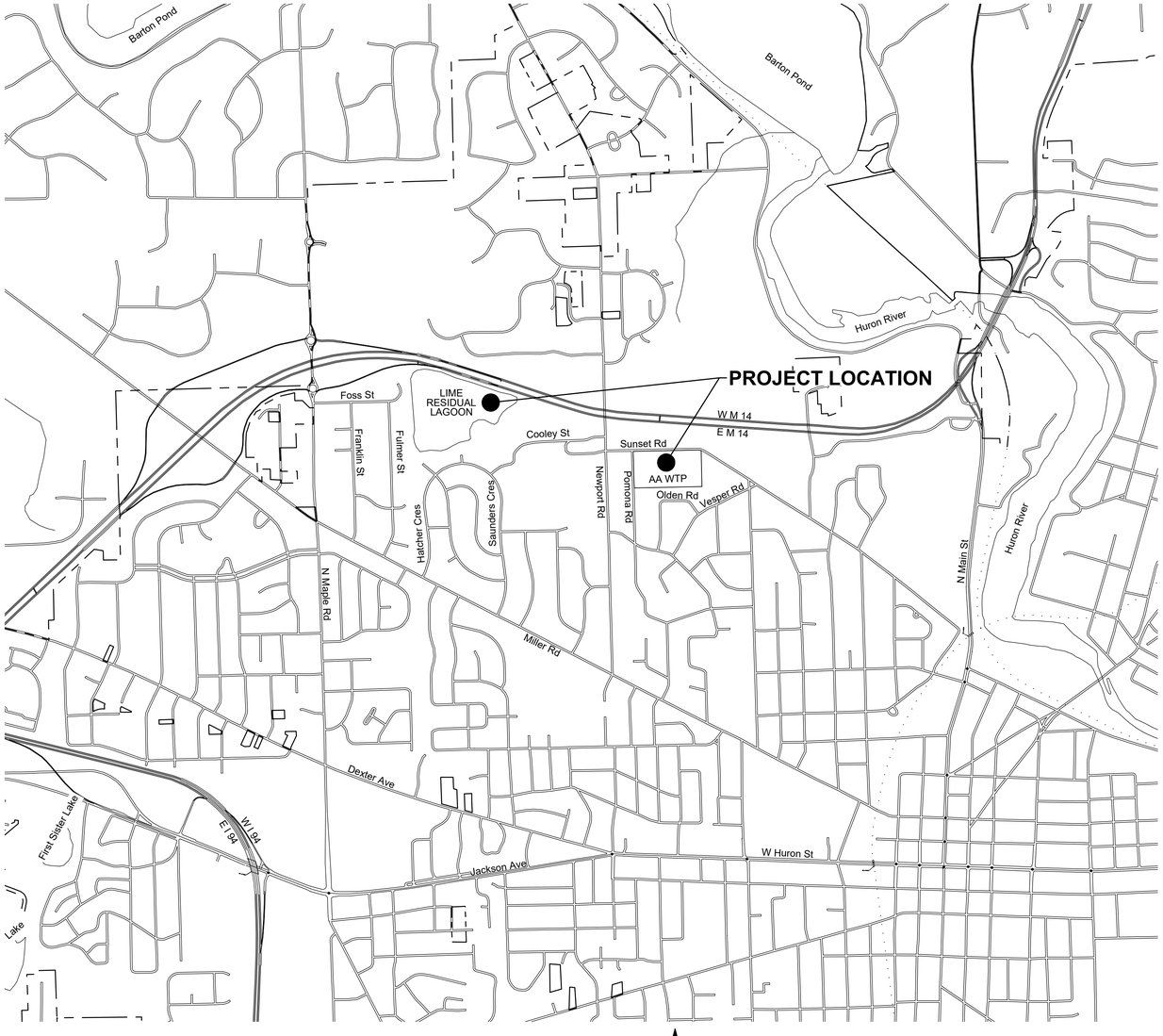
CLIENT INFORMATION:
CITY OF ANN ARBOR
WATER TREATMENT SERVICES UNIT

Tt PROJECT No.:
200-31537-17002

CLIENT PROJECT No.:
CONTRACT NO. 2 OF 3 - ITB #: 4561, FILE #: 19004

PROJECT DESCRIPTION / NOTES:
DREDGING, DEWATERING, HAULING AND DISPOSAL OF LIME RESIDUALS FROM LAGOON.

ISSUED:



LOCATION MAP
SCALE: 1" = 1000'

SHEET INDEX	
NUMBER	TITLE
C-000	COVER SHEET
C-021	LEGEND, OVERALL SITE PLAN & NOTES
C-121	LIME RESIDUAL LAGOON EXISTING SITE PLAN
C-122	WATER TREAMENT PLANT SITE PLAN
C-123	SESC & STANDARD DETAILS
C-124	8 IN FM PLAN & PROFILE - FOR INFO ONLY
C-125	8 IN FM PLAN & PROFILE - FOR INFO ONLY

811
MISS DIG System, Inc.
1-800-482-7171

Please allow for 3 full working days before you dig - call the MISS DIG System at 811 or 800-482-7171.

STATE OF MICHIGAN
JOSEPH CHRISTIAN SIWEK
ENGINEER
NO. 55740
LICENSED PROFESSIONAL ENGINEER
12-14-2018

VICINITY MAP:

SITE LEGEND

SITE SYMBOLS

FEATURES

- EXISTING SIGN
- PROPOSED SIGN
- TRASH RECEPTACLE
- PICNIC TABLE
- POST
- MAIL BOX
- POWER METER
- FLAG POLE
- ROCK
- GUY WIRE
- UTILITY POLE
- DECIDUOUS TREE
- EVERGREEN TREE
- SHRUB
- STUMP

STORM / DRAINAGE

- EXISTING MANHOLE
- PROPOSED MANHOLE
- EXISTING CULVERT
- PROPOSED CULVERT
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN

MISCELLANEOUS

- MONITORING WELL
- SOIL BORING
- MANHOLE W/ ID
- SPOT ELEVATION
- SLOPE ARROW
- SLOPE ARROW
- ADA MARKING
- (F) FUTURE IMPROVEMENTS

SURVEY

- FOUND PROPERTY CORNER
- SET PROPERTY CORNER
- FOUND MONUMENT
- SET MONUMENT
- OWNERSHIP TIE
- SECTION CORNER
- BM-1 BENCHMARK
- KEY NOTE
- XX SOIL EROSION AND SEDIMENTATION CONTROL NOTE

UTILITY SYMBOLS

WATER

- DF DRINKING FOUNTAIN
- WV EXISTING VALVE IN BOX
- WV PROPOSED VALVE IN BOX
- WCS EXISTING CURB STOP
- WCS PROPOSED CURB STOP
- WM METER
- W EXISTING VALVE MANHOLE
- W PROPOSED VALVE MANHOLE
- WELL EXISTING WELL
- WELL PROPOSED WELL
- FH EXISTING FIRE HYDRANT
- FH PROPOSED FIRE HYDRANT
- SH SPRINKLER HEAD
- IJ IRRIGATION BOX
- SPIG SPIGOT
- W LOCATION FLAG

