

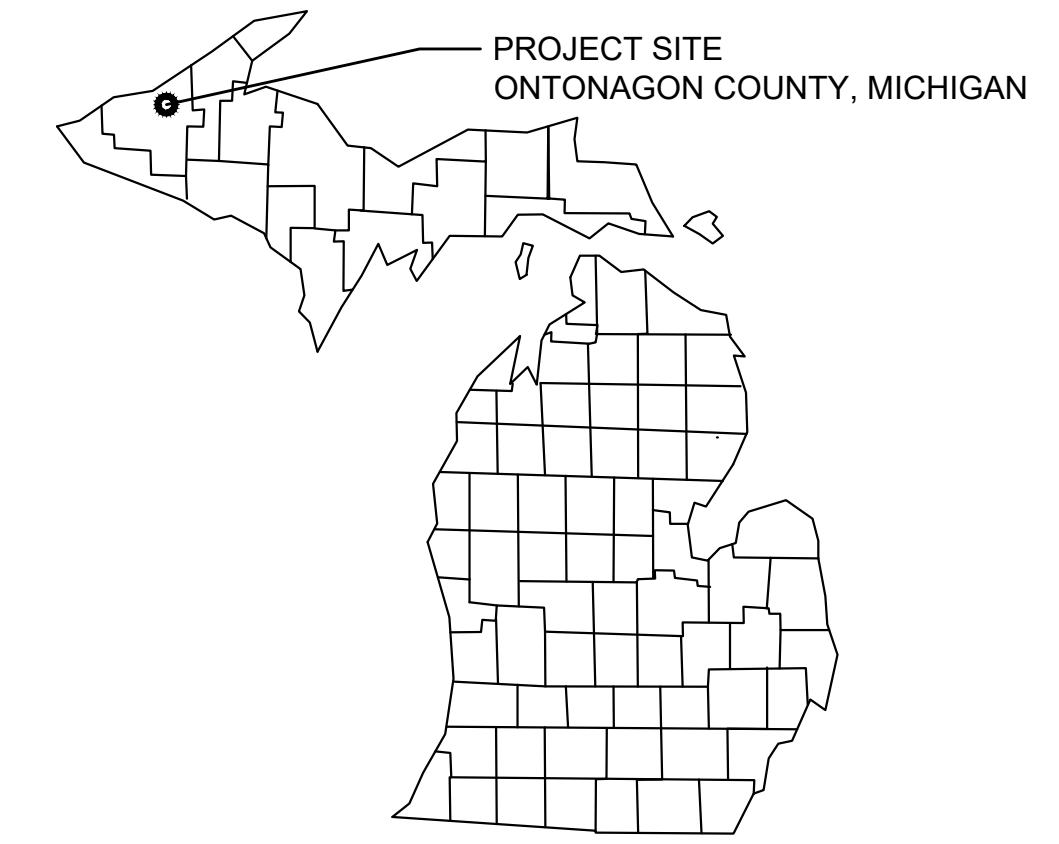


WESTERN UPPER PENINSULA SHOOTING FACILITY

CONSTRUCTION PLANS FOR MICHIGAN DEPARTMENT OF TECHNOLOGY, MANAGEMENT & BUDGET

T.51 North , R.41 West
ONTONAGON COUNTY, MICHIGAN

FILE NO.: 751 / 17172.JBB



VICINITY MAP
N.T.S. SHEET INDEX

CIVIL ENGINEER

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS



STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ROBERT C. HALL, RA, NCARB, DIRECTOR

PROJECT PERMITS

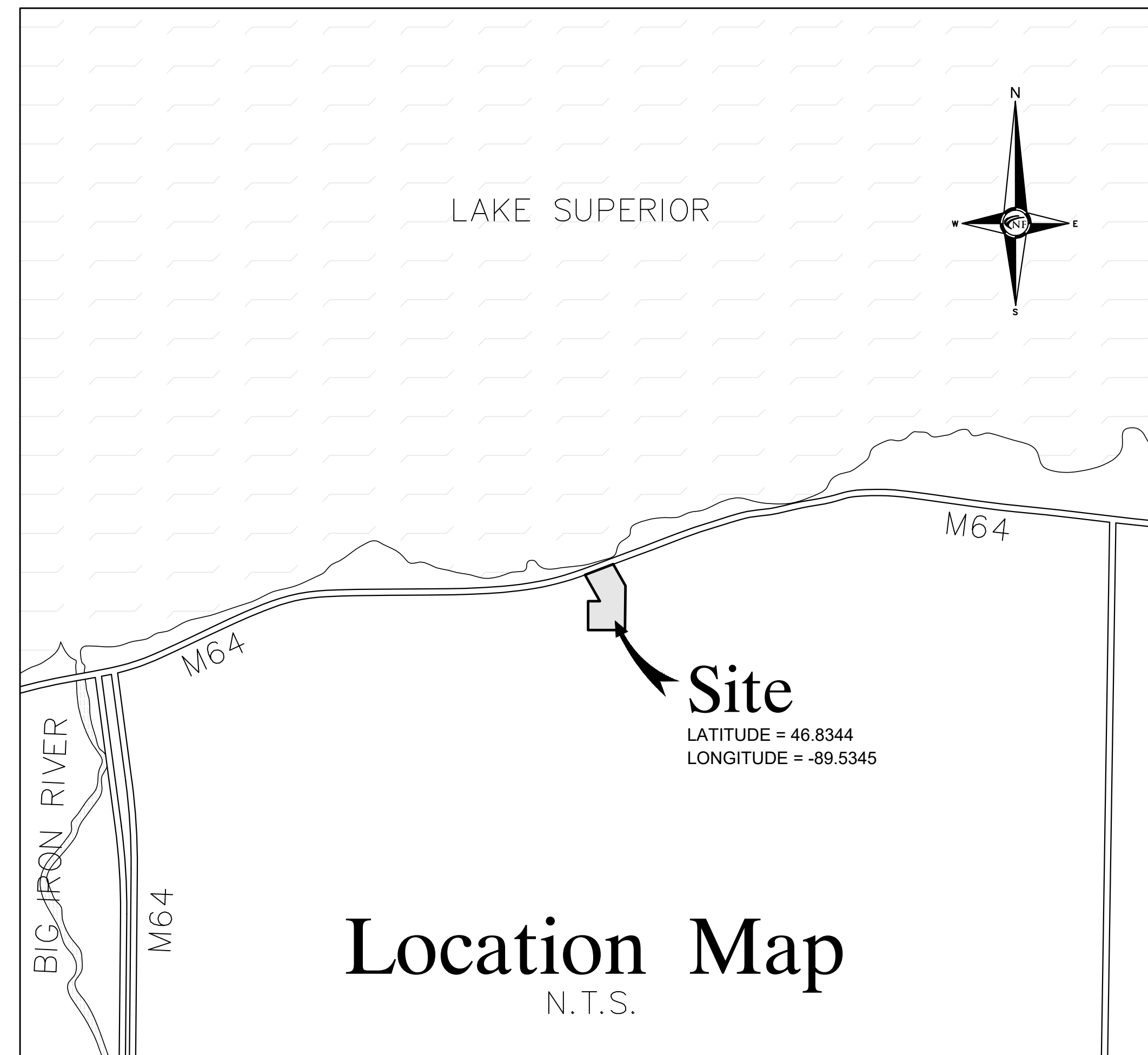
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS (DLARA)
A PERMIT FROM DLARA IS REQUIRED FOR INSTALLATION OF PROPOSED ON-SITE PAVING, UNDERGROUND PIPING AND BUILDING, MECHANICAL AND PLUMBING CONSTRUCTION. PLANS HAVE BEEN PROVIDED FOR REVIEW, AND THE CONTACTOR IS RESPONSIBLE FOR APPLYING FOR THE PERMIT, COORDINATING ALL INSPECTIONS AND PAYING ALL FEES.

WESTERN UPPER PENINSULA HEALTH DEPARTMENT
A PERMIT FROM THE COUNTY HEALTH DEPARTMENT IS REQUIRED FOR INSTALLATION OF THE SEPTIC SYSTEM. PLANS HAVE BEEN PROVIDED FOR REVIEW, AND THE CONTACTOR IS RESPONSIBLE FOR APPLYING FOR THE PERMIT, COORDINATING ALL INSPECTIONS AND PAYING ALL FEES.

MICHIGAN DEPARTMENT OF TRANSPORTATION
A PERMIT FROM MDOT IS REQUIRED FOR WORK IN THE M-64 RIGHT-OF-WAY. PLANS HAVE BEEN PROVIDED FOR REVIEW, AND THE CONTACTOR IS RESPONSIBLE FOR APPLYING FOR THE PERMIT, COORDINATING ALL INSPECTIONS AND PAYING ALL FEES.

SOIL EROSION AND SEDIMENTATION CONTROL PERMIT
A PERMIT FROM THE DTMB FOR THE SOIL EROSION AND SEDIMENTATION CONTROL, PRIOR TO EARTHWORK ACTIVITIES ON THE PROJECT. PLANS HAVE BEEN PROVIDED FOR REVIEW, AND THE CONTACTOR IS RESPONSIBLE FOR APPLYING FOR THE PERMIT, COORDINATING ALL INSPECTIONS AND PAYING ALL FEES.

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE)
A PERMIT FROM EGLE WILL BE REQUIRED FOR THE PROPOSED WATER MAIN INSTALLATION. THE CONTRACTOR SHALL COORDINATE AS NEEDED WITH THE LOCAL WATER SYSTEM OWNER AND COMPETE ALL WORK IN ACCORDANCE WITH THAT PERMIT. PERMIT WILL BE SUPPLIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF THE WORK.



Location Map
N.T.S.

Architect

OHM Advancing Communities
OHM Advisors
34000 Plymouth Rd.
Livonia, MI 48150
Contact: Christopher Ozog, AIA, LEED A.P. BD+C,
CDT, CSI
Phone: (734) 522-6711
Fax: (734) 522-6427
E-mail: christopher.ozog@ohm-advisors.com

Civil Engineer

NF
ENGINEERS
NF Engineers
46777 Woodward Avenue
Pontiac, MI 48342
Contact: Steven Sutton, P.E.
Phone: (248) 332-7931
Fax: (248) 332-8257
E-mail: swsutton@nfe-engr.com



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SHEET NO.	TITLE
T	TITLE SHEET
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C2	PAVING / GRADING PLAN
C3	SEPTIC / WATER MAIN AND PRIVATE SERVICES PLAN
C4	SEPTIC ABSORPTION FIELD DESIGN AND DETAILS
C5	NOTES AND DETAILS PLAN
C6	WATER METER VAULT DETAILS
C7	ACCESS ROAD CROSS SECTIONS
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G-101	CODE COMPLIANCE PLAN
STRUCTURAL PLANS - SHEET INDEX	
SHEET NO.	TITLE
S-001	STRUCTURAL NOTES AND SYMBOLS
S-002	STRUCTURAL STANDARDS
S-003	STRUCTURAL STANDARD DETAILS
SB101	FOUNDATION PLAN
SF101	STRUCTURAL FRAMING PLAN
SF111	ROOF FRAMING PLAN
ARCHITECTURAL PLANS - SHEET INDEX	
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A-002	TYPICAL DETAILS & WALL ASSEMBLIES
A-101	MAIN FLOOR PLAN
AF101	MAIN FLOOR FINISH PLAN
A-111	MAIN FLOOR REFLECTED CEILING PLAN
A-121	ROOF PLAN
A-201	EXTERIOR ELEVATIONS
A-301	BUILDING SECTIONS
A-302	BUILDING SECTIONS
A-303	BUILDING SECTIONS
A-311	WALL SECTIONS
A-312	WALL SECTIONS
A-313	WALL SECTIONS
A-451	INTERIOR ELEVATIONS
A-601	DOOR SCHEDULE & DETAILS
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P-001	GENERAL PLUMBING INFORMATION
P-101	PLUMBING PLAN

MECHANICAL AND ELECTRICAL PLANS - SHEET INDEX	
SHEET NO.	TITLE
M-001	MECHANICAL NOTES AND SYMBOLS
M-101	MECHANICAL PLAN
M-401	MECHANICAL SCHEDULES
E-001	ELECTRICAL NOTES AND SYMBOLS
E-101	FLOOR 1 POWER PLAN
E-102	FLOOR 1 LIGHTING PLAN
E-501	ELECTRICAL DETAILS
E-502	ELECTRICAL DIAGRAMS
E-601	ELECTRICAL SCHEDULE

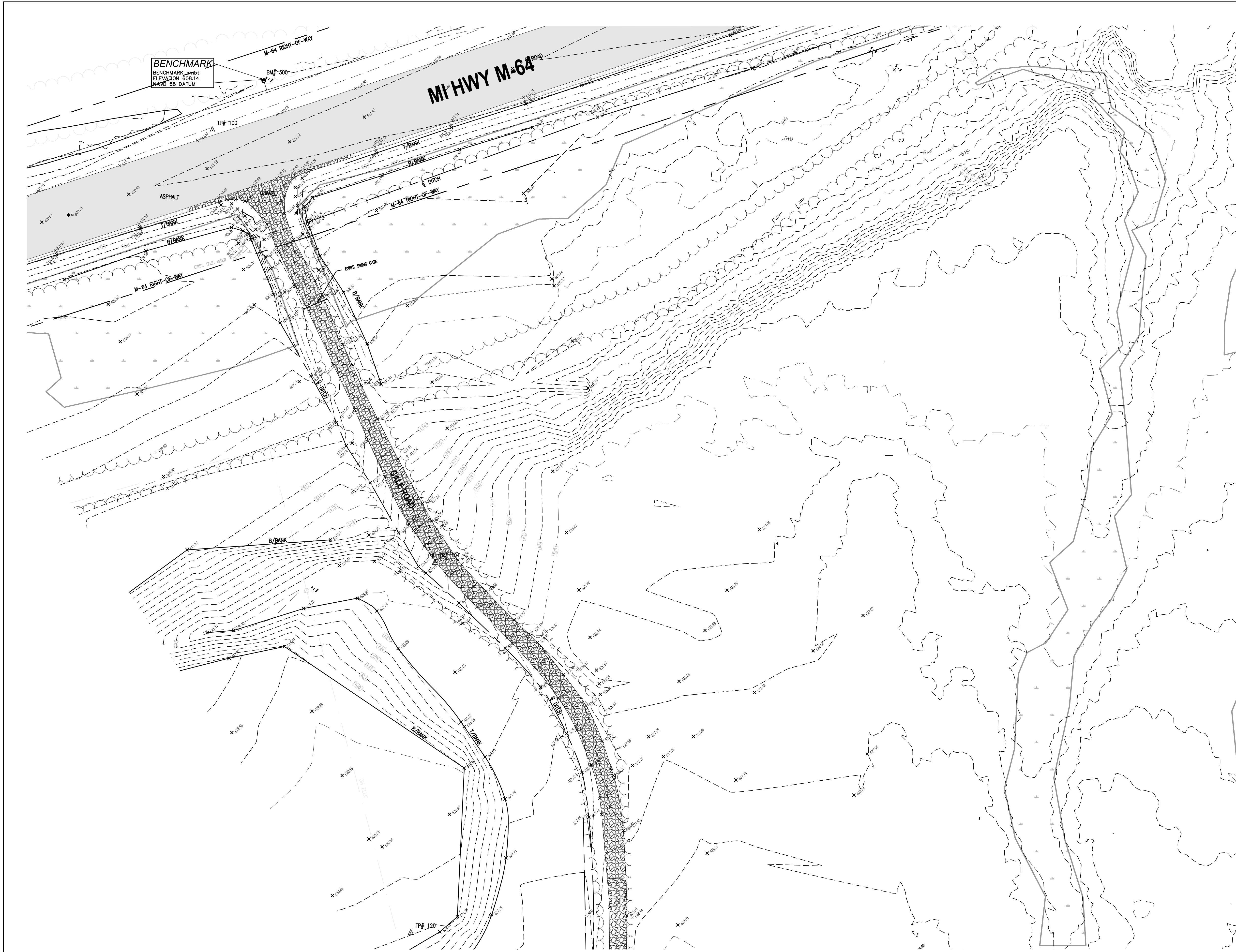
DATE	REVIEW
2021-03-11	Bid Documents
2020-01-13	Phase 900 90% Review
2020-11-04	Phase 500 50% Review

