

Mr. Don Cree
City of Kokomo Engineering Department
100 South Union Street
Kokomo, IN 46901

Date: April 28, 2022
Our Ref: 30075940
Subject: Rule 5 Permitting, Former GM Delco Plant Facility, Kokomo, Indiana

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Dear Mr. Cree,

Arcadis U.S. Inc. (Arcadis) has prepared the attached contract plans on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust for the implementation of in-situ solidification and stabilization (ISS) corrective measures at the former GM Delco Plant 5 facility located at 1723 North Washington Street, Kokomo, Indiana. The corrective measures will disturb more than one acre of land and will be implemented in a manner compliant with the General Permit Rule 327 IAC 15-5 (Rule 5) requirements as shown in the contract plans

Project Background

RACER Trust and the United States Environmental Protection Agency (USEPA) signed an Administrative Order on Consent RCRA-05-2011-0017 with an effective date of September 29, 2011. Pursuant to the Order, RACER Trust has worked in cooperation with USEPA to investigate historical releases of hazardous wastes or hazardous constituents at or from the Site located in Kokomo, Indiana (USEPA ID IND000806844). In 2019, RACER Trust prepared and submitted to the USEPA an updated Corrective Measures Proposal (CMP) that evaluated several options to address the potential risk to receptors and USEPA's request for groundwater restoration.

In 2021, the USEPA issued a Statement of Basis identifying their proposed corrective measures for the Site as: In-Situ Stabilization and Solidification (ISS) with monitored natural attenuation (MNA) for Groundwater and Soil; Institutional Controls; and Long-Term Care/Stewardship. After a public comment period, the USEPA issued a Final Decision and Response to Comments (FD/RC) for the above selected remedies on June 16, 2021.

Selected Corrective Measure: In-Situ Stabilization and Solidification (ISS)

The active corrective measure selected for the site includes a combination of two ISS technologies:

- Step 1: Stabilization. Soil stabilization will be achieved by adding 1% zero valent iron (ZVI) by dry unit weight of in-situ soils in a bentonite slurry mixture. As a reagent, ZVI will cause a rapid chemical reaction to occur, thereby reducing the chlorinated compounds to non-hazardous byproducts. In the ZVI mixing process, the existing soil structure and strength will be destroyed.
- Step 2: Treatment Period: The soil treated in Step 1 will be allowed to react for a minimum of 28 days prior to solidification. Post treatment, the soil will require solidification.
- Step 3: Solidification: The treated soil will be solidified by adding 5% Portland cement (PC) by dry unit weight of existing soil to make the ISS treatment zone geotechnically competent. The PC will be used as a binding agent and the solidified soil will cure into a lower-permeability monolith, which will further prevent soil leaching contamination into the groundwater.

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Groundwater Contingency Plan

Groundwater monitoring will be conducted in accordance with the USEPA approved Groundwater Contingency Plan (GCP). The remediation activities at the site will include disturbance to vadose zone soils, abandonment of existing monitoring wells within the treatment area, and installation of new monitoring wells around the perimeter for groundwater monitoring during and after the remedy implementation. The GCP includes groundwater monitoring during work activities and contingency measures that will be implemented to address the potential risk associated with a temporary increase in VOC concentrations in groundwater. The GCP will be implemented to prevent temporary spike in groundwater concentrations from disturbance to TCE-impacted soil through excavation and ISS.

Stormwater Runoff Analysis

Arcadis analyzed the site in its existing and proposed conditions for the 10- and 100-year storm events utilizing the Rational Method to evaluate the effect of the final remedy on the site. The site is fairly flat with a slope to the southeast. Site restoration will result in minor grade changes, with a slope still continuing in the southeast direction and all flow going toward the storm inlets on North Washington Street. It is reasonable to expect that the removal of concrete pads and the proposed grading at the site would reduce the peak discharge. The existing and proposed grading of the site is shown in attached contract drawings. Based on the analysis, the proposed remediation work will not change the drainage patterns of the site and will not have negative impact with regards to runoff from the site.

The remediation activities will disturb 9.3 acres, and erosion and sediment control measures will be implemented to prevent sediment-laden stormwater runoff leaving the site.

With this letter, Arcadis is submitting for your information the contract drawings and figures associated with the implementation of the planned ISS corrective measures at the site of the former GM Delco Plant 5 facility.

If you have any questions or concerns regarding the work at the former GM Delco Plant 5 facility site, please feel free to contact us at the phones provided below.

Sincerely,
Arcadis U.S., Inc.



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Appendix:

- Contract Drawings, RACER Trust, Former GM Delco Plant 5, Kokomo, Indiana, February 2022.
- Site Figures

APPENDIX



C:\Users\steinberger\Arcadis\AUS\RACER TRUST-1723 N WASHINGTON ST-KOKOMO Indiana\Project Files\2022\01-in Progress\01-DWG\ISS-DESIGN\DR00-COVER.dwg LAYOUT: C-COVER SAVED: 4/20/2022 1:38 PM ACADVER: 24.1S (LMS TECH) PAGES: 24 PLOTSTYLETABLE: PLTCONT CTB PLOTTED: 4/20/2022 1:51 PM BY: STEINBERGER, GEORGE XREFS: IMAGES: PROJECTNAME: 00844X16.tif

CONTRACT DRAWINGS

PROPOSED REMEDIAL ACTION

RACER TRUST
FORMER GM DELCO PLANT 5
1723 NORTH WASHINGTON STREET
KOKOMO INDIANA

DATE ISSUED
APRIL 2022

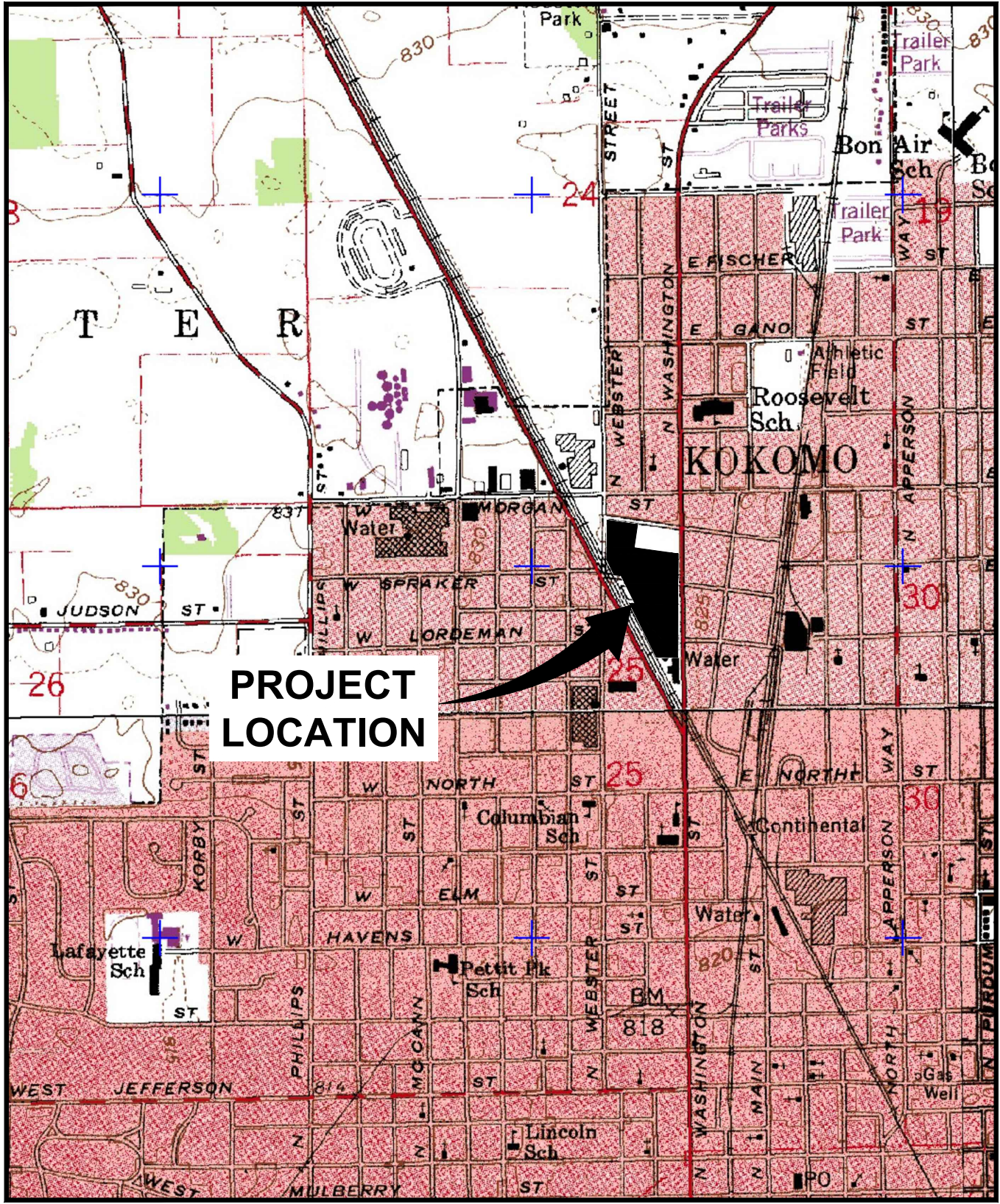
INDEX TO DRAWINGS

GENERAL

G-000	STORMWATER POLLUTION PREVENTION PLAN	C-103	REMEDIATION CROSS-SECTIONS - NORTH AREA
G-001	GENERAL NOTES AND LEGEND	C-104	EXCAVATION AND ISS PLAN - SOUTH AREA
G-002	TECHNICAL SPECIFICATIONS (1 OF 2)	C-105	REMEDIATION CROSS-SECTIONS - SOUTH AREA
G-003	TECHNICAL SPECIFICATIONS (2 OF 2)	C-106	ISS SUBGRADE PLAN - NORTH AREA
G-004	EXISTING SITE PLAN	C-107	ISS SUBGRADE PLAN - SOUTH AREA
G-005	TRAFFIC CONTROL PLAN	C-108	OVERBURDEN SUBGRADE PLAN
G-006	EROSION AND SEDIMENT CONTROL PLAN	C-109	FINAL GRADING PLAN
G-007	EROSION AND SEDIMENT CONTROL DETAILS AND NOTES	C-110	RESTORATION CROSS-SECTIONS

CIVIL

C-101	EXCAVATION PLAN - NORTH AREA
C-102	ISS PLAN - NORTH AREA



LOCATION MAP
0 1250' 2500'
GRAPHIC SCALE



DRAFT - NOT FOR CONSTRUCTION



ARCADIS U.S., INC.



IMAGE (C) MICROSOFT, 2022
SOIL TYPE KEY:
CsA Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes

AERIAL PHOTO
0 300' 600'
GRAPHIC SCALE

CONSTRUCTION STORMWATER GENERAL PERMIT CHECKLIST

SECTION A: CONSTRUCTION PLAN ELEMENTS

1. INDEX SHOWING LOCATIONS OF REQUIRED PLAN ELEMENTS
PLAN ELEMENTS A2–A23, B1–B15, & C1–C5 ARE ADDRESSED ON THIS SHEET
2. VICINITY MAP SHOWING PROJECT LOCATION
THE COVER SHEET CONTAINS A VICINITY MAP.
3. NARRATIVE DESCRIBING NATURE AND PURPOSE OF PROJECT
THIS PROJECT WILL INCLUDE EXCAVATION AND IN–SITU SOLIDIFICATION AND STABILIZATION (ISS) OF THE SUBSURFACE AS SHOWN ON THE DRAWINGS. THIS IS PART OF AN ONGOING REMEDIATION AT THE SITE DUE TO TRICHLORETHYLENE (TCE) – IMPACTS IDENTIFIED WITHIN SUBSURFACE SOILS.
4. LATITUDE AND LONGITUDE TO THE NEAREST 15 SECONDS
LATITUDE 40.501905°N LONGITUDE 86.133741°W
5. LEGAL DESCRIPTION OF THE PROJECT SITE
ADDRESS: 1723 NORTH WASHINGTON STREET, KOKOMO, INDIANA 46901
SECTION: 25 TOWNSHIP: 24N RANGE: 3E
6. 11X17 INCH PLAT WITH BUILDING, LOTS, BOUNDARIES, ROAD LAYOUT NAMES (AN 11X17 INCH PLOT SHALL BE SUBMITTED AS A SEPARATE DOCUMENT TO THE HOWARD COUNTY STORMWATER DISTRICT.)
THE 11X17 PLAT IS ATTACHED AS A SEPARATE UPLOADED DOCUMENT
7. BOUNDARIES OF THE ONE HUNDRED (100) YEAR FLOODPLAINS, FLOODWAY FRINGES, AND FLOODWAYS
THE FLOOD INSURANCE RATE MAP IS ATTACHED AS A SEPARATE UPLOADED DOCUMENT
8. LAND USE OF ALL ADJACENT PROPERTIES
URBAN AND INDUSTRIAL LAND USE, INCLUDING RESIDENTIAL, INDUSTRIAL, AND COMMERCIAL PROPERTIES
9. IDENTIFICATION OF A U.S. EPA APPROVED OR ESTABLISHED TMDL
THE PROJECT IS LOCATED IN THE UPPER WILDCAT CREEK WATERSHED, WHICH HAS AN ESTABLISHED TMDL FOR E. COLI.
10. IDENTIFICATION OF ALL RECEIVING WATERS
STORMWATER DISCHARGE WILL FLOW OVERLAND INTO THE EXISTING STORMWATER INLET STRUCTURES LOCATED ON THE ADJACENT STREETS. WATER CAPTURED AT THE INLETS FLOWS INTO A COMBINED SEWER SYSTEM THAT FLOWS TO THE KOKOMO WASTEWATER TREATMENT PLANT. THE KOKOMO WASTEWATER TREATMENT PLANT TREATS WATER CAPTURED AND DISCHARGES TO WILDCAT CREEK.
11. IDENTIFICATION OF DISCHARGES TO A WATER ON THE 303(D) LIST OF IMPAIRED WATERS AND THE POLLUTANTS FOR WHICH IT IS IMPAIRED:
THE PROJECT WILL NOT DISCHARGE TO ANY WATER ON THE 303(D) LIST OF IMPAIRED WATERS AS IT WILL DRAIN TO THE COMBINED SEWERS WHICH WILL FLOW TO THE KOKOMO WASTEWATER TREATMENT PLANT
12. SOILS MAP INCLUDING SOIL DESCRIPTIONS AND LIMITATIONS
COVER SHEET CONTAINS THE SOIL MAP.
13. IDENTIFICATION AND LOCATION OF ALL WETLANDS, LAKES AND WATER COURSES ON AND ADJACENT TO THE SITE
NO WETLANDS, LAKES AND WATER COURSES ARE ON OR ADJACENT TO THE SITE.
14. IDENTIFICATION OF ANY OTHER STATE OR FEDERAL WATER QUALITY PERMITS OR AUTHORIZATIONS THAT ARE REQUIRED FOR CONSTRUCTION ACTIVITIES:
NO STATE OR FEDERAL WATER QUALITY PERMITS ARE REQUIRED.
15. IDENTIFICATION OF EXISTING VEGETATIVE COVER
EXISTING VEGETATIVE COVER IN AND AROUND THE SITE CONTAINS GRASSES AND TREES.
16. EXISTING SITE TOPOGRAPHY AT AN INTERVAL APPROPRIATE TO INDICATE DRAINAGE PATTERNS
G–004 CONTAINS EXISTING SITE TOPOGRAPHY.
17. LOCATION(S) WHERE RUNOFF ENTERS THE PROJECT SITE
RUNOFF DOES NOT ENTER THE PROJECT SITE FROM OFFSITE LOCATIONS
18. SPECIFIC POINTS WHERE RUNOFF DISCHARGES FROM THE PROJECT SITE PRIOR TO LAND DISTURBANCE
STORMWATER DISCHARGE WILL FLOW OVERLAND INTO THE EXISTING STORMWATER INLET STRUCTURES LOCATED ON THE ADJACENT STREETS. WATER CAPTURED AT THE INLETS FLOWS INTO A COMBINED SEWER SYSTEM THAT FLOWS TO THE KOKOMO WASTEWATER TREATMENT PLANT.
19. LOCATION OF ALL EXISTING STRUCTURES ON THE PROJECT SITE
EXISTING STRUCTURES ARE SHOWN IN G–004
20. EXISTING PERMANENT RETENTION OR DETENTION FACILITIES, INCLUDING MANMADE WETLANDS, DESIGNED FOR THE PURPOSE OF STORMWATER MANAGEMENT
THERE ARE NO EXISTING PERMANENT RETENTION OR DETENTION FACILITIES ON SITE
21. LOCATIONS WHERE STORMWATER MAY BE DIRECTLY DISCHARGED INTO GROUNDWATER, SUCH AS ABANDONED WELLS, SINKHOLES, OR KARST FEATURES
MINIMAL DEWATERING MAY BE REQUIRED. WATER WILL BE CAPTURED IN TANKS AND EITHER REUSED ONSITE TO COMPLETE ISS OR SAMPLED AND DISPOSED OF OFF–SITE. EXISTING MONITORING WELLS WITHIN THE LIMITS OF REMEDIATION WILL BE ABANDONED PRIOR TO SOIL DISTURBANCE. CONTINGENCY MONITORING WELLS WILL BE INSTALLED AND GROUNDWATER WILL BE MONITORED IN ACCORDANCE WITH A GROUNDWATER CONTINGENCY PLAN APPROVED BY THE UNITED STATES DEPARTMENT OF ENVIRONMENTAL PROTECTION AGENCY AS PART OF THE CORRECTIVE MEASURES WORK PLAN.
22. SIZE OF THE PROJECT AREA EXPRESSED IN ACRES
10.36 ACRES
23. TOTAL LAND DISTURBANCE EXPRESSED IN ACRES
9.28 ACRES
24. PROPOSED FINAL TOPOGRAPHY AT AN INTERVAL APPROPRIATE TO INDICATE DRAINAGE PATTERNS
C–109 CONTAINS PROPOSED FINAL TOPOGRAPHY.
25. LOCATION AND APPROXIMATE BOUNDARIES OF ALL DISTURBED AREAS
THE DISTURBED AREAS CAN BE SEEN IN G–006
26. LOCATIONS, SIZE AND DIMENSIONS OF PROPOSED STORM WATER SYSTEMS
NO STORMWATER SYSTEMS ARE PROPOSED.
27. SPECIFIC POINTS WHERE STORMWATER DISCHARGE WILL LEAVE THE SITE
STORMWATER DISCHARGE WILL LEAVE THE SITE THROUGH THE STORM INLETS STRUCTURES LOCATED IN THE ADJACENT STREETS

28. LOCATION OF ALL PROPOSED SITE IMPROVEMENTS, INCLUDING ROADS UTILITIES, LOT DELINEATION AND IDENTIFICATION, PROPOSED STRUCTURES, AND COMMON AREAS
G–006 SHOWS THE LOCATION OF PROPOSED SITE IMPROVEMENTS.
29. LOCATIONS OF PROPOSED SOIL STOCKPILES AND/OR BORROW DISPOSAL AREAS
G–006 CONTAINS PROPOSED SOIL STOCKPILES AND/OR BORROW DISPOSAL AREAS. SOIL WILL TEMPORARILY BE STOCKPILED FOR COMPLETING ISS AT DEPTH. SOIL WILL THEN BE RETURNED TO ORIGINAL LOCATION OR DISPOSED OF OFFSITE BASED ON VISUAL OBSERVATIONS AND ANALYTICAL TESTING.
30. CONSTRUCTION SUPPORT ACTIVITIES THAT ARE EXPECTED TO BE PART OF THE PROJECT
NO OFFSITE CONSTRUCTION ACTIVITIES ARE PROPOSED.
31. LOCATION OF ANY IN –STREAM ACTIVITIES THAT ARE PLANNED FOR THE PROJECT INCLUDING, BUT NOT LIMITED TO, STREAM CROSSINGS AND PUMP AROUNDS:
NO IN–STREAM ACTIVITIES ARE PROPOSED AS A PART OF THIS PROJECT.

