11/21/2024

ADDENDUM NO. 1

PROJECT:	Saline Area Schools – 2022 Bond Program – MS Rec Complex
DESCRIPTION:	Addendum No.1
BID PACKAGE RELEASE NUMBER:	BP #3
BID PROPOSAL DUE DATE/TIME:	**2**:00 PM, Thursday, December 5th, 2024

The following clarifications and/or Changes made to the Contract Documents are hereby made part of the Contract Documents.

The general character of the Work clarified or revised by this Addendum shall be the same as required by the complete set of Contract Documents. All incidentals required in connection with the Work of this Addendum shall be included in the Scope of Work even though not specifically specified.

All bidders shall be held responsible to review the Addendum and to include in its Bid Proposal all Work reasonably inferred to be included in its Scope of Work.

Acknowledge receipt of this Addendum in the space provided on the Bid Proposal Form.

A. Division 00 – Bidding and Contract Requirement Modifications:

1. SECTION 004126 – Bid Form

i. Revised Unit Price (Updated on BuildingConnected)

1. UNIT PRICES

a) Bid Category - (Bid Category 31A – Site Demo, Earthwork and Utilities)

i. Excavation of unsuitable soils and disposal off-site

ii. $_____/.Ton

2. **Section 002416 – Scope of Work – Bid Category Specific Notes**
    - **i.** Bid Category 02 – UST System Removal (Reissued)
    - **ii.** Bid Category 26 – Electrical (Reissued)

B. Architect/Engineering Documentation

1. ADDENDUM No. 1, November 20th, 2024 as issued by Kingscott (Attached)

2. Bid Package T4 Draft Drawings, October 22nd, 2024 - Saline Middle School Rex Complex as issued by Barton Malow (For Reference Only)

C. Pre-Bid RFI's

1. Attached Pre-bid RFI's

D. Pre-Bid Conference Sign-in Sheet and Presentation

END OF SECTION

SECTION 002416
SCOPE OF WORK
BID CATEGORY SPECIFIC NOTES

BID CATEGORY 02-UST System Removal

GENERAL – The following shall not be interpreted as a complete itemization of the work to be performed under this Bid Category. This Bid Category Trade Contractor shall be responsible to perform all work reasonably interpreted to be included in its scope of work in accordance with the drawings and specifications in addition to these Bid Category notes of clarification.

BASE SPECIFICATION(S)
Include **ALL WORK** specified or reasonably inferred

002413 – SCOPE OF WORK GENERAL NOTES
026500 – UST SYSTEM REMOVAL

PARTIAL SCOPE OF WORK / REFERENCE SPECIFICATION(S)
Include **PORTIONS** of the Work specified and/or requirements as it pertain to the work of this Bid Category.

015000 – TEMPORARY FACILITIES AND CONTROLS
312000 – EARTH MOVING
321124 – AGGREGATE BASE COURSE

Include (Furnish and Install u.n.o):

1. Pumping of water to accomplish the Work of this bid category.
2. Maintain streets and public areas free of dirt, mud and debris. Daily or more frequent road sweeping as required when debris is tracked onto roads.
3. Determine location of existing underground utilities prior to any excavation work. Contact MISS DIG a minimum of 3 days in advance of any excavation work, more than 3 days if required to allow adequate time for MISS DIG to mark underground utilities as required to meet excavation work schedules. Submit verification of MISS DIG work order to Clark Construction Company. Hand dig as necessary to avoid contact with underground utilities.
4. Determine location of existing underground utilities prior to any excavation work outside of the responsibility of MISS DIG for marking including fiber optic lines and other non-public utilities.
5. Protect existing structures, equipment, trees, landscaping, etc., to remain.
6. Dust control for the duration of this work.
7. Remove debris from the site in a timely manner.
8. Legal disposal of materials off site.
9. Excavation and backfill associated with the work.

10. Barricades Traffic Maintenance and Control in accordance with Section 015000 – temporary Facilities and Controls.
11. Coordinate, accomplish, verify and provide evidence of utility shut downs and/or disconnects.
12. Obtain permits, fees and licenses required to complete the work of this bid category from governing authorities and provide evidence of same to Construction Manager.
13. Provide certified flag personnel, signage and all other miscellaneous appurtenances required for traffic and pedestrian control while delivering to the job site. All equipment, trucks and vehicles entering and/or exiting the jobsite must be accompanied by certified flag personnel. The construction gates must be kept always closed unless a full-time certified flag person is assigned and stationed at the opened gate.
14. Remove above ground, overhead and below grade materials (e.g. pavement and base material, utilities, etc.) indicated in the documents.
15. Import and export of soils required to accomplish the work of this bid category.
16. Coordinate all work and testing with environmental consultant.
17. Include all backfill once removal is completed per note 17 on C2.5.
    a. Include Allowance of 600 CY of sand backfill per note 17.
18. Include removal of asphalt in area shown in Note 17 on C2.5.

SECTION 002416
SCOPE OF WORK
BID CATEGORY SPECIFIC NOTES

BID CATEGORY 26-Electrical

GENERAL – The following shall not be interpreted as a complete itemization of the work to be performed under this Bid Category. This Bid Category Trade Contractor shall be responsible to perform all work reasonably interpreted to be included in its scope of work in accordance with the drawings and specifications in addition to these Bid Category notes of clarification.

BASE SPECIFICATION - (Include **all** Work specified or reasonably inferred)

002413 – SCOPE OF WORK GENERAL NOTES

DIVISION 26 – ELECTRICAL (ALL SPECIFICATION SECTIONS)
275119 – FIELD UTILITY BOXES

REFERENCE SPECIFICATION - (Include portions of the Work specified as noted below)

015000 – Temporary Facilities and Controls
079200 – JOINT SEALANTS

Include (Furnish and Install u.n.o):

1. MEP Contractors are required to submit MEP Cost Breakdown as a start-up submittal for approval.
2. Coordinate design of system material and equipment routing with other Trade Contractors as required to avoid conflicts.
    a. This Trade Contractor shall develop shop drawings equal to scale as that to be used by other Trade Contractors in which conflicts have potential to occur. Drawing scale shall be coordinated prior to start of shop drawings.
    b. Shop drawings shall be extensively and thoroughly coordinated with each Trade Contractor with which conflicts have potential to occur to the extent required to eliminate conflicts prior to fabrication and installation.
    c. Conflicts encountered during fabrication and installation which could have been foreseen through a more extensive coordination effort shall be corrected by this bid category.
    d. All costs for modifications which are a result of conflicts with items noted in the Contract Documents shall be born by this bid category.

e. In the event of conflict with items indicated in shop drawings of other Trade Contractors and not in the Contract Documents, the cost shall be shared equally by the Trade Contractors involved.

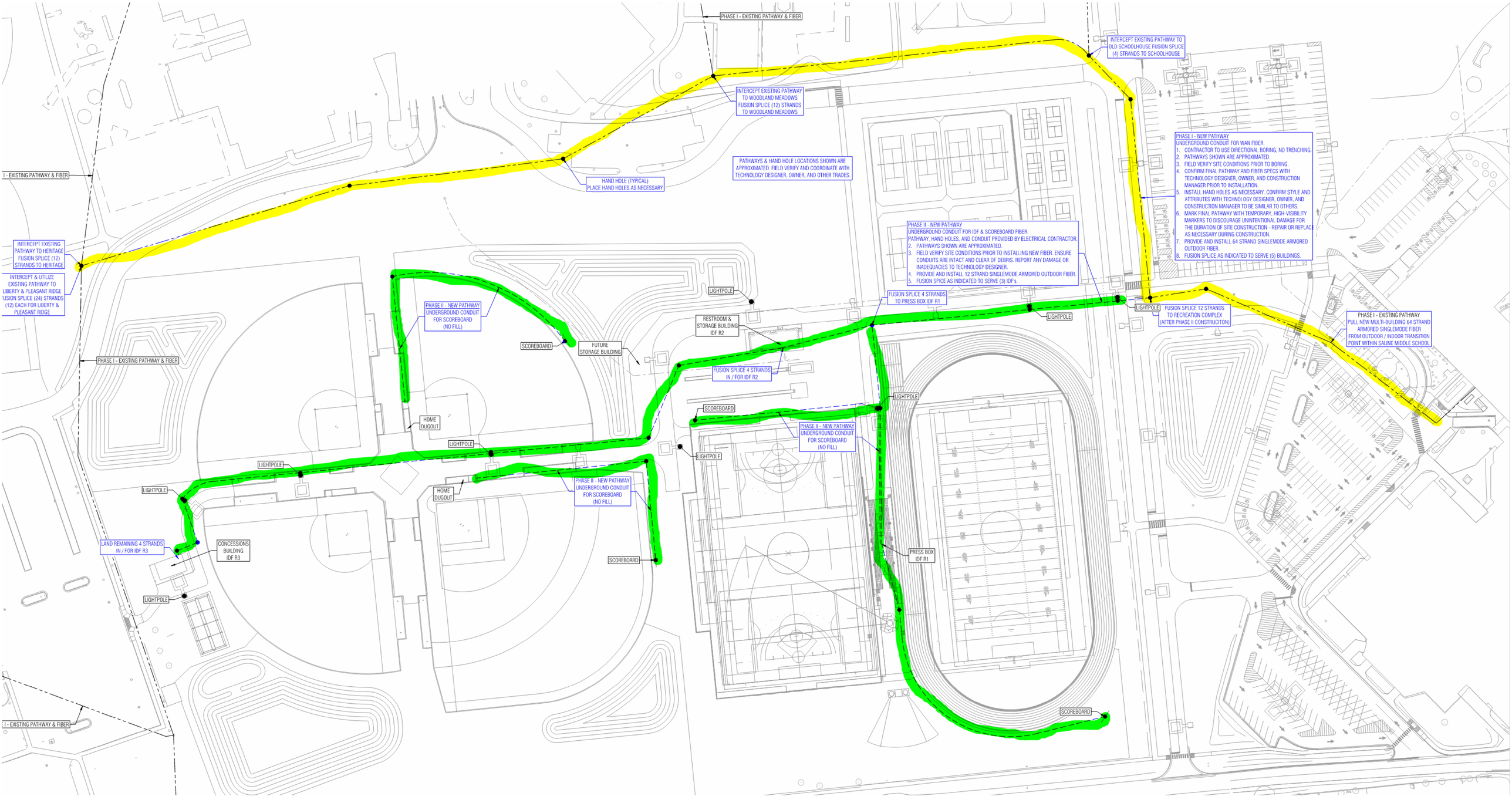
3. Coordinate openings required to accommodate installation of equipment prior to enclosure of spaces by other Trades.
4. Hangers, supports, unistrut or misc. steel required for a complete installation.
5. Equipment support structures as required.
6. Furnish only, for installation by others, access panels as required for this Work but not indicated in the documents. Confirm type of panel required with Clark Construction Company prior to ordering.
7. Concrete housekeeping pads for electrical equipment required and not indicated in the documents.
8. Fire stopping of penetrations associated with the Work of this bid category.
9. Excavation, backfill and compaction associated with the Work of this bid category.
10. Warning tape in trenches above conduit and wire.
11. Restore grade to condition that existed prior to start of the Work.
12. Furnish sleeves as needed and not indicated in the Documents for installation by others. Provide layout and assistance with placement.
13. Coring as required to perform the Work of this bid category.
14. Perform final hook up of equipment furnished by Owner and others. Coordinate rough in location with equipment supplier and Clark Construction Company.
15. Electrical Work associated with fire protection system equipment (e.g. tamper and flow switches, etc.) installed by Fire Protection Contractor.
16. Electrical identification and labeling.
17. Obtain permits required to complete the Work of this bid category. Post at the jobsite prior to performing the Work.
18. Electrical Work as described in specification Section 015000 “Temporary Facilities and Controls”.
19. Site electrical Work.
20. Site lighting including light pole bases.
21. Relocate existing fixture and pole with new concrete base shown on ES1.1E.
22. Fire alarm system.
23. Verify with electrical utility company that high voltage rating indicated on the documents to be actual voltage prior to submission of service equipment material submittals.
24. Remove spoils from the site and backfill in accordance with the plans and specifications requirements.
25. Starters and disconnects for equipment.
26. Install variable speed drives furnished by others including conduit and wiring.
27. Warranty and Guarantee start date shall be the project Substantial Completion date.

28. Train Owner's representative(s) on proper start-up, operation and maintenance of all mechanical systems. Provide video recording of training for Owner.
29. Install hand dryers furnished by others.
30. Provide electrical for Scoreboards.
31. Coordinate electrical requirements with Pressbox per specification section 133423 and drawing LD3.12.
32. See "Saline Area Schools – Bid Pack T4 – Saline Middle School Recreation Complex" Drawings ~~for work excluded from~~ to coordinate scope of work related this Bid Category. Raceways for low voltage are to be provided by this Bid Category 26 (see item #33 below).
    a. Provide sleeves as shown on "Technology Improvement" Drawings.
    b. Provide underground conduit for new fiber per the attached drawings. Green highlighted conduit is to be provided by this Bid Category. Yellow highlighted underground is to be provided by others.
33. Raceways, pull boxes and pull strings for work provided by others (below).
    a. Sound system.
    b. Security system.
    c. Communications system.
    d. Telephone system.
    e. Data system.
    f. Low voltage wiring
        i. Automatic doors
        ii. Door security hardware card readers etc.
    g. Other low voltage systems.
    h. Mounting panels for system components.

1. **Electrical Alternate No. E1**: Additional (2) Poles and additional equipment for MUSCO heads to illuminate soccer field on 4 poles total.

Exclude:

1. Underground fiber work as indicated on Saline Area Schools Bid Pack T4.
    a. See note 32 for the extent of underground fiber scope of work.
2. Low voltage wiring and equipment related to item #33. Coordinate extent of work with Contract Drawings and Barton Malow Drawings.


PHASE I - EXISTING PATHWAY & FIBER
INTERCEPT EXISTING PATHWAY TO WOODLAND MEADOWS FUSION SPLICE (12) STRANDS TO WOODLAND MEADOWS
INTERCEPT EXISTING PATHWAY TO OLD SCHOOLHOUSE FUSION SPLICE (4) STRANDS TO SCHOOLHOUSE
HAND HOLE (TYPICAL) PLACE HAND HOLES AS NECESSARY
PATHWAYS & HAND HOLE LOCATIONS SHOWN ARE APPROXIMATED. FIELD VERIFY AND COORDINATE WITH TECHNOLOGY DESIGNER, OWNER, AND OTHER TRADES.
PHASE I - NEW PATHWAY
UNDERGROUND CONDUIT FOR WAN FIBER.
1. CONTRACTOR TO USE DIRECTIONAL BORING. NO TRENCHING.
2. PATHWAYS SHOWN ARE APPROXIMATED.
3. FIELD VERIFY SITE CONDITIONS PRIOR TO BORING.
4. CONFIRM FINAL PATHWAY AND FIBER SPECS WITH TECHNOLOGY DESIGNER, OWNER, AND CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
5. INSTALL HAND HOLES AS NECESSARY. CONFIRM STYLE AND ATTRIBUTES WITH TECHNOLOGY DESIGNER, OWNER, AND CONSTRUCTION MANAGER TO BE SIMILAR TO OTHERS.
6. MARK FINAL PATHWAY WITH TEMPORARY, HIGH-VISIBILITY MARKERS TO DISCOURAGE UNINTENTIONAL DAMAGE FOR THE DURATION OF SITE CONSTRUCTION - REPAIR OR REPLACE AS NECESSARY DURING CONSTRUCTION.
7. PROVIDE AND INSTALL 64 STRAND SINGLEMODE ARMORED OUTDOOR FIBER.
8. FUSION SPLICE AS INDICATED TO SERVE (5) BUILDINGS.
PHASE II - NEW PATHWAY
UNDERGROUND CONDUIT FOR IDF & SCOREBOARD FIBER.
PATHWAY, HAND HOLES, AND CONDUIT PROVIDED BY ELECTRICAL CONTRACTOR.
2. PATHWAYS SHOWN ARE APPROXIMATED.
3. FIELD VERIFY SITE CONDITIONS PRIOR TO INSTALLING NEW FIBER. ENSURE CONDUITS ARE INTACT AND CLEAR OF DEBRIS. REPORT ANY DAMAGE OR INADEQUACIES TO TECHNOLOGY DESIGNER.
4. PROVIDE AND INSTALL 12 STRAND SINGLEMODE ARMORED OUTDOOR FIBER.
5. FUSION SPICE AS INDICATED TO SERVE (3) IDF's.
I - EXISTING PATHWAY & FIBER
INTERCEPT EXISTING PATHWAY TO HERITAGE FUSION SPLICE (12) STRANDS TO HERITAGE
INTERCEPT & UTILIZE EXISTING PATHWAY TO LIBERTY & PLEASANT RIDGE USION SPLICE (24) STRANDS (12) EACH FOR LIBERTY & PLEASANT RIDGE
PHASE I - EXISTING PATHWAY & FIBER
PHASE II - NEW PATHWAY UNDERGROUND CONDUIT FOR SCOREBOARD (NO FILL)
LIGHTPOLE
RESTROOM & STORAGE BUILDING IDF R2
FUSION SPLICE 4 STRANDS TO PRESS BOX IDF R1
LIGHTPOLE
LIGHTPOLE
FUSION SPLICE 12 STRANDS TO RECREATION COMPLEX (AFTER PHASE II CONSTRUCITON)
PHASE I - EXISTING PATHWAY PULL NEW MULTI-BUILDING 64 STRAND ARMORED SINGLEMODE FIBER FROM OUTDOOR / INDOOR TRANSITION POINT WITHIN SALINE MIDDLE SCHOOL
SCOREBOARD
FUTURE STORAGE BUILDING
FUSION SPLICE 4 STRANDS IN / FOR IDF R2
LIGHTPOLE
HOME DUGOUT
LIGHTPOLE
SCOREBOARD
PHASE II - NEW PATHWAY UNDERGROUND CONDUIT FOR SCOREBOARD (NO FILL)
LIGHTPOLE
LIGHTPOLE
HOME DUGOUT
PHASE II - NEW PATHWAY UNDERGROUND CONDUIT FOR SCOREBOARD (NO FILL)
LIGHTPOLE
LAND REMAINING 4 STRANDS IN / FOR IDF R3
CONCESSIONS BUILDING IDF R3
SCOREBOARD
PRESS BOX IDF R1
LIGHTPOLE
SCOREBOARD
I - EXISTING PATHWAY & FIBER

KINGSCOTT
ARCHITECTURE | ENGINEERING | DESIGN

Date:	November 20, 2024
Name of Job:	Saline Middle School Rec Complex
Owner of Job:	Saline Area Schools
Location:	7190 N. Maple Rd. Saline, MI 48176
A/E #:	2900.09B DF

ADDENDUM No. 1

SPECIAL NOTE:
The Notice to Bidders, Instructions to Bidders, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, and all modifications and previously issued Contract Documentation are a part of this Addendum.

SCOPE OF WORK:
The following items are changes, additions, deletions, clarifications and/or errors and omissions in plans & specifications and shall be considered by each Bidder in making up and submitting their proposal. All items shall be considered a part of the Contract Documents.

NOTICE TO ALL BIDDERS:
All Bidders shall take note of all items covered by this Addendum. Each Bidder shall review the total scope of his responsibilities with respect to his contract work and his interface with the work of others, as well as his required interface with their work.

ATTACHMENTS:
Specifications:
013300 Architects Submittal Procedures, 133500 Grandstands.

Drawings:
C1.0, C1.1, C1.2, C3.0, C3.1, C3.2, C3.3, C3.4, C3.5, C3.6, C3.7, C3.9, C3.10, C3.11, C3.12, C3.13, C3.14, C3.15, C3.16, C3.17, C3.18, C3.19, C3.20, C3.21, C6.1, C6.2, C6.3, C6.4, C6.5, C6.8, LA2.0, L2.01, L2.04, L2.05, L3.04, L3.05.

SPECIFICATIONS:
013300 – ARCHITECTS SUBMITTAL PROCEDURES
ADDED Section.

133500 – GRANDSTANDS
ADDED Section.

DRAWINGS:

Item No. 1: Added sheet "C3.15 – WATERMAIN PROFILES (1 OF 2)" to sheet C1.0.

Item No. 2: Added sheet "C3.16 – WATERMAIN PROFILES (2 OF 2)" to sheet C1.0.

Item No. 3: Added sheet "C3.17 – SANITARY PROFILE" to sheet C1.0.

Item No. 4: Added sheet "C3.18 – STORMWATER PROFILES (1 OF 4)" to sheet C1.0.