PROJECT DESCRIPTION
WESTERN UPPER PENINSULA SHOOTING FACILITY
ONTONAGON, MICHIGAN

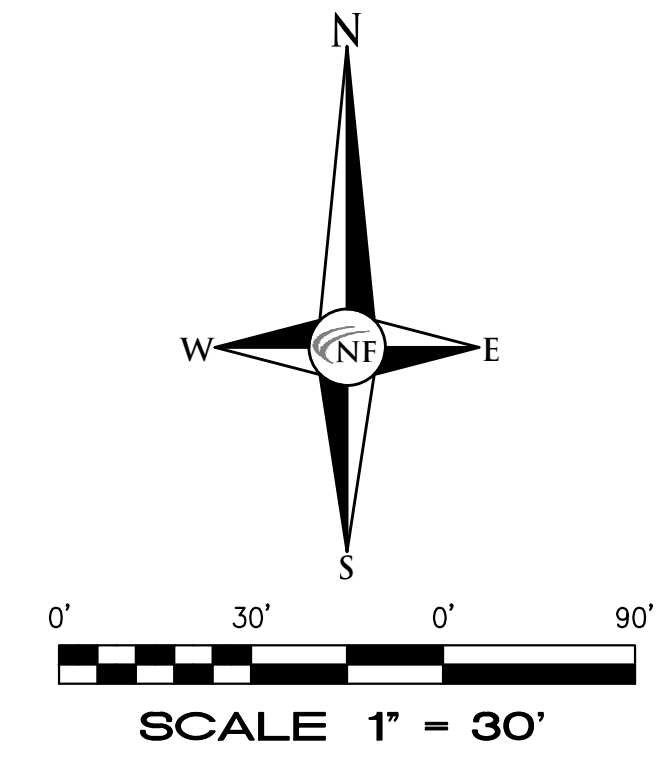
TITLE SHEET

FILE NO.	751/17172.JBB
INDEX	2550
PCA	00-000
DRAWN BY	MAW
DESIGNED BY	MAW
JC/ENG BY	SWS

T



BENCHMARK
 BENCHMARK POINT
 ELEVATION 608.14
 MVD 88 DATUM



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 DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
 STATE FACILITIES ADMINISTRATION
 DESIGN AND CONSTRUCTION DIVISION
 ROBERT C. HALL, RA, NCARB, DIRECTOR

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2020-01-13	Phase 500 90% Review	REVIEW
2020-11-04	Phase 500 50% Review	REVIEW
	DATE	

PROJECT DESCRIPTION
**WESTERN UPPER PENINSULA
 SHOOTING FACILITY**
 ONTONAGAN, MICHIGAN

TOPOGRAPHIC SURVEY

FILE NO.	75117172.JBB
INDEX	25550
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JCIENG BY	SWS

C1

SITE ACCESS DURING CONSTRUCTION
 THE LAKE SUPERIOR SPORTSMAN CLUB WILL CONTINUE TO UTILIZE THEIR CLUBHOUSE BUILDING SOUTH OF THE WORK ZONE. AS SUCH, THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE ACCESS DRIVE DURING ALL PHASES OF CONSTRUCTION, EXCEPT FOR ENGINEERING APPROVED CLOSURES. ACCEPTABLE CLOSURES WOULD INCLUDE ITEMS SUCH AS UTILITY WORK OR FINAL GRADING OF THE DRIVE/AGGREGATE PLACEMENT, WHICH WOULD PRECLUDE SAFE TRANSIT THRU THE AREA OF CLUB USERS. EACH REQUESTED CLOSURE SHALL BE PROVIDED IN WRITING, A MINIMUM OF 2 WEEKS IN ADVANCE AND OUTLINED ON THE PROJECT SCHEDULES FOR PROPER COORDINATION WITH THE CLUB. NO ADDED COSTS FOR MAINTAINING ACCESS WILL BE REVIEWED OR APPROVED.

REGULATED WETLANDS
 WETLANDS LIMITS PER STANTEC REPORT (SEE SPECIFICATIONS) AND ALSO PER EGLE SITE REVIEW IN DECEMBER 2020

TOPO NOTES
 ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.

THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER

THE SURVEY DID NOT LOCATE EXISTING TREES OR IDENTIFY LIMITS OF BRUSH COVER. CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF THE EXTENT OF COVER AND INCLUDING IN THEIR CLEARING AND GRUBBING COSTS.

BORING LEGEND

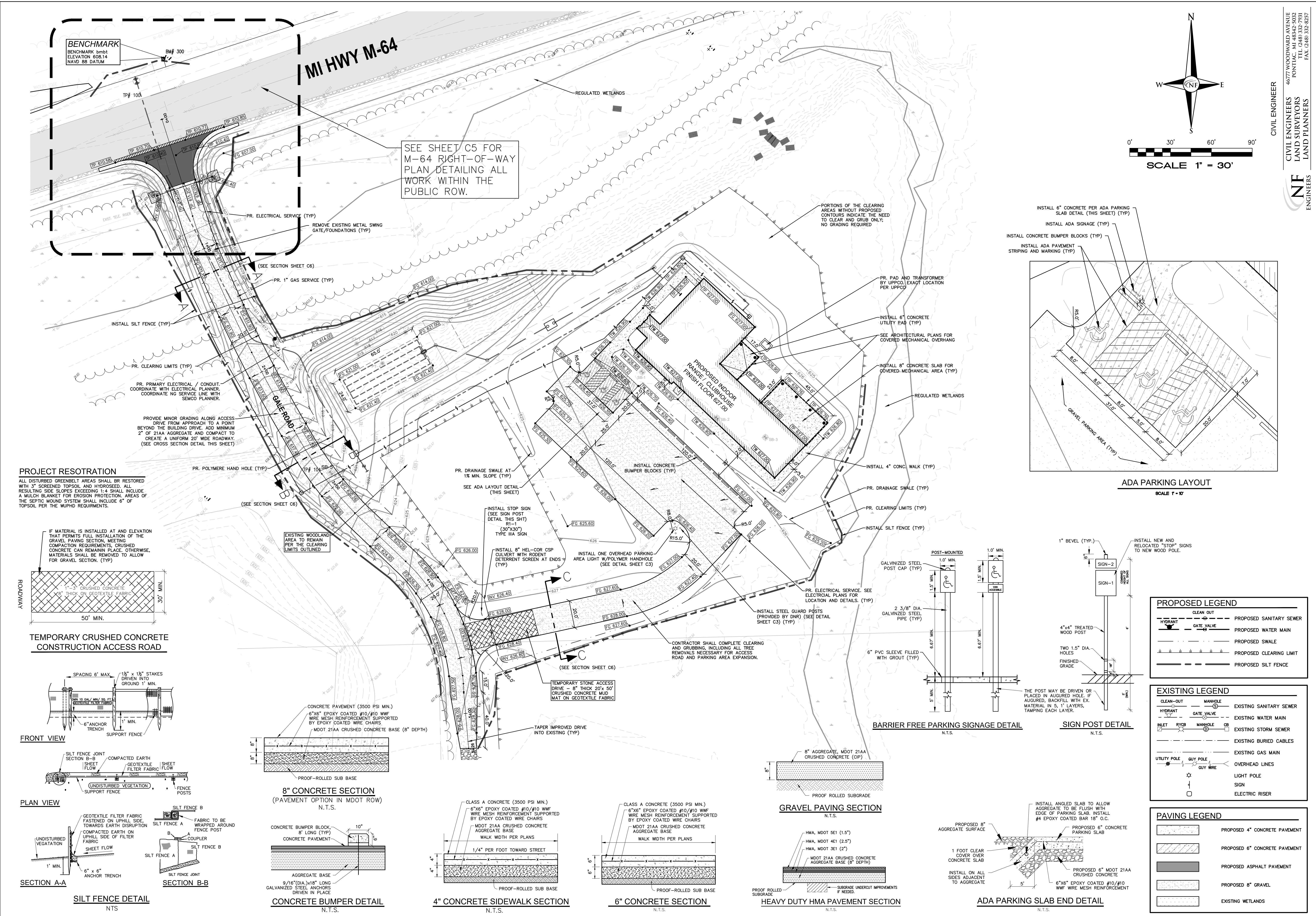
	SOIL BORING
SB-1	
	PERK TEST
PT-1	

LEGEND

	CLEAN-OUT		MANHOLE		EXISTING SANITARY SEWER
	HYDRANT		GATE VALVE		EXISTING WATER MAIN
	INLET		R/CB		EXISTING STORM SEWER
	MANHOLE		CB		EXISTING BURIED CABLES
	UTILITY POLE		GUY POLE		EXISTING GAS MAIN
	GUY WIRE		OVERHEAD LINES		LIGHT POLE
	SIGN		ELECTRIC RISER		FIRE PIT

EXISTING FEATURES LEGEND

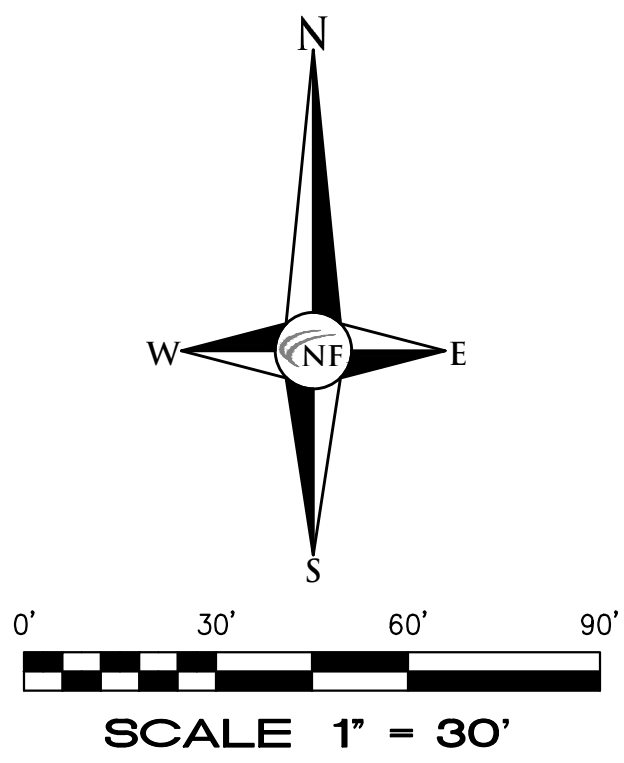
	EXISTING CONCRETE PAVEMENT
	EXISTING GRAVEL PAVEMENT
	EXISTING ASPHALT PAVEMENT
	EXISTING REGULATED WETLANDS



BENCHMARK
 BENCHMARK bmbt
 ELEVATION 608.14
 NAVD 88 DATUM

MI HWY M-64

SEE SHEET C5 FOR
 M-64 RIGHT-OF-WAY
 PLAN DETAILING ALL
 WORK WITHIN THE
 PUBLIC ROW.



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2020-11-04	Phase 900 50% Review	Phase 900 50% Review	Phase 900 50% Review	REVIEW
	DATE			

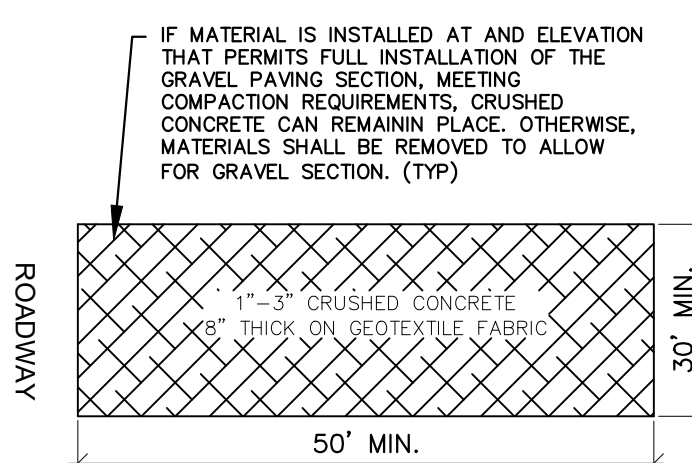
PROJECT DESCRIPTION
**WESTERN UPPER PENINSULA
 SHOOTING FACILITY**
 ANTONAGAN, MICHIGAN

PAVING / GRADING PLAN

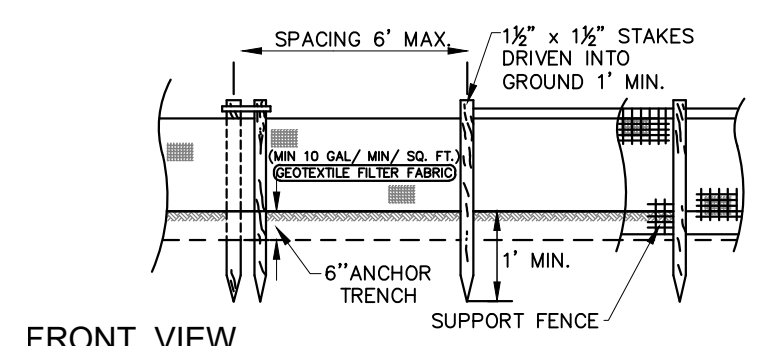
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INDEX	2550
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
IN CHARGE	SWS

C2

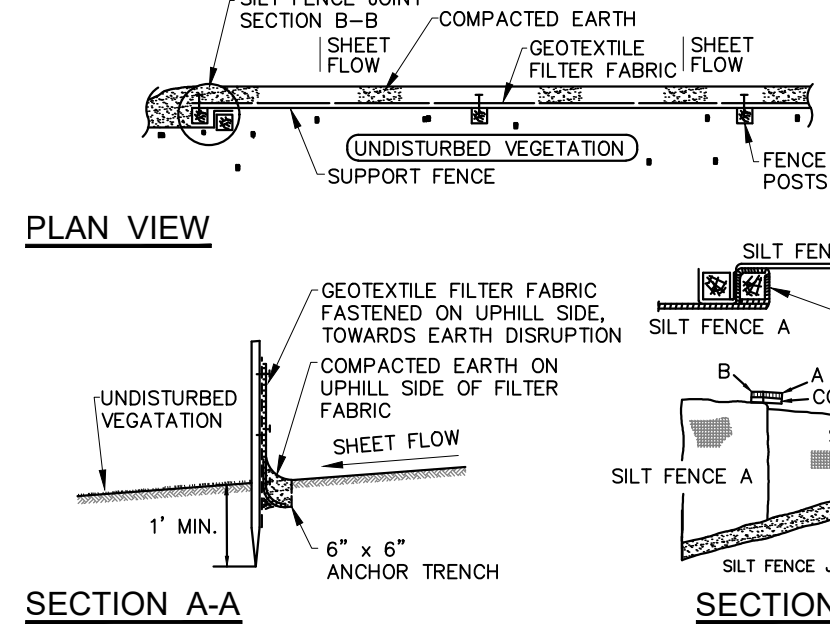
PROJECT RESOTRATION
 ALL DISTURBED GREENBELT AREAS SHALL BE RESTORED WITH 3" SCREENED TOPSOIL AND HYDROSEED. ALL RESULTING SIDE SLOPES EXCEEDING 1:4 SHALL INCLUDE A MULCH BLANKET FOR EROSION PROTECTION. AREAS OF THE SEPTIC MOUND SYSTEM SHALL INCLUDE 6" OF TOPSOIL PER THE WUPHD REQUIREMENTS.



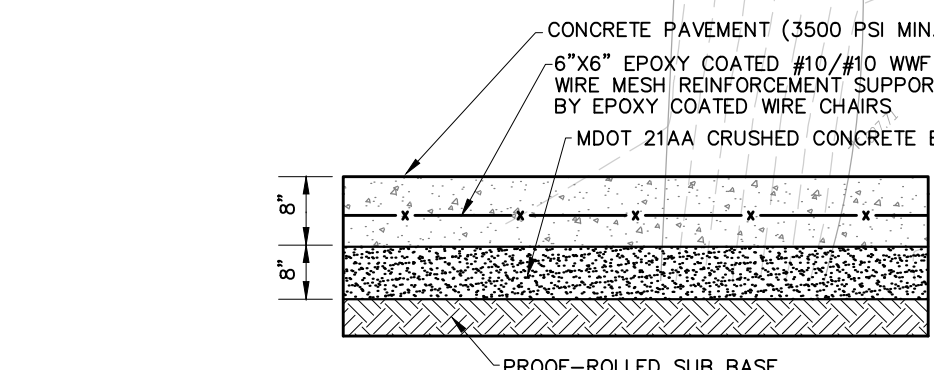
TEMPORARY CRUSHED CONCRETE CONSTRUCTION ACCESS ROAD



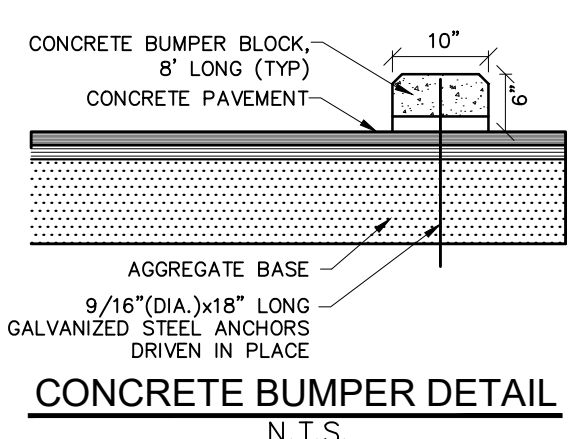
FRONT VIEW



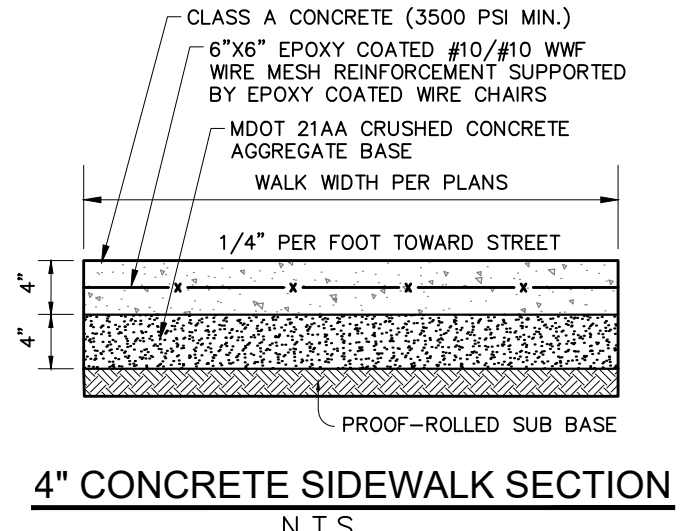
SILT FENCE DETAIL
 N.T.S.