SECTION B –STORMWATER POLLUTION PREVENTION PLAN CONSTRUCTION COMPONENT

1. DESCRIPTION OF POTENTIAL POLLUTION SOURCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES
A. FUELING OF VEHICLES
B. LEAKING EQUIPMENT OR VEHICLES
C. MATERIAL STORAGE
D. SITE DEMOLITION
E. EXCAVATION OF MATERIALS
F. EXPOSED SOILS
G. CONSTRUCTION WASTE AND LITTER
H. SANITARY WASTE
I. CONCRETE WASTE AND WASHOUT
J. TRACKING OF SOILS OFFSITE
2. STABLE CONSTRUCTION ENTRANCE LOCATIONS AND SPECIFICATIONS (AT ALL POINTS OF INGRESS AND EGRESS)
G–006 CONTAINS STABLE CONSTRUCTION ENTRANCE LOCATIONS. G–007 CONTAINS STABLE CONSTRUCTION ENTRANCE SPECIFICATIONS. CONTRACTOR MAY RELOCATE CONSTRUCTION ENTRANCE TO BETTER SUIT THE PROJECT WITH PERMISSION FROM THE ENGINEER.
3. SPECIFICATIONS FOR TEMPORARY AND PERMANENT STABILIZATION:
ALL DISTURBED AREAS LEFT INACTIVE FOR MORE THAN 7 DAYS WILL BE TEMPORARILY SEEDED. G–003 CONTAINS SEEDING NOTES.
ALL DISTURBED AREAS REQUIRE PERMANENT SEEDING UPON FINAL GRADING. G–003 CONTAINS SEEDING NOTES.
4. SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS
THERE ARE NO CONCENTRATED FLOW AREAS ON SITE.
5. SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS
G–006 CONTAINS SEDIMENT CONTROL MEASURES. G–007 CONTAINS SEDIMENT MEASURE SPECIFICATIONS. COMPOST SOCKS WILL BE INSTALLED AS SHOWN OR AS NEEDED FOR SHEET FLOW AREAS.
6. RUNOFF CONTROL MEASURES (E.G. DIVERSIONS, ROCK CHECK DAMS, SLOPE DRAINS, ETC.)
THERE ARE NO RUNOFF CONTROL MEASURES PROPOSED.
7. STORMWATER OUTLET PROTECTION SPECIFICATIONS
THERE ARE NO KNOWN STORMWATER OUTLETS ONSITE OR PROPOSED.
8. GRADE STABILIZATION STRUCTURE LOCATIONS AND SPECIFICATIONS.
NO GRADE STABILIZATION STRUCTURES ARE ONSITE OR PROPOSED.
9. DEWATERING APPLICATION AND MANAGEMENT METHODS
MINIMAL DEWATERING MAY BE REQUIRED. WATER WILL BE CAPTURED IN CONTAINERS SET WITHIN SECONDARY CONTAINMENT. WATER MAY BE REUSED DURING IMPLEMENTATION OF ISS OR CHARACTERIZED AND DISPOSED OF OFF–SITE.
10. MEASURES UTILIZED FOR WORK WITHIN WATERBODIES:
NO WORK WITHIN WATERBODIES IS PROPOSED FOR THIS PROJECT.
11. MONITORING AND MAINTENANCE GUIDELINES FOR EACH PROPOSED STORM WATER QUALITY MEASURE. THE CONTRACTOR SHALL MAINTAIN ALL WATER QUALITY MEASURES DURING CONSTRUCTION TO PREVENT ANY BLOCKAGES FROM ACCUMULATED SEDIMENT. MONITORING OF THE PROTECTIVE MEASURES SHALL BE DONE ON A WEEKLY BASIS AND AGAIN WITHIN 24 HOURS OF EVERY HALF–INCH RAIN EVENT. MAINTENANCE SHALL INCLUDE A WRITTEN RECORD OF EACH INSPECTION THAT IS MADE WITHIN 24 HOURS OF A RAIN EVENT AND WEEKLY. THE WRITTEN RECORD SHALL BE MADE AVAILABLE UPON REQUEST.
TEMPORARY CONSTRUCTION ENTRANCE:
INSPECT WEEKLY, WITH IN 24 HOURS OF EVERY HALF–INCH RAIN EVENT, AND AFTER HEAVY USE.
A. RESHAPE PAD AS NEEDED.
B. TOP DRESS PAD AS NEEDED.
C. REMOVE IMMEDIATELY ANY MUD AND SEDIMENT TRACKED OR WASHED ONTO THE STREET USING BRUSHING OR SWEEPING. FLUSH AREA ONLY IF RUNOFF WILL BE FLOWING THROUGH A SEDIMENT TRAP.
D. REPAIR ANY DAMAGED PAVEMENT IMMEDIATELY.
- COMPOST SOCK:
INSPECT WEEKLY, WITH IN 24 HOURS OF EVERY HALF–INCH RAIN EVENT, AND AFTER HEAVY USE.
A. REPLACE IF TORN, STARTS TO DEGRADE, OR BECOMES INEFFECTIVE IN ANYWAY.
B. REMOVE SEDIMENT WHEN IT REACHES HALF OF SOCK HEIGHT TAKING CARE NOT TO UNDERMINE.
- INLET PROTECTION:
INSPECT WEEKLY, WITH IN 24 HOURS OF EVERY HALF–INCH RAIN EVENT, AND AFTER HEAVY USE.
A. REPLACE OR CLEAN GEOTEXTILE FABRIC AS NEEDED.
B. REMOVE TRACKED SEDIMENT FROM STREET (BUT NOT BY FLUSHING WITH WATER) TO REDUCE THE SEDIMENT LOAD ON INLET PROTECTION.
- TEMPORARY SEEDING:
A. MONITOR UNTIL IT REACHES SEVENTY PERCENT COVERAGE.
B. RESEED AS NEEDED.
C. INSTALL ADDITIONAL EROSION CONTROL TO HELP ESTABLISH COVER.
12. PLANNED CONSTRUCTION SEQUENCE THAT DESCRIBES THE IMPLEMENTATION OF EACH STORMWATER QUALITY MEASURES IN RELATION TO LAND DISTURBANCE.
G–001 CONTAINS A SEQUENCE OF CONSTRUCTION.
13. PROVISIONS FOR EROSION AND SEDIMENT CONTROL ON INDIVIDUAL RESIDENTIAL BUILDING LOTS REGULATED UNDER THE PROPOSED PROJECT:
THERE IS NO DISTURBANCE TO INDIVIDUAL RESIDENTIAL BUILDING LOTS TO BE REGULATED UNDER THIS PROJECT.

14. MATERIAL HANDLING AND SPILL PREVENTION PLAN
VEHICLE AND EQUIPMENT MAINTENANCE:
ONSITE VEHICLE AND EQUIPMENT MAINTENANCE SHOULD ONLY BE USED WHERE IT IS IMPRACTICAL TO SEND VEHICLES AND EQUIPMENT OFFSITE FOR MAINTENANCE AND REPAIR. IF MAINTENANCE MUST OCCUR ONSITE, THE AREA WHERE REPAIRS ARE TO BE MADE MUST BE LOCATED AWAY FROM DRAINAGE COURSES. DRIP PANS AND/OR ABSORBENT PADS SHOULD BE USED DURING VEHICLE AND EQUIPMENT MAINTENANCE WORK THAT INVOLVES FLUIDS, UNLESS THE MAINTENANCE WORK IS PERFORMED OVER AN IMPERMEABLE SURFACE IN A DEDICATED MAINTENANCE AREA. INSPECT ONSITE VEHICLES AND EQUIPMENT DAILY AT THE STARTUP FOR LEAKS, AND REPAIR IMMEDIATELY. PROPERLY DISPOSE OF USED OILS, FLUIDS, LUBRICANTS AND SPILL CLEANUP MATERIALS. DO NOT PLACE USED OIL IN A DUMPSTER OR POUR INTO A STORM DRAIN OR WATERCOURSE.
- VEHICLE FUELING:
ONSITE VEHICLE AND EQUIPMENT FUELING SHOULD ONLY BE USED WHERE IT IS IMPRACTICAL TO SEND VEHICLES AND EQUIPMENT OFFSITE FOR FUELING. DRIP PANS AND ABSORBENT PADS SHOULD BE USED DURING VEHICLE AND EQUIPMENT FUELING, UNLESS THE FUELING IS PERFORMED OVER AN IMPERMEABLE SURFACE IN A DEDICATED FUELING AREA. NOZZLES USED IN VEHICLE AND EQUIPMENT FUELING SHOULD BE EQUIPPED WITH AN AUTOMATIC SHUTOFF TO CONTROL DRIPS. FUELING OPERATIONS SHOULD NOT BE LEFT UNATTENDED. FEDERAL, STATE, AND LOCAL REQUIREMENTS SHOULD BE OBSERVED FOR ANY STATIONARY ABOVE GROUND STORAGE TANKS.

DEBRIS COLLECTION:
TO PREVENT CLOGGING OF THE STORM DRAINAGE SYSTEM, LITTER AND DEBRIS REMOVAL FROM DRAINAGE GRATES, TRASH, ROCKS AND DITCH LINES SHOULD BE A PRIORITY. CONSTRUCTION DEBRIS AND WASTE SHOULD BE REMOVED FROM THE SITE BIWEEKLY OR MORE FREQUENTLY AS NEEDED. CONSTRUCTION MATERIAL VISIBLE TO THE PUBLIC SHOULD BE STORED IN AN ORDERLY MANNER. STORMWATER RUNOFF SHOULD BE PREVENTED FROM CONTACTING STORED SOLID WASTE.

ALERT PROCEDURE FOR SPILLS:
IN THE EVENT OF A MATERIAL SPILL (FUEL, OIL, FLUIDS, LUBRICANTS, ETC.), BARRICADE THE AREA ALLOWING NO VEHICLES TO ENTER OR LEAVE THE SPILL ZONE. NOTIFY THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM), OFFICE OF EMERGENCY RESPONSE, BY CALLING THE APPROPRIATE PHONE NUMBER: OFFICE 317–233–7745 OR TOLL FREE: 800–233–7745. ALSO, THE NATIONAL RESPONSE CENTER AT 800–424–8802 AND PROVIDE THE FOLLOWING INFORMATION: TIME OF OBSERVATION OF THE SPILL, LOCATION OF THE SPILL, IDENTIFY MATERIAL SPILLED, PROBABLE TIME AND SOURCE OF SPILL, WEATHER CONDITIONS, PERSONNEL AT SCENE AND ACTION INITIATED BY PERSONNEL. NOTIFY THE LOCAL FIRE DEPARTMENT AND POLICE DEPARTMENT AND THE HOWARD COUNTY STORMWATER DISTRICT AT 765–456–2217. COORDINATE AND MONITOR CLEANUP UNTIL THE SITUATION HAS BEEN STABILIZED AND THE SPILL HAS BEEN ELIMINATED.

SECTION C –STORM WATER POLLUTION PREVENTION PLAN–POST CONSTRUCTION

1. DESCRIPTION OF POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH THE PROPOSED LAND USE.
THERE ARE NO NEW POLLUTANT SOURCES POST–CONSTRUCTION.
2. DESCRIPTION OF PROPOSED POST CONSTRUCTION STORM WATER QUALITY MEASURES
PERMANENT SEEDING WILL BE COMPLETED ON THE EXPOSED SOIL TO PREVENT EROSION.
3. PLAN DETAILS OF EACH STORM WATER QUALITY MEASURE.
PERMANENT SEEDING WILL BE DONE ON ANY EXPOSED SOIL. G–003 CONTAINS SEEDING NOTES.
4. SEQUENCE DESCRIBING STORM WATER QUALITY MEASURE IMPLEMENTATION
SHEET G–001 CONTAINS THE SEQUENCE OF CONSTRUCTION.
5. DESCRIPTION OF MAINTENANCE GUIDELINES FOR POST CONSTRUCTION STORM WATER QUALITY MEASURES.
UPON COMPLETION OF PERMANENT SEEDING, PERIODIC INSPECTIONS SHALL BE MADE, AND ANY RESEEDING OR FERTILIZATION SHALL BE DONE AS NECESSARY. SEDIMENT AND EROSION CONTROL MEASURES, INCLUDING PERMANENT SEEDING, SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL 70% UNIFORM DENSITY OF PERMANENT GROUND COVER HAS BEEN ESTABLISHED. THE PROJECT OWNER SHALL BE RESPONSIBLE FOR PERIODIC INSPECTIONS AS WELL AS ANY RESEEDING OR FERTILIZATION REQUIRED. THE PERSON WHO INSPECTS THE VEGETATION GROWTH WILL HAVE AN UNDERSTANDING OF AND BE FAMILIAR WITH THE NECESSARY EROSION CONTROL PRACTICE AND HOW TO PROPERLY MAINTAIN IT.
6. ENTITY THAT WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE POST–CONSTRUCTION STORMWATER MEASURES:
THE CONTRACTOR WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE POST–CONSTRUCTION STORMWATER MEASURES UNTIL THE SITE HAS STABILIZED AT WHICH TIME RESPONSIBILITY WILL BE HANDED OVER TO THE OWNER.



PRE–CONSTRUCTION MEETING REQUIRED

THE SITE OWNER MUST SCHEDULE A PRE–CONSTRUCTION MEETING AT LEAST 48 HOURS IN ADVANCE OF LAND DISTURBANCE. PLEASE CONTACT THE STORMWATER INSPECTOR AT 765–457–2114 EXT. 2458

SCALE(S) AS INDICATED										Professional Engineer's Name .				
										Professional Engineer's No. .				
										State IN				
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.	USE TO VERIFY FIGURE REPRODUCTION SCALE	No.	Date	Revisions	By	Ckd	Designed by	Drawn by	Checked by	Project Mgr. .				
		THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.						GS						
DRAFT NOT FOR CONSTRUCTION							 ARCADIS U.S., INC.			RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA PROPOSED REMEDIAL ACTION		ARCADIS Project No. 30075940		G-000
										STORMWATER POLLUTION PREVENTION PLAN		Date APRIL 2022		
										ARCADIS 150 W. Market Street, Suite 728 Indianapolis IN, 46204 Tel: 317-231-6500				

1.0 INTRODUCTION

THE ENCLOSED DRAWINGS AND SPECIFICATIONS CONTAIN INFORMATION FOR THE CORRECTIVE MEASURE ASSOCIATED WITH THE FORMER GENERAL MOTORS DELCO PLANT 5 IN KOKOMO, INDIANA.

CLIENT: REVITALIZING AUTO COMMUNITIES ENVIRONMENTAL RESPONSE (RACER) TRUST
ENGINEER: ARCADIS US INC. (ARCADIS)

CONTRACTOR: TO BE DETERMINED

2.0 HEALTH AND SAFETY

2.1 THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR ALL SAFETY PROGRAMS FOR THEIR EMPLOYEES, SUBCONTRACTORS, AND ANY OTHER PERSONS WHO MAY BE AFFECTED THEREBY. THE CONTRACTOR WILL PREPARE A SITE-SPECIFIC HEALTH AND SAFETY PLAN (HASP) THAT WILL BE REVIEWED BY THE ENGINEER PRIOR TO THE START OF ANY WORK.

2.2 HASP SHALL INCLUDE THE FOLLOWING:

- a. LIST OF EMERGENCY CONTACT INFORMATION.
- b. CONTRACTOR'S ORGANIZATIONAL STRUCTURE. ORGANIZATIONAL STRUCTURE TO BE UPDATED, AS NECESSARY, TO REFLECT CURRENT STATUS OF SITE OPERATIONS AND PERSONNEL.
- c. HAZARD ANALYSIS FOR EACH TASK AND OPERATION FOUND IN THE CONTRACTOR'S WORK PLAN.
- d. SDS FOR ALL CONTRACTOR CONTROLLED MATERIALS KEPT ON SITE.
- e. EMPLOYEE TRAINING ASSIGNMENTS INCLUDING COPIES OF OSHA 40-HOUR, 30-HOUR SUPERVISED FIELD ACTIVITIES, 8-HOUR SUPERVISORS, AND 8-HOUR REFRESHER TRAINING CERTIFICATES FOR EACH CONTRACTOR AND SUBCONTRACTOR EMPLOYEE ASSIGNED TO THE PROJECT.
- f. PPE TO BE USED BY EMPLOYEES FOR EACH TASK AND OPERATION BEING CONDUCTED.
- g. MEDICAL SURVEILLANCE REQUIREMENTS: MEDICAL CLEARANCE CERTIFICATES FOR ALL CONTRACTOR AND SUBCONTRACTOR EMPLOYEES ASSIGNED TO THE PROJECT.
- h. FREQUENCY AND TYPES OF AIR AND PERSONNEL MONITORING, INCLUDING METHODS OF MAINTENANCE AND CALIBRATION OF MONITORING EQUIPMENT.
- i. SITE CONTROL MEASURES TO PREVENT UNQUALIFIED OR UNPROTECTED WORKERS FROM ENTERING RESTRICTED AREAS.
- j. EMERGENCY RESPONSE PLAN FOR COMMUNICATING ROUTES OF ESCAPE AND GATHERING POINTS DURING AN EMERGENCY SITUATION (SEE BELOW).
- k. DECONTAMINATION PROCEDURES.
- l. SPILL CONTAINMENT PROGRAM.

2.3 ACCIDENT REPORTING AND INVESTIGATION SHALL COMPLY WITH 29 CFR 1904.29, INCLUDING USING OSHA 300, 300-A, AND 301 FORMS (OR EQUIVALENT) TO DOCUMENT ALL ACCIDENTS THAT RESULT IN BODILY INJURY. COPIES OF COMPLETED ACCIDENT REPORTS SHALL BE SUBMITTED TO THE CLIENT AND ENGINEER WITHIN 24 HOURS. BASED UPON RESULTS OF ACCIDENT INVESTIGATION, MODIFY THE HASP AS REQUIRED BY CHANGING TASKS OR PROCEDURES TO PREVENT REOCCURRENCE OF ACCIDENT.

3.0 SUBMITTALS & PROGRESS MEETINGS

3.1 THE CONTRACTOR SHALL CONFIRM A CONSTRUCTION SCHEDULE WITH THE ENGINEER AT LEAST TWO WEEKS (10 BUSINESS DAYS) PRIOR TO ANY WORK AT THE SITE. CONSTRUCTION SCHEDULE SHALL INCLUDE THE ESTIMATED START DATE, DURATION AND COMPLETION TIMES FOR EACH ACTIVITY. ANY DEVIATION FROM THE ORIGINALLY PROPOSED SCHEDULE MUST BE COMMUNICATED TO THE ENGINEER WITHIN 24-HOURS.

3.2 THE CONTRACTOR SHALL MAKE PROPER AND TIMELY NOTIFICATION OF ALL WORK AND INSPECTIONS TO REGULATORY OR GOVERNING AGENCIES AS REQUIRED BY PERMITS.

3.3 PROVIDE SUBMITTALS IN ACCORDANCE WITH THESE NOTES AT LEAST 10 DAYS PRIOR TO PERFORMING THE WORK ASSOCIATED WITH THE SUBMITTAL. SUBMITTALS ANTICIPATED AS PART OF THIS PROJECT INCLUDE, BUT ARE NOT LIMITED TO:

- a. SCHEDULE OF VALUES
- b. PROJECT SCHEDULE
- c. CONTRACTOR'S EXECUTION PLAN
- d. HASP
- e. SUBMITTAL REGISTER
- f. LIST OF SUBCONTRACTORS AND LICENSES
- g. INSURANCE CERTIFICATES
- h. INDIANA ONE CALL (811) DIGSAFE TICKET
- i. PERSONNEL CERTIFICATIONS- HAZWOPER, ETC
- j. EROSION CONTROL MATERIALS AND DEVICES
- k. TEMPORARY CONTROLS - MATERIAL SPECIFICATIONS
- l. ZERO VALENT IRON (ZVI) SUPPLIER INFORMATION AND SPECIFICATIONS
- m. BENTONITE AND PORTLAND CEMENT (PC) SUPPLIER INFORMATION AND SPECIFICATIONS
- n. AGGREGATE MATERIAL SUPPLIER INFORMATION, ANALYTICAL & GEOTECHNICAL RESULTS
- o. TOPSOIL MATERIAL SUPPLIER INFORMATION, ANALYTICAL & GEOTECHNICAL RESULTS
- p. SEEDING AND MULCH SUPPLIER INFORMATION
- q. DAILY FIELD CONSTRUCTION REPORTS, IN-SITU SOLIDIFICATION AND STABILIZATION (ISS) TRACKING LOGS, WEEKLY REPORTS & UPDATED PROJECT SCHEDULES

- r. AS-BUILTS - PRE-CONSTRUCTION, EXCAVATION / ISS LIMITS, AND RESTORED CONDITIONS
 - s. TREATMENT & DISPOSAL FACILITIES & TRANSPORTERS, IDENTIFICATIONS, PERMITS, ETC
 - t. WEIGHT TICKETS, MANIFESTS & SHIPPING DOCUMENTATION
 - u. QUALITY ASSURANCE AND QUALITY CONTROL PROGRAM AND SAMPLING
- 3.4 BEFORE SUBMITTING EACH SUBMITTAL, THE CONTRACTOR WILL HAVE:
- a. REVIEWED AND COORDINATED EACH SUBMITTAL WITH OTHER SUBMITTALS AND WITH THE REQUIREMENTS OF THE PROJECT.
 - b. DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS, INSTALLATION REQUIREMENTS, MATERIALS AND SIMILAR INFORMATION WITH RESPECT THERETO.
 - c. DETERMINED AND VERIFIED ALL INFORMATION RELATIVE TO THE CONTRACTOR'S RESPONSIBILITIES FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO.