Item No. 5: Added sheet "C3.19 – STORMWATER PROFILES (2 OF 4)" to sheet C1.0.

Item No. 6: Added sheet "C3.20 – STORMWATER PROFILES (3 OF 4)" to sheet C1.0.

Item No. 7: Added sheet "C3.21 – STORMWATER PROFILES (4 OF 4)" to sheet C1.0.

Item No. 8: Revised phasing designations on sheet C1.1.

Item No. 9: Updated phasing callouts on sheet C1.2.

Item No. 10: Added "Overall Stormwater Narrative" on sheet C3.0

Item No. 11: Revised inverts, pipe slopes, pipe and structure sizes, and pipe material on sheet C3.1.

Item No. 12: Added infiltration test pits on sheet C3.1.

Item No. 13: Added boring locations on sheet C3.1.

Item No. 14: Added utility crossing number(s) and crossing table on sheet C3.1.

Item No. 15: Revised concrete cradle note(s) on sheet C3.1.

Item No. 16: Revised rim elevation for standpipe on sheet C3.1.

Item No. 17: Revised inverts, pipe slopes, pipe sizes and material on sheet C3.2.

Item No. 18: Added infiltration test pits on sheet C3.2.

Item No. 19: Added boring locations on sheet C3.2.

Item No. 20: Added utility crossing number(s) and crossing table(s) on sheet C3.2.

Item No. 21: Removed equalizer pipe and associated structures on sheet C3.2.

Item No. 22: Revised concrete cradle note(s) on sheet C3.2.

Item No. 23: Revised rim elevation for standpipe on sheet C3.2.

Item No. 24: Revised inverts, pipe slopes, pipe and structure sizes, and pipe material on sheet C3.3.

Item No. 25: Added infiltration test pits on sheet C3.3.

Item No. 26: Added boring locations on sheet C3.3.

Item No. 27: Added utility crossing number(s) and crossing table(s) on sheet C3.3.

Item No. 28: Added and revised concrete cradle note(s) on sheet C3.3.

Item No. 29: Revised rim elevation for standpipe on sheet C3.3.

Item No. 30" Added MH419A on sheet C3.3.

Item No. 31: Revised inverts, pipe slopes and pipe sizes on sheet C3.4.

Item No. 32: Added infiltration test pits on sheet C3.4.

Item No. 33: Added boring locations on sheet C3.4.

Item No. 34" Removed ES 322 and associated pipe and stub on sheet C3.4.

Item No. 35: Revised inverts, pipe slopes, pipe and structure sizes on sheet C3.5.

Item No. 36: Added infiltration test pits on sheet C3.5.

Item No. 37: Added boring locations on sheet C3.5.

Item No. 38: Added utility crossing number(s) and crossing table(s) on sheet C3.5.

Item No. 39: Removed 18" pipe between FCB 417 and FCB 416 on sheet C3.5.

Item No. 40: Added 18" pipe from FCB 417 to ES 417A on sheet C3.5.

Item No. 41: Revised rim elevation for standpipe on sheet C3.5.

Item No. 42: Revised inverts, pipe slopes and pipe sizes on sheet C3.6.

Item No. 43: Added infiltration test pits on sheet C3.6.

Item No. 44: Added boring locations on sheet C3.6.

Item No. 45: Added utility crossing number(s) and crossing table(s) on sheet C3.6.

Item No. 46: Added concrete cradle note(s) on sheet C3.6.

Item No. 47: Added boring locations on sheet C3.7.

Item No. 48: Added utility crossing number(s) and crossing table(s) on sheet C3.7.

Item No. 49: Added "Utility Crossing Concrete Encasement", trench, and bedding details to sheet C3.9.

Item No. 50: Updated Storage Volume Calcs and Standpipe details on sheet C3.10.

Item No. 51: Added proposed basin storage tables to sheet C3.10.

Item No. 52: Updated OMP per basin and utility layout changes on sheet C3.11.

Item No. 53: Updated drainage areas per basin and utility layout changes on sheet C3.12.

Item No. 54: Updated drainage areas per basin and utility layout changes on sheet C3.13.

Item No. 55: Added drainage area for Basin "E" on sheet C3.13.

Item No. 56: Updated basin naming per new stormwater detention layout on sheet C3.13.

Item No. 57: Added Hydraulic Pipe Calcs on sheet C3.14.

Item No. 58: Updated Orifice Calcs on sheet C3.14.

Item No. 59: Added "Top of Storage" and "Freeboard" elevations on sheet C6.1.

Item No. 60: Added additional spot grades on sheet C6.1.

Item No. 61: Updated inverts and rim elevations per utility layout changes on sheet C6.1.

Item No. 62: Added "Ridge" location and label on sheet C6.1.

Item No. 63: Combined "Basin C" and "Basin D" into one basin on sheet C6.2.

Item No. 64: Added "Top of Storage" and "Freeboard" elevations on sheet C6.2.

Item No. 65: Added additional spot grades on sheet C6.2.

Item No. 66: Updated inverts and rim elevations per utility layout changes on sheet C6.2

Item No. 67: Revised basin grading on sheet C6.3.

Item No. 68: Added "Top of Storage" and "Freeboard" elevations on sheet C6.3.

Item No. 69: Updated spot grades per grading changes on sheet C6.3.

Item No. 70: Updated inverts and rim elevations per utility layout changes on sheet C6.3.

Item No. 71: Added "Ridge" location and label on sheet C6.3.

Item No. 72: Combined "Basin C" and "Basin D" into one basin on sheet C6.4.

Item No. 73: Added "Top of Storage" and "Freeboard" elevations on sheet C6.4.

Item No. 74: Updated spot grades per grading changes on sheet C6.4.

Item No. 75: Updated inverts and rim elevations per utility layout changes on sheet C6.4.

Item No. 76: Added "Top of Storage" and "Freeboard" elevations on sheet C6.5.

Item No. 77: Updated spot grades per grading changes on sheet C6.5.

Item No. 78: Updated inverts and rim elevations per utility layout changes on sheet C6.5.

Item No. 79: Added missing rim elevations to storm structures on sheet C6.5.

Item No. 80: Updated location of "Freeboard" label on sheet C6.8.

Item No. 81: Updated "Wayfinding Sign Detail" on sheet LA2.0

Item No. 82: Added note for sod to sheet L2.01.

Item No. 83: Revised spot grade elevations at (2) ballfields on sheet L2.04.

Item No. 84: Revised inverts and outlet locations to coordinate with civil on sheet L2.05.

Item No. 85: Added spot grade elevations on sheet L3.04.

Item No. 86: Revised inverts and outlet locations to coordinate with civil on sheet L3.05.

Item No. 87: Revised specification section 13 3500 Grandstands to align with design intent.

END OF ADDENDUM

SECTION 013300
ARCHITECT'S SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for submitting RFI's, Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Documents will be provided for a cost of $150 per contractor by Architect for Contractor's use in preparing submittals.

B. All submittals must be in electronic form. Paper copies are not acceptable unless specifically listed. The architect will review, stamp and return an electronic document for the contractor's use. Copies of the reviewed shop drawings shall be provided by the contractor for distribution as required by the Construction Manager.

C. Each submittal item shall be submitted in its entirety as one complete package including all information required to fully review the item. Material sample, data, warranty and maintenance information, and drawings shall come as one package. Submittals missing required components and / or without product selections identified will be rejected without review.

D. Compliance Certificate: Refer to the attached Compliance Certificate. Compliance Certificates are to be used by contractors to indicate the products/devices intended for use in this project without the need and time for product data submittals. Contractors shall use Compliance Certificates whenever possible to expedite the work and limit paper work. Items listed on the form must be approved products listed in the specifications. No substitutions allowed. Select one (1) source for each category, sign this sheet, and submit as the contractor's commitment to use products required by the contract documents. No further product data submittals are required for this section. Physical sample, color samples, or layout shop drawings must be submitted where required by the specification. Refer to the attached specification list for sections that are subject to this certificate. **NOTE: Not all specification sections listed below will apply to the project listed above. There might not be specification sections**

included that are in the project listed above, in that case coordinate with architect at post bid interview for submittal requirements.

E. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

F. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

G. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. RFI's, request for information: Allow 5 working days for initial response for each RFI. Allow additional time if coordination with subsequent RFI is required, or when additional information is need for the response.

2. Shop drawings, sample, and product data:

    a. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.

    b. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

    c. Resubmittal Review: Allow 15 days for review of each resubmittal.

    d. Sequential Review: where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

    e. Submissions that are large or of multiple submissions or requires detailed or lengthy review by the Architect or his consultant may require additional time.

    f. Submissions for products or material that require a long lead time for delivery shall be noted as such and marked "Top Priority" so the architect may expedite the process. The architect will expedite reviews when the contractor legitimately can't submit within a reasonable time due to construction schedule. Failure to submit in a timely manner or to allow sufficient time for initial review and resubmittal reviews may result in project delays, additional service charges by the architect, or other penalties for the contractor.

H. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:

a. Project name.
b. Date.
c. Name and address of Architect.
d. Name and address of Contractor.
e. Name and address of subcontractor.
f. Name and address of supplier.
g. Name of manufacturer.
h. Submittal number or other unique identifier, including revision identifier.

1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).

i. Number and title of appropriate Specification Section.
j. Drawing number and detail references, as appropriate.
k. Location(s) where product is to be installed, as appropriate.
l. Other necessary identification.

I. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

J. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

1. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

K. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form including electronic submittals. Architect will discard submittals received from sources other than the Construction Manager. Architect will return any submittal with a transmittal, which doesn’t fully list, and properly identify the enclosed items.

L. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked " Review or reviewed with comments."

M. Distribution: Furnish copies of reviewed submittals to the Construction Manager, manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

1.4 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

A. General: At Contractor's written request, copies of Architect's CAD files will be provided for a cost to the Contractor for Contractor's use in connection with Project, subject to the following conditions:

1. The Architect will provide electronic data files, compatible with AutoCAD for contractor's convenience and use in the preparation of shop drawings. **Refer to Terms and Conditions at the end of this specification.** Requests for electronic data shall be in written form through the architect. Prior to the release of electronic files, the Architect will require a signed waiver of release. Contractors should allow a minimum of 1-week for this process.

PART 2 - RFI'S – REQUEST FOR INFORMATION

1. All RFI's shall be submitted to the Architect in electronic form. PDF's and Word files are acceptable.

2. PDF RFI forms shall include an editable text area for response, date, and signature.

3. RFI's shall be distributed by e-mail. E-mail title shall be specific to job name, and RFI number. This is mandatory for proper tracking.

4. Faxed and Hand written RFI's are not acceptable and will be rejected.

PART 3 - PRODUCTS

3.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

1. Submittal Types:
   a. Shop Drawing
   b. Product Data
   c. Sample
   d. Other

B. Kingscott Review Stamp Statement: "Reviewed only for the limited purpose of checking for conformance with the design concept expressed in the Contract Documents. Dimensions, quantities, accuracy, assembly methods, installation methods, coordination with other trades and field verification are the responsibility of the contractor."

1. The following Actions will be taken:
   a. Reviewed with no exceptions
   b. Reviewed with Exceptions
   c. Revise and resubmit
   d. Rejected

C. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. Use the Material Compliance form when permitted and whenever possible to save time and paper work.
2. If information must be specially prepared for submittal because standard data are not suitable for use, submit as Shop Drawings, not as Product Data.
3. Mark each copy of each submittal to show which products and options are applicable. Unmarked submittals will be rejected. Failure to mark appropriate products will result in rejection of the submittal.
4. Include the following information, as applicable:

    a. Manufacturer's written recommendations.
    b. Manufacturer's product specifications.
    c. Manufacturer's installation instructions.
    d. Manufacturer's catalog cuts.
    e. Wiring diagrams showing factory-installed wiring.
    f. Printed performance curves.
    g. Operational range diagrams.
    h. Compliance with specified referenced standards.
    i. Testing by recognized testing agency.

5. Number of Copies: Submit one electronic copy of Product Data, unless otherwise indicated. Architect will return one electronic copy. See the Constriction Manager’s submittal requirements for final record and distribution copy requirements.

D. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal of Architect's CAD Drawings is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Dimensions.
    b. Identification of products.
    c. Fabrication and installation drawings.
    d. Roughing-in and setting diagrams.
    e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    f. Shop work manufacturing instructions.
    g. Templates and patterns.
    h. Schedules.
    i. Notation of coordination requirements.
    j. Notation of dimensions established by field measurement.
    k. Relationship to adjoining construction clearly indicated.
    l. Seal and signature of professional engineer if specified.
    m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Number of Copies: Submit one opaque (bond) copy, and one electronic copy of each submittal. Architect will return one electronic copy for printing and distribution.

E. Samples: **Submit Physical Samples** for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

    a. Generic description of Sample.
    b. Product name and name of manufacturer.
    c. Sample source.
    d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available. **Scanned color charts, samples, etc. will be REJECTED. Send physical samples, color charts, etc. as described in each specification section.**

    a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection**. Scanned color charts, samples, etc., will be REJECTED. Send physical samples, color charts, etc. as described in each specification section.**

    a. Number of Samples: Submit three sets of Samples. Architect will retain one Sample set; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.

3.2 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit four copies of a statement, signed and sealed by the responsible design professional,

for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 4 - EXECUTION

4.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions prior to submission for review. It is the contractor’s responsibility to review and identify major discrepancy with the contract dements, and significant missing information. Documents with discrepancies and substantially missing information shall be returned for revisions prior to submission to the Construction Manager.

B. Mark with approval stamp before submitting to the Construction Manager.

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

4.2 CONSTRUCTION MANAGER'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions prior to submission for review. It is the Construction Manager’s responsibility to review and identify major discrepancy with the contract dements, and significant missing information. Documents with discrepancies and substantially missing information shall be returned for revisions prior to submission to the Architect.

B. Mark with approval stamp before submitting to Architect.

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

4.3 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's and Construction Managers approval stamp, and have not been fully reviewed and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. Reviewed with no exceptions.

2. Reviewed with exceptions.
3. Revise and resubmit.
4. Rejected.

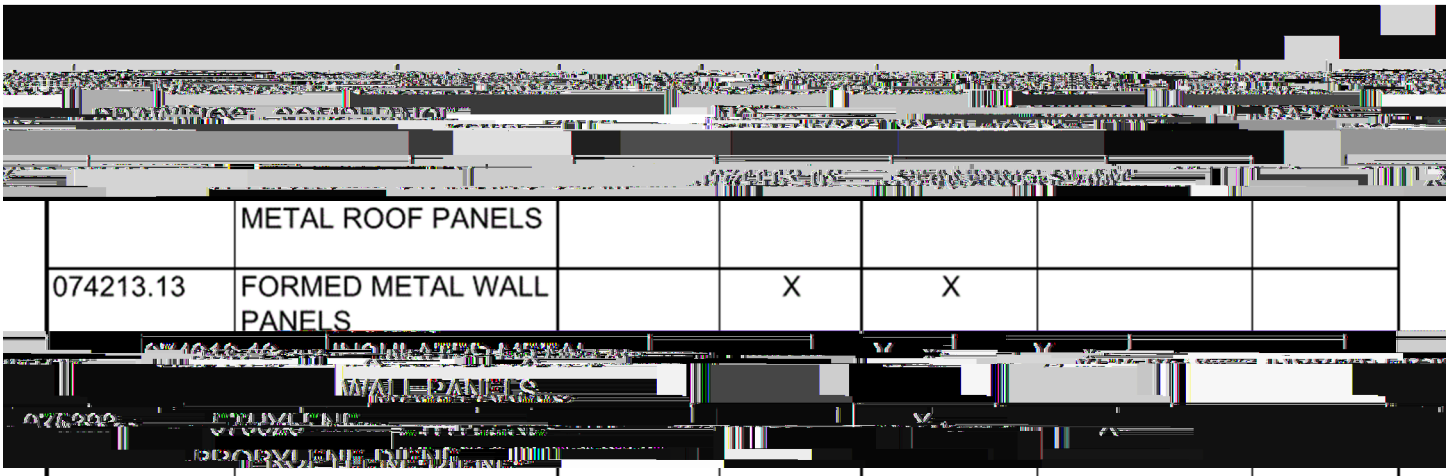
C. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review.

D. Incomplete submittals with substantial missing information, will be considered non-responsive, and will be returned without review.

E. Non-complaint submittals, will be considered non-responsive, and will be returned without review.

F. Submittals not required by the Contract Documents will not be reviewed and will be discarded.

SUMBITTALS REQUESTED BY SPECIFICATION SECTION						
This is a general guide, but may vary by project.						
Given the age of digital submittal, product information and images, and multiple files can be compiled into one complete product data page. When this complete product data sheet is submitted, it becomes an acceptable option to help limit physical samples and paper.						
SECTION. NO.	SECTION TITLE	PRODUCT DATA	SAMPLE	SHOP DRAWINGS	MATERIAL COMPLIANCE	TESTING
033000	CAST-IN-PLACE CONCRETE	X		X		X
042000	UNIT MASONRY/BRICK	X	X (BRICK)			
047200	CAST STONE	X	X			
051200	STRUCTURAL STEEL FRAMING			X		
052100	STEEL JOIST			X		
053100	STEEL DECKING				X	
054000	COLD-FORMED METAL FRAMING			X		
055000	METAL FABRICATIONS			X		
055113	METAL PAN STAIRS			X		
055213	PIPE AND TUBE			X		
061000	ROUGH CARPENTRY				X	
061053	MISCELLANEOUS ROUGH CARPENTRY				X	
061063	EXTERIOR ROUGH CARPENTRY				X	
061600	SHEATHING				X	
061753	SHOP-FABRICATED WOOD TRUSSES			X		
062013	EXTERIOR FINISH CARPENTRY		X		X	
062023	INTERIOR FINISH CARPENTRY		X		X	
071326	SELF-ADHERING SHEET	X			X	
072100	THERMAL INSULATION	X			X	
072119	FOAMED-IN-PLACE INSULATION	X			X	
072500	WEATHER BARRIERS	X			X	
072600	VAPOR RETARDERS	X			X	
073113	ASPHALT SHINGLES		X			



	METAL ROOF PANELS					
074213.13	FORMED METAL WALL PANELS		X	X		
	MONOMER (EPDM) ROOFING					
075423	THERMOPLASTIC POLYOLEFIN (TPO) ROOFING			X		
076200	SHEET METAL FLASHING AND TRIM		X			
077100	ROOF SPECIALTIES	X			X	
077129	MANUFACTURED ROOF EXPANSION JOINTS	X			X	
077200	ROOF ACCESSORIES	X			X	
078413	PENETRATION FIRESTOPPING				X	
078443	JOINT FIRESTOPPING				X	
079200	JOINT SEALANTS	X	X			
079219	ACOUSTICAL JOINT SEALANTS	X	X			
081213	HOLLOW METAL DOORS AND FRAMES			X		
081416	FLUSH WOOD DOORS		X	X		
083113	ACCESS DOORS AND FRAMES				X	
083313	COILING COUNTER DOORS			X		
083323	OVERHEAD COILING DOORS			X		
083513	FOLDING DOORS			X		
083613	SECTIONAL DOORS			X		

SECTION. NO.	SECTION TITLE	PRODUCT DATA	SAMPLE	SHOP DRAWINGS	MATERIAL COMPLIANCE	TESTING
084113	ALUMINUM-FRAMED ... ASSEMBLIES		X	X		
092216	NON-STRUCTURAL METAL FRAMING				X	
092900	GYPSUM BOARD				X	
093013	CERAMIC TILE	X			X	
095113	ACOUSTICAL PANEL CEILING				X	
096513	RESILIENT BASE & ACCESSORIES	X				
096813	SHEET CARPET	X				
098433	SOUND ABSORBING WALL UNITS	X				
098436	SOUND ABSORBING CEILING UNITS	X				
099113	EXTERIOR PAINTING		X			
099123	INTERIOR PAINTING		X			
099600	HIGH PERFORMANCE		X			

SECTION. NO.	SECTION TITLE	PRODUCT DATA	SAMPLE	SHOP DRAWINGS	MATERIAL COMPLIANCE	TESTING
101100	VISUAL DISPLAY BOARDS			X	X	
101200	DISPLAY CASES			X	X	
101423	PANEL SIGNAGE		X	X		
102113	TOILET COMPARTMENTS	X		X		
102116	SHOWER AND DRESSING COMPARTMENTS	X		X		
102123	CUBICAL CURTAINS AND TRACK	X			X	
102800	TOILET, BATH, AND LAUNDRY ACCESSORIES (CONTRACTOR TO VERIFY QUANTITIES				X	
104413	FIRE PROTECTION CABINETS				X	
104416	FIRE EXTINGUISHERS				X	
105113	METAL LOCKERS		X	X		
105613	METAL SHELVING				X	
105626	MOBILE STORAGE SHELVING			X	X	
113100	RESIDENTIAL APPLIANCES				X	
115123	LIBRARY STACK SYSTEMS		X	X		
115213	PROJECTION SCREENS				X	
115313	LABORATORY FUME HOODS		X	X		
116143	STAGE CURTAINS		X	X		
116623	GYMNASIUM EQUIPMENT		X	X		
126600	TELESCOPING STANDS		X	X		
122113	HORIZONTAL BLINDS	X				
122413	VERTICLE BLINDS	X				
122413	ROLLER SHADES (OPERABLE SHOP DRAWINGS)	X		X	X	

SECTION. NO.	SECTION TITLE	PRODUCT DATA	SAMPLE	SHOP DRAWINGS	MATERIAL COMPLIANCE	TESTING
123___	CASEWORK AND COUNTERTOPS		X	X		
124816	ENTRANCE FLOOR GRILLS	X				

Material Compliance Form

Name of Building:

Owner:

Bid Package #:

A/E #:

Cc:

Material Compliance Submittal Section:

This document is to be used by this contractor to indicate the products/devices intended for use in this project w for product data submittals. Items listed are approved products in the specifications. No substitutions allowed. Select one (1) source for each category, sign this sheet, and submit as the contractor's commitment to use products required by the contract documents. **No further product data submittals are required for this section. However, physical sample, color samples, or layout shop drawings must be submitted where required by th ecification.**

As contractor for work specified under the section named above, I e to use only the products/devices listed below that were listed in the specification section.