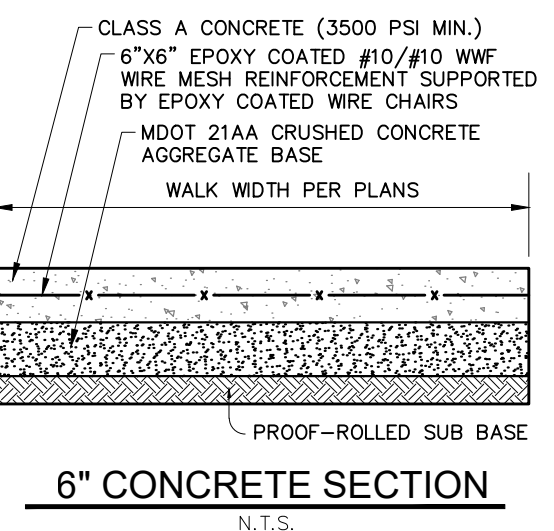
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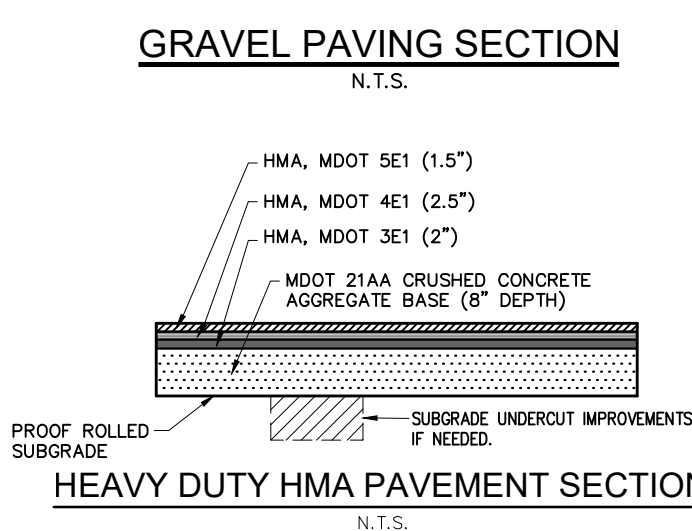
CONCRETE BUMPER DETAIL
 N.T.S.



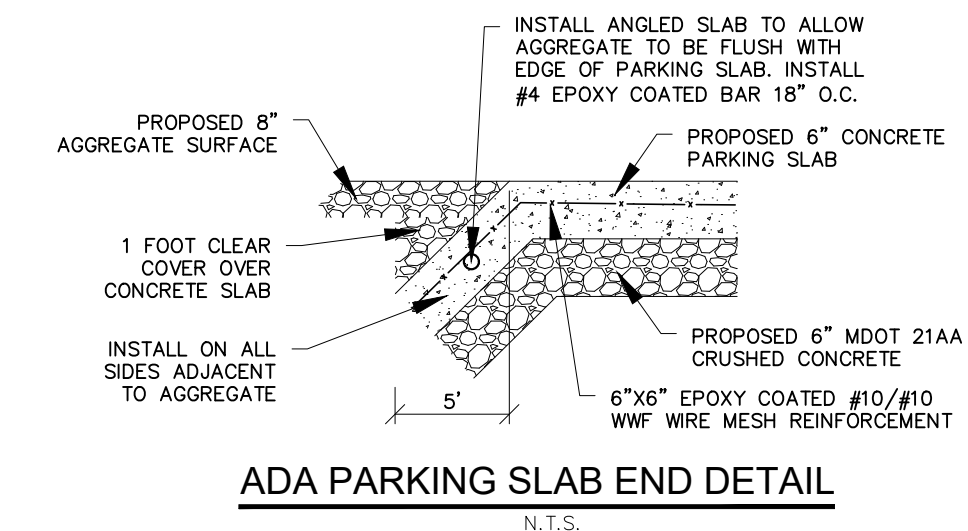
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**6\"/>
 N.T.S.**



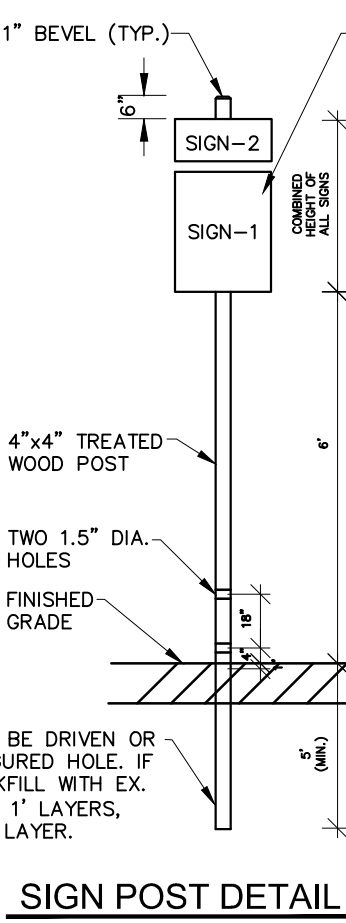
HEAVY DUTY HMA PAVEMENT SECTION
 N.T.S.



ADA PARKING SLAB END DETAIL
 N.T.S.



BARRIER FREE PARKING SIGNAGE DETAIL
 N.T.S.



SIGN POST DETAIL
 N.T.S.

PROPOSED LEGEND

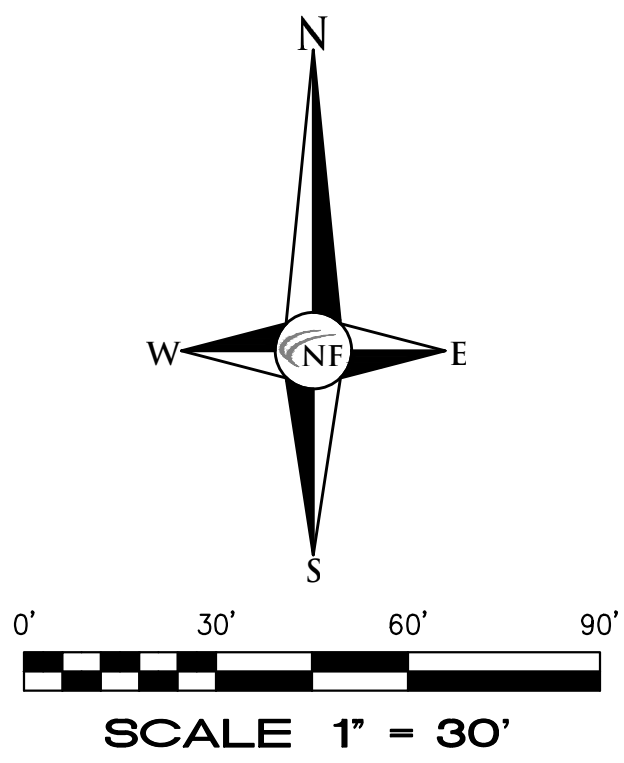
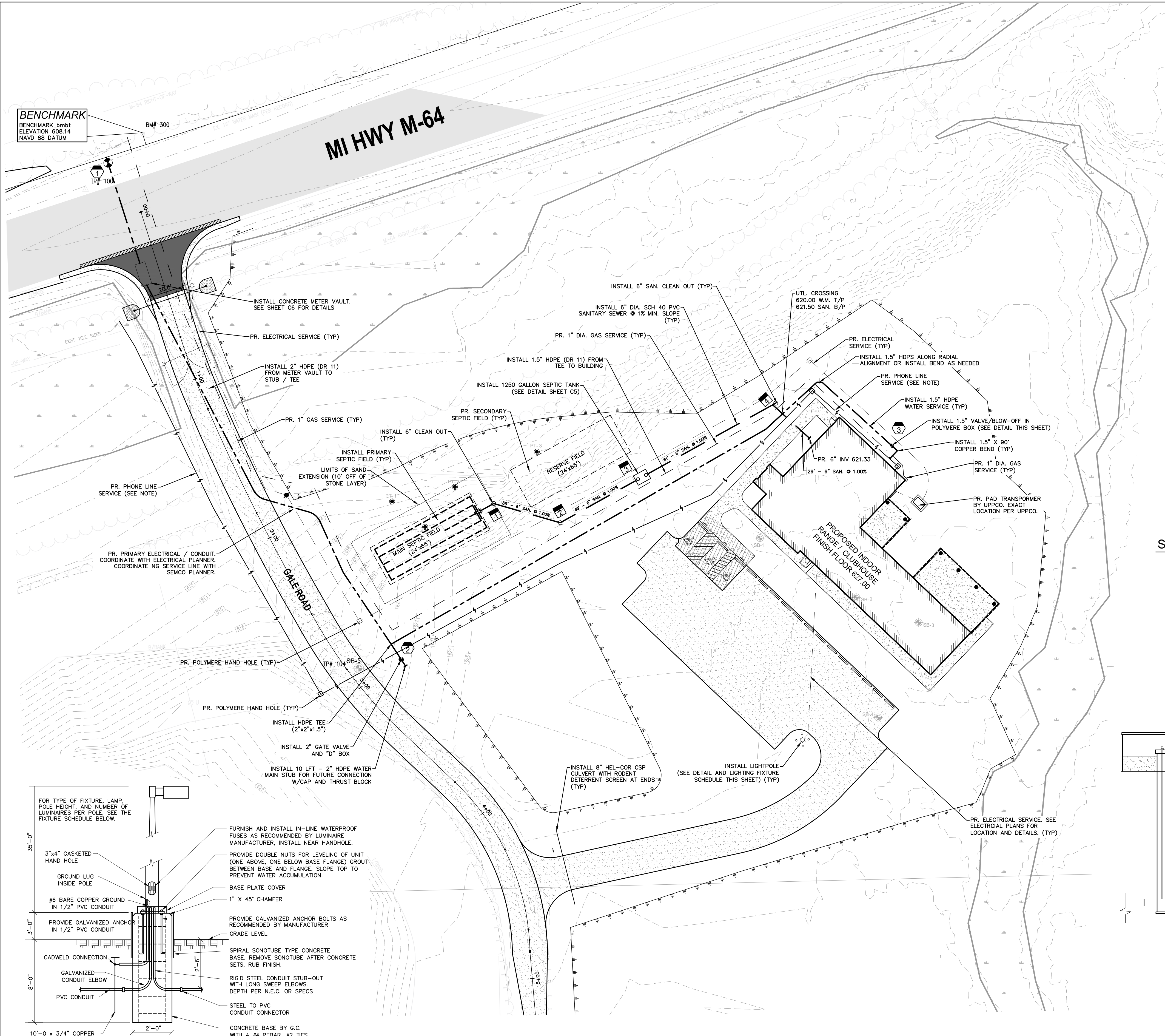
CLEAN OUT	PROPOSED SANITARY SEWER
HYDRANT	PROPOSED WATER MAIN
GATE VALVE	PROPOSED SWALE
PROPOSED CLEARING LIMIT	PROPOSED SILT FENCE

EXISTING LEGEND

CLEAN-OUT	MANHOLE	EXISTING SANITARY SEWER
HYDRANT	GATE VALVE	EXISTING WATER MAIN
INLET	RYOB	EXISTING STORM SEWER
MANHOLE	CB	EXISTING BURIED CABLES
UTILITY POLE	GUY POLE	EXISTING GAS MAIN
GUY WIRE	GUY WIRE	OVERHEAD LINES
		LIGHT POLE
		SIGN
		ELECTRIC RISER

PAVING LEGEND

[Pattern]	PROPOSED 4\"/>
[Pattern]	PROPOSED 6\"/>
[Pattern]	PROPOSED ASPHALT PAVEMENT
[Pattern]	PROPOSED 8\"/>
[Pattern]	EXISTING WETLANDS



CIVIL ENGINEER
 CIVIL ENGINEERS
 LAND SURVEYORS
 LAND PLANNERS
 ENGINEERS

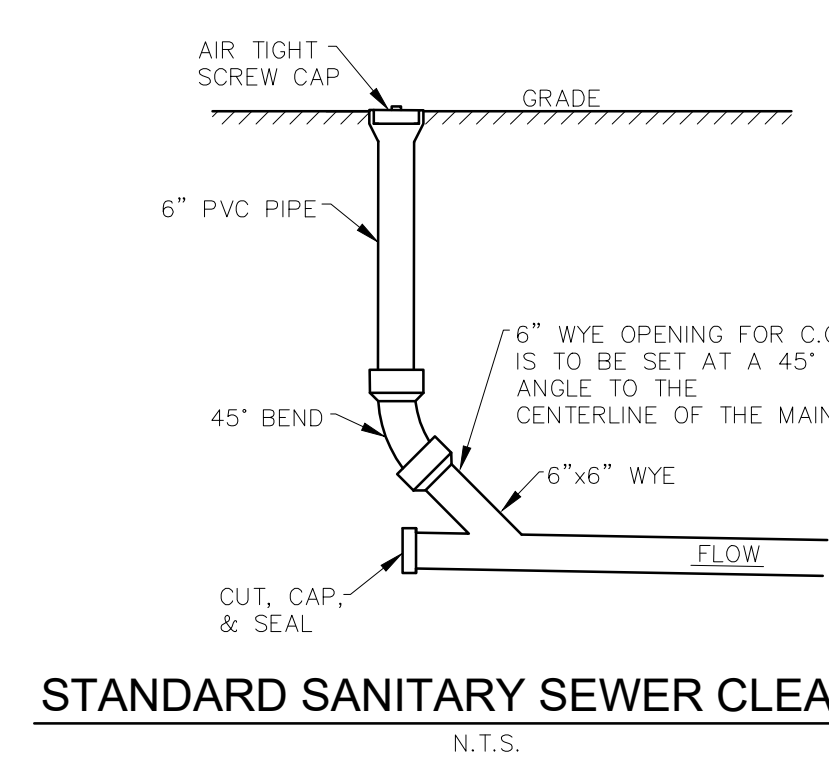
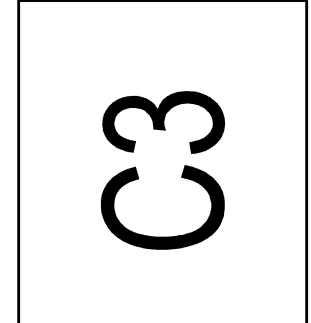
STATE OF MICHIGAN
 DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
 STATE FACILITIES ADMINISTRATION
 DESIGN AND CONSTRUCTION DIVISION
 ROBERT C. HALL, RA, NCARB, DIRECTOR

2021-03-11	Bid Documents	Phase 900 90% Review	REVIEW
2020-01-13	Phase 900 90% Review	Phase 900 50% Review	REVIEW
2020-11-04	Phase 900 50% Review		REVIEW
	DATE		

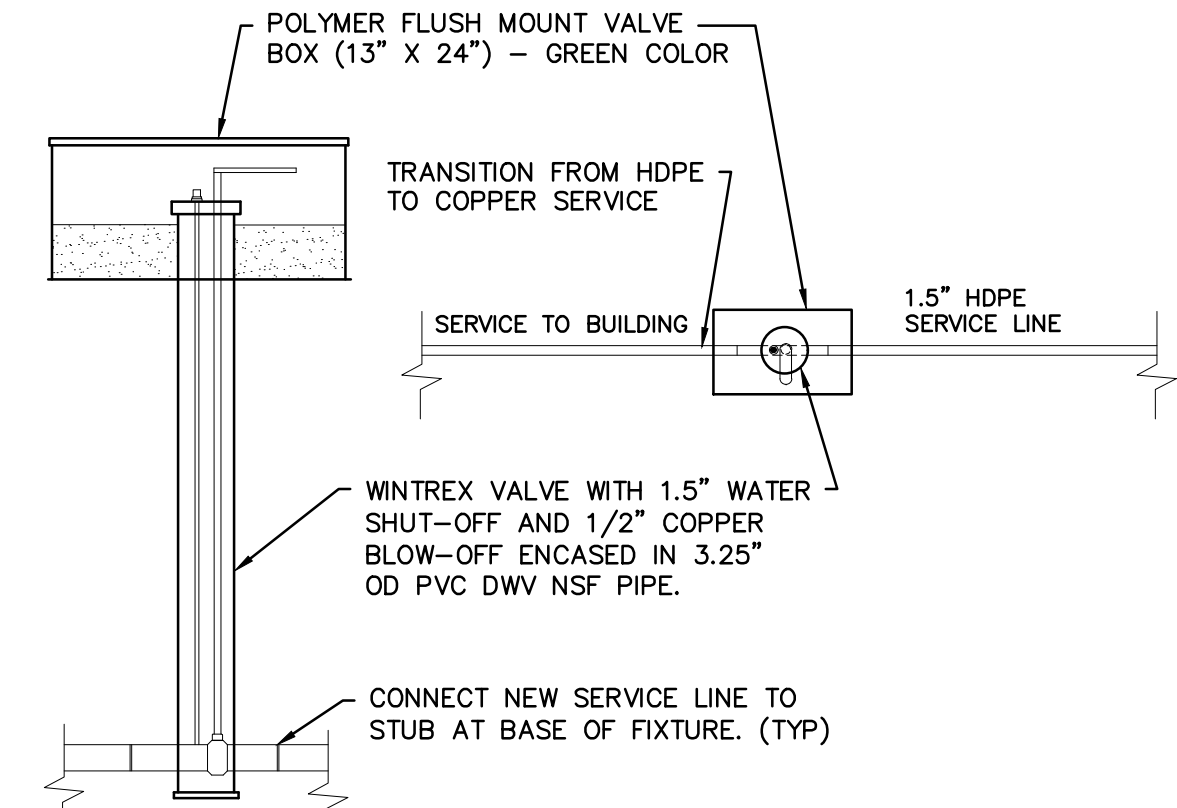
PROJECT DESCRIPTION
 WESTERN UPPER PENINSULA
 SHOOTING FACILITY
 ONTONAGAN, MICHIGAN

SEPTIC / WATER MAIN AND
 PRIVATE SERVICES PLAN

FILE NO.	75117172.1BB
INDEX	25550
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
JOINED BY	SWS



STANDARD SANITARY SEWER CLEANOUT
 N.T.S.