- 3.5 EACH SUBMITTAL WILL BEAR A STAMP OR SPECIFIC WRITTEN CERTIFICATION THAT THE CONTRACTOR HAS SATISFIED THE CONTRACTOR'S OBLIGATIONS WITH RESPECT TO THE CONTRACTOR'S REVIEW AND APPROVAL OF THAT SUBMITTAL.
- 3.6 EACH SUBMITTAL WILL GIVE THE ENGINEER SPECIFIC WRITTEN NOTICE OF ANY VARIATIONS THAT THE SUBMITTAL MAY HAVE FROM THE REQUIREMENTS OF THE PROJECT. THIS NOTICE WILL BE BOTH A WRITTEN COMMUNICATION SEPARATE FROM THE SUBMITTAL AND BY A SPECIFIC NOTATION MADE ON EACH SUBMITTAL PROVIDED TO THE ENGINEER FOR REVIEW OF EACH SUCH VARIATION.
- 3.7 PROVIDE A SEPARATE LETTER OF TRANSMITTAL WITH EACH SUBMITTAL, THAT INCLUDES THE FOLLOWING INFORMATION:
- a. CONTRACTOR'S NAME.
 - b. PROJECT NAME.
 - c. CONTRACT NAME AND NUMBER.
 - d. SUBMITTAL NUMBER.
 - e. REFERENCE TO NOTE REQUIRING SUBMITTAL.
 - f. CONTRACTOR'S STAMP OR SPECIFIC WRITTEN CERTIFICATION.

3.8 ENGINEER WILL PROVIDE TIMELY REVIEW OF SUBMITTALS. THE ENGINEER REVIEW WILL DETERMINE IF THE ITEMS COVERED BY THE SUBMITTALS WILL, AFTER INSTALLATION OR INCORPORATION IN THE WORK, CONFORM TO THE INFORMATION GIVEN AND ARE COMPATIBLE WITH THE DESIGN.

3.9 ENGINEER'S REVIEW WILL NOT EXTEND TO MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES OF CONSTRUCTION OR TO SAFETY PRECAUTIONS OR PROGRAMS INCIDENT THERETO. THE REVIEW OF A SEPARATE ITEM AS SUCH WILL NOT INDICATE APPROVAL OF THE ASSEMBLY IN WHICH THE ITEM FUNCTIONS.

3.10 ENGINEER'S REVIEW WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY VARIATION FROM THE REQUIREMENTS OF THE PROJECT DOCUMENTS UNLESS THE CONTRACTOR HAS COMPLIED WITH THE REQUIREMENTS OF SUBMITTAL AND THE ENGINEER HAS GIVEN WRITTEN AGREEMENT OF EACH SUCH VARIATION BY SPECIFIC WRITTEN NOTATION THEREOF INCORPORATED IN OR ACCOMPANYING THE SUBMITTAL.

4.0 UTILITIES

4.1 NOTIFY DIG SAFELY INDIANA (811) AT LEAST 5 DAYS IN ADVANCE OF ANY LAND DISTURBANCE ACTIVITY.

4.2 INFRASTRUCTURE SHOWN ARE COMPILED FROM PLANS OF RECORD AND MUST BE VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. ADDITIONAL INFRASTRUCTURE INCLUDING UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN. CONTRACTOR SHALL NOTIFY ENGINEER IF UNKNOWN UTILITY IS ENCOUNTERED/IDENTIFIED.

4.3 THE CONTRACTOR IS RESPONSIBLE FOR SUBCONTRACTING/COORDINATING WITH AN APPROPRIATE PRIVATE UTILITY LOCATOR TO LOCATE AND IDENTIFY UNDERGROUND UTILITIES WITHIN PROPERTY LIMITS.

5.0 SURVEY

5.1 BASE MAP CREATED FROM AVAILABLE GIS DATA AND SITE FIGURES. ADDITIONAL DATA DIGITIZED FROM AERIAL IMAGERY. SURFACE TOPOGRAPHY WAS GENERATED FROM SURVEYED GROUND ELEVATIONS AT MONITORING WELLS AND SOIL BORINGS. ALL LOCATIONS APPROXIMATE.

5.2 APPARENT HORIZONTAL DATUM IS NAD83 INDIANA STATE PLANE, EAST ZONE, US FEET.

5.3 VERTICAL DATUM IS UNKNOWN.

5.4 ESTABLISH AND MAINTAIN SURVEY CONTROL DURING THE PERFORMANCE OF WORK.

5.5 DOCUMENT PRE-CONSTRUCTION, EXCAVATION / ISS LIMITS, AND RESTORED CONDITIONS VIA A CERTIFIED PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF INDIANA. CONTRACTOR WILL PROVIDE AN ELECTRONIC COPY OF THE SURVEY (AUTOCAD 2020 OR EARLIER) IN ADDITION TO RECORD DRAWINGS STAMPED BY PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF INDIANA AT PROJECT COMPLETION.

5.6 SURVEY WILL BE ON A MINIMUM 10' X 10' GRID AND INCLUDE ALL ESTABLISHED CONTROL POINTS. CONSISTENT POSITIONS FOR PRE-CONSTRUCTION, EXCAVATION, STAGE 1 - ZVI MIXING LIMITS, STAGE 2 - PORTLAND CEMENT MIXING LIMITS, AND RESTORED CONDITIONS SHALL BE COLLECTED. ADDITIONAL SURVEY WILL ALSO BE PERFORMED AT ABRUPT CHANGES IN GRADE.

5.7 SURVEY CONTROL SHALL BE ESTABLISHED WHICH SHALL BE UTILIZED FOR CELL LOCATION AND DESIGNATION IN THE FIELD. USE THE SAME COORDINATE SYSTEM AND VERTICAL AND HORIZONTAL CONTROLS AS USED BY THE ENGINEER IN DEVELOPING THE CONTRACT DRAWINGS.

- a. SURVEY THE DIMENSIONS AND LOCATION OF EACH MIX CELL/COLUMN, USING GPS OR TRANSIT SURVEY FROM ESTABLISHED HORIZONTAL CONTROL POINTS. SURVEY SHALL BE PERFORMED DURING EACH DAY OF SOLIDIFICATION TO ENSURE ACCURATE LOCATION OF MIX CELL/COLUMN, TO DOCUMENT THAT ADEQUATE OVERLAP IS OBTAINED, AND TO PROVIDE FOR WEEKLY ISS REPORTING. ALTERNATIVELY, GPS-ENABLED EQUIPMENT, CALIBRATED TO THE SITE COORDINATE SYSTEM, MAY BE USED TO LOCATE AND TRACK ISS CELL/COLUMN LOCATIONS. DEMONSTRATE CALIBRATION THROUGH LOCATION OF SITE SURVEY CONTROL POINTS ESTABLISHED BY THE ENGINEER AND PROVIDED IN THESE CONTRACT DRAWINGS.
 - b. FOR EACH MIX CELL/COLUMN, SURVEY STARTING ELEVATION OF ISS (I.E., BEFORE MIXING) AND MEASURE THE TOTAL DEPTH MIXED TO VERIFY THAT THE BOTTOM OF ISS ELEVATION HAS BEEN ACHIEVED.
- 5.8 THE ACCURACY OF ALL SURVEY LAYOUT DATA SHALL BE PLUS OR MINUS ONE TENTH (0.1) FOOT HORIZONTAL.
- 5.9 THE ACCURACY OF ALL SURVEY LAYOUT DATA SHALL BE AT OR MINUS 0.1 FOOT VERTICAL.
- 5.10 TOPOGRAPHY SHALL BE PREPARED WITH 1 FOOT CONTOURS.

6.0 SITE ACCESS & TRAFFIC CONTROL

- 6.1 THE CONTRACTOR SHALL SECURE THE LIMIT OF DISTURBANCE WITH 6 FT HIGH CHAIN LINK FENCE WITH PRIVACY SCREEN TO PREVENT INTRUSION BY UNAUTHORIZED VEHICLES OR PEDESTRIANS. THE WORK ZONE SHALL BE A HEALTH AND SAFETY RISK TO THE PUBLIC AND SHOULD THEREFORE BE LOCKED AND GUARDED FROM ENTRY BY THE PUBLIC 24 HOURS A DAY, 7 DAYS A WEEK.
- 6.2 THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SAFE AND ADEQUATE VEHICLE/EQUIPMENT INGRESS AND EGRESS TO THE SITE TO FACILITATE THE CORRECTIVE MEASURE.

7.0 EROSION AND SEDIMENTATION CONTROL

- 7.1 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL NECESSARY TEMPORARY EROSION AND SEDIMENT CONTROLS THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
- 7.2 THE CONTRACTOR IS RESPONSIBLE FOR ANY SEDIMENTATION AND EROSION CONTROL MEASURES REQUIRED BY REGULATORY AUTHORITY REGARDLESS OF WHETHER OR NOT THEY ARE EXPLICITLY STATED HEREIN.
- 7.3 INSPECT AND REPAIR EROSION CONTROL MEASURES AT LEAST WEEKLY, PRIOR TO EACH ANTICIPATED RAINFALL, AND FOLLOWING RAINFALL EVENTS OF 0.5 INCHES OR MORE. ANY DAMAGE INCURRED BY EROSION WILL BE RECTIFIED IMMEDIATELY.
- 7.4 NO CONSTRUCTION TRASH OR DEBRIS, ETC. SHALL BE DEPOSITED IN ANY DRAINAGE COURSE NOR HAVE THE ABILITY TO LEAVE THE SITE DUE TO RAINFALL AND/OR RUNOFF.
- 7.5 MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES MUST CONTINUE UNTIL THE SITE IS PERMANENTLY STABILIZED AND THE CONTROLS ARE REMOVED.

8.0 DUST AND ODOR CONTROL

- 8.1 CONTROL DUST AND VAPORS GENERATED DURING THE PROJECT, AS NECESSARY. ODORS WILL BE CONTROLLED TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING DUST AND VAPOR CONTROLS TO ADDRESS TOTAL SUSPENDED PARTICULATES (TSP) AND VOLATILE ORGANIC COMPOUNDS (VOCs), RESPECTIVELY. THE CONTRACTOR WILL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH PROJECT DELAYS ASSOCIATED WITH UNCONTROLLED DUST AND VAPOR EMISSIONS.
- 8.2 THE ENGINEER SHALL MONITOR THE PERIMETER SITE AIR QUALITY. THE ENGINEER WILL NOTIFY THE CONTRACTOR WHEN THERE ARE EXCURSIONS OF TSP AND/OR VOCs ABOVE THE ACTION LEVELS.
- 8.3 WORK WILL BE SUSPENDED IF VISUAL DUST IS OBSERVED OR IF THE TSP OR VOCs AT THE PERIMETER OF THE SITE ARE EXCEEDED. THESE WORK STOPPAGES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL NOT BE A BASIS FOR AN EXTENSION OF TIME OR ADDITIONAL MONEY FOR DOWNTIME AND IS NOT CONSIDERED TO BE STAND-BY TIME.
- 8.4 DUST AND ODOR CONTROL MEASURES WILL COMPLY WITH THE FOLLOWING MANAGEMENT PRACTICES:
- a. WATERING ACTIVE CONSTRUCTION AREAS, IF NEEDED.
 - b. COVERING TRUCKS THAT WILL HAUL SOIL AND OTHER LOOSE MATERIALS.
 - c. CLEANING TRUCKS AND TIRES TO MINIMIZE THE TRACKING OF DRY MATERIALS ONTO LOCAL ROADS.
 - d. MAINTAINING THE BATCH PLANT AND TEMPORARY STOCKPILE AREA TO ELIMINATE ANY DUST FROM THESE SOURCES.
 - e. OPERATING A PORTABLE FOAM-GENERATING SYSTEM WITH AIR COMPRESSOR, PUMPS, HOSES AND NOZZLES, SOLUTION TANK. AND SOLUTION (ATMOS SHIELD 645 FOAM OR EQUIVALENT).
- 8.5 CONTRACTOR SHALL PERFORM AIR MONITORING WITHIN THE WORK ZONES IN ACCORDANCE WITH OSHA GUIDELINES TO ENSURE WORKER SAFETY.

9.0 OVERBURDEN EXCAVATION

- 9.1 INSTALL TEMPORARY CONCRETE BARRIERS (JERSEY BARRIERS) AND/OR TEMPORARY FENCING AROUND THE PERIMETER OF THE WORK ZONE TO PREVENT ACCESS TO ACTIVE EXCAVATION/ISS TREATMENT AREAS.
- 9.2 FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, ACCESSORIES, AND APPURTENANCES NECESSARY TO PREPARE THE ISS TREATMENT AREA VIA REMOVAL OF OVERBURDEN SOIL.

- 9.3 SEGREGATE CONSTRUCTION DEBRIS AND ABANDONED MONITORING WELLS UNCOVERED IN THE OVERBURDEN FOR CHARACTERIZATION AND OFFSITE DISPOSAL.
- 9.4 STAGE THE OVERBURDEN MATERIAL IN A TEMPORARY STOCKPILE AREA TO BE CHARACTERIZED BY OTHERS FOR REUSE ONSITE.
- 9.5 CAPTURE ALL WATER THAT ACCUMULATES ON-SITE, INCLUDING BUT NOT LIMITED TO: SURFACE WATER AND/OR STORMWATER FROM OPEN EXCAVATIONS; DEWATERING IF NECESSARY; AND DECONTAMINATION OF CONSTRUCTION VEHICLES AND EQUIPMENT. WATER SHALL BE STORED ONSITE IN APPROVED CONTAINERS WITH SECONDARY CONTAINMENT FOR ONSITE REUSE OR OFFSITE DISPOSAL.
- 9.6 CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SLOPING, BENCHING, SHEETING OR SHORING TO SUPPORT THE EXCAVATION WORK. DESIGN OF SUCH SHEETING AND SHORING SHALL BE BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF INDIANA.
- 9.7 EXCAVATION SHALL BE IN ACCORDANCE WITH OSHA CONSTRUCTION STANDARDS (29 CFR - PART 1926, SUBPART P).
- 9.8 PROJECT EQUIPMENT THAT COMES IN CONTACT WITH EXCAVATED MATERIALS WILL BE APPROPRIATELY DECONTAMINATED.

10.0 MATERIAL HANDLING AND STAGING

- 10.1 CONTRACTOR IS RESPONSIBLE FOR THE LOADING OF ALL CONSTRUCTION DEBRIS, WASTEWATER AND GENERAL REFUSED GENERATED DURING THE PROJECT AND COORDINATE TRANSPORTATION WITH APPROVED OFFSITE DISPOSAL FACILITIES. MATERIALS DESIGNATED FOR DISPOSAL SHALL BE STORED SEPARATELY ON SITE FROM THE OVERBURDEN MATERIALS FOR REUSE.
- 10.2 STAGED MATERIALS MUST BE CONTAINED WITH APPLICABLE EROSION AND SEDIMENT CONTROLS AND/OR SECONDARY CONTAINMENT AND COVERED.
- 10.3 DEPOSITION OF REMOVED MATERIAL IN PLACES OTHER THAN THOSE DESIGNATED OR OTHERWISE PREVIOUSLY APPROVED IS STRICTLY PROHIBITED AND MAY REQUIRE THE CONTRACTOR TO MOVE SUCH MISPLACED MATERIAL AT NO COST TO THE ENGINEER.
- 10.4 NO MATERIAL SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR WITHOUT PRIOR NOTIFICATION TO, AND APPROVAL OF, THE ENGINEER.
- 10.5 MATERIALS REMOVED FROM THE SITE SHALL BE TRANSPORTED BY INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT APPROVED TRANSPORTERS; AND DISPOSED OF AT AN APPROVED DISPOSAL OR TREATMENT FACILITY.
- 10.6 MATERIALS THAT ARE DISPOSED OF WILL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS. PROOF OF DISPOSAL WILL BE PROVIDED IN THE FORM OF COPIES OF BILLS OF LADING, DISPOSAL RECEIPTS AND/OR MANIFESTS.

11.0 IN-SITU SOLIDIFICATION AND STABILIZATION

- 11.1 THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, AND EQUIPMENT AND PERFORM ALL OPERATIONS NECESSARY FOR THE ISS, AS DESCRIBED ON THESE CONSTRUCTION DRAWINGS. ISS MIXING SHALL BE COMPLETED USING EITHER A ROTARY HEAD MIXING HEAD, AUGER MIXING OR BUCKET MIXING AS AN ACCEPTABLE METHOD FOR THIS PROJECT.
- 11.2 A TWO STEP ISS MIXING APPROACH WILL BE IMPLEMENTED. STEP ONE - ZVI MIXING AND STEP TWO - PC MIXING. ISS WILL NOT BE PERMITTED TO BE PERFORMED DURING PERIODS OF PRECIPITATION WITHOUT APPROVAL OF THE ENGINEER. CONTRACTOR SHALL SCHEDULE THIS WORK ACCORDINGLY AND ACCOUNT FOR WEATHER DELAYS. A MINIMUM OF 28 DAYS SHALL BE ALLOWED TO ELAPSE BETWEEN STABILIZATION WITH ZVI AND SOLIDIFICATION VIA PC TO MEET THE PERFORMANCE REQUIREMENTS.
- 11.3 MIXING SHALL COVER THE ENTIRE ISS TREATMENT AREA(S) AND MEET ALL TARGET DEPTHS AS DEPICTED ON THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL EVENLY DISTRIBUTE THE ZVI BENTONITE SLURRY MIXTURE OR PC THROUGHOUT THE ISS AREA.
- a. THE CONTRACTOR SHALL KEEP ANY STORED SLURRY MIXTURE AGITATED AS REQUIRED TO KEEP ZVI IN SUSPENSION DURING MIXING.
 - b. THE CONTRACTOR MUST PROVIDE SUFFICIENT OVERLAP BETWEEN MIXED AREAS SUCH THAT NO SOIL WITHIN THE ESTABLISHED ISS AREA LIMITS GOES UNTREATED.
- 11.4 THE CONTRACTOR SHALL PROVIDE MIX MATERIALS (I.E., REAGENTS AND WATER) IN SUFFICIENT QUANTITIES TO ALLOW FOR UNINTERRUPTED ISS ACTIVITIES BASED ON THE PRODUCTION RATE AS DETERMINED BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF AN APPROPRIATE MATERIAL DELIVERY SCHEDULE TO ACCOMMODATE THIS INDICATED STOCK REQUIREMENT.
- 11.5 THE CONTRACTOR SHALL CALCULATE AND PROVIDE IN AN ACCEPTABLE FORMAT, THE FOLLOWING ISS MIX PARAMETERS:
- a. THE VOLUME OF SOIL BEING TREATED IN EACH ISS AREA, INCLUDING THE VOLUME OF TREATED SOIL AS A RESULT OF OVERLAP FROM ADJACENT AREAS.
 - b. PROVIDE THE CALCULATIONS THAT INDICATES THE WEIGHT OF SOIL BEING TREATED IN THE ISS AREA.
 - c. PROVIDE CALCULATIONS THAT INDICATES THE QUANTITY OF MATERIALS REQUIRED FOR THE ISS AREA BY A PERCENTAGE OF THE TOTAL WEIGHT OF TREATED SOIL.
- 11.6 THE FOLLOWING REAGENTS AND MIX DESIGNS SHALL BE USED FOR ISS IMPLEMENTATION:
- a. ZVI SHALL BE ADDED AT 1% TOTAL BASED ON THE EXISTING DRY WEIGHT OF SOIL VIA A BENTONITE SLURRY MIXTURE. ZVI SHALL BE CONNELLY GPM, PRODUCT CC-1200. CONTRACTOR SHALL DETERMINE THE APPROPRIATE SLURRY MIXTURE THAT WILL KEEP THE ZVI IN SUSPENSION DURING MIXING WITH SUFFICIENT SLURRY TO PRODUCE A HOMOGENIZED SOIL COLUMN WITH ZVI EVENLY DISTRIBUTED.
 - b. PORTLAND CEMENT (PC) SHALL BE ADDED AT A 5% MINIMUM BASED ON THE WET BULKED WEIGHT OF TREATED SOIL VIA SOLID STATE MIXING. PC

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						Professional Engineer's No.					Date APRIL 2022				
						State					Date Signed		Project Mgr.		
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								Designed by		Drawn by GS		Checked by			

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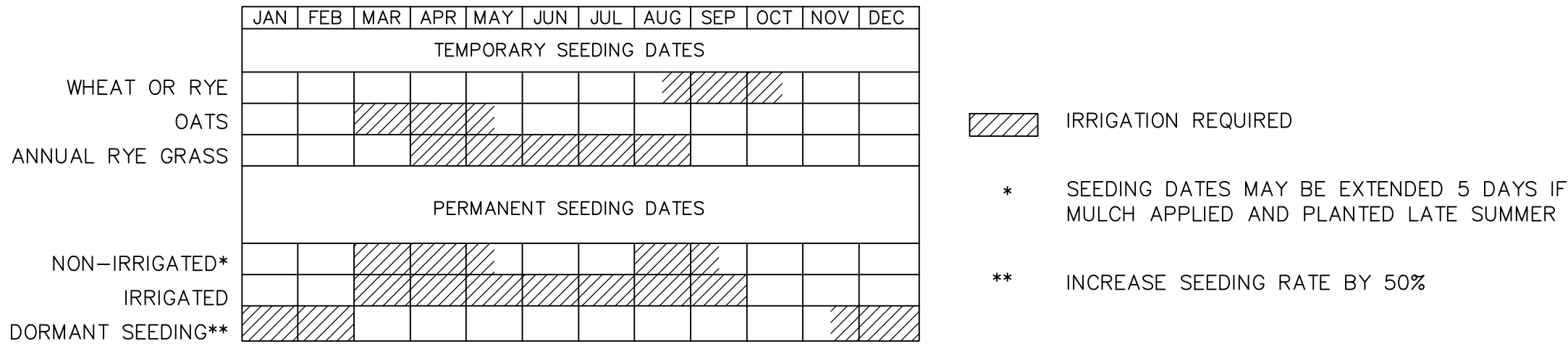
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SHALL BE TYPE I/II, MANUFACTURED BY LAFARGE NORTH AMERICA (OR APPROVED EQUAL). THE PC SHALL BE ADEQUATELY PROTECTED FROM MOISTURE AND CONTAMINATION WHILE IN TRANSIT. PC SHALL BE STORED IN A SILO OR OTHER APPROPRIATE BULK STORAGE CONTAINER. PC SHALL BE FROM AN APPROVED SOURCE AND THE SUPPLIER SHALL PROVIDE A CERTIFICATION OF COMPLIANCE WITH APPLICABLE REQUIREMENTS OF ASTM C150. CONTRACTOR SHALL MAINTAIN ALL DUST CONTROLS IN ACCORDANCE WITH THE AMBIENT AIR MONITORING PLAN DURING HANDLING OF THE PC.