SANITARY SEWER

- SS EXISTING MANHOLE
- SS PROPOSED MANHOLE
- ARS EXISTING AIR RELEASE STRUCTURE
- ARS PROPOSED AIR RELEASE STRUCTURE
- LFC EXISTING IN-LINE FLUSH CONNECTION
- LFC PROPOSED IN-LINE FLUSH CONNECTION
- TFC EXISTING IN-LINE FLUSH CONNECTION
- TFC PROPOSED IN-LINE FLUSH CONNECTION
- CO EXISTING CLEAN OUT
- CO PROPOSED CLEAN OUT
- SV EXISTING SEWER VALVE
- SV PROPOSED SEWER VALVE
- SCS EXISTING CURB STOP
- SCS PROPOSED CURB STOP
- PUMP STATION (SIMPLEX)
- PUMP STATION (DUPLEX)
- SEWER LATERAL
- SS LOCATION FLAG

NATURAL GAS

- G MARKER
- G LOCATION FLAG
- GV VALVE

CABLE TV

- TV RISER
- TV LOCATION FLAG
- CJ JUNCTION BOX

COMMUNICATIONS

- TEL TELEPHONE
- TB BOX OR RISER
- TJ JUNCTION BOX
- FO FIBER OPTIC BOX
- T LOCATION FLAG
- FO FIBER OPTIC FLAG
- TEL MANHOLE
- TEL VAULT
- SATELLITE DISH

UTILITY SYMBOLS (CONT.)

ELECTRICAL

- EM METER
- ET TRANSFORMER
- EB BOX OR RISER
- E LOCATION FLAG
- LIGHT POLE
- EXTERIOR BUILDING LIGHT
- TSP TRAFFIC SIGNAL POLE
- TS TRAFFIC SIGNAL CONTROL (BOX)
- RR RAIL ROAD SIGNAL
- ELEC MANHOLE
- EJ JUNCTION BOX

FEATURE HATCHING

- EXISTING ASPHALT TO BE DEMOLISHED
- EXISTING CONCRETE TO BE DEMOLISHED
- PROPOSED PAVEMENT AS NOTED ON DRAWINGS
- PROPOSED CONCRETE PAVEMENT
- PROPOSED LIGHT DUTY HOT MIX ASPHALT (HMA) PAVEMENT
- PROPOSED HEAVY DUTY HOT MIX ASPHALT (HMA) PAVEMENT
- PROPOSED GRAVEL
- WETLAND AREA
- PROPOSED SOD

FEATURES & FEATURE LINES

- LIMITS OF CONSTRUCTION
- RIGHT OF WAY LINE
- SECTION LINE
- UTILITY EASEMENTS
- 900 EXISTING CONTOUR - MAJOR
- 899 EXISTING CONTOUR - MINOR
- 899 PROPOSED CONTOUR - MAJOR
- 899 PROPOSED CONTOUR - MINOR
- SF EROSION SILT FENCE
- SSF EROSION SUPER SILT FENCE
- FENCE (WOOD)
- FENCE (STEEL)
- FLOOD HAZARD AREA
- FLOW ARROW
- GUARD RAILING
- GRAVEL ROAD OR DRIVE
- RAIL ROAD TRACKS
- ROCK RETAINING WALL
- TREE / BRUSH LINES
- CLEARING & GRUBBING LIMITS
- WATER EDGES
- DITCH CENTER LINE
- WETLAND BOUNDARY
- PROPOSED STRUCTURE
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- EXISTING UNDERGROUND STRUCTURE
- FUTURE STRUCTURE

UTILITY LINES

- OTV CABLE TV OVERHEAD
- UTV CABLE TV UNDERGROUND
- FO COMMUNICATION FIBER OPTIC
- OT COMMUNICATION OVERHEAD
- UT COMMUNICATION UNDERGROUND
- OE ELECTRIC OVERHEAD
- UE ELECTRIC UNDERGROUND
- G NATURAL GAS
- HPG NATURAL GAS HIGH PRESSURE
- FM SANITARY FORCEMAIN
- SS SANITARY SEWER
- CSS COMBINED SANITARY SEWER
- SD STORM DRAIN
- RD STORM ROOF DRAIN
- SM STEAM
- F FIRE PROTECTION
- W WATER MAIN
- 36"SS UTILITY LINE 36" AND LARGER

NOTE: HEAVIER LINE WEIGHTS INDICATE PROPOSED WORK.

N

0 200' 400' 800'

SCALE: 1" = 400'

OVERALL SITE PLAN

GENERAL NOTES

1. THREE FULL WORKING DAYS PRIOR TO ANY EXCAVATION; THE CONTRACTOR SHALL CONTACT MISS DIG (1-800-482-7171) FOR LOCATION OF UNDERGROUND UTILITIES LOCATED IN THE VICINITY OF THE WORK. THE CONTRACTOR SHALL MAKE ANY NECESSARY ARRANGEMENTS WITH UTILITY COMPANIES FOR RELOCATION OF EXISTING UTILITIES, IF REQUIRED.
2. UNDERGROUND UTILITIES AS SHOWN HEREON WERE TAKEN FROM EXISTING PLANS AND ARE APPROXIMATE LOCATIONS ONLY. UNDERGROUND UTILITY LOCATIONS HAVE NOT BEEN FIELD VERIFIED.
3. UNLESS SPECIFICALLY NOTED FOR REMOVAL ON THE CONSTRUCTION PLANS, ALL SIDEWALK, DRIVES, CULVERTS, GUARDRAILS AND ABOVE GROUND UTILITIES DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED, INCIDENTAL TO THE COST OF CONSTRUCTION, AT NO EXPENSE TO THE OWNER.
4. EXISTING WATER MAINS, GAS MAINS AND UNDERGROUND TELEPHONE, ELECTRIC AND CABLE TELEVISION CONDUITS AND/OR LINES ARE SHOWN ONLY IN THE PLAN VIEW OF THE CONSTRUCTION DRAWINGS. THE EXACT DEPTH OF THESE UTILITIES IS NOT KNOWN AND THEREFORE, NO ATTEMPT HAS BEEN MADE TO SHOW SUCH UTILITIES IN THE PROFILE OF THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THESE UTILITIES WHICH ARE NOT WITHIN THE SPACE OCCUPIED BY COMPLETED PIPES OR STRUCTURES THAT ARE A PART OF THIS CONTRACT. DURING CONSTRUCTION, IF DAMAGED OR DESTROYED DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS TO REPAIR OR REPLACE THEM AT NO ADDITIONAL EXPENSE TO THE OWNER.
5. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES IN A MANNER ACCEPTABLE TO THE ENGINEER DURING THE PROPOSED CONSTRUCTION. ANY UTILITY, WHICH IS TO REMAIN IN SERVICE, THAT IS DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REPLACE BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
6. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT POINTS OF POSSIBLE CONFLICT SO THAT THESE CONFLICTS CAN BE RESOLVED.
7. PROTECT TREES IN ACCORDANCE WITH ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, DIVISION I - GENERAL SPECIFICATIONS "PROTECTION OF TREES" AND STANDARD DETAIL SD-M-1.
8. ACCESS TO THE FORCE MAIN AIR RELEASE VALVE LOCATED WITHIN THE SCHOOL PARKING AREA SHALL ONLY BE ACCESSED WITH ADVANCE APPROVAL. REQUESTS SHALL BE MADE A MINIMUM OF 3 DAYS IN ADVANCE. ALL OTHER CONTRACTOR ACCESS TO THE ANN ARBOR PUBLIC SCHOOL PROPERTY IS PROHIBITED.

