SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY

CONSTRUCTION PLANS FOR

MICHIGAN DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET

SECTION 30, TOWN 1 NORTH, RANGE 6 EAST
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

FILE NO.: 472/23129.KMM



VICINITY MAP
N.T.S.

PROJECT PERMITS

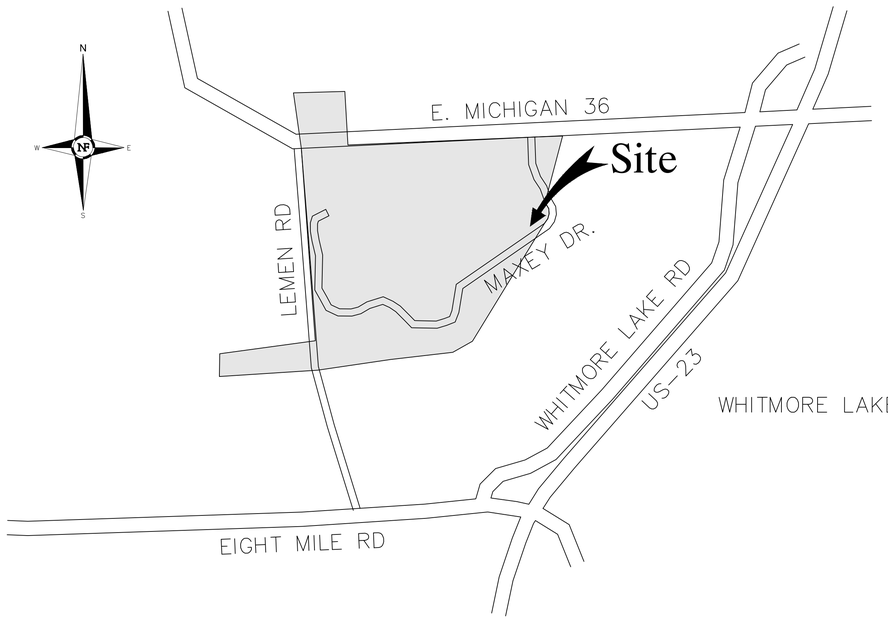
DLARA PERMIT
A PERMIT FROM THE DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS IS REQUIRED FOR THE ELECTRICAL WORK ASSOCIATED WITH LIFT STATION. THE CONTRACTOR SHALL OBTAIN THE PERMIT, PAY ANY FEES AND COORDINATE NEEDED INSPECTIONS.

SOIL EROSION CONTROL PERMIT
A PERMIT FROM THE DTMB IS REQUIRED FOR EARTH DISTURBANCE AND ALL SOIL EROSION CONTROL MEASURES. THE PERMIT HAS BEEN OBTAINED DURING THE PREVIOUS PHASE OF THE PROJECT AND WILL BE EXTENDED FOR WORK PERFORMED UNDER THIS CONTRACT. THE CONTRACTOR SHALL ABIDE BY ALL REQUIREMENTS AND PERFORM ALL MAINTENANCE OF EXISTING SOIL EROSION MEASURES AS REQUIRED.

MDOT RIGHT OF WAY PERMIT
A PERMIT FROM THE MICHIGAN DEPARTMENT OF TRANSPORTATION IS REQUIRED FOR ALL WORK PROPOSED WITHIN THE M-36 ROW. THE CONTRACTOR SHALL OBTAIN THE PERMIT, PAY ANY FEES, PROVIDE ADDITIONAL BONDING AND COORDINATE NEEDED INSPECTIONS.

LIVINGSTON COUNTY ROAD COMMISSION RIGHT OF WAY PERMIT
A PERMIT FROM THE LIVINGSTON COUNTY ROAD COMMISSION IS REQUIRED FOR ALL WORK PROPOSED WITHIN THE LEMEN ROAD ROW. THE CONTRACTOR SHALL OBTAIN THE PERMIT, PAY ANY FEES, PROVIDE ADDITIONAL BONDING AND COORDINATE NEEDED INSPECTIONS.

EGLE PERMIT
A PERMIT FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE) IS REQUIRED FOR THE WATER MAIN WORK ASSOCIATED WITH THIS PROJECT. THE CONTRACTOR SHALL OBTAIN THE PERMIT, PAY ANY FEES AND COORDINATE NEEDED INSPECTIONS.



LOCATION MAP
N.T.S.

Department of Corrections

Physical Plant Division
Contact: Trever LeBarre - Physical Plant Manager
Phone: (517) 643-6518
E-mail: lebarret@michigan.gov

Electrical Engineer

Matrix Consulting Engineer's, Inc.
1601 E. Grand River
Lansing, MI 48908
Contact: Mason Cordes
Phone: (517) 487-2511 (Office)
E-mail: mcordes@matrixceinc.com

Civil Engineer

NF Engineers
46777 Woodward Avenue
Pontiac, MI 48342
Contact: Steven Sutton, P.E.
Phone: (248) 635-6571
Fax: (248) 332-8257
E-mail: swsutton@nfe-engr.com

STEVEN W. SUTTON ENGINEER NO. 50497 LICENSED PROFESSIONAL ENGINEER STATE OF MICHIGAN

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG. OR 811
1-(800)-482-7171 For free location of public utility lines
Know what's below. Call before you dig.

SHEET INDEX

CIVIL PLANS - SHEET INDEX	
SHEET NO.	TITLE
T	TITLE SHEET
C1	OVERALL IMPROVEMENT PLAN
C2	SOIL EROSION & SEDIMENTATION CONTROL PLAN
C3	IMPROVEMENT PLAN - AREA 1
C4	IMPROVEMENT PLAN - AREA 2
C5	IMPROVEMENT PLAN - AREA 3
C6	IMPROVEMENT PLAN - AREA 4
C7	IMPROVEMENT PLAN - AREA 5
C8	IMPROVEMENT PLAN - AREA 6
C9	IMPROVEMENT PLAN - AREA 7
C10	IMPROVEMENT PLAN - AREA 8
C11	IMPROVEMENT PLAN - AREA 9
C12	IMPROVEMENT PLAN - AREA 10
C13	IMPROVEMENT PLAN - AREA 11
C14	IMPROVEMENT PLAN - AREA 12
C15	IMPROVEMENT PLAN - AREA 13
C16	IMPROVEMENT PLAN - AREA 14
C17	IMPROVEMENT PLAN - AREA 15
C18	IMPROVEMENT PLAN - AREA 16
C19	SANITARY PROFILES
C20	SANITARY PROFILES
C21	IMPROVEMENT PLAN - SANITARY SEWER LIFT STATION
C22	STANDARD DETAILS AND NOTES
C23	STANDARD DETAILS AND NOTES
C24	WATER MAIN DETAILS AND NOTES
C25	OVERALL WATERMAIN PLAN
C26	WATER MAIN PROFILE
C27	WATER MAIN PROFILE
C28	WATER MAIN PROFILE
C29	WATER MAIN PROFILE
C30	GREEN OAKS TRAINING FACILITY WATER MAIN PROFILE
C31	BUILDING NO. 4 WATER MAIN PROFILE
ELECTRICAL PLANS - SHEET INDEX	
E1	ELECTRICAL ABBREVIATIONS, SYMBOLS, AND NOTES
E2	ELECTRICAL SITE PLAN

NFE PROJECT NO. K648-06
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	REVIEW
08-15-2024	Phase 50%
12-05-2024	Phase 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents
11-06-2026	Addendum #3

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

TITLE SHEET

PROJECT NO.	472/23129.KMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

T

CAUTION NOTE:

IT IS NOT KNOW WHETHER CONDUITS SHOWN OR NOT SHOWN ON SURVEY CONTAIN HIGH VOLTAGE, LOW VOLTAGE OR FIBER OPTIC LINES AND WILL NEED FIELD VERIFICATION. CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING AND INSTALLING PROPOSED UTILITIES.

EXISTING UTILITY CONDUIT NOTE:

ALL EXISTING LIGHT, POWER, AND COMMUNICATION CONDUIT LOCATIONS SHOWN SHALL BE FIELD VERIFIED FOR EXACT SIZE AND LOCATION. ADDITIONAL CONDUITS NOT SHOWN ON SURVEY MAY EXIST AND WILL NEED FIELD VERIFICATION PRIOR TO INSTALLATION OF PROPOSED WORK. CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING FOR PROPOSED WORK AS ADDITIONAL CONDUITS NOT SHOWN ON SURVEY MAY EXIST.

HYDRO EXCAVATION:

THE CONTRACTOR SHALL INCLUDE COSTS OFOR HYDRO EXCAVATION OF ALL UTILITY CROSSINGS REQUIRED, PRIOR TO COMMENCING WITH THE INSTALLATION. A SECONDARY ALLOWANCE HAS BEEN PROVIDED FOR THE POTENTIAL NEED OF ADDED HYDRO EXCAVATION, IF NEW UTILITIES ARE DISCOVERED DURING THE PRE-CONSTRUCTION GPR SCAN.

UTILITY LOCATION:

THE CONTRACTOR SHALL INCLUDE A THIRD PARTY GPR AND EXISTING UTILITY LOCATION SERVICE IN ALL WORK ZONES TO DETERMINE EXISTING LOCATIONS OF BELOW GRADE UTILITIES. ANY DAMAGED LINES SHALL BE REPAIRED AS SOON AS IS POSSIBLE (WITHIN HOURS OF A FOUND BREAK). ANY DAMAGE TO EX. UTILITIES WILL BE REPAIRED AT THE CONTRACTORS EXPENSE.

DEWATERING:

THE CONTRACTOR SHALL REVIEW THE SITE CONDITIONS, PROVIDED SOIL BORINGS AND DETERMINE THEIR OWN NEEDS FOR DEWATERING NECESSARY TO BUILD THE PROJECT. DEWATERING WILL NOT BE PAID FOR SEPARATELY. ALL DEWATERING DISCHARGE POINTS SHALL BE PROPERLY COORDINATED AND MAINTAINED TO PROTECT AGAINST EROSION.

OPEN EXCAVATIONS / TEMP. CHAIN LINK FENCE / STEEL PLATES:

ALL OPEN EXCAVATIONS SHALL BE EITHER BACKFILLED TO ROUGH FINISH GRADE OR A MOVEABLE CHAIN LINK FENCE / STEEL PLATES SHALL ENCLOSE OR COVER ANY AREAS WHEN CONTRACTORS LEAVE FOLLOWING THE WORK DAY. FENCING SHALL NOT IMPEDE REQUIRED WALKING PATHS FOR DOC INMATES OR STAFF.

PROJECT PHASING:

THE CONTRACTOR SHALL PREPARE A PHASING PLAN, FOLLOWING AWARD OF THE PROJECT, FOR PRESENTATION TO THE OWNER TEAM FOR REVIEW AND APPROVAL. THIS PLAN SHALL ACHIEVE THE REQUIREMENTS NOTED IN THIS PLAN, TO ALLOW FOR CONTINUED OPERATION AND PRISON MOVEMENT IN THE WORK ZONE.

DAMAGE TO PRIVATE PROPERTY

ALL SIDEWALKS, DRIVEWAYS, LAWNS, FENCING, TREES, SHRUBS, SPRINKLERS, LANDSCAPING, ETC., THAT ARE DAMAGED DURING CONSTRUCTION MUST BE REPAIRED OR REPLACED, IN KIND OR BETTER, BY THE CONTRACTOR. ALL STREET SIGNS, MAIL BOXES, ETC., REMOVED SHALL BE REPLACED IN KIND OR BETTER, BY THE CONTRACTOR. ALL THE REPAIRS OR REPLACEMENTS DUE TO THE CONTRACTOR'S WORK ARE TO BE INCLUDED IN THE CONTRACT PRICE(S) AND SHALL NOT BE AN EXTRA TO THE CONTRACT.

THE CONTRACTOR SHALL SECURE PERMISSION IN WRITING FROM ADJACENT PROPERTY OWNERS PRIOR TO ENTERING UPON ANY ADJOINING PROPERTIES, UNLESS OFFSITE PERMITS HAVE ALREADY BEEN OBTAINED BY THE OWNER AND ARE PART OF THE CONTRACT DOCUMENTS.

PROJECT RESTORATION

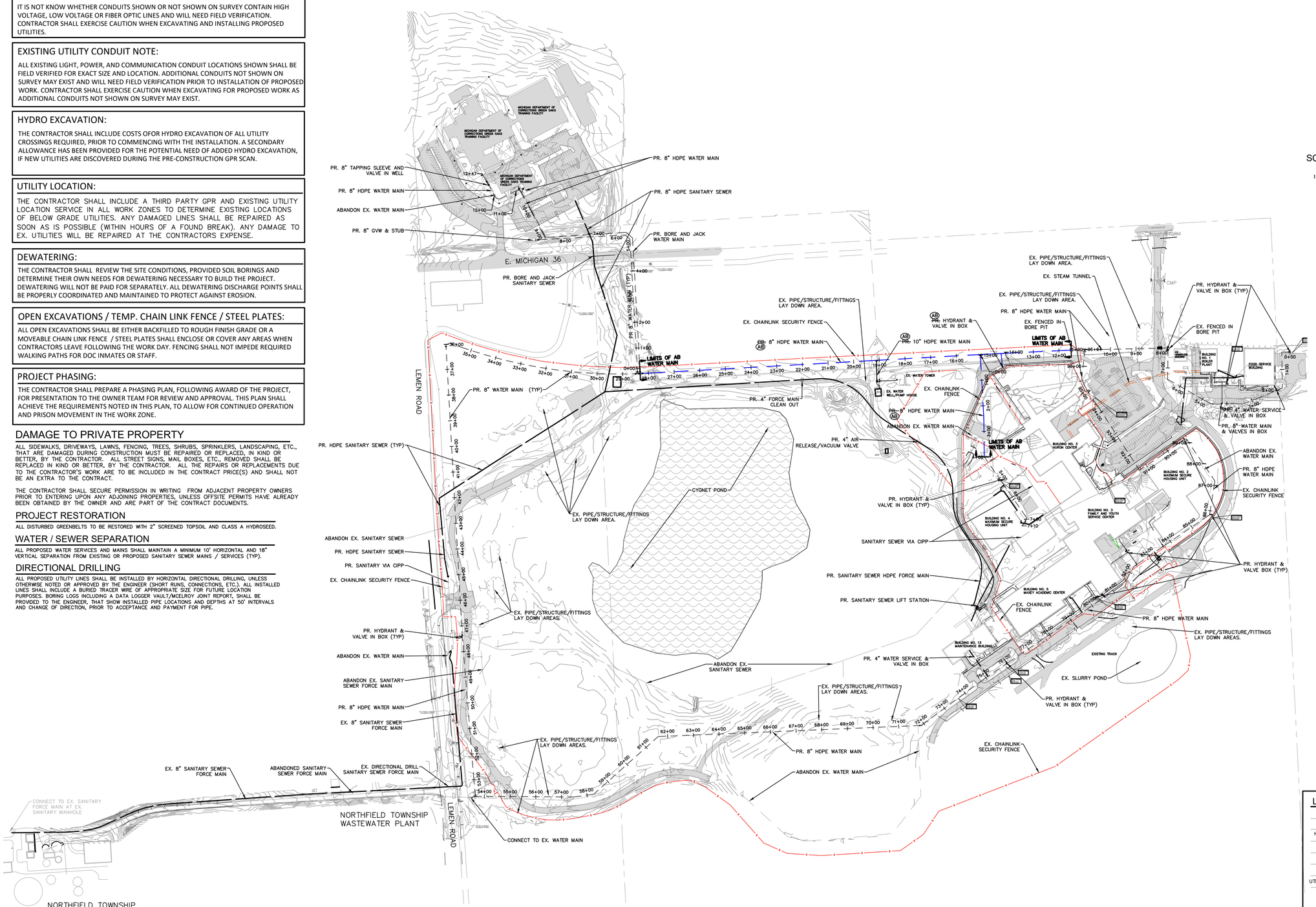
ALL DISTURBED GREENBELTS TO BE RESTORED WITH 2" SCREENED TOPSOIL AND CLASS A HYDROSEED.

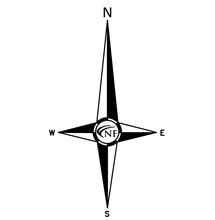
WATER / SEWER SEPARATION

ALL PROPOSED WATER SERVICES AND MAINS SHALL MAINTAIN A MINIMUM 10' HORIZONTAL AND 18" VERTICAL SEPARATION FROM EXISTING OR PROPOSED SANITARY SEWER MAINS / SERVICES (TYP).

DIRECTIONAL DRILLING

ALL PROPOSED UTILITY LINES SHALL BE INSTALLED BY HORIZONTAL DIRECTIONAL DRILLING, UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER (SHORT RUNS, CONNECTIONS, ETC.). ALL INSTALLED LINES SHALL INCLUDE A BURIED TRACER WIRE OF APPROPRIATE SIZE FOR FUTURE LOCATION PURPOSES. BORING LOGS INCLUDING A DATA LOGGER VAULT/MCELROY JOINT REPORT, SHALL BE PROVIDED TO THE ENGINEER, THAT SHOW INSTALLED PIPE LOCATIONS AND DEPTHS AT 50' INTERVALS AND CHANGE OF DIRECTION, PRIOR TO ACCEPTANCE AND PAYMENT FOR PIPE.





LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	REVIEW
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 900 90%
08-15-2024	Phase 900 50%

PROJECT DESCRIPTION

SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY

WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

OVERALL IMPROVEMENT PLAN

PROJECT NO. - 4722329.KMM	--
INDEX	00-0000
PCA	MAW
DRAWN BY	MAW
DESIGNED BY	SWS
JC/ENG BY	

C1

SOIL EROSION CONTROL

CUTTING, FILLING AND GRADING SHALL BE MINIMIZED AND THE NATURAL TOPOGRAPHY OF THE SITE SHALL BE PRESERVED TO THE MAXIMUM POSSIBLE EXTENT.

DEVELOPMENT SHALL BE STAGED TO KEEP THE EXPOSED AREAS OF SOIL AS SMALL AS PRACTICABLE.

SEDIMENT RESULTING FROM ACCELERATED SOIL EROSION DURING CONSTRUCTION SHALL BE REMOVED FROM RUNOFF WATER BEFORE THAT WATER LEAVES THE SITE. BEST MANAGEMENT PRACTICE SHALL BE UTILIZED TO MITIGATE BUILDUP OF WATER RUNOFF VELOCITIES.

TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF WATER AROUND, THROUGH, OR AWAY FROM THE SITE SHALL BE DESIGNED TO LIMIT THE WATER FLOW TO A NON-EROSIVE VELOCITY.

TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE REMOVED AFTER PERMANENT SOIL EROSION CONTROL MEASURES HAVE BEEN IMPLEMENTED. ALL SITES SHALL BE STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES.

WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHEN SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED.

PERMANENT EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 15 (FIFTEEN) CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED.

VEGETATED BUFFER STRIPS SHALL BE RETAINED ALONG THE EDGES OF ALL LAKES, PONDS, CREEKS, STREAMS, OTHER WATERCOURSES, OR WETLANDS.

EROSION AND SEDIMENTATION CONTROL MEASURES SHALL RECEIVE REGULAR MAINTENANCE TO ASSURE PROPER FUNCTIONING.

ALL GRADING PLANS AND SPECIFICATIONS, INCLUDING EXTENSIONS OF PREVIOUSLY APPROVED PLANS, SHALL INCLUDE PROVISIONS FOR EROSION AND SEDIMENT CONTROL. CONTRACTOR SHALL OBTAIN SESC PERMIT FROM THE DTMB PRIOR TO COMMENCEMENT OF ANY SOIL DISTURBANCE ON THE PROJECT.

SOIL EROSION NOTE

ALL WORK UNDER THIS CONTRACT MUST MEET THE STORM WATER MANAGEMENT REQUIREMENTS OF THE PROJECT AND COMPLY WITH THE APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL (SESC) RULES AND REGULATIONS (SOIL EROSION AND SEDIMENTATION CONTROL 1994 PA 451, PART 91, AS AMENDED, MCL 324.9101) AND SPECIFIC PROVISIONS AND REGULATIONS FOR SAME WITHIN THE CONTRACT DOCUMENTS. THE DEPARTMENT OF TECHNOLOGY MANAGEMENT AND BUDGET, STATE FACILITIES ADMINISTRATION, AN AUTHORIZED PUBLIC AGENCY (APA), HAS PROMULGATED STANDARD PROCEDURES AND SPECIFICATIONS FOR EROSION CONTROL THAT SHALL BE CONSIDERED A PART OF THE CONTRACT DOCUMENTS. SESC MEASURES WILL BE MONITORED AND ENFORCED BY STATE FACILITIES ADMINISTRATION THROUGH THE REVIEW OF THE CONTRACTOR'S IMPLEMENTATION PLANS AND SITE INSPECTIONS. STATE FACILITIES ADMINISTRATION OR THE PROFESSIONAL WILL NOTIFY THE CONTRACTOR IN WRITING OF ANY VIOLATIONS OF THE APPLICABLE SESC STATUTES AND / OR THE CORRECTIVE ACTIONS UNDERTAKEN BY THE OWNER AND MAY ISSUE STOP WORK ORDERS. STATE FACILITIES ADMINISTRATION HAS THE RIGHT TO ASSESS A $500/DAY FINE TO THE CONTRACTOR FOR NONCOMPLIANCE WITH THE PROVISIONS OF THE CONTRACT DOCUMENTS AND / OR SESC REGULATIONS APPLICABLE TO THIS WORK AND FINES SHALL BE IN ADDITION TO ANY REMEDIATION COSTS OR LIQUIDATED DAMAGES APPLICABLE TO THE PROJECT AND MAY EXCEED THE VALUE OF THE CONTRACT.

SOIL DATA

THIS SITE CONSISTS OF

- BtB – BOYER–OSHTEMO LOAMY SANDS, 2 TO 6 PERCENT SLOPES
- By – BROOKSTON LOAM, 0 TO 2 PERCENT SLOPES
- CarabA – CARLISLE MUCK, 0 TO 2 PERCENT SLOPES
- CvA – CONOVER LOAM, 0 TO 2 PERCENT SLOPES
- Gd – GILFORD SANDY LOAM, 0 TO 2 PERCENT SLOPES, GRAVELLY SUBSOIL
- HgtahA – HOUGHTON MUCK, 0 TO 1 PERCENT SLOPES
- MoA – WAWASEE LOAM, 0 TO 2 PERCENT SLOPES
- MoB – WAWASEE LOAM, 2 TO 6 PERCENT SLOPES
- MoC – WAWASEE LOAM, 6 TO 12 PERCENT SLOPES
- MoD – MIAMI LOAM, 12 TO 18 PERCENT SLOPES
- MoE – MIAMI LOAM, 18 TO 25 PERCENT SLOPES

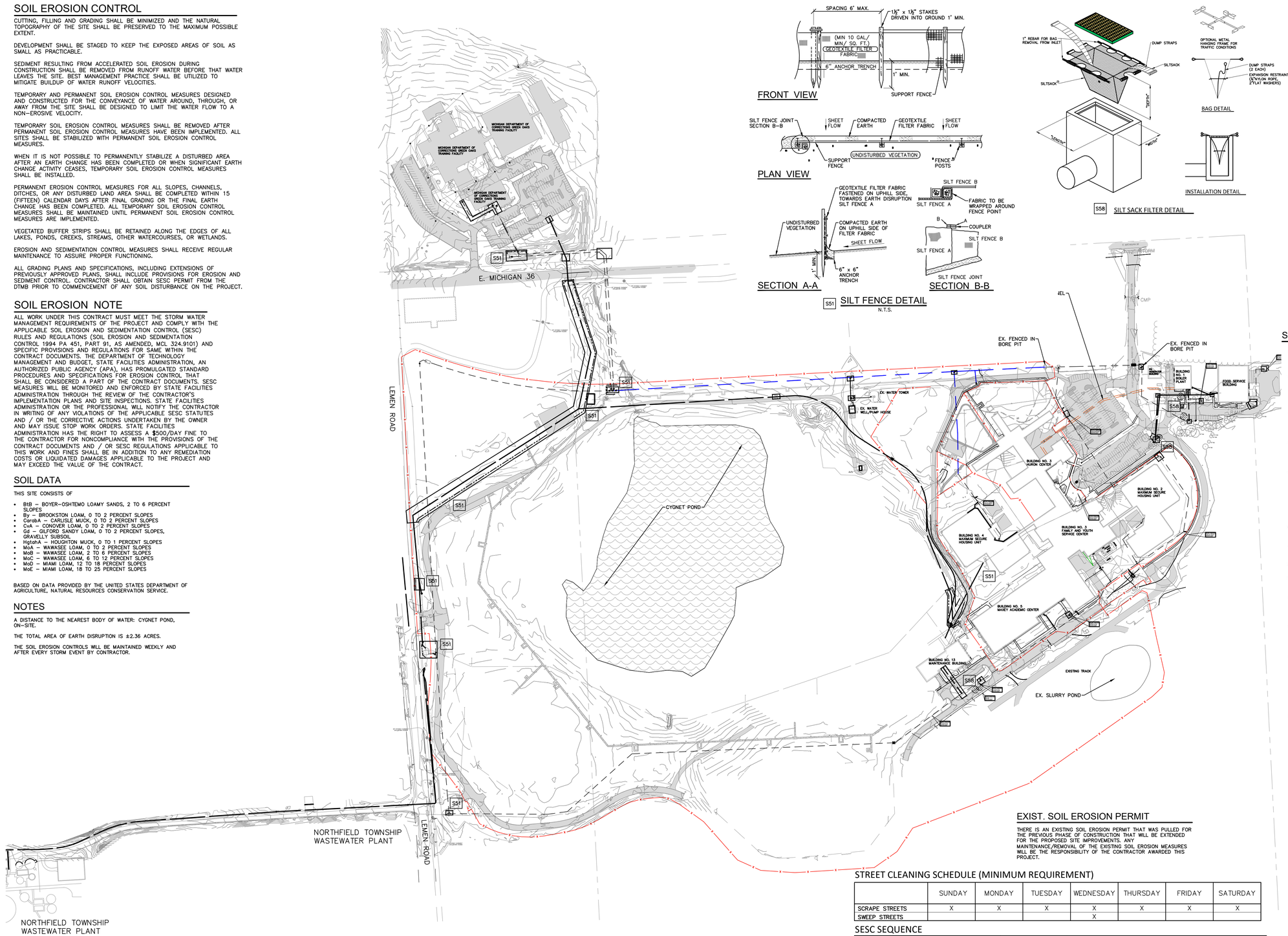
BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE.

NOTES

A DISTANCE TO THE NEAREST BODY OF WATER: CYGNET POND, ON-SITE.

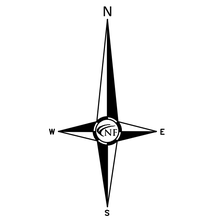
THE TOTAL AREA OF EARTH DISRUPTION IS ±2.36 ACRES.

THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY CONTRACTOR.



S51 SILT FENCE DETAIL
N.T.S.

S58 SILT SACK FILTER DETAIL



NFE PROJECT NO. K648-06
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

SOIL EROSION CONTROL NOTES

1. ALL WORK SHALL COMPLY WITH THE APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL (SESC) RULES AND REGULATIONS (SOIL EROSION AND SEDIMENTATION CONTROL – 1994 PA 451, PART 91, AS AMENDED, MCL 324.9101 ET SEQ.).
2. ALL EARTH CHANGES OF ONE ACRE OR MORE OR WITHIN 500 FEET OF WATERS OF THE STATE REQUIRE A SESC PERMIT. IF A SESC PERMIT IS REQUIRED THE PROFESSIONAL SERVICES CONTRACTOR (DESIGN CONSULTANT) SHALL PREPARE AN SESC PLAN. THE SESC PLAN SHALL ADDRESS BOTH WIND AND WATER EROSION AND SEDIMENTATION.
3. THE CONTRACTOR SHALL REVIEW THE DESIGN CONSULTANT'S SESC PLAN IN ORDER TO PREPARE AND ISSUE FOR APPROVAL AN 'SESC IMPLEMENTATION PLAN', WHICH INDICATES THE CONTRACTOR'S INTENDED IMPLEMENTATION OF THE SESC PLAN FOR THE PROJECT, INCLUDING A SCHEDULE.
4. THE DTMB SESC PROGRAM, UPON APPROVAL OF THE IMPLEMENTATION PLAN, WILL ISSUE THE CONTRACTOR AN 'AUTHORIZATION TO PROCEED WITH EARTH CHANGE', WHICH IS TO BE POSTED AT THE JOB SITE. THIS DOCUMENT IS ISSUED IN LIEU OF A PERMIT FROM THE COUNTY OR OTHER LOCAL ENFORCING AGENCY.
5. THE CONTRACTOR SHALL IMPLEMENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED BY THE PROJECT'S SESC PLAN, SESC IMPLEMENTATION PLAN, DTMB'S SOIL EROSION AND SEDIMENTATION CONTROL GUIDEBOOK, DATED FEBRUARY 2005, AND AS DIRECTED BY THE PROFESSIONAL SERVICES CONTRACTOR, DTMB SESC INSPECTOR, AND/OR DTMB PROJECT DIRECTOR. THE DTMB SESC INSPECTOR SHALL INSPECT THE SITE WEEKLY AND AFTER SIGNIFICANT RAIN EVENTS.
6. THE CONTRACTOR SHALL INSTALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO OR UPON COMMENCEMENT TO EARTHWORK ACTIVITIES.
7. THE CONTRACTOR WILL PERFORM SWEEPING AS NEEDED TO REMOVE ANY SEDIMENT TRACKED OFF SITE. FREQUENCY OF SWEEPING WILL BE BASED ON SITE CONDITIONS.
8. THE CONTRACTOR WILL PERFORM DUST CONTROL AS NEEDED BASED ON SITE CONDITIONS.
9. DISTURBED AREAS THAT WILL REMAIN IDLE DURING CONSTRUCTION MUST BE TEMPORARILY STABILIZED, INCLUDING SOIL STOCKPILES, USING DTMB SESC BEST MANAGEMENT PRACTICES.
10. THE CONTRACTOR SHALL MAINTAIN AND INSPECT SESC MEASURES THROUGHOUT THE COURSE OF THE PROJECT. RECOMMEND INSPECTING AND MAINTAINING EROSION AND SEDIMENTATION CONTROLS ON A DAILY BASIS, AT A MINIMUM, THE CONTRACTOR SHALL INSPECT AND MAINTAIN SESC MEASURES ONCE A WEEK AND AFTER RAIN EVENTS.
11. THE CONTRACTOR SHALL CORRECT NON–CONFORMING SESC MEASURES WITHIN 24 HOURS, IF WATERS OF THE STATE ARE BEING IMPACTED OR WITHIN 48 HOURS FOR ROUTINE MAINTENANCE ITEMS. OTHER SESC MAINTENANCE SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NEVER MORE THAN FIVE (5) DAYS AFTER DETECTION.
12. THE CONTRACTOR SHALL COMPLETE PERMANENT SOIL EROSION CONTROL MEASURES FOR ANY DISTURBED LAND AREA WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. THE CONTRACTOR SHALL MAINTAIN TEMPORARY CONTROL MEASURES UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IN PLACE AND THE AREA IS STABILIZED.
13. THE CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER PERMANENT SOIL EROSION MEASURES ARE IN PLACE AND THE AREA IS STABILIZED. CARE SHALL BE TAKEN DURING REMOVAL TO PREVENT SOIL EROSION AND SEDIMENTATION.
14. AFTER THE COMPLETION OF THE PROJECT, PERMANENT SESC MEASURES WILL BE MAINTAINED BY THE PROPERTY OWNER.

EXIST. SOIL EROSION PERMIT

THERE IS AN EXISTING SOIL EROSION PERMIT THAT WAS PULLED FOR THE PREVIOUS PHASE OF CONSTRUCTION THAT WILL BE EXTENDED FOR THE PROPOSED SITE IMPROVEMENTS. ANY MAINTENANCE/REMOVAL OF THE EXISTING SOIL EROSION MEASURES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AWARDED THIS PROJECT.