- c. POTABLE WATER MUST BE PROVIDED FOR SLURRY MIXING BY THE CONTRACTOR. THE CONTRACTOR IS REQUIRED TO ARRANGE FOR AND OBTAIN APPROPRIATE PERMITS FOR THE USE OF HYDRANT WATER OR TEMPORARY HOOKUP OF SITE POTABLE WATER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH WATER USAGE. IF AN OFF-SITE SOURCE OF WATER IS USED OTHER THAN CITY-PROVIDED WATER, THE CONTRACTOR MUST SUBMIT DOCUMENTATION OF THE SOURCE OF WATER FOR ENGINEER REVIEW. THE CONTRACTOR SHALL INCORPORATE CONTACT STORMWATER, DEWATERING WATER AND DECONTAMINATION WATER AS PRACTICAL AFTER PRETREATING THE WATER USING NO LARGER THAN 100 MICRON FILTERS TO REMOVE SUSPENDED PARTICLES.
- 11.7 METERING DEVICES UTILIZED FOR PROPER REAGENT BLENDING MUST BE APPROVED BY THE ENGINEER PRIOR TO THE START OF FULL-SCALE ISS. ALL METERING DEVICES SHALL BE CALIBRATED OR VERIFIED ON-SITE PRIOR TO COMMENCING ON-SITE MIXING OPERATIONS. METERING DEVICES MUST BE CAPABLE OF MEASURING TOTALIZED AND INSTANTANEOUS FLOWS. METERING DEVICES MUST BE CALIBRATED TO WITHIN +/-2 PERCENT TO ACCURATELY MEASURE THE REQUIRED QUANTITY NECESSARY FOR EACH MATERIAL OR SLURRY MIXTURE. THE CONTRACTOR IS REQUIRED TO PROVIDE DOCUMENTATION FOR EQUIPMENT CALIBRATION AND CALIBRATION SCHEDULE.
- 11.8 MUST PROVIDE ADEQUATE PRESSURE AND FLOW RATE AND A MEANS OF MEASURING PRESSURE AND FLOW SUCH THAT SLURRY IS DELIVERED AT A CONSTANT RATE THROUGHOUT THE ISS AREA. THIS IS APPLICABLE TO INJECTION AND AUGER MIXING/ROTARY HEAD MIXING. IF BUCKET MIXING IS THE METHOD CONTRACTOR MUST DOCUMENT AND RECORD THE APPROPRIATE VOLUME OF ZVI SLURRY HAS BEEN PUMPED TO THE ISS AREA.
- 11.9 CONTRACTOR IS REQUIRED TO PROVIDE SPARE PARTS/PUMPS/MIXING EQUIPMENT TO BE AVAILABLE ON SITE DURING FULL-SCALE OPERATIONS TO MINIMIZE POTENTIAL DOWNTIME.
- 11.10 IF THE CONTRACTOR PROPOSES TO USE MIX DESIGNS OTHER THAN THOSE PROVIDED ABOVE, THE CONTRACTOR SHALL CONDUCT BENCH-SCALE TREATABILITY STUDY OR PILOT SCALE TESTING TO DOCUMENT THE PROPOSED MIX DESIGNS' UNCONFINED COMPRESSIVE STRENGTH (UCS).
- 11.11 UCS OF THE TREATED SOIL MATRIX MUST BE GREATER THAN OR EQUAL TO 20 POUNDS PER SQUARE INCH (PSI), MEASURED AT 14 DAYS AND THE UCS OF THE TREATED SOIL MATRIX MUST BE GREATER THAN OR EQUAL TO 50 POUNDS PER SQUARE INCH (PSI), MEASURED AT 28 DAYS OR SOONER (UNLESS OTHERWISE DIRECTED BY THE ENGINEER), AFTER 28 DAYS WITH NO MORE THAN 20 PERCENT OF THE PERFORMANCE SAMPLES LESS THAN 50 PSI, AND NO SAMPLES LESS THAN 30 PSI.
- 11.12 THE CONTRACTOR MUST COLLECT VERIFICATION ISS SAMPLES, USING AN IN-SITU WET SAMPLER, AT A FREQUENCY OF ONE SET FOR EVERY 500 CUBIC YARDS (CY) OR DAILY FROM THE ISS AREA AND TEST THE SAMPLES FOR ASTM INTERNATIONAL D1633. EACH SET OF SAMPLES SHALL CONSIST OF FOUR (4) 3-INCH BY 6-INCH SAMPLE SPECIMENS (CYLINDERS) OF HOMOGENIZED SOLIDIFIED SOILS OBTAINED FROM THE ISS MONOLITH. SAMPLES WILL BE COLLECTED AT VARIOUS DEPTHS AND ALTERNATE BETWEEN SURFACE, MID-POINT, AND BOTTOM DEPTH. SAMPLES SHALL BE PREPARED AND CURED IN ACCORDANCE WITH ASTM INTERNATIONAL C31. PRIOR TO FILLING THE CYLINDERS, THE SAMPLE MATERIAL WILL BE PASSED THROUGH A 1/4 INCH-OPENING SIEVE.
- a. ISS SAMPLES WILL BE COLLECTED, HANDLED, PACKAGED, AND TESTED BY THE CONTRACTOR AS INDICATED BELOW AND IN ACCORDANCE WITH ASTM D-1362.
- 1.) SAMPLES WILL BE PLACED IN PROPERLY LABELED BOXES (INCLUDING SAMPLE LOCATION, DEPTH, AND COLUMN).
- 2.) SAMPLES WILL BE WRAPPED IN CLEAR PLASTIC WRAP TO PREVENT MOISTURE LOSS.
- 3.) SAMPLES WILL BE STORED IN A COOL, DRY LOCATIONS AND ALLOWED TO CURE AND SOLIDIFY FOR A MINIMUM OF 48 HOURS, BUT NOT MORE THAN 72 HOURS, BEFORE TRANSPORT TO A TESTING LABORATORY.
- 4.) SAMPLES WILL NOT BE ALLOWED TO FREEZE.
- 5.) ONE CYLINDER WILL BE TESTED AFTER 7 DAYS, 14 DAYS AND 28 DAYS (TOTAL OF 3 CYLINDERS) OF CURE FOR UNCONFINED COMPRESSIVE STRENGTH (UCS) OF CYLINDRICAL CONCRETE SPECIMENS (ASTM D1633).
- 6.) THE REMAINING ONE CYLINDER WILL BE STORED AT THE LABORATORY FOR SUBSEQUENT TESTING SHOULD THE TEST CRITERIA NOT BE MET IN THE FIRST TWO SAMPLE CYLINDERS.
- 7.) SAMPLE RESULTS WILL BE REPORTED NO LATER THAN 3 DAYS AFTER TESTING HAS BEEN PERFORMED.
- b. IN ADDITION TO LABORATORY COMPLIANCE SAMPLES DESCRIBED ABOVE, FIELD TESTS INCLUDING VISUAL INSPECTION AND SLUMP TESTING (4 TO 7 INCH SLUMP TARGET RANGE) WILL BE PERFORMED.
- c. CONTRACTOR MAY ELECT TO COLLECT ADDITIONAL ISS SAMPLES FOR FURTHER TESTING AT CONTRACTORS' DISCRETION.
- d. THE ENGINEER WILL BE ON SITE DURING ALL ISS OPERATIONS TO OBSERVE AND DOCUMENT THE OVERALL ISS OPERATION. SLURRY MIXTURE AND IN-SITU STABILIZED MATERIAL SHALL BE VISUALLY OBSERVED TO VERIFY THAT THE MATERIAL HAS BEEN MIXED CREATING A HOMOGENEOUS SOIL MATRIX.

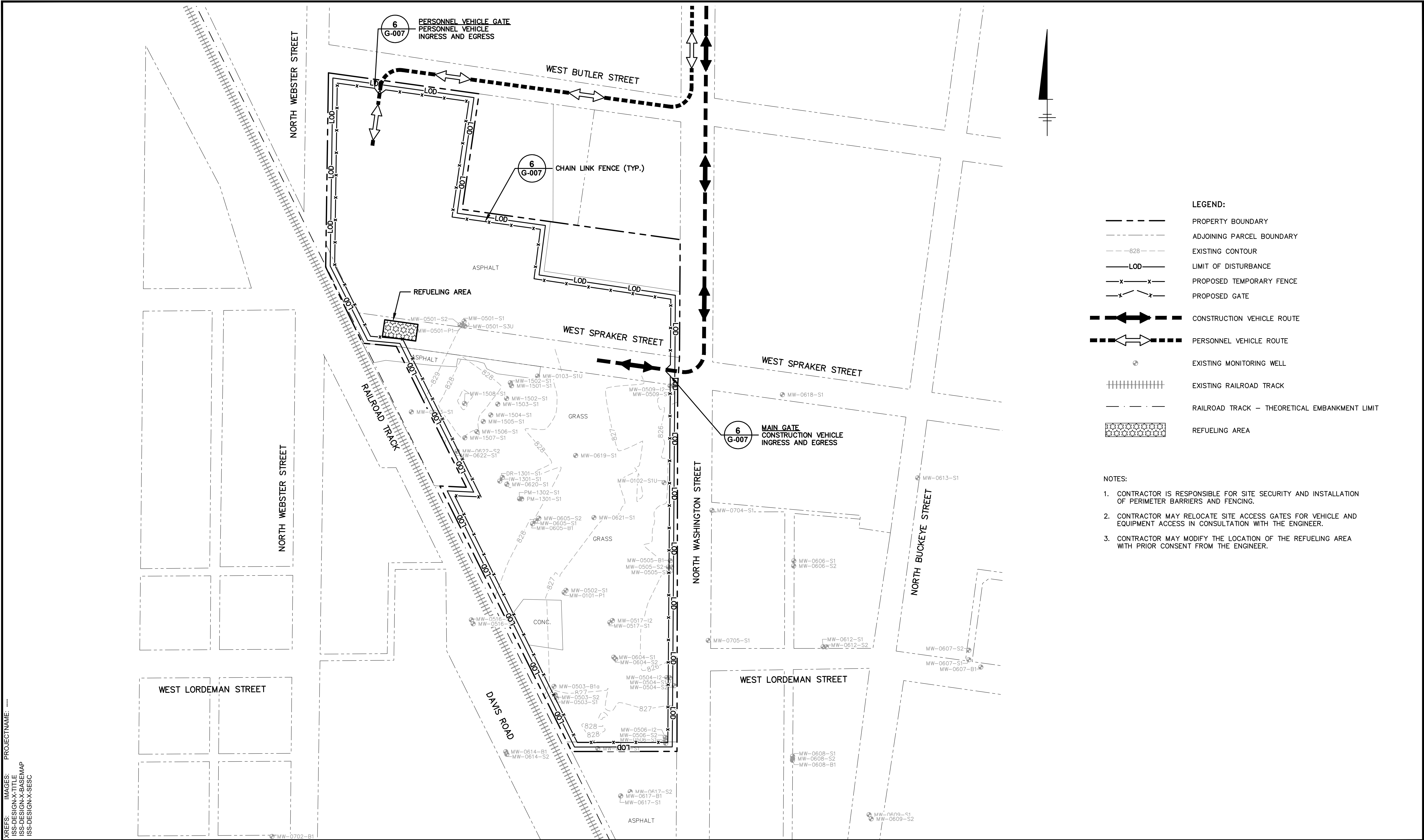
- 11.13 THE TREATMENT AREA SHALL BE CONSTRUCTED USING ISS TO THE LINES, GRADES, AND CROSS SECTIONS INDICATED ON THESE CONTRACT DRAWINGS. THE VOLUMES PRESENTED ON THESE CONTRACT DRAWINGS ARE NEAT IN-PLACE VOLUMES AND DO NOT INCLUDE OR ACCOUNT FOR OVERLAPPING OR ISS SWELL VOLUMES GENERATED AS A RESULT OF THE ISS MIXING PROCESSES. FOR INSTALLATION PURPOSES, THE ISS STRUCTURE SHALL BE ESSENTIALLY VERTICAL WITH A PATTERN OF OVERLAPPING COLUMNS, CELLS OR TRENCHES AND SHALL EXTEND TO THE MINIMUM ELEVATIONS AND HORIZONTAL LIMITS SHOWN ON THESE CONTRACT DRAWINGS.
- 11.14 IN-SITU MATERIAL THAT EXCEEDS THE MAXIMUM ALLOWABLE PARTICLE SIZE OF THE ISS MIXING EQUIPMENT AND THAT IS AMENABLE TO TREATMENT SHALL BE REDUCED TO A SIZE THAT THE MIXING EQUIPMENT CAN ACCOMMODATE. OVERSIZE MATERIAL THAT CANNOT BE REDUCED TO AN ACCEPTABLE SIZE SHALL BE REMOVED FOR OFF-SITE DISPOSAL.
- 11.15 IF AUGER MIXING IS SELECTED, AUGER REFUSAL IS DEFINED AS NO DOWNWARD ADVANCEMENT OF THE AUGER FOR A 15-MINUTE CONTINUOUS DRILLING PERIOD. ENGINEER'S CONSTRUCTION MANAGER SHALL BE CONSULTED DURING ALL AUGER REFUSAL SITUATIONS. ADDITIONAL INVESTIGATION AND REMEDIATION OF AUGER REFUSAL AREAS MAY BE NECESSARY, AT THE DISCRETION OF THE ENGINEER, TO DETERMINE IF PRODUCT REMAINS BENEATH THE INCOMPLETE ISS COLUMN. AUGER REFUSAL CAUSES MAY BE DUE TO PRE-EXISTING OBSTRUCTIONS, EQUIPMENT LIMITATIONS IN PENETRATING DENSE SAND/GRAVEL LAYERS, OVERLAPPING PREVIOUSLY SOLIDIFIED COLUMNS, OR EQUIPMENT MALFUNCTION. CONTRACTOR SHALL ADJUST SLURRY FLOW RATE WHERE FEASIBLE DURING THE 15-MINUTE REFUSAL VERIFICATION PERIOD TO REDUCE THE IMPACT OF INCREASED SLURRY ADDITION WHICH MAY INFLUENCE ADJACENT COLUMN OVERLAP DRILLING.
- 11.16 IF OBSTRUCTIONS INCLUDING, BUT NOT LIMITED TO, CONCRETE DEBRIS, REMNANT PIPING IN FILL, WOOD PILES, UNKNOWN SUBSURFACE STRUCTURES OR ABANDONED UTILITIES ARE ENCOUNTERED DURING ISS OPERATIONS, THE ISS OPERATOR SHALL STOP MIXING AT THAT LOCATION UNTIL THE NATURE OF THE OBSTRUCTION IS KNOWN OR AS OTHERWISE DIRECTED BY THE ENGINEER. OBSTRUCTIONS WHICH CANNOT BE PENETRATED, MAY BE REMEDIATED BY REMOVAL, GROUTING, OR OTHER ACCEPTABLE MEANS.
- a. OBSTRUCTION OCCURRING WITHIN THE EXCAVATION DEPTH RANGE ARE CONSIDERED INCIDENTAL TO THE EXCAVATION WORK AND SHALL BE STAGED FOR OFF-SITE DISPOSAL.
- b. DEBRIS OR OBSTRUCTIONS THAT CAN BE REMOVED BY AN EXCAVATOR WITHIN ITS REACH DEPTH RANGE SHALL BE REMOVED. EXCAVATION VOLUME FOR OBSTRUCTION REMOVAL WILL BE DEFINED AS THE THICKNESS OF SOIL FROM THE EXCAVATION ELEVATION TO 1-FT BELOW THE BOTTOM OF THE OBSTRUCTION AND AS THE AREAL EXTENT OF THE OBSTRUCTION EXCAVATION AS DETERMINED IN THE FIELD EITHER BY SURVEY OR FIELD MEASUREMENT. THIS VOLUME WILL BE TRACKED ON A DAILY PROGRESS REPORT. THE DAILY PROGRESS REPORT WILL INCLUDE THE ISS STAND-BY TIME ASSOCIATED WITH THE REMOVAL OF THE OBSTRUCTION. IF ADDITIONAL RETREATING OF SOLIDIFIED SOIL IS REQUIRED, THEN THE VOLUME OF RETREATED SOIL WILL BE DETERMINED IN THE FIELD AND MEASURED FOR PAYMENT AND RECORDED ON THE DAILY PROGRESS REPORT.
- c. ALL OBSTRUCTIONS FOR WHICH CONTRACTOR INTENDS TO SEEK ADDITIONAL COMPENSATION IN ACCORDANCE WITH THE ABOVE MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER'S CONSTRUCTION MANAGER AS SOON AS THE OBSTRUCTION IS ENCOUNTERED SO THAT AN APPROPRIATE APPROACH CAN BE AGREED UPON. AFTER-THE-FACT CLAIMS FOR OBSTRUCTION COMPENSATION WHICH THE ENGINEER'S CONSTRUCTION MANAGER DID NOT WITNESS WILL NOT BE ACCEPTED.
- 11.17 PLACEMENT OF OVERBURDEN WITHIN THE ISS AREA WILL NOT BE PERMITTED FOR A MINIMUM PERIOD OF 7 DAYS FOLLOWING THE COMPLETION OF STEP 2 - PC MIXING AND RECEIPT OF APPROVED PERFORMANCE RESULTS FROM FIELD QUALITY ASSURANCE/QUALITY CONTROL TESTING PROGRAM INDICATING ISS HAS ACHIEVED THE REQUIRED DESIGN STRENGTH.
- 11.18 ISS MATERIALS THAT DO NOT PASS THE REQUIRED PERFORMANCE CRITERIA SHALL BE ADDRESSED BY THE CONTRACTOR. RE-MIXING, WITH ADDITIONAL REAGENTS, SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER/ENGINEER FOR TREATED MATERIAL THAT DOES NOT MEET THE REQUIREMENTS SET FORTH IN THE PERFORMANCE CRITERIA, OR THE SOIL MIXING FAILS TO ACHIEVE THOROUGH HOMOGENOUS MIXING, MIXING TO THE SPECIFIED DEPTHS OR COMPLETE MIXING OVERLAP TO THE DEPTHS SPECIFIED. ISS MATERIALS THAT ARE RE-MIXED SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH THESE SPECIFICATIONS. CONTRACTOR MAY ELECT TO ALTER THE MIX DESIGN FOR RE-MIXING OF THESE AREAS AS NECESSARY TO MEET THE PROJECT PERFORMANCE CRITERIA.
- 11.19 ISS TRACKING LOGS SHALL BE PREPARED DAILY AND INCLUDE THE FOLLOWING INFORMATION.
- a. REQUIRED QUANTITY OF REAGENTS ADDED.
- b. TREATED ISS AREA.
- 1.) AREA COORDINATES (I.E. TAKEN AT CENTER OF COLUMN OR PERIMETER OF CELLS).
- 2.) SURFACE ELEVATION AT TOP OF ISS COLUMN.
- 3.) TOTAL INSTALLED DEPTH OF ISS.
- 4.) LOCATION/DEPTH OF POST-MIX REPRESENTATIVE SAMPLE, IF APPLICABLE.
- 5.) START TIME AND FINISH TIME.
- 6.) QUANTITY TREATED.
- 7.) SOIL MIXING TECHNIQUE AND DURATION.
- 8.) DIAGRAM OF ISS AREA DEPICTING LOCATION AND OVERLAP CONFIGURATION.
- c. IDENTIFICATION OF ISS OVERLAP AND REDUCTION IN VOLUME DUE TO OVERLAP (WHERE APPLICABLE).