Contractor:

Date:

Print Name: Filled out by Contractor

Title:

Signature: _____

Notary:

County:

Date Commission Expires:

me: Filled out by Contractor and Notary used from Contractor

Signatu _____

Reviewed By: Construction Manager, Inc.

Date:

Print Name: Filled out by Construction Manager

Signature: _____

viewed By: Kingscott Associates, Inc.

ate:

me: Filled out by Architect

Signature: _____

List the manufacturer's name and mode er(s) ach item being submitted in this division. Provide all relevant information not covered by the model numbe w ful mpliance with each requirement of the specification. This will include but is not limited to c r finish, size, thic nd all other selectable option. Note: Use location for each listed item when several different is division ar d in specific locations.

Specification Section:	Manufacturer's Name:	Model Number:
096519	Shaw Commercial	Uncommon Ground 6 #0188V (LVT-1)
096519	haw Commercial	Skyline #02560 (LVT-2)
095113	Armstrong	#1713 (CP-1)
095113	Armstrong	#3101 (CP-2)
095113	Armstrong	Armstrong Prelude XL (ME-1 grid)
095113	Armstrong	Armstrong Axiom Classic Trim (ME-2 grid and trim)

Electronic Media Authorization

Payment required prior to release or email a copy of completed check

Project Name: _____ KAI Project# _____

Name : _____ Company: _____

Address: _____

City, State, Zip: _____

Phone: _____ Email: _____

Autocad/Revit file version: _____

Signature: _____ Date: _____

By signing, you are agreeing to the Terms and Conditions on the following page

Documents Requested: KAI DWG # Issued Date on DWG

_____

_____

_____

_____

Approved by: _____ Date:_____

Email form to:
ralm@kingscott.com

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Kingscott will furnish to you electronic files after the completion of the Electronic Media Authorization Form. Under no circumstances, shall a delivery of the electronic files for use by you, be deemed a sale by Kingscott.

SECTION 133520 – GRANDSTANDS – CLOSED DECK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.

B. Related Sections

1. Section 03 3000 Cast In Place Concrete
2. Section 13 3423 Pressbox

C. Section Includes

1. Steel Structure
2. Aluminum Decking System
3. Concrete Foundation and Flatwork
4. Perimeter Guard Railings
5. Stair and Ramp Exits

1.2 SCOPE

A. The work under this section of the specifications shall consist of furnishing all labor, materials and equipment necessary to furnish and install a permanent double-sided, closed-deck, elevated grandstand, with a net seating capacity of 354 seats per side.

B. Install steel grandstand understructure including galvanized I-beams, steel horizontal bracing, and concrete pads and engineered slab / trench footings. Concrete footings and flatwork necessary to the grandstand installation shall be furnished and installed by Bleacher Manufacturer unless noted otherwise in the project documents.

C. Provide for handicap seating and companion seating to be accommodated within the seating area.

D. Integrated pressbox support structure and 10’ X 24’ Pressbox with access stair/landings.

E. Integrated 9’6” x 42’ permanent viewing decks on each side of pressbox and with access seating area.

F. Proposed footing package is a delegated design, performed by the manufacturer’s engineer of record.

G. Minimum Criteria

1. 5 rows x 129’-3” ft. long grandstand
2. 13 inch rise x 24 inch row-to-row spacing
3. 6 ft. wide front cross walk elevated 30 inches.
4. Anodized Aluminum Extruded Benches and Colored Riser Planks.
5. Closed Mill Finish Aluminum Extruded Footplanks
6. Mill finish aluminum Extruded aisle step extensions w/black contrasting aisle step nosing.
7. Welded Anodized Aluminum 2 line aisle hand rails.
8. Perimeter guard Railings:
   - Galvanized Steel Rail Risers
   - Anodized Aluminum Upper and Lower Pipe Frames
   - Black Vinyl Chain Link Fabric. Guard rail to consist of top and bottom anodized aluminum piping with a third to pipe.
9. Mill Finish Extruded aluminum stairs, landings, ramps as shown on drawings.
10. 12 wheelchair spaces placed within rows 1 and 2.
11. Provide all aluminum edge trim for exposed aluminum ends.
12. Seats approx. 750 net seats.

1.3 QUALITY ASSURANCE

A. The grandstand system shown is a Delegated Design and final layout based on Bleacher Manufacturer’s Engineer of Record. The layout shown shall serve as the basis of design, with the final layout and system engineering by EOR and subject to approval with the Owner.

B. The bleacher system shall be engineered by the manufacturer to meet the specific requirements of this project, as well as all applicable codes and regulations.

C. Delegated-Design Submittal: Submit engineering calculations for Architects review to comply with performance requirements and design criteria, including analysis data and shop drawings signed and sealed by the qualified professional engineer responsible for their preparation registered in the State of Michigan.

D. Delegated-Design for Concrete Foundation: Comply with Section 03 3000 “Cast-in-Place Concrete”.

E. The system shall be designed by a registered professional Engineer for the State of Michigan and shall be certified by the manufacturer.

F. All components shall be provided by one manufacturer and shall be specifically designed for the use required of them.

G. Manufacturer Qualifications: Shall specialize in spectator seating with a minimum 10 years experience in design, manufacturing and installation of bleacher seating. Manufacturer shall have a local representative within a 200 mile radius to insure proper quality control during construction. Welders must be AWS certified. Bleacher shall be designed under the supervision of a registered Professional Engineer.

H. The grandstand shall be designed, fabricated and erected by the same manufacturer/supplier. The

manufacturer/supplier shall have at least five continuous years of experience in the manufacture and erection of similar systems installed within the State of Michigan and shall be AISC Certified.

I. The proposal shall include a listing of sub-contractors, major material supplier, and standards and specifications for materials to be used.

J. Underground Utility Line: Owner to clearly make all underground utilities and obstructions and Owner to relocate all that conflict with grandstand.

K. Soil Test: Refer to Project Manual

1.4 QUALIFICATIONS OF WORKMAN

A. Provide at least one person who shall be thoroughly trained and experienced in the skills required, who shall be completely familiar with the design and application of work described for this Section, and who shall be present at all times during progress of the work of this Section and shall direct all work performed under this Section.

B. For actual construction of the specified items, use only personnel who are thoroughly trained and experienced in the skills required.

1.6 SUBMITTALS

A. Manufacturer's Product Data: Submit manufacturer's descriptive data for project.

B. Shop Drawings: Manufacturer to submit shop drawings sealed by a registered professional engineer and schedules for type, location, quantity, and details of steel and aluminum components required for the project.

C. Product Samples: Provide color charts and any physical samples necessary in order to aide the Owner is selecting colors using standard manufacturer colors.

1.7 DESIGN CRITERIA AND CERTIFICATION

A. The grandstands shall, in general, be designed in accordance with all applicable provisions of the State of Michigan. The structural design shall be in accordance with accepted engineering principles and shall comply with the requirements given in;

1. Michigan Building Code 2003
2. American Institute of Steel Construction Design Manual
3. American Concrete Institute Building Code for Reinforced Concrete
4. American's with Disabilities Act (for wheelchair accessibility)

B. The Contractor shall assume complete design responsibility for the work specified herein. He shall furnish drawings bearing the seal of a Registered Professional Engineer to the Construction Manager.

1. Use a flexible design wherever possible.

C. Foundation design shall be based on the soil data provided in this document. Bearing capacity shall be a min. 2000 psi or per soil boring report. Foundation type to be an engineered slab or trench footings at a minimum depth of 42 inches below grade, as determined by manufacturer's Engineer.

D. Design Loads:

1. Dead Load	-	6 lbs per S.F (seat and boards, risers, steel frame, etc.)
2. Live Load	-	100 lbs per S.F (to structural member)
	-	120 lbs per L.F. (seat and footboards)
3. Wind	-	30 lbs per S.F. (ANSI A58.1) (on project surface)
4. Sway	-	24 lbs per L.F. (parallel per ft. of seat parallel to seat run)
	-	10 lbs per L.F. (perpendicular per ft. of seat)

1.8 WARRANTY

A. Permanent Grandstand shall be under warranty for a period of one year beginning the date of Substantial Completion for Projects installed by Manufacturer. The Grandstand is to be warranted free from defects in materials and workmanship in the course of manufacturer. This warranty excludes any other defects resulting from abnormal use in service, accidental or intentional damage or any occurrences beyond manufacturer's control.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Grandstands shall be from one of the following manufacturers:

1.	Dant-Clayton 1500 Bernheim Lane Louisville, KY 40210	2.	E&D Specialty Stands, Inc. P.O. Box 700 North Collins, NY 14111
3.	Southern Bleacher Co., Inc. P.O. Box One Graham, TX 76046	4.	Sturdi-Steel P.O. Box 2655 Waco, TX 76702
5.	GT Grandstands 2810 Sydney Road Plant City, FL 33566		

B. Bids from manufacturers other than companies listed will not be considered unless written approval is obtained a minimum of 10 days prior to date of bid receipt and must conform to requirements listed in specifications.

C. Product Description: Horizontal Beam Design
1. Horizontal Beam Design: Gross Seating capacity of 354 with, 5 rows, and 129'-3" feet, long.
2. Press Box: 8' x 30', with 6' side access landings.
3. Schematic layout of vertical columns are placed at 6' – 0" on center laterally and ±18'-0" on center front to back through primary seating section and ±8'-0" to the pressbox support column.
    a. Grandstand design shall employ horizontal bracing where deemed necessary by

bleacher manufacturer's structural engineer.

4. Stringers are wide flange with steel angle rise and depth fabrication and are placed 6 feet on center. Exception where the secondary gutters are installed.
5. Front Walkway:
   a. Clear width 59" inches.
   b. Elevated 3.5' feet above grade at benchmark.
6. Entry stairs to be firmly anchored to uniformly poured concrete bases.
   a. Stair rise: - 7" inches per Michigan Building Code with aluminum closure.
   b. Stair tread depth: - 12 inches per Michigan Building Code.
   c. Guardrails on Stair to be 42" inches above leading edge of step with intermediate rail spacing at 34" inches.
   d. Stairs to have handrail extension. The handgrip portion of handrails shall not be less than 1-1/2 inches or more than 2 inches in cross-sectional dimension or the shape shall provide an equivalent gripping surface. The handgrip portion of handrails shall have a smooth surface with no sharp corner. The top of handrails and handrail extensions shall be placed not less than 34 inches or more than 38 inches above the nosing of treads and landings. Handrails shall be continuous the full length of the stairs and shall extend in the direction of the stair run not less than 12 inches beyond the bottom riser. Ends shall be returned or shall terminate in newel posts or safety terminals.
7. Aisles:
   a. Aisles with seating on both sides to have 34-inch high handrail with intermediate rail at approximately 22 inches above tread.
   b. Anodized aluminum handrails with rounded ends are discontinuous to allow access to seating through a space 22 inches (min.) to 36 inches (max.).
   c. Half-steps shall provide equal rise and run throughout aisle. Each shall have aisle nosing with black powder coat finish and riser closure with clear anodized finish. If colored riser is specified for seating area, the aisle nose and riser closure shall be of same finish.
8. Closed Deck System:
   a. Rise per row 13 inches, depth per row 26 inches.
   b. Each seat 17 inches above its respective tread.
   c. Riser planks shall include manufacturer approved color coated finish. Color to be selected by Owner from manufacturer standard colors.
9. Guardrailing: To be at all sides of bleacher, entry stairs and ramps, portals, and landings. Railing to be anodized aluminum with end plugs at ends of straight runs and/or elbows at corner. All guardrails shall be secured to angle rail risers by galvanized fasteners. Railing shall be 42" above walkways and entrances. Railing shall be 42" above any adjacent seat. Guardrailing on sides and back shall include 9 gauge black vinyl chain link fencing fastened in place with galvanized fasteners and aluminum ties.
10. Ramps:
    a. Slope: 1 in 12.
    b. Guardrail to be 42 inches above ramp with 9 gauge black vinyl chainlink fence and 2 x 6 toeboard.
    c. Handrail: Ramps to have handrail extension. The handgrip portion of handrails shall not be less than 1 1/2 inches or more than 2 inches in cross-sectional dimension or the shape shall provide an equivalent gripping surface. The handgrip portion of handrails shall have a smooth surface with no sharp corners. The top of handrails and handrail extensions shall be placed not less than 34 inches or more than 38 inches above the ramp surface. Handrails shall be continuous the full length of the ramp and shall extend in the direction of the ramp not less than 12 inches beyond the end of the ramp. Ends shall be returned or shall

terminate in newel posts or safety terminals.

11. Handicap provision:
    a. Quantity of wheelchair spaces: Twelve (12)
    b. Riser area adjacent to wheelchair spaces to have intermediate construction so 4-inch sphere cannot pass through opening.
12. Materials/Finishes:
    a. Substructures:
        i. Structural shapes meet one of the following ASTM specifications: A36, A36/A572 grade 50, A572 grade 50, A529-50, or A500 grade B.
        ii. Shop connections are seal welds.
        iii. After fabrication, all steel is hot-dipped galvanized to ASTM-A-123 specifications.
        iv. Painted steel finish is unacceptable.
    b. Extruded Aluminum:
        i. Seat Planks, Stanchions, Riser Planks, and Railing are extruded aluminum alloy, 6063-T6 with clear anodized 204R1, AA-M10C22A31, Class II finish
        ii. Tread planks are extruded aluminum alloy 6063-T6 mill finish
        iii. Railing: Extruded aluminum alloy, 6063-T6 clear anodized 204R1, AA-M10C22A31, Class II.
    c. Accessories:
        i. Channel End Caps: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II. Polyethylene end cap is unacceptable.
        ii. Cast End Caps: Aluminum 319 alloy, cast finish. (Required for back rest and RS plank only)
        iii. Hardware:
            (1) Bolts, Nuts: Hot-dipped galvanized or mechanically galvanized.
            (2) Hold-down Clip Assembly: Aluminum alloy 6005A-T6, mill finish.
            (3) Structural Hardware: Equal to or greater than hot-dipped galvanized ASTM-A307. No connections utilizing high strength bolts are classed as slip critical.
        iv. Aisle Nose and Stair Nose: Aluminum alloy, 6063-T6, non-skid black powder coat finish.

2.2 CAST-IN-PLACE CONCRETE FOUNDATION

A. All cast-in-place concrete work shall comply with the A.C.I. Building Code requirement for reinforced concrete and with the A.C.I. Manual of Concrete Practice latest edition. Cast-in-place concrete shall have a minimum ultimate compressive strength of 3000 psf at the end of 28 days.

2.3 STEEL SUPPORT STRUCTURE

A. Steel support structure shall be designed and certified by a registered Engineer.

B. All structural fabrication shall be with ASTM-A36 steel. All shop connection shall be seal welded. After fabrication, all steel shall be hot-dipped galvanized to ASTM-123 specifications.

C. Manufacturer to be AISC Certified.

2.4 ALUMINUM

A. All exposed aluminum components shall be 6063-T6 aluminum alloy, clear anodized 204 R1, AA-MIOC22A31 having a minimum thickness of 0.075 inches.

B. Seat planks shall be nominal 2" X 10" continuous extruded anodized 204 R1 aluminum with channels in underside for concealed bolt clips; grooved top surface.

C. Foot planks shall be nominal two (3) 2" X 8" aluminum, mill finish, with channels in underside for concealed bolt clips; grooved top surface.

D. Provide anodized channel end caps at all exposed plank ends.

E. Bolt clips shall be manufacturer's standard, 4-way adjustable with aluminum clips and galvanized steel bolt and nut.

F. Riser board shall be extruded anodized aluminum, 6063-T6 alloy, with powder-coated colored finish. Color to be selected by Owner from manufacturer’s standard colors. Nominal 2" x 10" riser plank shall be 1 7/8" x 9 1/2” actual dimension.riser board shall be nominal 1" x 10" under each seat.

2.5 GUARDRAILS

A. Shall be capable of 50 lbs. per lineal foot horizontal load and 100 lbs. lineal foot vertical load.

B. Side, back and front guardrailing shall be 9 gauge chain link fencing with top and bottom rail. All fence fabric shall be 2" black vinyl mesh, 42” high.

C. Guardrails shall be of 1 5/8", 6061-T6 alloy, anodized aluminum pipe. Joints shall be made with fittings. Plug open ends with flush fitting closures.

PART 3 - EXECUTION

3.1 INSPECTION

A. Prior to installation, examine the site conditions to verify that on-site preparation work has been completed.

B. Verify soil bearing pressure per Soils Report and correct if required. Grandstand footings to be placed on virgin soils.

3.2 INSTALLATION

A. Install the grandstand bleacher in accordance with the manufacturer's written procedures.

B. Sonotube forms are to be stripped immediately after concrete has set. Concrete is to be finished by rubbing and parging any voids.

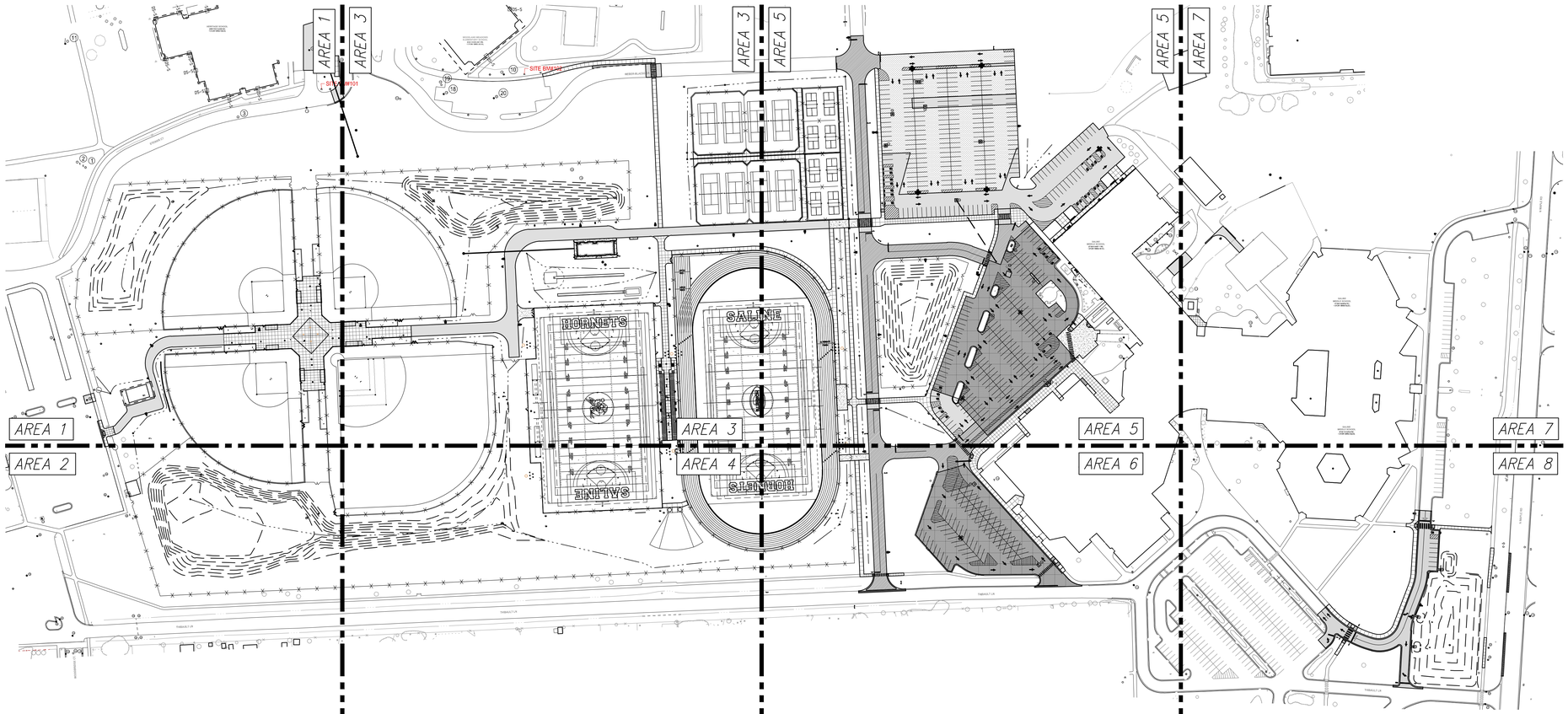
C. Protect all adjacent work and restore or replace any adjacent work removed or damaged by the grandstand construction.