STREET CLEANING SCHEDULE (MINIMUM REQUIREMENT)

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
SCRAPE STREETS	X	X	X	X	X	X	X
SWEEP STREETS				X			

SESC SEQUENCE

	2026			2027								
CONSTRUCTION EVENTS	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
INSTALL TEMPORARY SOIL EROSION MEASURES			–									
UTILITY ABANDONMENT			–	–	–	–	–	–	–	–	–	
WATER MAIN AND SANITARY SEWER INSTALLATION			–	–	–	–	–	–	–	–	–	
INSTALL LANDSCAPING / SEED & MULCH										–	–	
REMOVE SOIL EROSION CONTROL ITEMS												–

SESC LEGEND

- INDICATES SILT SACK OR EQUAL ON EXISTING DRAINAGE STRUCTURE
- INDICATES LIMITS OF SOIL DISTURBANCE
- INDICATES SILT FENCE

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE, GUY POLE, GUY WIRE — EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

DATE	REVIEW
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

SOIL EROSION & SEDIMENTATION CONTROL PLAN

PROJECT NO.	472231(KIM)
INDEX	–
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C2

AB INSTALLED WATER MAIN PIPE

ALL EXISTING HPDE WATER MAIN PIPING INSTALLED DURING THE PREVIOUS PHASE OF CONSTRUCTION MUST BE PRESSURE TESTED BY THE CONTRACTOR USING CURRENT AWWA TESTING STANDARDS. IN THE EVENT THE PIPE DOES NOT PASS THE TEST, THE CONTRACTOR SHALL LOCATE THE AREA OF WHERE THE FAILURE OCCURRED AND REPAIR THE EXISTING PIPE JOINT AND/OR FITTING. REPAIRS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR EACH JOINT REPAIR. ALL TESTED/APPROVED PIPING/FITTINGS WILL BE INCLUDED OVERALL WARRANTY BY THE CONTRACTORS.

MATCHLINE SHEET C12

MATCHLINE C4

MATCHLINE SHEET C7

ABANDON EX. WATER MAIN

INSTALL 8" X 8" HDPE TEE

INSTALL 8" HDPE DR11 W.M.

EX. ABOVE GROUND STEAM PIPES

ABANDON VALVE AND REMOVE BOX

INSTALL 10" HDPE DR11 WATER MAIN

EX. STEAM ABOVE GROUND STEAM PIPES

STOP BOX RIM 909.95

ABANDON EX. POST INDICATOR VALVES

ABANDON EX. WATER MAIN

INSTALL 10" HYDRO-STOP/INSTA-VALVE 250 INSERTION VALVE. (NIOT-OWNER FURNISHED) (OR APPROVED EQUAL) CONNECTION ALONG EX. 10" WATER MAIN TO PROVIDE ISOLATION WITHOUT SHUTTING DOWN THE EXIST. WATER MAIN.

EXIST. BORING PIT

INSTALL IN-LINE FLUSHING VALVE

LIMITS OF AS BUILT WATER MAIN

INSTALL 10"X8" REDUCER

INSTALL 10" X 10" HDPE TEE

CONTRACTOR TO FIELD INVESTIGATE TO LOCATE EXISTING WATER MAIN AND VERIFY EXISTING PIPING/CONNECTIONS AND DETERMINE BEST LOCATION FOR PROPOSED WATER STOP VALVE.

REMOVE EX. POST INDICATOR VALVES AND BOLLARDS

INSTALL BENDS AS NEEDED TO MEET ALIGNMENT

CUT / CAP TERMINUS OF EX. PIPE (TYP)

CONNECT TO EXISTING WELL/PUMP HOUSE PLUMBING USING REQUIRED FITTINGS. CONTRACTOR TO FIELD INVESTIGATE TO DETERMINE LOCATION AND MATERIALS FOR CONNECTIONS. CONTRACTOR TO SCHEDULE AND COORDINATE TEMPORARY SHUT DOWN AND CONNECTION TO NEW MAIN WITH THE ENGINEER / FACILITY A MINIMUM OF 7 DAYS IN ADVANCE.

EX. WELL HOUSE #1

EX. WELL/PUMP HOUSE

6" D.I. WATER MAIN

EX. WELL

INSTALL 4" HDPE DR11 SANITARY SEWER FORCE MAIN

EXIST. BORING PIT

INSTALL AIR RELEASE VALVE/SANITARY SEWER CLEANOUT (DETAIL ON SHEET C22)

EX. WELL HOUSE #2

INSTALL 4" HDPE DR11 SANITARY SEWER FORCE MAIN

U.G. CABLE (PER PAINT MARKING TYP)

CONCRETE

LIMITS OF CYGNET POND

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION,

EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

LEGEND - AS-BUILT WATER MAIN

(AB) AS-BUILT LABELING

AS-BUILT WATER MAIN

N

W E

S

SCALE: 1" = 30'

30 15 0 15 30 45

NFE PROJECT NO. K648-06

46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NF ENGINEERS

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

PIPE ABANDONMENT

ANY UNCOVERED OR CUT WATER / SEWER LINES TO BE ABANDONED IN PLACE SHALL BE CAPPED OR BULKHEADED PRIOR TO BACKFILL (TYP. FOR PROJECT).

WATERMAIN STRUCTURE SCHEDULE

(AB) 4 PR. 8" GATE VALVE IN BOX FG 910.24

(AB) 5 PR. 8" GATE VALVE IN BOX FG 910.13

1 PR. 10" GATE VALVE IN BOX FG 910.85

2 PR. 10" GATE VALVE IN BOX FG 910.83

3 PR. 8" GATE VALVE IN BOX FG 910.87

1A PR. 10" HYDRO-STOP/INSTA-VALVE 250 IN BOX FG 911.60

SANITARY STRUCTURE SCHEDULE

13 PR. AIR RELEASE VALVE IN MANHOLE
6' DIA. MANHOLE
FG 911.65
4" E. T/P 906.15
4" W. T/P 906.15

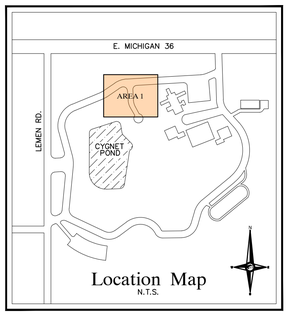
14 PR. FLUSHING VALVE IN MANHOLE
7' DIA. MANHOLE
FG 904.04
4" SE. T/P 898.54
4" NW. T/P 898.54

CROSSING SCHEDULE

A FG. 909.95±
EX. 6" DI WTR B/P APPROX. 903.90
PR. 4" SAN T/P 902.40

B FG. 910.00±
EX. UNDERGROUND ELECTRICAL
PR. 4" SAN T/P 903.68

C FG. 910.68±
EX. 6" DI WTR B/P APPROX. 905.18
PR. 4" SAN T/P 903.68



LEGEND

- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER
- PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	REVIEW
08-15-2024	Phase 500 50%
12-05-2024	Phase 500 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents
11-06-2026	Addendum #3

PROJECT DESCRIPTION

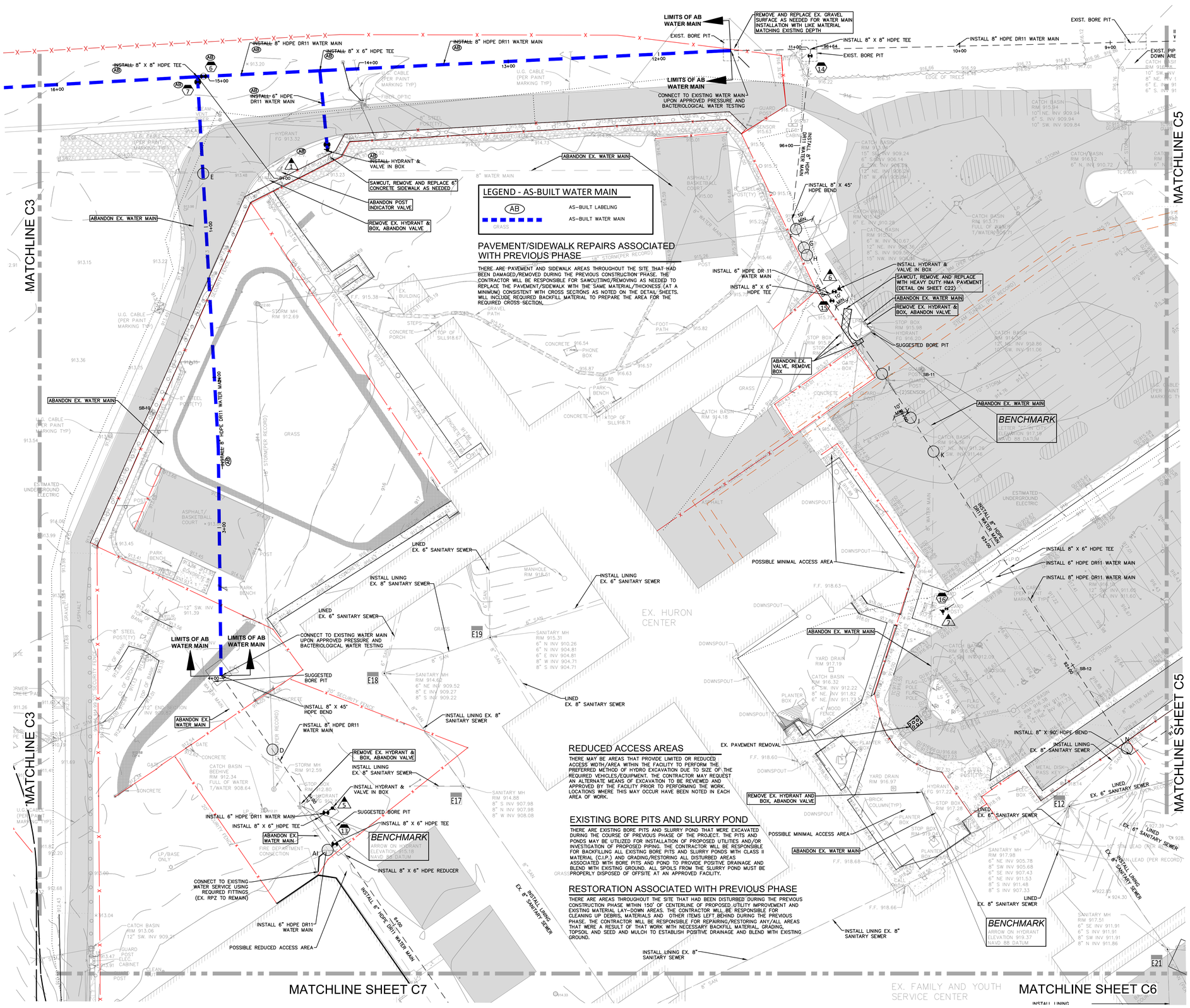
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY

WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN AREA 1

PROJECT NO.	472/23135.KMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C3



N
W KNF E
S

SCALE: 1" = 30'
30 15 0 15 30 45

BUILDING CONNECTIONS

CONTRACTORS SHALL INVESTIGATE THE INTERIOR PLUMBING TO VERIFY EXACT LOCATIONS AND TYPE OF MATERIALS TO ALLOW FOR PROPER EXTERIOR RECONNECTION OF NEW MAINS AT EACH PROPOSED REFEED. THIS EFFORT SHALL BE INCLUDED IN THE BID FEES.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

WATER STRUCTURE SCHEDULE

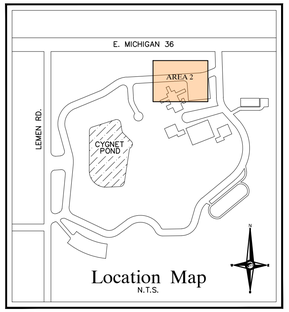
- AB 6 — PR. 6" GATE VALVE IN BOX, FG 913.63
- AB 7 — PR. 6" GATE VALVE IN BOX, FG 913.72
- 13 — PR. 6" GATE VALVE IN BOX, FG 914.75
- 14 — PR. 8" GATE VALVE IN BOX, FG 916.46
- 15 — PR. 8" GATE VALVE IN BOX, FG 915.90
- 16 — PR. 6" GATE VALVE, FG 917.80
- 17 — PR. 8" GATE VALVE IN BOX, FG 917.83
- AB 1 — PR. HYDRANT & VALVE IN BOX, FG 914.90
- 5 — PR. HYDRANT & VALVE IN BOX, FG 913.47
- 6 — PR. HYDRANT & VALVE IN BOX, FG 916.05
- 7 — PR. HYDRANT & VALVE IN BOX, FG 917.90

CROSSING SCHEDULE

- D — FG. 913.31±; EX. 18" STORM B/P FIELD INVESTIGATE; PR. 8" WATER T/P 907.80
- E — FG. 914.00±; EX. 12" WATER B/P APPROX. 908.50; PR. 8" WATER T/P 907.00
- F — FG. 914.80±; EX. 18" STORM B/P 908.56 (V.I.F.); PR. 8" WATER T/P 907.06
- G — FG. 914.80±; EX. 6" STORM B/P 908.80 (V.I.F.); PR. 8" WATER T/P 907.30
- H — FG. 915.49±; PR. 8" WATER B/P 909.39; EX. 6" STORM T/P 906.70 (V.I.F.)
- I — FG. 915.35±; EX. STEAM TUNNEL B/P 909.35 (V.I.F.); PR. 8" WATER T/P 907.32
- J — FG. 914.47±; EX. 10" STORM B/P 911.08; PR. 8" WATER T/P 907.32
- K — FG. 914.42±; EX. 8" WATER B/P 908.82; PR. 8" WATER T/P 907.32
- N — FG. 918.33±; PR. 8" WATER B/P 912.00; EX. 6" SAN T/P 907.58

SANITARY STRUCTURE SCHEDULE

- E12 — EX. SANITARY MANHOLE, RIM 917.98; 8" NE. INV. 905.78; 8" SW. INV. 905.68; 6" SE. INV. 907.43; 6" NE. INV. 911.53; 8" S. INV. 911.48; 8" S. INV. 907.33
- E17 — EX. SANITARY MANHOLE, RIM 914.88; 10" N. INV. 907.98; 10" E. INV. 909.25; 8" W. INV. 908.08
- E18 — EX. SANITARY MANHOLE, RIM 914.62; 6" NE. INV. 909.52; 8" E. INV. 909.27; 8" S. INV. 909.22
- E19 — EX. SANITARY MANHOLE, RIM 915.31; 6" N. INV. 910.36; 6" N. INV. 904.81; 10" W. INV. 904.81; 10" W. INV. 904.71; 10" S INV. 904.71



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE, HYDRANT, GATE VALVE — PR. SANITARY SEWER
- PR. WATER MAIN
- INLET, G.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

NFE PROJECT NO. K648-06

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

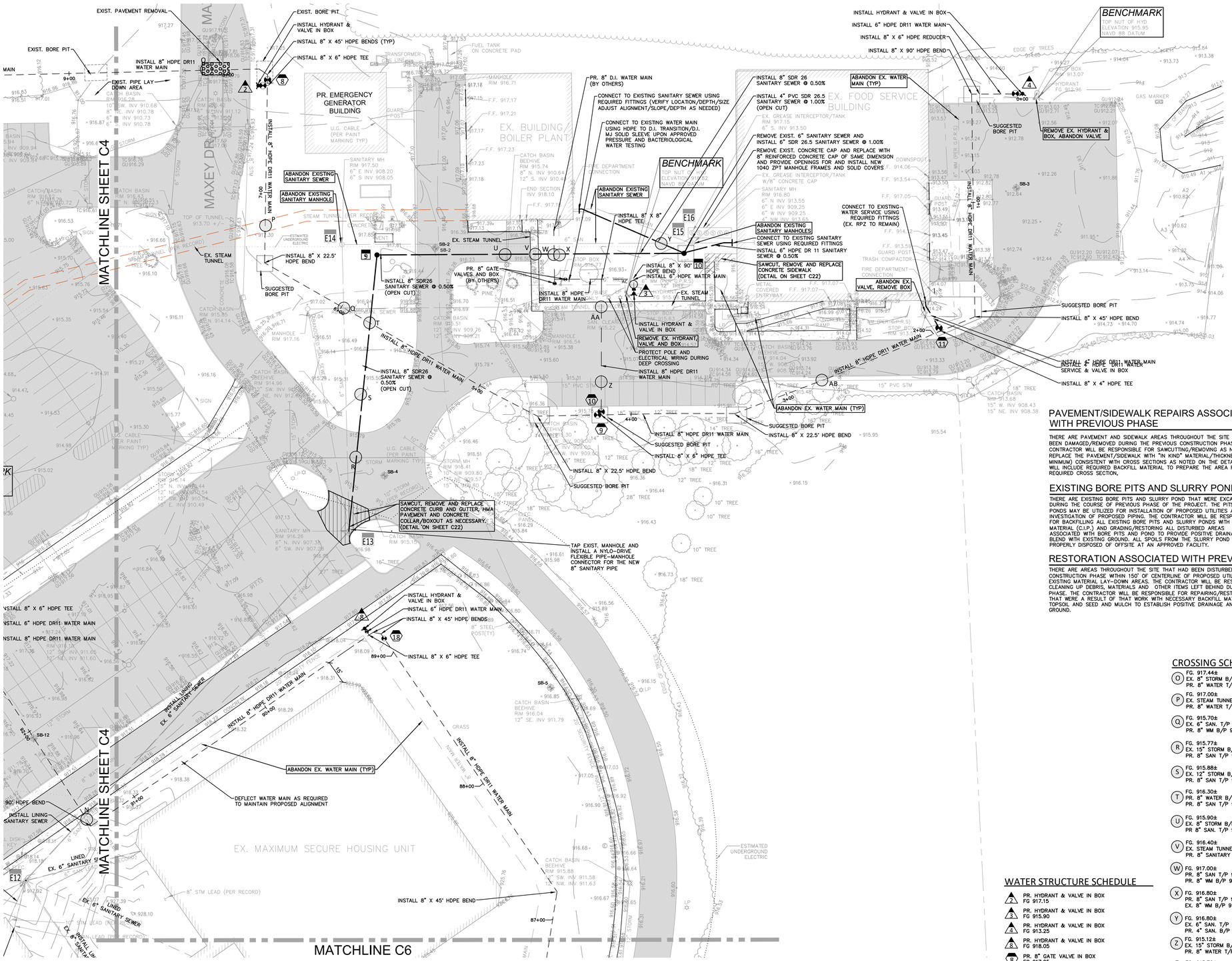
DATE	REVIEW
08-15-2024	Phase 500 50%
12-05-2024	Phase 500 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents
11-06-2026	Addendum #3

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN
AREA 2

PROJECT NO.	47252150-XMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C4



N

W E

S

SCALE:
1" = 30'
30 15 0 15 30 45

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

11-06-2026	Addendum #3	
10-09-2026	Bid Documents	
10-05-2026	EGLE WM AB Resubmit	
12-01-2025	EGLE WM As-Built	
12-05-2024	Phase 900 90%	
08-15-2024	Phase 900 50%	
DATE	REVIEW	

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN
AREA 3

PROJECT NO.	472/2125.KMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
J/C/ENG BY	SWS

C5

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

BUILDING CONNECTIONS

CONTRACTORS SHALL INVESTIGATE THE INTERIOR PLUMBING TO VERIFY EXACT LOCATIONS AND TYPE OF MATERIALS TO ALLOW FOR PROPER EXTERIOR RECONNECTION OF NEW MAINS AT EACH PROPOSED REFEED. THIS EFFORT SHALL BE INCLUDED IN THE BID FEES.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

SANITARY STRUCTURE SCHEDULE

- 13 EX. SANITARY MANHOLE RIM 916.26 EX. 6" SW. INV. 907.28 EX. 8" NW. INV. 907.38 8" NE. INV. 907.38 8" SW. INV. 907.28
- 14 EX. SANITARY MANHOLE RIM 917.50 6" E. INV. 908.20 6" S. INV. 908.05
- 15 EX. SANITARY MANHOLE RIM 916.80 6" N. INV. 913.55 6" E. INV. 909.25 6" W. INV. 909.25 4" NW. INV. 913.65 +/-
- 16 EX. SANITARY MANHOLE RIM 917.15 6" S. INV. 913.50
- 9 PR. 4' SANITARY MANHOLE RIM 917.65 8" S. INV. 908.24 8" E. INV. 908.24
- 10 PR. 4' SANITARY MANHOLE RIM 916.60 8" W. INV. 909.20 8" E. INV. 909.30 6" N. INV. 913.50 4" NW. INV. 911.20

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH "IN KIND" MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION.

EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

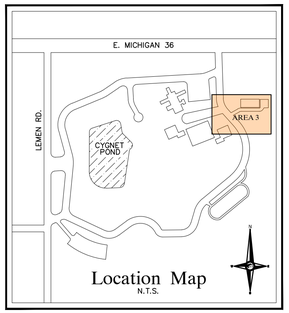
THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

WATER STRUCTURE SCHEDULE

- 2 PR. HYDRANT & VALVE IN BOX FG 917.15
- 3 PR. HYDRANT & VALVE IN BOX FG 915.90
- 4 PR. HYDRANT & VALVE IN BOX FG 913.25
- 5 PR. HYDRANT & VALVE IN BOX FG 918.05
- 8 PR. 8" GATE VALVE IN BOX FG 917.05
- 9 PR. 8" GATE VALVE IN BOX FG 916.00
- 10 PR. 8" GATE VALVE IN BOX FG 916.00
- 11 PR. 4" GATE VALVE IN BOX FG 913.90
- 18 PR. 8" GATE VALVE IN BOX FG 918.00

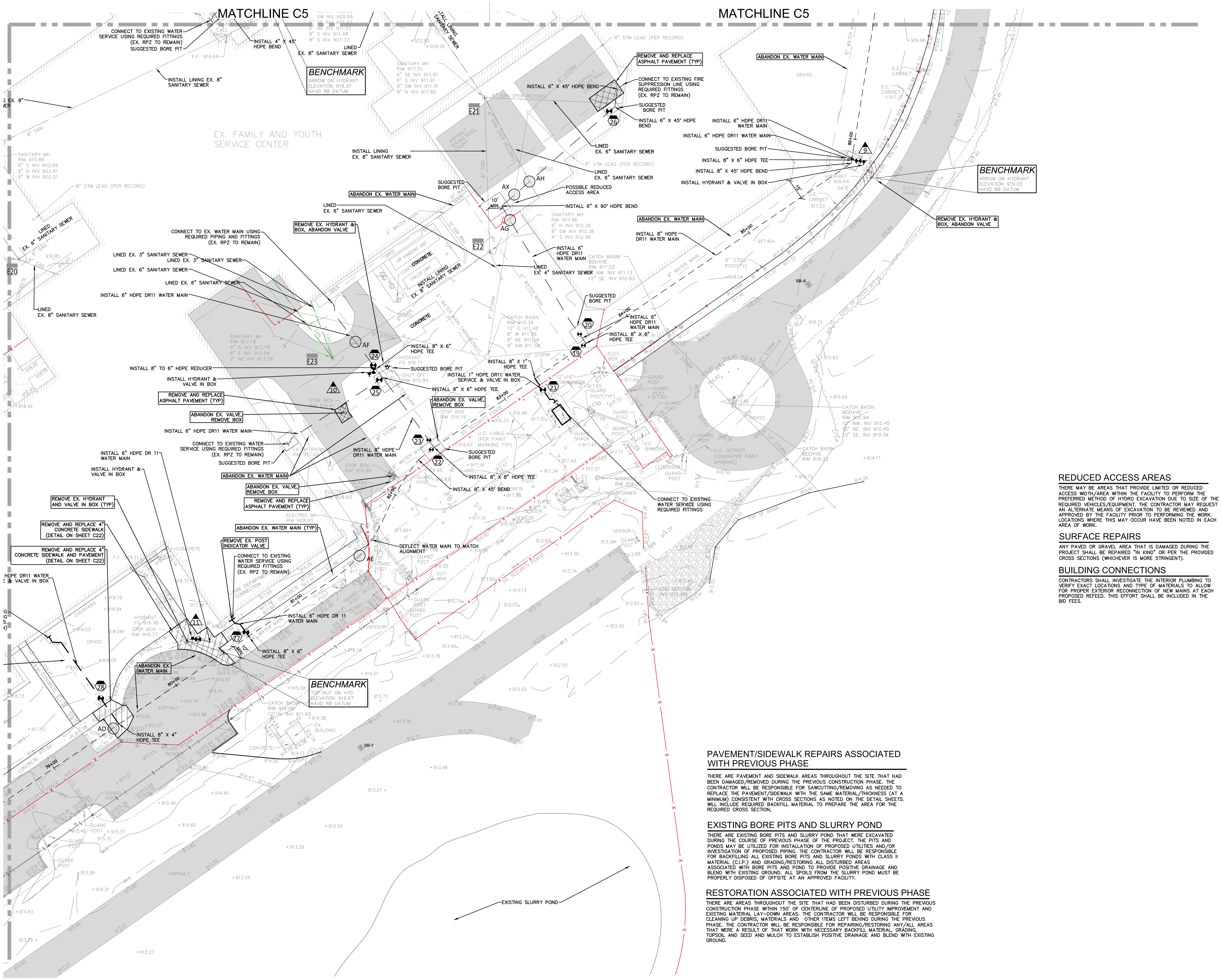
CROSSING SCHEDULE

- O FG. 917.44± EX. 8" STORM B/P 911.12 PR. 8" WATER T/P 909.62
- P FG. 917.00± EX. STEAM TUNNEL B/P APPROX. 908.70 PR. 8" WATER T/P 907.80
- Q FG. 915.70± EX. 6" SAN. T/P 908.50 PR. 8" WM B/P 910.00
- R FG. 915.77± EX. 15" STORM B/P APPROX. 909.97 PR. 8" SAN T/P 908.30
- S FG. 915.88± EX. 12" STORM B/P APPROX. 912.26 PR. 8" SAN T/P 908.50
- T FG. 916.30± PR. 8" WATER B/P APPROX. 910.25 PR. 8" SAN T/P 908.72
- U FG. 915.90± EX. 8" STORM B/P 910.50 PR 8" SAN. T/P 909.34
- V FG. 916.40± EX. STEAM TUNNEL B/T APPROX. 910.90 (V.I.F.) PR. 8" SANITARY T/P 909.34
- W FG. 917.00± PR. 8" SAN T/P 909.40 PR. 8" WM B/P 911.10
- X FG. 916.80± PR. 8" SAN T/P 909.42 EX. 8" WM B/P 911.00
- Y FG. 916.80± EX. 6" SAN. T/P 909.15 PR. 4" SAN. B/P 913.75 (V.I.F.)
- Z FG. 915.12± EX. 15" STORM B/P 908.68 PR. 8" WATER T/P 907.15
- AA FG. 915.70± EX. STEAM TUNNEL B/P APPROX. 909.70 (V.I.F.) PR. 6" WATER T/P 908.10
- AB FG. 914.53± EX. 15" STORM B/P 908.65 PR. 8" WATER T/P 907.15
- AC FG. 915.70 EX. 6" WATER B/P 909.80 PR. 6" WATER T/P 908.80



LEGEND

- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER
- PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE



REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

BUILDING CONNECTIONS

CONTRACTORS SHALL INVESTIGATE THE INTERIOR PLUMBING TO VERIFY EXACT LOCATIONS AND TYPE OF MATERIALS TO ALLOW FOR PROPER EXTERIOR RECONNECTION OF NEW MAINS AT EACH PROPOSED REFEED. THIS EFFORT SHALL BE INCLUDED IN THE BID FEES.

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION,

EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

SCALE: 1" = 30'

30 15 0 15 30 45

WATER STRUCTURE SCHEDULE

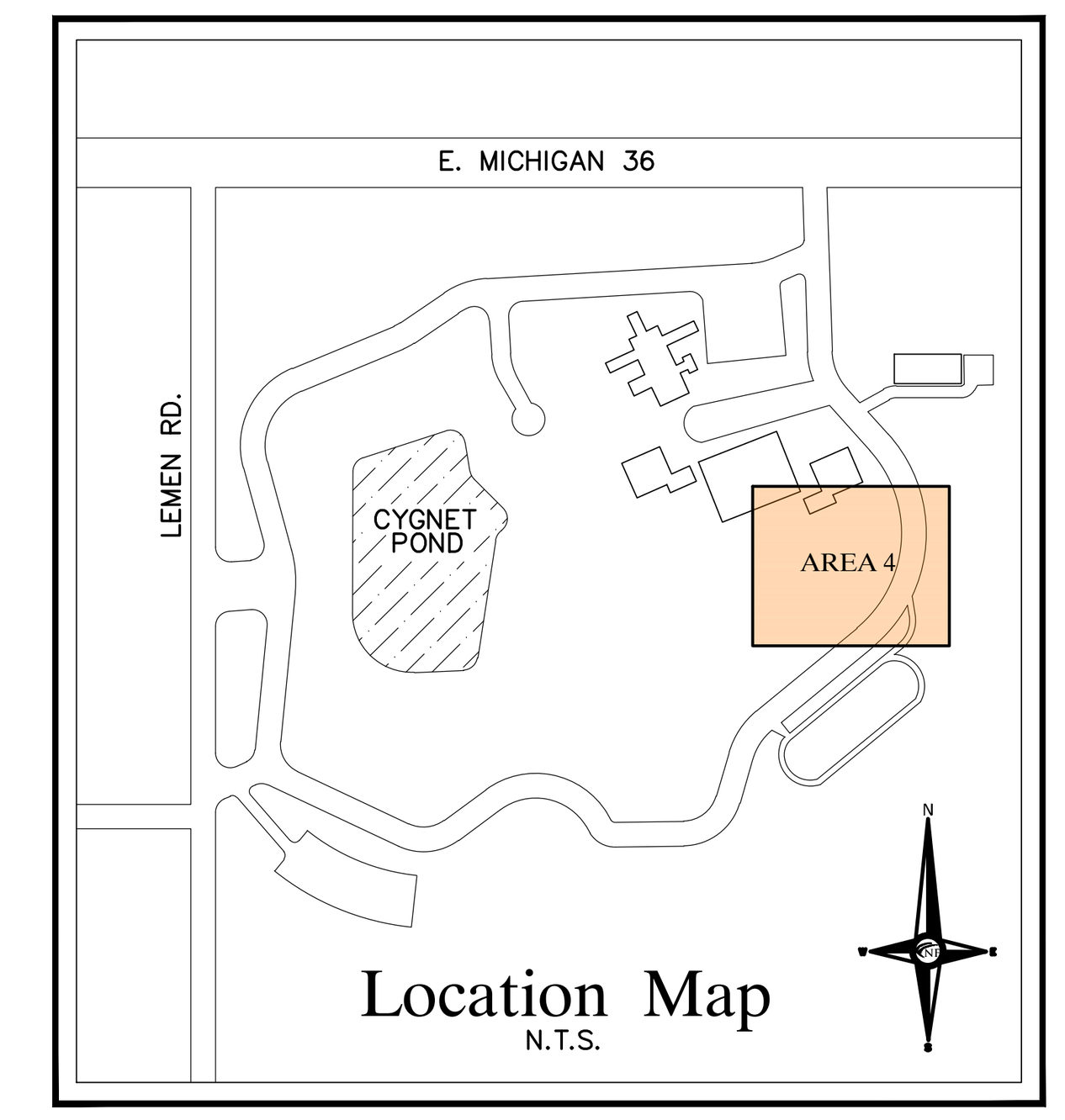
9	PR. HYDRANT & VALVE IN BOX FG 917.14
10	PR. HYDRANT & VALVE IN BOX FG 916.67
11	PR. HYDRANT & VALVE IN BOX FG 917.14
19	PR. 8" GATE VALVE IN BOX FG 917.40
20	PR. 6" GATE VALVE IN BOX FG 917.42
21	PR. 1" GATE VALVE IN BOX FG 916.53
22	PR. 8" GATE VALVE IN BOX FG 916.37
23	PR. 8" GATE VALVE IN BOX FG 916.70
24	PR. 6" GATE VALVE IN BOX FG 916.70
25	PR. 6" GATE VALVE IN BOX FG 918.60
26	PR. 6" GATE VALVE IN BOX FG 918.79
27	PR. 6" GATE VALVE IN BOX FG 917.49
28	PR. 4" GATE VALVE IN BOX FG 915.62

CROSSING SCHEDULE

AD	FG. 915.53± EX. 8" WATER B/P 910.03 PR 8" WATER T/P 908.53
AE	FG. 917.17± EX. 8" WATER B/P 911.67 PR 8" WATER T/P 910.17
AF	FG. 917.10± EX. 8" SAN B/P 913.63 PR 8" WATER T/P 911.60
AG	FG. 918.06± EX. 8" STORM B/P 912.80 PR 8" WATER T/P 911.30
AH	FG. 917.65± EX. 8" SAN B/P 912.08 PR 8" WATER T/P 910.58
AX	FG. 917.70± EX. 8" STORM B/P V.I.F. PR 8" WATER T/P 910.58

SANITARY STRUCTURE SCHEDULE

E21	EX. SANITARY MANHOLE RIM 917.51 6" SE. INV. 911.91 6" S. INV. 911.91 8" SW. INV. 911.91 8" N. INV. 911.86
E23	EX. SANITARY MANHOLE RIM 917.19 6" N. INV. 913.79 8" E. INV. 913.74 2" N. INV. 913.79
E22	EX. SANITARY MANHOLE RIM 917.86 6" S. INV. 912.96 8" SW. INV. 912.36 8" N. INV. 912.26



LEGEND

- EXISTING SANITARY SEWER (MANHOLE)
- SAN. CLEAN OUT
- EXISTING WATER MAIN (HYDRANT, GATE VALVE)
- EXISTING STORM SEWER (MANHOLE, CATCH BASIN)
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES (UTILITY POLE, GUY POLE, GUY WIRE)
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER (C.O., MANHOLE)
- PR. WATER MAIN (HYDRANT, GATE VALVE)
- PR. STORM SEWER (INLET, C.B., MANHOLE)
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

PROJECT DESCRIPTION

SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY

WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN AREA 4

PROJECT NO.	472/23129.KMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C6

MATCHLINE C3

MATCHLINE C4

MATCHLINE C6

MATCHLINE C5

MATCHLINE C8

MATCHLINE C8

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION.

EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

SEE SHEET C21 FOR LIFT STATION PLAN AND DETAIL AND E1 AND E2 FOR RELATED CONTROL PANEL AND ELECTRICAL IMPROVEMENTS

EX. MAXIMUM SECURE HOUSING UNIT

EX. MAXY ACADEMIC CENTER

INSTALL LINING EX. 8" SANITARY SEWER

INSTALL HYDRANT & VALVE IN BOX

INSTALL 6" HDPE DR11 WATER MAIN

INSTALL 8" X 6" HDPE TEE

SUGGESTED BORE PIT

ABANDON EX. WATER MAIN

INSTALL 8" X 6" HDPE REDUCER

CONNECT TO EXISTING WATER SERVICE USING REQUIRED FITTINGS (EX. RPZ TO REMAIN)

INSTALL 6" HDPE DR11 WATER MAIN

POSSIBLE REDUCED ACCESS AREA

INSTALL 6" HDPE DR11 WATER MAIN

SUGGESTED BORE PIT

INSTALL 6" X 45° HDPE BEND

CONNECT TO EXISTING WATER SERVICE USING REQUIRED FITTINGS (EX. RPZ TO REMAIN)

INSTALL LINING EX. 10" SANITARY SEWER

INSTALL LINING EX. 8" SANITARY SEWER

LINED EX. 6" SANITARY SEWER

LINED EX. 8" SANITARY SEWER

LINED EX. 6" SANITARY SEWER

ABANDON EX. SANITARY SEWER

6" SAN LEAD (PER RECORD)

INSTALL 10" HDPE SANITARY SEWER @ 1.00%

TAP EX. SANITARY MANHOLE AND INSTALL MANHOLE BOOT CONNECTOR FOR PROPOSED PIPE SIZE. PATCH/SEAL OPENING FROM REMOVED SANITARY PIPE.

INSTALL 4" GATE VALVE WITH 12" D-BOX AND COVER

ABANDON EX. SANITARY SEWER MANHOLE

INSTALL 4" HDPE DR 11 SANITARY SEWER FORCE MAIN

PROPOSED STAINLESS STEEL CONTROL PANEL AND ASSOCIATED CONDUIT/WIRING WITH RADAR LEVEL MONITORING SENSOR. SEE ELECTRICAL PLAN FOR INFORMATION ON POWER SUPPLY TO CONTROL PANEL

ABANDON EX. EX. SANITARY SEWER

PROPOSED SANITARY SEWER LIFT STATION

INSTALL 4" HDPE DR 11 SANITARY SEWER FORCE MAIN

ABANDON EX. SANITARY SEWER

PROPOSED POWER LINES/CONDUITS FOR SERVICE TO THE PROPOSED LIFT STATION. SEE ELECTRICAL PLAN

ABANDON EX. SANITARY MANHOLE

POSSIBLE REDUCED ACCESS AREA

ABANDON EX WATER MAIN

INSTALL 4" HDPE DR11 WATER SERVICE & VALVE IN BOX

CONNECT TO EXISTING WATER SERVICE USING REQUIRED FITTINGS. (EX. RPZ TO REMAIN)

REMOVE EX. HYDRANT AND VALVE IN BOX (TYP)

REMOVE AND REPLACE 4" CONCRETE SIDEWALK (DETAIL ON SHEET C22)

REMOVE AND REPLACE 8" CONCRETE SIDEWALK AND PAVEMENT (DETAIL ON SHEET C22)

REMOVE EX. HYDRA BOX, ABANDON

INSTALL HY VALVE IN B

INSTALL WATER

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

BENCHMARK
ARROW ON HYDRANT
ELEVATION = 915.18
NAVD 88 DATUM

N

W E

S

SCALE: 1" = 30'

30 15 0 15 30 45

BUILDING CONNECTIONS

CONTRACTORS SHALL INVESTIGATE THE INTERIOR PLUMBING TO VERIFY EXACT LOCATIONS AND TYPE OF MATERIALS TO ALLOW FOR PROPER EXTERIOR RECONNECTION OF NEW MAINS AT EACH PROPOSED REFEED. THIS EFFORT SHALL BE INCLUDED IN THE BID FEES.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

WATER STRUCTURE SCHEDULE

- 5 — PR. HYDRANT & VALVE IN BOX, FG 913.47
- 13 — PR. 6" GATE VALVE IN BOX, FG 914.71
- 15 — PR. 6" GATE VALVE IN BOX, FG 915.61

CROSSING SCHEDULE

- AI — FG. 915.20±, EX. 6" WATER B/P 909.18, PR. 6" WATER T/P 907.68
- AL — FG. 911.85±, EX. 8" SAN B/P 903.08, PR. 10" SANI T/P 901.31
- AJ — FG. 904.00±, EX. 8" SAN B/P 901.04, PR. 4" SAN T/P 898.50
- AK — FG. 910.90±, EX. 15" STORM B/P 903.05 +/- (V.I.F.), PR. 10" SAN T/P 900.28

SANITARY STRUCTURE SCHEDULE

- E8 — EX. SANITARY MANHOLE, RIM 915.18, 10" SW. INV. 899.48, 10" NE. INV. 899.68
- E9 — EX. SANITARY MANHOLE, RIM 907.84, 10" SW. INV. 901.24, 10" NE. INV. 901.39
- E10 — EX. SANITARY MANHOLE, RIM 915.37, 8" N. INV. 908.47, 8" N. INV. 902.42, 8" SE. INV. 902.32, 8" SE. INV. 907.82, 10" NE. INV. 907.72, 10" NW. INV. 901.72
- E11 — EX. SANITARY MANHOLE, RIM 915.86, 10" S. INV. 902.66, 10" N. INV. 902.81, 10" W. INV. 902.51
- E17 — EX. SANITARY MANHOLE, RIM 914.88, 8" S INV 907.98, 8" N INV 907.98, 8" W INV 908.08
- E20 — EX. SANITARY MANHOLE, RIM 915.72, 10" NE. INV. 903.87, 8" E. INV. 904.12, 8" SE. INV. 905.57
- 11 — PR. 8' SANITARY MANHOLE, RIM 915.00, 10" NE. INV. 899.12, 10" 4" S. INV. 909.00, 6" SW INV 906.00 +/- (VIF)
- 12 — PR. 4" GATE VALVE AND BOX, RIM 910.10, 4" S. INV. 904.60, 4" N. INV. 904.60

LEGEND

- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER
- PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

E. MICHIGAN 36

LEMEN RD.

CYGNET POND

AREA 5

Location Map
N.T.S.

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

PROJECT DESCRIPTION

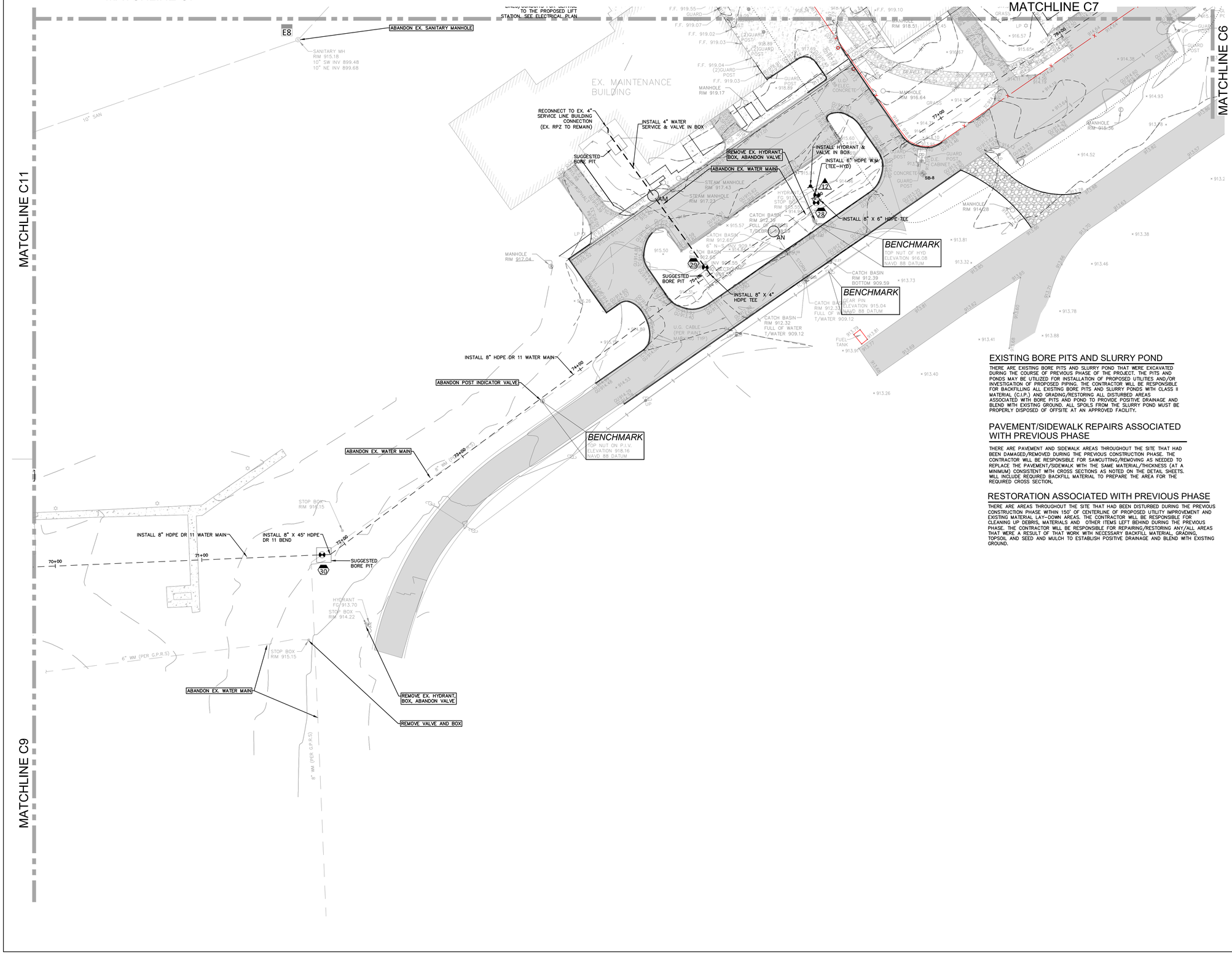
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY

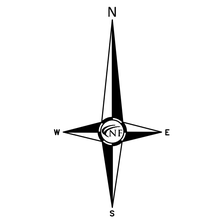
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN AREA 5

PROJECT NO.	4722213SI.KMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C7





NFE PROJECT NO. K648-06

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

BUILDING CONNECTIONS

CONTRACTORS SHALL INVESTIGATE THE INTERIOR PLUMBING TO VERIFY EXACT LOCATIONS AND TYPE OF MATERIALS TO ALLOW FOR PROPER EXTERIOR RECONNECTION OF NEW MAINS AT EACH PROPOSED REFEED. THIS EFFORT SHALL BE INCLUDED IN THE BID FEES.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

WATER STRUCTURE SCHEDULE

12 PR. HYDRANT
FG 914.68

28 PR. 8" GATE VALVE IN BOX
FG 913.71

29 PR. 8" GATE VALVE IN BOX
FG 914.20

30 PR. 8" GATE VALVE IN BOX
FG 916.27

CROSSING SCHEDULE

AM FG. 916.75±
EX. STEAM TUNNEL B/P APPROX. 911.75
PR. 4" WATER T/P 910.25

AN FG. 913.92±
EX. 6" STORM B/P 909.62
PR. 8" WATER T/P 908.12

EXISTING BORE PITS AND SLURRY POND

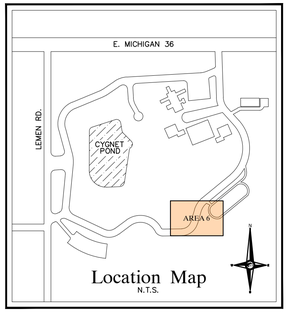
THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION,

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

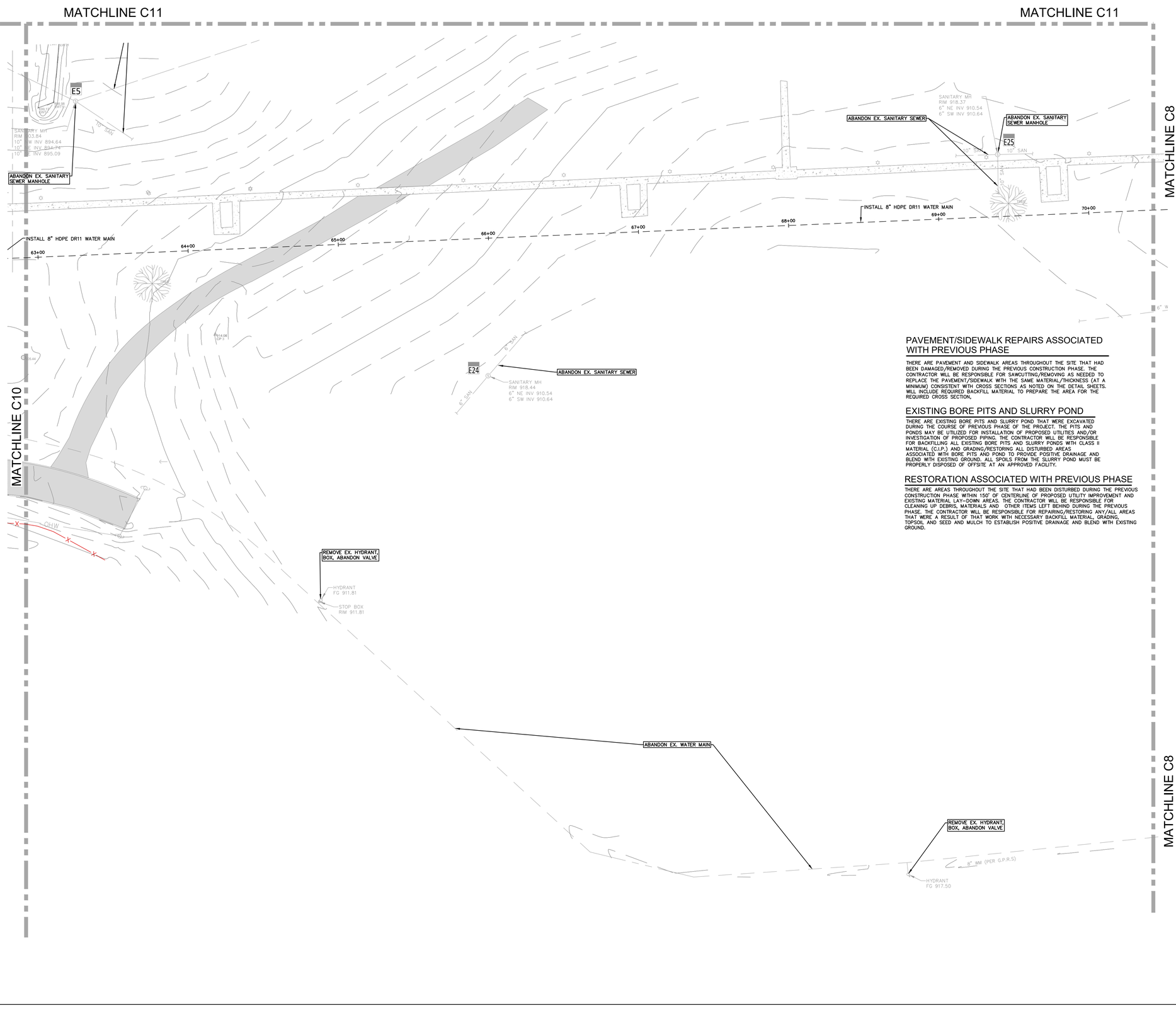
DATE	REVIEW
08-15-2024	Phase 500 50%
12-05-2024	Phase 500 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents
11-06-2026	Addendum #3

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN
AREA 6

PROJECT NO.	47223128.XMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C8



PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION.

EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

REDUCED ACCESS AREAS

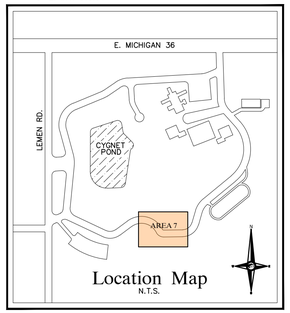
THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

SANITARY STRUCTURE SCHEDULE

E5	EX. SANITARY MANHOLE RIM 908.58 10" NW. INV. 894.64 10" NE. INV. 894.74 10" SE. INV. 895.82	E25	EX. SANITARY MANHOLE RIM 918.37 6" N. INV. 910.54 6" E. INV. 910.64
E24	EX. SANITARY MANHOLE RIM 918.44 6" N. INV. 910.54 6" E. INV. 910.64		



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

N

W E (NF) S

SCALE: 1" = 30'

30 15 0 15 30 45

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	DESCRIPTION
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

PROJECT DESCRIPTION

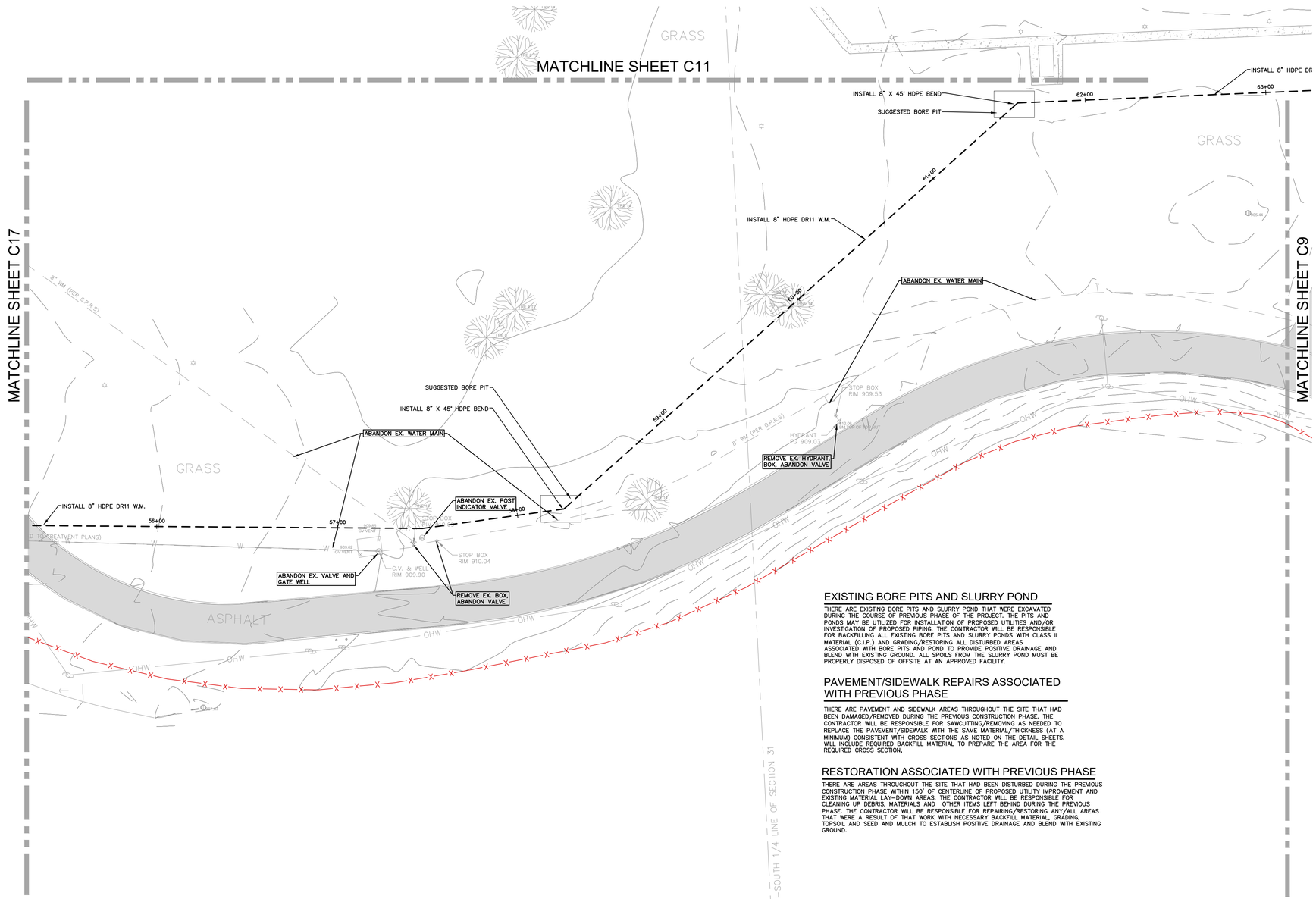
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY

WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN AREA 7

PROJECT NO.	4722/129.K0#8
INDEX	–
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C9



EXISTING BORE PITS AND SLURRY POND

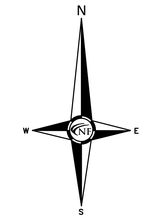
THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.



SCALE: 1" = 30'

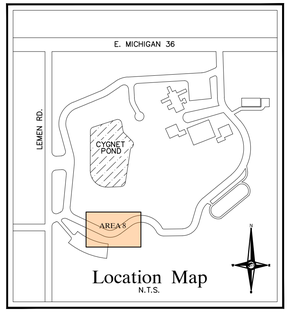
30 15 0 15 30 45

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

11-06-2026 Addendum #3

DATE	REVIEW
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%

PROJECT DESCRIPTION

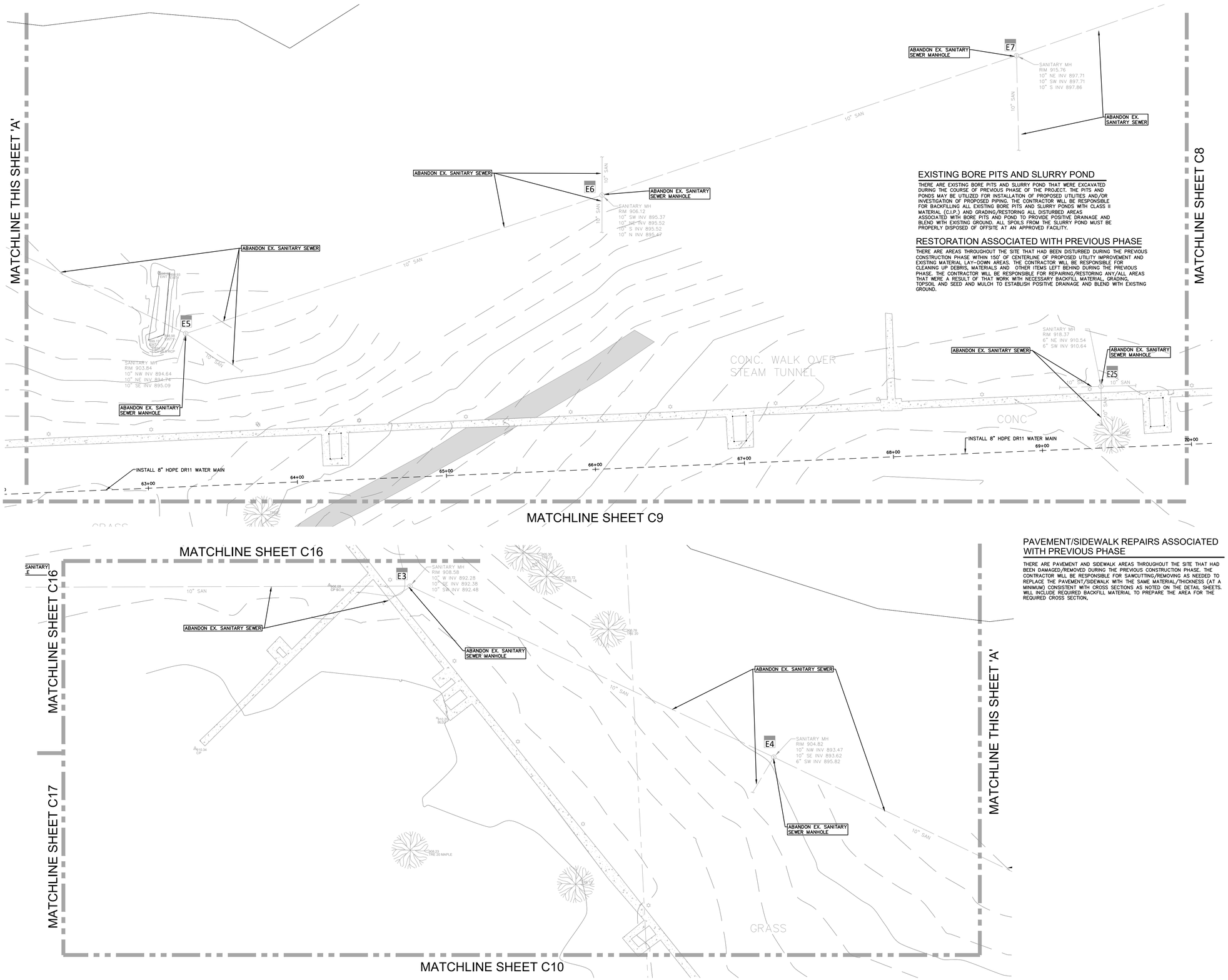
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY

WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN AREA 8

PROJECT NO.	472213\19.KMI
INDEX	–
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C10



EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

SANITARY STRUCTURE SCHEDULE

E3 EX. SANITARY MANHOLE
RIM 908.59
10" W. INV. 892.28
10" SE. INV. 892.38
10" SW. INV. 892.48

E4 EX. SANITARY MANHOLE
RIM 904.82
10" NW. INV. 893.47
10" SE. INV. 893.62
10" SW. INV. 895.82

E5 EX. SANITARY MANHOLE
RIM 908.58
10" NW. INV. 894.64
10" NE. INV. 894.74
10" SE. INV. 895.82

E6 EX. SANITARY MANHOLE
RIM 906.12
10" SW. INV. 895.37
10" NE. INV. 895.52
10" S. INV. 895.52
10" N. INV. 895.47

E7 EX. SANITARY MANHOLE
RIM 915.76
10" NE. INV. 897.71
10" SW. INV. 897.71
10" W. INV. 897.86

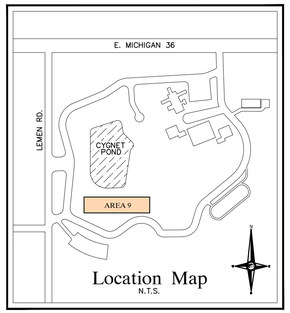
E25 EX. SANITARY MANHOLE
RIM 918.37
6" N. INV. 910.54
6" E. INV. 910.64

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION.