VALVE / BLOW-OFF DETAIL
 N.T.S.

GATE VALVE SCHEDULE

- 1 2"x16" TAPPING SADDLE VALVE IN 8" DIA. WELL IN BOX RIM 609.25
- 2 2" GATE VALVE IN BOX RIM 621.70
- 3 1" SHUT-OFF/BLOW-OFF IN POLYMER BOX RIM 626.20

SAN. STRUCTURE SCHEDULE

- 1 6" DIA. CLEANOUT RIM 621.20 6" INV. 619.29
- 2 6" DIA. CLEANOUT RIM 623.90 6" INV. 619.69
- 3 1600 GALLON SEPTIC TANK RIM 624.70 6" SW INV. 620.18 6" NE INV. 620.23
- 4 6" DIA. CLEANOUT RIM 625.20 6" E INV. 621.04

WATER MAIN INSTALLATION
 CONTRACTOR SHALL COORDINATE

- THE CONTRACTOR SHALL COORDINATE WITH OTOGONAN DPW FOR ALL WATER MAIN INSTALLATION INCLUDING EXIST. WATER MAIN TAPS, CONNECTIONS AND TESTING OF INSTALLED WATER MAIN AND SERVICES.
- 1,906.884.2305 OTOGONAN DPW

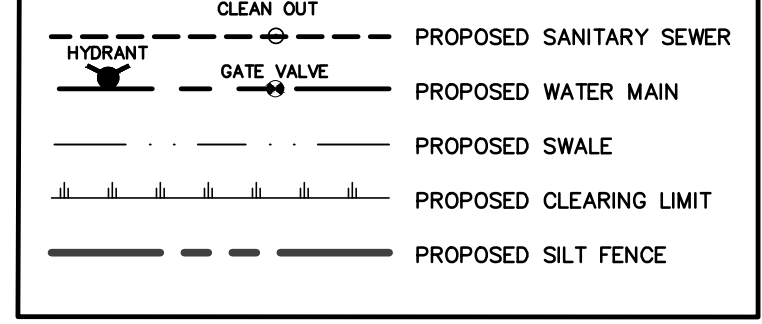
PHONE SERVICE
 CONTRACTOR SHALL COORDINATE

- THE CONTRACTOR SHALL COORDINATE WITH THE PHONE SERVICE SUPPLIER TO PROVIDE A FEED TO THE LOCATION OUTLINED ON THE ARCHITECTURAL PLANS, FOR HARD LINE SERVICE TO THE BUILDING.

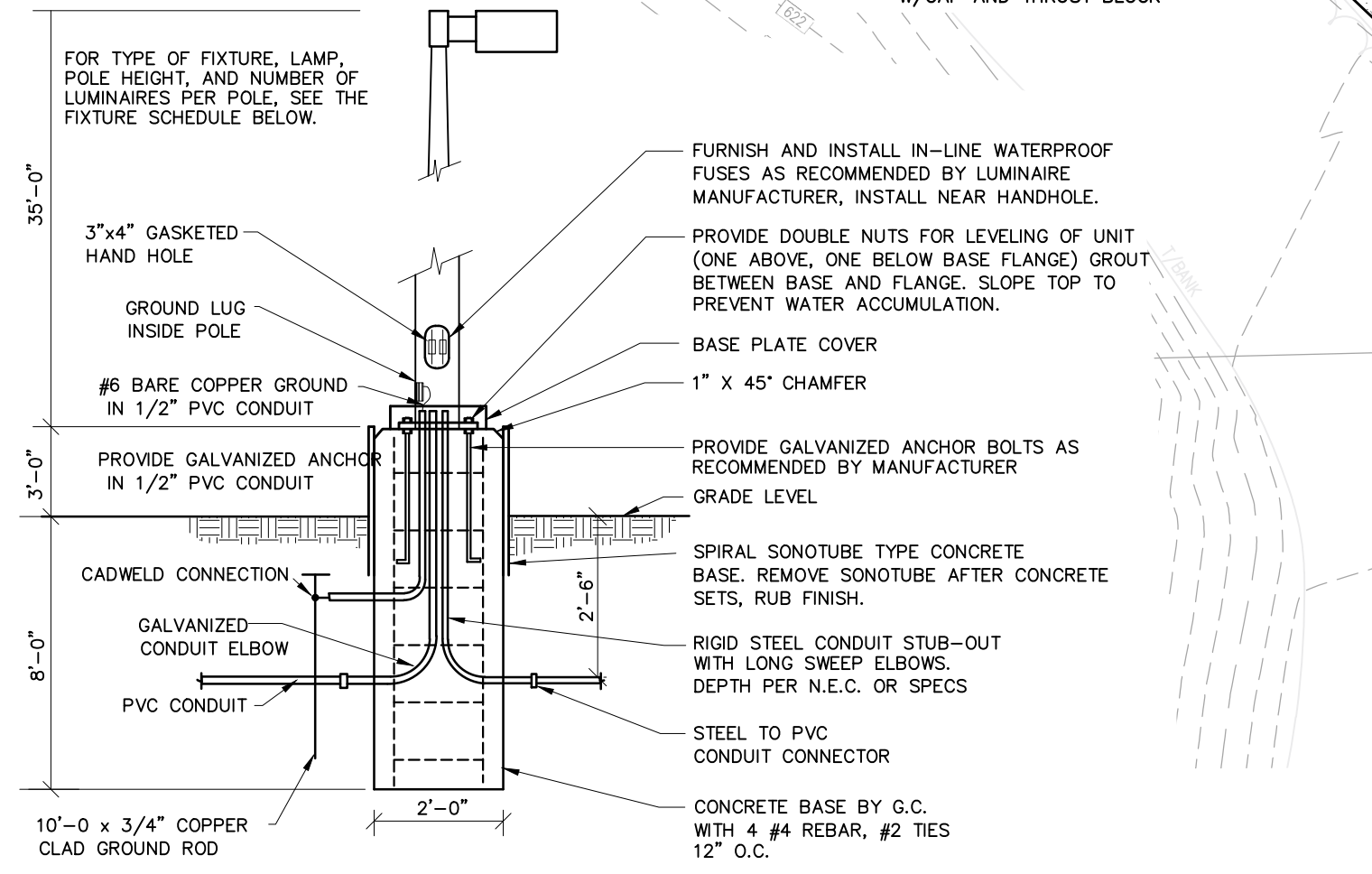
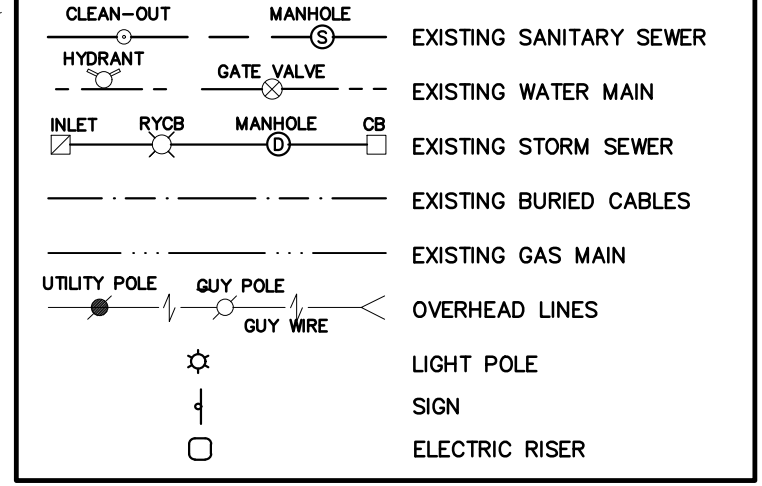
NATURAL GAS SERVICE
 CONTRACTOR SHALL COORDINATE WITH THE NG SUPPLIER

- SEMCO ENERGY GAS COMPANY
- 1,800,624,2019 FOR INSTALLATION OF THE SUPPLY LINE AND METER
- ALL FEES REQUIRED BY SEMCO SHALL BE PAID BY THE CONTRACTOR AND REIMBURSED UTILIZING THE PERMIT ALLOWANCE ITEM IN THE CONTRACT.

PROPOSED LEGEND



LEGEND

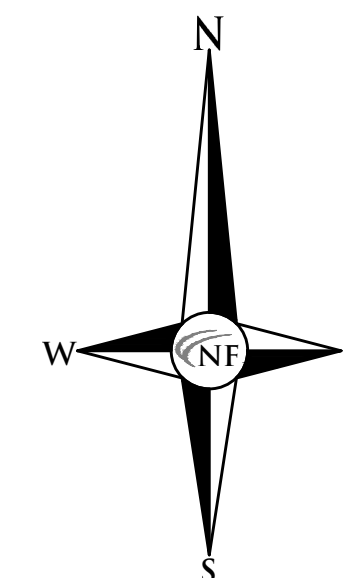
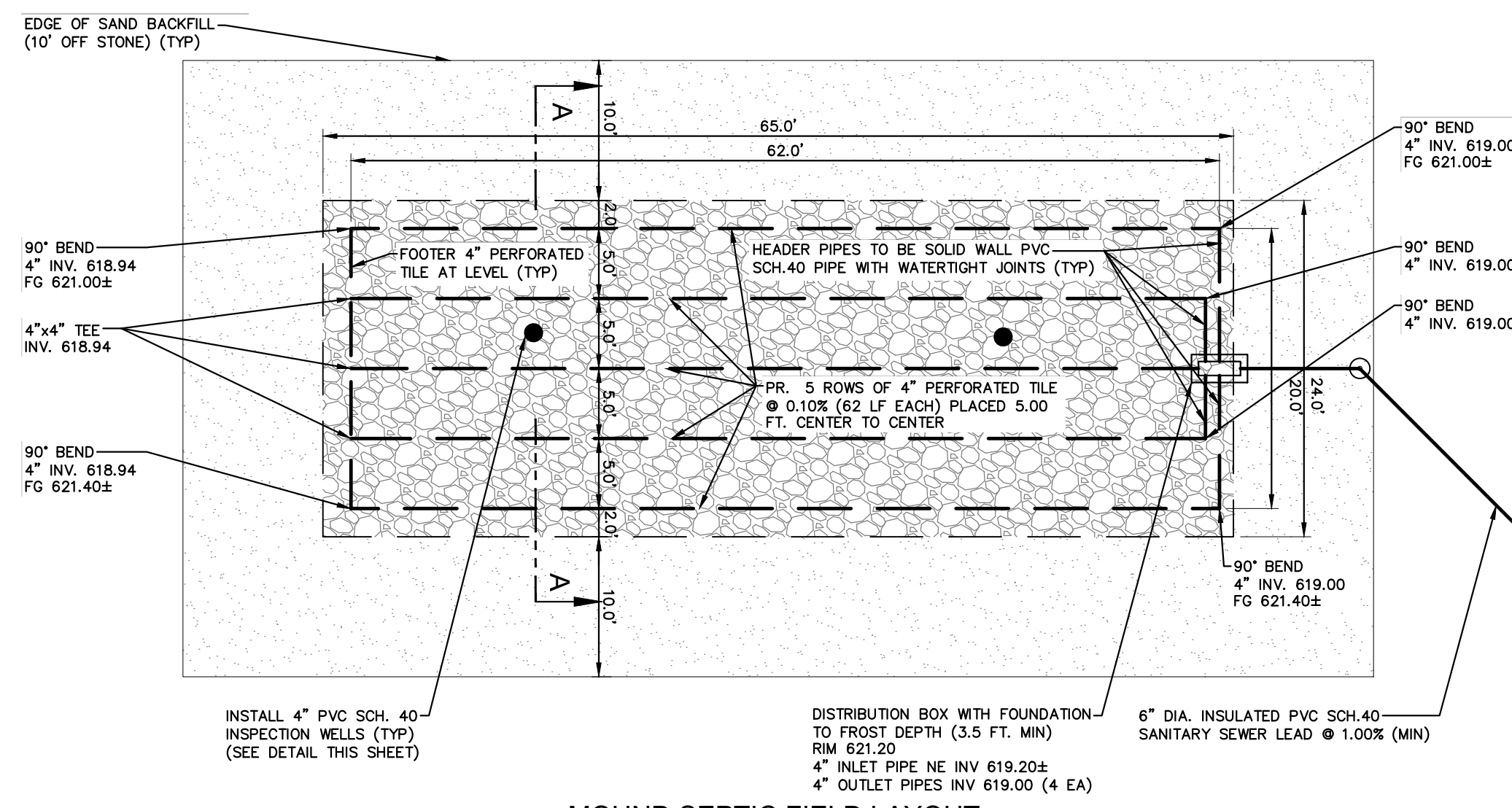
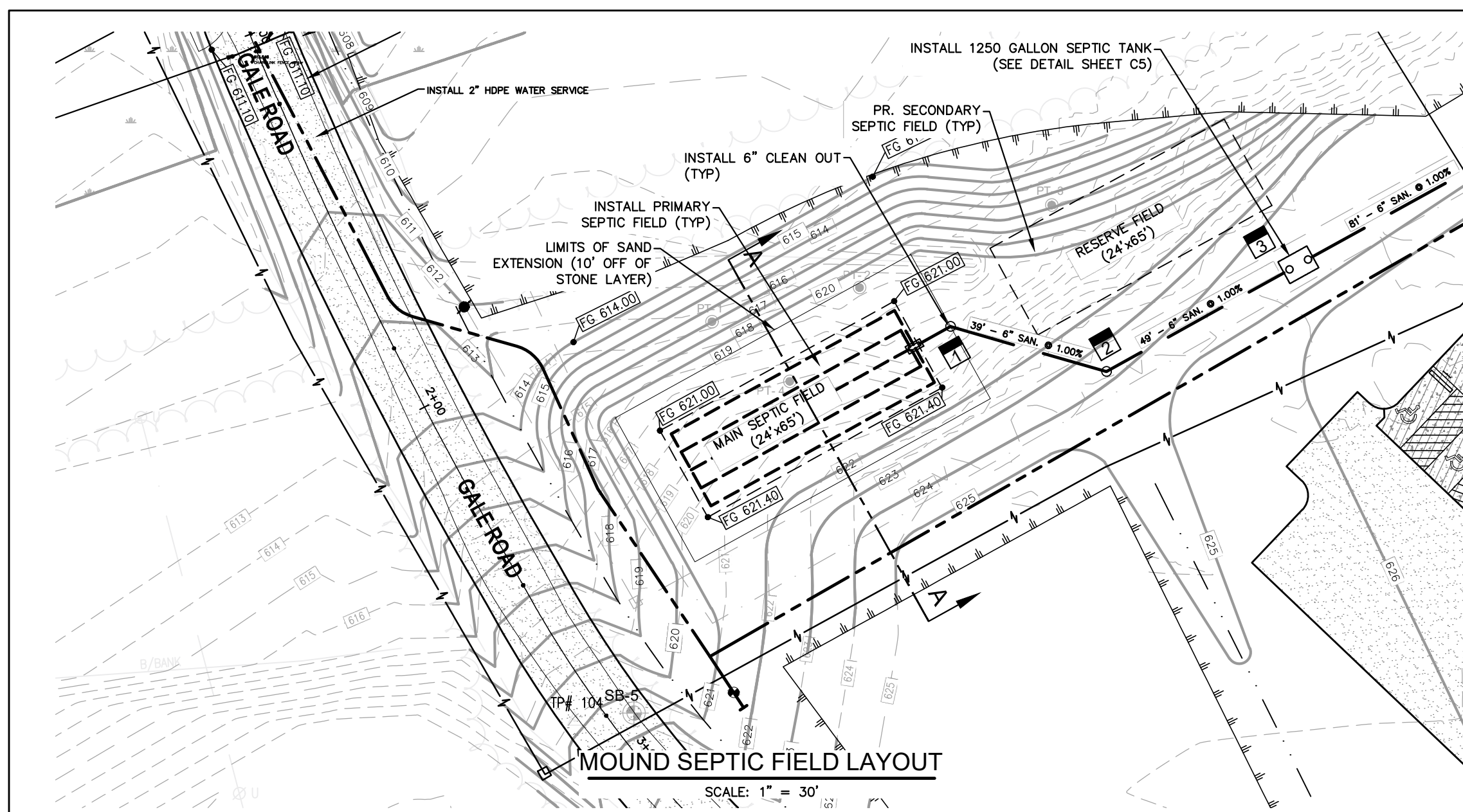


LIGHT POLE BASE DETAIL
 N.T.S.