SESC NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR APPLYING AND PAYING FOR THE SESC PERMIT. CONTRACTOR MAY USE THE EXISTING SITE PLAN AS A BASE AND IS RESPONSIBLE FOR ADDING OR MODIFYING TO SUIT THE NEEDS OF THEIR OPERATION.
2. CONTRACTOR SHALL INSTALL SILT FENCING ALONG THE DOWN SLOPE SIDE OF ALL EXCAVATIONS.
3. CONTRACTOR RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ALL TEMPORARY AND PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL (SESC) MEASURES DURING CONSTRUCTION. CONTRACTOR SHALL REMOVE ANY TEMPORARY SESC MEASURES AFTER PROJECT COMPLETION. CONTRACTOR RESPONSIBLE FOR OBTAINING, EXERCISING AND PERFORMING ALL WORK IN ACCORDANCE WITH THE CONDITIONS PROVIDED BY THE ISSUER OF THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT.
4. ALL TEMPORARY SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AND VERIFIED BY ENGINEER PRIOR TO EARTH DISTURBANCE ACTIVITY AND CHECKED DAILY FOR EFFECTIVENESS AND REPAIRED AS NEEDED.
5. CONSTRUCTION TRAFFIC TO THE WATER TREATMENT PLANT IS EXPECTED TO UTILIZE MILLER AVE TO NEWPORT RD TO SUNSET RD. CONTRACTOR MUST SUBMIT FOR APPROVAL ANY ALTERNATIVE ACCESS ROUTES.

TRAFFIC CONTROL:

1. CONTRACTOR RESPONSIBLE FOR ANY TRAFFIC CONTROL REQUIRED TO COMPLETE THE WORK IN A SAFE AND EFFICIENT MANNER. WORK INCLUDES IDENTIFYING, APPLYING FOR AND OBTAINING ROW PERMITS AND APPROVAL FOR ALL TEMPORARY LANE CLOSURES OR PARKING SPACE RESTRICTIONS THROUGH THE CITY OF ANN ARBOR.
2. CONTRACTOR TO FURNISH AND INSTALL TWO EACH - "YOUR SPEED / SPEED LIMITS LED RADAR SPEED DISPLAY SIGNS" ALONG NEWPORT RD BETWEEN SUNSET RD AND MILLER AVE. ONE SIGN FOR EACH DIRECTION WITH THE EXACT LOCATIONS TO BE IDENTIFIED IN THE FIELD. CONTRACTOR TO OPERATE THESE SIGNS THROUGHOUT THE DURATION OF THE PROJECT AND REMOVE THEM UPON COMPLETION OF TRUCKING OPERATIONS.
3. TRUCKING FOR THE DISPOSAL OF LIME RESIDUALS SHALL NOT RUN BETWEEN 7:30 - 8:30 AM AND 2:45 - 3:45 PM ON SCHOOL DAYS.
4. CONTRACTOR TO FURNISH AND INSTALL THREE EACH - "TRUCKS ENTERING ROADWAY" TRAFFIC SIGNS. SIGNS TO BE FIELD LOCATED BY ENGINEER AND REMOVED UPON COMPLETION OF TRUCKING OPERATION.

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MARK	DATE	DESCRIPTION	BY

CITY OF ANN ARBOR, MI

CONTRACT NO:2 - LIME RESIDUAL REMOVAL DREDGING AND HAULING

LEGEND, OVERALL SITE PLAN & NOTES

PROJ:	200-31537-17002
DESN:	J. SIWEK
DRWN:	S. GOTHA
CHKD:	B. RUBLE

C-021

Bar Measures 1 inch, otherwise drawing not to scale

SHEET NOTES:

1. ALL LOCATIONS AND DIMENSIONS OF EXISTING FEATURES SHOWN ON THE DRAWINGS ARE APPROXIMATE. FIELD VERIFY SITE CONDITIONS AND EXISTING FEATURES PRIOR TO COMMENCING WORK.
2. CONTRACTOR TO REMOVE TREES BETWEEN THE EXISTING ACCESS ROADS AND LAGOON AS NEEDED TO FACILITATE OPERATIONS. PROTECT TREES AND UTILITY POLES NOT NOTED FOR REMOVAL IN ACCORDANCE WITH ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, DIVISION 1 - GENERAL SPECIFICATIONS "PROTECTION OF TREES" AND STANDARD SD-M-1.
3. THE LAGOON WATER SURFACE ELEVATION WAS RECORDED ON 6-21-2017 AS 951.55. ALL SPOT ELEVATIONS IN THE LAGOON REFLECT THE TOP OF LIME / SEDIMENT. CONTRACTOR SHALL FOCUS REMOVAL EFFORTS IN THE AREA SHOWN.
4. CONTRACTOR TO UTILIZE EXISTING FORCE MAIN CONNECTION CONSTRUCTED IN CONTRACT NO. 1.
5. CONTRACTOR RESPONSIBLE FOR ALL SITE SECURITY AT THE LAGOON SITE DURING CONSTRUCTION. THE ACCESS GATE SHOULD REMAIN LOCKED AT ALL TIMES WHEN NOT BEING ACTIVELY UTILIZED. CONTRACTOR TO COORDINATE WITH CITY AND "DAISY CHAIN" THEIR LOCK WITH CITY'S LOCK FOR ACCESS DURING CONSTRUCTION.
6. CONTRACTOR ACCESS TO WATER FROM HYDRANT LOCATED IN FRONT OF 1800 COOLY AVE. APPROX. 150 FEET SOUTH. CONNECTION AND USAGE MUST BE COORDINATED WITH THE CITY WATER DEPARTMENT.
7. CONTRACTOR RESPONSIBLE FOR SUPPLYING TEMPORARY POWER ON SITE TO MEET THE NEEDS OF THE PROPOSED OPERATION. GENERATORS SHALL BE EQUIPPED WITH SOUND ATTENUATORS AND BE LOCATED TO MINIMIZE THE IMPACT ON SURROUNDING RESIDENTS.
8. CONTRACTOR SHALL RESTORE THE SITE ONCE ALL RESIDUAL REMOVAL WORK IS COMPLETE.
9. PROTECTED SWAN HABITAT BUFFER AREA. CITY WILL PROVIDE ACCESS APPROVAL ONCE SWANS HAVE VACATED. ACCESS ANTICIPATED AFTER SEPTEMBER 15.
10. THE EXISTING STORM SEWER WHICH OUTLETS TO THE BASIN WILL BE USED TO RETURN DEWATERING EQUIPMENT DISCHARGE (FILTRATE) FLOWS TO THE LAGOON. CONTRACTOR SHALL INSTALL MECHANICAL PLUG ON THE EXISTING OUTLET STRUCTURE DISCHARGE PIPING SO THAT FILTRATE CAN FLOW BACK INTO THE LIME LAGOON THROUGH THE 21 INCH OVERFLOW PIPE.
11. CONTRACTOR SHALL SWEEP HATCHER ST. AND CONNECTING ROADS THROUGH PROJECT AS NEEDED TO CLEAN CONSTRUCTION DEBRIS.
12. NO STAGING OF CONSTRUCTION VEHICLES OR EQUIPMENT ON CITY STREETS.
13. CONTRACTOR TO INSTALL SILT FENCE - IN ADDITION TO THAT PREVIOUSLY INSTALLED UNDER CONTRACT NO.1 - AS REQUIRED FOR DREDGING OPERATIONS.