N
W E
S

SCALE: 1" = 30'
30 15 0 15 30 45



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT — SAN. CLEAN OUT
- GATE VALVE — EXISTING WATER MAIN
- MANHOLE — CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE — GUY POLE — GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O. — MANHOLE — PR. SANITARY SEWER
- HYDRANT — GATE VALVE — PR. WATER MAIN
- INLET — C.B. — MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

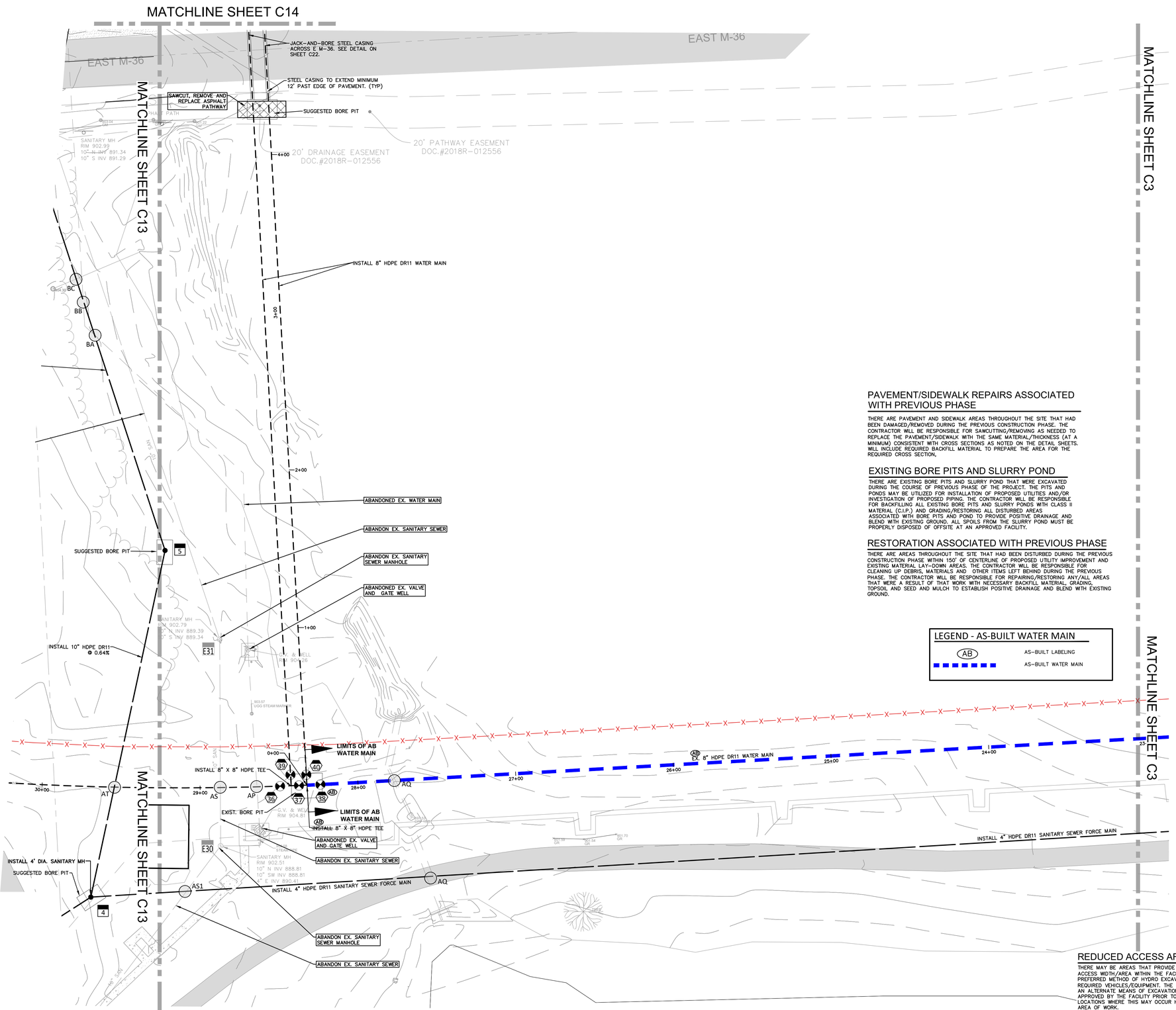
DATE	REVIEW
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 900 90%
08-15-2024	Phase 900 50%

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN
AREA 9

PROJECT NO.	47223129.XMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C11



PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION,

EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

LEGEND - AS-BUILT WATER MAIN

- (AB) — AS-BUILT LABELING
- AS-BUILT WATER MAIN

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

N

W (NF) E

S

SCALE: 1" = 30'

30 15 0 15 30 45

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

WATER STRUCTURE SCHEDULE

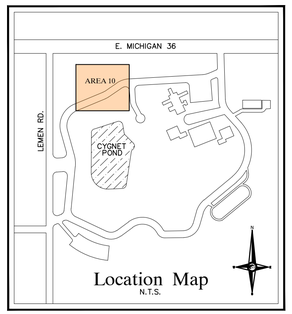
- (35) PR. 8" GATE VALVE IN BOX FG 902.80
- (37) PR. 8" GATE VALVE IN BOX FG 902.50
- (AB) (38) PR. 8" GATE VALVE IN BOX FG 901.65
- (39) PR. 8" GATE VALVE IN BOX FG 902.62
- (40) PR. 8" GATE VALVE IN BOX FG 902.62

CROSSING SCHEDULE

- (AO) FG. 904.65± PR. 8" WATER B/P 898.48 EX. 10" SAN T/P 891.00
- (AP) FG. 903.50± EX. WATER B/P 898.00 PR. 8" WATER T/P 896.50
- (AQ) FG. 899.82± PR. 8" WATER T/P 894.32 EX. STORM CULV. – FIELD INVESTIGATE
- (AR) FG. 902.70± PR. 4" SAN FORCE MAIN T/P 897.20 EX. STORM CULV. – FIELD INVESTIGATE
- (BA) FG. 903.00± EX. UNDERGROUND HEAT CONDUIT – FIELD INVESTIGATE PR. 10" SAN T/P 892.47
- (BB) FG. 903.10± EX. UNDERGROUND HEAT CONDUIT – FIELD INVESTIGATE PR. 10" SAN T/P 892.62
- (BC) FG. 903.10± EX. STORM – FIELD INVESTIGATE PR. 10" SAN T/P 892.71
- (AS) FG. 903.81± PR. 8" WATER B/P 897.64 EX. 10" SAN T/P 889.90
- (AS1) FG. 903.31± PR. 4" F.M. B/P 891.00 EX. 10" SAN T/P 889.50

SANITARY STRUCTURE SCHEDULE

- (30) EX. SANITARY MANHOLE RIM 902.51 10" N. INV. 888.81 10" SW. INV. 890.41 4" E. INV. 890.41
- (31) EX. SANITARY MANHOLE RIM 902.79 10" N. INV. 889.39 10" S. INV. 889.34
- (5) PR. 4' SANITARY MANHOLE RIM 902.37 10" N. INV. 890.64 10" S. INV. 890.64
- (4) PR. 4' SANITARY MANHOLE RIM 904.81 10" N. INV. 889.20 10" SW. INV. 889.20 4" E. INV. 890.65 W/90° BEND



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

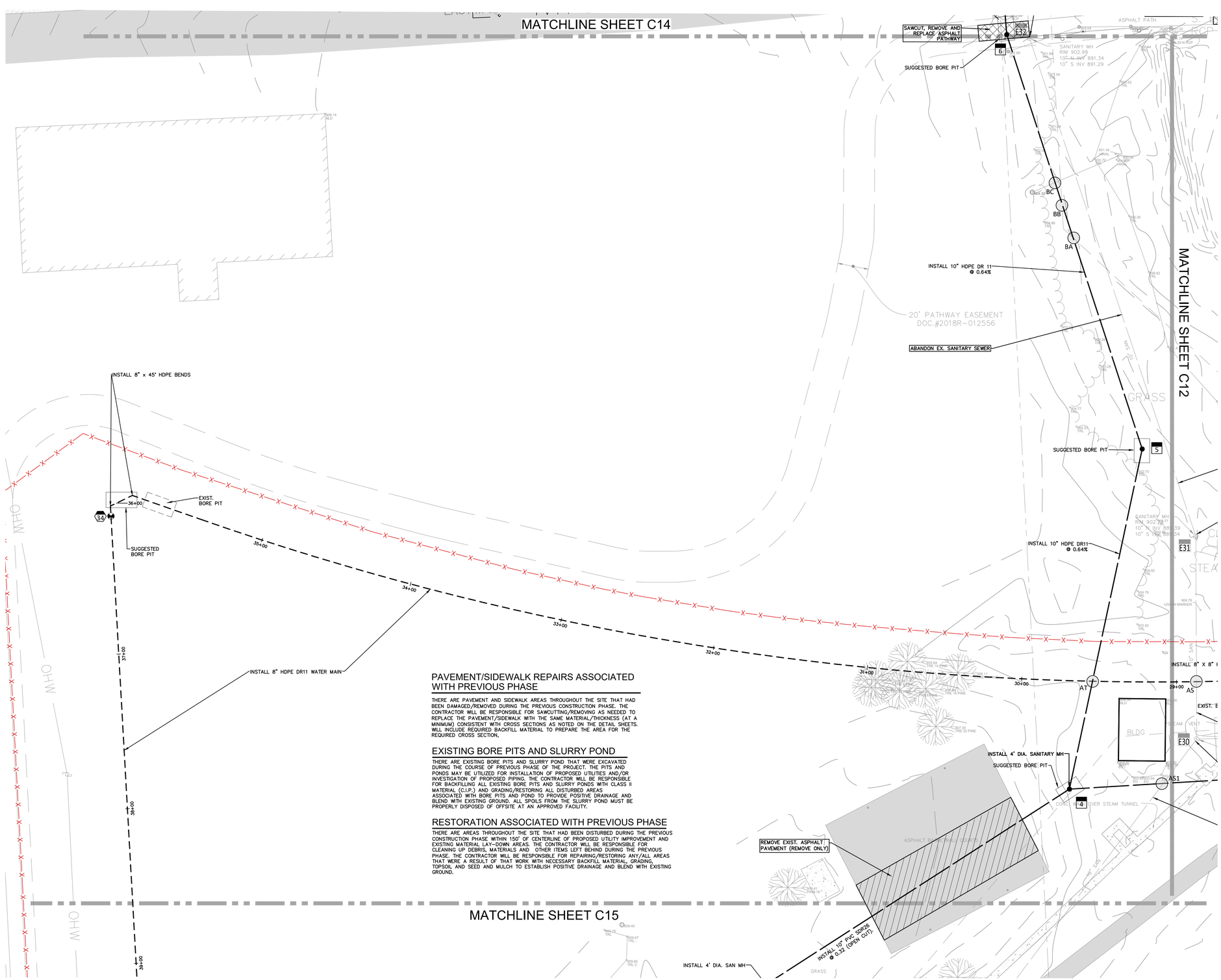
PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

IMPROVEMENT PLAN
AREA 10

PROJECT NO. - 4722329.6MM	--
INDEX	00-0000
PCA	MAW
DRAWN BY	MAW
DESIGNED BY	SWS
JC/ENG BY	

C12



PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

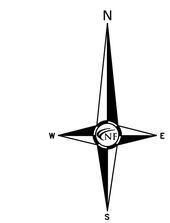
THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION.

EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.



SCALE: 1" = 30'

30 15 0 15 30 45

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

CROSSING SCHEDULE

(AT) FG. 904.65±
PR. 10" SAN T/P 891.28
PR. 8" WATER B/P 898.40

(AS) FG. 903.81±
PR. 8" WATER B/P 897.64
EX. 10" SAN T/P 889.90

(AS1) FG. 903.31±
PR. 4" F.M. B/P 891.00
EX. 10" SAN T/P 889.50

(BA) FG. 903.00±
EX. UNDERGROUND HEAT CONDUIT – FIELD INVESTIGATE
PR. 10" SAN T/P 891.57

(BB) FG. 903.10±
EX. UNDERGROUND HEAT CONDUIT – FIELD INVESTIGATE
PR. 10" SAN T/P 891.71

(BC) FG. 903.10±
EX. STORM B/P 899.70 – FIELD INVESTIGATE
PR. 10" SAN T/P 891.81

SANITARY STRUCTURE SCHEDULE

30 EX. SANITARY MANHOLE
RIM 902.51
10" N. INV. 888.81
10" SW. INV. 890.41
4" E. INV. 890.41

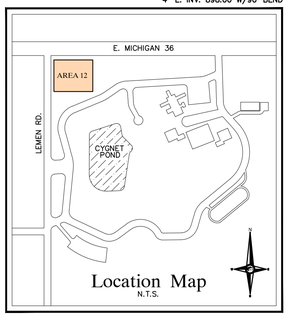
31 EX. SANITARY MANHOLE
RIM 902.79
10" N. INV. 889.39
10" S. INV. 889.34

32 EX. SANITARY MANHOLE
RIM 902.99
10" N. INV. 891.34
10" S. INV. 891.29

6 PR. 4' SANITARY MANHOLE
RIM 903.40
10" N. INV. 891.75
10" S. INV. 891.70

5 PR. 4' SANITARY MANHOLE
RIM 902.37
10" N. INV. 889.89
10" S. INV. 889.84

4 PR. 4' SANITARY MANHOLE
RIM 904.81
10" N. INV. 888.40
10" SW. INV. 888.35
4" E. INV. 898.00 W/90° BEND



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE, GUY POLE, GUY WIRE — EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O. MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

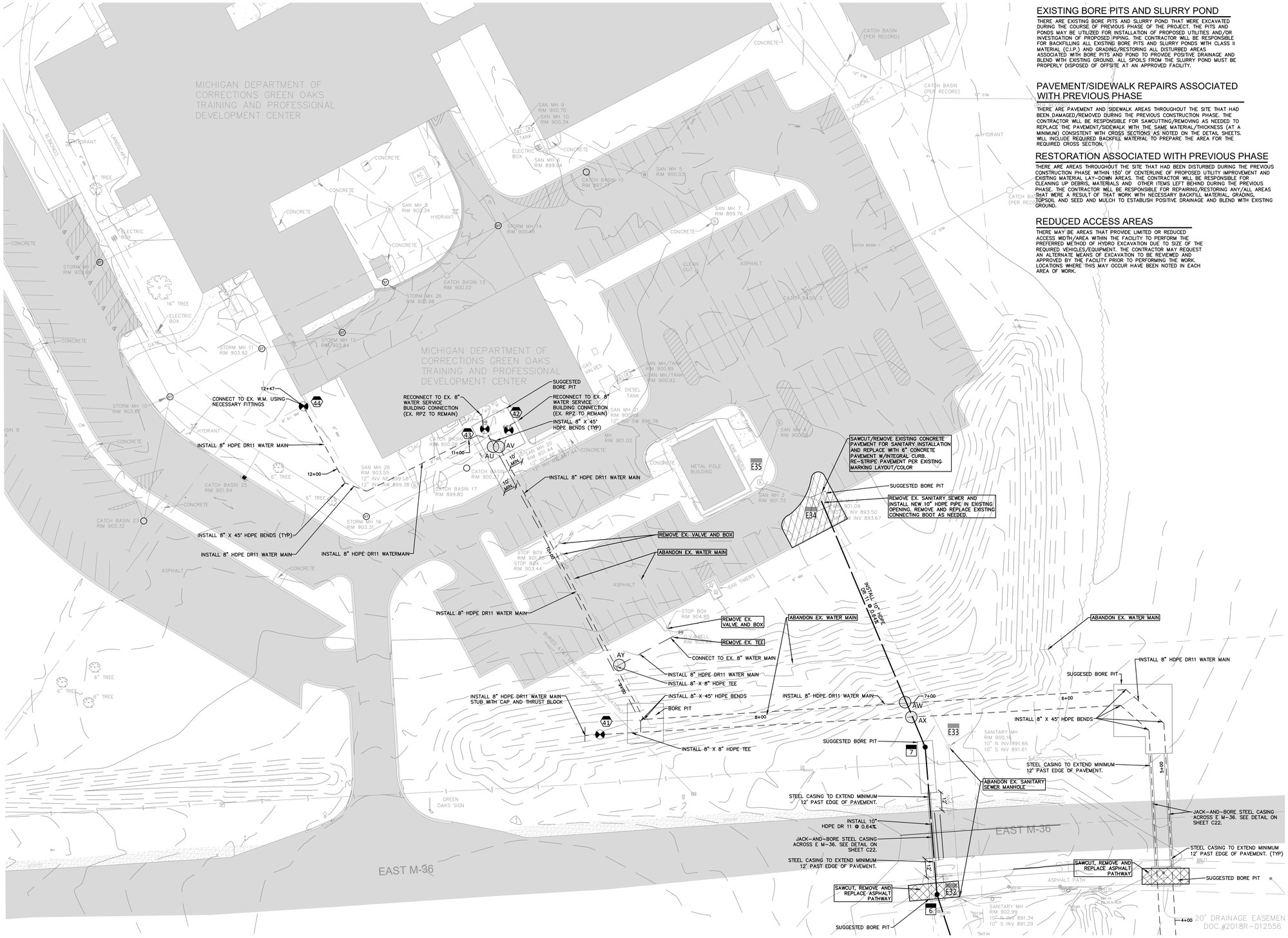
DATE	
08-15-2024	REVIEW
12-05-2024	Phase 500 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents
11-06-2026	Addendum #3

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN
AREA 11

PROJECT NO.	472231291.MAM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C13



EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

N
W E
S
SCALE: 1" = 30'
30 15 0 15 30 45

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

BUILDING CONNECTIONS

CONTRACTORS SHALL INVESTIGATE THE INTERIOR PLUMBING TO VERIFY EXACT LOCATIONS AND TYPE OF MATERIALS TO ALLOW FOR PROPER EXTERIOR RECONNECTION OF NEW MAINS AT EACH PROPOSED REFEED. THIS EFFORT SHALL BE INCLUDED IN THE BID FEES.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

WATER STRUCTURE SCHEDULE

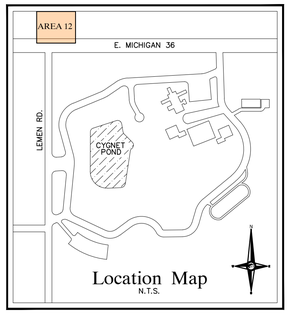
- 41 — PR. 8" GATE VALVE IN BOX, FG 913.31
- 42 — PR. 8" GATE VALVE IN BOX, FG 901.68
- 43 — PR. 8" GATE VALVE IN BOX, FG 901.68
- 44 — PR. 8" GATE VALVE IN BOX, FG 904.16

CROSSING SCHEDULE

- AU — FG. 904.65±; PR. 10" SAN B/P 899.41; PR. 8" WATER T/P 897.91
- AV — FG. 901.40±; EX. 12" SAN B/P 897.31; PR. 8" WATER T/P 895.81
- AW — FG. 905.62±; PR. 8" WATER B/P 900.12; PR. 10" SAN T/P 894.16
- AX — FG. 902.20±; PR. 8" WATER B/P 896.70; PR. 10" SAN T/P 894.10
- AY — FG. 905.80±; EX. 8" WATER B/P 899.40; PR. 8" WATER T/P 897.90

SANITARY STRUCTURE SCHEDULE

- 32 — EX. SANITARY MANHOLE, RIM 902.99, 10" N. INV. 891.34, 10" S. INV. 891.29
- 33 — EX. SANITARY MANHOLE, RIM 900.16, 10" N. INV. 891.66, 10" S. INV. 891.61
- 34 — EX. SANITARY MANHOLE, RIM 901.09, 10" S. 893.50, 10" NW 893.67
- 6 — PR. 4' SANITARY MANHOLE, RIM 903.40, 10" N. INV. 891.75, 10" S. INV. 891.70
- 7 — PR. 4' SANITARY MANHOLE, RIM 900.92, 10" NW. INV. 892.36, 10" S. INV. 892.41
- 35 — EX. SANITARY MANHOLE, RIM 901.72



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

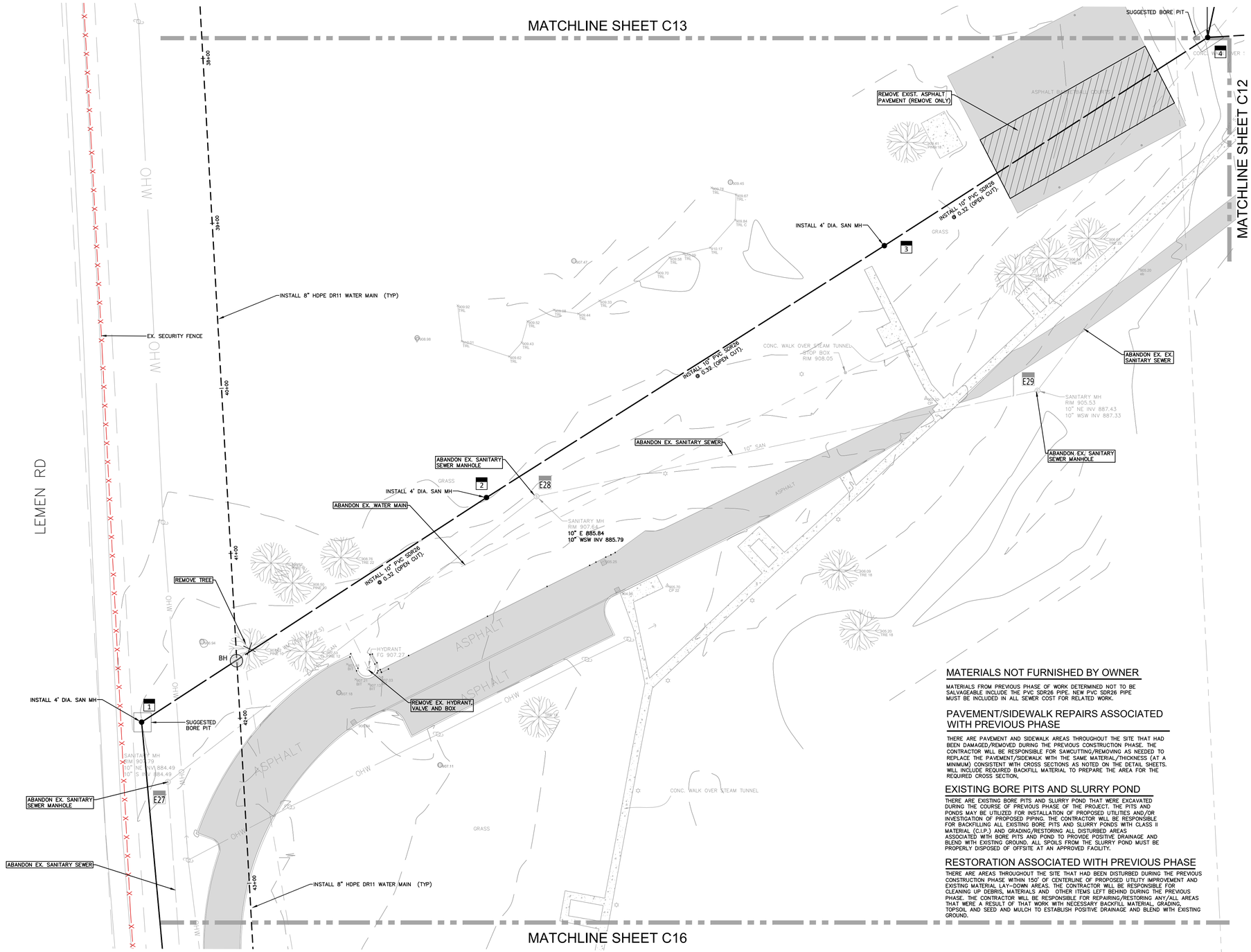
DATE	REVIEW
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN
AREA 12

PROJECT NO.	472023128.XMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C14



REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

CROSSING SCHEDULE

(BH) FG. 907.30±
PR. 8" WATER B/P 901.30
PR. 10" SAN T/P 887.20

SANITARY STRUCTURE SCHEDULE

E27 EX. SANITARY MANHOLE RIM 907.79 10" NE. INV. 884.49 10" S. INV. 884.49

E28 EX. SANITARY MANHOLE RIM 907.64 10" E. INV. 885.84 10" WSW. INV. 885.79

E29 EX. SANITARY MANHOLE RIM 905.53 10" NE. INV. 887.43 10" WSW. INV. 887.33

4 PR. 4' SANITARY MANHOLE RIM 904.81 10" N. INV. 888.40 10" SW. INV. 888.35 4" E. INV. 898.00

3 PR. 4' SANITARY MANHOLE RIM 909.46 10" NE. INV. 887.60 10" SW. INV. 887.55

2 PR. 4' SANITARY MANHOLE RIM 909.09 10" NE. INV. 886.64 10" SW. INV. 886.59

1 PR. 4' SANITARY MANHOLE RIM 908.02 10" NE. INV. 885.79 10" S. INV. 885.74

MATERIALS NOT FURNISHED BY OWNER

MATERIALS FROM PREVIOUS PHASE OF WORK DETERMINED NOT TO BE SALVAGEABLE INCLUDE THE PVC SDR26 PIPE. NEW PVC SDR26 PIPE MUST BE INCLUDED IN ALL SEWER COST FOR RELATED WORK.

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

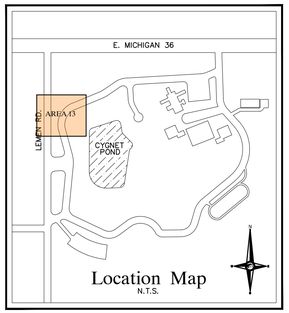
THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITHIN CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION.

EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.



LEGEND

- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER
- PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

SCALE: 1" = 30'

30 15 0 15 30 45

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	DESCRIPTION
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

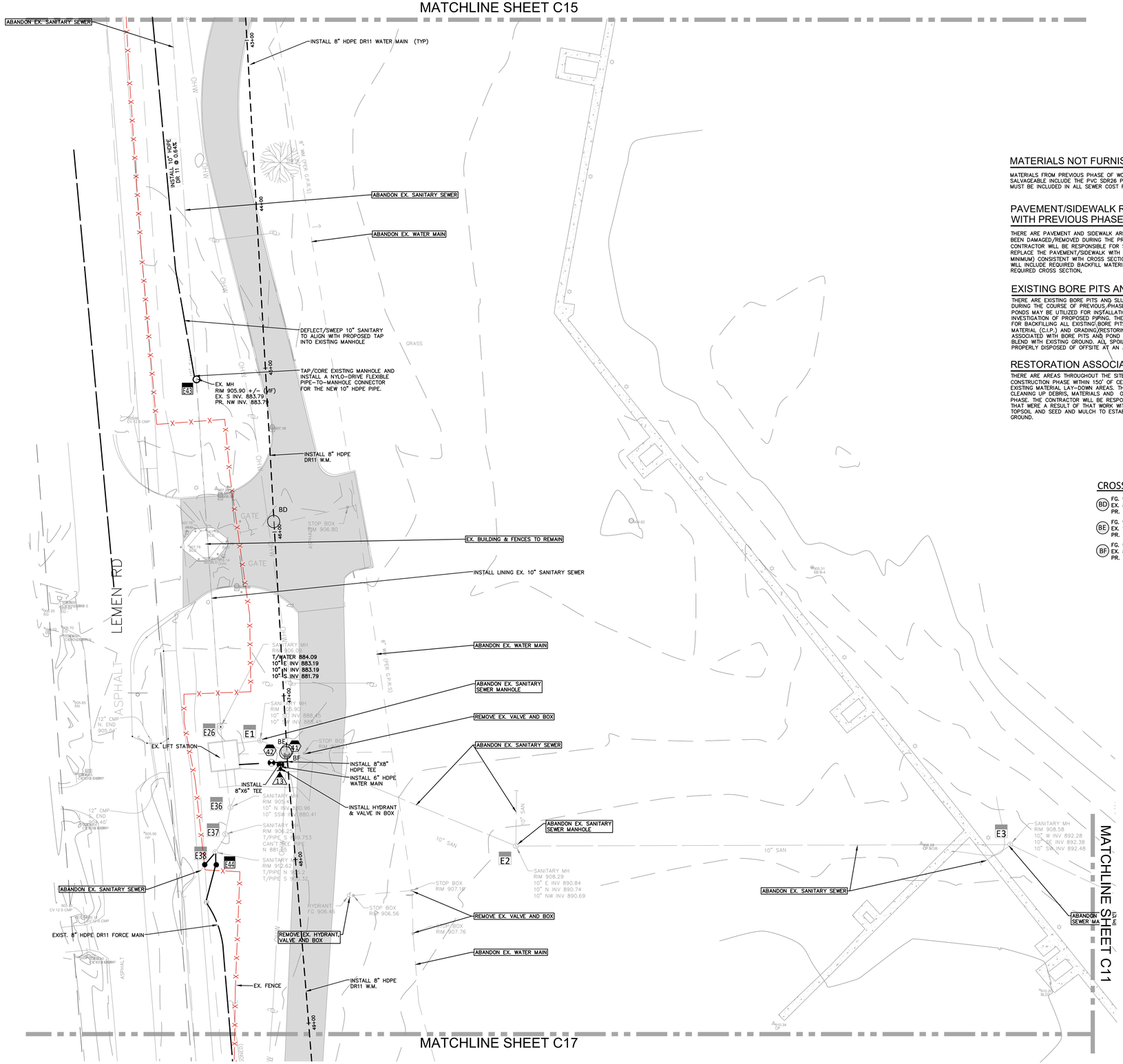
PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN
AREA 13

PROJECT NO.	472231129.AMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C15

MATCHLINE SHEET C15



MATERIALS NOT FURNISHED BY OWNER

MATERIALS FROM PREVIOUS PHASE OF WORK DETERMINED NOT TO BE SALVAGEABLE INCLUDE THE PVC SDR26 PIPE. NEW PVC SDR26 PIPE MUST BE INCLUDED IN ALL SEWER COST FOR RELATED WORK.

PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION,

EXISTING BORE PITS AND SLURRY POND

THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

CROSSING SCHEDULE

- (BD) FG. 906.50±
  EX. 8" WATER B/P 900.50
  PR. 8" WATER T/P 898.50
- (BE) FG. 906.20±
  EX. 10" SAN T/P 889.59
  PR. 8" WATER B/P 899.50
- (BF) FG. 906.20±
  EX. 8" WATER B/P 900.50
  PR. 8" WATER T/P 898.50

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

N
W (NF) E
S

SCALE:
1" = 30'
30 15 0 15 30 45

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

BUILDING CONNECTIONS

CONTRACTORS SHALL INVESTIGATE THE INTERIOR PLUMBING TO VERIFY EXACT LOCATIONS AND TYPE OF MATERIALS TO ALLOW FOR PROPER EXTERIOR RECONNECTION OF NEW MAINS AT EACH PROPOSED REFEED. THIS EFFORT SHALL BE INCLUDED IN THE BID FEES.

SURFACE REPAIRS

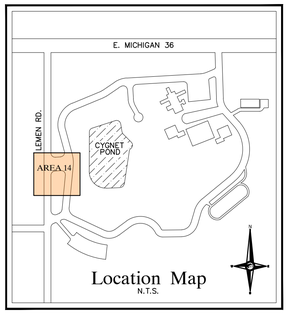
ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

WATER STRUCTURE SCHEDULE

- (41) PR. 8" GATE VALVE IN BOX
  FG 906.14
- (42) PR. 8" GATE VALVE IN BOX
  FG 906.00
- (13) PR. HYDRANT
  FG 905.97

SANITARY STRUCTURE SCHEDULE

- (E1) EX. SANITARY MANHOLE
  RIM 905.90
  10" SE. INV. 888.45
  10" SW. INV. 888.45
- (E2) EX. SANITARY MANHOLE
  RIM 908.59
  10" W. INV. 892.28
  10" SE. INV. 892.38
  10" SW. INV. 892.48
- (E26) EX. SANITARY MANHOLE
  RIM 905.41
  10" N. INV. 880.96
  10" SSW. INV. 880.41
- (E43) EX. SANITARY MANHOLE
  RIM 905.90 +/- (VIF)
  10" N. INV. 883.79
  10" SSW. INV. 883.79
- (E44) EX. SANITARY GATE VALVE IN BOX
  RIM – VIF
  8" FM INV – VIF
- (E36) EX. SANITARY MANHOLE
  RIM 905.41
  10" N. INV. 880.96
  10" SSW. INV. 880.41
- (E37) EX. SANITARY MANHOLE
  RIM 906.25
  10" S. T/P 899.75
  10" N. INV. 881.25
- (E38) EX. SANITARY MANHOLE
  RIM 912.62
  10" N. INV. 905.2
  8" S. INV. 905.32



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE, GUY POLE — EXISTING BURIED CABLES
- GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

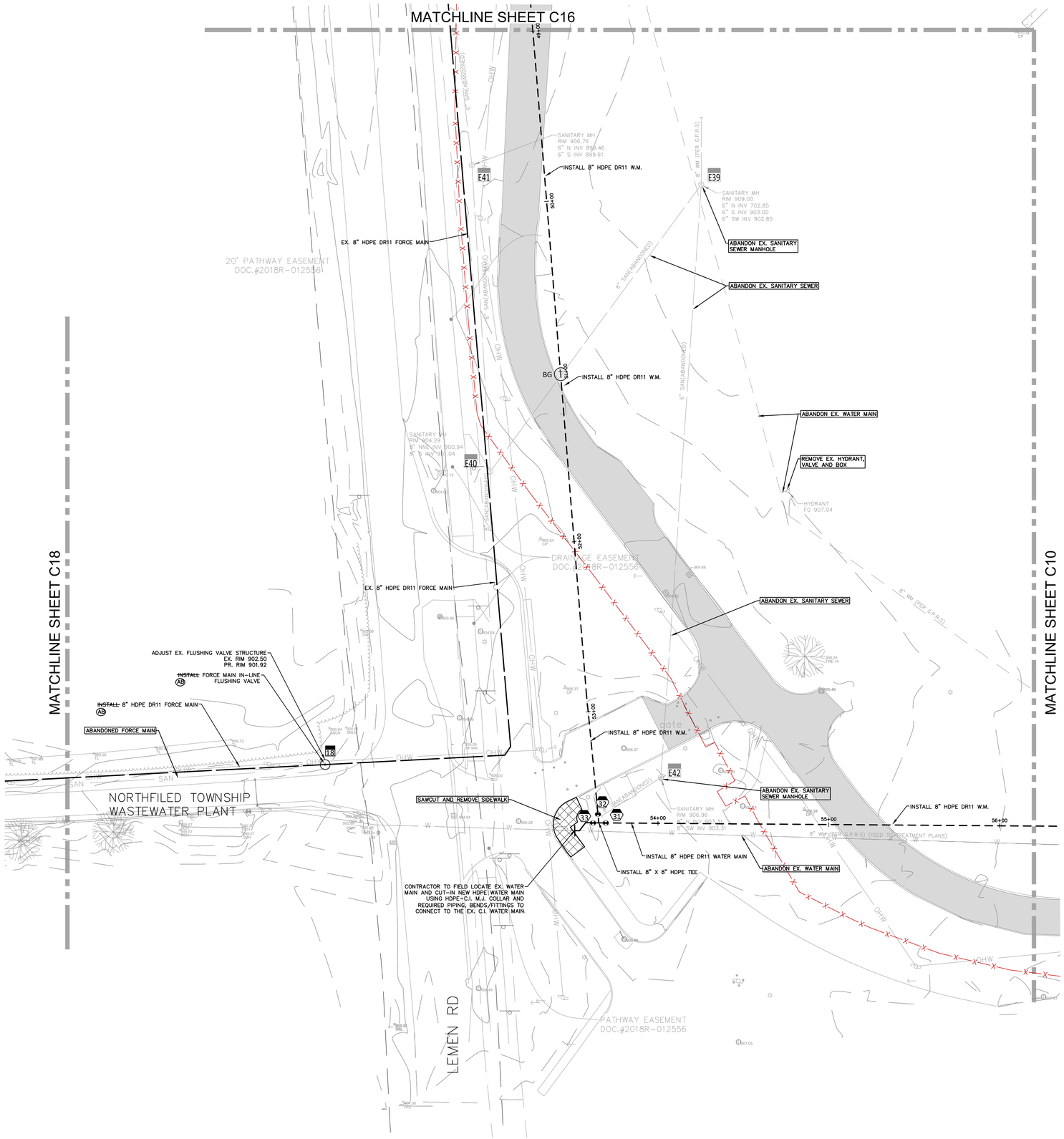
DATE	REVIEW
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 900 90%
08-15-2024	Phase 900 50%

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN
AREA 14

PROJECT NO.	47220129-XMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C16



PAVEMENT/SIDEWALK REPAIRS ASSOCIATED WITH PREVIOUS PHASE

THERE ARE PAVEMENT AND SIDEWALK AREAS THROUGHOUT THE SITE THAT HAD BEEN DAMAGED/REMOVED DURING THE PREVIOUS CONSTRUCTION PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAWCUTTING/REMOVING AS NEEDED TO REPLACE THE PAVEMENT/SIDEWALK WITH THE SAME MATERIAL/THICKNESS (AT A MINIMUM) CONSISTENT WITH CROSS SECTIONS AS NOTED ON THE DETAIL SHEETS. WILL INCLUDE REQUIRED BACKFILL MATERIAL TO PREPARE THE AREA FOR THE REQUIRED CROSS SECTION.