- 12.0 SITE RESTORATION
- 12.1 CONTRACTOR SHALL ALLOW TREATED SOILS TO STABILIZE FOR A MINIMUM OF 7 DAYS POST STEP 2 - PC MIXING PRIOR TO PLACEMENT OF OVERBURDEN.
- 12.2 GEOTEXTILE DEMARCATION FABRIC SHALL BE PLACED OVER THE TREATED SOILS BEFORE BACKFILLING WITH OVERBURDEN.
- 12.3 OVERBURDEN MATERIALS WILL BE SAMPLED TO VERIFY THAT THE MATERIALS MEET A TRICHLOROETHENE (TCE) CONCENTRATION OF LESS THAN 100 PARTS PER MILLION (PPM) TO BE USED AS BACKFILL. A MINIMUM OF ONE SAMPLE WILL BE COLLECTED FOR EVERY 500 CUBIC YARDS OF OVERBURDEN MATERIAL BY ENGINEER.
- 12.4 OVERBURDEN MATERIALS WILL BE SAMPLED TO DETERMINE MODIFIED PROCTOR IN ACCORDANCE WITH ASTM INTERNATIONAL D-1557. A MINIMUM OF TWO SAMPLES WILL BE COLLECTED.
- 12.5 OVERBURDEN SHALL BE PLACED IN 10-INCH LOOSE LIFTS AND COMPACTED WITH A VIBRATORY ROLLER OR EQUIVALENT TO 92 TO 95% OF THE MODIFIED PROCTOR AT A FREQUENCY OF 1 IN-SITU DENSITY TEST FOR EVERY 2,500 SQUARE FEET PER LIFT.
- 12.6 FINAL RESTORATION WILL CONSIST OF A 4-INCHES OF TOPSOIL. TOPSOIL SHALL BE A LOCALLY AVAILABLE, FERTILE, FRIABLE SOIL OF LOAMY CHARACTER, OBTAINED FROM WELL-DRAINED ARABLE LAND AND REASONABLY FREE FROM SUBSOIL, REFUSE, ROOTS, HEAVY OR STIFF CLAY, ROCKS LARGER THAN 2 INCHES, COARSE SAND, STICKS, BRUSH, LITTER, AND OTHER DELETERIOUS SUBSTANCES.
- 12.7 TOPSOIL SHALL HAVE A MAXIMUM PARTICLE SIZE, 2 INCHES, WITH MAXIMUM 3 PERCENT RETAINED ON 1/4-INCH SCREEN. THE PH SHALL BE TESTED IN ACCORDANCE WITH AASHTO T289, OR EQUIVALENT. TOPSOIL SHALL CONFORM TO THE FOLLOWING LIMITS:
- a. SILT 30% TO 80%
CLAY 5% TO 30%
SAND 5% TO 50%
- b. ORGANIC MATERIAL 5% TO 10%
- c. PH 6.2 TO 7.4
- AT LEAST TWO REPRESENTATIVE SAMPLES SHALL BE SENT TO AN APPROVED LABORATORY FOR PHYSICAL AND FERTILITY TESTING.
- 12.8 TOPSOIL SHALL BE ANALYZED FOR:
- a. VOLATILE ORGANIC COMPOUNDS (BY USEPA SW-846 METHOD 8260)
- b. SEMI-VOLATILE ORGANIC COMPOUNDS INCLUDING POLYAROMATIC HYDROCARBONS BY USEPA METHODS 8270
- c. POLYCHLORINATED BIPHENYLS BY USEPA METHODS 8082
- d. RESOURCE CONSERVATION AND RECOVERY ACT METALS BY USEPA METHOD 6020, AND USEPA METHOD 7471
- e. PER- AND POLYFLUOROALKYL SUBSTANCES BY USEPA METHOD 8327
- AT LEAST TWO REPRESENTATIVE SAMPLES SHALL BE SENT TO AN APPROVED LABORATORY FOR ANALYTICAL TESTING TO VERIFY THE TOPSOIL MEETS THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT REMEDIATION CLOSURE GUIDE - RESIDENTIAL DIRECT CONTACT SOIL EXPOSURE LIMITS.
- 12.9 SEED MIXTURE SHALL BE A 100 POUND PER ACRE (LB/AC) 4-WAY BLEND OF TURF TYPE TALL FESCUE, 50 LB/AC CREEPING RED FESCUE, 45 LB/AC PERENNIAL RYEGRASS AND 1.6 LB/AC WHITE DUTCH CLOVER. THIS SEED MIXTURE SHALL BE APPLIED AT THE RATE OF 196.5 LB/AC.
- 12.10 MULCH SHALL BE PROCURED AND APPLIED IN ACCORDANCE WITH SECTION 621 - SEEDING AND SODDING OF THE INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS 2020.
- 12.11 ALL AREAS IMPACTED BY OR OTHERWISE DISTURBED DURING THE PROJECT WILL BE RESTORED BY THE CONTRACTOR TO PRE-CONSTRUCTION CONDITIONS, IN A TIMELY MANNER AND PRIOR TO CONTRACTOR DEMOBILIZATION.
- 12.12 ALL EQUIPMENT OPERATED WITHIN THE PROJECT WORK LIMITS WILL BE DECONTAMINATED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES PRIOR TO ARRIVING ONSITE AND PRIOR TO LEAVING THE SITE. PROJECT EQUIPMENT THAT COMES IN CONTACT WITH IMPACTED MATERIALS WILL BE APPROPRIATELY DECONTAMINATED PRIOR TO LEAVING THE SITE.
- 12.13 THE CONTRACTOR WILL PREVENT TRACKING OF SOIL MATERIALS ONTO OFFSITE AREAS. ANY SOIL MATERIALS TRACKED, SPILLED OR DROPPED ONTO OFF-SITE AREAS, WILL BE IMMEDIATELY CLEANED UP BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE ENGINEER.
- 12.14 THE CONTRACTOR WILL PERFORM PERIODIC INSPECTIONS OF EROSION CONTROLS AND ANY RESEEDING OR FERTILIZATION AS NECESSARY FOLLOWING DEMOBILIZATION UNTIL VEGETATION HAS BEEN SUCCESSFULLY REESTABLISHED AND THE RULE 5 PERMIT HAS BEEN CLOSED.

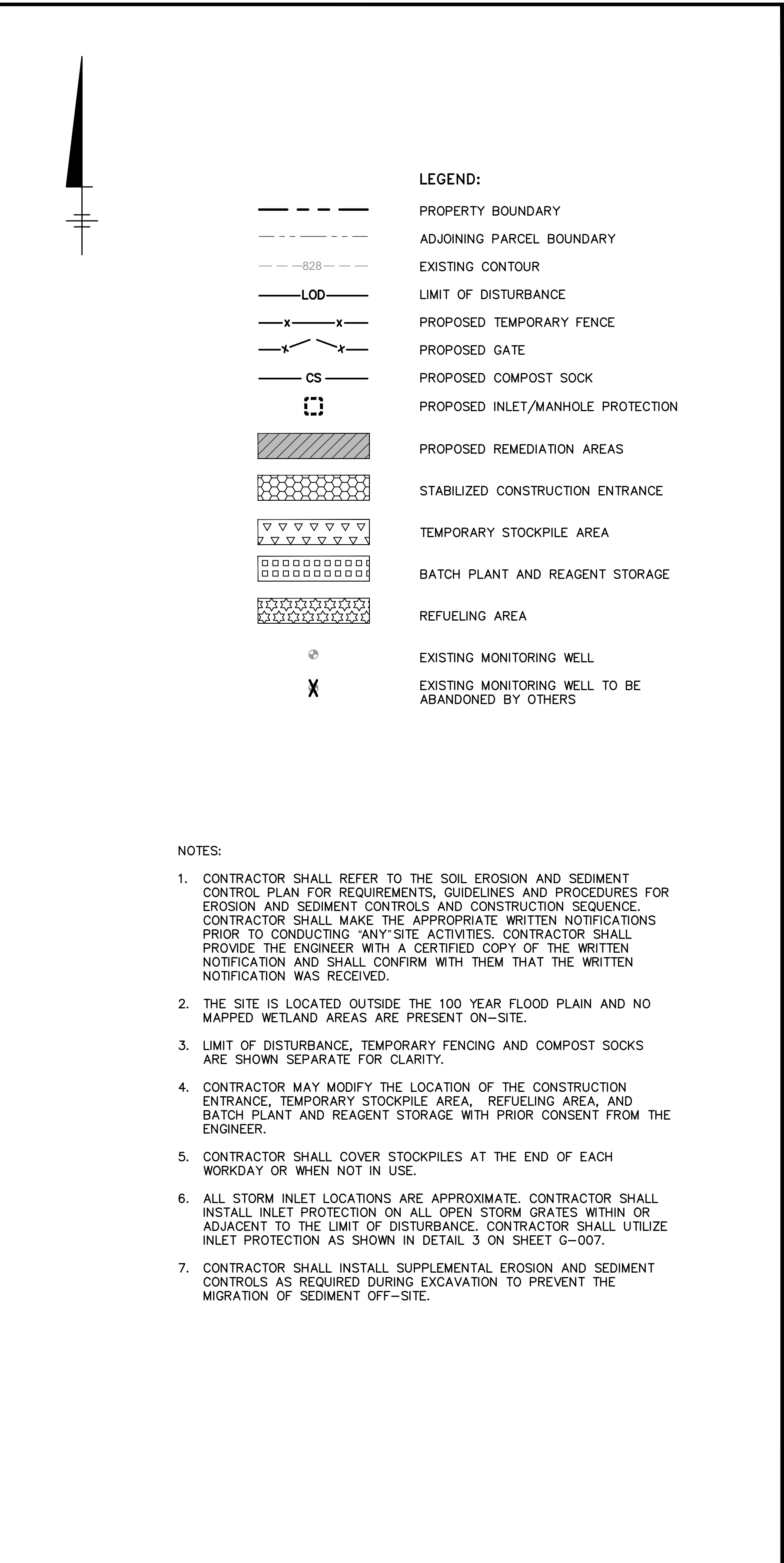


SCALE(S) AS INDICATED						Professional Engineer's Name		DRAFT NOT FOR CONSTRUCTION	 ARCADIS U.S., INC.	RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA PROPOSED REMEDIAL ACTION		ARCADIS Project No. 30075940		G-003
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.		USE TO VERIFY FIGURE REPRODUCTION SCALE				Professional Engineer's No.				Date APRIL 2022		ARCADIS 150 W. Market Street, Suite 728 Indianapolis IN, 46204 Tel: 317-231-6500		
						State				Date Signed		Project Mgr.		
						IN				Designed by		Drawn by GS		
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1"=80' SCALE(S) AS INDICATED	<table border="1"><thead><tr><th>No.</th><th>Date</th><th>Revisions</th><th>By</th><th>Ckd</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></tbody></table>	No.	Date	Revisions	By	Ckd																Professional Engineer's Name Professional Engineer's No. State Date Signed Project Mgr.			DRAFT NOT FOR CONSTRUCTION	ARCADIS ARCADIS U.S., INC.	RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA PROPOSED REMEDIAL ACTION TRAFFIC CONTROL PLAN	ARCADIS Project No. 30075940	G-005
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ISS-DESIGN-X-TITLE
ISS-DESIGN-X-BASEMAP
ISS-DESIGN-X-PROPOSED
ISS-DESIGN-X-PROPOSED-PATT
ISS-DESIGN-X-SSC

1"=20'

20' 0 20' 40'

SCALE(S) AS INDICATED

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Professional Engineer's Name		
Professional Engineer's No.		
State	Date Signed	Project Mgr.
IN		
Designed by	Drawn by	Checked by
	GS	

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ARCADIS U.S., INC.

RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA
PROPOSED REMEDIAL ACTION

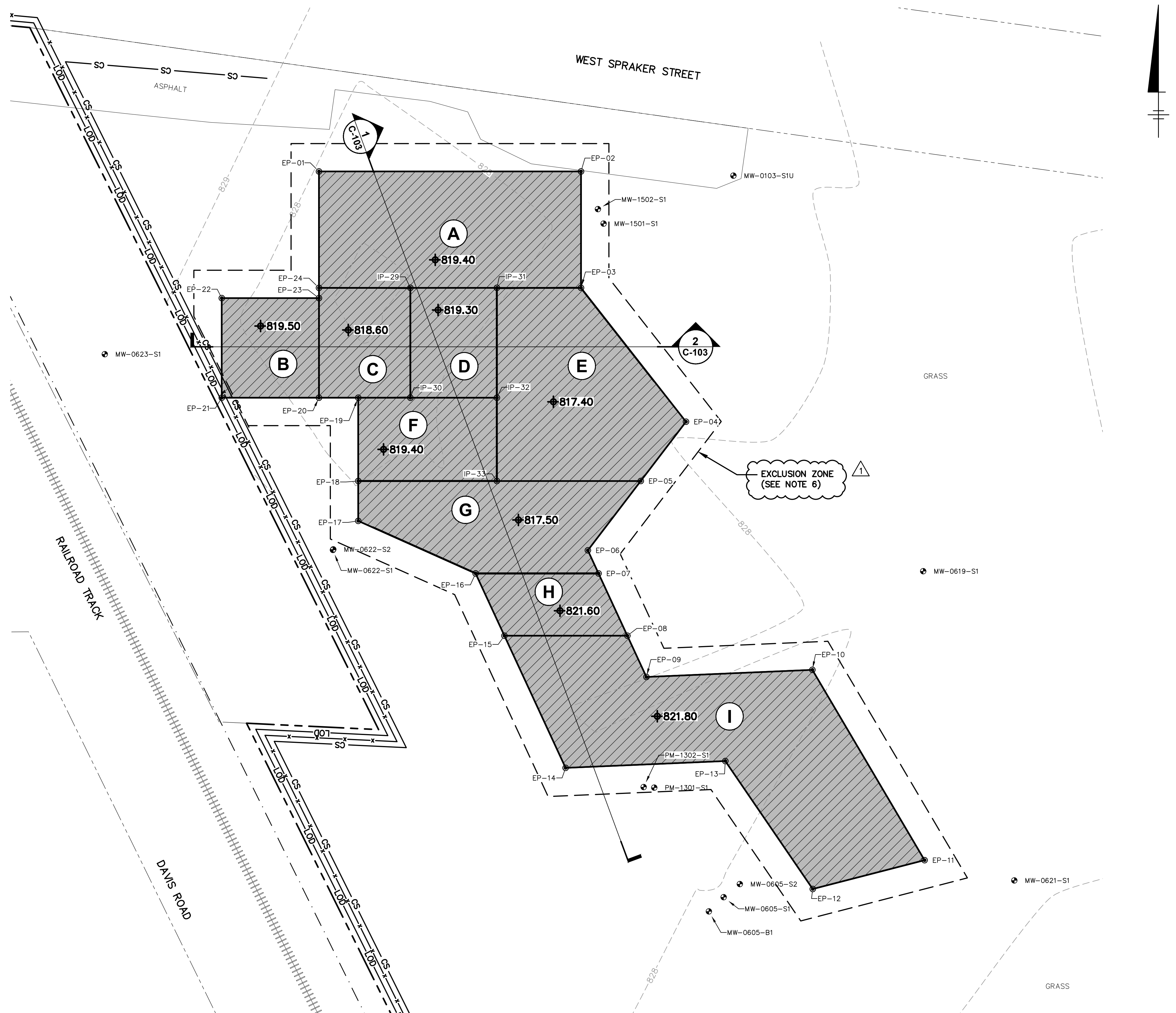
EXCAVATION PLAN - NORTH AREA

ARCADIS Project No.
30075940

Date
APRIL 2022

ARCADIS
150 W. Market Street, Suite 728
Indianapolis IN, 46204
Tel: 317-231-6500

C-101



- NOTES:
- CONTRACTOR SHALL DETERMINE THE OPTIMAL SIZE OF THE TEMPORARY STOCKPILE AREA AND BATCH PLANT AND REAGENT STORAGE AREA TO ACCOMMODATE CONTRACTOR'S EXECUTION, OVERALL SITE LOGISTICS AND WORK SEQUENCING.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS FOR IMPLEMENTATION OF THE EXCAVATION. VOLUMES PROVIDED HEREIN ARE NEAT IN-PLACE VOLUMES AND DO NOT ACCOUNT FOR SLOPING OR OVERLAPPING CELLS/COLUMN.
 - CONTRACTOR SHOULD BE PREPARED TO ENCOUNTER CONSTRUCTION DEBRIS AND ABANDONED MONITORING WELLS WITHIN THE LIMITS OF EXCAVATION. CONTRACTOR SHALL SORT, SIZE AND SEGREGATE CONSTRUCTION DEBRIS FOR STAGING IN A ROLL-OFF OR WITHIN THE TEMPORARY STOCKPILE AREA FOR CHARACTERIZATION AND OFF-SITE DISPOSAL.
 - DEWATERING IS NOT ANTICIPATED; HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS FOR IMPLEMENTATION OF CONSTRUCTION DEWATERING TO FACILITATE EXCAVATION. WATER SHALL BE STORED ONSITE IN APPROVED CONTAINERS WITH SECONDARY CONTAINMENT FOR ONSITE REUSE OR CHARACTERIZATION AND OFFSITE DISPOSAL.
 - AIR MONITORING SHALL BE IMPLEMENTED WHENEVER INTRUSIVE ACTIVITIES ARE BEING CONDUCTED. CONTRACTOR IS RESPONSIBLE FOR WORK ZONE MONITORING AND ENGINEER WILL MONITOR THE AMBIENT AIR AT THE LIMIT OF DISTURBANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING DUST AND ODOR CONTROLS WHEN TOTAL SUSPENDED PARTICLES OR VOLATILE ORGANIC COMPOUNDS EXCEED ACTION LEVELS.
 - AN EXCLUSION ZONE SHALL BE ESTABLISHED AROUND THE PERIMETER OF ALL OPEN EXCAVATIONS AND/OR ACTIVE TREATMENT GRIDS/CELLS. EXCLUSION ZONE LOCATION TO BE DETERMINED BASED ON CONTRACTOR MEANS AND METHODS. EXCLUSION ZONE LOCATION MAY BE ADJUSTED AS WORK PROGRESSES. THE EXCLUSION ZONE SHALL BE SECURE, PREVENT UNAUTHORIZED ACCESS AND MEET THE MINIMUM OSHA REGULATIONS.

CELL ID	AREA (SQ. FT.)	MINIMUM EXCAVATION ELEVATION	IN-PLACE EXCAVATION VOLUME (CU. YD.)
A	3921	819.40	1188
B	1245	819.50	383
C	1290	818.60	410
D	1222	819.30	386
E	3619	817.40	1447
F	1484	819.40	470
G	2584	817.50	1035
H	984	821.60	251
I	6005	821.80	1389

CONTROL POINT	NORTHING	EASTING
EP-01	1914323.80	197766.31
EP-02	1914323.80	197860.27
EP-03	1914282.07	197860.27
EP-04	1914234.09	197897.89
EP-05	1914212.83	197881.68
EP-06	1914187.97	197862.71
EP-07	1914179.68	197866.55
EP-08	1914157.35	197876.88
EP-09	1914142.57	197883.72
EP-10	1914145.12	197943.21
EP-11	1914076.88	197983.44
EP-12	1914066.54	197943.34
EP-13	1914112.43	197911.99
EP-14	1914109.97	197854.73
EP-15	1914157.35	197832.80
EP-16	1914179.68	197822.47
EP-17	1914198.52	197780.39
EP-18	1914212.83	197780.39
EP-19	1914242.68	197780.39
EP-20	1914242.68	197766.31
EP-21	1914242.68	197731.45
EP-22	1914278.40	197731.45
EP-23	1914278.40	197766.31
EP-24	1914282.07	197766.31
IP-29	1914282.07	197799.06
IP-30	1914242.68	197799.06
IP-31	1914282.07	197830.09
IP-32	1914242.68	197830.09
IP-33	1914212.83	197830.09

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XREFS: IMAGES: PROJECTNAME: ISS-DESIGN-X-TITLE ISS-DESIGN-X-BASEMAP ISS-DESIGN-X-PROPOSED ISS-DESIGN-X-PROPOSED-PATT ISS-DESIGN-X-SSC

1"=20'

020'40'

SCALE(S) AS INDICATED

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1	3/15/2022	ADDENDUM NO. 1			
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Professional Engineer's Name		
Professional Engineer's No.		
State	Date Signed	Project Mgr.
IN		
Designed by	Drawn by	Checked by
	GS	

DRAFTNOT FOR CONSTRUCTION

ARCADIS

ARCADIS U.S., INC.

RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA
PROPOSED REMEDIAL ACTION

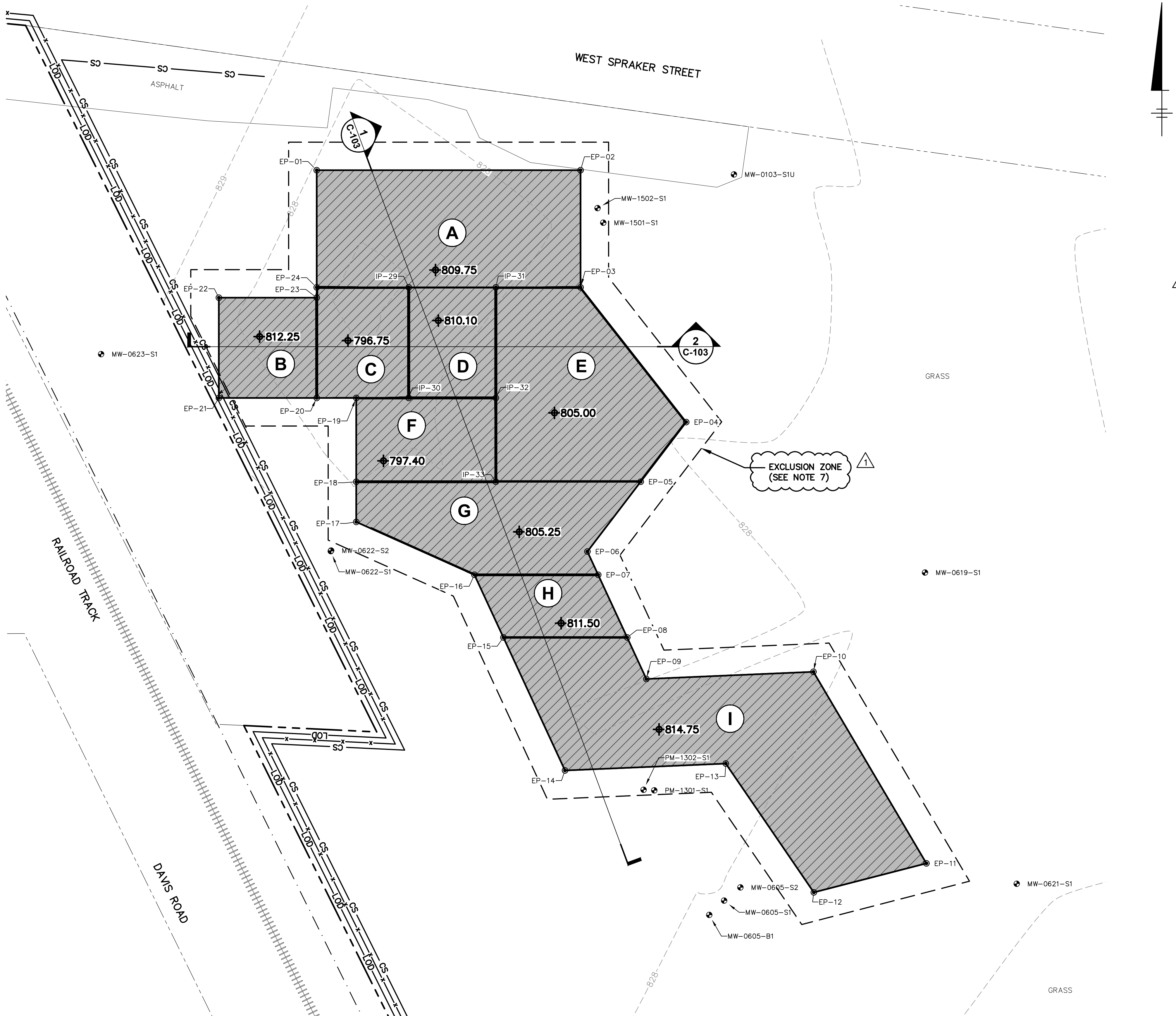
ISS PLAN - NORTH AREA

ARCADIS Project No.
30075940

Date
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ARCADIS
150 W. Market Street, Suite 728
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C-102



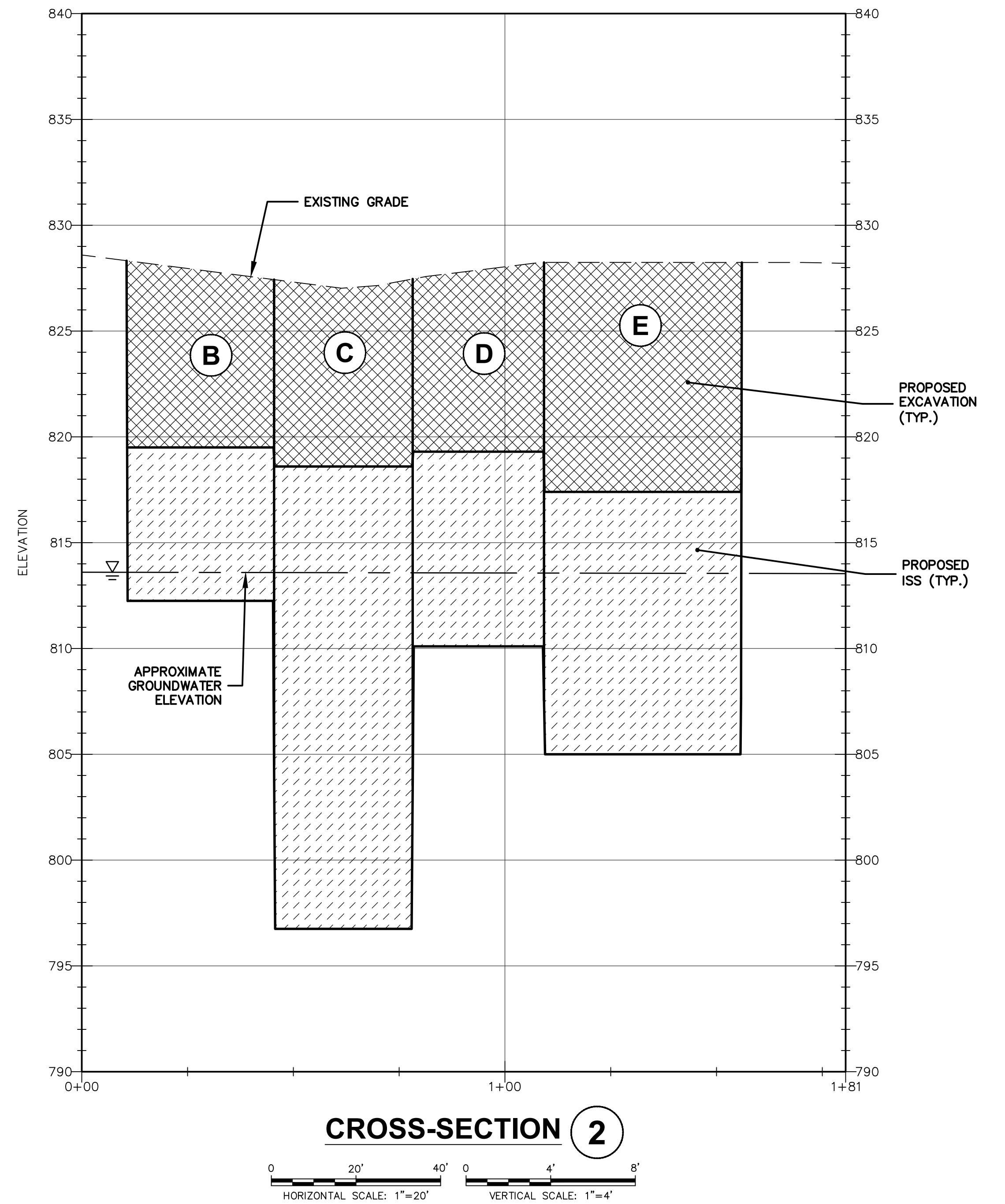
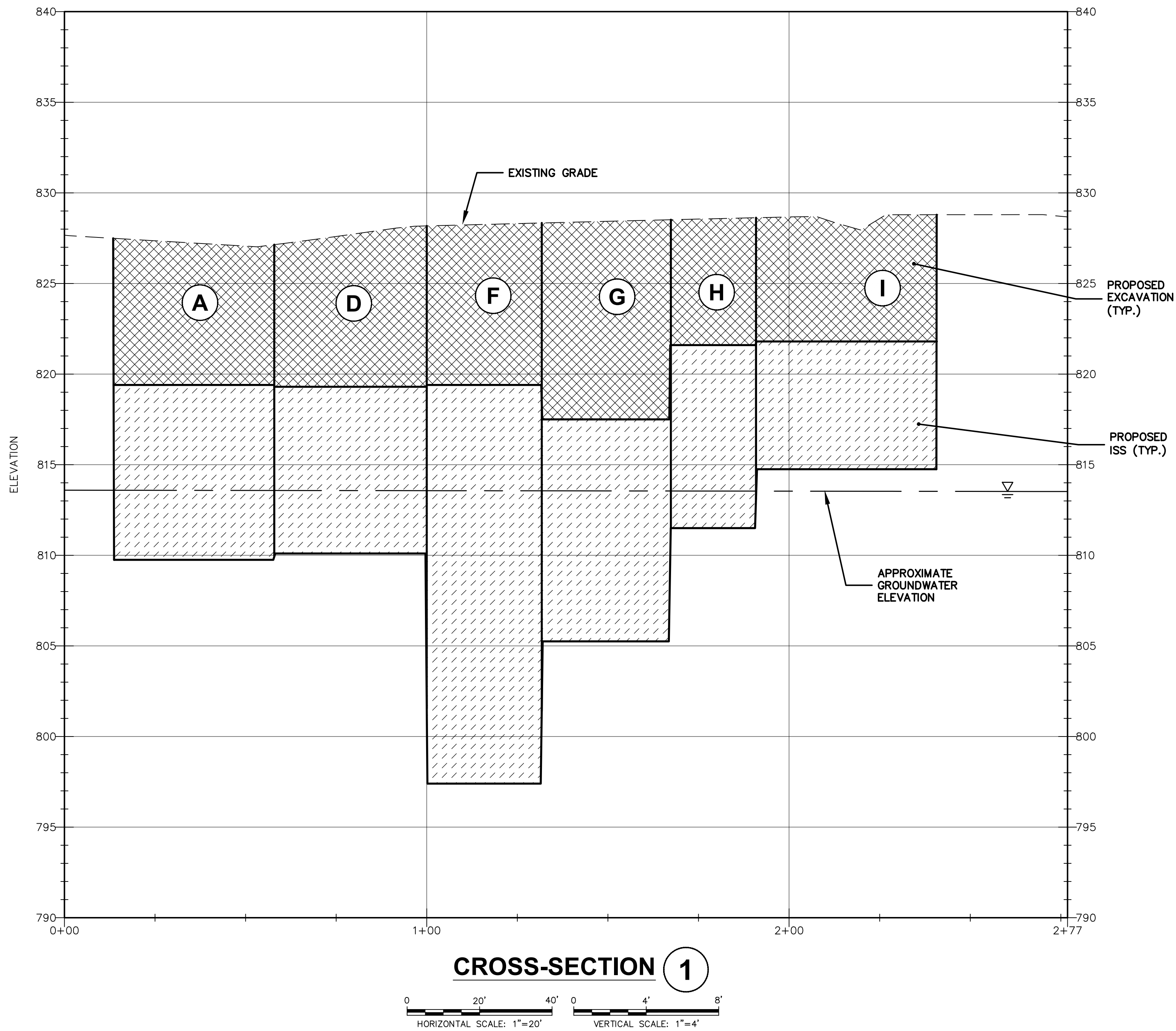
- NOTES:
- THE CONTRACTOR SHALL PROVIDE MIX MATERIALS (I.E., REAGENTS AND WATER) IN SUFFICIENT QUANTITIES TO ALLOW FOR UNINTERRUPTED ISS ACTIVITIES BASED ON THE PRODUCTION RATE AS DETERMINED BY THE CONTRACTOR.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS FOR IMPLEMENTATION OF ISS. VOLUMES PROVIDED HEREIN ARE NEAT IN-PLACE VOLUMES AND DO NOT ACCOUNT FOR OVERLAPPING CELLS/COLUMN.
 - ZVI SHALL BE ADDED AT 1% TOTAL BASED ON THE EXISTING DRY WEIGHT OF SOIL VIA A BENTONITE SLURRY MIXTURE. ZVI SHALL BE CONNELLY GPM, PRODUCT CC-1200. CONTRACTOR SHALL DETERMINE THE APPROPRIATE SLURRY MIXTURE THAT WILL KEEP THE ZVI IN SUSPENSION DURING MIXING WITH SUFFICIENT SLURRY TO PRODUCE A HOMOGENIZED SOIL COLUMN WITH ZVI EVENLY DISTRIBUTED.
 - MIXING WITH STEP 2 – PORTLAND CEMENT MIXING WILL NOT BE PERMITTED FOR A MINIMUM PERIOD OF 28 DAYS FOLLOWING COMPLETION OF STEP 1 –ZVI MIXING FOR A GIVEN CELL/COLUMN.
 - PORTLAND CEMENT (PC) SHALL BE ADDED AT A 5% MINIMUM BASED ON THE WET BULKED WEIGHT OF TREATED SOIL VIA SOLID STATE.
 - UCS OF THE TREATED SOIL MATRIX MUST BE GREATER THAN OR EQUAL TO 20 POUNDS PER SQUARE INCH (PSI), MEASURED AT 14 DAYS AND THE UCS OF THE TREATED SOIL MATRIX MUST BE GREATER THAN OR EQUAL TO 50 POUNDS PER SQUARE INCH (PSI), MEASURED AT 28 DAYS OR SOONER (UNLESS OTHERWISE DIRECTED BY THE ENGINEER), AFTER 28 DAYS WITH NO MORE THAN 20 PERCENT OF THE PERFORMANCE SAMPLES LESS THAN 50 PSI, AND NO SAMPLES LESS THAN 30 PSI.
 - AN EXCLUSION ZONE SHALL BE ESTABLISHED AROUND THE PERIMETER OF ALL OPEN EXCAVATIONS AND/OR ACTIVE TREATMENT GRIDS/CELLS. EXCLUSION ZONE LOCATION TO BE DETERMINED BASED ON CONTRACTOR MEANS AND METHODS. EXCLUSION ZONE LOCATION MAY BE ADJUSTED AS WORK PROGRESSES. THE EXCLUSION ZONE SHALL BE SECURE, PREVENT UNAUTHORIZED ACCESS AND MEET THE MINIMUM OSHA REGULATIONS.

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A	3921	809.75	1386
B	1245	812.25	328
C	1290	796.75	1039
D	1222	810.10	419
E	3619	805.00	1654
F	1484	797.40	1200
G	2584	805.25	1164
H	984	811.50	364
I	6005	814.75	1545

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EP-21	1914242.68	197731.45
EP-22	1914278.40	197731.45
EP-23	1914278.40	197766.31
EP-24	1914282.07	197766.31
IP-29	1914282.07	197799.06
IP-30	1914242.68	197799.06
IP-31	1914282.07	197830.09
IP-32	1914242.68	197830.09
IP-33	1914212.83	197830.09

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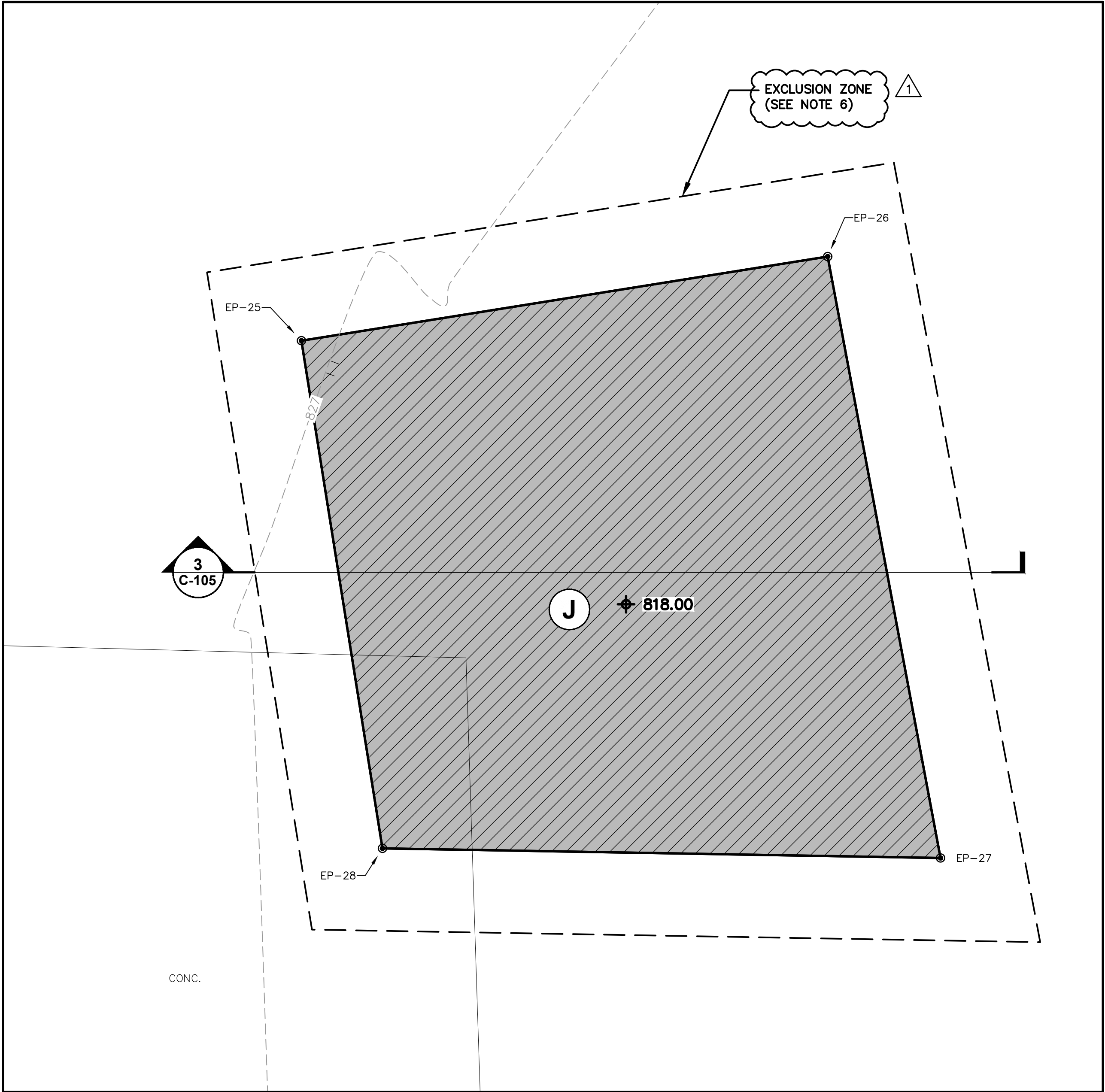
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SCALE(S) AS INDICATED						Professional Engineer's Name	
						Professional Engineer's No.	
						State	
						Date Signed	
						Project Mgr.	
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				Revisions		By	
						Ckd	
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				GS		Checked by	
DRAFT NOT FOR CONSTRUCTION				ARCADIS U.S., INC.		RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA	
						PROPOSED REMEDIAL ACTION	
						REMEDIATION CROSS-SECTIONS - NORTH AREA	
		ARCADIS Project No. 30075940		C-103			
		Date APRIL 2022					
		ARCADIS 150 W. Market Street, Suite 728 Indianapolis IN, 46204 Tel: 317-231-6500					

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PROJECT NAME: ISS-DESIGN-X-TITLE
ISS-DESIGN-X-BASEMAP
ISS-DESIGN-X-PROPOSED
ISS-DESIGN-X-PROPOSED-PATT
ISS-DESIGN-X-SSC



EXCAVATION PLAN

NOTES:

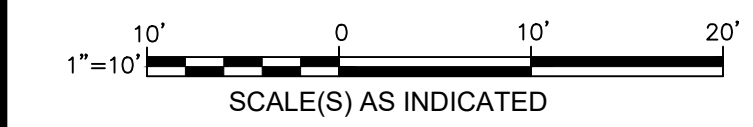
- CONTRACTOR SHALL DETERMINE THE OPTIMAL SIZE OF THE TEMPORARY STOCKPILE AREA AND BATCH PLANT AND REAGENT STORAGE AREA TO ACCOMMODATE CONTRACTOR'S EXECUTION, OVERALL SITE LOGISTICS AND WORK SEQUENCING.
- THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS FOR IMPLEMENTATION OF THE EXCAVATION. VOLUMES PROVIDED HEREIN ARE NEAT IN-PLACE VOLUMES AND DO NOT ACCOUNT FOR SLOPING OR OVERLAPPING CELLS/COLUMN.
- CONTRACTOR SHOULD BE PREPARED TO ENCOUNTER CONSTRUCTION DEBRIS AND ABANDONED MONITORING WELLS WITHIN THE LIMITS OF EXCAVATION. CONTRACTOR SHALL SORT, SIZE AND SEGREGATE CONSTRUCTION DEBRIS FOR STAGING IN A ROLL-OFF OR WITHIN THE TEMPORARY STOCKPILE AREA FOR CHARACTERIZATION AND OFF-SITE DISPOSAL.
- DEWATERING IS NOT ANTICIPATED; HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS FOR IMPLEMENTATION OF CONSTRUCTION DEWATERING TO FACILITATE EXCAVATION. WATER

SHALL BE STORED ONSITE IN APPROVED CONTAINERS WITH SECONDARY CONTAINMENT FOR ONSITE REUSE OR CHARACTERIZATION AND OFFSITE DISPOSAL.

- AIR MONITORING SHALL BE IMPLEMENTED WHENEVER INTRUSIVE ACTIVITIES ARE BEING CONDUCTED. CONTRACTOR IS RESPONSIBLE FOR WORK ZONE MONITORING AND ENGINEER WILL MONITOR THE AMBIENT AIR AT THE LIMIT OF DISTURBANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING DUST AND ODOR CONTROLS WHEN TOTAL SUSPENDED PARTICLES OR VOLATILE ORGANIC COMPOUNDS EXCEED ACTION LEVELS.

6. AN EXCLUSION ZONE SHALL BE ESTABLISHED AROUND THE PERIMETER OF ALL OPEN EXCAVATIONS AND/OR ACTIVE TREATMENT GRIDS/CELLS. EXCLUSION ZONE LOCATION TO BE DETERMINED BASED ON CONTRACTOR MEANS AND METHODS. EXCLUSION ZONE LOCATION MAY BE ADJUSTED AS WORK PROGRESSES. THE EXCLUSION ZONE SHALL BE SECURE, PREVENT UNAUTHORIZED ACCESS AND MEET THE MINIMUM OSHA REGULATIONS.