0 30' 60' 120'
SCALE: 1" = 60'

M-14

SEE NOTE 2

EXISTING ACTIVE 10" PVC DISCHARGE TOP OF PIPE 950.78

SEE NOTE 3

EXISTING OUT-OF-USE DISCHARGE PIPE

APPROXIMATE TRUMPETER SWAN HABITAT BUFFER AREA SEE NOTE 9

250 METERS (820 FT)

APPROXIMATE SWAN NEST LOCATION

SITE ACCESS THROUGH LOCKED GATE AT HATCHER STREET. (SEE NOTE 5)

100 LF GRAVEL ACCESS DRIVE (CONTRACT 1)

LAGOON OVERFLOW STRUCTURE
SEE DETAIL SHEET C-123

1

EX. STM GRATE
RIM ELEV. 950.66

ELEV = 954.00

EX. MH.
W/ FLUME
RIM 955.52

EX. MH.
RIM 954.42
RIP RAP

EX. MH.
RIM 954.70

EX. MH.
RIM 954.09

SEE NOTE 2

8" BLIND FLANGE

8" MJ 45° BEND UP

8" PLUG VALVE

8" PLUG VALVE

1
C-121
8" FM - PLAN
SCALE: 1"=10'

21" RCP
I.E. 954.83

21" OVERFLOW PIPE

21" RCP
I.E. 955.81

EX STORM WATER BASIN
OUTLET STRUCTURE
(SEE NOTE 10)

TURBIDITY CURTAIN
(CONTRACT 1)

SEE NOTE 13

26

1
C-121

SEE NOTE 4

SILT FENCE (CONTRACT 1)

30" RCP
I.E. 955.43

EX. STM. MH. 3
RIM 970.34
30" NNW. CONC. IE 955.39
30" E. CONC. IE 955.69

EX. MH. 2
RIM 970.39

EX. MH. 1
RIM 970.68
8" NNW. PVC. IE 963.70
8" E. STEEL IE 963.93

COOLEY AVE

SEE NOTE 10

SEE NOTE 6

CONC
ASPH

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MARK	DATE	DESCRIPTION	BY

CITY OF ANN ARBOR, MI
CONTRACT NO:2 - LIME RESIDUAL REMOVAL
DREDGING AND HAULING

LIME RESIDUAL LAGOON
EXISTING SITE PLAN

PROJ:	200-31537-17002
DESN:	J. SIWEK
DRWN:	S. GOTHA
CHKD:	B. RUBEL

C-121

Bar Measures 1 inch, otherwise drawing not to scale

SHEET NOTES:

1. CONTRACTOR SHALL ARRANGE SITE OPERATIONS TO HAVE TRUCKS ACCESS THE SITE USING THE TEMPORARY GATE CONSTRUCTED AS PART OF CONTRACT NO. 1 AND EXIT THROUGH THE EXISTING WTP ACCESS GATE. CONTRACTOR IS RESPONSIBLE FOR OPERATING THE TEMPORARY GATE AT ALL TIMES AND MUST COORDINATE THE CLOSURE AND LOCKING OF THE GATE DAILY WITH WTP SECURITY PROTOCOLS.
2. SITE MODIFICATIONS WILL BE COMPLETED AS PART OF CONTRACT NO.1. CONTRACTOR IS RESPONSIBLE FOR THE LAYOUT OF THEIR EQUIPMENT WITHIN THE AREA ALLOTTED ON THE WTP PROPERTY.
3. PLANT WATER SUPPLY AVAILABLE FROM YARD HYDRANT. COORDINATE CONNECTIONS AND USAGE WITH WTP STAFF.
4. CONTRACTOR RESPONSIBLE FOR SUPPLYING TEMPORARY POWER ON SITE TO MEET THE NEEDS OF THE PROPOSED OPERATION. GENERATORS SHALL BE EQUIPPED WITH SOUND ATTENUATORS AND BE LOCATED TO MINIMIZE THE IMPACT ON SURROUNDING RESIDENTS.
5. CONTRACTOR TO IDENTIFY ANY PARKING SPACES ALONG SUNSET RD THAT WILL NEED TO BE TAKEN OUT OF SERVICE IN ORDER TO COMPLETE THE WORK AND COORDINATE WITH THE CITY OF ANN ARBOR TO TEMPORARILY ADJUST PARKING LIMITS AND INCLUDING INSTALLATION OF "NO PARKING" SIGNS.
6. CONTRACTOR RESPONSIBLE FOR THE IMMEDIATE CLEANUP OF ANY SPILLS THAT MAY OCCUR ON SITE AND THREATEN TO LEAVE ANY AREAS OF CONTAINMENT ESTABLISHED AROUND THE OPERATIONS.
7. CONTRACTOR SHALL PLACE SPREADER PADS AND OTHER DEVICES DOWN BENEATH THE DEWATERING EQUIPMENT IN ORDER TO REDUCE DAMAGE TO EXISTING PAVEMENT. ALL TRUCK BEDS ON PROJECT SHALL BE LINED TO PREVENT ANY LIQUID WASTE FROM SPILLING.
8. THE EXISTING STORM SEWER WILL BE USED TO RETURN DEWATERING EQUIPMENT DISCHARGE (FILTRATE) FLOWS TO THE LAGOON. CONTRACTOR RESPONSIBLE FOR MONITORING FLOWS IN THIS SYSTEM DURING STORM EVENTS TO ENSURE THERE IS NO SURFACE FLOODING . AFTER COMPLETION OF THE WORK, THIS SEWER SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL LIME RESIDUALS FROM THE PIPE. CONTRACTOR RESPONSIBLE FOR ALL CLEANUP OF LIME RESIDUALS FROM THE STORMWATER BASIN.
9. CONTRACTOR TO SET UP PEDESTRIAN DETOUR DURING CLOSURE OF THE SIDEWALK FOR TRUCKING OPERATIONS. POMONA, RED OAK AND VESPER ROADS SHALL BE UTILIZED. CONTRACTOR SHALL FOLLOW CITY STANDARDS FOR SIGNAGE AND PLACEMENT. ADDITIONAL SIGNAGE MAY BE NECESSARY AT SUNSET RD AND BROOKS ST. CONTRACTOR SHALL SUBMIT BOTH TRAFFIC CONTROL AND PEDESTRIAN DETOUR PLANS TO THE CITY FOR APPROVAL.
10. UPON COMPLETION OF DREDGING OPERATION, CONTRACTOR TO FLUSH AND "PIG" FORCE MAIN WITH POLY-PIG SWAB TO CLEAN SETTLED LIME TO THE SATISFACTION OF THE OWNER.
11. CONTRACTOR TO MAINTAIN EXISTING PROJECT SIGN DURING CONSTRUCTION AND REMOVE AT PROJECT COMPLETION.