EXISTING BORE PITS AND SLURRY POND

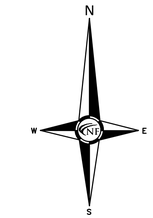
THERE ARE EXISTING BORE PITS AND SLURRY POND THAT WERE EXCAVATED DURING THE COURSE OF PREVIOUS PHASE OF THE PROJECT. THE PITS AND PONDS MAY BE UTILIZED FOR INSTALLATION OF PROPOSED UTILITIES AND/OR INVESTIGATION OF PROPOSED PIPING. THE CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING ALL EXISTING BORE PITS AND SLURRY PONDS WITH CLASS II MATERIAL (C.I.P.) AND GRADING/RESTORING ALL DISTURBED AREAS ASSOCIATED WITH BORE PITS AND POND TO PROVIDE POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND. ALL SPOILS FROM THE SLURRY POND MUST BE PROPERLY DISPOSED OF OFFSITE AT AN APPROVED FACILITY.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

CROSSING SCHEDULE

(BG) FG. 906.50±
EX. 6" SAN B/P 901.54
PR. 8" WATER T/P 900.00



SCALE: 1" = 30'

30 15 0 15 30 45

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

LEMEN ROAD CROSSING NOTES

- MAINTAIN MINIMUM 6' COVER ON SANITARY SEWER.
- BORE PITS MUST BE AT LEAST 10' FROM EDGE OF LEMEN ROAD PAVEMENT.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

WATER STRUCTURE SCHEDULE

(30) PR. 8" GATE VALVE IN BOX FG 907.18
(31) PR. 8" GATE VALVE IN BOX FG 906.96
(32) PR. 8" GATE VALVE IN BOX FG 906.98

SANITYARY STRUCTURE SCHEDULE

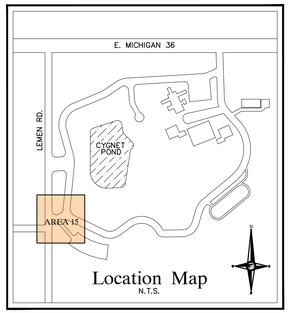
EX. SANITARY MANHOLE E39 RIM 909.00
6" E. INV. 902.85
6" S. INV. 903.00
6" SW. INV. 902.85

EX. SANITARY MANHOLE E40 RIM 904.29
8" NNE. INV. 900.94
8" S. INV. 901.04

EX. SANITARY MANHOLE E41 RIM 906.76
6" N. INV. 899.46
6" S. INV. 899.61

EX. SANITARY MANHOLE E42 RIM 906.96
8" N. INV. 903.31
8" S. INV. 903.31

PR. FLUSHING VALVE 18 7' DIA MANHOLE FG 901.92
8" E. INV 895.65
8" W. INV 895.65



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE_VALVE — SAN. CLEAN OUT
- GATE_VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

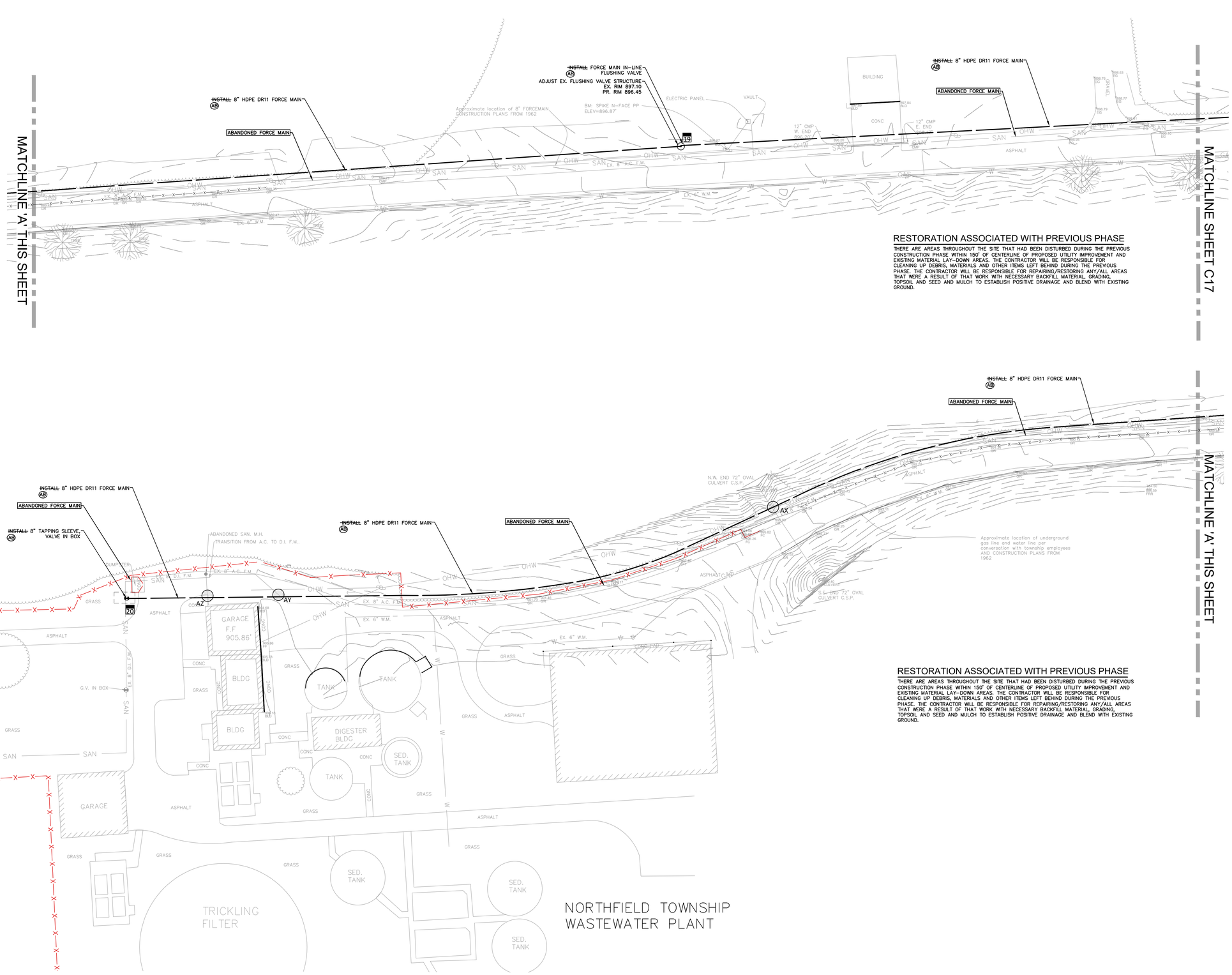
DATE	DESCRIPTION
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

IMPROVEMENT PLAN
AREA 15

PROJECT NO. 472231291.KMM	–
INDEX	00-0000
PCA	
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C17



RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

RESTORATION ASSOCIATED WITH PREVIOUS PHASE

THERE ARE AREAS THROUGHOUT THE SITE THAT HAD BEEN DISTURBED DURING THE PREVIOUS CONSTRUCTION PHASE WITHIN 150' OF CENTERLINE OF PROPOSED UTILITY IMPROVEMENT AND EXISTING MATERIAL LAY-DOWN AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING UP DEBRIS, MATERIALS AND OTHER ITEMS LEFT BEHIND DURING THE PREVIOUS PHASE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING/RESTORING ANY/ALL AREAS THAT WERE A RESULT OF THAT WORK WITH NECESSARY BACKFILL MATERIAL, GRADING, TOPSOIL AND SEED AND MULCH TO ESTABLISH POSITIVE DRAINAGE AND BLEND WITH EXISTING GROUND.

REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

SURFACE REPAIRS

ANY PAVED OR GRAVEL AREA THAT IS DAMAGED DURING THE PROJECT SHALL BE REPAIRED "IN KIND" OR PER THE PROVIDED CROSS SECTIONS (WHICHEVER IS MORE STRINGENT).

SANITARY STRUCTURE SCHEDULE

18 ~~AB~~ PR. FLUSHING VALVE 7' DIA. MANHOLE
ADJUST MANHOLE
EX. RIM 896.45
PR. RIM 896.45

19 ~~AB~~ PR. FLUSHING VALVE 7' DIA. MANHOLE
ADJUST MANHOLE
EX. RIM 897.10
PR. RIM 896.45
8" E&W T/P 890.45 (MIN.)

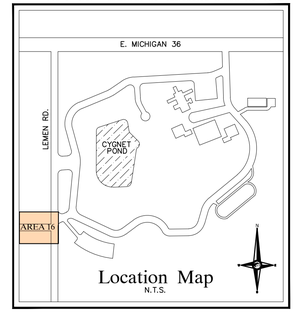
20 ~~AB~~ PR. TAPPING SLEEVE, VALVE IN BOX
FG 904.80±
8" E&W T/P 898.80 (MIN.)

CROSSING SCHEDULE

AX FG. 904.65±
EX. CULVERT B/P 880.10
PR. 8" SAN T/P 878.10

AY FG. 905.00± V.I.F.
EX. SAN – VERIFY DEPTH IN FIELD
PR. 8" SAN – MAINTAIN 1.5' CLEARANCE & MIN. 5.5' COVER

AZ FG. 905.00± V.I.F.
EX. SAN – VERIFY DEPTH IN FIELD
PR. 8" SAN – MAINTAIN 1.5' CLEARANCE & MIN. 5.5' COVER



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE, GUY POLE, GUY WIRE — EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

N
W E
S

SCALE: 1" = 30'
30 15 0 15 30 45

NFE PROJECT NO. K648-06

46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

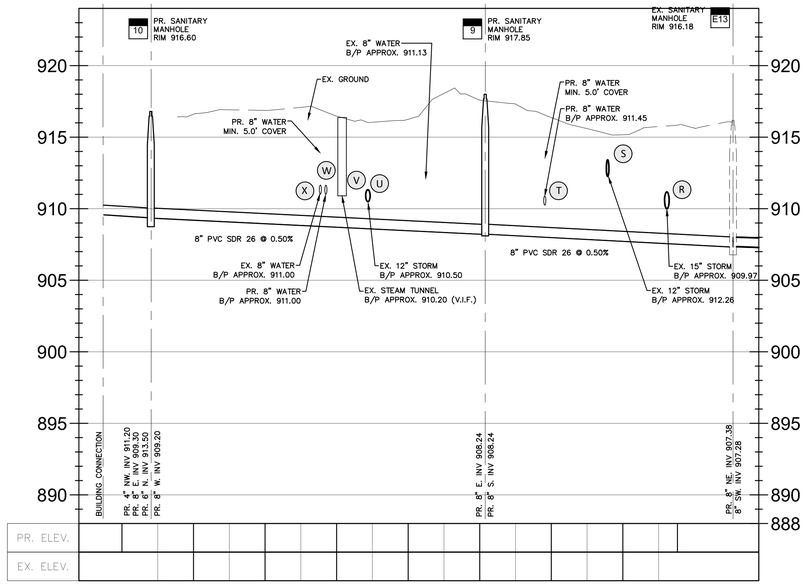
DATE	
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

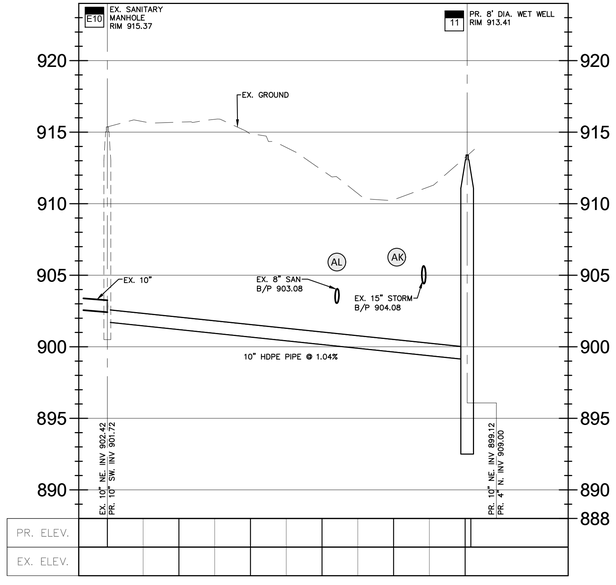
IMPROVEMENT PLAN
AREA 16

PROJECT NO. 472231SI.WAM	--
INDEX	00-0000
PCA	MAW
DRAWN BY	MAW
DESIGNED BY	SWS
JC/ENG BY	

C18



PROFILE VIEW
STRUCTURES E13 TO 12



PROFILE VIEW
STRUCTURES E10 TO 13

CROSSING SCHEDULE

(AK) FG. 910.90±
EX. 15" STORM B/P 904.08 (V.I.F.)
PR. 10" SAN T/P 900.28

(AL) FG. 911.85±
EX. 8" SAN B/P 903.08 (V.I.F.)
PR. 10" SAN T/P 901.31

(R) FG. 915.77±
EX. 15" STORM B/P APPROX. 909.97
PR. 8" SAN T/P 908.30

(S) FG. 915.88±
EX. 12" STORM B/P APPROX. 912.26
PR. 8" SAN T/P 908.50

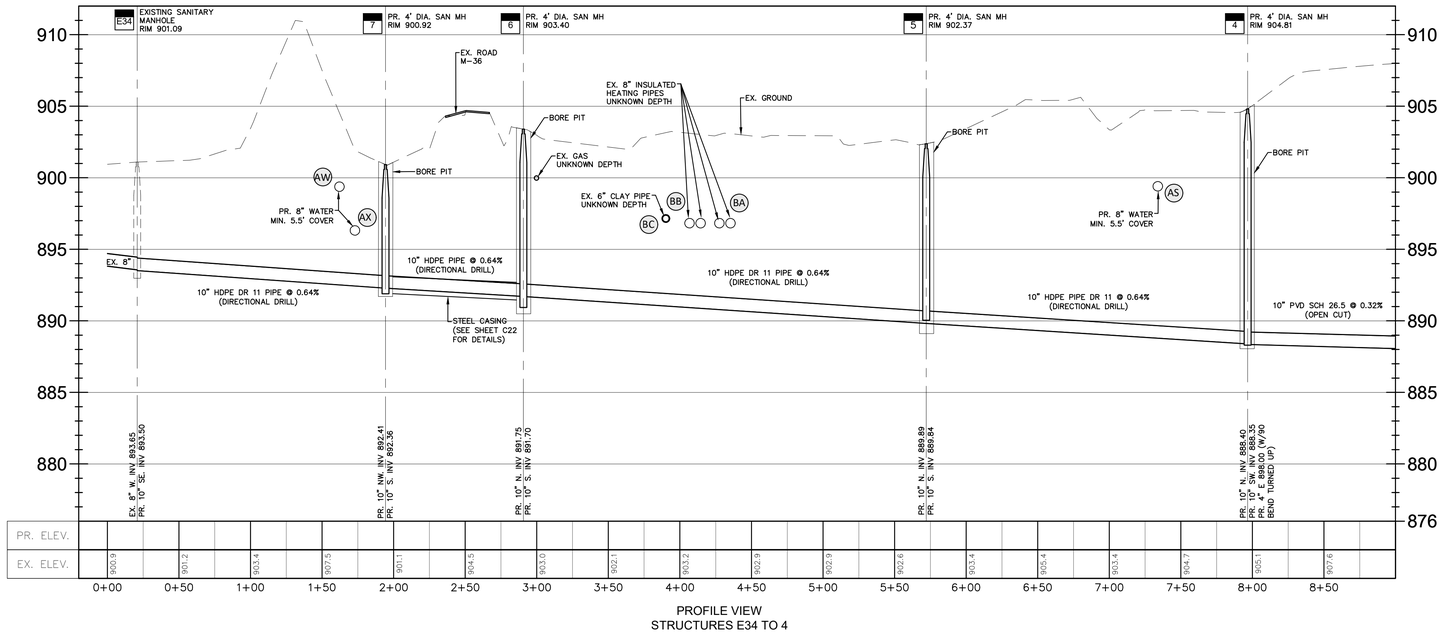
(T) FG. 916.30±
PR. 8" WATER B/P APPROX. 910.25
PR. 8" SAN T/P 908.72

(U) FG. 915.90±
EX. 8" STORM B/P 910.50
PR 8" SAN. T/P 909.34

(V) FG. 916.40±
EX. STEAM TUNNEL B/T APPROX. 910.90 (V.I.F.)
PR. 8" SANITARY T/P 909.34

(W) FG. 917.00±
PR. 8" SAN T/P 909.40
PR. 8" WM B/P 911.10

(X) FG. 916.80±
PR. 8" SAN T/P 909.42
EX. 8" WM B/P 911.00



PROFILE VIEW
STRUCTURES E34 TO 4

CROSSING SCHEDULE

(AS) FG. 904.65±
PR. 10" SAN B/P 890.57
PR. 8" WATER T/P 899.15

(BA) FG. 903.00±
EX. UNDERGROUND HEAT CONDUIT – 897.0 +/– B/T (V.I.F.)
PR. 10" SAN T/P 892.47

(BB) FG. 903.10±
EX. UNDERGROUND HEAT CONDUIT – 897.0 +/– B/T (V.I.F.)
PR. 10" SAN T/P 892.62

(BC) FG. 903.10±
EX. STORM – FIELD INVESTIGATE
PR. 10" SAN T/P 892.71

(AX) FG. 902.20±
PR. 8" WATER B/P 896.03
PR. 10" SAN T/P 893.62

(AW) FG. 905.62±
PR. 8" WATER B/P 899.45
PR. 10" SAN T/P 893.67

SCALE: 1" = 50' / 1"=5'

50 25 0 25 50 75

NFE PROJECT NO. K648-06
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

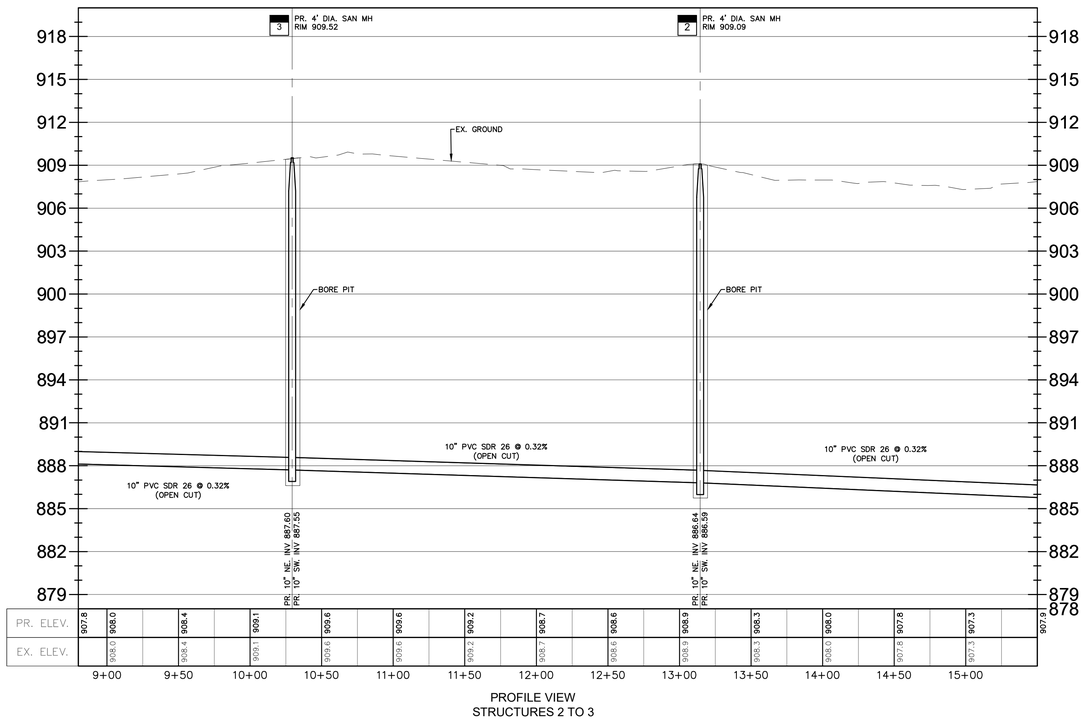
DATE	DESCRIPTION
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

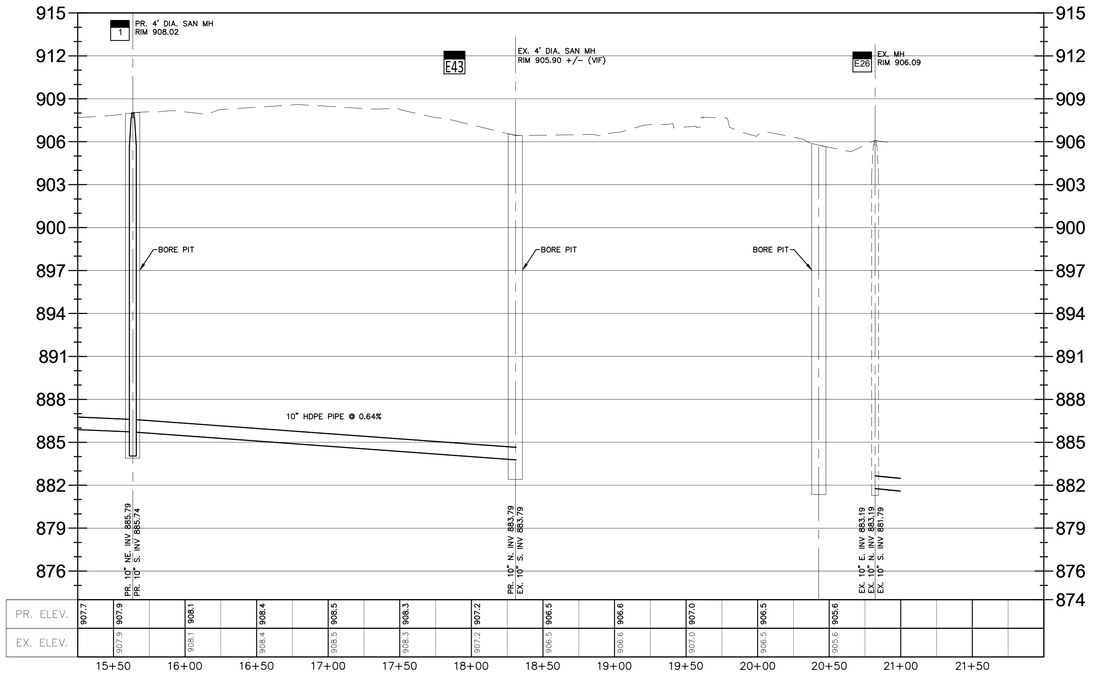
SANITARY PROFILES

PROJECT NO. - 472219	AMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C19



PROFILE VIEW
STRUCTURES 2 TO 3



PROFILE VIEW
STRUCTURES E26 TO 1

SCALE:
1" = 50' / 1"=5'
50 25 0 25 50 75

NFE PROJECT NO. K648-06
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	DESCRIPTION
08-15-2024	REVIEW
12-05-2024	Phase 500 50%
12-01-2025	Phase 500 90%
10-05-2026	EGLE WM As-Built
10-09-2026	EGLE WM AB Resubmit
11-06-2026	Bid Documents
	Addendum #3

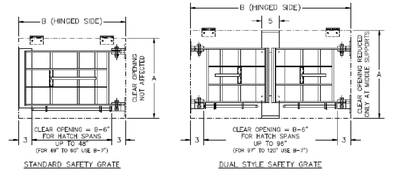
PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

SANITARY PROFILES

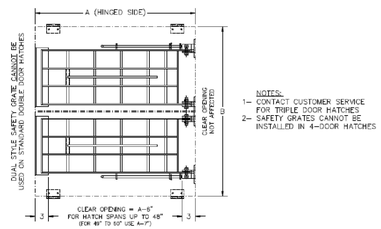
PROJECT NO. 4722319.XMM	--
INDEX	00-0000
PCA	MAW
DRAWN BY	MAW
DESIGNED BY	SWS
JC/ENG BY	

C20

EFFECT OF SAFETY GRATE ON HATCH CLEAR OPENINGS



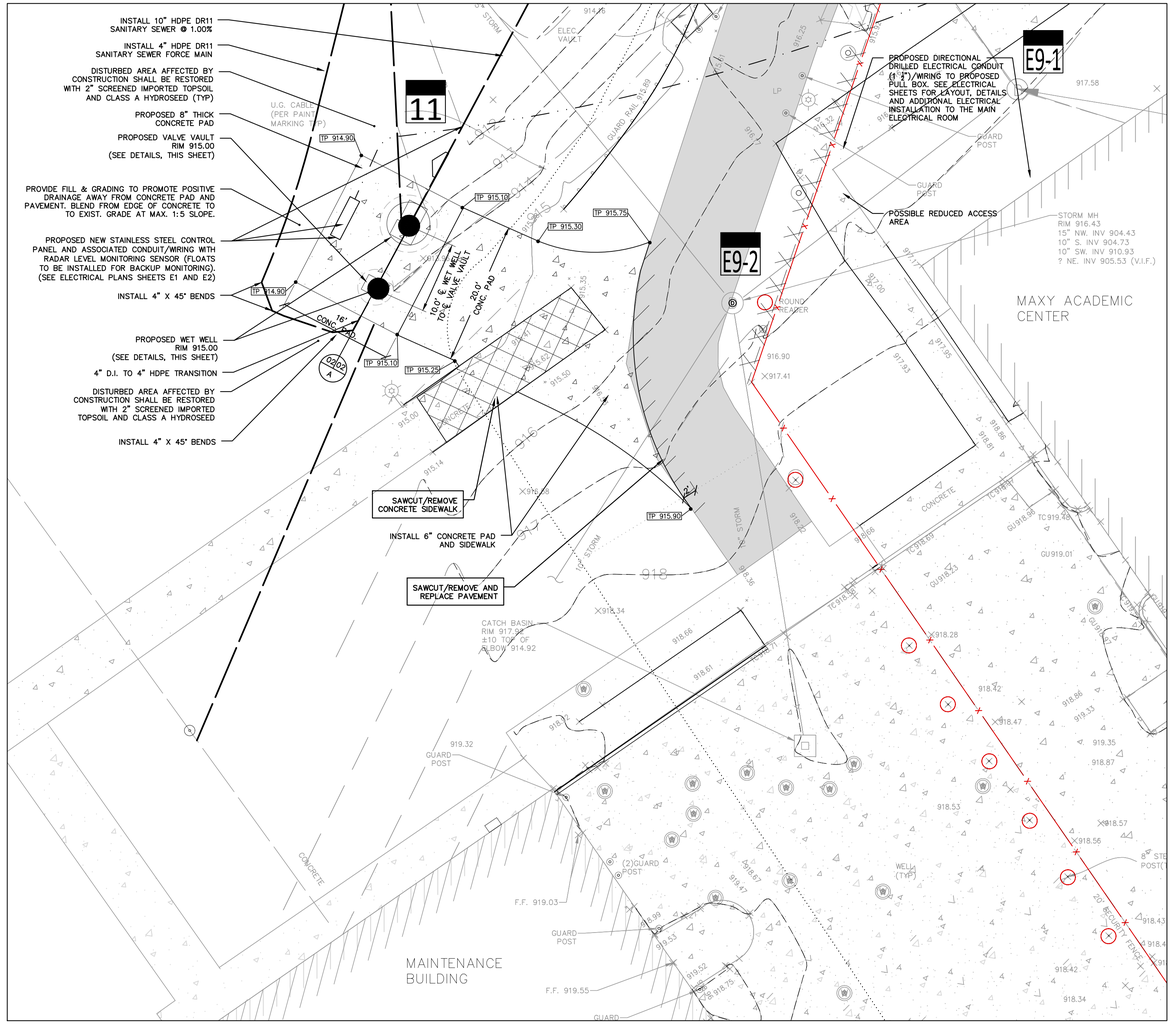
SINGLE DOOR HATCH
(ALSO APPLIES TO DOUBLE DOOR HATCH WHEN HINGED ON THE SAME SIDE)

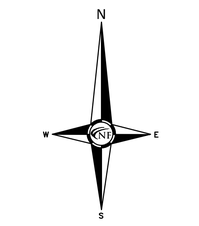


NOTES:
1- CONTACT CUSTOMER SERVICE FOR TRIPLE DOOR HATCHES
2- SAFETY GRATES CANNOT BE INSTALLED IN 4-DOOR HATCHES

STANDARD DOUBLE DOOR HATCH (HINGED OPPOSITE SIDES) WITH STANDARD SAFETY GRATE

EFFECT OF SAFETY GRATE ON HATCH CLEAR OPENINGS





REDUCED ACCESS AREAS

THERE MAY BE AREAS THAT PROVIDE LIMITED OR REDUCED ACCESS WIDTH/AREA WITHIN THE FACILITY TO PERFORM THE PREFERRED METHOD OF HYDRO EXCAVATION DUE TO SIZE OF THE REQUIRED VEHICLES/EQUIPMENT. THE CONTRACTOR MAY REQUEST AN ALTERNATE MEANS OF EXCAVATION TO BE REVIEWED AND APPROVED BY THE FACILITY PRIOR TO PERFORMING THE WORK. LOCATIONS WHERE THIS MAY OCCUR HAVE BEEN NOTED IN EACH AREA OF WORK.

DEWATERING / BY-PASS PUMPING

THE CONTRACTOR SHALL ANTICIPATE DEWATERING AS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT. ALL COSTS FOR THIS EFFORT SHALL BE INCLUDED IN THE PROJECT COST AND WILL NOT BE PAID FOR SEPARATELY. THE CONTRACTOR SHALL WORK WITH DOC STAFF TO FIND AN AGREEABLE OUTLET TO PUMP GROUNDWATER, SO AS TO NOT CAUSE EROSION OR SATURATE THE WORKSITE.

THE CONTRACTOR SHALL ALSO BE PREPARED FOR BY-PASS SEWER PUMPING DURING THE TURN OVER OF THE SYSTEM, SUCH THAT SEWER FLOW IS NOT INTERRUPTED TO THE FACILITY. REVIEW SPECIFICATIONS FOR REQUIREMENTS INCLUDING PREPARATION OF A BY-PASS PLAN FOR REVIEW AND APPROVAL, NEED FOR SUPERVISION AND OVERSIGHT OF PUMPS WHILE OPERATING AND STANDBY PUMP REQUIREMENTS.