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NO.	DESCRIPTION AND COMMENTS	BALLAST INFO	FIXTURE MOUNTING HEIGHT	LAMPS
LWR	MCGRAW EDISON	OLEON-AP-OR-LED-E1-SL-4-PP-R68-M30M-MA1030-0X-OLEON-MT2	LED SITE LIGHT WITH TYPE 4 SPALL CONTROL OPTICS. FIXTURE SHALL HAVE QUICK MOUNT ARM (EXTENDED AS INDICATED ON DETAIL). OPTICS SHALL BE ROTATED 90° RIGHT. PROVIDE BRD CONTROL SPINE MTS AS INDICATED.	0-10V	ABOVE GRADE	2801 LUMENS 275W, 4000K LED
LAL	MCGRAW EDISON	OLEON-AP-OR-LED-E1-SL-4-PP-R68-M30M-MA1030-0X-OLEON-MT2	LED SITE LIGHT WITH TYPE 4 SPALL CONTROL OPTICS. FIXTURE SHALL HAVE QUICK MOUNT ARM (EXTENDED AS INDICATED ON DETAIL). OPTICS SHALL BE ROTATED 90° LEFT. PROVIDE BRD CONTROL SPINE MTS AS INDICATED.	0-10V	ABOVE GRADE	2801 LUMENS 275W, 4000K LED
LA	LIMITED LIGHTING SOLUTIONS	RFSQ-26-7	36" SQUARE STRAIGHT STEEL POLE. POLE SHALL HAVE GRAY FINISH TO MATCH FIXTURE FINISH.			

CONTRACTOR TO INSTALL OWNER PROVIDED GUARD POSTS TO PROTECT LIGHT POLE. POLES TO BE SET IN CONCRETE FOUNDATIONS (12" DIAMETER X 48" DEEP) - 4 EA.



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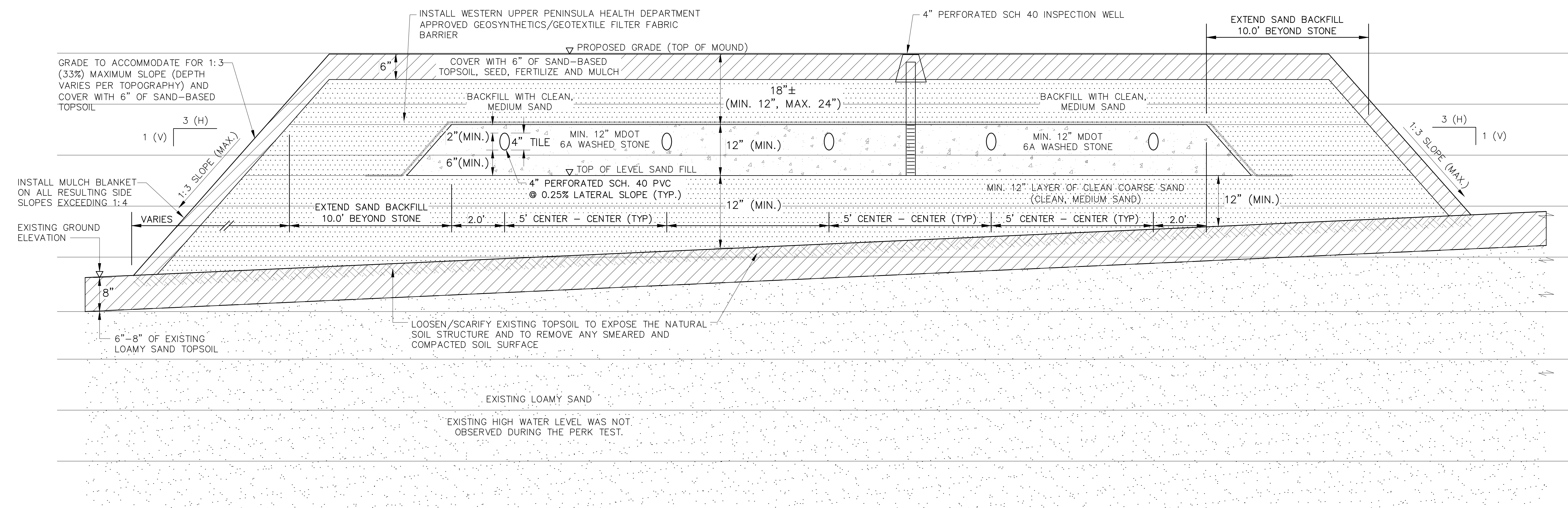
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DATE		

PROJECT DESCRIPTION
 WESTERN UPPER PENINSULA
 SHOOTING FACILITY
 ONTONAGAN, MICHIGAN

SEPTIC ABSORPTION FIELD
 DESIGN AND DETAILS

FILE NO.	75117172-JBB
INDEX	25560
PCA	00-0000
DRAWN BY	MAW
DESIGNED BY	MAW
INCHARGE	SWS

C4



MOUND SEPTIC FIELD CROSS SECTION (A-A)
 (NOT TO SCALE)

BED SEPTIC SYSTEM BASIS OF DESIGN

DESIGN FLOW:
 EMPLOYEES 4 EMPLOYEES MAX x 35 GPD/PERSON = 140 GPD
 CONFERENCE ROOM 48 PEOPLE MAX x 2.8 GAL/SEAT x 4 TWO HOUR FRAMES = 537.6 GPD
 SHOOTING RANGE 6 LANES x 2.8 GAL/LANE x 4 TWO HOUR FRAMES = 67.2 GPD
 TOTAL DESIGN FLOW 744.8 GPD

RECOMMENDED SIZE OF SEPTIC TANK: 1000 GAL MIN.

DESIGN APPLICATION RATE: 0.50 GALLON/SF (LOAMY SAND & BED SYSTEM)

REQUIRED BOTTOM AREA: 744.8 GPD / (0.50 GALLON/SF) = 1489.6 SF

PIPE SPACING CENTER TO CENTER: S = 5.0 FT

PROVIDED BOTTOM AREA: 1,560 SF (65 FT x 24 FT)
 LATERALS - 62 LF x 5 = 325 LF
 HEADERS - 20 LF x 2 = 40 FT

PROVIDED 4" DIA PIPE STORAGE VOLUME:
 PIPE AREA x (LATERAL LENGTH + HEADER + FOOTER PIPE LENGTH)
 0.087 SF x (325 LF + 20 LF + 20 LF) = 237 GAL

ADDITIONAL STONE BEDDING VOLUME:
 1,560 SF (BED AREA) x 0.83 FT (6A STONE DEPTH) x (0.30 VOID RATIO) = 388 CF (2,905 GAL)

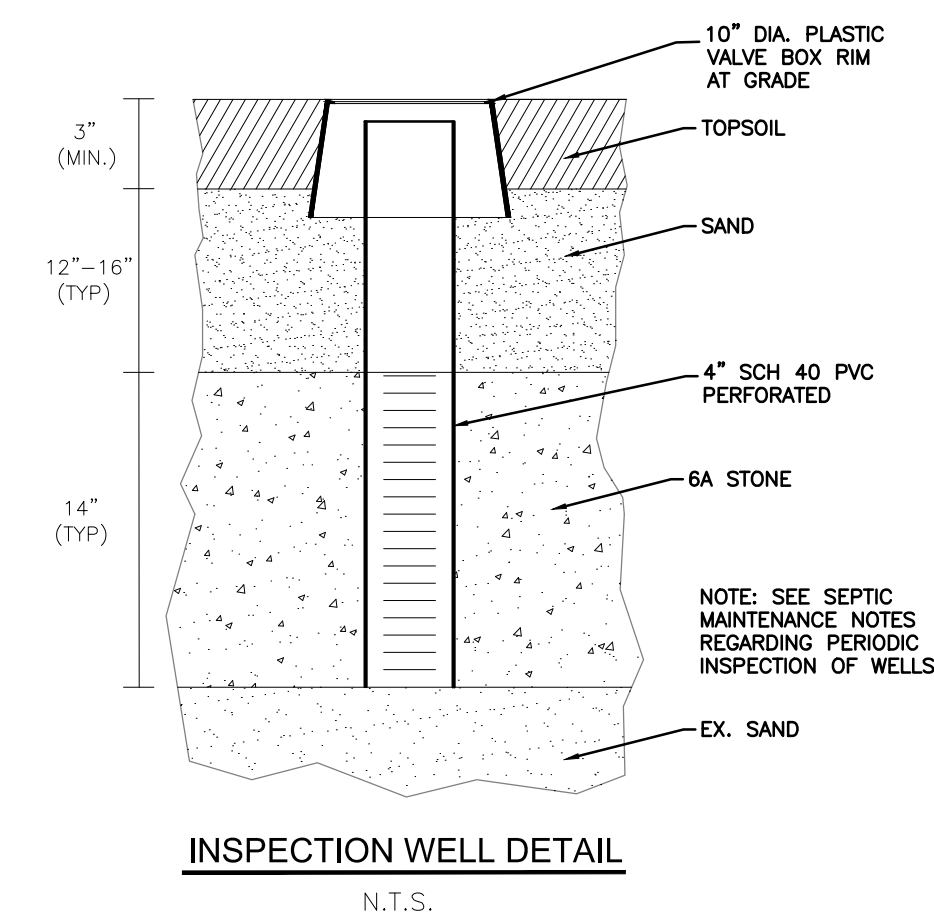
TOTAL VOLUME PROVIDED IN PROPOSED SEPTIC FIELD:
 237 GAL + 2,905 GAL = 3,142 GAL

SEPTIC FIELD CONSTRUCTION SEQUENCE

- SITE PREPARATION: INSTALL SYSTEM ONLY WHEN SOIL IS COMPLETELY DRY. CUT GRASS AS SHORT AS POSSIBLE, RAKE CUTTINGS, LOOSEN/SCARIFY TOPSOIL PRIOR TO SAND INSTALLATION. DO NOT REMOVE ANY NATURAL SOIL.
- CONTACT THE WESTERN UPPER PENINSULA HEALTH DEPARTMENT FOR INSPECTION PRIOR TO ANY BACKFILLING OPERATIONS.
- MOUND SYSTEM TO BE INSTALLED ON A MINIMUM OF 12 INCHES OF CLEAN COARSE SAND FILL (2NS) IN THE AREA OF TEST HOLES #1, #2 AND #4.
- PLACE 6" OF MDOT CLASS 6A WASHED STONE WITHIN BED AREAS UNTIL ELEVATION OF BOTTOM OF DRAIN TILE IS REACHED. IN AREAS WHERE 6A STONE IS NOT AVAILABLE, OTHER SUITABLE CLEAN AGGREGATE FROM 1/2 TO 1-1/2 INCH SIZE MAY BE APPROVED.
- INSTALL DRAIN TILE ASSEMBLY PER THE PROPOSED PLAN.
- CONTACT THE WESTERN UPPER PENINSULA HEALTH DEPARTMENT FOR FINAL INSPECTION.
- PLACE REMAINING AGGREGATE TO THE PROPOSED ELEVATION (MIN. 2" ABOVE THE TOP OF DRAIN TILES) AND INSTALL WESTERN UPPER PENINSULA HEALTH DEPARTMENT APPROVED GEOSYNTHETICS/GEOTEXTILE FILTER FABRIC BARRIER AS DETAILED.
- BACKFILL AGGREGATE LAYER WITH CLEAN COARSE SAND TO THE PROPOSED TOP OF SAND ELEVATION. SAND BACKFILL SHALL BE LEVEL AND EXTEND 5 FEET BEYOND 6A STONE AGGREGATE AND SLOPE MAX. 3(H) : 1(V).
- RESTORE AREA WITH 6" OF TOPSOIL TO PROPOSED CROWN ELEVATION OF SEPTIC FIELD. TILL AND GRADE AS NECESSARY. PLACE CLASS A SEED, FERTILIZER AND MULCH TO ALL AREAS DISTURBED BY CONSTRUCTION. FINAL COVER OVER THE MDOT CLASS 6A WASHED STONE LAYER IS TO BE AT LEAST 12 INCHES AND NO MORE THAN 24 INCHES.

SEPTIC SYSTEM NOTES

- THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT ALL NECESSARY PERMITS HAVE BEEN OBTAINED AND FULLY COMPLY WITH ALL REQUIREMENTS SPECIFIED THEREIN.
- ALL AREAS OFF-SITE DISTURBED BY THE CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO EQUAL OR BETTER CONDITION THAN PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT PROPER INSPECTION HAS BEEN ARRANGED AND SCHEDULED WITH THE OWNER AND WESTERN UPPER PENINSULA HEALTH DEPARTMENT PRIOR TO THE COMMENCEMENT OF ACTIVITIES.
- THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND VISIT THE SITE TO DETERMINE CONDITIONS ABOVE GROUND AND TO ASCERTAIN THE LOCATION OF THE EXISTING SEPTIC SYSTEM, IF ANY, PRIOR TO ENTERING INTO ANY CONTRACT WITH THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THEIR OWN QUANTITIES AND AGREE THAT THESE PLANS REPRESENTED AN ESTIMATE OF SITE CONDITION AND ELEVATIONS ALONG WITH A GOOD FAITH REPRESENTATION OF REQUIRED MATERIALS.
- SEPTIC TANK SHALL MEET ALL MANUFACTURERS AND WESTERN UPPER PENINSULA HEALTH DEPARTMENT REQUIREMENTS FOR HIGH WATER TABLE INSTALLATIONS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR TANK INSTALLATION TO THE ENGINEER FOR REVIEW AND APPROVAL.
- IF THE DEPTH OF THE SEPTIC TANK EXCEEDS 12" BELOW FINISHED GRADE, THEN 24" DURABLE RISER SECTIONS HAVE TO BE INSTALLED AT ACCESS PORTS.
- NO CONSTRUCTION TRAFFIC SHALL BE ALLOWED OVER THE SEPTIC FIELD BED AREA. PRIOR TO CONSTRUCTION, THE AREA FOR THE SEPTIC FIELD SHALL BE FENCED TO AVOID DISRUPTION OF THE BED SYSTEM.
- WHEN FILLING, 12 INCHES OF SAND MUST SEPARATE THE WHEELS OR TRACKS OF CONSTRUCTION EQUIPMENT FROM THE UNDERLYING MATERIAL.
- FROM THE LIMITS OF SEPTIC FIELD SLOPE PROPOSED SEPTIC MOUND FILL AT 3(H) : 1(V) (33%) MAX. SLOPE TO MEET EXISTING GRADE. MATCH EX GRADE AT THE TOE OF FILLED SAND.
- MAINTAIN ALL ISOLATION DISTANCES. TOE OF PROPOSED SEPTIC BED FILL AT 3:1 SLOPE SHOULD BE MIN. 10 FEET FROM THE PROPERTY LINES, 100 FEET FROM SURFACE WATER, 75 FEET FROM WATER WELL.



BORING LEGEND

- SB-1 SOIL BORING
- PT-1 PERK TEST

LEGEND

- CLEAN-OUT
- HYDRANT
- INLET
- UTILITY POLE
- MANHOLE
- GUY POLE
- GATE VALVE
- MANHOLE
- GUY WIRE
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EXISTING BURIED CABLES
- EXISTING GAS MAIN
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- ELECTRIC RISER

SOIL EROSION CONTROL - SEQUENCE OF OPERATION (NEW CONSTRUCTION)

INSTALL CRUSHED CONCRETE ACCESS DRIVE AND TEMPORARY CULVERTS AT THE ENTRANCE AS INDICATED ON THE PLANS.

INSTALL SILT FENCE OR SIMILAR APPROVED SILT BARRIER AROUND SENSITIVE NATURAL FEATURES AS INDICATED ON THE PLANS.

IF INDICATED ON CONSTRUCTION PLANS, SEDIMENTATION BASINS, DETENTION POND, ETC., SHALL BE CONSTRUCTED PRIOR TO THE INSTALLATION OF ANY OTHER WORK.

STRIP EXISTING TOPSOIL, VEGETATION AND ORGANIC MATTER FROM BUILDING PAD AND PARKING AREAS. COMMENCE LAND BALANCE AND MASS GRADING OPERATIONS. MAINTAIN A MINIMUM BUFFER OF 15' OF EXISTING VEGETATION WHEREVER POSSIBLE AROUND SITE PERIMETER. STOCK PILES SHOULD BE LOCATED AWAY FROM EXISTING DRAINAGE FACILITIES.