N

0 10' 20' 40'

SCALE: 1" = 20'

SUNSET RD

POMONA RD

SEE NOTE 5

SEE NOTE 8

SEE NOTE 9

STM MH 12
RIM = 970.90
30" S. RCP. IE 963.70
30" W. RCP. IE 961.30
24" E. RCP. IE 962.00

STM CB 8
RIM = 971.72
12" NW. RCP IE 967.12
12" SW. RCP IE 967.22

STM MH 13
RIM = 973.26
12" NE. RCP. IE 967.81
12" E. RCP. IE 967.86

STM MH 9
RIM = 971.92
12" SW. RCP. IE 966.62
12" N. RCP. IE 966.92
24" W. RCP. IE 962.07
15" E. RCP. IE 962.92

STM MH 7
RIM = 974.13
15" SE. RCP IE 963.37
15" W. RCP. IE 963.28

TEMPORARY ACCESS DRIVE (CONTRACT NO.1)

SLIDING GATE (CONTRACT NO.1)

PLUG VALVE IN MH

STM MH 11
RIM = 974.06
24" SE. METAL IE 969.06
30" N. RCP. IE 964.96

FM MH 10
RIM = 974.07
FILLED WITH WATER

CONNECT TO 8" FM (CONSTRUCTED IN CONTRACT NO.1) SEE DETAIL SHEET C-123

STM CB 2
RIM = 976.00
12" E. RCP. IE

GROUNDING ROD MONUMENT BOX.

STM MH 1
RIM = 978.82
24" S. METAL IE 970.62
24" NW. METAL IE 972.57

FILTRATE FROM DEWATERING OPERATIONS MAY BE DISCHARGED TO THIS MH (SEE NOTE 8)

RECYCLE PUMP STATION

EQ TANKS

WTR. MH 1036
RIM = 981.18

BUILDING RAILING

ALLOWABLE WORK AREA

YARD HYDRANT (SEE NOTE 3)

HMA PARKING LOT

TEMPORARY PAVEMENT (CONTRACT NO.1)

CONTRACTOR TO KEEP THESE 5 SPACES OPEN

379 GATE CONTROL

STORAGE AND STAGING AREA

CONTRACTOR TO KEEP THESE 2 SPACES OPEN

FILTER BUILDING

STM CB 6
RIM = 973.99
15" E. RCP. IE 963.89
12" NW. RCP. IE 963.79

STM CB 5
RIM = 974.58
12" W. RCP. IE 970.08

STM CB 4
RIM = 974.62
12" W. RCP. IE 969.12
12" SW. RCP. IE 969.52
12" RCP. IE 969.32

WTR. MH 1227
RIM = 977.67

ADMINISTRATION BUILDING

STM CB 3
RIM = 976.03
12" W. RCP. IE 970.23
15" NE. RCP. IE 970.13

BM#1- FINISHED FLOOR ELEVATION AT ENTRANCE TO ADMINISTRATION BUILDING. ELEV. 980.51 NAVD 88

BUILDING OVERHANG

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MARK	DATE	DESCRIPTION	BY

CITY OF ANN ARBOR, MI

CONTRACT NO.2 - LIME RESIDUAL REMOVAL DREDGING AND HAULING

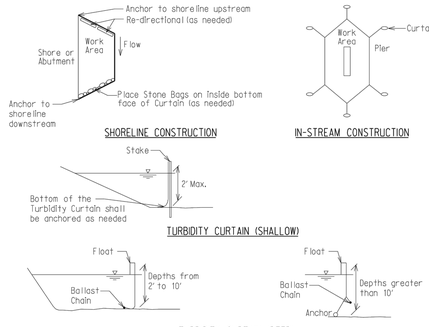
WATER TREAMENT PLANT SITE PLAN

PROJ:	200-31537-17002
DESN:	J. SIWEK
DRWN:	S. GOTHA
CHKD:	B. RUBEL

C-122

Bar Measures 1 inch, otherwise drawing not to scale

12/13/2018 12:21:32 PM - P:\IER\31537\200-31537-17002\CAD\SHEETFILES\PJ2-C-101_LAGOON.DWG - MELLING, VICKIE



Use:

A Turbidity Curtain is used when slack water area is necessary to isolate construction activities from the watercourse.

The Turbidity Curtain system shall be designed to handle site specific drainage or flow patterns.

When water is less than 2 feet deep and has low flow, Turbidity Curtain (Shallow) may be used. Curtain shall be securely fastened to stakes. Water greater than 2 feet deep or where high flow exists requires the use of Turbidity Curtain (Deep).

Installation and Maintenance:

The Turbidity Curtain shall be installed at the location shown on the plans and according to the special provision.

The Turbidity Curtain shall be placed parallel to the direction of flow and anchored upstream, downstream, and to the stream bed to maximize protection to the watercourse.

The Contractor shall maintain the Turbidity Curtain until the construction activity within the watercourse is complete or as approved by the Engineer. Retained sediment shall be removed to the maximum extent practicable prior to removing the curtain

Optional Measures:

The Turbidity Curtain may include a re-directional barrier on the upstream end of the work area.

Related SESC Measures:

E & S-18 Dewatering with Filter Bag
E & S-24 Sand and Stone Bags
E & S-34 Cofferdam

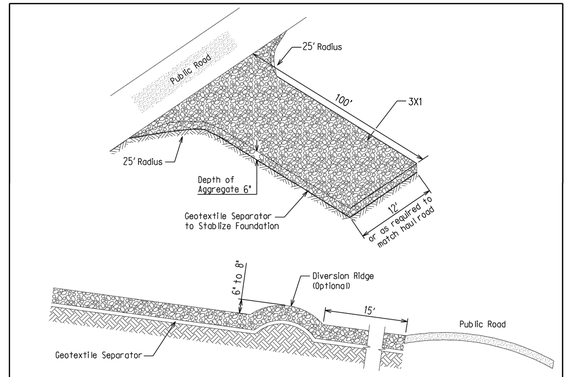
Measurement and Payment:

Turbidity Curtain requires inclusion of the appropriate special provision in the contract documents. Payment includes furnishing and installing sufficient anchors, tie-downs, or other mechanisms to ensure proper position and performance of the Turbidity Curtain. Optional work shown, when installed and maintained as directed by the Engineer, will be paid using the associated contract item listed here.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

Turbidity Curtain

MDOT	09-30-2005 PLAN DATE	E&S-1-A	SHEET 1 OF 1



Use:

Providing a stable Gravel Access Approach, minimizes the tracking of loose materials from the construction site onto public roadways. Coarser aggregate is more effective in reducing tracking. Any materials tracked onto public roadways shall be removed as specified in the Standard Specifications for Construction, or as directed by the Engineer.

Installation and maintenance of Gravel Access Approach is effective in reducing sediment loading to inlet protection devices.

Installation and Maintenance:

The Gravel Access Approach should be located in accordance with the plans or as directed by the Engineer. All vegetation and other objectionable material shall be removed from the foundation area. Geotextile Separator must be placed beneath the aggregate to stabilize the foundation.