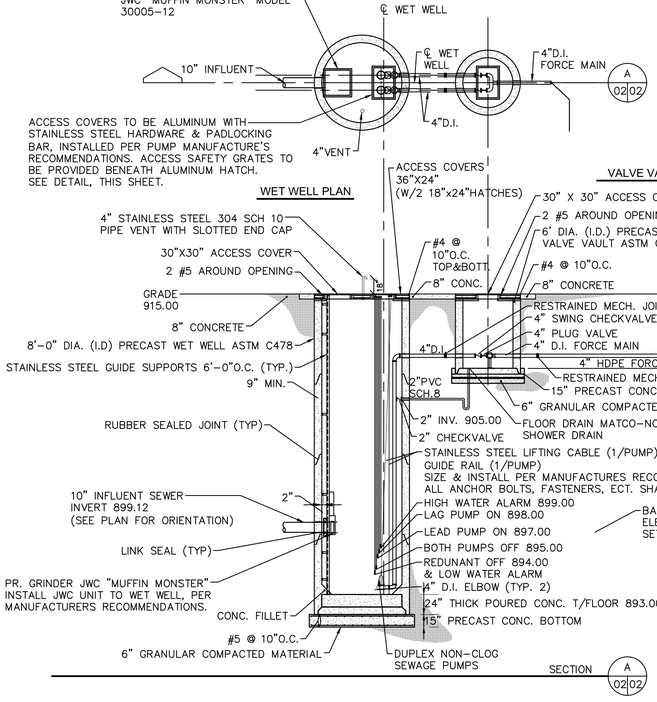
PUMP AND HAUL

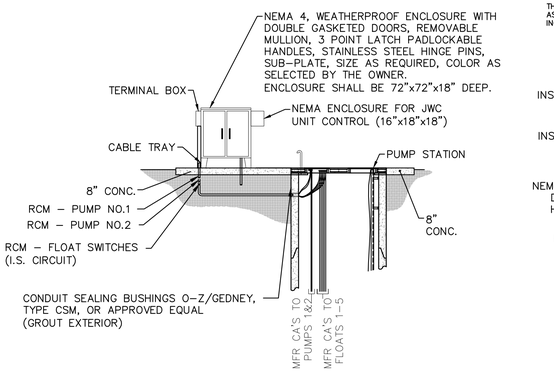
CONTRACTOR SHALL ANTICIPATE PUMP AND HAUL OPERATION DURING THE SHUT DOWN OF EXISTING STATION AND TO ALLOW THE EX. FORCE MAIN TO DRAIN DOWN.
FOLLOWING DRAINING OF EXISTING MAIN, TEMPORARY BY-PASS CONNECTION TO BE MADE TO ALLOW FOR BY-PASS PUMPING.
NO EXISTING VALVES EXIST ON THE FORCE MAIN TO SEGREGATE THE SYSTEM.

SANITARY STRUCTURE SCHEDULE

11 PR. 8' SANITARY MANHOLE
RIM 915.00
10" NE. INV. 899.12
4" S. INV. 909.00
6" SW INV 906.00 +/- (VIF)

12 PR. GATE VALVE AND BOX
RIM 910.10
4" S. INV. 904.60
4" N. INV. 904.60

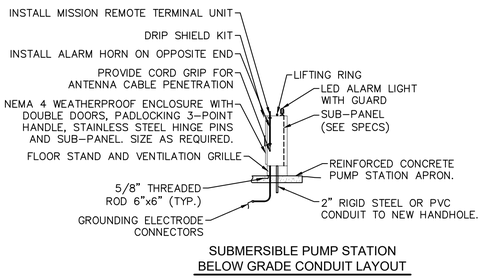




SUBMERSIBLE PUMP STATION BELOW GRADE CONDUIT LAYOUT

OWNER FURNISHED MATERIALS - PUMP STA. EQUIP.

THE OWNER HAS PROCURED ALL MATERIALS/EQUIPMENT FOR THE PUMP STATION OTHER THAN THE CONTROL PANEL/WATER PROOF ENCLOSURE FOR JWC UNIT CONTROL AND ASSOCIATED ELECTRICAL MATERIALS AND REINFORCED CONCRETE PAD AND ALL ELSE INCLUDED IN THE SUBMERSIBLE PUMP STATION BELOW GRADE CONDUIT LAYOUT DETAILS.



SUBMERSIBLE PUMP STATION
BELOW GRADE CONDUIT LAYOUT



LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE, GUY POLE, GUY WIRE — EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

NFE PROJECT NO. K648-06
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

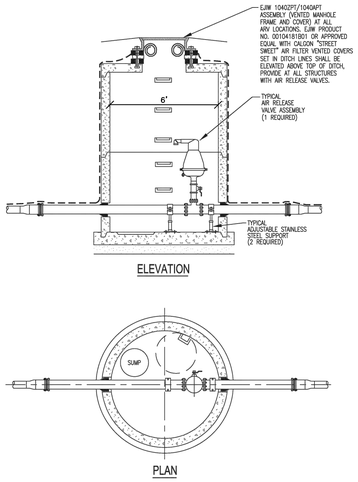
DATE	REVIEW
08-15-2024	Phase 50% 50%
12-05-2024	Phase 90% 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents
11-06-2026	Addendum #3

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

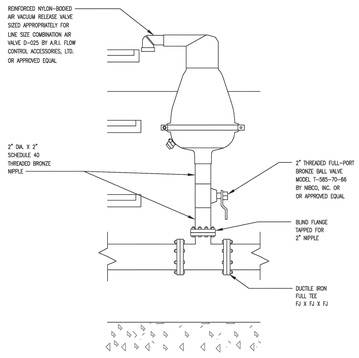
SANITARY SEWER LIFT STATION IMPROVEMENT PLAN AND LIFT STATION DETAILS

PROJECT NO.	47223128.XMM
INDEX	–
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

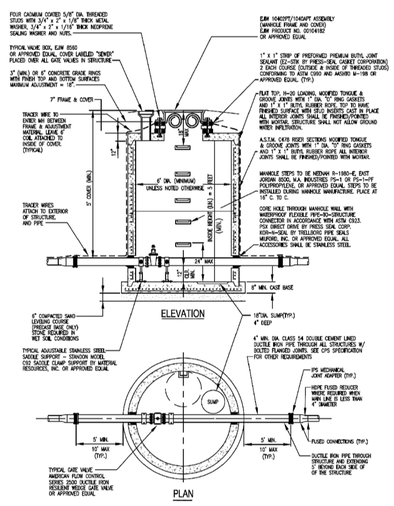
C21



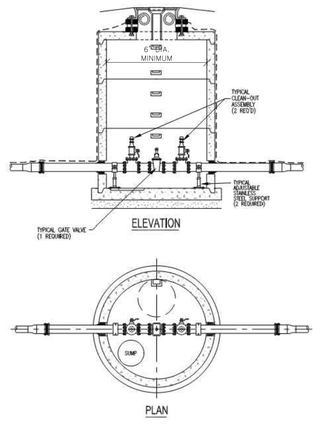
AIR/VACUUM RELEASE VALVE (ARV) IN WELL



TYPICAL AIR VACUUM RELEASE VALVE ASSEMBLY



TYPICAL STRUCTURE DETAIL



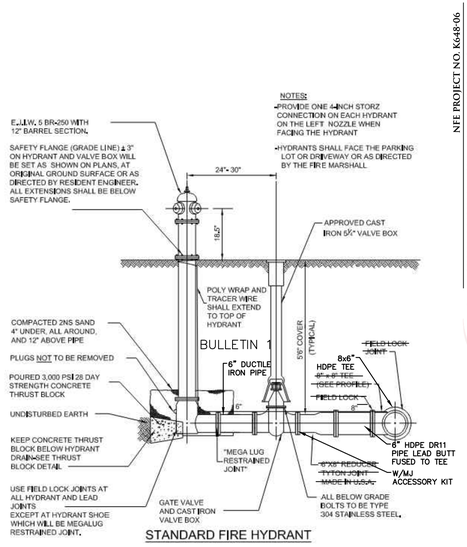
INTERMEDIATE FLUSHING CONNECTION (IFC) IN WELL

TYPICAL VALVE DETAIL

N.T.S.

FLUSHING VALVE DETAIL

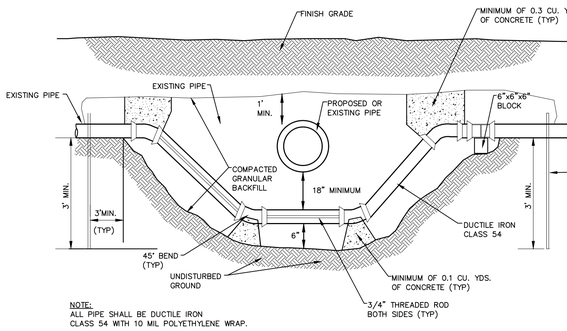
N.T.S.



STANDARD FIRE HYDRANT

HYDRANT ASSEMBLY

N.T.S.



NOTE:
ALL PIPE SHALL BE DUCTILE IRON CLASS 54 WITH 10 MIL POLYETHYLENE WRAP.

WATERMAN LOWERING DETAIL

N.T.S.

NOTES
MAINTAIN A MINIMUM OF 5.5 FEET OF COVER BETWEEN BASE OF RAIL & TOP OF CASING UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

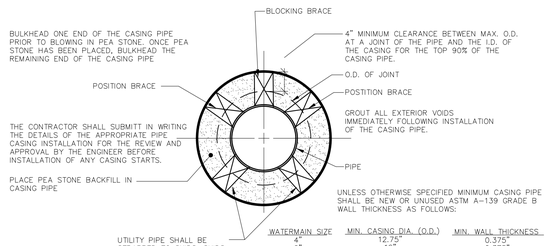
THE ENDS OF THE CASING SHALL BE SUITABLY PROTECTED AGAINST THE ENTRANCE OF FOREIGN MATERIAL.

WHEN BORING, ALL VOIDS OUTSIDE OF CASING PIPE SHALL BE FILLED BY MEANS OF PRESSURE GROUTING WITH 1:3 CEMENT SAND MORTAR. THIS WORK SHALL BE COMPLETED WITHIN 24 HOURS AFTER THE CROSSING HAS BEEN COMPLETED.

BORING SHALL EXTEND A MINIMUM OF 10 FEET OUTSIDE EDGE OF PAVEMENT.

STANDARD CASING SECTION

N.T.S.



BULKHEAD ONE END OF THE CASING PIPE PRIOR TO BLOWING IN PEA STONE. ONCE PEA STONE HAS BEEN PLACED, BULKHEAD THE REMAINING END OF THE CASING PIPE

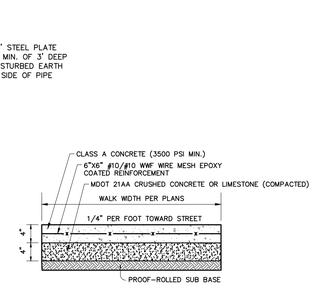
THE CONTRACTOR SHALL SUBMITT IN WRITING THE DETAILS OF THE APPROPRIATE PIPE CASING INSTALLATION FOR THE REVIEW AND APPROVAL BY THE ENGINEER BEFORE INSTALLATION OF ANY CASING STARTS.

PLACE PEA STONE BACKFILL IN CASING PIPE

WATERMAIN SIZE	MIN. CASING DIA. (O.D.)	MIN. WALL THICKNESS
4"	12.75"	0.375"
6"	16"	0.375"
8"	16"	0.375"
12"	20"	0.375"
16"	24"	0.406"
20"	30"	0.438"
24"	36"	0.562"

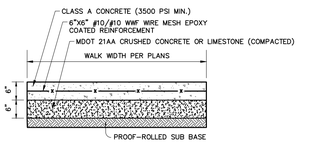
PIPE BARREL SUPPORT FOR UTILITY PIPE CONSTRUCTED IN CASING PIPE

N.T.S.



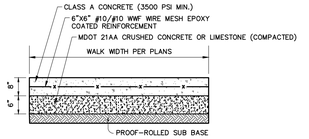
4" CONCRETE SIDEWALK SECTION

N.T.S.



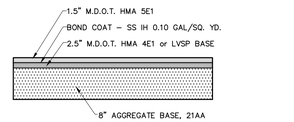
6" CONCRETE SECTION

N.T.S.



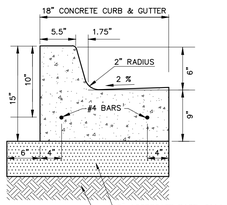
8" CONCRETE PAVEMENT SECTION

N.T.S.



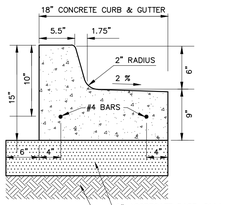
ASPHALT PAVEMENT SECTION

(DRIVE AND PARKING)



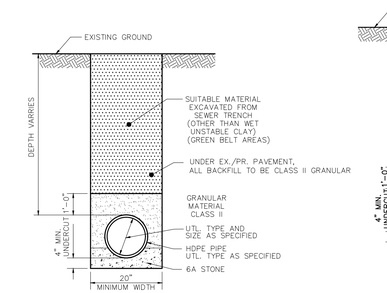
CONCRETE CURB DETAIL 'A'

N.T.S.



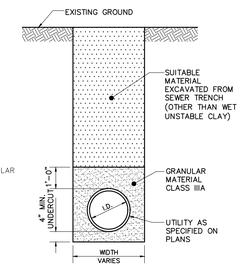
CONCRETE CURB DETAIL 'B'

N.T.S.



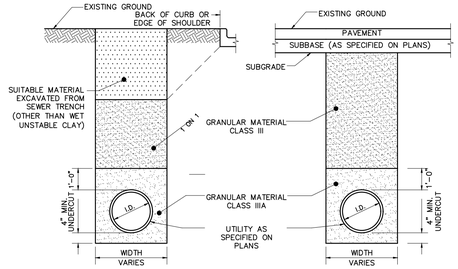
HDPE STANDARD TRENCH DETAIL

N.T.S.



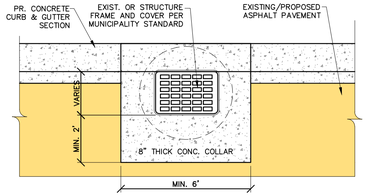
TRENCH DETAIL A
UTILITY NOT UNDER PAVEMENT

N.T.S.



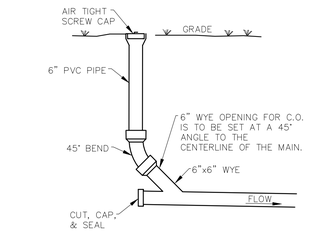
TRENCH DETAIL B
UTILITY UNDER PAVEMENT OR WITHIN INFLUENCE OF PAVEMENT

N.T.S.



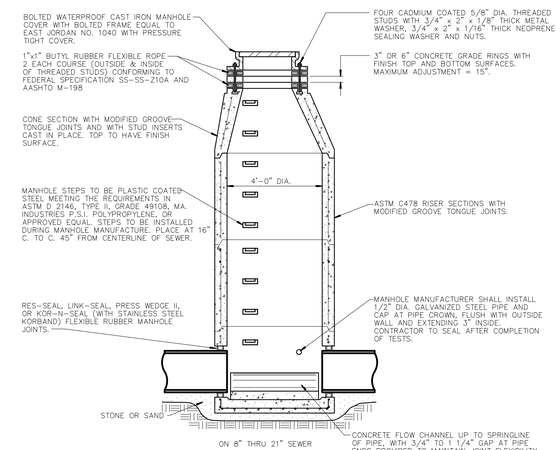
STRUCTURE BOXOUT DETAIL I

N.T.S.



STANDARD SANITARY SEWER CLEANOUT

N.T.S.



STANDARD SANITARY MANHOLE DETAIL

N.T.S.

NFE PROJECT NO. K648-06
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

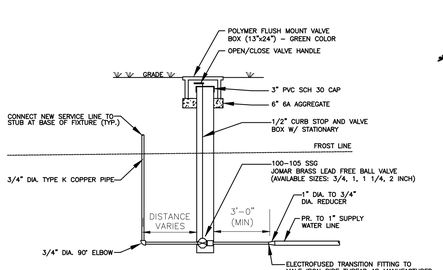
DATE	
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

STANDARD DETAILS AND NOTES

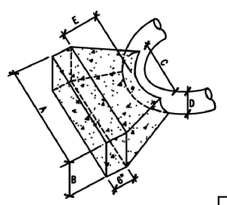
PROJECT NO.	47223120-KMM
INDEX	–
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
J/C/ENG BY	SWS

C22



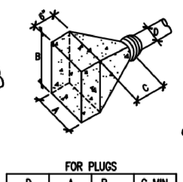
GATE VALVE DETAIL

N.T.S.



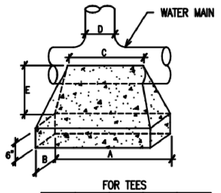
FOR 90° BENDS OR SMALLER

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



FOR PLUGS

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

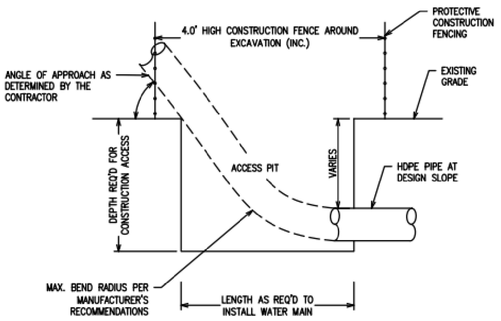


FOR TEES

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

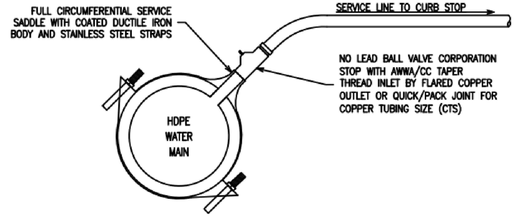
THRUST BLOCK DETAILS

NOTE:
1. 3000 PSI CONCRETE TO BE USED. THRUST BLOCK TO ABUT & REST AGAINST UNDISTURBED SOIL OR EARTH COMPACTED TO 95% MODIFIED PROCTER.



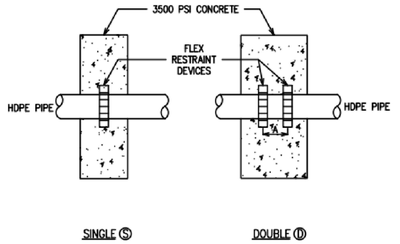
ACCESS PIT DETAIL

ACCESS PIT NOTES:
1. ACCESS PIT WIDTH SHALL BE KEPT TO THE MINIMUM NECESSARY TO ALLOW CONSTRUCTION ACCESS.
2. ACCESS PITS WITHIN PAVED AREAS SHALL INCLUDE BARRIER WALLS (TEMP. WATER FILLED OR CONCRETE) IN ADDITION TO THE CONSTRUCTION FENCING.
3. BRACE AND/OR SUPPORT EXCAVATION AS NECESSARY TO CONTAIN EXCAVATION TO PLANNED DIMENSIONS.
4. PROVIDE ANY NECESSARY DEWATERING TO MAINTAIN A DRY WORKING SPACE (INC).
5. BACKFILL ACCESS PIT WITH COMPACTED CLASS II SAND BACKFILL OR SUITABLE EXCAVATED MATERIAL IN ACCORDANCE WITH THE DETAIL ON SHEET 3 AND THE PROJECT SPECIFICATIONS.



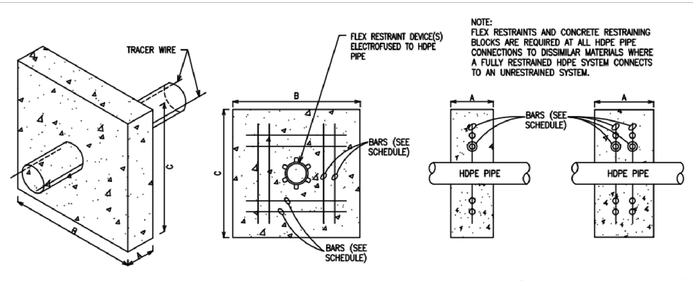
SERVICE LINE CONNECTION TO HDPE PIPE

NOTES:
1. FLARED HDPE SERVICE LINES ARE PROHIBITED.



SINGLE Ⓢ DOUBLE Ⓓ

RESTRAINING BLOCK RESTRAINTS



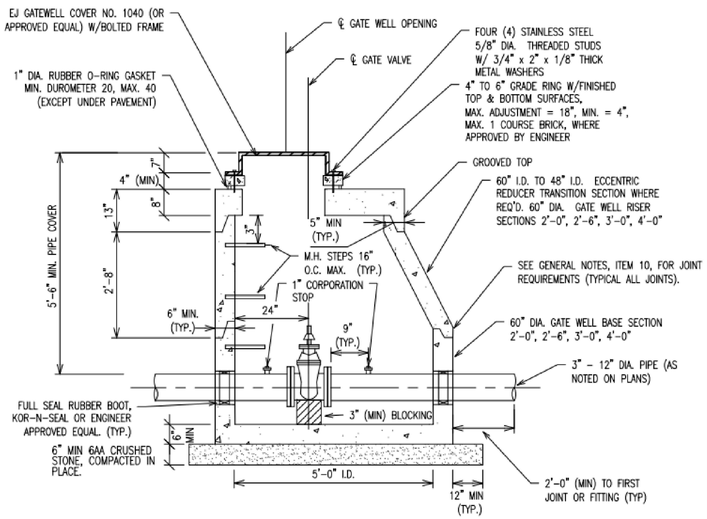
RESTRAINING BLOCK DIMENSIONS — SINGLE FACE RESTEEL Ⓢ — DOUBLE FACE RESTEEL Ⓓ

RESTRAINING BLOCK RESTEEL

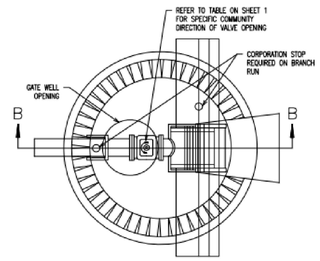
HDPE SDR11 DIPS RESTRAINING BLOCK SCHEDULE

HDPE SDR11 DIPS SIZE	A	B	C	EFFECTIVE AREA	# RESTRAINTS	REINFORCING
4"	1 FT	2 FT	2 FT	3.5 S.F.	1	4 #6 Ⓢ
6"	1 FT	2.75 FT	2.75 FT	7.5 S.F.	2	4 #6 Ⓢ
8"	1 FT	3.75 FT	3.75 FT	12.5 S.F.	2	4 #6 Ⓢ
10"	1 FT	4.5 FT	4.5 FT	19 S.F.	3	8 #4 Ⓢ
12"	1.5 FT	5.25 FT	5.25 FT	27 S.F.	4	8 #6 Ⓢ
14"	1.5 FT	6 FT	6 FT	36 S.F.	6	8 #6 Ⓢ
16"	2 FT	7 FT	7 FT	46.5 S.F.	7	16 #6 Ⓓ
18"	2 FT	7.75 FT	7.75 FT	58 S.F.	9	16 #6 Ⓓ
20"	2 FT	8.5 FT	8.5 FT	71.5 S.F.	11	16 #6 Ⓓ
24"	2 FT	10.25 FT	10.25 FT	102 S.F.	15 Ⓓ	16 #6 Ⓓ
30"	2.5 FT	12.75 FT	12.75 FT	157 S.F.	23 Ⓓ	16 #6 Ⓓ
36"	2.5 FT	15 FT	15 FT	224 S.F.	31 Ⓓ	16 #6 Ⓓ

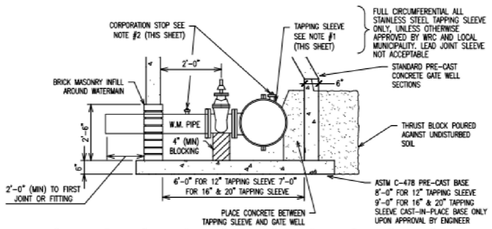
1. RESTRAINING BLOCKS SHALL HAVE A MINIMUM OF 3.0' OF COVER.
2. RESTRAINING BLOCK DIMENSIONS "B" AND "C" MAY BE CHANGED DUE TO DEPTH OF COVER LIMITATIONS PROVIDED THE EFFECTIVE AREA IS MAINTAINED.
3. THE EFFECTIVE AREA OF ALL THE RESTRAINING BLOCKS ARE BASED ON A RECURRING SURGE PRESSURE OF 250 PSI AND 1,000 PSF BEARING SOIL. SHOULD SOILS THAT ABUT THE RESTRAINING BLOCK BE LESS THAN 1,000 PSF, PROVIDE STAMPED ENGINEERING CALCULATIONS TO DETERMINE THE APPROPRIATE EFFECTIVE AREA FOR THE RESTRAINING BLOCK.
4. THE NUMBER OF FLEX RESTRAINTS INDICATED IS BASED ON PROVIDING 7,000 LBS OF SHEAR FORCE EACH. SHOULD THE FLEX RESTRAINTS INTENDED FOR USE PROVIDE LESS THAN 7,000 LBS OF SHEAR FORCE EACH, INCLUDE STAMPED ENGINEERING CALCULATIONS FOR THE NUMBER OF RESTRAINTS REQUIRED.



3" THRU 12" GATE WELL

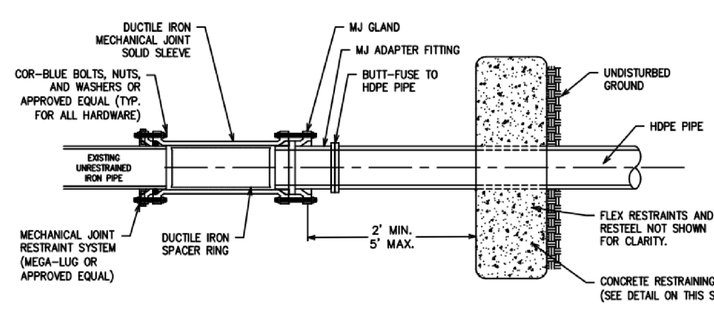


PLAN TAPPING SLEEVE VALVE & WELL (TYPICAL)



20" x 12", 20" x 8", 16" x 12", 16" x 8", 12" x 8" TAPPING SLEEVE, VALVE & WELL

NOTES:
1. REFER TO NOTE 7 OF "VALVE AND SLEEVE NOTES" ON SHEET 1.
2. FOR PIPE SMALLER THAN 16" USE 1" CORPORATION STOP, FOR 16" PIPE OR LARGER USE 2" CORPORATION STOP WITH BRONZE SADDLE.



HDPE TO DUCTILE IRON TRANSITIION

WATER MAIN MATERIALS NOTES

1. WATER SUPPLY SYSTEM PIPING (3-INCH & LARGER) SHALL BE DUCTILE IRON OR HIGH DENSITY POLYETHYLENE (HDPE) UNLESS OTHERWISE APPROVED BY THE LOCAL COMMUNITY.
2. DUCTILE IRON PIPE SHALL BE CLASS 54 FOR SIZES THREE (3) INCH THROUGH EIGHTEEN (18) INCH, CLASS 55 FOR TWENTY (20) INCH, AND CLASS 56 FOR TWENTY-FOUR (24) INCH AND LARGER. (ABBREVIATED "D.I." IN DETAILS AND ON THIS SHEET).
3. PIPES OF SIZES LARGER THAN TWENTY-FOUR (24) INCHES IN NOMINAL DIAMETER SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C100 FOR DUCTILE IRON WATER PIPE.
4. THE DUCTILE IRON PIPE TO BE FURNISHED AND DELIVERED UNDER THIS SPECIFICATION SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C151 (ANSI A21.5), EXCEPT AS OTHERWISE SPECIFIED HEREIN. PIPE SHALL BE DOUBLE CEMENT-LINED AND SEAL COATED WITH AN APPROVED BITUMINOUS SEAL COAT IN ACCORDANCE WITH AWWA C104 (ANSI A21.4).
5. REFER TO SHEET 5 FOR HDPE MATERIAL REQUIREMENTS.
6. MECHANICAL AND SLIP-ON JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C111 (ANSI A21.11).
7. FLANGE JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C110 (ANSI A21.10).
8. FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON OR CAST IRON AND SHALL MEET REQUIREMENTS OF AWWA C110 (ANSI A21.10) OR AWWA C153 (ANSI A21.53). DUCTILE IRON FITTINGS SHALL BE RATED FOR 350 PSI. PIPE SIZES TWENTY-FOUR (24) INCH DIAMETER AND LESS AND 250 PSI FOR PIPE SIZES OVER TWENTY-FOUR (24) INCH DIAMETER. DUCTILE IRON FLANGE FITTINGS SHALL BE RATED FOR 250 PSI FOR ALL PIPE DIAMETERS.
9. INSTALL BRASS WEDGES AT ALL PUSH ON JOINTS IN DUCTILE IRON PIPE INSTALLATIONS. TWO (2) WEDGES PER JOINT FOR PIPES 12 INCH IN DIAMETER AND LESS; FOUR WEDGES PER JOINT FOR PIPES GREATER THAN 12 INCHES IN DIAMETER.
10. ALL WATER MAINS SHALL BE DESIGNED FOR 150 PSI MINIMUM WORKING PRESSURE.
11. ALL BURIED BOLTS, NUTS, AND WASHERS SHALL BE AWWA C111 LOW ALLOY STEEL COATED WITH A MINIMUM OF TWO (2) COATS OF FLUOROPOLYMER EPOXY COATING AND HEAT CURED (COR-BLUE OR APPROVED EQUAL) AND POLY-WRAPPED WHEN SPECIFIED.
12. ALL BURIED BOLTS, NUTS, AND WASHERS FOR ALL FLANGED CONNECTIONS SHALL BE STAINLESS STEEL (ASTM A320, GRADE B8M) AND HAVE A NEVER SEIZE TYPE COMPOUND APPLIED TO THE THREADS PRIOR TO INSTALLATION.
13. CORPORATION STOPS USED FOR INSERTION INTO MAINS SHALL BE MUELLER TYPE H-15000, FORD METER BOX FB-1000-X-W-NL OR FORD METER BOX FB1000-4-G-NL. ALL STOPS SHALL HAVE BRONZE CAST BODIES. KEYS, STEM WASHERS AND NUTS. INLET THREADS SHALL CONFORM TO THE LATEST VERSION OF AWWA C800.
14. TEMPORARY CONNECTIONS, WHICH MAY BE MADE FOR CHLORINATING AND FLUSHING PURPOSES, SHALL INCLUDE A TESTABLE REDUCE PRESSSURE ZONE (RPZ) VALVE WITH CURRENT CERTIFICATION.

HYDROSTATIC PRESSURE TESTING

A. Refer to Section 02660 for general acceptance testing and hydrostatic testing requirements.

B. Before connection of installed water main to the municipal system is allowed, complete a hydrostatic pressure test of the system in accordance with ASTM F2164. The specified test pressure is 150 psi or 1.5 times the MEOP of the test section, whichever is greater. The test method is generally summarized as follows:
1. Zero leakage allowed.
2. The ambient air temperature and surface temperature of the pipe must be considered and adjustment to test pressure may be appropriate.
3. Slowly fill the test section with water and carefully and completely exhaust all of the air from the test section.
4. Allow time for test fluid and pipe temperature to equalize.
5. Allow for initial expansion as full test pressure is applied. The initial expansion phase is four hours.
6. Reduce pressure by 10 psi, observe target test pressure for one hour, and if the pressure remains within 5% of the target test pressure, then a passing test is indicated.
7. If leaks are detected, depressurize main and repair as needed. Allow the test section to remain depressurized for 8 hours before retesting.

FLUSHING, CLEANING, AND DISINFECTION

A. Disinfect the water main system in accordance with ANSI/AWWA C651 and as described in Section 02660, except that the disinfection solutions containing chlorine must not exceed 12 percent active chlorine.

B. Duration of disinfection should not exceed 24 hours.

C. Thoroughly flush system with fresh water upon successful completion of sampling.

D. Sample again to verify the disinfectant chlorine level has been reduced to potable drinking water concentrations.

VALVE AND SLEEVE NOTES

1. GATE VALVES, SIZES THREE (3) INCH THROUGH SIXTEEN (16) INCH AND TAPPING VALVES SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED WITH NON-RISING STEM.
2. ALL IN LINE GATE VALVES THREE (3) INCH AND LARGER SHALL BE IN WELLS AS DETAILED. SPECIFICATIONS SHALL INCLUDE THE DIRECTION OF OPERATION OF ALL VALVES.
3. ALL GATE WELL COVERS SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED.
4. ALL GATE VALVES WITH OPERATING NUTS AT A DISTANCE GREATER THAN FIVE (5) FEET BELOW GROUND SURFACE SHALL BE PROVIDED WITH A STAINLESS STEEL EXTENSION STEM. THE LENGTH OF THE EXTENSION STEM SHALL REACH WITHIN FIVE (5) FEET FROM THE GROUND SURFACE. WHEN AN EXTENSION STEM IS USED, IT SHALL BE HELD IN PLACE BY A STAINLESS STEEL EXTENSION STEM GUIDE SUITABLY FASTENED TO THE WALL OF THE GATE WELL. THE EXTENSION STEM SHALL BE MECHANICALLY ATTACHED TO THE OPERATING NUT. DETAILS OF THE EXTENSION SYSTEM AND THE METHOD OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
5. TAPPING VALVES SHALL BE AWWA C515 FL X MJ AS MANUFACTURED BY EJ WITH RESILIENT SEATED GATE VALVES AS APPROVED BY LOCAL MUNICIPALITY.
6. TAPPING SLEEVES SHALL BE ALL STAINLESS STEEL (BODY, FLANGE AND HARDWARE), MANUFACTURED BY ROMAC INDUSTRIES SST; JCM 432; SMITH-BLAIR 663/665 OR APPROVED EQUAL BY THE WATER RESOURCES COMMISSIONER'S OFFICE.