D. Prior to final acceptance, Bleacher Contractor shall be responsible to clean or replace foot planks that become stained or oxidized.

E. On completion of all work contractor shall clean up and restore the site, removal of all shavings, dirt, debris, construction materials i.e. nuts, bolts etc.

F. Clean up and restore the site upon completion.

END OF SECTION 133520



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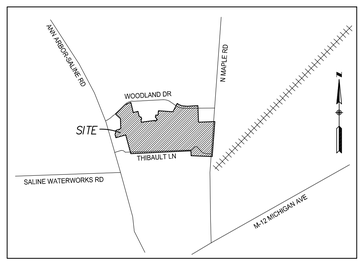
(IN FEET)
1 inch = 100 ft.



LOCATION MAP
NOT TO SCALE

OWNER

Saline Area Schools
7265 North Ann Arbor St
Saline, MI 48176
Phone: (734) 401-4003

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KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS
7190 N. Maple Rd. Saline, MI 48176

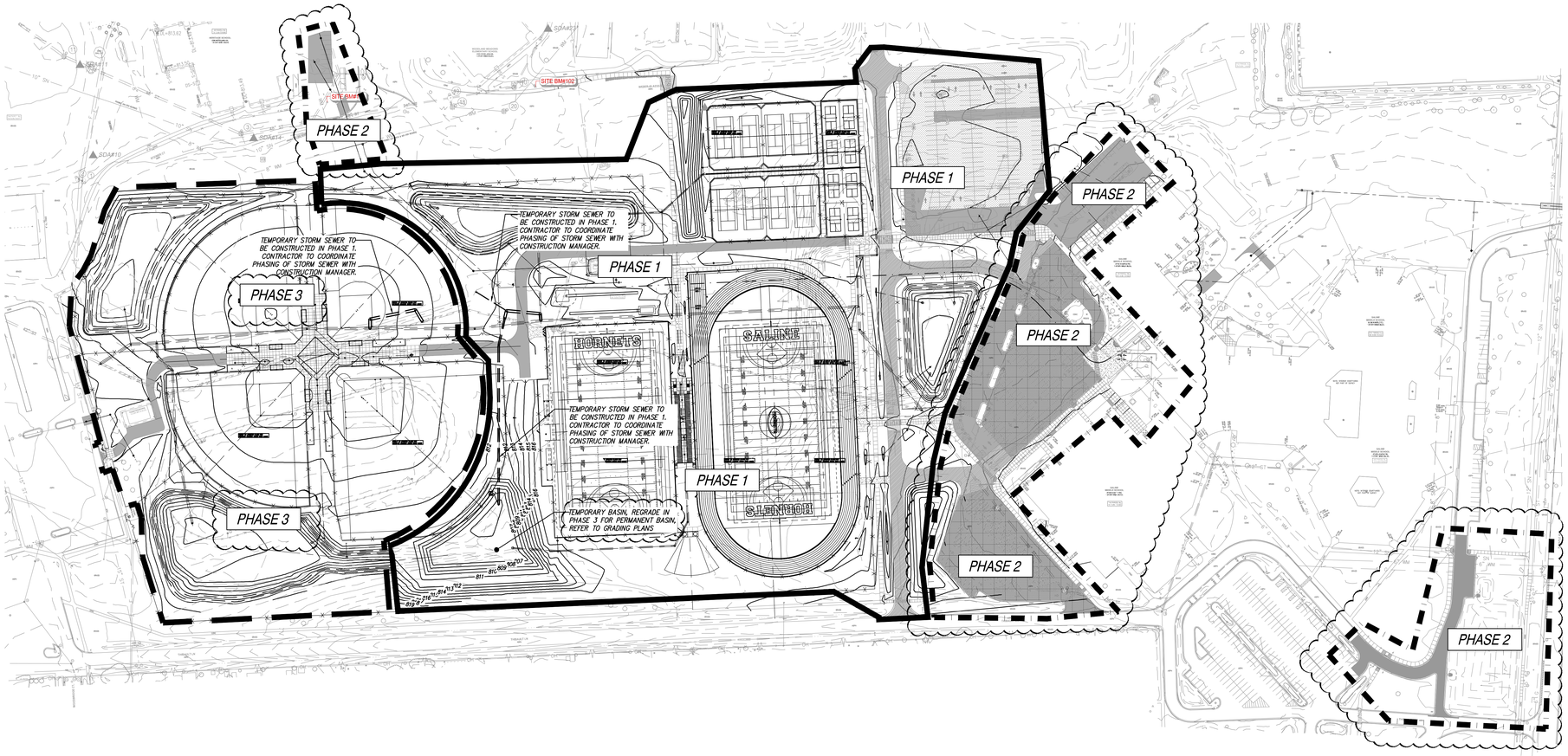
REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
DESIGN DEVELOPMENT	08/22/2024
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE
General Plan

SHEET NO.
C1.0



GRAPHIC SCALE
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(IN FEET)
1 inch = 100 ft.

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

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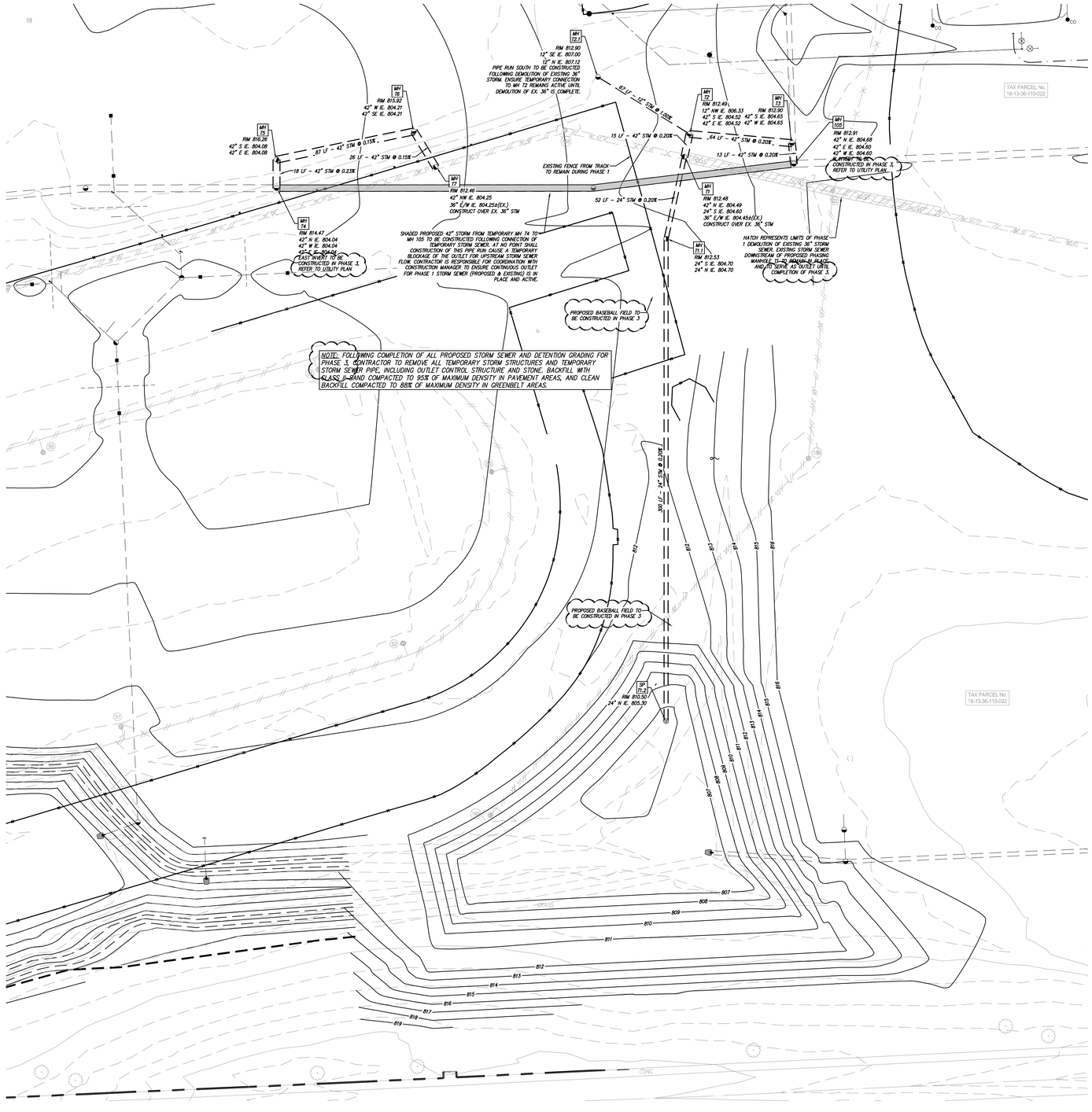
SHEET TITLE
Phasing Plan (1 of 2)

SHEET NO.
C1.1



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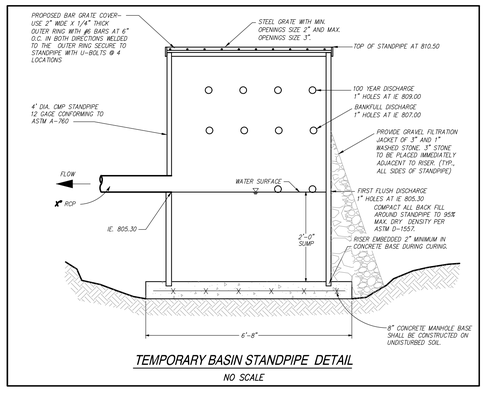

TEMPORARY BASIN STANDPIPE DETAIL
NO SCALE

NO SCALE

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STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
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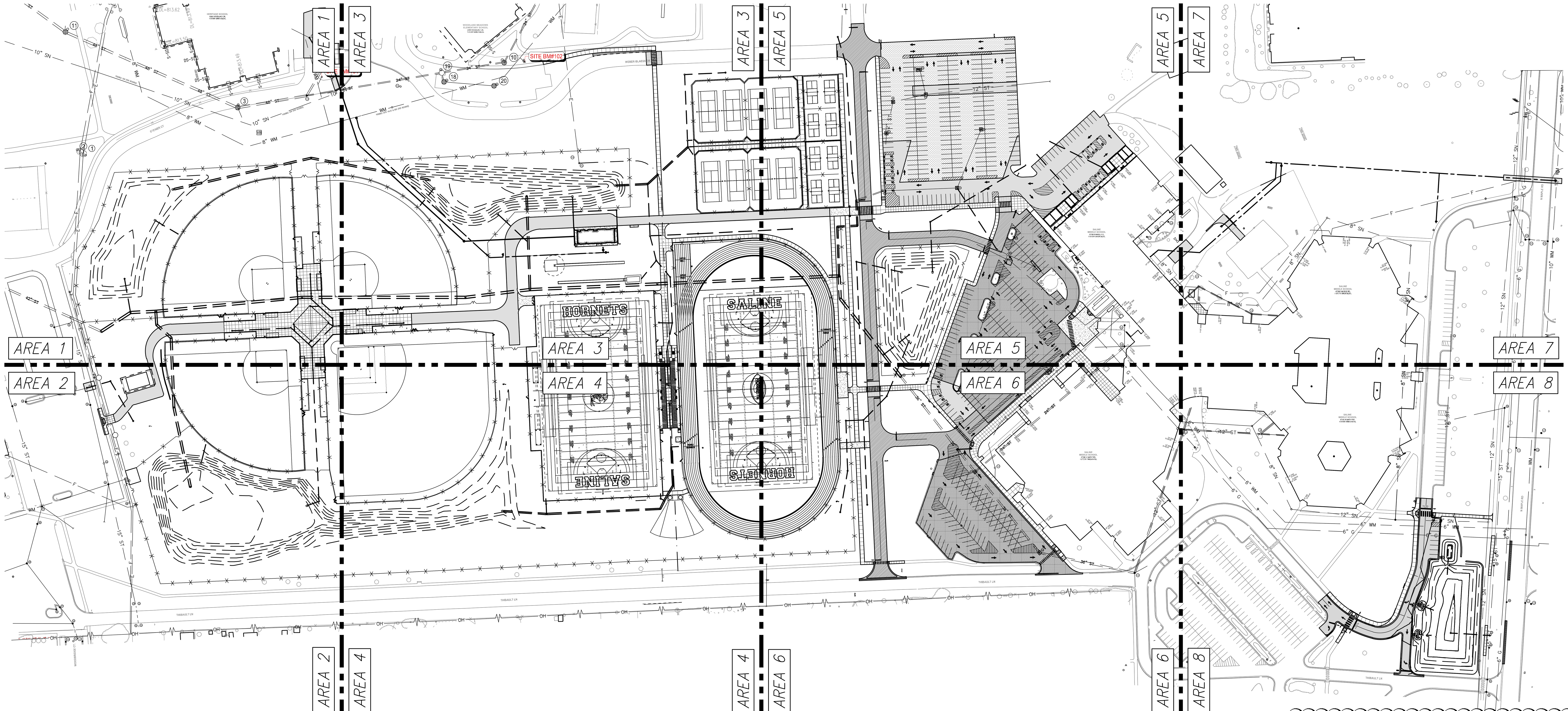
JOB NO. **2900-09A**

SHEET TITLE
Phasing Plan (2 of 2)

SHEET NO.
C1.2



GRAPHIC SCALE

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(IN FEET)
1 inch = 100 ft.

OVERALL DRAINAGE NARRATIVE

THIS PROJECT IS A MULTI-PHASE RECREATIONAL COMPLEX DEVELOPMENT FOR SALINE AREA SCHOOLS. IT INCLUDES BASEBALL FIELDS, SYNTHETIC TURF MULTI-PURPOSE ATHLETIC FIELDS, TENNIS COURTS, AND PAVEMENT IMPROVEMENTS. THIS PROJECT ALSO INCLUDES THE "MIDDLE SCHOOL CONNECTOR DRIVE (WRC REVIEW #9739)" PARKING LOT REDEVELOPMENT LOCATED AT THE SOUTHEAST CORNER OF THE SITE ALONG NORTH MAPLE ROAD. ALL PROPOSED WORK FALLS WITHIN A DISTURBED AREA OF 32.58 ACRES.

WITHIN THE PROPOSED DISTURBED AREA, STORMWATER RUNOFF IS INTENDED TO ENTER THE DETENTION BASINS VIA OVERLAND FLOW, VARIOUS LOW POINT STRUCTURES WHERE IT WILL FLOW UNDERGROUND THROUGH STORM PIPES. ADDITIONALLY, EACH SPORTS FIELD WILL INCLUDE AN UNDERDRAIN SYSTEM THAT WILL BE DIRECTED TO THE APPROPRIATE BASIN FOR THE DRAINAGE AREA THAT SERVES THAT PORTION OF THE FIELD.

STORMWATER OUTLET WILL BE MANAGED WITH A 3-STAGE OUTLET CONTROL STRUCTURE AT EACH DETENTION BASIN. ORIFICES WILL BE DESIGNED AT THE FIRST FLUSH, BANKFULL, AND 100 YEAR STORAGE ELEVATIONS. ADDITIONALLY, THE TOP OF THE STRUCTURE WILL INCLUDE AN OVERFLOW OUTLET GRATE AND THE STORM PIPE CONNECTING THE OUTLET CONTROL STRUCTURE TO THE ULTIMATE OUTLET LOCATION (42" PIPE RUNNING EAST/WEST) WILL BE DESIGNED TO ACCOMMODATE THE 10 YEAR FLOW OF THE ENTIRE DRAINAGE AREA THE SUBJECT BASIN SERVICES PLUS ANY OFFSITE DRAINAGE AREA AS OUTLINED BELOW.

ANY OFFSITE RUNOFF THAT FLOWS INTO THE PROPOSED DISTURBED AREA WILL BE ACCOMMODATED ON THE BASIS THAT IT IS INTENDED TO FLOW THROUGH THE SITE. ADDITIONAL DETENTION IS NOT PROVIDED FOR OFFSITE FLOW BUT ONSITE STORM INFRASTRUCTURE WILL BE DESIGNED TO ACCOMMODATE THE ADDITIONAL FLOW AS NECESSARY. AN EXCEPTION IS THAT ADDITIONAL TREATMENT VOLUME IS PROVIDED IN BASIN C TO TREAT THE AREA THIBAULT LANE SHOWN ON THE DRAINAGE AREA MAP.

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

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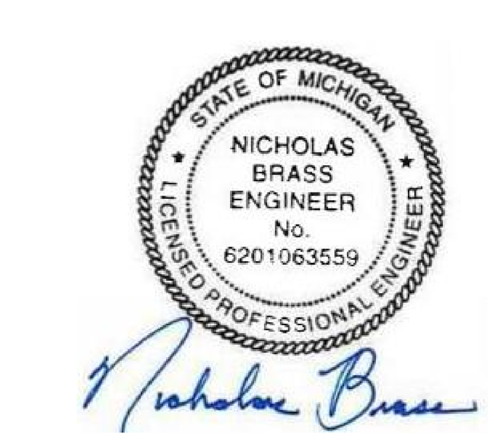


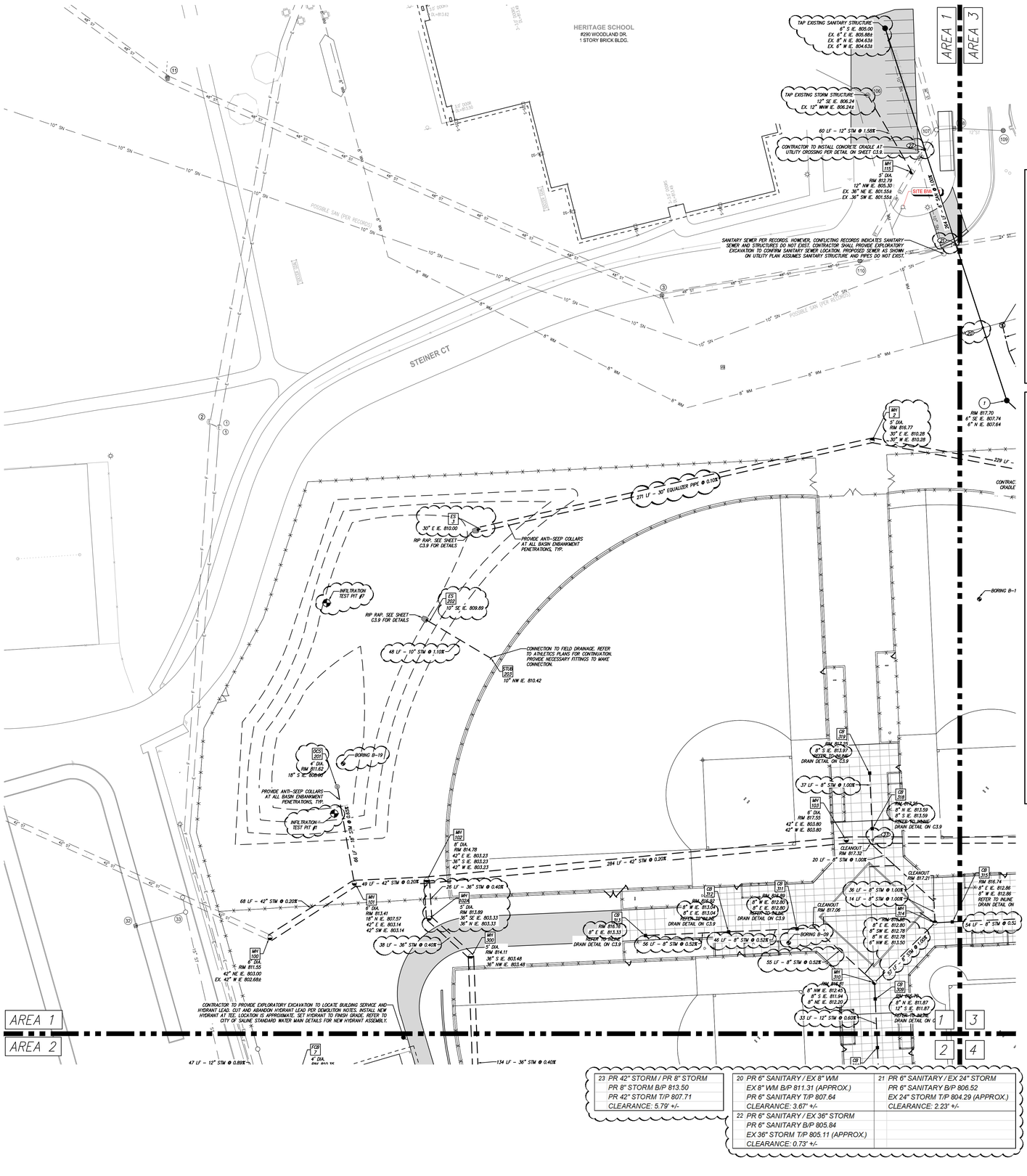
JOB NO. 2900-09A

SHEET TITLE

General Utility Plan

SHEET NO.