EXCAVATE AND INSTALL UNDERGROUND UTILITIES.

COMMENCE FINAL GRADING AND TRIMMING OPERATIONS. PREPARE SUBGRADE FOR INSTALLATION OF PROPOSED PAVEMENT.

SEED AND MULCH ALL DISTURBED SITE AREAS AND INSTALLED SITE LANDSCAPING.

REMOVE CONSTRUCTION DEBRIS AND JET VAC NEWLY INSTALLED STORM SEWER SYSTEM AS REQUIRED BY THE MUNICIPALITY.

REMOVE ALL REMAINING TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ONCE PERMANENT MEASURES ARE ESTABLISHED.

WHENEVER POSSIBLE, THE SITE SHALL BE GRADED TO WITHIN SIX INCHES (6") OF THE PROPOSED FINISH GRADE PRIOR TO INSTALLATION OF UNDERGROUND FACILITIES.

STAGING OF PROPOSED WORK SHALL BE COMPLETED BY THE CONTRACTOR AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED AREAS.

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, EXCEPT WHERE SPECIFIC FINDINGS DEMONSTRATE THAT MAJOR ALTERATIONS WILL STILL MEET THE PURPOSES AND REQUIREMENTS OF THIS ORDINANCE.

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

SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED BETWEEN THE DISTURBED AREA AND ANY WATERCOURSES, INCLUDING RIVERS, STREAMS, CREEKS, LAKES, PONDS AND OTHER WATERCOURSES; WETLANDS; OR ROADWAYS ON OR NEAR THE SITE.

SEDIMENT RESULTING FROM ACCELERATED SOIL EROSION SHALL BE REMOVED FROM RUNOFF WATER BEFORE THAT WATER LEAVES THE SITE.

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.

IF LAKES, PONDS, CREEKS, STREAMS, OR WETLANDS ARE LOCATED ON OR NEAR THE SITE, EROSION CONTROL MEASURES WHICH DIVERT RUNOFF AND TRAP SEDIMENT MUST BE PROVIDED AT STRATEGIC LOCATIONS. STRAW BALE BERMES MAY BE USED AS TEMPORARY STORMWATER DIVERSION STRUCTURES, BUT WILL NOT BE CONSIDERED SUFFICIENT FOR TRAPPING SEDIMENT. THE USE OF SEDIMENT BASINS, FILTER FABRIC, VEGETATED BUFFER STRIPS, AND ROCK FILTERS IN LIEU OF STRAW BALE BERMES SHALL BE STRONGLY ENCOURAGED. OTHER MEASURES MAY BE REQUIRED IF REASONABLY DETERMINED TO BE NECESSARY TO PROTECT A WATERCOURSE OR WETLAND.

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 CREATED OR 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.

NOTES

A DISTANCE OF 120 FEET TO THE NEAREST BODY OF WATER LAKE SUPERIOR TO THE NORTH.

THE TOTAL AREA OF EARTH DISRUPTION IS 2.430 ACRES.

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

A SOIL EROSION PERMIT IS REQUIRED FROM THE DTMB.

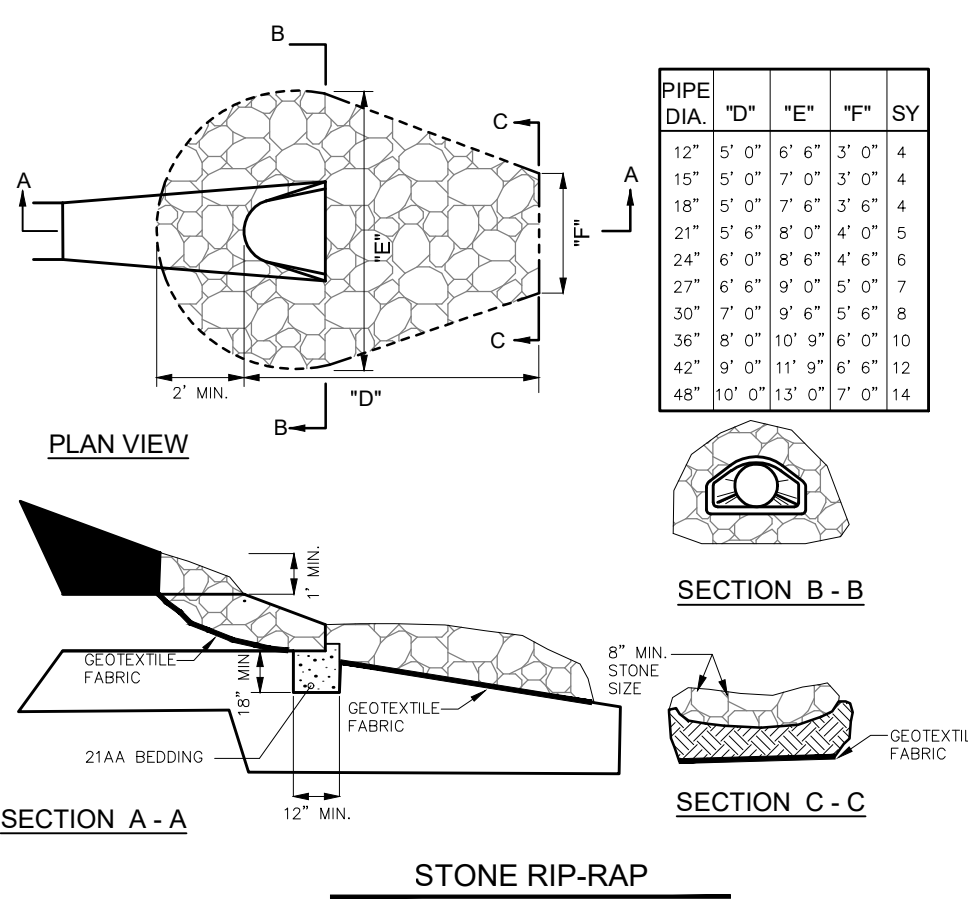
SOIL DATA

THIS SITE CONSISTS OF 88.3% BIG IRON-FLINTSTEEL-GULL POINT, FREQUENTLY FLOODED, COMPLEX, DISSECTED, 1--15% SLOPES, AND 11.7% MISHWABIC SILT LOAM, 0--2% SLOPES.

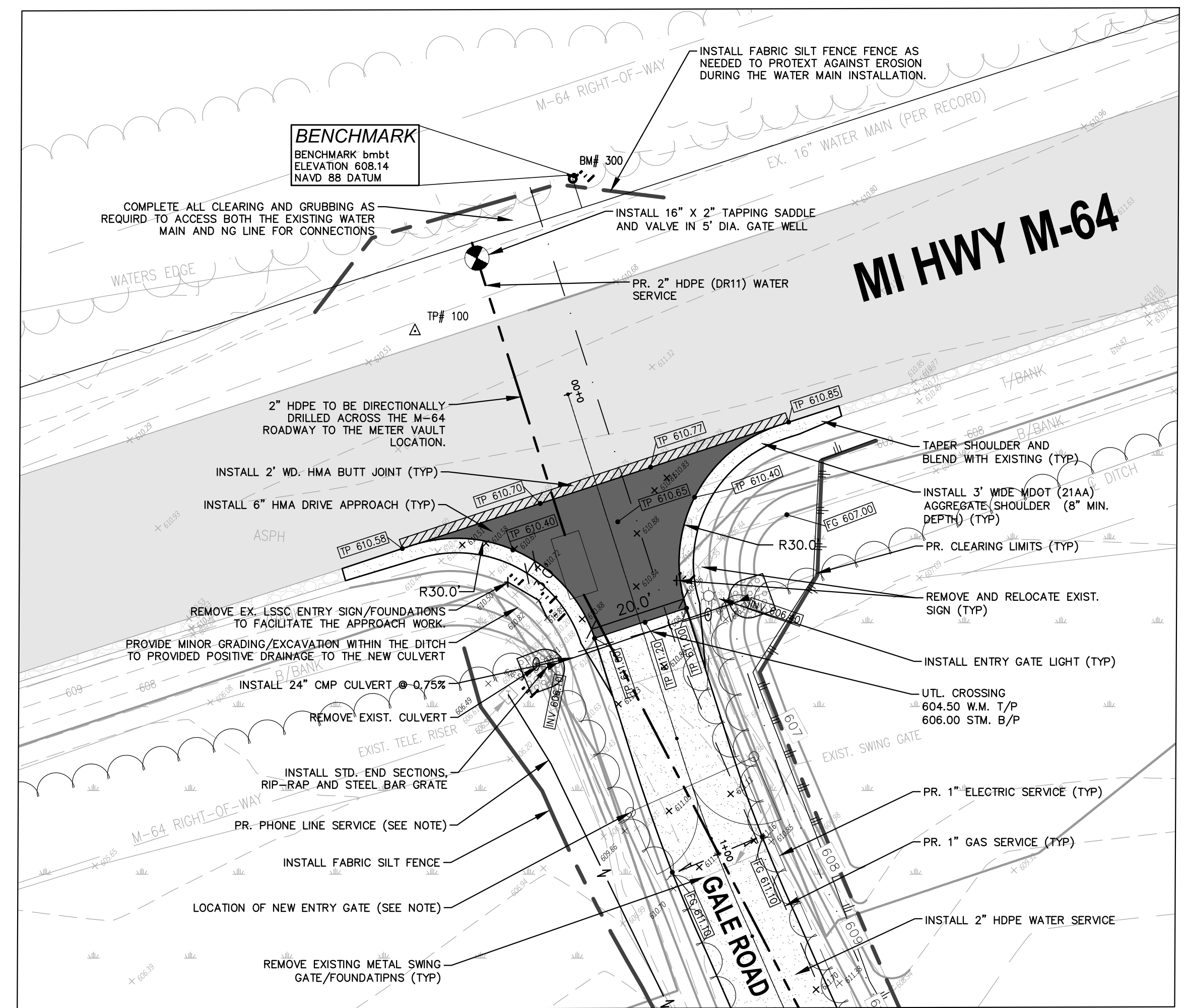
BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, ACCESSED 10/26/2020.

CONSTRUCTION SEQUENCE / TIMING SCHEDULE

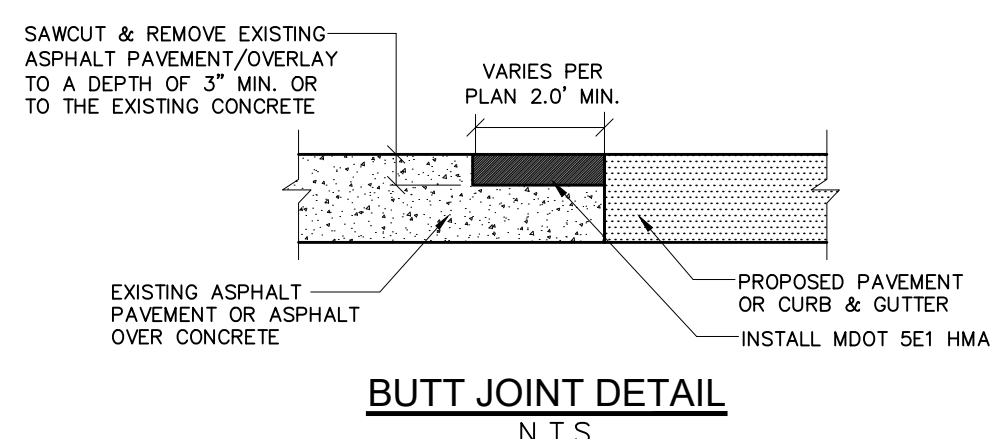
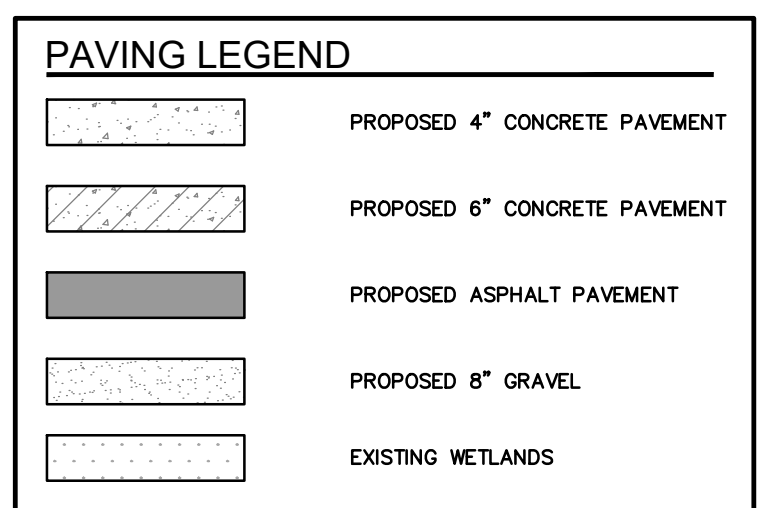
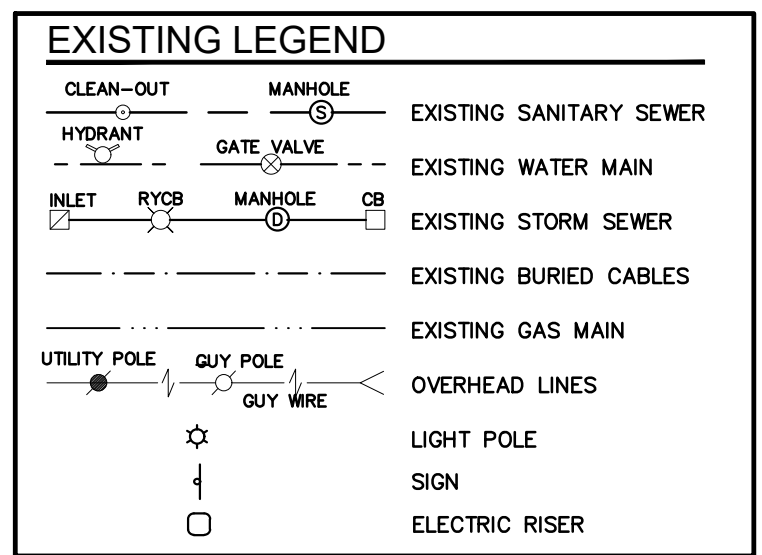
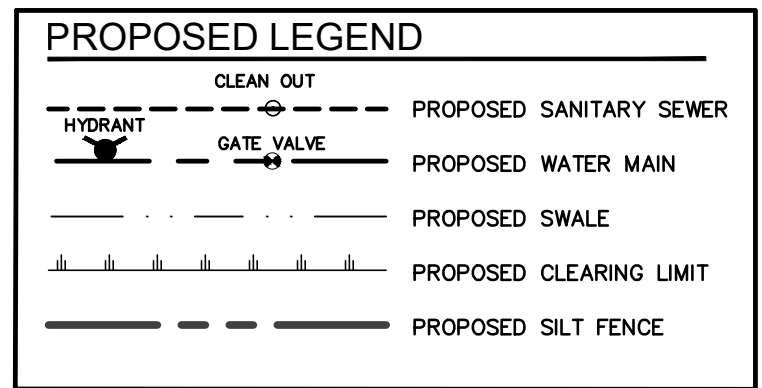
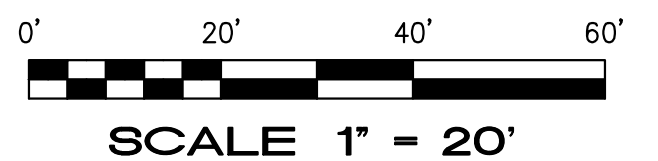
1. INSTALL PERIMETER FILTER FABRIC FENCING AND STONE FILTER WHERE REQUIRED.	MAY, 2021
2. MASS GRADE SITE.	MAY, 2021
3. COMMENCE UNDERGROUND UTILITY WORK.	MAY, 2021
4. COMPLETE ALL BUILDINGS AND LANDSCAPE ACTIVITY.	JUNE, 2021
5. FILL IN SEDIMENTATION TRAPS AND PAVE SITE.	JULY, 2021
6. REMOVE ALL TEMPORARY SOIL EROSION MEASURES.	AUG, 2021



STONE RIP-RAP
N.T.S.