HYDRANT REQUIREMENTS

1. ALL HYDRANTS SHALL BE CONSTRUCTED WITH A SIX (6) INCH COMPANION GATE VALVE IN A THREE (3) PIECE, ADJUSTABLE DUCTILE IRON VALVE BOX, WHICH SHALL INCLUDE A FIVE AND ONE-QUARTER (5-1/4) INCH SCREW SHAFT. VALVE BOXES SHALL BE SERIES 6860 AS MANUFACTURED BY TYLER PIPE, EJ VALVE BOX NO. 8560 OR APPROVED EQUAL.
2. ALL HYDRANTS SHALL BE EJ 5SR250 TRAFFIC MODEL, OR APPROVED EQUAL WITH A MINIMUM OF 6'-0" DEPTH OF BURY UNLESS OTHERWISE INDICATED. SELF-DRAINING HYDRANTS SHALL NOT BE USED. ALL HYDRANTS SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED. HYDRANTS SHALL HAVE BREAKAWAY FLANGE.
3. ALL HYDRANTS SHALL BE PAINTED RED ABOVE GROUND AND BLACK BELOW GROUND FROM A FINISH COAT OF GLAMORTEX 501 ENAMEL, COLOR 314 VERMILLION OR APPROVED EQUAL HYDRANT CAP SHALL BE PAINTED SAME COLOR AS THE HYDRANT. FOR PONTIAC: YELLOW RUST-OLEUM #7543 SAFETY YELLOW.

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

WATERMAIN DETAILS & NOTES

PROJECT NO.	4722319.WMA	
INDEX	--	00-0000
PCA		
DRAWN BY		MAW
DESIGNED BY		MAW
JC/ENG BY		SWS

C23

HDPE pipe, appurtenances, and installation:

The pipe must meet American Water Works Association (AWWA Standard C901 or C906) and the C901 or C906 identification must appear on the exterior wall print line.

All HDPE materials must be listed and approved for use with potable water under ANSI/NSF standard 14. ANSI/NSF standard 14 meets the requirements of ANSI/NSF standard 61. The exterior wall print line of all HDPE pipe proposed must bear the NSF-pw identification. In addition to AWWA C901 or C906 and ANSI/NSF standard requirements, HDPE pipe shall be manufactured from high density PE 3408 polyethylene resin, having a dimension ratio (DR) of 11 or less and a minimum working pressure rating of 160 psi. The DR is calculated as the outside diameter of the pipe divided by the minimum wall thickness.

…Requirements for both HDPE and fusible PVC pipe:

Critical crossings, such as surface water crossings, require valving on each side of the crossing so that the section of piping may be isolated. In addition, a valve manhole with corporation stops on each side of the valve shall be installed for purposes of future chlorination, sampling, and leak testing.

Due to the high expansion and contraction rates compared to metal pipe materials, adequate restraint must be provided at connections to appurtenances or transitions to different pipe materials. Additional restraint is necessary on each side of the connection point. This restraint may be provided in the form of an anchor ring encased in concrete or other methods as approved by the DEQ. All proposed connection and restraint details shall be included with plans and specifications. The design engineer should refer to manufacturer's recommendations and/or the Plastic Pipe Institute for guidance on the best method and required degree of restraint.

Leakage testing.
Under 6.9 B. Hydrostatic Tests, the specifications state that the maximum allowable leakage is 2 quarts per hour per 100 joints; however, AWWA Manual M55 states that there should be zero leakage (for HDPE) since the joints are fused. Please explain or revise.

"Installed pipe shall be pressure tested and leakage tested in accordance with the applicable AWWA Standard."

Suggested Practices, Part 11 (17). Pressure Testing
"… The testing requirements shall be equal to or exceed the applicable AWWA standards as outlined in Act 399.

Special consideration must be given to HDPE water main while pressure testing to account for the expansion of the material. Currently, there is no applicable AWWA standard for pressure testing of HDPE water main. Lacking an applicable standard, specific test procedures must be included in the project specifications. The pressure test procedure for HDPE water main must include an initial expansion phase before conducting the actual pressure test. The pressure test should be conducted at 150 psi for at least 2 hours, to match the requirements for testing of other water main materials. The Plastic Pipe Institute's Handbook of Polyethylene Pipe is a good resource for determining the appropriate specifications for such a pressure test. AWWA Manual M55 also has valuable information on pressure testing of HDPE pipe."

UPDATED AWWA, ANSI, ASTM ASME STANDARDS

Reference	Latest Edition
ASTM D2774	ASTM D2774-21a
ASTM F645	ASTM F645-18b
ASTM F2164	ASTM F2164-21
AWWA C110	AWWA C110-21
AWWA C111	AWWA C111-23
AWWA C509	AWWA C509-23
AWWA C515	AWWA C515-20
AWWA C550	AWWA C550-24
AWWA C600	AWWA C600-23
AWWA C651	AWWA C651-23

10 States, 8.1.1 Standards and Materials Selection
"All materials including pipe, fittings, valves and fire hydrants, and those used for the rehabilitation of water mains shall conform to the latest standards issued by the ASTM, AWWA and ANSI/NSF, where such standards exist, and be acceptable to the reviewing authority."

10 States, 8.7.5 Anchoring of Fusible Pipe
"Additional restraint may be necessary on fusible pipe at the connection to appurtenances or transitions to different pipe materials to prevent joint separation. The restraint may be provided in the form of an anchor ring encased in concrete or other methods as approved by the reviewing authority."

NFE PROJECT NO. K648-06
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

11-06-2026 Addendum #3

DATE	REVIEW
08-15-2024	Phase 500 50%
12-05-2024	Phase 500 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

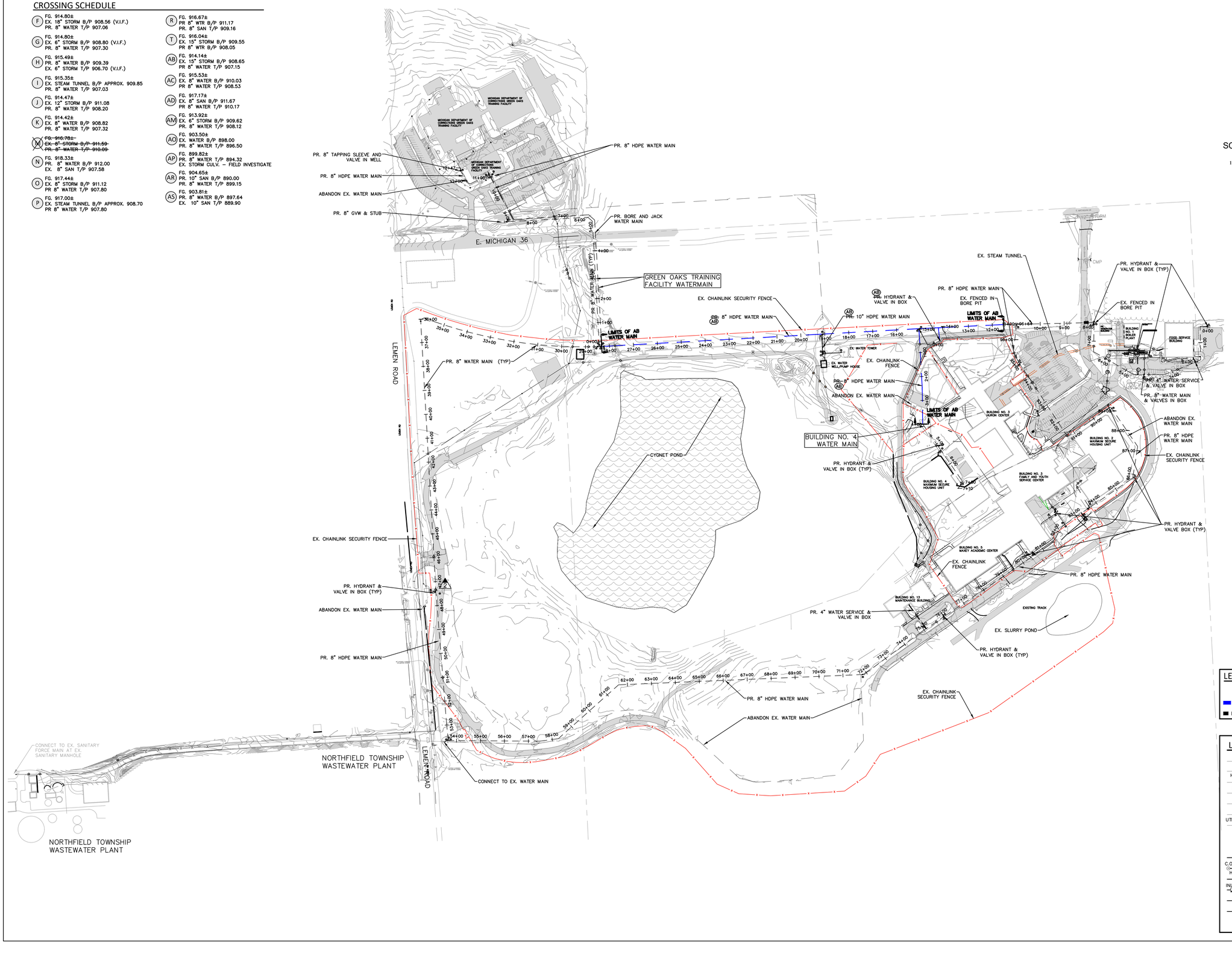
WATERMAIN DETAILS & NOTES

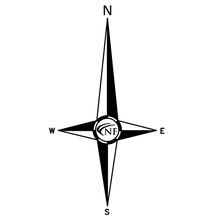
PROJECT NO. - 472319AMM	--
INDEX	00-0000
PCA	MAW
DRAWN BY	MAW
DESIGNED BY	SWS
JC/ENG BY	

C24

CROSSING SCHEDULE

- (F) FG. 914.80±
  EX. 18" STORM B/P 908.56 (V.I.F.)
  PR. 8" WATER T/P 907.06
- (G) FG. 914.80±
  EX. 6" STORM B/P 908.80 (V.I.F.)
  PR. 8" WATER T/P 907.30
- (H) FG. 915.49±
  PR. 8" WATER B/P 909.39
  EX. 6" STORM T/P 906.70 (V.I.F.)
- (I) FG. 915.35±
  EX. STEAM TUNNEL B/P APPROX. 909.85
  PR. 8" WATER T/P 907.03
- (J) FG. 914.47±
  EX. 12" STORM B/P 911.08
  PR. 8" WATER T/P 908.20
- (K) FG. 914.42±
  EX. 8" WATER B/P 908.82
  PR. 8" WATER T/P 907.32
- ~~(M) FG. 916.78±~~
  ~~EX. 8" STORM B/P 911.59~~
  ~~PR. 8" WATER T/P 910.09~~
- (N) FG. 918.33±
  PR. 8" WATER B/P 912.00
  EX. 8" SAN T/P 907.58
- (O) FG. 917.44±
  EX. 8" STORM B/P 911.12
  PR 8" WATER T/P 907.80
- (P) FG. 917.00±
  EX. STEAM TUNNEL B/P APPROX. 908.70
  PR 8" WATER T/P 907.80
- (R) FG. 916.67±
  PR 8" WTR B/P 911.17
  PR. 8" SAN T/P 909.16
- (T) FG. 916.04±
  EX. 15" STORM B/P 909.55
  PR 8" WTR B/P 908.05
- (AB) FG. 914.14±
  EX. 15" STORM B/P 908.65
  PR 8" WATER T/P 907.15
- (AC) FG. 915.53±
  EX. 8" WATER B/P 910.03
  PR 8" WATER T/P 908.53
- (AD) FG. 917.17±
  EX. 8" SAN B/P 911.67
  PR 8" WATER T/P 910.17
- (AM) FG. 913.92±
  EX. 6" STORM B/P 909.62
  PR. 8" WATER T/P 908.12
- (AO) FG. 903.50±
  EX. WATER B/P 898.00
  PR. 8" WATER T/P 896.50
- (AP) FG. 899.82±
  PR. 8" WATER T/P 894.32
  EX. STORM CULV. – FIELD INVESTIGATE
- (AR) FG. 904.65±
  PR. 10" SAN B/P 890.00
  PR. 8" WATER T/P 899.15
- (AS) FG. 903.81±
  PR. 8" WATER B/P 897.64
  EX. 10" SAN T/P 889.90





SCALE:
1" = 180'
180 90 0 90 180 270

NFE PROJECT NO. K648-06

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	REVIEW
08-15-2024	Phase 500 50%
12-05-2024	Phase 500 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents
11-06-2026	Addendum #3

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

OVERALL WATERMAIN LAYOUT PLAN

PROJECT NO. - 4722129.KMM	--
INDEX	00-0000
PCA	MAW
DRAWN BY	MAW
DESIGNED BY	SWS
JC/ENG BY	

LEGEND - WATER MAIN

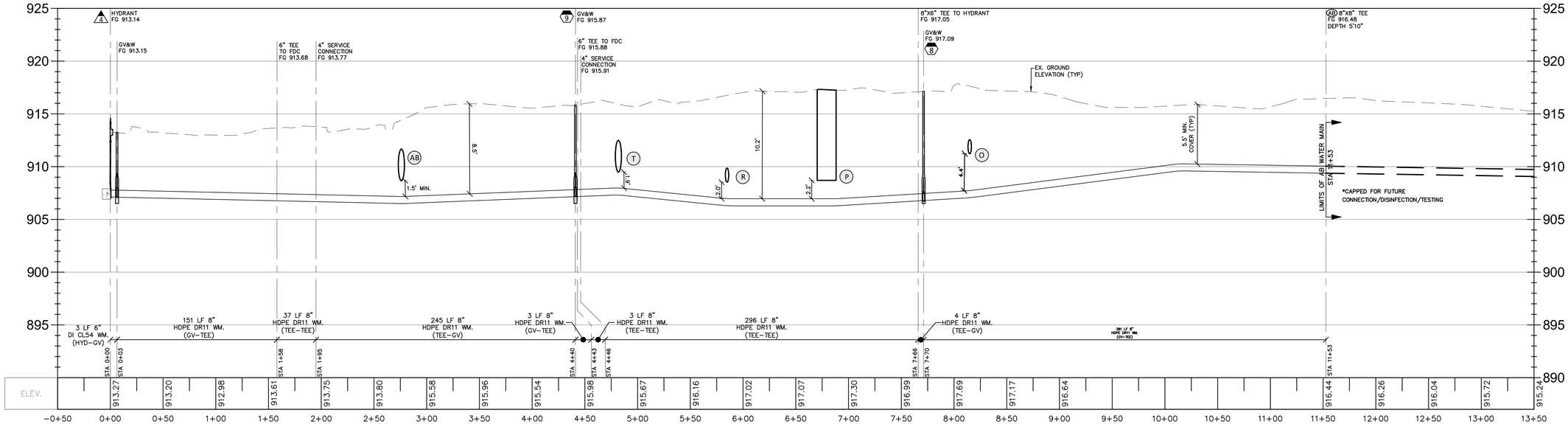
- (AB) AS-BUILT LABELING
- AS-BUILT WATER MAIN
- PROPOSED WATER MAIN

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

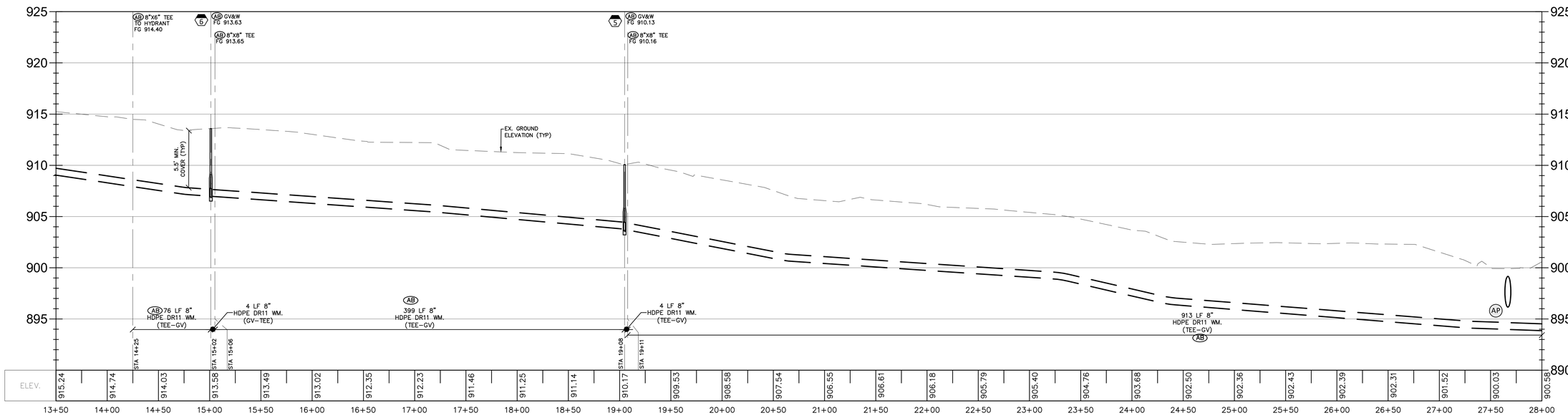
C25

Profile View of PRIMARY WATERMAIN



Watermain Profile
(-0+50.00 - 13+50.00)
SCALE: H 1"=50'
V 1"=5'

Profile View of PRIMARY WATERMAIN



Watermain Profile
(13+50.00 - 28+00.00)
SCALE: H 1"=50'
V 1"=5'

WATER STRUCTURE SCHEDULE

- 4 PR. HYDRANT & VALVE IN BOX FG 913.14
- 5 PR. 8" GATE VALVE IN BOX FG 910.13
- 6 PR. 8" GATE VALVE IN BOX FG 913.63
- 8 PR. 8" GATE VALVE IN BOX FG 917.09
- 9 PR. 8" GATE VALVE IN BOX FG 915.87

CROSSING SCHEDULE

- O FG. 917.44± EX. 8" STORM B/P 911.12 PR 8" WATER T/P 907.80
- P FG. 917.00± EX. STEAM TUNNEL B/P APPROX. 908.70 PR 8" WATER T/P 907.80
- R FG. 916.67± PR 8" SAN B/P 908.60 PR. 8" WTR T/P 907.10
- T FG. 916.04± EX. 15" STORM B/P 909.55 PR 8" WTR T/P 908.05
- AB FG. 914.14± EX. 15" STORM B/P 908.65 PR 8" WATER T/P 907.15
- AP FG. 899.82± PR. 8" WATER T/P 894.32 EX. STORM CULV. – FIELD INVESTIGATE

LEGEND - WATER MAIN

- (AB) AS-BUILT LABELING
- AS-BUILT WATER MAIN
- PROPOSED WATER MAIN

NFE PROJECT NO. K648-06
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	DESCRIPTION
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

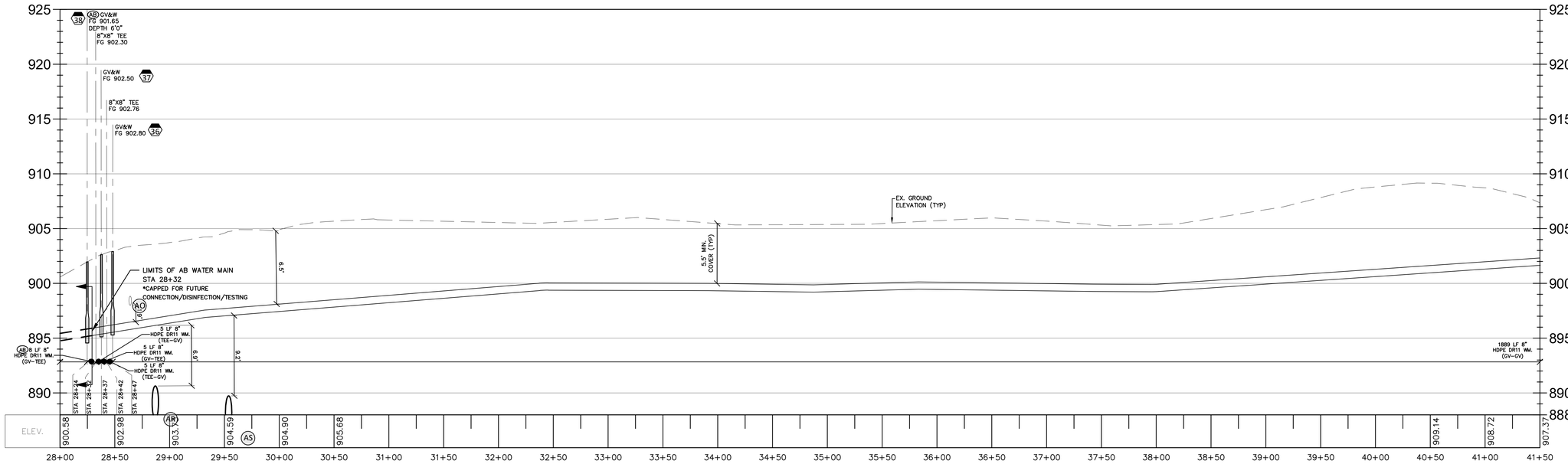
PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

WATERMAIN PROFILES

PROJECT NO. 472231261MM	
INDEX	–
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

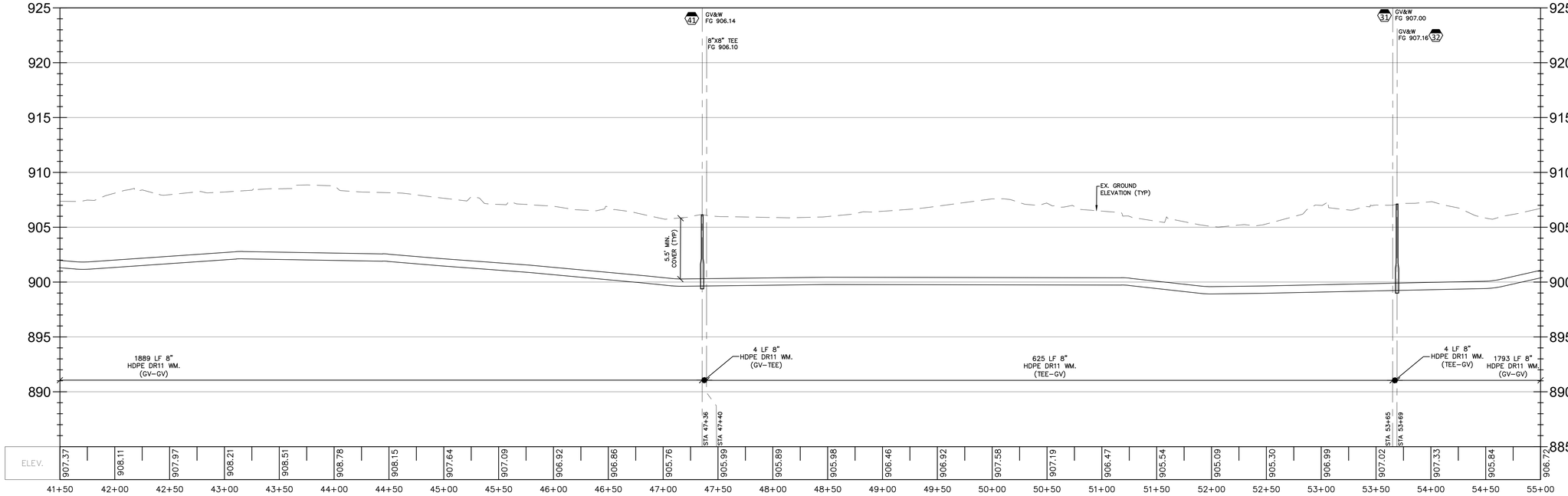
C26

Profile View of PRIMARY WATERMAIN



Watermain Profile
(28+00.00 - 41+50.00)
SCALE: H 1"=50'
V 1"=5'

Profile View of PRIMARY WATERMAIN



Watermain Profile
(41+50.00 - 55+00.00)
SCALE: H 1"=50'
V 1"=5'

WATER STRUCTURE SCHEDULE

- 31 PR. 8" GATE VALVE IN BOX FG 907.16
- 32 PR. 8" GATE VALVE IN BOX FG 907.16 (TO EXISTING WM)
- 33 PR. 8" GATE VALVE IN BOX FG 906.98
- 36 PR. 8" GATE VALVE IN BOX FG 902.80
- 37 PR. 8" GATE VALVE IN BOX FG 902.50
- 38 PR. 8" GATE VALVE IN BOX FG 901.65
- 41 PR. 8" GATE VALVE IN BOX FG 906.14
- 42 PR. 8" GATE VALVE IN BOX FG 906.14 (TO LIFT STATION)

CROSSING SCHEDULE

- AO FG. 903.50± EX. WATER B/P 898.00 PR. 8" WATER T/P 896.50
- AR FG. 904.65± PR. 8" WATER B/P 898.48 PR. 10" SAN T/P 890.83
- AS FG. 903.81± PR. 8" WATER B/P 897.64 EX. 10" SAN T/P 889.90

LEGEND - WATER MAIN

- (AB) AS-BUILT LABELING
- AS-BUILT WATER MAIN
- PROPOSED WATER MAIN

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	REVIEW
08-15-2024	Phase 500 50%
12-04-2024	Phase 500 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents
11-06-2026	Addendum #3

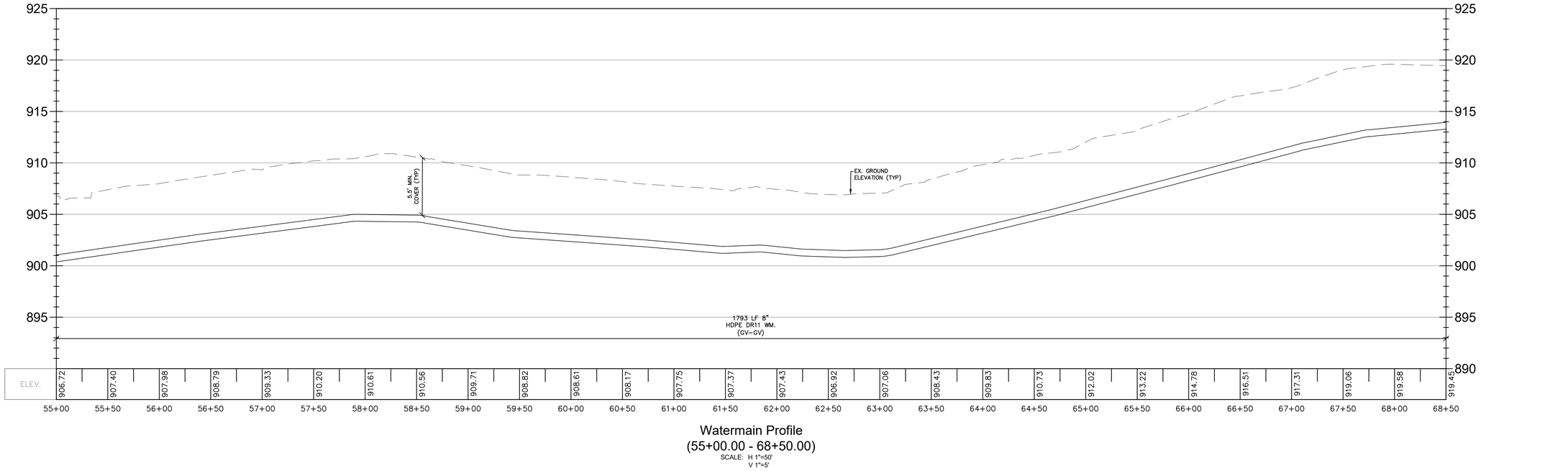
PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

WATERMAIN PROFILES

PROJECT NO.	472231291MM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

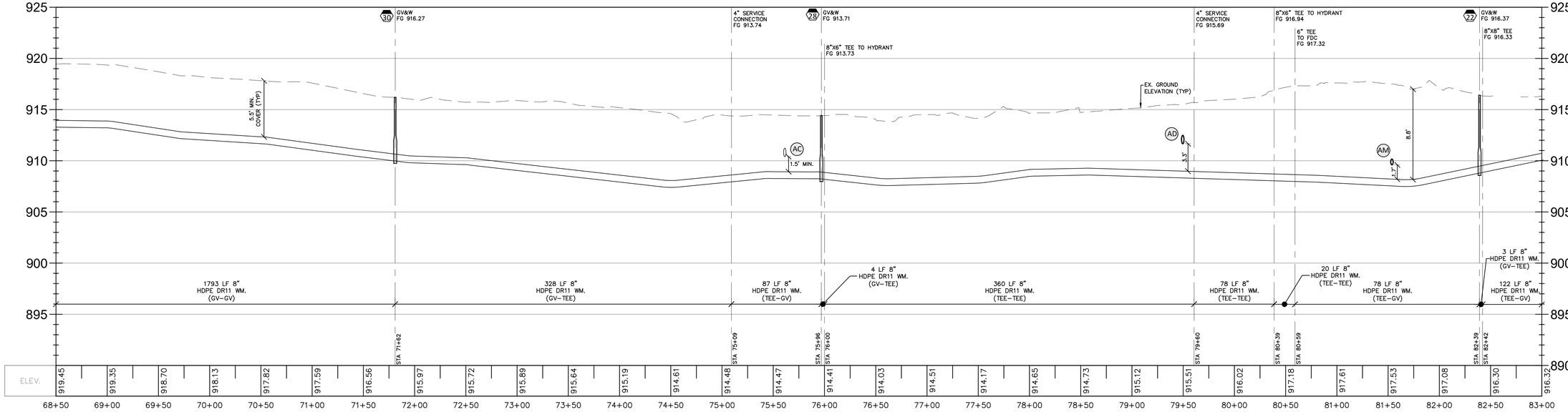
C27

Profile View of PRIMARY WATERMAIN



Watermain Profile
(55+00.00 - 68+50.00)
SCALE: H 1"=50'
V 1"=5'

Profile View of PRIMARY WATERMAIN



Watermain Profile
(68+50.00 - 83+00.00)
SCALE: H 1"=50'
V 1"=5'

WATER STRUCTURE SCHEDULE

- 22 PR. 8" GATE VALVE IN BOX FG 916.37
- 28 PR. 8" GATE VALVE IN BOX FG 913.71
- 30 PR. 8" GATE VALVE IN BOX FG 916.27

CROSSING SCHEDULE

- (AC) FG. 915.53±, EX. 8" WATER B/P 910.03, PR 8" WATER T/P 908.53
- (AD) FG. 917.17±, EX. 8" SAN B/P 911.67, PR 8" WATER T/P 910.17
- (AM) FG. 913.92±, EX. 6" STORM B/P 909.62, PR. 8" WATER T/P 908.12

LEGEND - WATER MAIN

- (AB) AS-BUILT LABELING
- AS-BUILT WATER MAIN
- PROPOSED WATER MAIN

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%
DATE	REVIEW

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

WATERMAIN PROFILES

PROJECT NO. 472231261MM	--
INDEX	00-0000
PCA	MAW
DRAWN BY	MAW
DESIGNED BY	SWS
JC/ENG BY	

C28

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

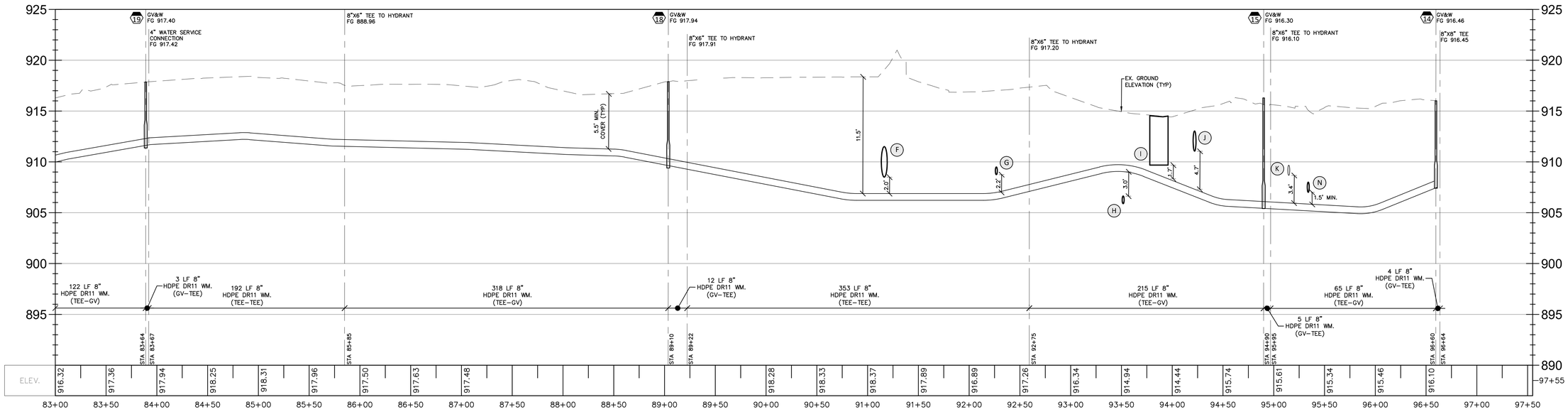
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	REVIEW
11-06-2026	Addendum #3
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 500 90%
08-15-2024	Phase 500 50%