CELL ID	AREA (SQ. FT.)	MINIMUM EXCAVATION ELEVATION	IN-PLACE EXCAVATION VOLUME (CU. YD.)
J	4479	818.00	1444



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No.	Date	Revisions	By	Ckd
1	3/15/2022	ADDENDUM NO. 1		

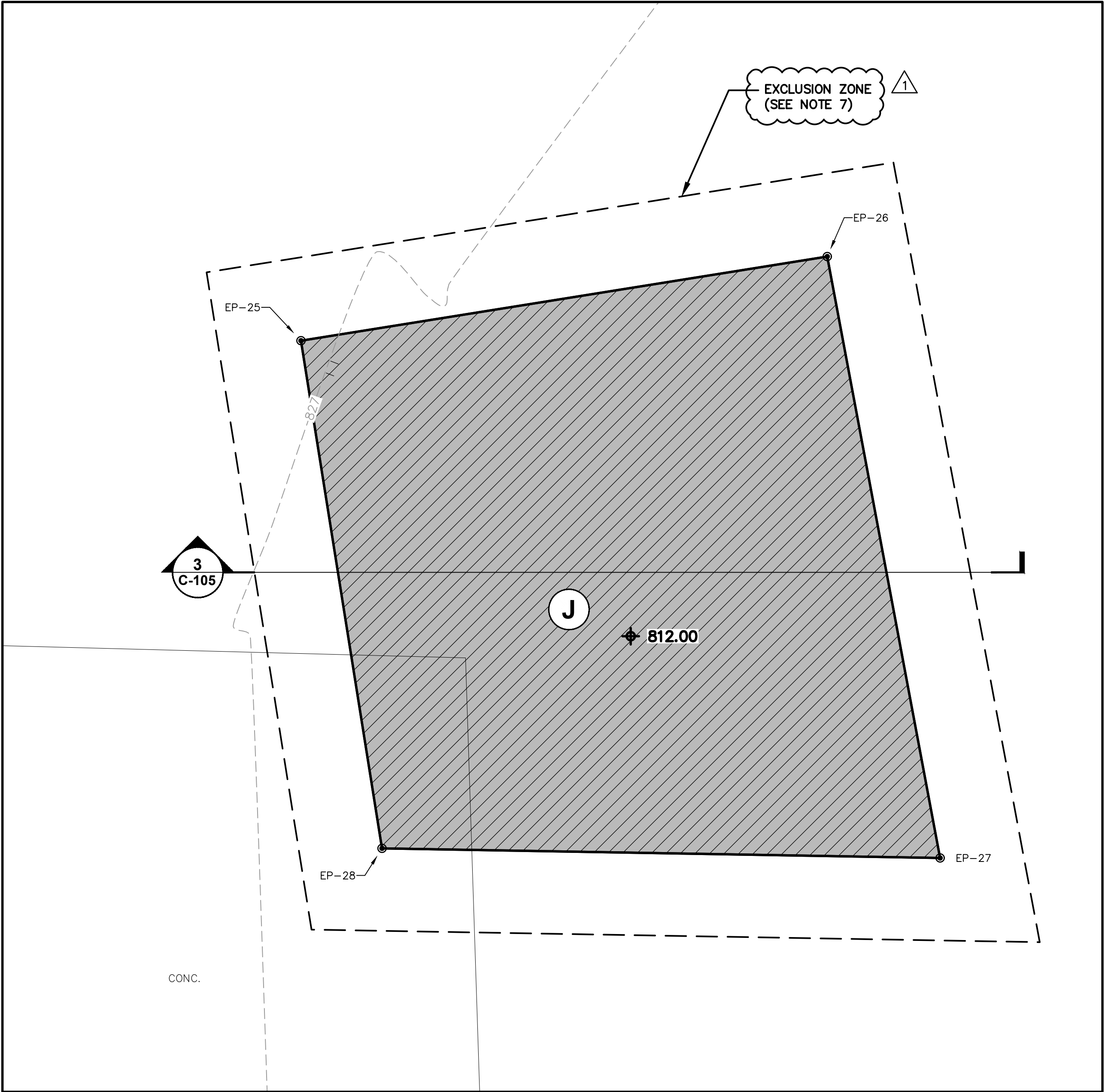
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Professional Engineer's Name		
Professional Engineer's No.		
State	Date Signed	Project Mgr.
IN		
Designed by	Drawn by	Checked by
	GS	

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CONSTRUCTION



ARCADIS U.S., INC.



ISS PLAN

NOTES:

- THE CONTRACTOR SHALL PROVIDE MIX MATERIALS (I.E., REAGENTS AND WATER) IN SUFFICIENT QUANTITIES TO ALLOW FOR UNINTERRUPTED ISS ACTIVITIES BASED ON THE PRODUCTION RATE AS DETERMINED BY THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS FOR IMPLEMENTATION OF ISS. VOLUMES PROVIDED HEREIN ARE NEAT IN-PLACE VOLUMES AND DO NOT ACCOUNT FOR OVERLAPPING CELLS/COLUMN.
- ZVI SHALL BE ADDED AT 1% TOTAL BASED ON THE EXISTING DRY WEIGHT OF SOIL VIA A BENTONITE SLURRY MIXTURE. ZVI SHALL BE CONNELLY GPM, PRODUCT CC-1200. CONTRACTOR SHALL DETERMINE THE APPROPRIATE SLURRY MIXTURE THAT WILL KEEP THE ZVI IN SUSPENSION DURING MIXING WITH SUFFICIENT SLURRY TO PRODUCE A HOMOGENIZED SOIL COLUMN WITH ZVI EVENLY DISTRIBUTED.
- MIXING WITH STEP 2 -- PORTLAND CEMENT MIXING WILL NOT BE PERMITTED FOR A MINIMUM PERIOD OF 28 DAYS FOLLOWING COMPLETION OF STEP 1 --ZVI MIXING FOR A GIVEN CELL/COLUMN.
- PORTLAND CEMENT (PC) SHALL BE ADDED AT A 5% MINIMUM BASED ON THE WET BULKED WEIGHT OF TREATED SOIL VIA SOLID STATE.
- UCS OF THE TREATED SOIL MATRIX MUST BE GREATER THAN OR EQUAL TO 20 POUNDS PER SQUARE INCH (PSI), MEASURED AT 14 DAYS AND THE UCS OF THE TREATED SOIL MATRIX MUST BE GREATER THAN OR EQUAL TO 50 POUNDS PER SQUARE INCH (PSI), MEASURED AT 28 DAYS OR SOONER (UNLESS OTHERWISE DIRECTED BY THE ENGINEER), AFTER 28 DAYS WITH NO MORE THAN 20 PERCENT OF THE PERFORMANCE SAMPLES LESS THAN 50 PSI, AND NO SAMPLES LESS THAN 30 PSI.

7. AN EXCLUSION ZONE SHALL BE ESTABLISHED AROUND THE PERIMETER OF ALL OPEN EXCAVATIONS AND/OR ACTIVE TREATMENT GRIDS/CELLS. EXCLUSION ZONE LOCATION TO BE DETERMINED BASED ON CONTRACTOR MEANS AND METHODS. EXCLUSION ZONE LOCATION MAY BE ADJUSTED AS WORK PROGRESSES. THE EXCLUSION ZONE SHALL BE SECURE, PREVENT UNAUTHORIZED ACCESS AND MEET THE MINIMUM OSHA REGULATIONS.

CELL ID	AREA (SQ. FT.)	MINIMUM ISS TARGET ELEVATION	ANTICIPATED ISS VOLUME (CU. YD.)
J	4479	812.00	980

CONTROL POINT	NORTHING	EASTING
EP-25	1913960.39	197937.32
EP-26	1913970.60	198001.16
EP-27	1913897.63	198014.85
EP-28	1913898.79	197947.15

RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA
PROPOSED REMEDIAL ACTION

EXCAVATION AND ISS PLAN -
SOUTH AREA

ARCADIS Project No.
30075940

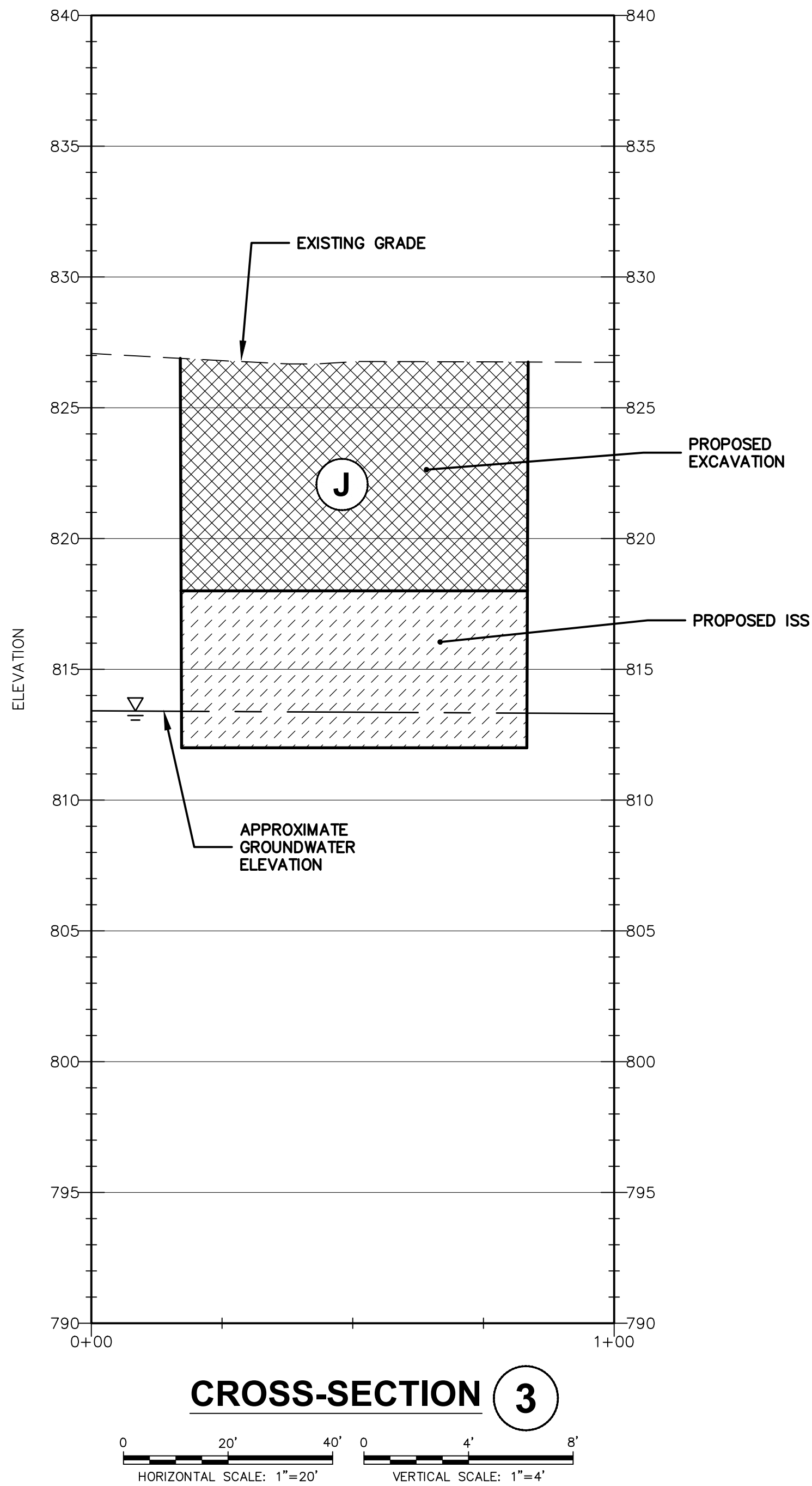
Date
APRIL 2022

ARCADIS
150 W. Market Street, Suite 728
Indianapolis IN, 46204
Tel: 317-231-6500

C-104

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ISS-DESIGN-X-TITLE
ISS-DESIGN-X-BASEMAP
ISS-DESIGN-X-PROPOSED
ISS-DESIGN-X-PROPOSED-PATT



SCALE(S) AS INDICATED								Professional Engineer's Name		DRAFT NOT FOR CONSTRUCTION	 ARCADIS U.S., INC.	RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA PROPOSED REMEDIAL ACTION REMEDIATION CROSS-SECTIONS - SOUTH AREA				ARCADIS Project No. 30075940		C-105			
								Professional Engineer's No.								Date APRIL 2022					
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1. DURING STEP 2 – PORTLAND CEMENT MIXING, BULKING MAY RESULT IN FINAL ELEVATIONS ABOVE EXISTING GROUND SURFACE. CONTRACTOR SHALL MAKE EVERY EFFORT TO CONTAIN THE MATERIAL DURING MIXING AND RELOCATE THE MATERIAL PRIOR TO HARDENING TO AN ALREADY SOLIDIFIED AREA OF THE SITE WHERE ISS HAS BEEN COMPLETED.
2. MINIMAL REGRADING OF POST SOLIDIFIED MATERIAL, IF NECESSARY, WILL BE ALLOWED WITH ENGINEER'S APPROVAL.
3. ELEVATIONS PRESENTED HEREIN ARE BASED ON EXISTING KNOWLEDGE OF THE ISS TREATMENT ZONE AND WILL BE ADJUSTED BY THE CONTRACTOR IN COORDINATION WITH THE ENGINEER PRIOR TO AND DURING IMPLEMENTATION OF ISS.

CONTROL POINT	NORTHING	EASTING
EP-01	1914323.80	197766.31
EP-02	1914323.80	197860.27
EP-03	1914282.07	197860.27
EP-04	1914234.09	197897.89
EP-05	1914212.83	197881.68
EP-06	1914187.97	197862.71
EP-07	1914179.68	197866.55
EP-08	1914157.35	197876.88
EP-09	1914142.57	197883.72
EP-10	1914145.12	197943.21
EP-11	1914076.88	197983.44
EP-12	1914066.54	197943.34
EP-13	1914112.43	197911.99
EP-14	1914109.97	197854.73
EP-15	1914157.35	197832.80
EP-16	1914179.68	197822.47
EP-17	1914198.52	197780.39
EP-18	1914212.83	197780.39
EP-19	1914242.68	197780.39
EP-20	1914242.68	197766.31
EP-21	1914242.68	197731.45
EP-22	1914278.40	197731.45
EP-23	1914278.40	197766.31
EP-24	1914282.07	197766.31
IP-29	1914282.07	197799.06
IP-30	1914242.68	197799.06
IP-31	1914282.07	197830.09
IP-32	1914242.68	197830.09
IP-33	1914212.83	197830.09



XREFS: IMAGES: PROJECT NAME: ---
ISS-DESIGN-X-TITLE
ISS-DESIGN-X-BASEMAP
ISS-DESIGN-X-PROPOSED
ISS-DESIGN-X-SESS
ISS-DESIGN-X-PROPOSED-PATT

1"=10'

10'

0

10'

20'

SCALE(S) AS INDICATED

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Professional Engineer's Name
.

Professional Engineer's No.
.

State
IN

Date Signed
.

Project Mgr.
.

Designed by
.

Drawn by
GS

Checked by
.

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CONSTRUCTION



ARCADIS U.S., INC.

RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA
PROPOSED REMEDIAL ACTION

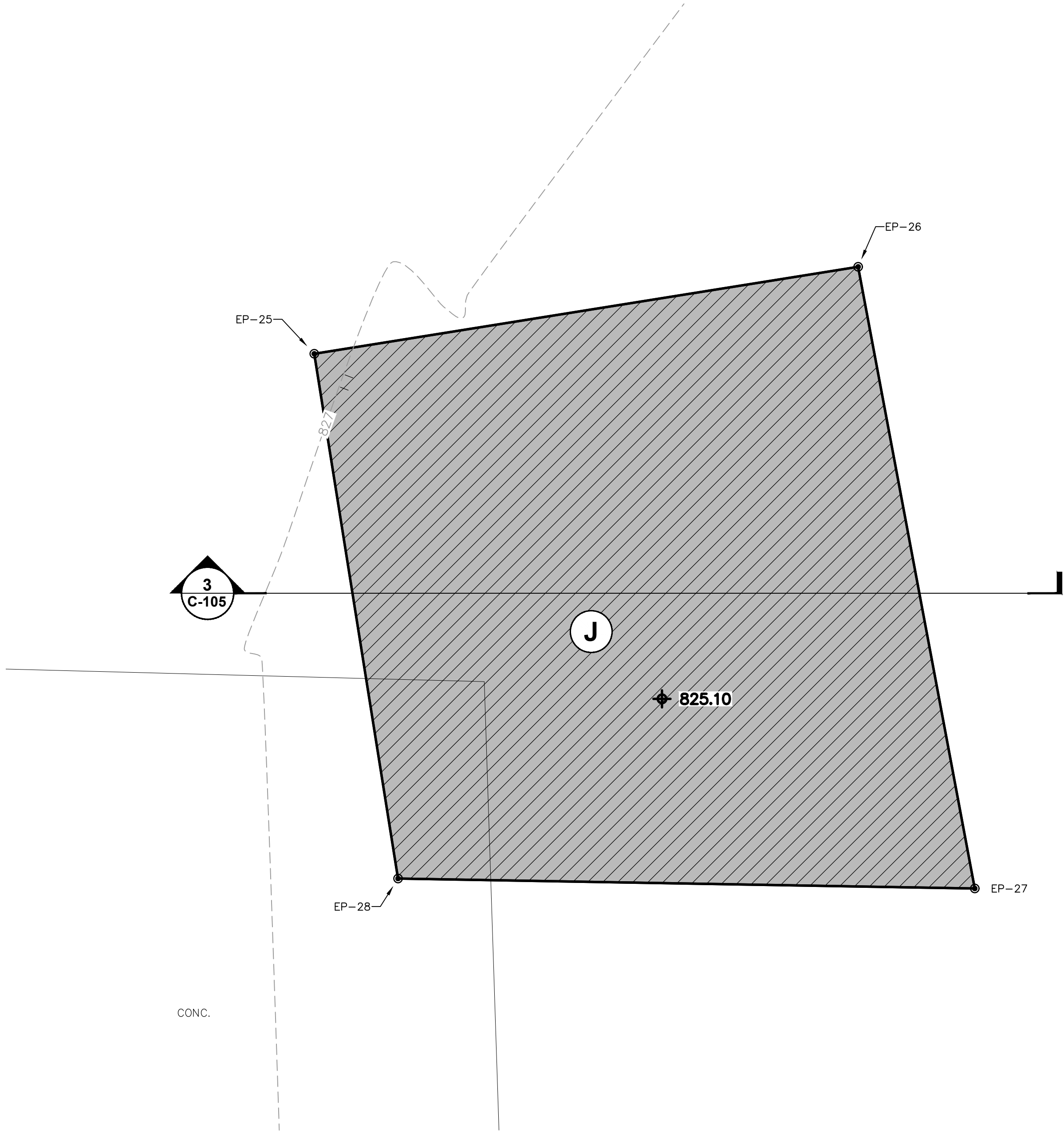
ISS SUBGRADE PLAN -
SOUTH AREA

ARCADIS Project No.
30075940

Date
APRIL 2022

ARCADIS
150 W. Market Street, Suite 728
Indianapolis IN, 46204
Tel: 317-231-6500

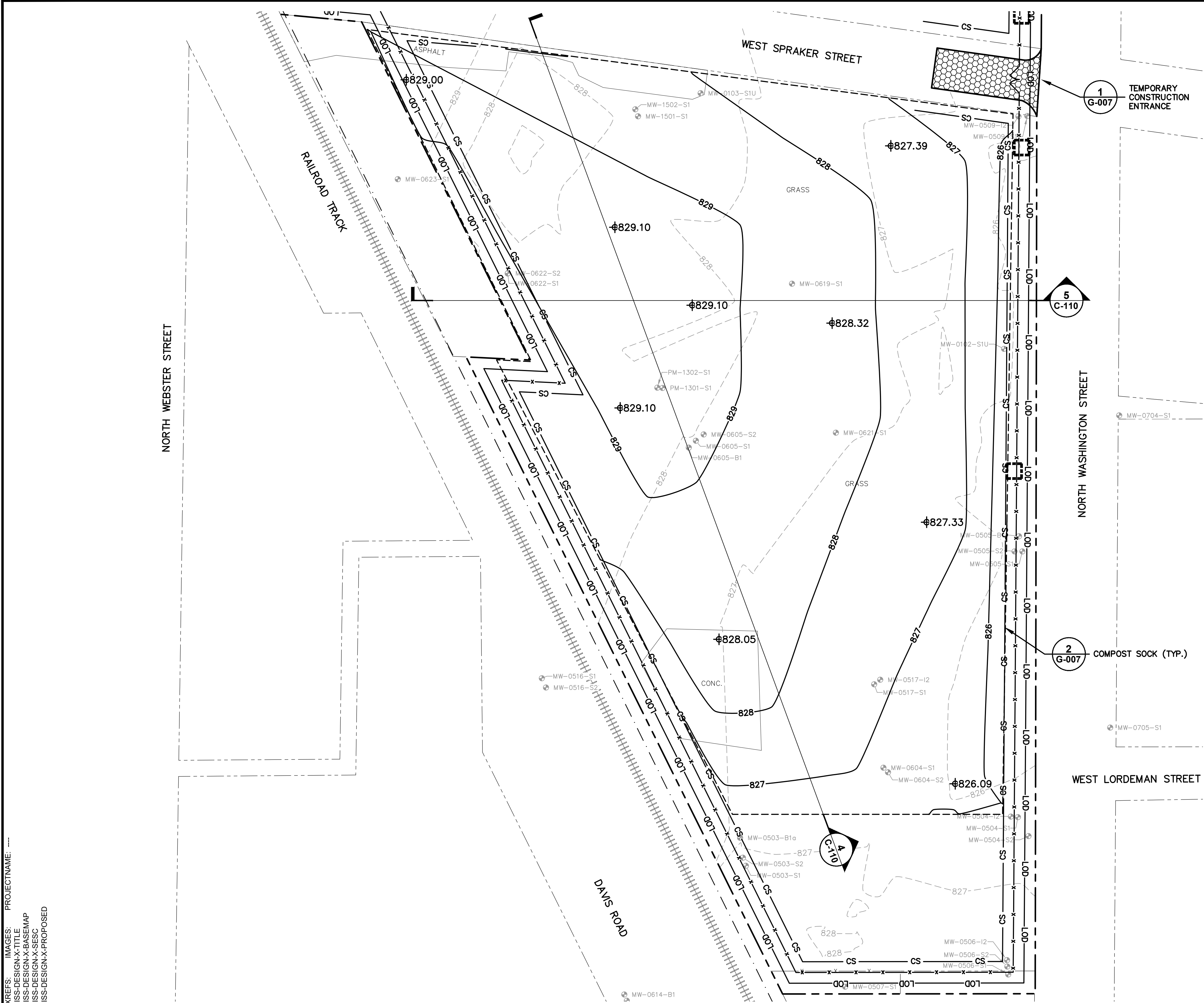
C-107



- NOTES:
1. DURING STEP 2 – PORTLAND CEMENT MIXING, BULKING MAY RESULT IN FINAL ELEVATIONS ABOVE EXISTING GROUND SURFACE. CONTRACTOR SHALL MAKE EVERY EFFORT TO CONTAIN THE MATERIAL DURING MIXING AND RELOCATE THE MATERIAL PRIOR TO HARDENING TO AN ALREADY SOLIDIFIED AREA OF THE SITE WHERE ISS HAS BEEN COMPLETED.
 2. MINIMAL REGRADING OF POST SOLIDIFIED MATERIAL, IF NECESSARY, WILL BE ALLOWED WITH ENGINEER'S APPROVAL.
 3. ELEVATIONS PRESENTED HEREIN ARE BASED ON EXISTING KNOWLEDGE OF THE ISS TREATMENT ZONE AND WILL BE ADJUSTED BY THE CONTRACTOR IN COORDINATION WITH THE ENGINEER PRIOR TO AND DURING IMPLEMENTATION OF ISS.