M-64 RIGHT-OF WAY IMPROVEMENTS

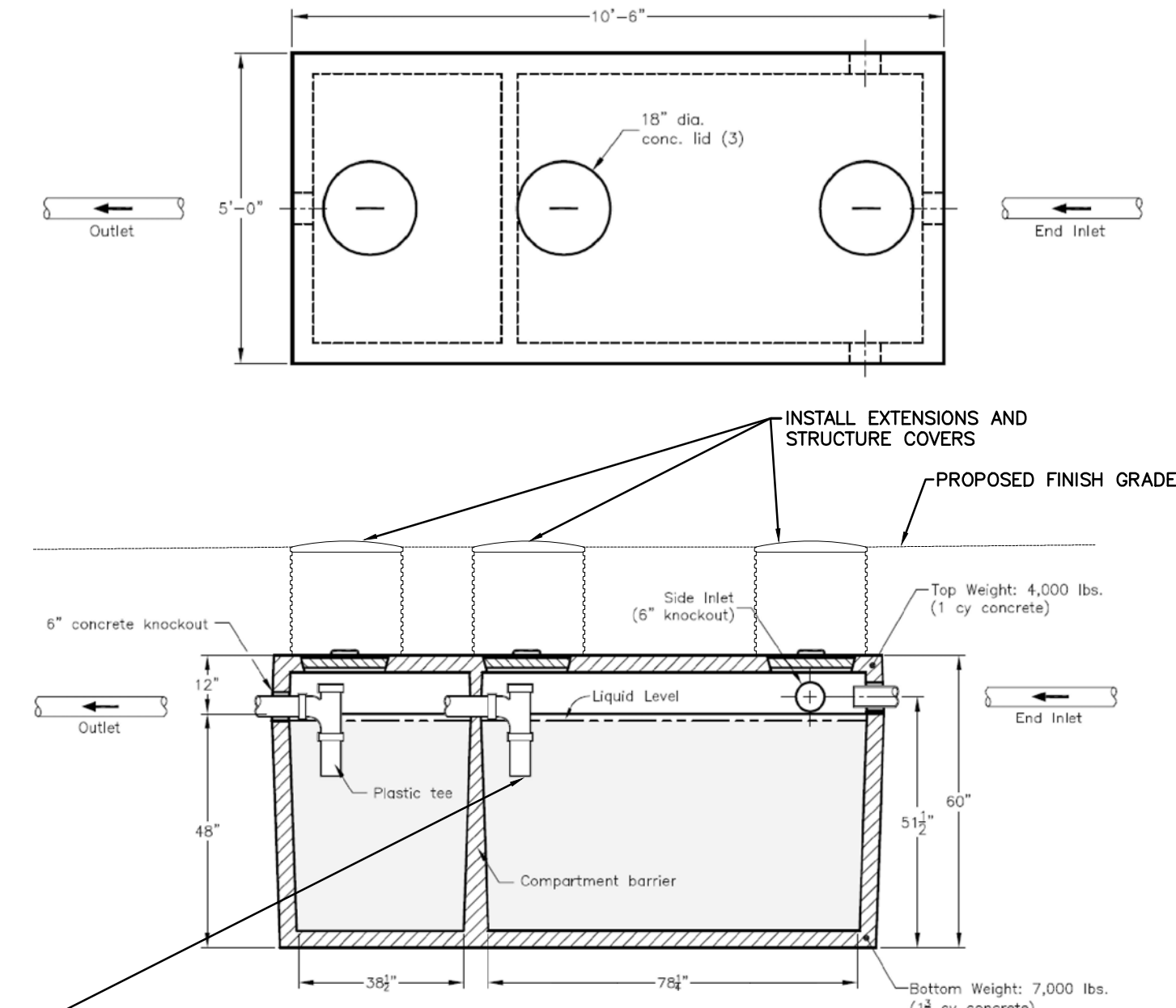


DNR PROVIDED GATE

THE OWNER WILL PROVIDE TO THE CONTRACTOR A DUAL SWING POWDER COATED STEEL PIPE RAIL GATE FOR INSTALLATION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR DELIVERY AND SHALL INCLUDE ALL INSTALLATION, INCLUDING 12" DIA. CONCRETE FOUNDATION (42" DEPTH) FOR EACH POST.

APPROACH PAVING SECTION

THE CONTRACTOR MAY DECIDE ON THE PAVEMENT CROSS SECTION FOR THE PAVED ENTRY APPROACH. BOTH HMA AND CONCRETE SECTIONS HAVE BEEN PROVIDED. ALL COST FOR EITHER SECTION SHALL BE INCLUDED IN THE BASE BID.

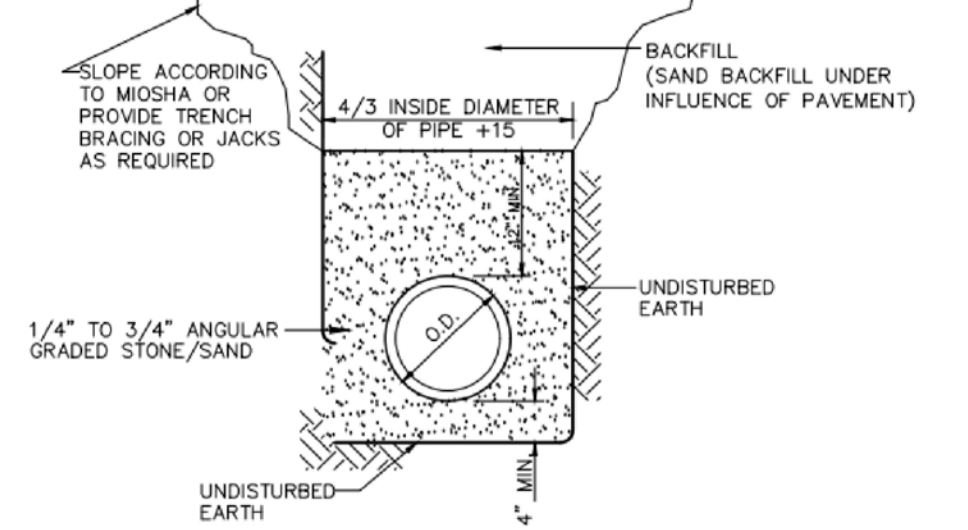
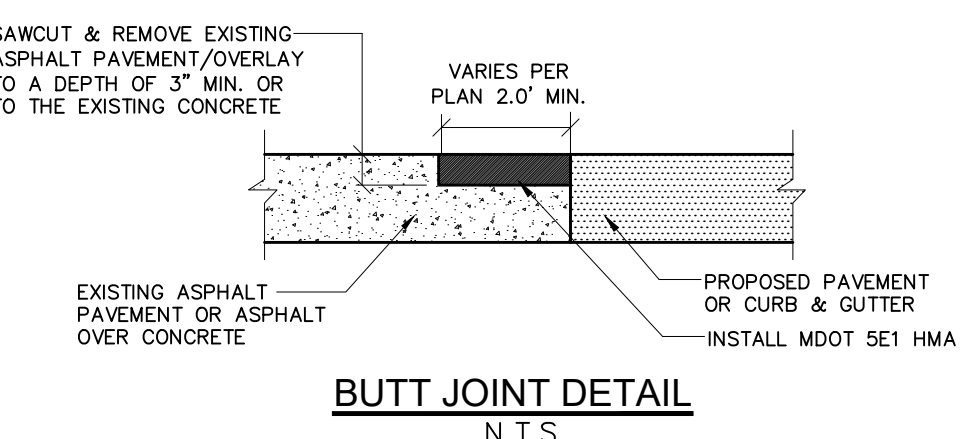


INLET SEPTIC FILTER TO BE PLACED AT OUTLET TO DOSING TANK. CONTRACTOR TO PROVIDE FILTER TYPE FOR REVIEW.

- Notes:
1. Typical wall thickness is 3.5"
 2. Unless otherwise noted, end inlet & outlet are fitted with polylock accepting pipes up to 6" dia.
 3. Concrete access lid(s) shown are included
 4. Plastic tees shown are included
 5. Dimensions shown are approximate only
 6. Tank may have internal support ribs or similar structures not shown above

#1250d-51½
Outside Dim: 60W x 126L x 60H
Total Weight: 11,000 lbs
Capacity: 1,250 ga.

1,250 GALLON DUAL COMPARTMENT SEPTIC TANK
SEPTIC TANK DETAIL
N.T.S.



LANE CLOSURES

LANE CLOSURES (TRAFFIC REGULATION) ON M-64 WILL ONLY BE PERMITTED BASED ON APPROVAL OF LANE CLOSURE REQUEST FORM SUBMITTED.

NO WORK WILL BE ALLOWED, OR LANE CLOSURES PERMITTED ON M-64 DURING EASTER, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING, CHRISTMAS AND NEW YEAR'S HOLIDAY PERIODS AND ANY OTHER DESIGNED STATE HOLIDAY AS DEFINED BY THE ENGINEER.

ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS MUST BE MAINTAINED AT ALL TIMES.

ALL TRAFFIC CONTROL DEVICES AND THEIR USAGE MUST CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD), 2011 EDITION.

DURING THE LANE CLOSURES ACCESS FOR EMERGENCY VEHICLES (FIRE, AMBULANCE AND POLICE) MUST BE MAINTAINED AT ALL TIMES.

ALL EXISTING PAVEMENT MARKINGS THAT ARE REMOVED FOR TRAFFIC CONTROL OR OBLITERATED DURING CONSTRUCTION OPERATIONS MUST BE REPLACED WITH WATERBORNE FOR THE LONGITUDINAL LANE LINES.

ALL SIGN MATERIALS AND SUPPORTS MUST MEET NCHRP-350 CRASH WORTHY REQUIREMENTS.

TEMPORARY WARNING, REGULATORY AND GUIDE SIGNS NOT REQUIRED FOR A PARTICULAR LANE OR SHOULDER CLOSURE MUST BE REMOVED, COVERED OR LAID DOWN WITH THE LEGS REMOVED.

Potential Bedrock Conditions

BASED UPON FEEDBACK FROM THE VILLAGE OF ONTONAGON, IT IS LIKELY THAT BEDROCK FORMATIONS MAY BE FOUND NEAR THE M-64 / DRIVE INTERSECTION AREA. THIS MAY REQUIRE SOME LEVEL OF BLASTING FOR INSTALLATION OF WATER SERVICE / METER VAULT IN THIS AREA. CONTRACTORS SHOULD INVESTIGATE THIS AND INCLUDE APPROPRIATE COSTS TO DEAL WITH THIS TYPE OF WORK.

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DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
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ROBERT C. HALL, RA, NCARB, DIRECTOR

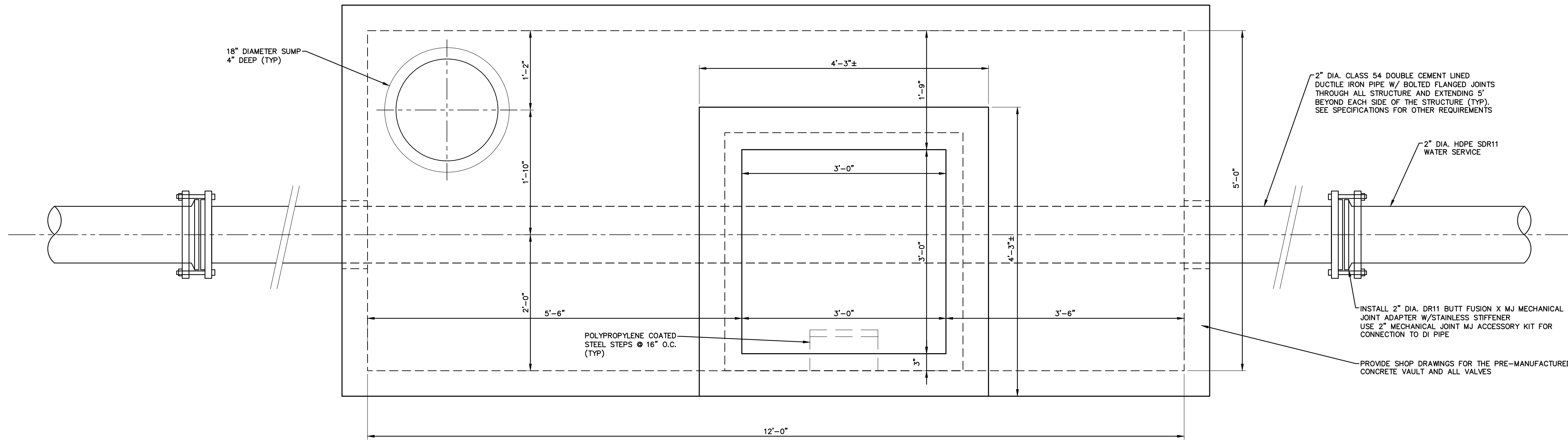
2021-03-11	Bid Documents	Phase 500 90% Review	Phase 500 50% Review	REVIEW
2020-01-13				
2020-11-04				
				DATE