Replace or replenish aggregate if it is no longer preventing tracking.

Optional Measures:

A Gravel Access with Diversion Ridge is recommended where access grade exceeds 2%. This will also aid in dislodging soil or debris from tires.

Related SESC Measures:

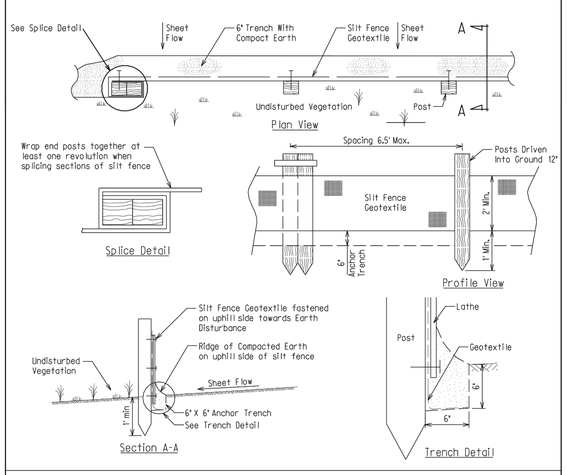
Measurement and Payment:

Optional work shown, when installed and maintained as directed by the Engineer, will be included in the item Gravel Access Approach

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

Gravel Access Approach

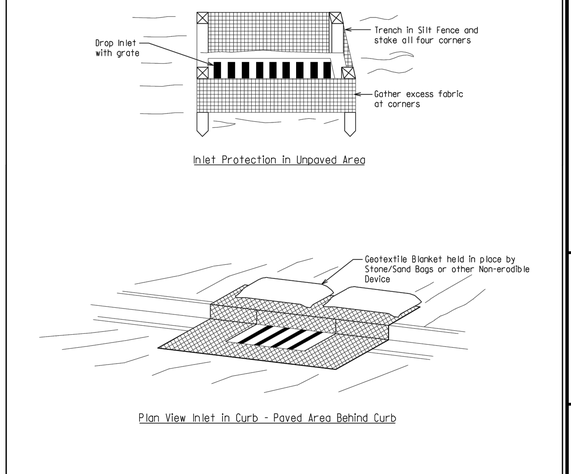
MDOT	04-07-2006 PLAN DATE	E&S-14-A	SHEET 1 OF 1



MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

Silt Fence

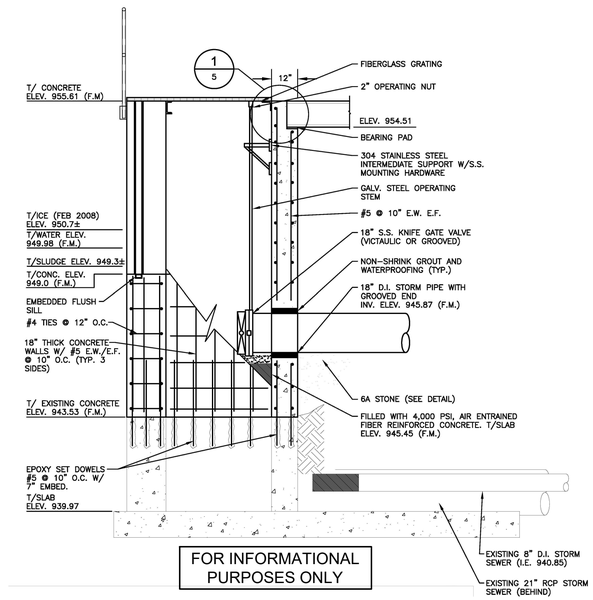
MDOT	09-30-2005 PLAN DATE	E&S-26-A	SHEET 1 OF 2



MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

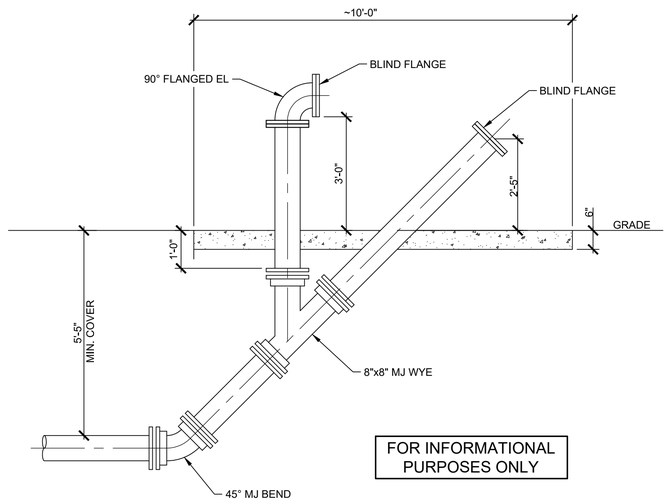
Inlet Protection Fabric Drop

MDOT	04-07-2006 PLAN DATE	E&S-29-A	SHEET 1 OF 2



FOR INFORMATIONAL PURPOSES ONLY

LAGOON OVERFLOW WEIR STRUCTURE DETAIL



FOR INFORMATIONAL PURPOSES ONLY

SWAB LAUNCH AND PIPE CONNECTION DETAIL

SCALE: NONE

PIGGING NOTES:

1. REMOVE CAP AND INSERT POLY-PIG SWAB.
2. REPLACE CAP AND APPROPRIATE FITTINGS FOR FLUSHING AND/OR TESTING.
3. USING PRESSURE PUMP, INSERT POLY-PIG SWAB INTO FORCE MAIN TO BE SWABBED. WHEN SWAB IS IN MAIN, STOP PUMP, MOMENTARILY, THEN BEGIN FLUSHING MAIN.
4. CONTRACTOR TO ADJUST THE ORIENTATION OF THE DISCHARGE BY REALIGNING THE 90 DEGREE BEND TO SUIT THEIR OPERATIONS. CONTRACTOR TO FURNISH ALL FITTINGS TO WORK WITH THEIR PUMPING AND TESTING EQUIPMENT. UPON COMPLETION OF THE WORK, AND ALL FLUSHING OF THE FORCE MAIN IS COMPLETE THE CONTRACTOR SHALL PUMP WATER OUT OF THE STAND PIPES TO A MINIMUM 5 FEET BELOW GRADE AND REINSTALL THE BLIND FLANGES.

NOTES:

1. DETAILS ARE PROVIDED FOR PROPOSED AND EXISTING SESC BMP'S LEFT IN PLACE FROM CONTRACT NO. 1. SESC BMP'S LEFT IN PLACE FROM CONTRACT NO. 1 THAT ARE TO BE RE-USED IN CONTRACT NO. 2 SHALL BE MAINTAINED THROUGHOUT THE COURSE OF THE CONTRACT. ALL SESC BMP'S SHALL BE REMOVED BY CONTRACTOR UPON COMPLETION OF CONTRACT 2.
2. CONTRACTOR SHALL REMOVE ALL INLET PROTECTIONS LOCATED WITHIN CITY STREETS UPON THE COMPLETION OF THE TRUCKING PORTION OF THE PROJECT.
3. CONTRACTOR SHALL ANCHOR TURBIDITY CURTAIN TO PROVIDE PROTECTION ENTIRELY AROUND THE EXISTING OVERFLOW STRUCTURE. CONTRACTOR SHALL CHECK THE SECURITY OF THE INSTALLATION BEFORE AND AFTER ANY STORM EVENTS.