CELL ID	AREA (SQ. FT.)	ISS SUBGRADE TARGET ELEVATION
J	4479	825.10

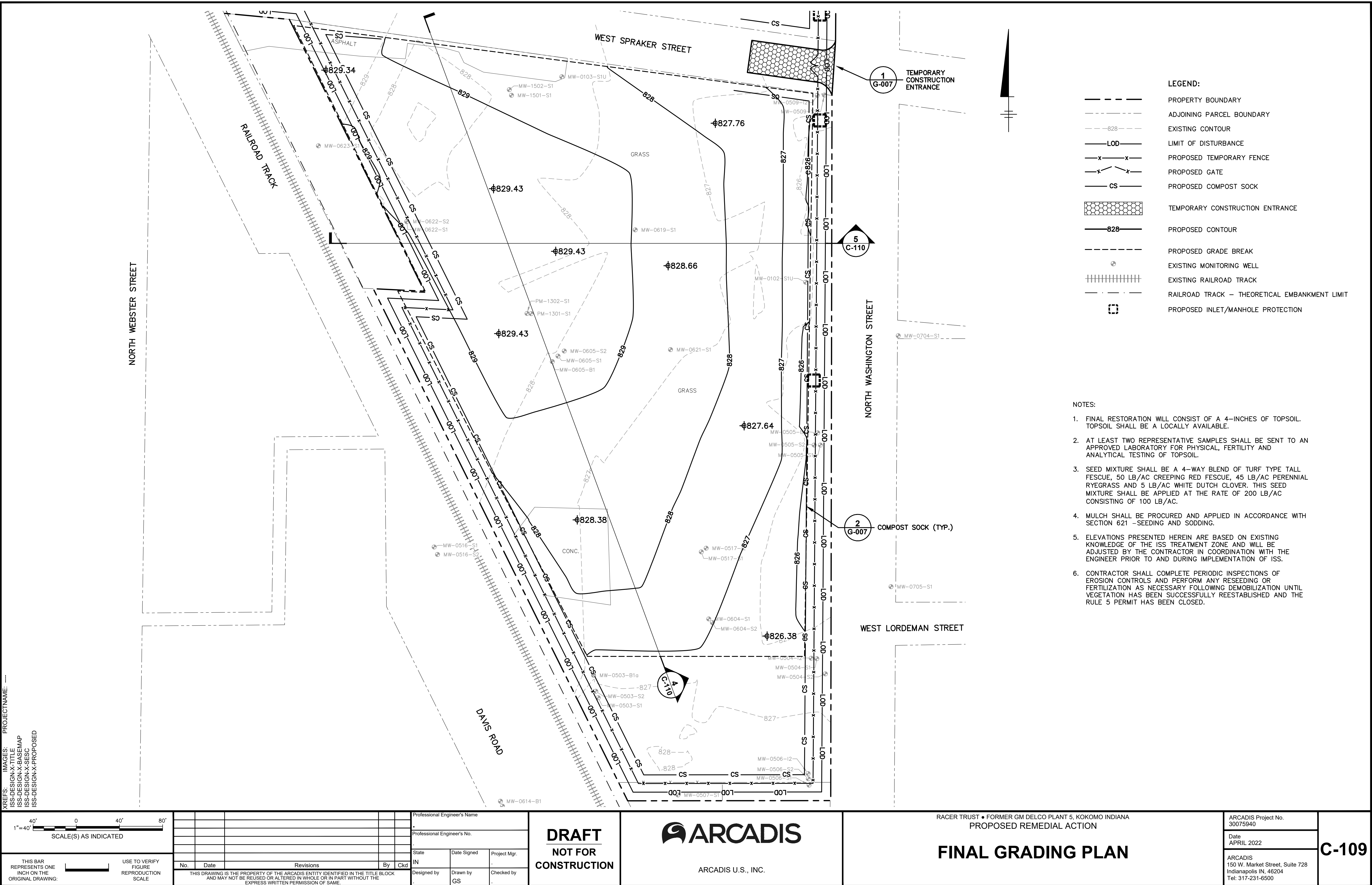
CONTROL POINT	NORTHING	EASTING
EP-25	1913960.39	197937.32
EP-26	1913970.60	198001.16
EP-27	1913897.63	198014.85
EP-28	1913898.79	197947.15



- LEGEND:**
- PROPERTY BOUNDARY
 - - - ADJOINING PARCEL BOUNDARY
 - 828- EXISTING CONTOUR
 - LOD --- LIMIT OF DISTURBANCE
 - x-x- PROPOSED TEMPORARY FENCE
 - x-x- PROPOSED GATE
 - CS --- PROPOSED COMPOST SOCK
 - [Pattern] TEMPORARY CONSTRUCTION ENTRANCE
 - 828--- PROPOSED CONTOUR
 - PROPOSED GRADE BREAK
 - EXISTING MONITORING WELL
 - [Pattern] EXISTING RAILROAD TRACK
 - RAILROAD TRACK - THEORETICAL EMBANKMENT LIMIT
 - [Pattern] PROPOSED INLET/MANHOLE PROTECTION

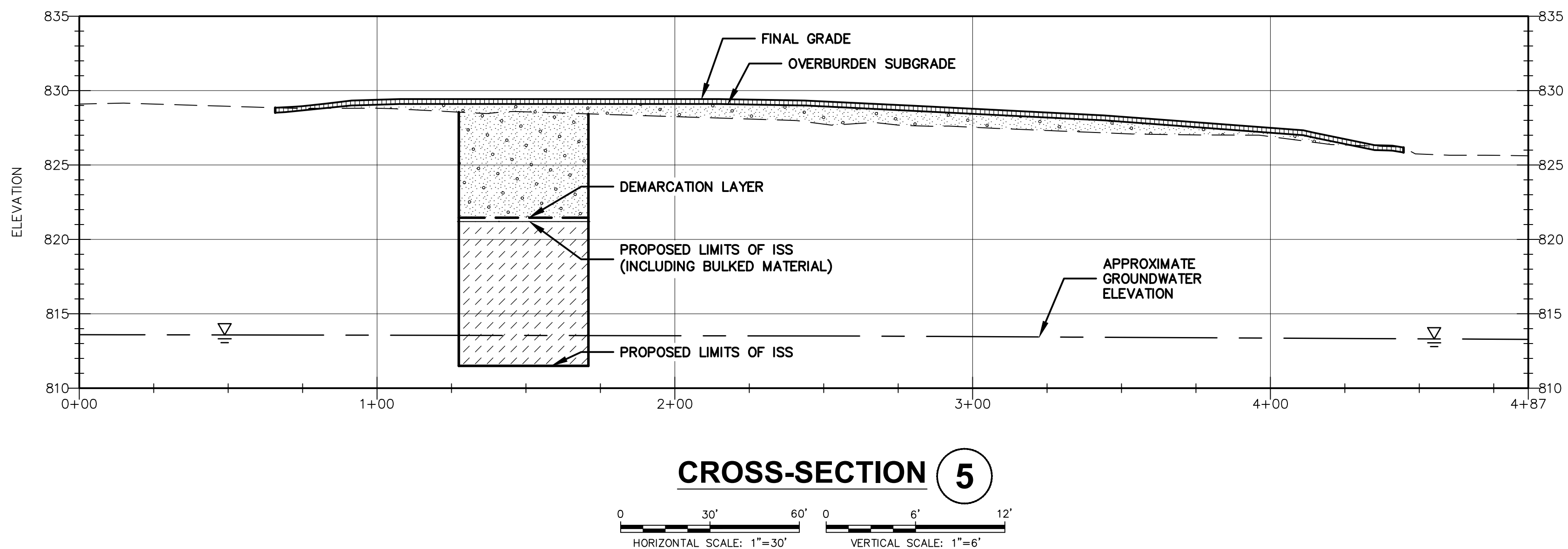
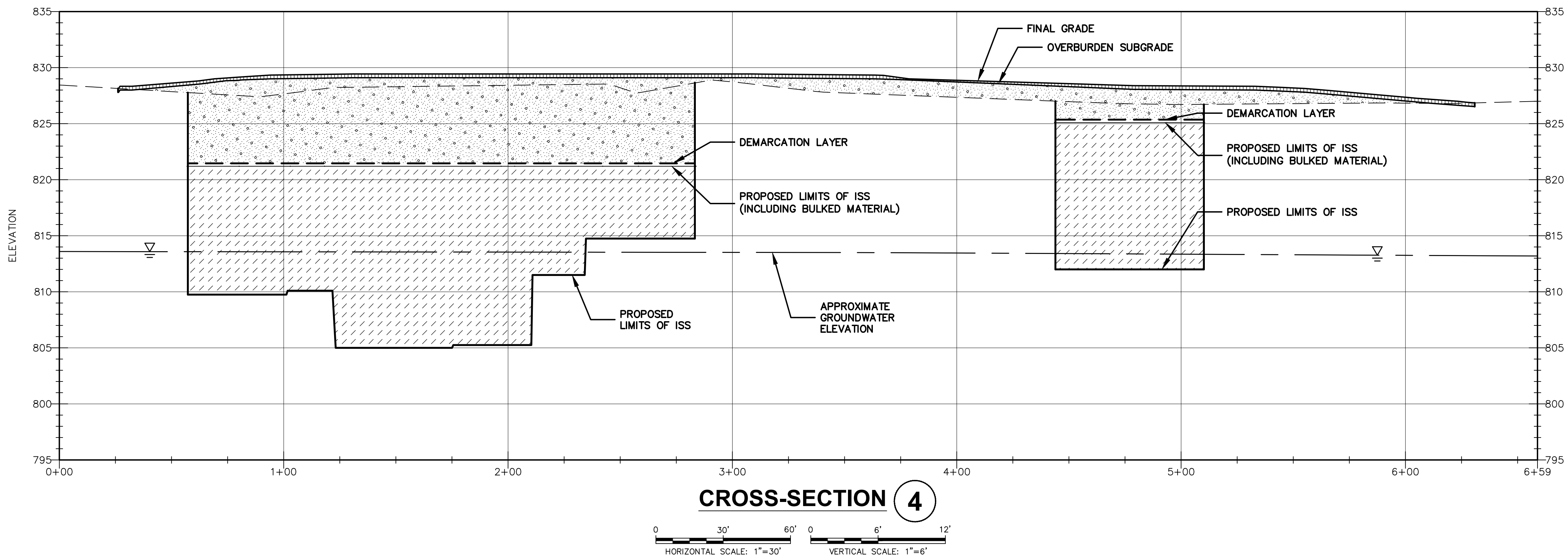
- NOTES:**
1. PLACEMENT OF OVERBURDEN WITHIN THE ISS AREA WILL NOT BE PERMITTED FOR A MINIMUM PERIOD OF 7 DAYS FOLLOWING THE COMPLETION OF STEP 2 -PC MIXING AND RECEIPT OF APPROVED PERFORMANCE RESULTS FROM FIELD QUALITY ASSURANCE/QUALITY CONTROL TESTING PROGRAM INDICATING ISS HAS ACHIEVED THE REQUIRED DESIGN STRENGTH.
 2. A DEMARCATION LAYER SHALL BE PLACED OVER THE ISS AREA TO PROVIDE DEMARCATION BETWEEN THE OVERBURDEN MATERIALS AND TREATED SOILS.
 3. OVERBURDEN MATERIALS WILL BE SAMPLED TO VERIFY THAT THE MATERIALS MEET A TRICHLOROETHENE (TCE) CONCENTRATION OF LESS THAN 100 PARTS PER MILLION (PPM) TO BE USED AS BACKFILL.
 4. OVERBURDEN MATERIALS WILL BE SAMPLED TO DETERMINE MODIFIED PROCTOR IN ACCORDANCE WITH ASTM INTERNATIONAL D-1557. A MINIMUM OF TWO SAMPLES WILL BE COLLECTED FROM THE TEMPORARY STOCKPILE AREA FOLLOWING EXCAVATION.
 5. ELEVATIONS PRESENTED HEREIN ARE BASED ON EXISTING KNOWLEDGE OF THE ISS TREATMENT ZONE AND WILL BE ADJUSTED BY THE CONTRACTOR IN COORDINATION WITH THE ENGINEER PRIOR TO AND DURING IMPLEMENTATION OF ISS.

1"=40' SCALE(S) AS INDICATED		Professional Engineer's Name Professional Engineer's No. State Date Signed Project Mgr. Designed by Drawn by Checked by		DRAFT NOT FOR CONSTRUCTION	ARCADIS ARCADIS U.S., INC.	RACER TRUST • FORMER GM DELCO PLANT 5, KOKOMO INDIANA PROPOSED REMEDIAL ACTION OVERBURDEN SUBGRADE PLAN	ARCADIS Project No. 30075940 Date APRIL 2022 ARCADIS 150 W. Market Street, Suite 728 Indianapolis IN, 46204 Tel: 317-231-6500	C-108
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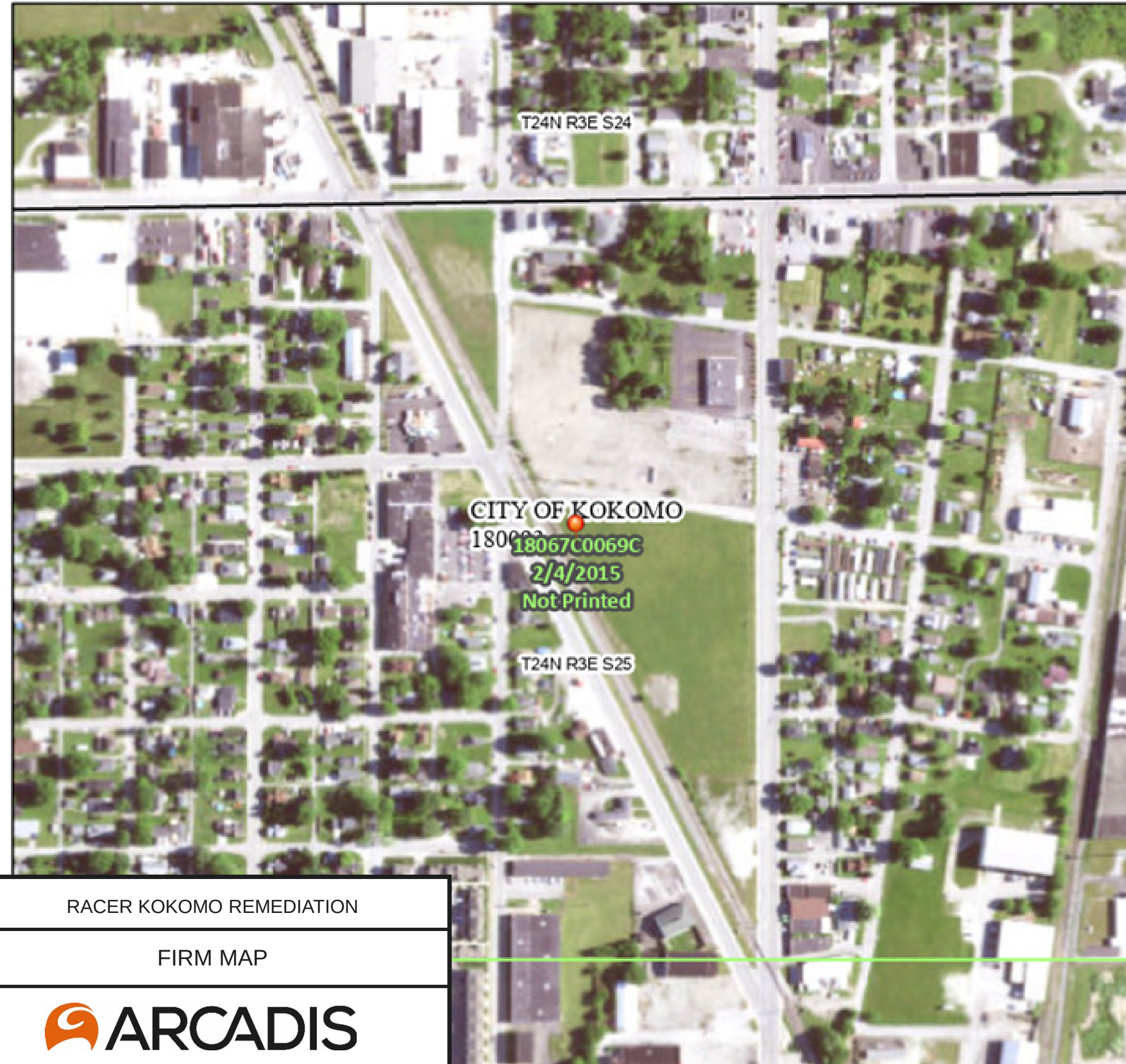
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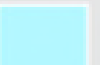
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					Professional Engineer's No.	
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					RESTORATION CROSS-SECTIONS	
					ARCADIS Project No. 30075940	
					Date APRIL 2022	
					ARCADIS 150 W. Market Street, Suite 728 Indianapolis IN, 46204 Tel: 317-231-6500	
					C-110	

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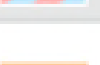


SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

 Without Base Flood Elevation (BFE)
Zone A, V, A99

 With BFE or Depth
Zone AE, AO, AH, VE, AR

 Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
Zone X

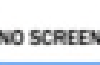
 Future Conditions 1% Annual Chance Flood Hazard
Zone X

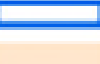
 Area with Reduced Flood Risk due to Levee. See Notes.
Zone X

 Area with Flood Risk due to Levee
Zone D

OTHER AREAS

 NO SCREEN Area of Minimal Flood Hazard
Zone X

 Effective LOMRs

 Area of Undetermined Flood Hazard
Zone D

GENERAL STRUCTURES

 Channel, Culvert, or Storm Sewer

 Levee, Dike, or Floodwall

OTHER FEATURES

 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
17.5

 Coastal Transect

 Base Flood Elevation Line (BFE)

 Limit of Study

 Jurisdiction Boundary

 Coastal Transect Baseline

 Profile Baseline

 Hydrographic Feature

MAP PANELS

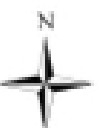
 Digital Data Available

 No Digital Data Available

 Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



RACER KOKOMO REMEDIATION

FIRM MAP



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **4/13/2022 at 10:50 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, north arrow, map creation date, community identifier.



RACER KOKOMO REMEDIATION

11X17 PLAT





Map unit symbol	Map unit name
CsA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes

RACER KOKOMO REMEDIATION

SOILS MAP

 **ARCADIS**