PROJECT DESCRIPTION
WESTERN UPPER PENINSULA SHOOTING FACILITY
ONTONAGON, MICHIGAN

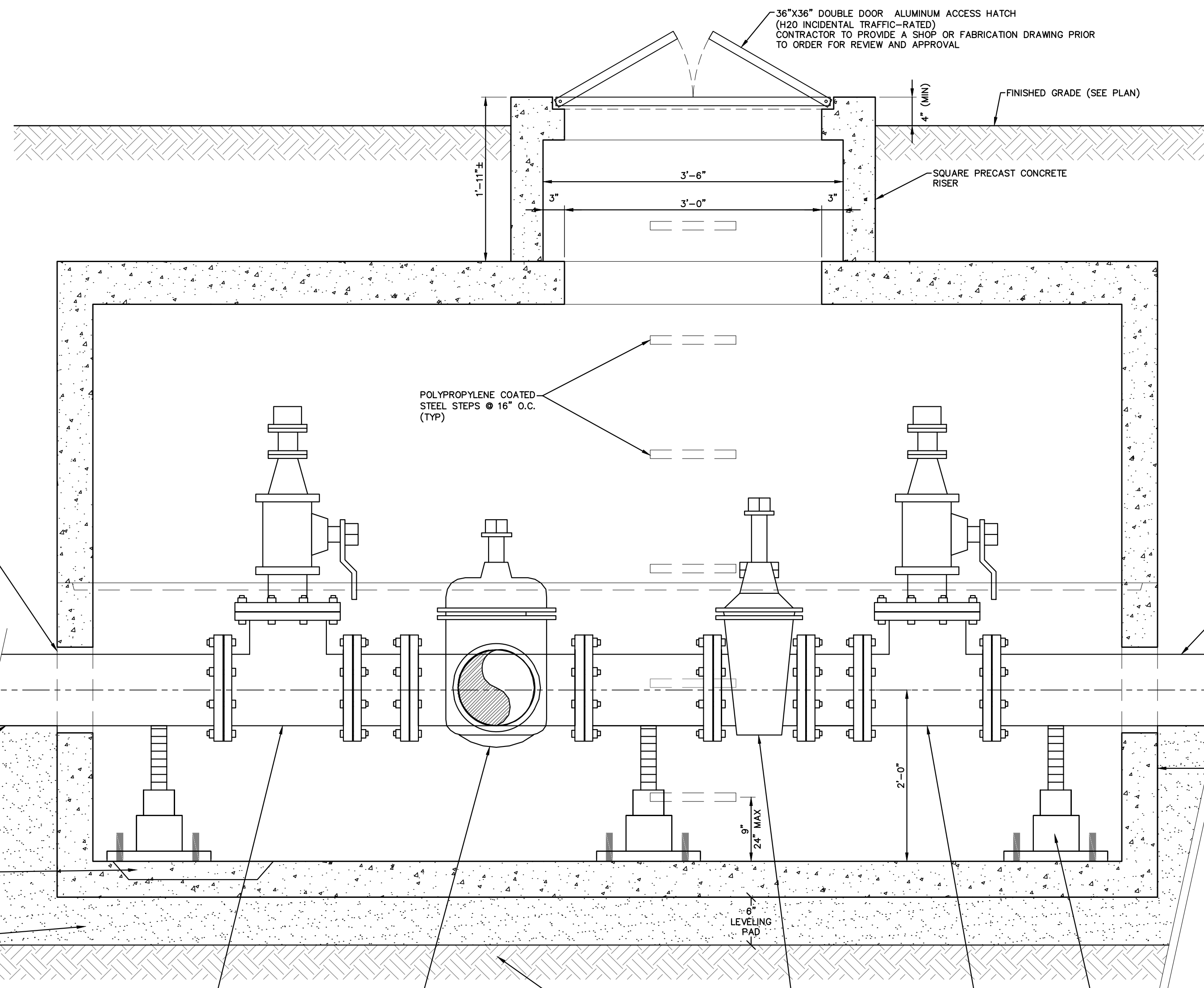
NOTES AND DETAILS PLAN

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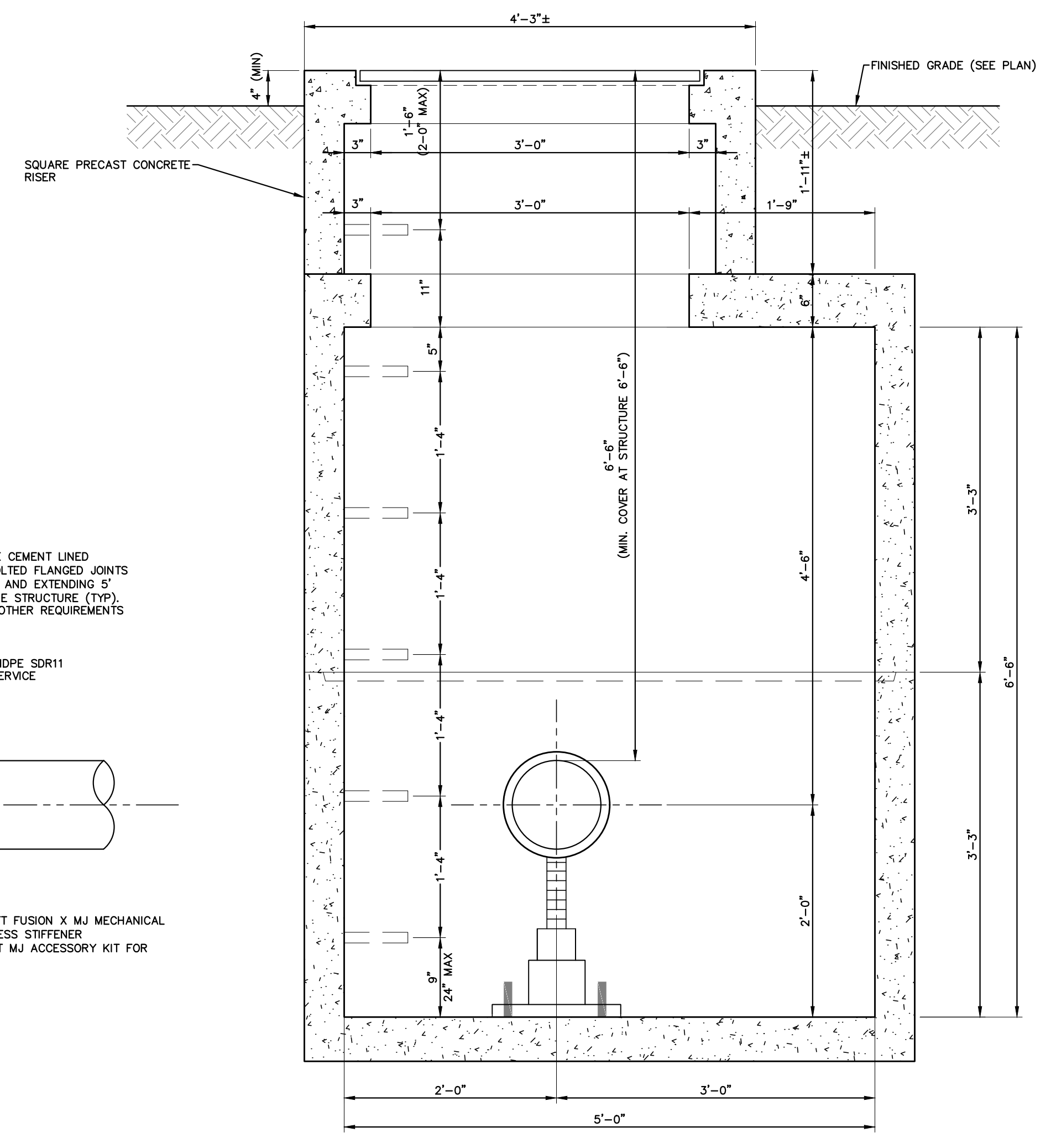
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PLAN VIEW
NTS



SIDE VIEW
NTS



END VIEW
NTS

CONCRETE VAULT DETAILS

NTS

DAMAGE TO PRIVATE PROPERTY

1. ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI.
2. REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60 REBAR.
3. BAR BENDING AND PLACEMENT SHALL COMPLY WITH THE LATEST ACI STANDARDS.
4. STANDARD STRUCTURAL DESIGN BASED ON AASHTO HS 20 WHEEL LOADING.
5. PROVIDE 1" DIA BUTYL RUBBER ROPE MASTIC FOR PLACEMENT BETWEEN TOP AND BOTTOM SECTIONS OF VAULT.

VILLAGE OF ONTONAGON COORDINATION

THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE METER PIT INSTALLATION AND WATER MAIN TAP WITH THE VILLAGE OFFICES, AND SCHEDULE ANY REQUIRED INSPECTIONS REQUIRED. ANY INSPECTION FEES WILL BE PAID FOR USING THE ALLOWANCE IN THE PROJECT. WORK WITHIN THE ROW IS ALSO UNDER THE JURISDICTION OF MDT AND ALL WORK REQUIRES PERMIT AND INSPECTION FROM THEIR OFFICE.

VAULT / METER / VALVE FABRICATION DRAWING

CONTRACTOR SHALL REVIEW METER AND CHECK VALVE REQUIREMENTS WITH THE VILLAGE OF ONTONAGON AND SUBMIT A FINAL DRAWING SHOWING PROPOSED PRE-CAST VAULT AND INTERIOR PLUMBING / CONNECTIONS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDER PLACEMENT. THIS DRAWING SHOWS GENERAL AND ANTICIPATED REQUIREMENTS.

CIVIL ENGINEER
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 LAND SURVEYORS
 LAND PLANNERS
 ENGINEERS

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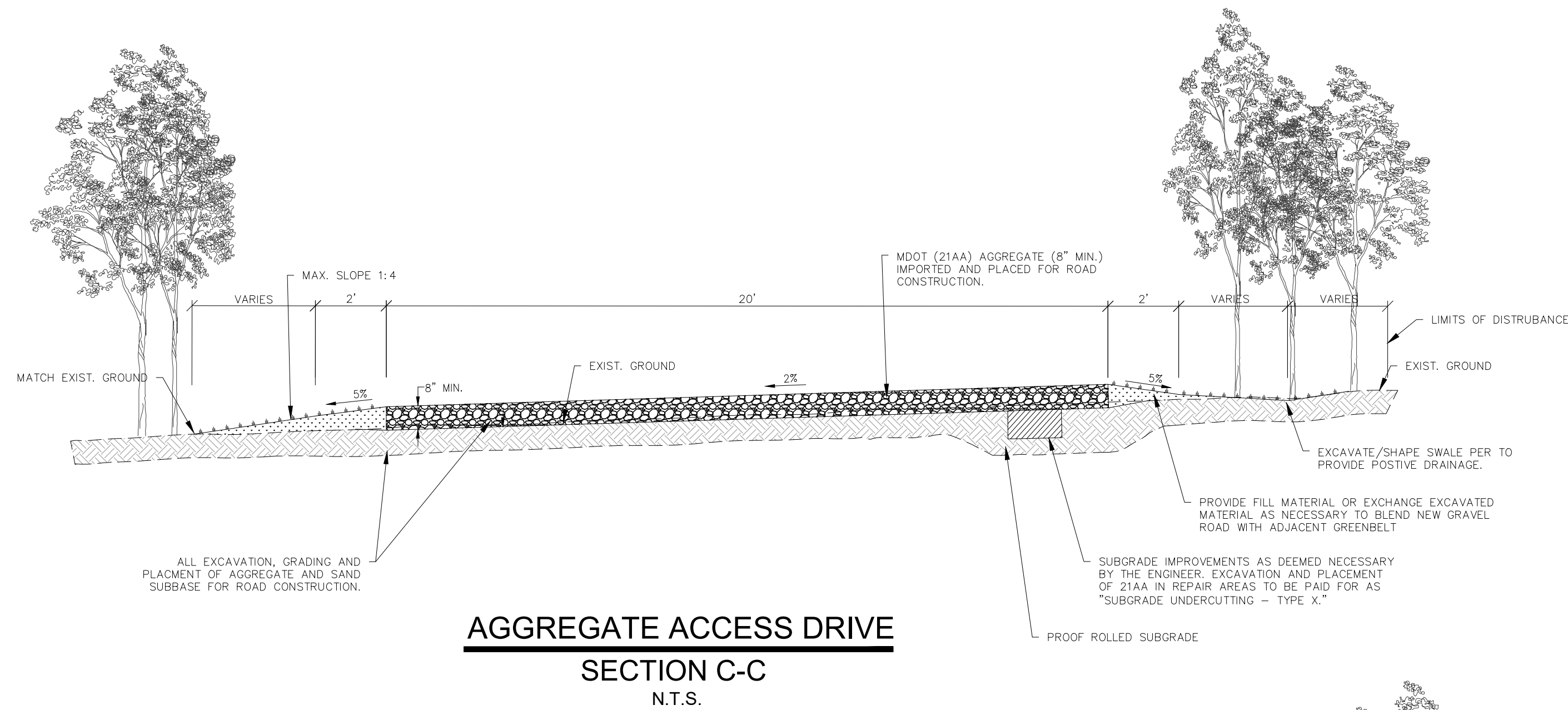
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DATE		REVIEW

PROJECT DESCRIPTION
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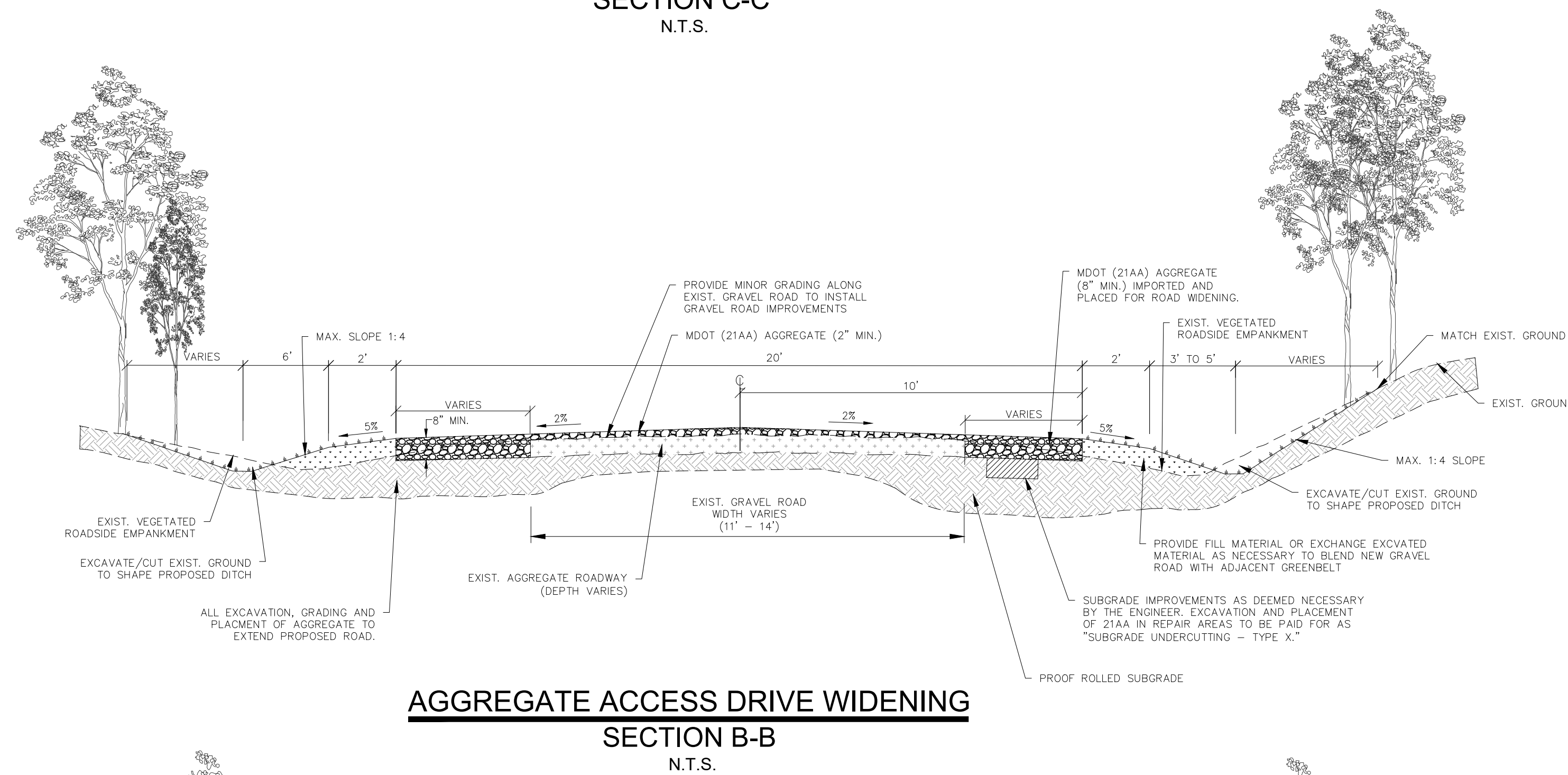
WATER METER VAULT DETAILS

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DESIGNED BY	MAW
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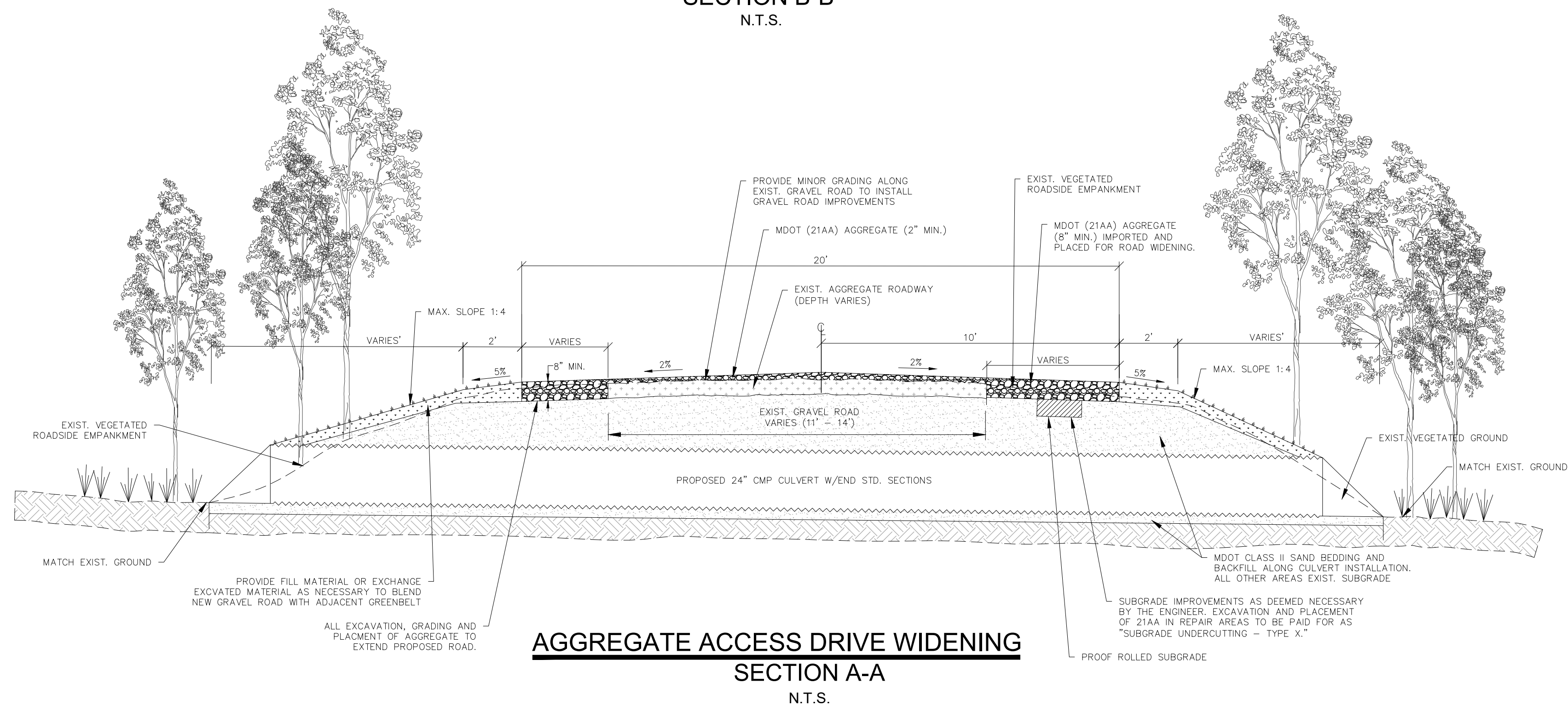
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AGGREGATE ACCESS DRIVE
SECTION C-C
N.T.S.



AGGREGATE ACCESS DRIVE WIDENING
SECTION B-B
N.T.S.



AGGREGATE ACCESS DRIVE WIDENING
SECTION A-A
N.T.S.

SOIL BORING DATA
REVIEW THE SOIL BORINGS FOR EXISTING PAVEMENT DEPTHS, UNDERLYING SOIL TYPES, GROUND WATER ELEVATIONS, ETC. ASSOCIATED WITH THE PROJECT.

CLEARING
ALL ADJACENT CLEARING OF TREES, BRUSH, AND OTHER VEGETATION SHALL BE INCLUDED AS PART OF THE INSTALLATION OF OVERALL PROJECT.

MDOT 21AA
ALL PROPOSED 21AA SHALL BE CRUSHED CONCRETE OR LIMESTONE MEETING MDOT STANDARD GRADATIONS.

RESTORATION
ALL DISTURBED GREENBELT AREAS SHALL BE RESTORED WITH 3" SCREENED TOPSOIL AND HYDROSEED. ALL SLOPES EXCEEDING 1:4 SHALL ALSO RECEIVE A MULCH BLANKET FOR EROSION PROTECTION.

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NF
ENGINEERS

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ONTONAGAN, MICHIGAN

ACCESS ROAD CROSS SECTIONS
DETAIL AND NOTES

FILE NO.	75117172.IBB	25550
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