SOIL EROSION & SEDIMENTATION CONTROL MEASURES KEY

• APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES
(COMPREHENSIVE DETAILS ARE LOCATED IN SECTION 7 OF THE SOIL EROSION & SEDIMENTATION CONTROL MANUAL)

A = SLOPES
B = STREAMS AND WATERWAYS
C = SURFACE DRAINAGEWAYS
D = ENCLOSED DRAINAGE (INLET & OUTFALL CONTROL)
E = LARGE FLAT SURFACE AREAS
F = BORROW AND STOCKPILE AREAS
G = MDEQ PERMIT MAY BE REQUIRED

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
1	TURBIDITY CURTAIN	A Turbidity Curtain is used when slack water area is necessary to isolate construction activities from the watercourse. The still water area contains the sediments within the construction limits.		•					
14	GRAVEL ACCESS APPROACH	Provides a stable access to roadways minimizing fugitive dust and tracking of materials onto public streets and highways.					•	•	
26	GEOTEXTILE SILT FENCE	A permeable barrier erected below disturbed areas to capture sediments from sheet flow. Can be used to divert small volumes of water to stable outlets. Ineffective as a filter and should never be placed across streams or ditches where flow is concentrated.	•				•	•	
29	INLET PROTECTION FABRIC DROP	Provides settling and filtering of silt ladened water prior to its entry into the drainage system. Can be used in median and side ditches where vegetation will be disturbed. Allows for early use of drainage systems prior to project completion.			•		•		

MARK	DATE	DESCRIPTION	BY

TETRA TECH
www.tetratech.com

CITY OF ANN ARBOR, MI
CONTRACT NO:2 - LIME RESIDUAL REMOVAL DREDGING AND HAULING
SESC & STANDARD DETAILS

PROJ:	200-31537-17002
DESN:	J. SIWEK
DRWN:	S. GOTHA
CHKD:	B. RUBEL

C-123
Sheet

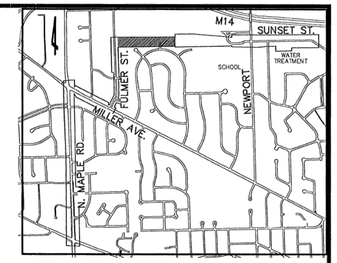
12/13/2018 12:23:24 PM - O:\PROJECTS\ANN ARBOR\IER\31537\200-31537-17002\CAD\SHEETFILES\PJ2-C-501.DWG - MELLING, VICKIE

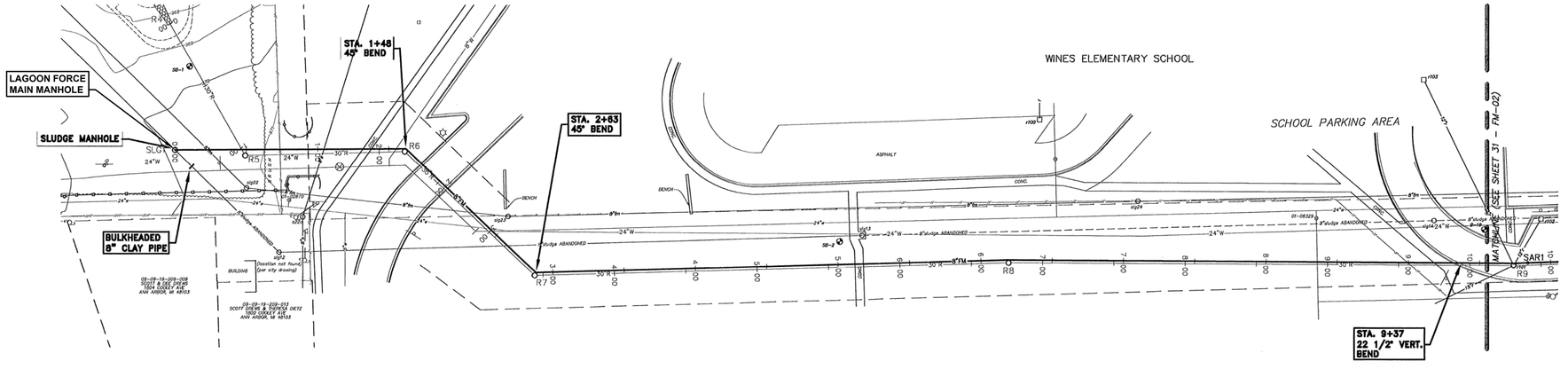
Bar Measures 1 inch, otherwise drawing not to scale

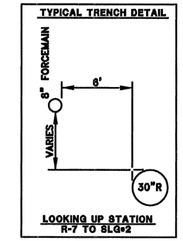
AS-BUILT WATER DRAWING
CONST. COMP. DATE 11-2008
MDEQ PERMIT No. W073126
IN SERVICE DATE (MO/YR) 12/08
CONTRACTOR E.T. MACKENZIE

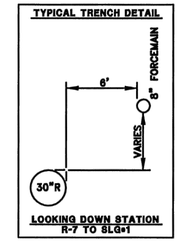
NOTE:
Data contained on this page was drawn from City records. No guarantee is made as to its accuracy or completeness.