C3.0



LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 XXX — STRUCT. NO. / STRUCT. TYPE

UTILITY NOTES

1. STORM SEWER 12" AND LARGER SHALL BE C76 CL IV (PREM.PT.) UNLESS OTHERWISE NOTED ON THE PLAN.
2. STORM SEWER 6" AND SMALLER SHALL BE PVC SDR 23.5. STORM SEWER GREATER THAN 6" THROUGH 10" SHALL BE PVC SDR 26 UNLESS OTHERWISE NOTED ON PLANS.
3. SANITARY SEWER AND LEADS SHALL BE SOLID WALL, PVC, SDR 23.5.
4. WATER MAIN SHALL BE PVC C900 DR-14. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
5. WHERE NOTED ON PLAN (STORAGE BUILDING LEAD), WATER MAIN SHALL BE CLASS 54 DUCTILE IRON. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
6. WATER MAIN SHALL INCLUDE #12AWG COPPER WIRE TRACER WIRE.
7. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO DISCONNECTION OF EXISTING WATER SERVICE LEAD. THE EXISTING VALVE BOX SHALL BE REMOVED AND EXISTING TEE SHALL BE CAPPED.
8. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO TAPPING EXISTING WATER MAIN.
9. ALL UTILITY TRENCHES THAT FALL WITHIN A 1–ON–1 INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY.
10. ALL WATER MAIN SHALL BE BURIED WITH 5.5' OF COVER FROM PROPOSED GRADES. USE 22.5° BENDS TO LOWER WATER MAIN WHERE NOTED AT UTILITY CROSSING.
11. WHERE HYDRANTS ARE INDICATED ON THE PLAN, COMPLETE HYDRANT ASSEMBLIES ARE REQUIRED, INCLUDING SHUT-OFF VALVE AND BOX (REFER TO THE STANDARD DETAIL SHEET FOR DETAILED REQUIREMENTS) THE ELEVATION OF THE VALVE BOX SHALL BE EQUAL TO THE FINISH GRADE (FG) ELEVATION OF THE HYDRANT UNLESS OTHERWISE NOTED.
12. STORM SEWER SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE WASHTENAW COUNTY. WATER MAIN AND SANITARY SEWER SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF CITY OF SALINE.
13. ALL UTILITIES SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
14. ALL HYDRANTS MUST BE AT LEAST 5' FROM THE BACK OF CURB OR EDGE OF PAVEMENT.
15. ALL UTILITIES SHALL BE PLACED AT LEAST 10' FROM OTHER UTILITIES, SIGNIFICANT TREES, AND FIXED STRUCTURES.
16. UNLESS OTHERWISE NOTED, ALL STORM SEWER STRUCTURES SHALL BE 4' DIAMETER (INLETS SHALL BE 2' DIAMETER). CONTRACTOR IS RESPONSIBLE FOR VERIFYING STRUCTURES SIZES IN RELATION TO PIPE SIZES AND ANGLES AND PRICING THEIR BID ACCORDINGLY. UNLESS OTHERWISE INDICATED ON THE STANDARD DETAIL SHEETS CASTINGS SHALL BE:
    PVMT. CATCH BASINS (WALKING SPACES) – EJW 5105 – "M3" – ADA ACCESSIBLE
    PVMT. CATCH BASINS (DRIVEWAYS) – EJW 5105 – "M1" (FRAMES WITH CURB BOXES WILL NOT BE ALLOWED)
    YARD CATCH BASINS – EJW 1040 – "02"
    MANHOLES – EJW 1040 – "A"
17. PLACEMENT OF EDGE DRAINS AND FINGER DRAINS AT ALL PAVEMENT CATCH BASINS IS REQUIRED. SEE STRUCTURE UNDERDRAIN DETAIL SHEET C3.9.
18. FOR CURB CATCH BASINS, SEE BASIN LOCATION DETAIL ON SHEET C3.9 FOR BASIN STAKING RELATIVE TO THE CURB.
19. SANITARY MANHOLE COVERS SHALL BE LABELED "SANITARY SEWER" ONLY. REFER TO STANDARD DETAIL SHEET FOR REQUIRED TEXT OF UTILITY CASTINGS.
20. SEE SHEET C9.4 FOR CITY OF SALINE SANITARY SEWER NOTES.
21. LOCATIONS OF LIGHT POLES, IF SHOWN ON THESE DRAWINGS, MAY BE APPROXIMATE. CONFIRM EXACT LOCATION (I.E. CURB OFFSETS, SIDEWALK OFFSETS, ETC.) PRIOR TO STAKING AND CONSTRUCTION. REFER TO SITE ELECTRICAL PLAN FOR DETAILS, AND COORDINATE WITH ELECTRICAL ENGINEER, ARCHITECT, AND CIVIL ENGINEER TO DETERMINE PROPER PLACEMENT.

RIM ADJUSTMENT NOTE:
REMOVE EXISTING CASTING, COVER AND ADJUSTMENT MATERIALS FROM DRAINAGE STRUCTURE. SALVAGE CASTING AND COVER FOR REINSTALLATION AND PROVIDE NEW ADJUSTMENT (BRICK/BLOCK/RINGS, REINSTALL ACCORDING TO STANDARD DETAILS (IF INCLUDED). PROTECT EXISTING UTILITY STRUCTURE TO REMAIN.

FIBER NOTE:
CONTRACTOR TO REFER TO FIBER PLANS FOR PROPOSED FIBER WORK AND ROUTING.

23 PR 42" STORM / PR 8" STORM	20 PR 6" SANITARY / EX 8" WM	21 PR 6" SANITARY / EX 24" STORM
PR 8" STORM B/P 813.50	EX 8" WM B/P 811.31 (APPROX.)	PR 6" SANITARY B/P 806.52
PR 42" STORM T/P 807.71	PR 6" SANITARY T/P 807.64	EX 24" STORM T/P 804.29 (APPROX.)
CLEARANCE: 5.79' +/-	CLEARANCE: 3.67' +/-	CLEARANCE: 2.23' +/-
	22 PR 6" SANITARY / EX 36" STORM	
	PR 6" SANITARY B/P 805.84	
	EX 36" STORM T/P 805.11 (APPROX.)	
	CLEARANCE: 0.73' +/-	

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

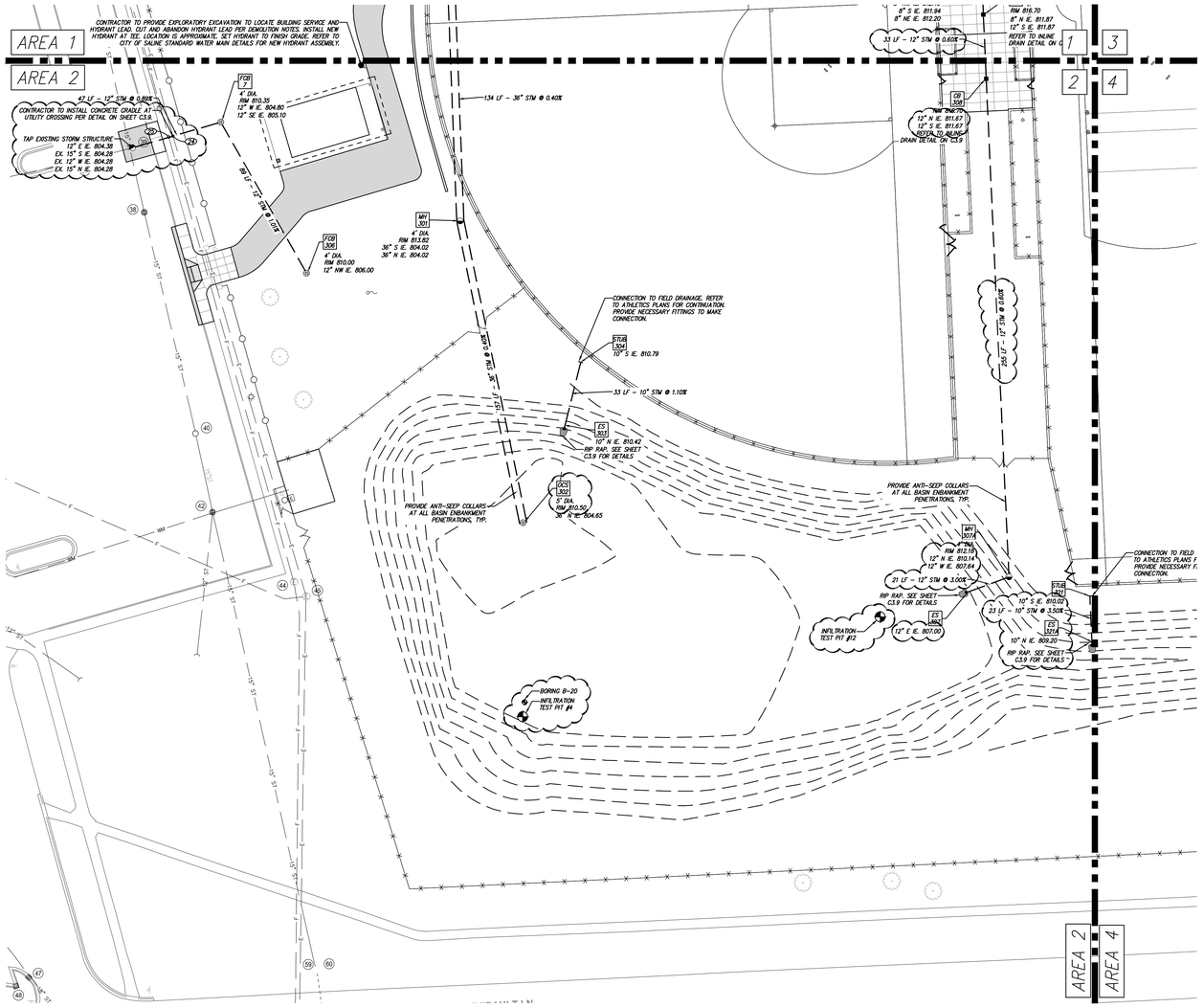
REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
DESIGN DEVELOPMENT	08/22/2024
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE
Utility Plan - (Area 1)

SHEET NO.
C3.1



LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 – STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 XXX – STRUCT. NO. / STRUCT. TYPE

UTILITY NOTES

1. STORM SEWER 12" AND LARGER SHALL BE C76 CL IV (PREM.JT.) UNLESS OTHERWISE NOTED ON THE PLAN.
2. STORM SEWER 6" AND SMALLER SHALL BE PVC SDR 23.5. STORM SEWER GREATER THAN 6" THROUGH 10" SHALL BE PVC SDR 26 UNLESS OTHERWISE NOTED ON PLANS.
3. SANITARY SEWER AND LEADS SHALL BE SOLID WALL, PVC, SDR 23.5.
4. WATER MAIN SHALL BE PVC C900 DR-14. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
5. WHERE NOTED ON PLAN (STORAGE BUILDING LEAD), WATER MAIN SHALL BE CLASS 54 DUCTILE IRON. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
6. WATER MAIN SHALL INCLUDE #12AWG COPPER WIRE TRACER WIRE.
7. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO DISCONNECTION OF EXISTING WATER SERVICE LEAD. THE EXISTING VALVE BOX SHALL BE REMOVED AND EXISTING TEE SHALL BE CAPPED.
8. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO TAPPING EXISTING WATER MAIN.
9. ALL UTILITY TRENCHES THAT FALL WITHIN A 1-ON-1 INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY.
10. ALL WATER MAIN SHALL BE BURIED WITH 5.5' OF COVER FROM PROPOSED GRADES. USE 22.5° BENDS TO LOWER WATER MAIN WHERE NOTED AT UTILITY CROSSING.
11. WHERE HYDRANTS ARE INDICATED ON THE PLAN, COMPLETE HYDRANT ASSEMBLIES ARE REQUIRED, INCLUDING SHUT-OFF VALVE AND BOX (REFER TO THE STANDARD DETAIL SHEET FOR DETAILED REQUIREMENTS) THE ELEVATION OF THE VALVE BOX SHALL BE EQUAL TO THE FINISH GRADE (FG) ELEVATION OF THE HYDRANT UNLESS OTHERWISE NOTED.
12. STORM SEWER SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE WASHTENAW COUNTY. WATER MAIN AND SANITARY SEWER SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF CITY OF SALINE.
13. ALL UTILITIES SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
14. ALL HYDRANTS MUST BE AT LEAST 5' FROM THE BACK OF CURB OR EDGE OF PAVEMENT.
15. ALL UTILITIES SHALL BE PLACED AT LEAST 10' FROM OTHER UTILITIES, SIGNIFICANT TREES, AND FIXED STRUCTURES.
16. UNLESS OTHERWISE NOTED, ALL STORM SEWER STRUCTURES SHALL BE 4' DIAMETER (INLETS SHALL BE 2' DIAMETER). CONTRACTOR IS RESPONSIBLE FOR VERIFYING STRUCTURES SIZES IN RELATION TO PIPE SIZES AND ANGLES AND PRICING THEIR BID ACCORDINGLY. UNLESS OTHERWISE INDICATED ON THE STANDARD DETAIL SHEETS CASTINGS SHALL BE:
PVMT. CATCH BASINS (WALKING SPACES) – EJIW 5105 – "M1" – ADA ACCESSIBLE
PVMT. CATCH BASINS (DRIVEWAYS) – EJIW 5105 – "M1" (FRAMES WITH CURB BOXES WILL NOT BE ALLOWED)
YARD CATCH BASINS – EJIW 1040 – "12"
MANHOLES – EJIW 1040 – "A"
17. PLACEMENT OF EDGE DRAINS AND FINGER DRAINS AT ALL PAVEMENT CATCH BASINS IS REQUIRED. SEE STRUCTURE UNDERDRAIN DETAIL SHEET C3.9.
18. FOR CURB CATCH BASINS, SEE BASIN LOCATION DETAIL ON SHEET C3.9 FOR BASIN STAKING RELATIVE TO THE CURB.
19. SANITARY MANHOLE COVERS SHALL BE LABELED "SANITARY SEWER" ONLY. REFER TO STANDARD DETAIL SHEET FOR REQUIRED TEXT OF UTILITY CASTINGS.
20. SEE SHEET C9.4 FOR CITY OF SALINE SANITARY SEWER NOTES.
21. LOCATIONS OF LIGHT POLES, IF SHOWN ON THESE DRAWINGS, MAY BE APPROXIMATE. CONFIRM EXACT LOCATION (I.E. CURB OFFSETS, SIDEWALK OFFSETS, ETC.) PRIOR TO STAKING AND CONSTRUCTION. REFER TO SITE ELECTRICAL PLAN FOR DETAILS, AND COORDINATE WITH ELECTRICAL ENGINEER, ARCHITECT, AND CIVIL ENGINEER TO DETERMINE PROPER PLACEMENT.

RIM ADJUSTMENT NOTE:

REMOVE EXISTING CASTING, COVER AND ADJUSTMENT MATERIALS FROM DRAINAGE STRUCTURE. SALVAGE CASTING AND COVER FOR REINSTALLATION AND PROVIDE NEW ADJUSTMENT BRICK/BLOCK/RINGS. REINSTALL ACCORDING TO STANDARD DETAILS (IF INCLUDED). PROTECT EXISTING UTILITY STRUCTURE TO REMAIN.

FIBER NOTE:

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24 PR 12" STORM / EX. ELECTRIC EX. ELEC. B/B 805.97 (APPROX.) PR 12" STORM T/P 805.74 CLEARANCE: 0.23' +/- Electrical duct bank depth based on 3' below grade and 2' thick.	25 PR 12" STORM / EX FIBER EX. FIBER B/P 807.23 (APPROX.) PR 12" STORM T/P 805.72 CLEARANCE: 1.51' +/- FIBER depth based on 3' below grade, in a 6" PVC pipe.