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

Profile View of PRIMARY WATERMAIN



Watermain Profile
(83+00.00 - 97+55.00)

SCALE: H 1"=50'
V 1"=5'

WATER STRUCTURE SCHEDULE

- 14 PR. 8" GATE VALVE IN BOX FG 916.46
- 15 PR. 8" GATE VALVE IN BOX FG 916.30
- 18 PR. 8" GATE VALVE IN BOX FG 917.94
- 19 PR. 8" GATE VALVE IN BOX FG 917.40

CROSSING SCHEDULE

- F FG. 914.80± EX. 18" STORM B/P 908.56 (V.I.F.) PR. 8" WATER T/P 907.06
- G FG. 914.80± EX. 6" STORM B/P 908.80 (V.I.F.) PR. 8" WATER T/P 907.30
- H FG. 915.49± PR. 8" WATER B/P 909.39 EX. 6" STORM T/P 906.70 (V.I.F.)
- I FG. 915.35± EX. STEAM TUNNEL B/P APPROX. 909.85 PR. 8" WATER T/P 907.03
- J FG. 914.47± EX. 12" STORM B/P 911.08 PR. 8" WATER T/P 908.20
- K FG. 914.42± EX. 8" WATER B/P 908.82 PR. 8" WATER T/P 907.32
- M FG. 916.78± EX. 8" STORM B/P 911.59 PR. 8" WATER T/P 905.51
- N FG. 918.33± EX. 8" SAN B/P 906.91 PR. 8" WATER T/P 905.41

LEGEND - WATER MAIN

- (AB) AS-BUILT LABELING
- AS-BUILT WATER MAIN
- PROPOSED WATER MAIN

WATERMAIN PROFILES

PROJECT NO.	472223129.KMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C29

NFE PROJECT NO. K648-06
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

11-06-2026 Addendum #3

DATE	REVIEW
10-09-2026	Bid Documents
10-05-2026	EGLE WM AB Resubmit
12-01-2025	EGLE WM As-Built
12-05-2024	Phase 900 90%
08-15-2024	Phase 900 50%

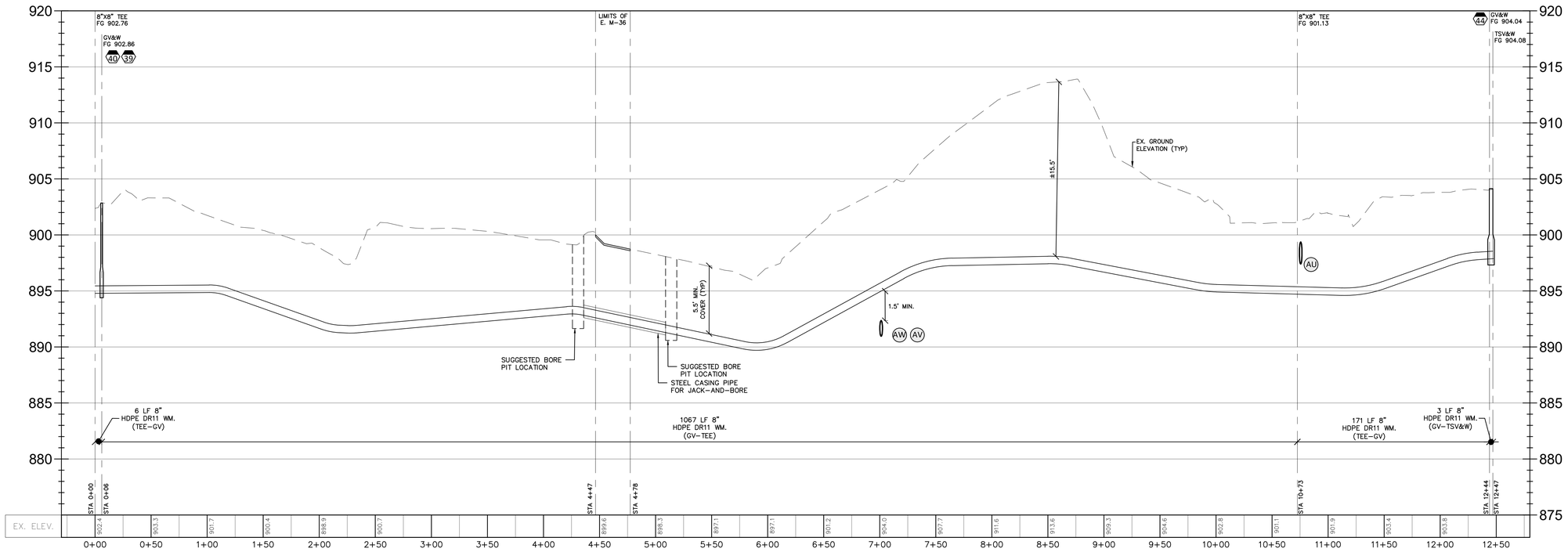
PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

GREEN OAKS TRAINING
FACILITY WATERMAIN
PROFILES

PROJECT NO.	47223129.KMM
INDEX	--
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

C30

Profile View of GREEN OAKS TRAINING FACILITY WATERMAIN



Watermain Profile
(-0+30.00 - 12+80.00)

SCALE: H 1"=50'
V 1"=5'

WATER STRUCTURE SCHEDULE

- 39 — PR. 8" GATE VALVE IN BOX, FG 902.62
- 40 — PR. 8" GATE VALVE IN BOX, FG 902.62
- 44 — PR. 8" GATE VALVE IN BOX, FG 904.16

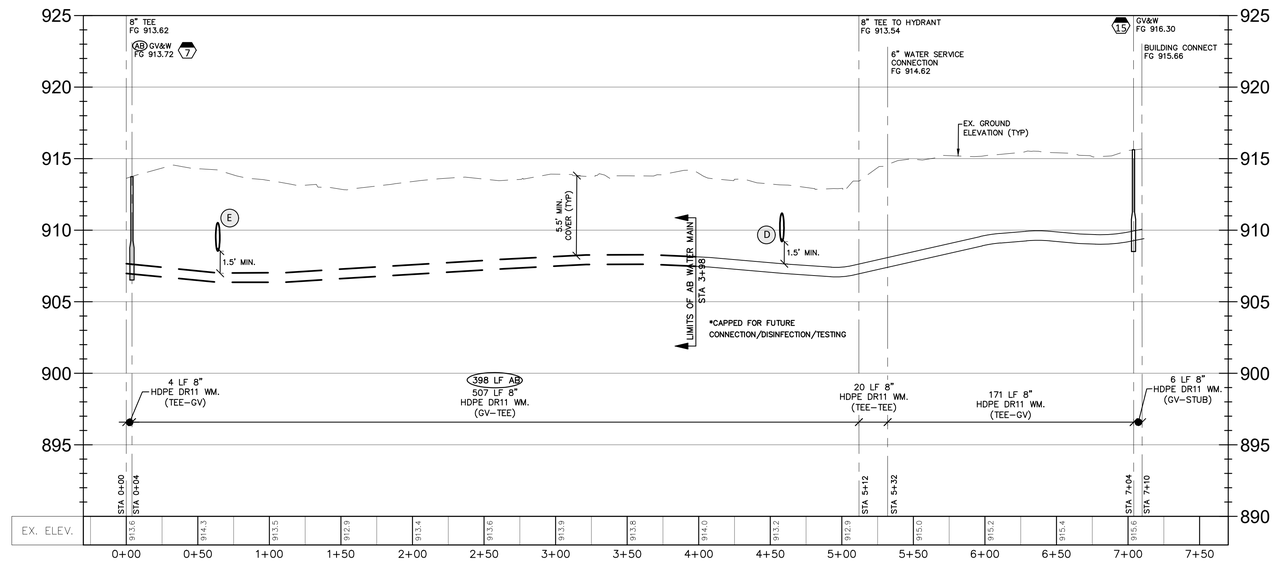
CROSSING SCHEDULE

- AU — FG. 901.40±, EX. 12" SAN B/P 897.31, PR. 8" WATER T/P 895.81
- AV — FG. 905.62±, PR. 8" WATER B/P 900.12, PR. 10" SAN T/P 893.67
- AW — FG. 902.20±, PR. 8" WATER B/P 896.70, PR. 10" SAN T/P 893.62

LEGEND - WATER MAIN

- (AB) — AS-BUILT LABELING
- — — — — AS-BUILT WATER MAIN
- ——— PROPOSED WATER MAIN

Profile View of BUILDING No. 4 WATER MAIN



Watermain Profile
(-0+30.00 - 7+70.00)

SCALE: H 1"=50'
V 1"=5'

WATER STRUCTURE SCHEDULE

7 PR. 6" GATE VALVE IN BOX
FG 913.72

15 PR. 8" GATE VALVE IN BOX
FG 916.30

CROSSING SCHEDULE

D FG. 913.31±
EX. 12" STORM B/P FIELD INVESTIGATE
PR. 8" WATER T/P 907.80

E FG. 914.00±
EX. 12" WATER B/P APPROX. 908.50
PR. 8" WATER T/P 907.00

LEGEND - WATER MAIN

AB — AS-BUILT LABELING
— — — — AS-BUILT WATER MAIN
——— PROPOSED WATER MAIN

NFE PROJECT NO. K648-06
46777 WOODWARD AVENUE
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	
08-15-2024	REVIEW
12-05-2024	Phase 500 90%
12-01-2025	EGLE WM As-Built
10-05-2026	EGLE WM AB Resubmit
10-09-2026	Bid Documents
11-06-2026	Addendum #3

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTIONAL FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

BUILDING NO. 4
WATERMAIN PROFILES

PROJECT NO. - 4722329.AMM	--
INDEX	00-0000
PCA	MAW
DRAWN BY	MAW
DESIGNED BY	SWS
JC/ENG BY	

C31

GENERAL ELECTRICAL NOTES

1. ALL NON-FIRE RATED WALLS ARE TO BE PATCHED WITH LIKE MATERIAL TO MAINTAIN ORIGINAL RATING.
2. ALL WALL AND FLOOR PENETRATIONS THROUGH FIRE RATED WALLS ARE TO BE SEALED WITH FIRE CAULK TO MAINTAIN ORIGINAL RATING.
3. ALL CONDUITS SHALL BE FIELD ROUTED ALONG EXISTING PIPING AND STRUCTURAL STEEL.
4. CONTRACTORS SHALL VISIT THE PROJECT SITE DURING PRE-BID WALK THROUGH TO DETERMINE THE EXACT EXTENT OF THE WORK REQUIRED BEFORE BIDDING THE PROJECT.
5. REMOVE ALL EXISTING EXPOSED CONDUIT, WIRE, AND EQUIPMENT NOT TO BE RE-USED WHERE WORK IS BEING DONE EXCEPT ITEMS NOTED OTHERWISE.
6. WHERE BUILDING SURFACES ARE DAMAGED BY THE REMOVAL OF OLD WORK, SURFACES SHALL BE PATCHED AND PAINTED TO MATCH ADJACENT.
7. EXISTING WORK WHICH IS PRESENTLY CONCEALED, WHICH WILL REMAIN CONCEALED, AND DOES NOT INTERFERE WITH ANY NEW WORK OF ANY TRADE NEED NOT BE REMOVED. HOWEVER, ALL CONDUIT SHALL BE CAPPED BELOW FINISH SURFACE AND THEN PATCHED AND PAINTED TO MATCH, OR AS NOTED.
8. EXISTING OPENINGS, WHICH ARE TO BE REUSED, SHALL BE MODIFIED OR ENLARGED TO SUIT THE NEW SYSTEMS AS REQUIRED. PROVIDE ALL REQUIRED CUTTING AND PATCHING.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING THE EXISTING WALLS TO MATCH THE ADJACENT SURFACES BEHIND ALL SURFACE MOUNTED EQUIPMENT.
10. CONTRACTOR SHALL FIELD VERIFY ALL EQUIPMENT AND LOADS PRIOR TO INSTALLING SERVICE TO EQUIPMENT.
11. DRAWINGS ARE BASED ON EXISTING RECORD DOCUMENTS AND CASUAL FIELD OBSERVATION PERFORMED ON AUGUST 16, 2024. REPORT ANY DISCREPANCIES TO ENGINEER FOR CLARIFICATION.
12. MINIMUM RACEWAY SIZE; 3/4" TRADE SIZE. ALL FLEXIBLE CONDUIT RACEWAYS SHALL BE LIQUID TITE, MAXIMUM 36" LENGTH. REFER TO SPECIFICATION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS.
13. ALL CONDUIT ABOVE 10 FOOT SHALL MEET THE FOLLOWING REQUIREMENTS;
    - 13.1. STRAP DISTANCE: 5 FEET.
    - 13.2. FASTENERS: 2 HOLE
    - 13.3. CONDUIT: INTERIOR EMT, EXTERIOR EXPOSED/ CONCEALED-GRC.
    - 13.4. FITTINGS: COMPRESSION.
    - 13.5. SECURE CONDUIT WITHIN 12 INCHES OF BOXES AND ENCLOSURES.
14. ALL CONDUIT 10 FOOT AND BELOW SHALL MEET THE FOLLOWING REQUIREMENTS;
    - 14.1. STRAP DISTANCE: 3 FEET.
    - 14.2. FASTENERS: 2 HOLE WITH SECURITY SCREWS.
    - 14.3. CONDUIT: INTERIOR EMT, EXTERIOR EXPOSED/ CONCEALED - GRC.
    - 14.4. FITTINGS: COMPRESSION.
    - 14.5. BELL BOXES: FS TYPE.
    - 14.6. NO KNOCKOUTS.
    - 14.7. SECURE CONDUIT WITHIN 12 INCHES OF BOXES AND ENCLOSURES
15. ALL EXPOSED WIRING SHALL BE IN CONDUIT. OPEN LOW VOLTAGE WIRING ABOVE CEILINGS IS ACCEPTABLE.
    - 15.1. ALL EXPOSED WIRING ABOVE CEILINGS SHALL BE INSTALLED WITH J-HOOKS. DO NOT CONNECT TO EXISTING CEILING TIE WIRES.
16. CONDUITS AND WIRES SHALL BE INSTALLED STRAIGHT, LEVEL, AND SHALL BE PARALLEL OR PERPENDICULAR TO THE BUILDING LINES.
17. CONTRACTOR SHALL VERIFY ALL VOLTAGES BEFORE CONNECTING ANY EQUIPMENT.
18. ALL LOCATIONS WHERE THE WALLS CAN NOT BE FISHED SHALL BE SURFACE MOUNTED CONDUIT FOLLOWING NOTES 12 THROUGH 14 ABOVE.
19. ALL WALLS THAT ARE ACCESSIBLE SHALL BE FISHED AND DEVICE CUT INTO WALL.
20. ALL EXTERIOR CONCEALED CONDUIT UNDERGROUND SHALL BE RNC, TYPE EPC-40-PVC. ALL EXTERIOR ABOVE GROUND CONDUIT SHALL BE GRC.
21. ALL ELECTRICAL OUTAGES SHALL NOT LAST OVER 2-HOURS. PORTABLE GENERATORS SHALL BE USED TO REPLACE ANY ELECTRICAL SERVICE EXCEEDING THAT DURATION.
22. WHEN RELOCATING ANY ELECTRICAL DEVICE, CONTRACTOR SHALL COMPLETE THE RELOCATION IN ONE DAY AND VERIFY THAT ALL DEVICES RELOCATED ARE WORKING PROPERLY PRIOR TO LEAVING THE SITE.
23. CONTRACTOR SHALL PROVIDE AND INSTALL ALL REQUIRED COMPONENTS, RACEWAYS, WIRE, AND HARDWARE, AS INDICATED ON DRAWINGS.
24. ALL WORK DONE WITHOUT APPROVED SHOP DRAWINGS IS AT CONTRACTORS RISK.
25. CONTRACTOR SHALL NOTIFY PSC OF ANY EXISTING INSTALLATIONS NOT MEETING THESE STANDARDS PRIOR TO STARTING WORK IN THE AREA.
26. THESE DRAWINGS HAVE BEEN SUBMITTED AND APPROVED BY LOCAL AUTHORITIES HAVING JURISDICTION. ANY COMMENTS THAT WERE PROVIDED BY THE LOCAL AUTHORITIES HAVING JURISDICTION HAVE BEEN ADDRESSED, AND THE DRAWINGS MODIFIED ACCORDINGLY. BECAUSE OF THIS, RESPONSIBILITY OF ANY ISSUES THAT ARISE UPON FINAL INSPECTION SHALL NOT FALL UPON MATRIX CONSULTING ENGINEERS.

ELECTRICAL SYMBOLS LEGEND

OUTLETS
- SINGLE RECEPTACLE (120 VOLT)
- DUPLEX RECEPTACLE
- EMERGENCY RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE
- F FLUSH FLOOR BOX
- S SURFACE FLOOR BOX
- SPECIAL EQUIPMENT RECEPTACLE
- TELEPHONE OUTLET
- DATA OUTLET
- TELEPHONE / DATA OUTLET
- PP POWER POLE
- JUNCTION BOX
- WALL JUNCTION BOX
- PULL (JUNCTION) BOX
- UNDERFLOOR JUNCTION BOX
- CEILING MOUNTED WIFI

DESIGNATIONS
- X DEMOLITION NOTE
- X PLAN NOTE
- X ADDENDUM NOTE

SOUND and SIGNAL
- CAMERA
- SSCP SECURITY SYSTEM CONTROL PANEL
- CCTV CO
- DR DATA RACK
- RUPS RACK MOUNTED UPS
- FUPS FLOOR UPS
- WUPS WALL MOUNTED UPS
- P POLE

FIXTURES
- LIGHT FIXTURE
- STRIP FIXTURE
- EMERGENCY LIGHT FIXTURE
- IN-GRADE LIGHT FIXTURE
- SPOTLIGHT (number of heads shown)
- EXIT SIGN (face & direction as shown)
- WALL MOUNT LIGHT FIXTURE
- CEILING LIGHT FIXTURE
- TRACK & FIXTURE
- STREET TYPE POLE FIXTURE
- POLE MOUNTED LIGHT FIXTURE
- EXTERIOR WALL MOUNT LIGHT FIXTURE
- WALLPACK LIGHT FIXTURE
- SPECIAL PURPOSE LIGHT FIXTURE
- HIGH BAY LIGHT FIXTURE
- EMERGENCY EGRESS LIGHT FIXTURE (number of heads shown)
- DOCK LIGHT FIXTURE

CIRCUITRY and RACEWAYS
- CONDUIT INSTALLED (by E.C.)
- CONDUIT INSTALLED (by others)
- CONDUIT STUB UP
- CONDUIT STUB DOWN
- 1,3 HOME RUN (with circuit numbers)
- END OF CONDUIT RUN
- END OF CONDUIT RUN, CAP AND STAKE
- "CONDUIT RUN CONTINUES" INDICATION
- OR FLEXIBLE PIGTAILS/CONNECTIONS
- WM WIREMOLD AS SPECIFIED
- PM PLUGMOLD AS SPECIFIED
- BD BUS DUCT
- UFD UNDERFLOOR DUCT

SERVICE and EQUIPMENT
- TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
- VFD VARIABLE FREQUENCY DRIVE
- T TRANSFORMER
- DISCONNECT SWITCH
- MAGNETIC STARTER
- COMB. STARTER
- PANELBOARD, SURFACE MOUNTED
- PANELBOARD, FLUSH MOUNTED
- WEATHERHEAD
- UTILITY METER, AS REQUIRED
- DIGITAL EQUIPMENT METER, AS REQUIRED
- CT CURRENT TRANSFORMERS
- GENERATOR, KW SHOWN
- TT TELEPHONE TERMINAL BOARD
- GROUND CONNECTION PER N.E.C.
- WW WIREWAY
- TSW TRANSFER SWITCH
- ENCLOSED CIRCUIT BREAKER
- CAPACITOR

CONTROL
- T THERMOSTAT
- H HUMIDISTAT
- PC PHOTOCELL (voltage as required)
- TC TIME CLOCK (24 hour U.O.N.)
- 3 PUSHBUTTON STATION (number of buttons indicated)
- CONTROL TRANSFORMER
- LIGHTING CONTACTOR
- IRRIGATION CONTROLLER (120 volt xxVA connection by x/C)

ABBREVIATIONS LEGEND

A	AMPS
AC	ABOVE COUNTER
ACU-	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AHU-	AIR HANDLING UNIT
AIC	AMPS INTERUPTING CAPACITY
AS	ABOVE SHELF
ATS	AUTOMATIC TRANSFER SWITCH
B-	BOILER
BC	BELOW COUNTER
BLDG	BUILDING
CHLR-	CHILLER
CND (C)	CONDUIT
CKT	CIRCUIT
CKT BKR	CIRCUIT BREAKER
CT-	COOLING TOWER
CU-	CONDENSING UNIT
CUH-	CABINET UNIT HEATER
DFU-	DUCT FURNACE
DISC	DISCONNECT
DWG	DRAWING
DWH-	DOMESTIC WATER HEATER
EBB-	ELECTRIC BASEBOARD
EC	ELECTRICAL CONTRACTOR
EF-	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EWC	ELECTRIC WATER COOLER
EX	EXISTING
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE CONDUIT
FLR	FLOOR
FLUOR	FLUORESCENT
FSES	FOOD SERVICE EQUIP. SUPPLIER
F/S	FIRE/SMOKE
FU-	FURNACE
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT INTERUPTER
GND	GROUND
H-	HUMIDIFIER
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO SELECTOR SWITCH
HP	HORSEPOWER
HR	HOUR
HVAC	HEATING/VENTILATING/AIR CONDITIONING
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX
LC	LIGHT CONTROL
LT	LIGHT
LTG	LIGHTING
LT FLEX	LIQUID TIGHT FLEXIBLE METAL CONDUIT
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MLO	MAIN LUG ONLY
MT	MOUNT
MTD	MOUNTED
MTG	MOUNTING
MUAU-	MAKE-UP AIR UNIT
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
P	POLE
P-	PUMP
PB	PULL BOX
PNL	PANEL
PRV-	POWER ROOF VENTILATOR
PVC	POLY VINYL CLORIDE
PWR	POWER
RECEPT	RECEPTACLE
RGC	RIGID GALVANIZED STEEL CONDUIT
RTU-	ROOF TOP UNIT
SF-	SUPPLY FAN
SPEC	SPECIFICATIONS
SW	SWITCH
SWBD	SWITCHBOARD
TCC	TEMPERATURE CONTROL CONTRACTOR
TR	TAMPER PROOF RECEPTACLE
TS	TAMPER PROOF SWITCH
TYP	TYPICAL
UF	UNDER FLOOR
UH-	UNIT HEATER
UL	UNDERWRITERS' LABORATORIES, INC.
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VL	VERIFY LOCATION WITH OWNER
W	WATTS
W/	WITH
W/O	WITHOUT
WP	WEATHER PROOF
XFMR	TRANSFORMER

NFE PROJECT NO. K648-06
Civil Engineers
Land Surveyors
Land Planners
46777 Woodward Avenue
Pontiac, MI 48342-5032
Tel. (248) 332-7931
Fax. (248) 332-8257
NF ENGINEERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

MATRIX
CONSULTING ENGINEERS, INC
1601 E. CESAR CHAVEZ AVE.
LANSING, MI 48906
PHONE (517) 487-2511
FAX (517) 487-2544
administrator@matrixcelnc.com

11/10/26	ADDENDUM #3	
01/17/25	BID SET	
DATE	REVIEW	

PROJECT DESCRIPTION
SITE MECHANICAL UNDERGROUND -
WOODLAND CORRECTION FACILITY
WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

STATE OF MICHIGAN
JOSEPH F. SOVIS, JR.
ENGINEER NO.
6201042247
LICENSED PROFESSIONAL ENGINEER

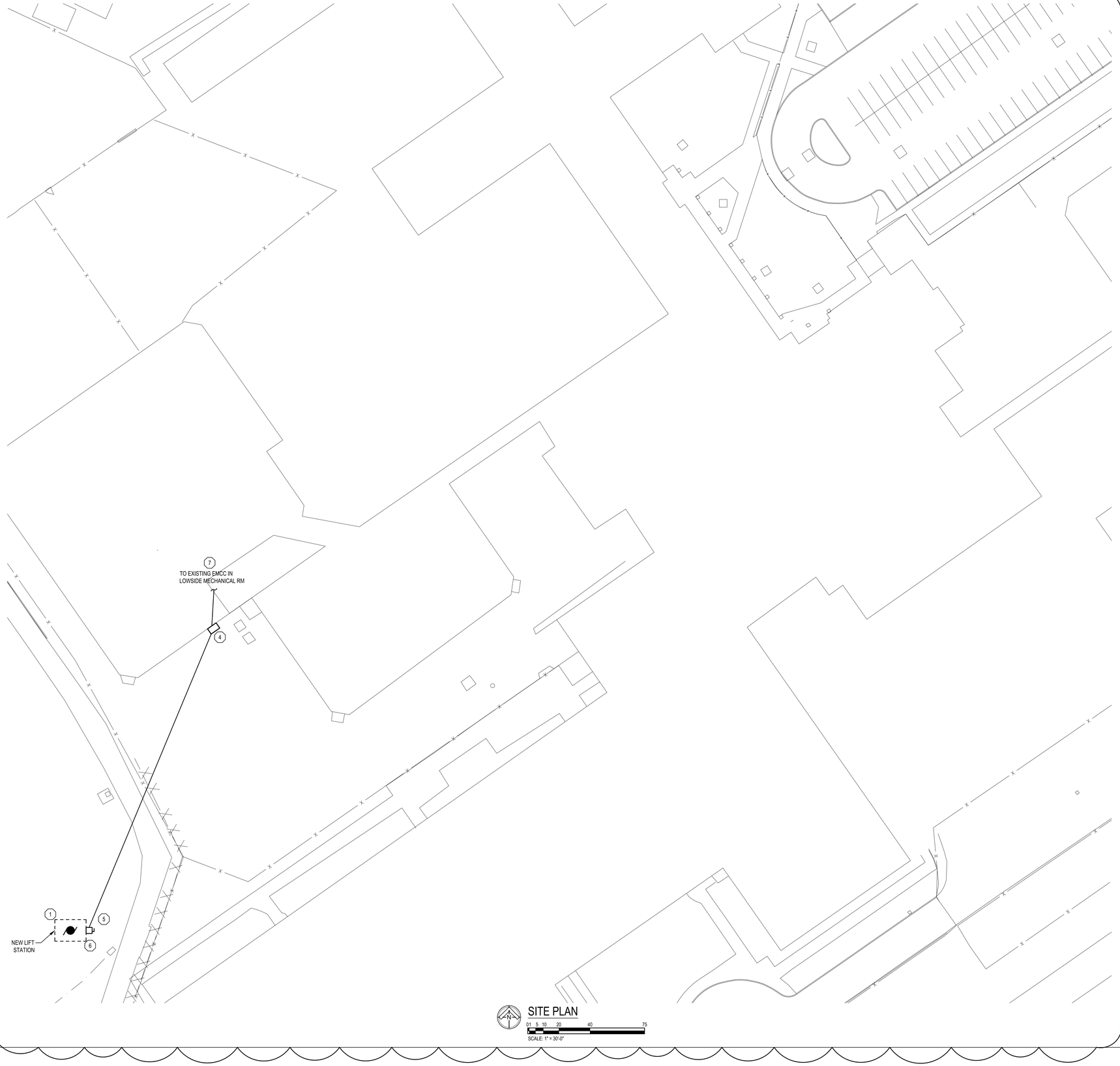
ELECTRICAL - SYMBOLS - NOTES - ABBREVIATIONS

PROJECT NO.	4722310.SSW
INDEX	--
PCA	00-0000
DRAWN BY	DRK
DESIGNED BY	DRK
JC/ENG BY	JFS

E1

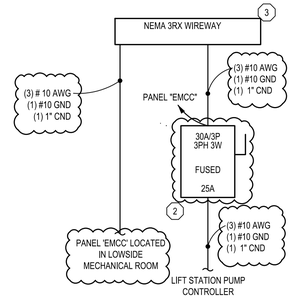
ELECTRICAL KEY NOTES

1. PROVIDE AND INSTALL NEW CIRCUITS AND TERMINATE NEW EQUIPMENT. REFER TO SHEET E-500 DETAIL 1. PROVIDE AND INSTALL ALL CONDUIT, WIRE, HARDWARE, AND BREAKERS AS REQUIRED.
2. PROVIDE AND INSTALL NEW WEATHER RATED WIREWAY AND DISCONNECT SWITCH. PROVIDE AND INSTALL FUSES AS SHOWN. COORDINATE LOCATION IN FIELD.
3. PROVIDE AND INSTALL GROUND LUG AND GROUND ALL CONDUITS AND ENCLOSURES.
4. PROVIDE AND INSTALL NEW WEATHER RATED PULL BOX ON THE EXTERIOR OF THE BUILDING TO DIRECTIONAL BORE TO. PROVIDE AND INSTALL CONDUIT TO EXTEND THE CIRCUIT TO THE ELECTRICAL ROOM. REFER TO SHEET E-2 DETAIL 1 FOR CONDUIT AND WIRE SIZES.
5. DIRECTIONAL BORE AND HYDRO-EXCAVATE CONDUITS AS SHOWN.
6. CONNECT NEW LIFT STATION PUMP(S) INTO EXISTING STARNET SYSTEM VIA NEW ULTRA LINK. CONTRACTOR SHALL CONTACT BRET EMERSON (BRET@COMMTECHDESIGN.COM) AND NATE DEWEERD (NATHAN.DEWEERD@AUS.COM) FOR INTEGRATION INTO THE EXISTING STARNET SYSTEM. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT AND CAT6 CABLE FOR THE INTEGRATION. AUS SHALL BE RESPONSIBLE FOR INSTALLING AND PROVIDING A COMPLETE WORKING CONTROLS SYSTEM.
7. PROVIDE NEW 30A 3 POLE BUCKET IN EXISTING SQUARE D MODEL 6 MOTOR CONTROL CENTER 'EMCC'. FUSE NEW BUCKET AT 25A 3Ø. MATCH FUSE TYPE IN EXISTING BUCKETS.



SITE PLAN

SCALE: 1" = 30'-0"



1 PARTIAL ONE-LINE DIAGRAM - LIFT STATION DISCONNECTS

SCALE: N.T.S

NFE PROJECT NO. K648-06

NF ENGINEERS

Civil Engineers
Land Surveyors
Land Planners

46777 Woodward Avenue
Pontiac, MI 48342-5032
Tel. (248) 332-7931
Fax. (248) 332-8257

MATRIX CONSULTING ENGINEERS, INC

1601 E. CESAR CHAVEZ AVE.
LANSING, MI 48906
PHONE (517) 487-2511
FAX (517) 487-2544
administrator@matrixceinc.com

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, NCARB, DIRECTOR

DATE	
11/10/26	ADDENDUM #3
01/17/25	BID SET
DATE	REVIEW

PROJECT DESCRIPTION

SITE MECHANICAL UNDERGROUND - WOODLAND CORRECTION FACILITY

WHITMORE LAKE, LIVINGSTON COUNTY, MICHIGAN

ELECTRICAL - SITE PLAN

PROJECT NO.	472/23125.83W
INDEX	--
PCA	00-0000
DRAWN BY	DRK-
DESIGNED BY	DRK-
JC/ENG BY	JFS-

E2