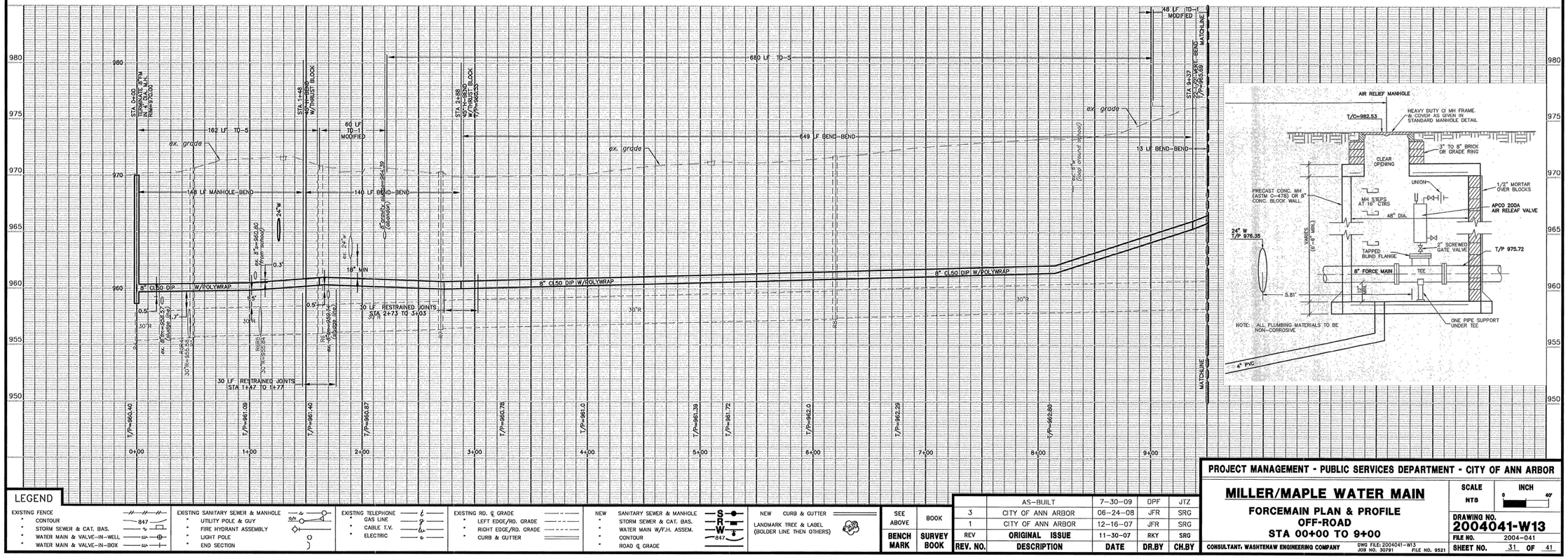
DIGITAL STATUS
SCANNED ON: 1/10
BY: BKG











LEGEND

EXISTING FENCE		EXISTING SANITARY SEWER & MANHOLE		EXISTING TELEPHONE	
CONTOUR	847	UTILITY POLE & GUY		GAS LINE	g
STORM SEWER & CAT. BAS.		FIRE HYDRANT ASSEMBLY		CABLE T.V.	tv
WATER MAIN & VALVE-IN-WELL	w	LIGHT POLE		ELECTRIC	e
WATER MAIN & VALVE-IN-BOX	w	END SECTION			

EXISTING RD. & GRADE		NEW	SANITARY SEWER & MANHOLE	S	
LEFT EDGE/RD. GRADE			STORM SEWER & CAT. BAS.		
RIGHT EDGE/RD. GRADE			WATER MAIN W/F.H. ASSEM.	W	
CURB & GUTTER			CONTOUR	847	
			ROAD & GRADE		

NEW CURB & GUTTER
LANDMARK TREE & LABEL (BOLDER LINE THEN OTHERS)

SEE ABOVE	BOOK
BENCH MARK	SURVEY BOOK

REV. NO.	DESCRIPTION	DATE	DR.BY	CH.BY
	AS-BUILT	7-30-09	DPF	JTZ
3	CITY OF ANN ARBOR	06-24-08	JFR	SRG
1	CITY OF ANN ARBOR	12-16-07	JFR	SRG
REV	ORIGINAL ISSUE	11-30-07	RKY	SRG

PROJECT MANAGEMENT - PUBLIC SERVICES DEPARTMENT - CITY OF ANN ARBOR

MILLER/MAPLE WATER MAIN

FORCEMAIN PLAN & PROFILE OFF-ROAD STA 00+00 TO 9+00

CONSULTANT: WASHTENAW ENGINEERING COMPANY
DWG FILE: 2004041-W13
JOB NO. 30791
FILE NO. 9521

SCALE NTS
INCH 0 40'
DRAWING NO. 2004041-W13
FILE NO. 2004-041
SHEET NO. 31 OF 41

TETRA TECH
www.tetratech.com

MARK	DATE	DESCRIPTION	BY

CITY OF ANN ARBOR, MI
CONTRACT NO:2 - LIME RESIDUAL REMOVAL DREDGING AND HAULING
8 IN FM PLAN & PROFILE
FOR INFO ONLY

PROJ:	200-31537-17002
DESN:	J. SIWEK
DRWN:	S. GOTHA
CHKD:	B. RUBEL

C-124
Sheet

Bar Measures 1 inch, otherwise drawing not to scale

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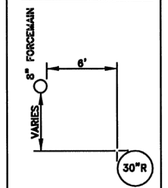
TYPICAL TRENCH DETAIL



LOOKING UP STATION R-7 TO SLG#2

AS-BUILT WATER DRAWING
CONST. COMP. DATE 11-2008
MDEQ PERMIT No. W073126
IN SERVICE DATE (MO/YR) 12/08
CONTRACTOR E.T. MACKENZIE

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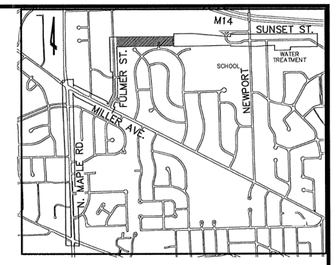
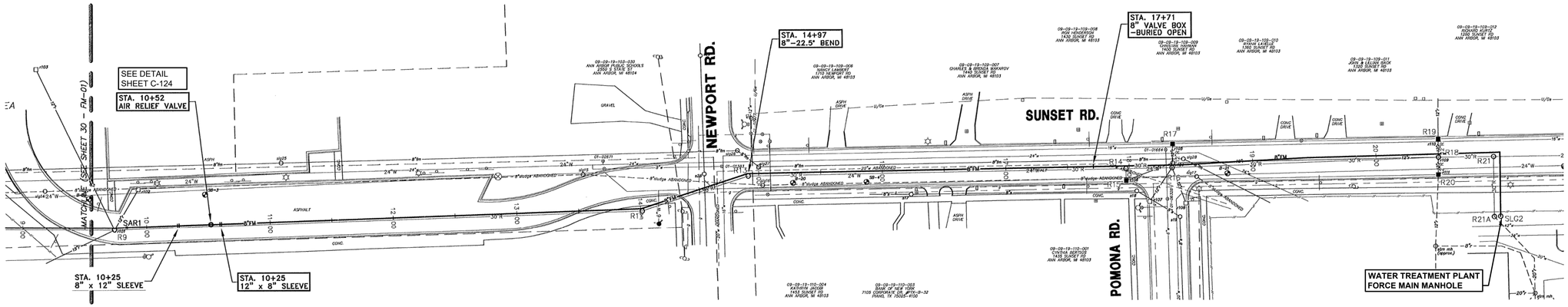
DIGITAL STATUS
SCANNED ON: 1/10
BY:





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
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" END SECTION

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" GAS LINE
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EXISTING RD. ℄ GRADE
" LEFT EDGE/RD. GRADE
" RIGHT EDGE/RD. GRADE
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REV	ORIGINAL ISSUE	11-30-07	RKY	SRG

PROJECT MANAGEMENT - PUBLIC SERVICES DEPARTMENT - CITY OF ANN ARBOR

MILLER/MAPLE WATER MAIN
FORCEMAIN PLAN & PROFILE
SCHOOL DRIVEWAY & SUNSET ROAD
STA 09+50 TO 20+34

CONSULTANT: WASHTENAW ENGINEERING COMPANY
DWG FILE: 2004041-W14
JOB NO. 30791 FILE NO. 9521

SCALE NTS
INCH 0 40'
DRAWING NO. 2004041-W14
FILE NO. 2004-041
SHEET NO. 32 OF 41

TETRA TECH
www.tetratech.com

MARK	DATE	DESCRIPTION	BY

CITY OF ANN ARBOR, MI
CONTRACT NO.2 - LIME RESIDUAL REMOVAL DREDGING AND HAULING
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PROJ:	200-31537-17002
DESN:	J. SIWEK
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