KINGSCOTT

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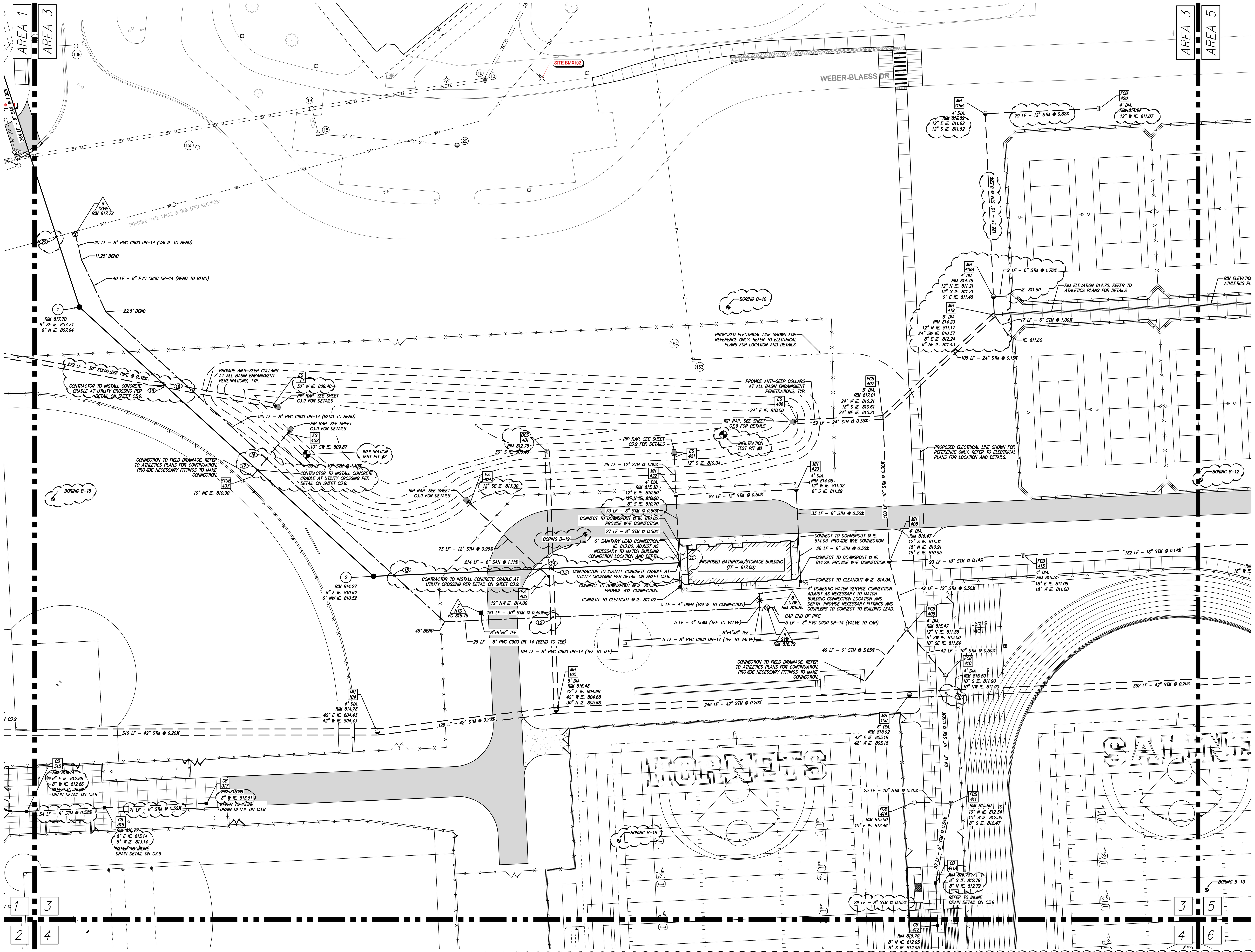
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE
Utility Plan - (Area 2)

SHEET NO.
C3.2



12	PR 8" WM / PR 30" STORM PR 8" WM B/P 809.57 PR 30" STORM T/P 808.76 CLEARANCE: 0.81' +/-
16	PR 8" WM / PR 10" STORM PR 10" STORM B/P 810.08 PR 8" WM T/P 807.14 CLEARANCE: 2.94' +/-
15	PR 8" WM / PR 6" SANITARY PR 6" SANITARY B/P 810.75 PR 8" WM T/P 807.14 CLEARANCE: 3.61' +/-
18	PR 8" WM / PR 30" STORM PR 30" STORM B/P 809.33 PR 8" WM T/P 807.14 CLEARANCE: 2.19' +/-
12	PR 30" STORM / PR 8" WM PR 8" WM B/P 809.57 PR 30" STORM T/P 808.76 CLEARANCE: 0.81' +/-
14	PR 12" STORM / PR 6" SANITARY PR 12" STORM B/P 813.78 PR 6" SANITARY T/P 812.43 CLEARANCE: 1.35' +/-
10	PR 42" STORM / PR 10" STORM PR 10" STORM B/P 811.94 PR 42" STORM T/P 809.10 CLEARANCE: 2.84' +/-
13	PR 30" STORM / PR 6" SANITARY PR 6" SANITARY B/P 811.98 PR 30" STORM T/P 808.91 CLEARANCE: 3.07' +/-
18	PR 30" STORM / PR 8" WM PR 30" STORM B.P 809.33 PR 8" WM T/P 807.14 CLEARANCE: 2.19' +/-
19	PR 30" STORM / PR 6" SANITARY PR 30" STORM B/P 809.41 PR 6" SANITARY T/P 809.06 CLEARANCE: 0.35' +/-
11	PR 6" SANITARY / PR 8" STORM PR 6" SANITARY B/P 812.97 PR 8" STORM T/P 811.89 CLEARANCE: 1.08' +/-
14	PR 6" SANITARY / PR 12" STORM PR 12" STORM B/P 813.78 PR 6" SANITARY T/P 812.43 CLEARANCE: 1.35' +/-
17	PR 6" SANITARY / PR 10" STORM PR 10" STORM B/P 810.19 PR 6" SANITARY T/P 809.94 CLEARANCE: 0.25' +/-
20	PR 6" SANITARY / EX 8" WM EX 8" WM B/P 811.31 (APPROX.) PR 6" SANITARY T/P 807.64 CLEARANCE: 3.67' +/-
13	PR 6" SANITARY / PR 30" STORM PR 6" SANITARY B/P 811.89 PR 30" STORM T/P 808.91 CLEARANCE: 3.07' +/-
15	PR 6" SANITARY / PR 8" WM PR 6" SANITARY B/P 810.75 PR 8" WM T/P 807.14 CLEARANCE: 3.61' +/-
19	PR 6" SANITARY / PR 30" STORM PR 30" STORM B/P 809.41 PR 6" SANITARY T/P 809.06 CLEARANCE: 0.35' +/-

GRAPHIC SCALE

0 15 30 60

(IN FEET)
1 inch = 30 ft.

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
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- BITUMINOUS PAVEMENT OVERLAY
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- CONCRETE SIDEWALK
- MILL PAVEMENT
- 2 — UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE, STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 XXX — STRUCT. NO., STRUCT. TYPE

UTILITY NOTES

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9. ALL UTILITY TRENCHES THAT FALL WITHIN A 1-ON-1 INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY.
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PVMT. CATCH BASINS (WALKING SPACES) – EJIW 5105 – "M3" – ADA ACCESSIBLE
PVMT. CATCH BASINS (DRIVEWAYS) – EJIW 5105 – "M1" (FRAMES WITH CURB BOXES WILL NOT BE ALLOWED)
YARD CATCH BASINS – EJIW 1040 – "02"
MANHOLES – EJIW 1040 – "A"
17. PLACEMENT OF EDGE DRAINS AND FINGER DRAINS AT ALL PAVEMENT CATCH BASINS IS REQUIRED. SEE STRUCTURE UNDERDRAIN DETAIL SHEET C3.9.
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19. SANITARY MANHOLE COVERS SHALL BE LABELED "SANITARY SEWER" ONLY. REFER TO STANDARD DETAIL SHEET FOR REQUIRED TEXT OF UTILITY CASTINGS.
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KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

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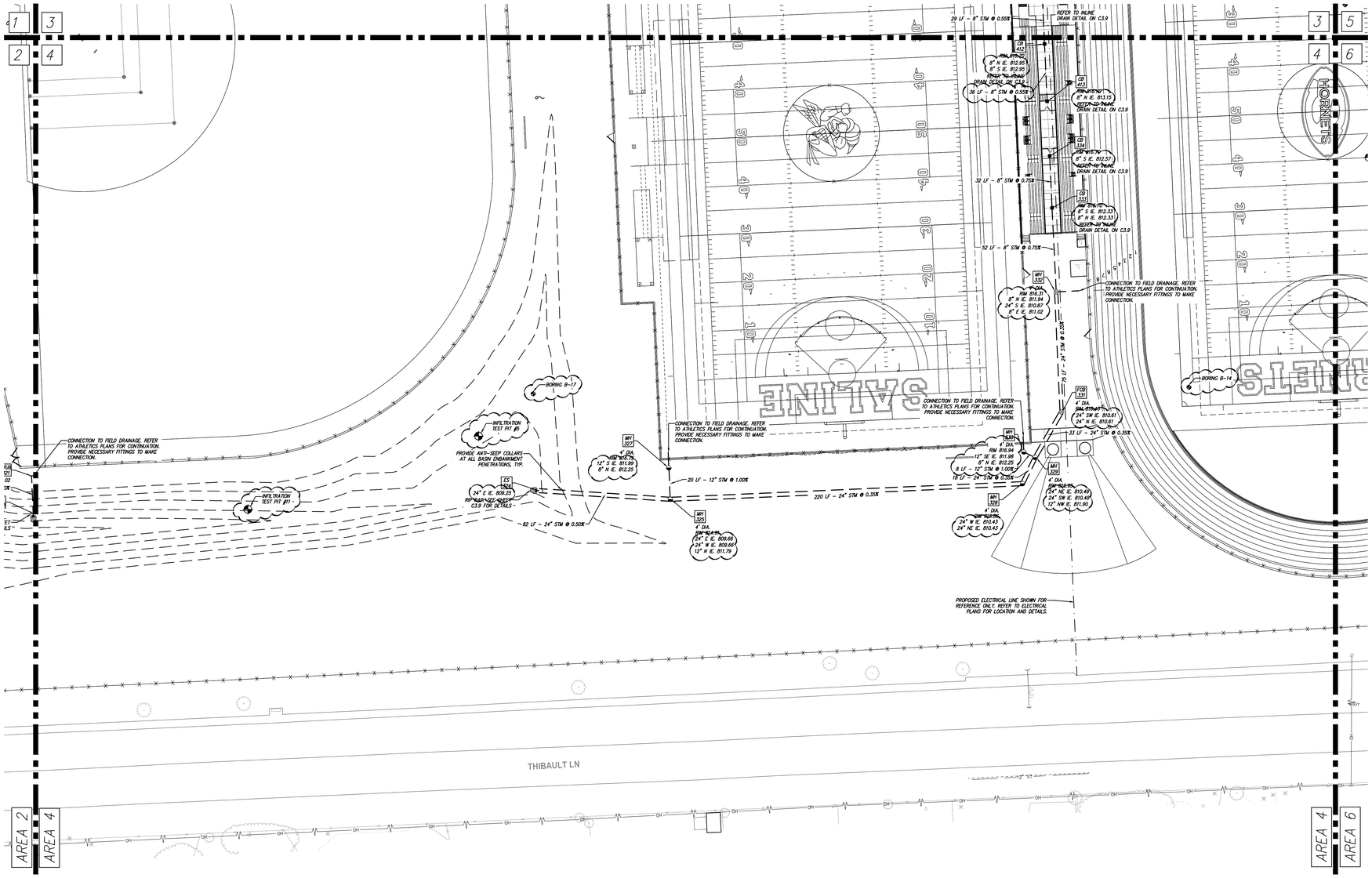
STATE OF MICHIGAN NICHOLAS BRASS ENGINEER No. 6201063559 LICENSED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE
Utility Plan - (Area 3)

SHEET NO.
C3.3



GRAPHIC SCALE

0 15 30 60

(IN FEET)

1 inch = 30 ft.

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
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- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
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- PROPOSED CATCH BASIN (CB)
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- PROPOSED FIELD CATCH BASIN (FCB) W/RECEIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
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- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 – STRUCT. TYPE, STRUCT. NO.
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    MANHOLES – EJIW 1040 – "A"
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20. SEE SHEET C9.4 FOR CITY OF SALINE SANITARY SEWER NOTES.
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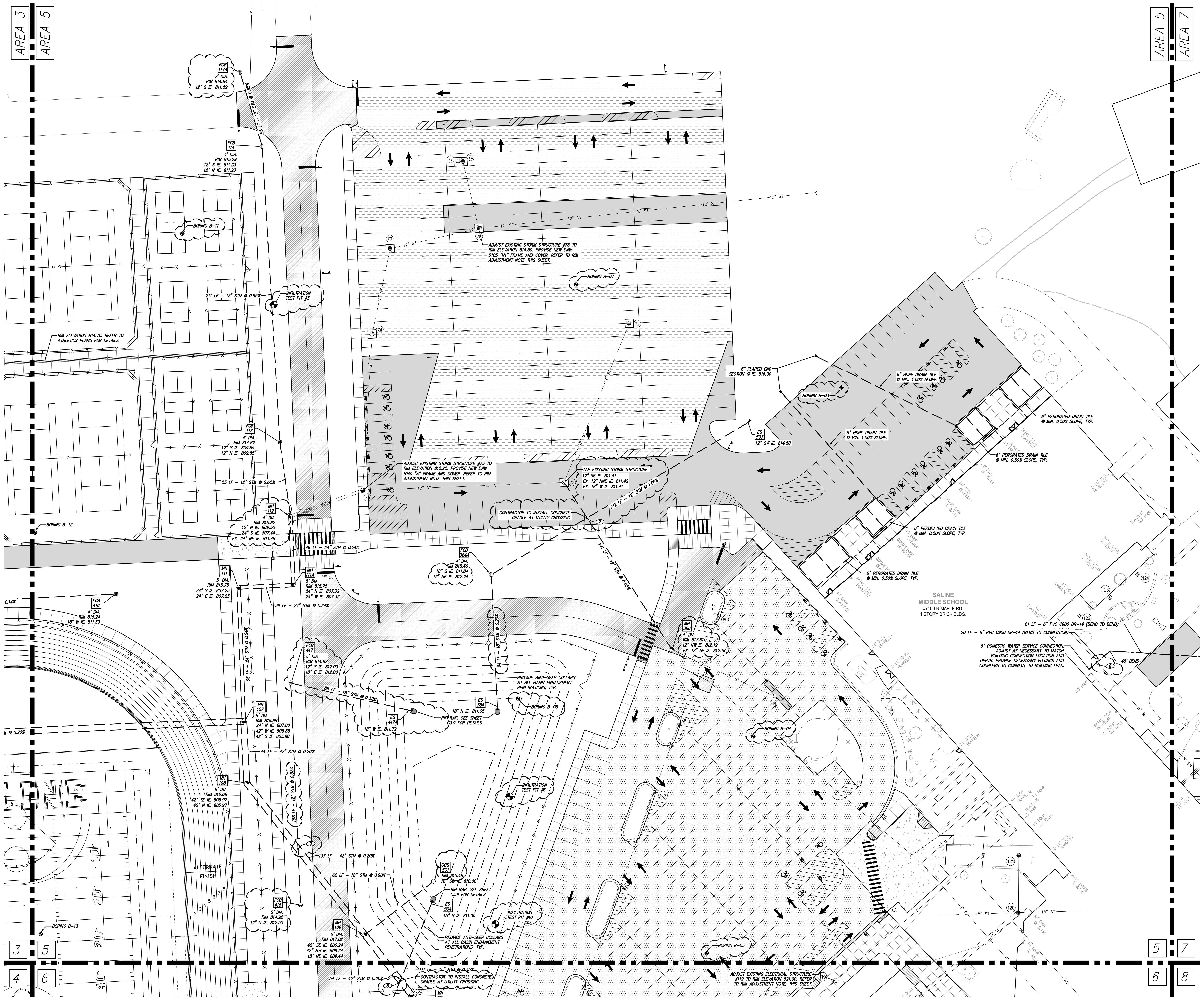
JOB NO. **2900-09A**

SHEET TITLE

Utility Plan - (Area 4)

SHEET NO.

C3.4



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0 15 30 60
(IN FEET)
1 inch = 30 ft.

LEGEND

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- PROPOSED SANITARY
- PROPOSED STORM SEWER
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- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- (2) UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: (20)
- WATERMAIN STRUCTURE: 10 XXX — STRUCT. NO. / STRUCT. TYPE

UTILITY NOTES

1. STORM SEWER 12" AND LARGER SHALL BE C76 CL IV (PREM.JT.) UNLESS OTHERWISE NOTED ON THE PLAN.
2. STORM SEWER 6" AND SMALLER SHALL BE PVC SDR 23.5. STORM SEWER GREATER THAN 6" THROUGH 10" SHALL BE PVC SDR 26 UNLESS OTHERWISE NOTED ON PLANS.
3. SANITARY SEWER AND LEADS SHALL BE SOLID WALL, PVC, SDR 23.5.
4. WATER MAIN SHALL BE PVC C900 DR-14. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
5. WHERE NOTED ON PLAN (STORAGE BUILDING LEAD), WATER MAIN SHALL BE CLASS 54 DUCTILE IRON. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
6. WATER MAIN SHALL INCLUDE #12AWG COPPER WIRE TRACER WIRE.
7. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO DISCONNECTION OF EXISTING WATER SERVICE LEAD. THE EXISTING VALVE BOX SHALL BE REMOVED AND EXISTING TEE SHALL BE CAPPED.
8. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO TAPPING EXISTING WATER MAIN.
9. ALL UTILITY TRENCHES THAT FALL WITHIN A 1-ON-1 INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY.
10. ALL WATER MAIN SHALL BE BURIED WITH 5.5' OF COVER FROM PROPOSED GRADES. USE 22.5° BENDS TO LOWER WATER MAIN WHERE NOTED AT UTILITY CROSSING.
11. WHERE HYDRANTS ARE INDICATED ON THE PLAN, COMPLETE HYDRANT ASSEMBLIES ARE REQUIRED, INCLUDING SHUT-OFF VALVE AND BOX (REFER TO THE STANDARD DETAIL SHEET FOR DETAILED REQUIREMENTS) THE ELEVATION OF THE VALVE BOX SHALL BE EQUAL TO THE FINISH GRADE (FG) ELEVATION OF THE HYDRANT UNLESS OTHERWISE NOTED.
12. STORM SEWER SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE WASHTENAW COUNTY. WATER MAIN AND SANITARY SEWER SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF CITY OF SALINE.
13. ALL UTILITIES SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
14. ALL HYDRANTS MUST BE AT LEAST 5' FROM THE BACK OF CURB OR EDGE OF PAVEMENT.
15. ALL UTILITIES SHALL BE PLACED AT LEAST 10' FROM OTHER UTILITIES, SIGNIFICANT TREES, AND FIXED STRUCTURES.
16. UNLESS OTHERWISE NOTED, ALL STORM SEWER STRUCTURES SHALL BE 4' DIAMETER (INLETS SHALL BE 2' DIAMETER). CONTRACTOR IS RESPONSIBLE FOR VERIFYING STRUCTURES SIZES IN RELATION TO PIPE SIZES AND ANGLES AND PRICING THEIR BID ACCORDINGLY. UNLESS OTHERWISE INDICATED ON THE STANDARD DETAIL SHEETS CASTINGS SHALL BE:
PVMT. CATCH BASINS (WALKING SPACES) – EJIW 5105 – "M3" – ADA ACCESSIBLE
PVMT. CATCH BASINS (DRIVEWAYS) – EJIW 5105 – "M1" (FRAMES WITH CURB BOXES WILL NOT BE ALLOWED)
YARD CATCH BASINS – EJIW 1040 – "02"
MANHOLES – EJIW 1040 – "A"
17. PLACEMENT OF EDGE DRAINS AND FINGER DRAINS AT ALL PAVEMENT CATCH BASINS IS REQUIRED. SEE STRUCTURE UNDERDRAIN DETAIL SHEET C3.9.
18. FOR CURB CATCH BASINS, SEE BASIN LOCATION DETAIL ON SHEET C3.9 FOR BASIN STAKING RELATIVE TO THE CURB.
19. SANITARY MANHOLE COVERS SHALL BE LABELED "SANITARY SEWER" ONLY. REFER TO STANDARD DETAIL SHEET FOR REQUIRED TEXT OF UTILITY CASTINGS.
20. SEE SHEET C9.4 FOR CITY OF SALINE SANITARY SEWER NOTES.
21. LOCATIONS OF LIGHT POLES, IF SHOWN ON THESE DRAWINGS, MAY BE APPROXIMATE. CONFIRM EXACT LOCATION (I.E. CURB OFFSETS, SIDEWALK OFFSETS, ETC.) PRIOR TO STAKING AND CONSTRUCTION. REFER TO SITE ELECTRICAL PLAN FOR DETAILS, AND COORDINATE WITH ELECTRICAL ENGINEER, ARCHITECT, AND CIVIL ENGINEER TO DETERMINE PROPER PLACEMENT.

RIM ADJUSTMENT NOTE:

REMOVE EXISTING CASTING, COVER AND ADJUSTMENT MATERIALS FROM DRAINAGE STRUCTURE. SALVAGE CASTING AND COVER FOR REINSTALLATION AND PROVIDE NEW ADJUSTMENT BRICK/BLOCK/RINGS. REINSTALL ACCORDING TO STANDARD DETAILS (IF INCLUDED). PROTECT EXISTING UTILITY STRUCTURE TO REMAIN.

FIBER NOTE:

CONTRACTOR TO REFER TO FIBER PLANS FOR PROPOSED FIBER WORK AND ROUTING.

9	PR 12" STORM / PR 42" STORM
	PR 12" STORM B/P 812.21
	PR 42" STORM T/P 809.96
	CLEARANCE: 2.25' +/-

6	PR 6" WM / EX 8" SANITARY
	EX 8" SANITARY B/P 816.55
	PR 6" WM T/P 813.90
	CLEARANCE: 2.65' +/-
	Bend WM under EX SAN to maintain 1.50' minimum clearance.

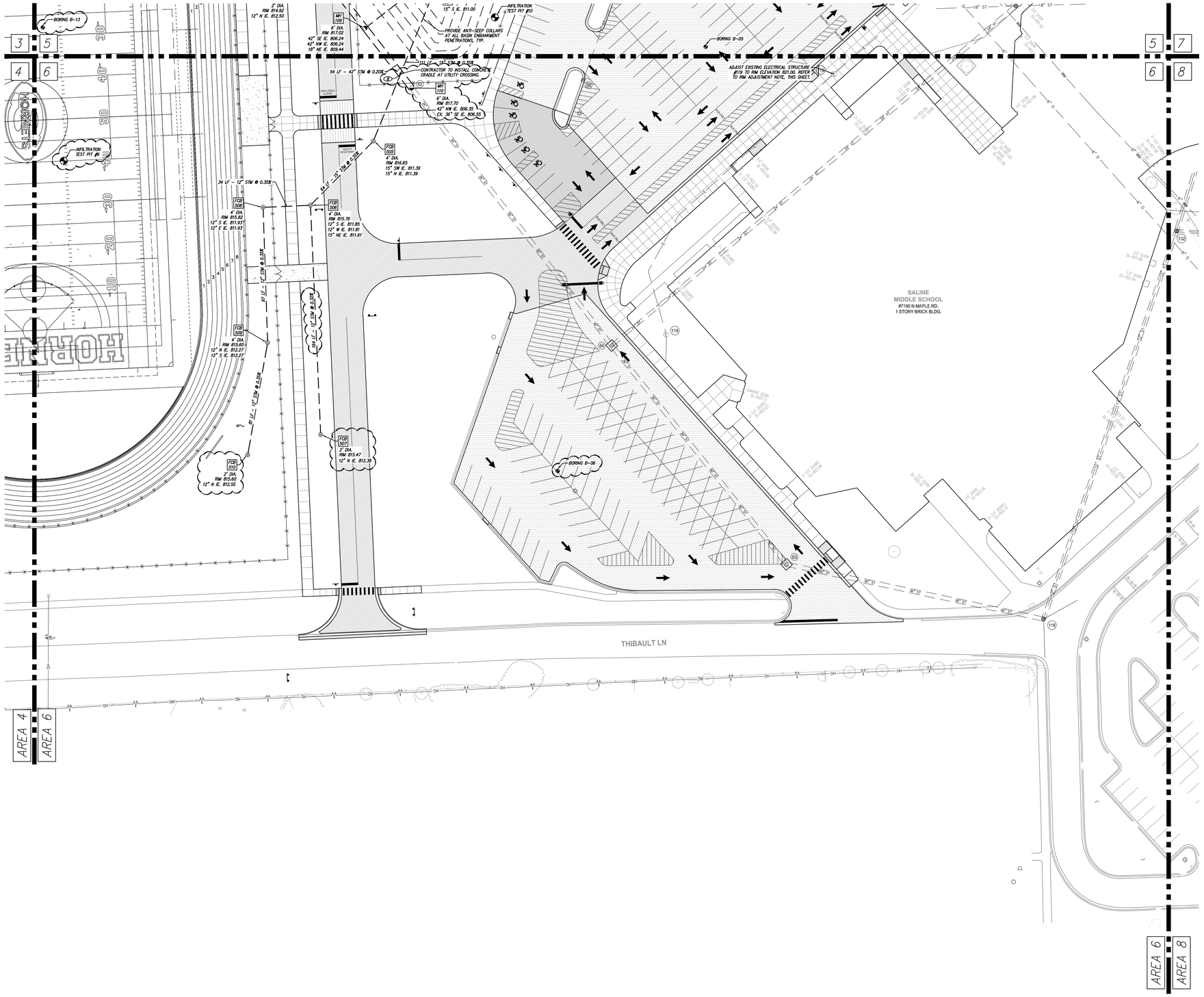
KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX
SALINE AREA SCHOOLS
7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
DESIGN DEVELOPMENT	08/22/2024
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

STATE OF MICHIGAN NICHOLAS BRASS ENGINEER No. 6201063559 LICENSED PROFESSIONAL ENGINEER

JOB NO. 2900-09A
SHEET TITLE
Utility Plan - (Area 5)
SHEET NO.
C3.5



GRAPHIC SCALE

0 15 30 60

(IN FEET)

1 inch = 30 ft.

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 / XXX — STRUCT. NO. / STRUCT. TYPE

UTILITY NOTES

1. STORM SEWER 12" AND LARGER SHALL BE C76 CL IV (PREM.JT.) UNLESS OTHERWISE NOTED ON THE PLAN.
2. STORM SEWER 6" AND SMALLER SHALL BE PVC SDR 23.5. STORM SEWER GREATER THAN 6" THROUGH 10" SHALL BE PVC SDR 26 UNLESS OTHERWISE NOTED ON PLANS.
3. SANITARY SEWER AND LEADS SHALL BE SOLID WALL, PVC, SDR 23.5.
4. WATER MAIN SHALL BE PVC C900 DR-14. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
5. WHERE NOTED ON PLAN (STORAGE BUILDING LEAD), WATER MAIN SHALL BE CLASS 54 DUCTILE IRON. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
6. WATER MAIN SHALL INCLUDE #12AWG COPPER WIRE TRACER WIRE.
7. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO DISCONNECTION OF EXISTING WATER SERVICE LEAD. THE EXISTING VALVE BOX SHALL BE REMOVED AND EXISTING TEE SHALL BE CAPPED.
8. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO TAPPING EXISTING WATER MAIN.
9. ALL UTILITY TRENCHES THAT FALL WITHIN A 1-ON-1 INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY.
10. ALL WATER MAIN SHALL BE BURIED WITH 5.5' OF COVER FROM PROPOSED GRADES. USE 22.5° BENDS TO LOWER WATER MAIN WHERE NOTED AT UTILITY CROSSING.
11. WHERE HYDRANTS ARE INDICATED ON THE PLAN, COMPLETE HYDRANT ASSEMBLIES ARE REQUIRED, INCLUDING SHUT-OFF VALVE AND BOX (REFER TO THE STANDARD DETAIL SHEET FOR DETAILED REQUIREMENTS) THE ELEVATION OF THE VALVE BOX SHALL BE EQUAL TO THE FINISH GRADE (FG) ELEVATION OF THE HYDRANT UNLESS OTHERWISE NOTED.
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    PVMT. CATCH BASINS (WALKING SPACES) – EJIW 5105 – "M3" – ADA ACCESSIBLE
    PVMT. CATCH BASINS (DRIVEWAYS) – EJIW 5105 – "M1" (FRAMES WITH CURB BOXES WILL NOT BE ALLOWED)
    YARD CATCH BASINS – EJIW 1040 – "1Q"
    MANHOLES – EJIW 1040 – "A"
17. PLACEMENT OF EDGE DRAINS AND FINGER DRAINS AT ALL PAVEMENT CATCH BASINS IS REQUIRED. SEE STRUCTURE UNDERDRAIN DETAIL SHEET C3.9.
18. FOR CURB CATCH BASINS, SEE BASIN LOCATION DETAIL ON SHEET C3.9 FOR BASIN STAKING RELATIVE TO THE CURB.
19. SANITARY MANHOLE COVERS SHALL BE LABELED "SANITARY SEWER" ONLY. REFER TO STANDARD DETAIL SHEET FOR REQUIRED TEXT OF UTILITY CASTINGS.
20. SEE SHEET C9.4 FOR CITY OF SALINE SANITARY SEWER NOTES.
21. LOCATIONS OF LIGHT POLES, 9' SHOWN ON THESE DRAWINGS, MAY BE APPROXIMATE. CONFIRM EXACT LOCATION (I.E. CURB OFFSETS, SIDEWALK OFFSETS, ETC.) PRIOR TO STAKING AND CONSTRUCTION. REFER TO SITE ELECTRICAL PLAN FOR DETAILS, AND COORDINATE WITH ELECTRICAL ENGINEER, ARCHITECT, AND CIVIL ENGINEER TO DETERMINE PROPER PLACEMENT.

RIM ADJUSTMENT NOTE:

REMOVE EXISTING CASTING, COVER AND ADJUSTMENT MATERIALS FROM DRAINAGE STRUCTURE. SALVAGE CASTING AND COVER FOR REINSTALLATION AND PROVIDE NEW ADJUSTMENT BRICK/BLOCK/RINGS. REINSTALL ACCORDING TO STANDARD DETAILS (IF INCLUDED). PROTECT EXISTING UTILITY STRUCTURE TO REMAIN.

FIBER NOTE:

CONTRACTOR TO REFER TO FIBER PLANS FOR PROPOSED FIBER WORK AND ROUTING.

8 PR 15" STORM / PR 42" STORM
PR 15" STORM B/P 811.02
PR 42" STORM T/P 810.20
CLEARANCE: 0.82' +/-

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
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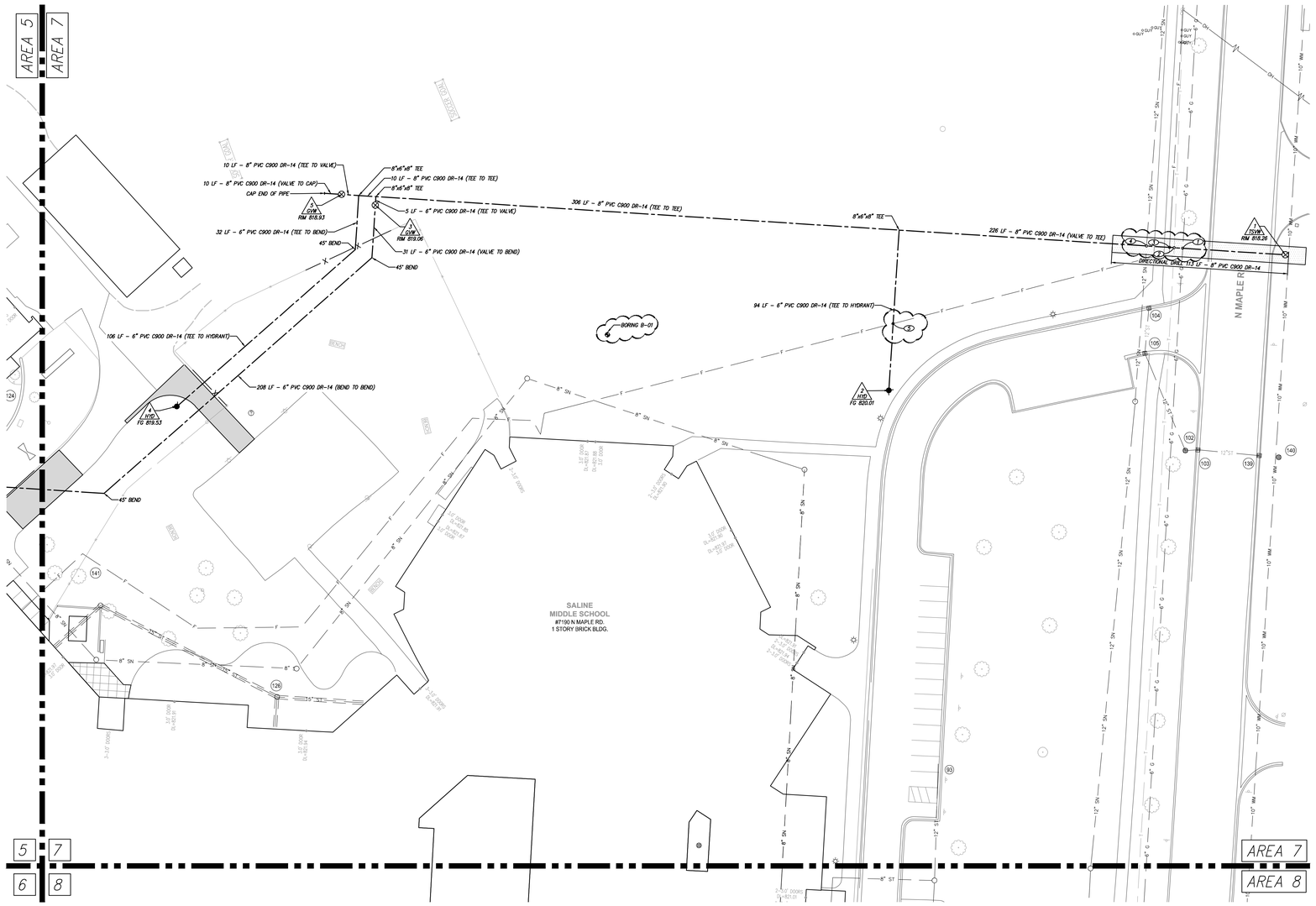
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE
Utility Plan - (Area 6)

SHEET NO.
C3.6



GRAPHIC SCALE

0 15 30 60

(IN FEET)

1 inch = 30 ft.

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
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- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 XXX — STRUCT. NO. / STRUCT. TYPE

UTILITY NOTES

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3. SANITARY SEWER AND LEADS SHALL BE SOLID WALL, PVC, SDR 23.5.
4. WATER MAIN SHALL BE PVC C900 DR-14. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
5. WHERE NOTED ON PLAN (STORAGE BUILDING LEAD), WATER MAIN SHALL BE CLASS 54 DUCTILE IRON. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE.
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7. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO DISCONNECTION OF EXISTING WATER SERVICE LEAD. THE EXISTING VALVE BOX SHALL BE REMOVED AND EXISTING TEE SHALL BE CAPPED.
8. CITY OF SALINE SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO TAPPING EXISTING WATER MAIN.
9. ALL UTILITY TRENCHES THAT FALL WITHIN A 1-ON-1 INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY.
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PVMT. CATCH BASINS ("WALKING SPACES") – EJIW 5105 – "M3" – ADA ACCESSIBLE
PVMT. CATCH BASINS (DRIVEWAYS) – EJIW 5105 – "M1" (FRAMES WITH CURB BOXES WILL NOT BE ALLOWED)
YARD CATCH BASINS – EJIW 1040 – "1Z"
MANHOLES – EJIW 1040 – "A"
17. PLACEMENT OF EDGE DRAINS AND FINGER DRAINS AT ALL PAVEMENT CATCH BASINS IS REQUIRED. SEE STRUCTURE UNDERDRAIN DETAIL SHEET C3.8
18. FOR CURB CATCH BASINS, SEE BASIN LOCATION DETAIL ON SHEET C3.9 FOR BASIN STAKING RELATIVE TO THE CURB.
19. SANITARY MANHOLE COVERS SHALL BE LABELED "SANITARY SEWER" ONLY. REFER TO STANDARD DETAIL SHEET FOR REQUIRED TEXT OF UTILITY CASTINGS.
20. SEE SHEET C9.4 FOR CITY OF SALINE SANITARY SEWER NOTES.
21. LOCATIONS OF LIGHT POLES, 8" SHOWN ON THESE DRAWINGS, MAY BE APPROXIMATE. CONFIRM EXACT LOCATION (I.E. CURB OFFSETS, SIDEWALK OFFSETS, ETC.) PRIOR TO STAKING AND CONSTRUCTION. REFER TO SITE ELECTRICAL PLAN FOR DETAILS, AND COORDINATE WITH ELECTRICAL ENGINEER, ARCHITECT, AND CIVIL ENGINEER TO DETERMINE PROPER PLACEMENT.

RIM ADJUSTMENT NOTE:

REMOVE EXISTING CASTING, COVER AND ADJUSTMENT MATERIALS FROM DRAINAGE STRUCTURE. SALVAGE CASTING AND COVER FOR REINSTALLATION AND PROVIDE NEW ADJUSTMENT BRICK/BLOCK/RINGS. REINSTALL ACCORDING TO STANDARD DETAILS (IF INCLUDED). PROTECT EXISTING UTILITY STRUCTURE TO REMAIN.

FIBER NOTE:

CONTRACTOR TO REFER TO FIBER PLANS FOR PROPOSED FIBER WORK AND ROUTING.

1 PR 8" WM / EX 6" GAS EX 6" GAS B/P 814.01 (APPROX.) PR 8" WM T/P 812.06 CLEARANCE: 1.95' +/- GAS depth based on 4' below grade.	2 PR 8" WM / EX ELECTRIC EX ELECTRIC B/B 813.57 (APPROX.) PR 8" WM T/P 812.02 CLEARANCE: 1.55' +/- Electrical duct bank depth based on 3' below grade and 2' thick.
3 PR 8" WM / EX FIBER EX FIBER B/P 814.98 PR 8" WM T/P 812.00 CLEARANCE: 2.98' +/- FIBER depth based on 3' below grade, in a 6" PVC pipe.	4 PR 8" WM / EX 12" SANITARY PR 8" WM B/PIPE 811.13 EX 12" SANITARY T/P 803.71 CLEARANCE: 7.42' +/-
5 PR 6" WM / EX FIBER EX FIBER B/P 816.20 (APPROX.) PR 6" WM T/P 812.37 CLEARANCE: 3.38' +/- FIBER depth based on 3' below grade, in a 6" PVC pipe.	

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

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STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

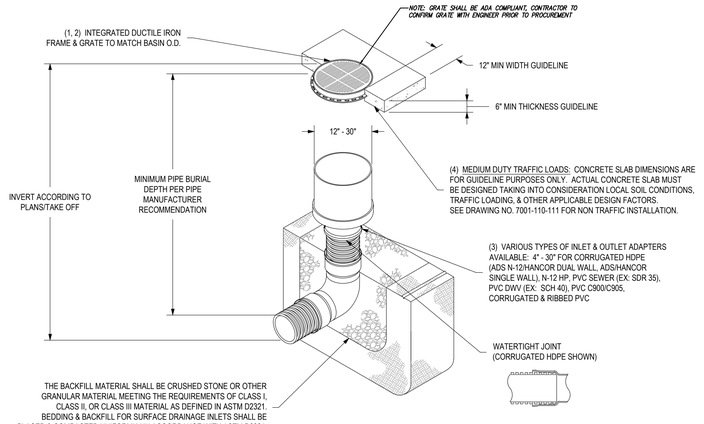
SHEET TITLE

Utility Plan - (Area 7)

SHEET NO.

C3.7

NYLOPLAST INLINE DRAIN WITH PEDESTRIAN GRATE



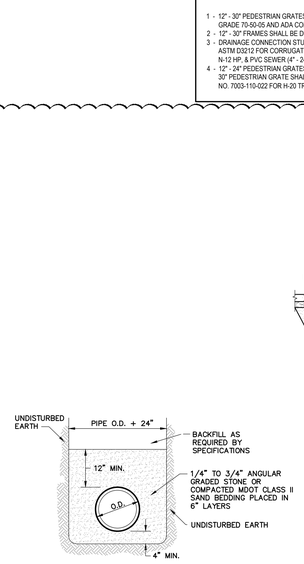
1 - 12" - 30" PEDESTRIAN GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05 AND ADA COMPLIANT.
2 - 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE, (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
4 - 12" - 24" PEDESTRIAN GRATES SHALL MEET H-10 LOAD RATING. 30" PEDESTRIAN GRATE SHALL MEET H-20 LOAD RATING (SEE DRAWING NO. 7003-110-022 FOR H-20 TRAFFIC LOAD GUIDELINES).

DRAWN BY	EBC	MATERIAL	
DATE	04-20-07		
REVISED BY	NMH	PROJECT NO./NAME	
DATE	03-15-16		
DWG SIZE	A	SCALE 1:40	SHEET 1 OF 1

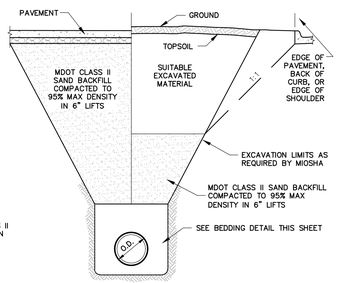
ADS Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE: INLINE DRAIN WITH PEDESTRIAN GRATE QUICK SPEC INSTALLATION DETAIL

DWG NO. 7003-110-037 REV D



BEDDING DETAIL
NO SCALE



TRENCH DETAIL
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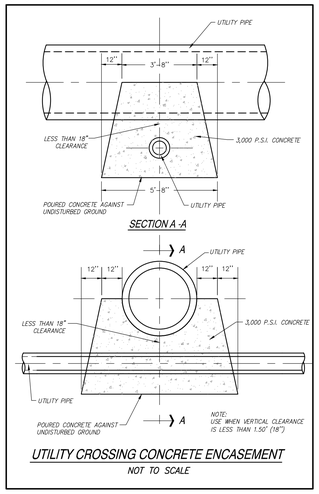
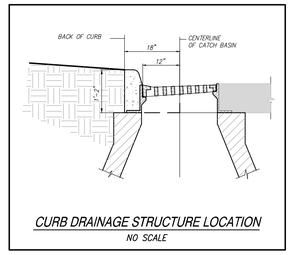
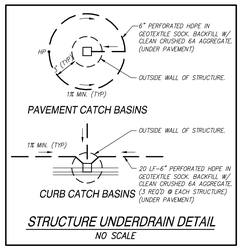


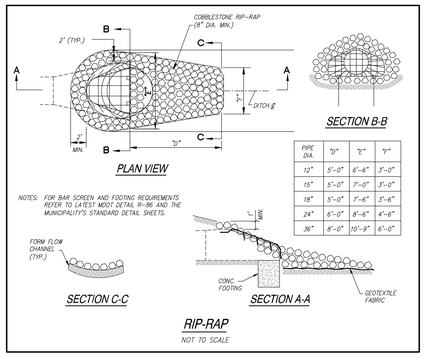
UTILITY CROSSING CONCRETE ENCASEMENT
NOT TO SCALE



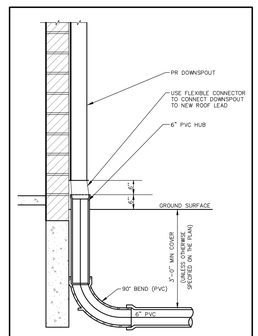
CURB DRAINAGE STRUCTURE LOCATION
NO SCALE



STRUCTURE UNDERDRAIN DETAIL
NO SCALE



RIP-RAP
NOT TO SCALE



TYPICAL ROOF CONDUCTOR CONNECTION
NO SCALE

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KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS
7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
DESIGN DEVELOPMENT	08/22/2024
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. 2900-09A

SHEET TITLE
Utility Details

SHEET NO.
C3.9

Basin "A" - Storage Table			
Elevation (FT)	**Area (SFT)**	**Incremental Volumes (CFT)**	**Cumulative Volume (CFT)**
808.00	**0**	**0**	0
809.00	**4,907**	**1,555**	1,555
810.00	**15,017**	**9,299**	10,854
811.00	**21,257**	**17,496**	28,350
812.00	**27,340**	**23,022**	51,372

STORAGE VOLUME CALCS - BASIN A

Basin "B" - Storage Table			
Elevation (FT)	**Area (SFT)**	**Incremental Volumes (CFT)**	**Cumulative Volume (CFT)**
806.50	**0**	**0**	0
807.00	**400**	**85**	85
808.00	**2,720**	**2,480**	2,565
809.00	**8,280**	**9,469**	12,034
810.00	**14,950**	**13,556**	25,590
811.00	**19,885**	**17,680**	43,270
812.00	**24,259**	**22,070**	65,340
813.00	**28,790**	**26,487**	91,827

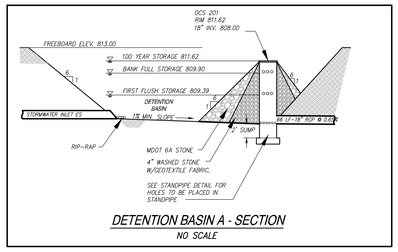
STORAGE VOLUME CALCS - BASIN B

Basin "C" - Storage Table			
Elevation (FT)	**Area (SFT)**	**Incremental Volumes (CFT)**	**Cumulative Volume (CFT)**
804.50	**0**	**0**	0
805.00	**1,976**	**310**	310
806.00	**15,872**	**7,805**	8,115
807.00	**29,410**	**22,503**	30,618
808.00	**34,600**	**31,968**	62,586
809.00	**41,660**	**37,827**	100,413
810.00	**50,510**	**45,846**	146,259
811.00	**61,050**	**55,608**	201,867

STORAGE VOLUME CALCS - BASIN C

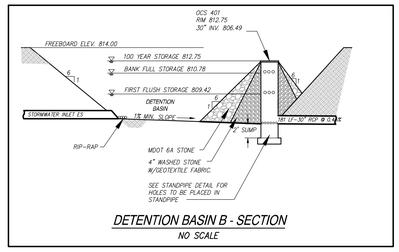
Basin "D" - Storage Table			
Elevation (FT)	**Area (SFT)**	**Incremental Volumes (CFT)**	**Cumulative Volume (CFT)**
810.00	**0**	**0**	0
811.00	**4,118**	**1,231**	1,231
812.00	**8,310**	**6,339**	7,570
813.00	**11,040**	**9,647**	17,217
814.00	**14,055**	**12,510**	29,727
815.00	**17,310**	**15,670**	45,397
816.00	**20,790**	**19,028**	64,425

STORAGE VOLUME CALCS - BASIN D



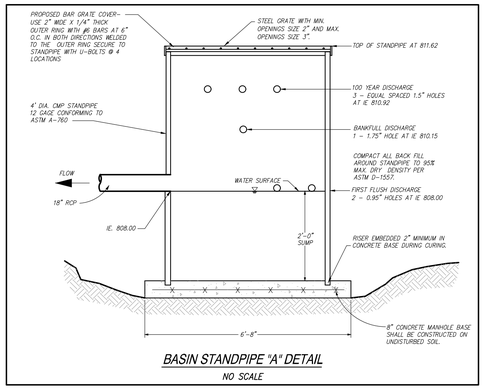
DETENTION BASIN A - SECTION

NO SCALE



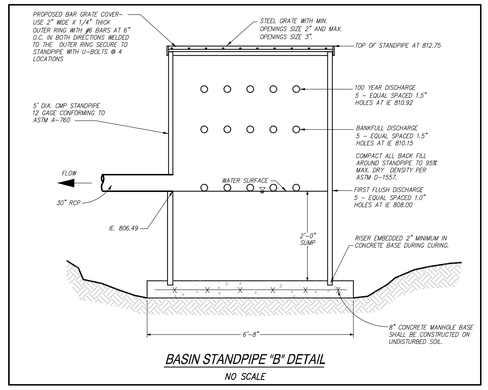
DETENTION BASIN B - SECTION

NO SCALE



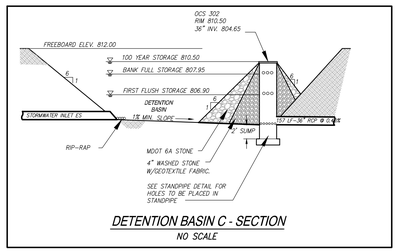
BASIN STANDPIPE "A" DETAIL

NO SCALE



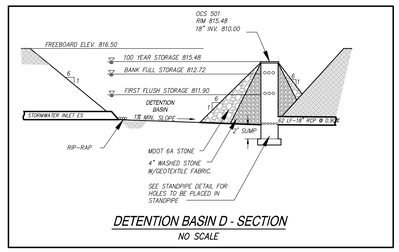
BASIN STANDPIPE "B" DETAIL

NO SCALE



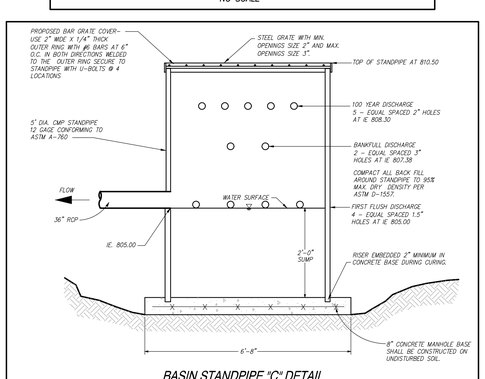
DETENTION BASIN C - SECTION

NO SCALE



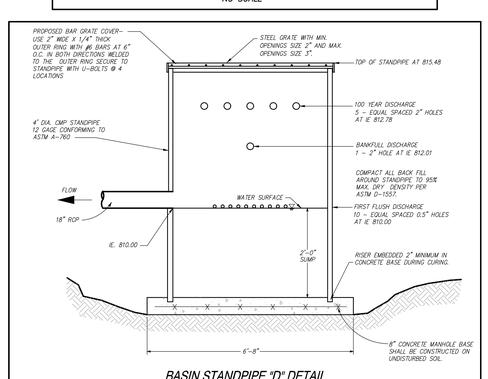
DETENTION BASIN D - SECTION

NO SCALE



BASIN STANDPIPE "C" DETAIL

NO SCALE



BASIN STANDPIPE "D" DETAIL

NO SCALE

MS CONNECTOR DRIVE UTILITY DETAILS
(WCWRC PROJECT NO. 9739, PLAN REVIEW #1)

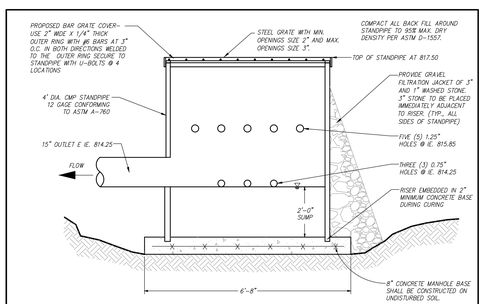
DRAINAGE NARRATIVE

DURING PRE-DEVELOPMENT CONDITIONS, RUNOFF FROM AN ESTIMATED AREA OF 2.5 ACRES AT THE SOUTHEAST SIDE OF THE MIDDLE SCHOOL WAS CAPTURED BY CATCH BASINS ALONG NORTH MAPLE ROAD. THIS RUNOFF WAS NOT TREATED OR DETAINED, AND FLOWED UNRESTRICTED INTO THE ACCEPTING STORM SEWER. OUR PROPOSED WORK IS DIRECTED AT FORCING ALL RUNOFF INTO A SERIES OF SPILLWAYS. THESE SPILLWAYS RELEASE ALL RUNOFF IN A SERIES OF SEDIMENT FOREBAYS, WHICH PROVIDE TREATMENT BY ALLOWING SEDIMENT TO SETTLE. ALL TREATED RUNOFF IS THEN CONTROLLED IN THE PROPOSED DETENTION BASIN FOR THE BANKFULL VOLUME AND THE 100-YEAR STORAGE VOLUME. AN EMERGENCY OVERFLOW SPILLWAY CAN BE FOUND ON THIS SHEET AT 6" ABOVE THE 100-YEAR STORAGE ELEVATION. THE OUTLET FOR THE DETENTION BASIN IS A PROPOSED STANDPIPE AT THE SOUTHEAST CORNER OF THE BASIN. THIS STANDPIPE HAS A SERIES OF ORIFICES THAT CONTROL THE RELEASE RATE FOR THE BANKFULL VOLUME AND THE 100-YEAR STORAGE VOLUME, RESTRICTED FLOW MEETING WCWRC STANDARDS THEN IS RELEASED INTO THE EXISTING 15" STORM SEWER THAT RUNS PARALLEL TO NORTH MAPLE LANE.

DETENTION BASIN WEIR CALCULATIONS

TOTAL TRIBUTARY AREA	2.5 AC
OVERALL C-FACTOR	0.65
TIME OF CONC.	15 MINUTES
RAINFALL INTENSITY	7.43 IN/HR
WEIR HEIGHT	0.50 LF
Q100 = CIA =	12.08 CFS
Q100 = 3.367 x B x H^(3/2)	
B = Q100 / 3.367 x H^(3/2)	10.16 LF -> 11 LF

BOTTOM WIDTH OF TRAPEZOIDAL EMERGENCY OVERFLOW WEIR SHALL BE NO LESS THAN 11 LF.



BASIN STANDPIPE "1" DETAIL

NO SCALE

DETENTION BASIN / FOREBAY NOTES

SEE BELOW FOR PROPOSED DETENTION BASIN AND FOREBAY STORAGE VOLUME TABLES.

PROPOSED CONDITIONS

FOREBAY #1	CUMULATIVE STORAGE (CF)
817.5	672 CF
817	185 CF
816.25	0 CF

FOREBAY #2	CUMULATIVE STORAGE (CF)
817.5	72 CF
817	7 CF
816.75	0 CF

FOREBAY #3	CUMULATIVE STORAGE (CF)
817.5	63 CF
817	5 CF
816.75	0 CF

DETENTION BASIN	CUMULATIVE STORAGE (CF)
817.5 (100-YR VOL)	16,786 CF
817	12,330 CF
816	5,090 CF
815.65 (BANKFULL VOL)	4,600 CF
815	690 CF
814.25	0 CF

FOREBAY CALCULATIONS
DETENTION BASIN VOLUME REQUIRED = 16,114 CF
16,114 CF * 0.05 = = 805 CF REQUIRED
PROPOSED FOREBAY VOLUME = 807 CF PROVIDED

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MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

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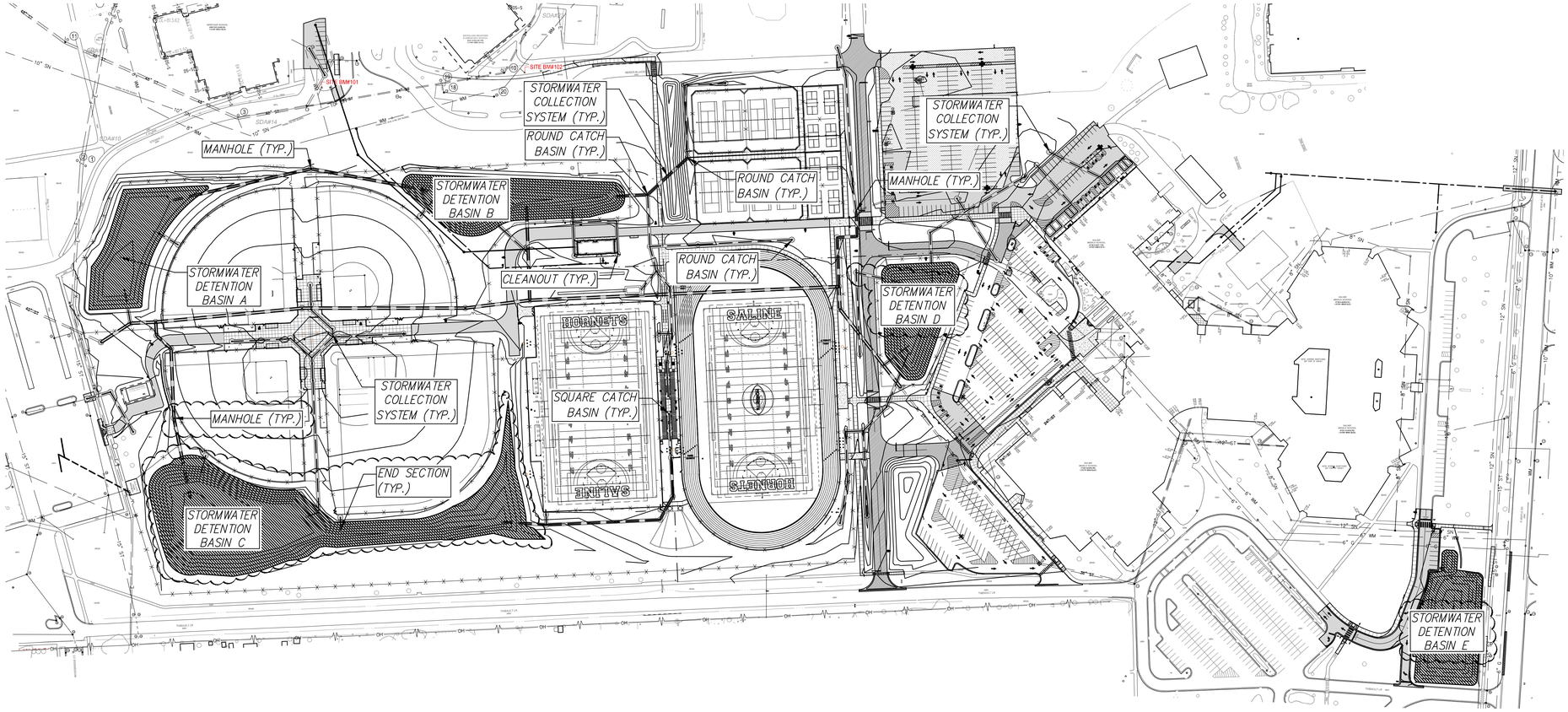
JOB NO. **2900-09A**

SHEET TITLE

Detention Details & Calculations

SHEET NO.

C3.10



GRAPHIC SCALE
0 50 100 200
(IN FEET)
1 inch = 100 ft.

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MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

CHART A

MAINTENANCE TASKS AND SCHEDULE DURING CONSTRUCTION

TASKS	COMPONENTS										SCHEDULE
	Storm Sewer System	Catch Basin Sumps	Catch Basin Inlet Casings	Ditches and Swales	Outflow Control Structure	Rip-Rap	Filtration Basins	Storm Detention Areas	Wetlands	Emergency Overflow	
Inspect for sediment accumulation	X	X		X	X		X	X			Weekly
Removal of sediment accumulation	X	X		X	X		X	X			As needed* & prior to turnover
Inspect for floatables and debris			X	X	X		X	X			Quarterly
Cleaning of floatables and debris			X	X	X		X	X			Quarterly & at turnover
Inspection for erosion				X	X		X	X			Weekly
Re-establish permanent vegetation on eroded slopes				X			X	X			As needed & at turnover
Replacement of Stone					X						As needed* & prior to turnover
Mowing			X	X	X	X	X	X			0 to 2 times per year
Inspect Stormwater system components during wet weather and compare to as-built plans (by professional engineer reporting to XYZ Co.)				X	X		X	X			Annually and at turnover
Make adjustments or replacements as determined by annual wet weather inspection	X	X	X	X	X	X	X	X	X	X	As needed

*as needed means when sediment has accumulated to a maximum of one foot depth

CHART B

PERMANENT MAINTENANCE TASKS AND SCHEDULE

TASKS	COMPONENTS								SCHEDULE
	Catch Basin Inlet Casings	Ditches and Swales	Outflow Control Structure	Rip-Rap	Filtration Basins	Storm Detention Areas	Wetlands	Emergency Overflow	
Inspect for sediment accumulation		X	X		X	X			Annually
Removal of sediment accumulation		X	X		X	X			Every 2 years as needed
Inspect for floatables and debris	X	X	X		X	X			Annually
Cleaning of floatables and debris	X	X	X		X	X			Annually
Inspection for erosion		X	X		X	X			Annually
Re-establish permanent vegetation on eroded slopes		X			X	X			As Needed
Replacement of Stone			X						Every 3-5 years as needed
Clean Streets									Semi-Annually
Mowing		X			X	X			0-2 times per year
Inspect Stormwater system components during wet weather and compare to as-built plans (by professional engineer reporting to XYZ Co.)	X	X	X	X	X	X	X	X	Annually
Make adjustments or replacements as determined by annual wet weather inspection	X	X	X	X	X	X	X	X	As needed
Keep records of all inspections and maintenance activities and report to XYZ Co.									Annually
Keep records of all costs for inspections, maintenance and repairs. Report to XYZ Co.									Annually

LEGEND

- COLLECTION SYSTEM
- OPEN-AIR DETENTION SYSTEM
- MANHOLE
- SQUARE CATCH BASIN
- ROUND CATCH BASIN
- END SECTION
- STORM SEWER COLLECTION SYSTEM

MAINTENANCE PLAN NOTES

1. RESPONSIBILITY FOR MAINTENANCE

   DURING CONSTRUCTION, IT IS THE DEVELOPER'S RESPONSIBILITY TO PERFORM THE MAINTENANCE. FOLLOWING CONSTRUCTION, IT WILL BE THE RESPONSIBILITY OF SALINE AREA SCHOOLS TO PERFORM THE MAINTENANCE. THE MASTER DEED WILL SPECIFY THAT ROUTINE MAINTENANCE OF THE STORMWATER FACILITIES MUST BE COMPLETED WITHIN 14 DAYS OF RECEIPT OF WRITTEN NOTIFICATION THAT ACTION IS REQUIRED, UNLESS OTHER ACCEPTABLE ARRANGEMENTS ARE MADE WITH SALINE TOWNSHIP, THE WASHTENAW COUNTY DRAIN COMMISSIONER OR SUCCESSORS. EMERGENCY MAINTENANCE (I.E. WHEN THERE IS ENDANGERMENT TO PUBLIC HEALTH, SAFETY OR WELFARE) SHALL BE PERFORMED IMMEDIATELY UPON RECEIPT OF WRITTEN NOTICE. SHOULD SALINE AREA SCHOOLS FAIL TO ACT WITHIN THESE TIME FRAMES, SALINE TOWNSHIP, WASHTENAW COUNTY OR SUCCESSORS MAY PERFORM THE NEEDED MAINTENANCE AND ASSESS THE COSTS AGAINST SALINE AREA SCHOOLS.

2. SOURCE OF ENHANCING

   SALINE AREA SCHOOLS IS REQUIRED TO PAY FOR ALL MAINTENANCE ACTIVITIES ON A CONTINUING BASIS.

3. MAINTENANCE TASKS AND SCHEDULE

   REFER TO CHARTS "A" AND "B" THIS SHEET. THE MAINTENANCE TASKS DURING CONSTRUCTION TO BE PERFORMED BY THE DEVELOPER, AND THE PERMANENT MAINTENANCE TASKS TO BE PERFORMED BY SALINE AREA SCHOOLS ARE DESCRIBED. IMMEDIATELY FOLLOWING CONSTRUCTION, THE DEVELOPER WILL HAVE THE STORMWATER MANAGEMENT SYSTEM INSPECTED BY AN ENGINEER TO VERIFY GRADES OF THE DETENTION AND FILTRATION AREAS AND MAKE RECOMMENDATIONS FOR ANY NECESSARY SEDIMENT.

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STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE

Operations and Maintenance Plan

SHEET NO.

C3.11

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MS REC COMPLEX

SALINE AREA SCHOOLS

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STATE OF MICHIGAN · NICHOLAS R. HAAS · ENGINEER · No. 6201065559 · LICENSED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

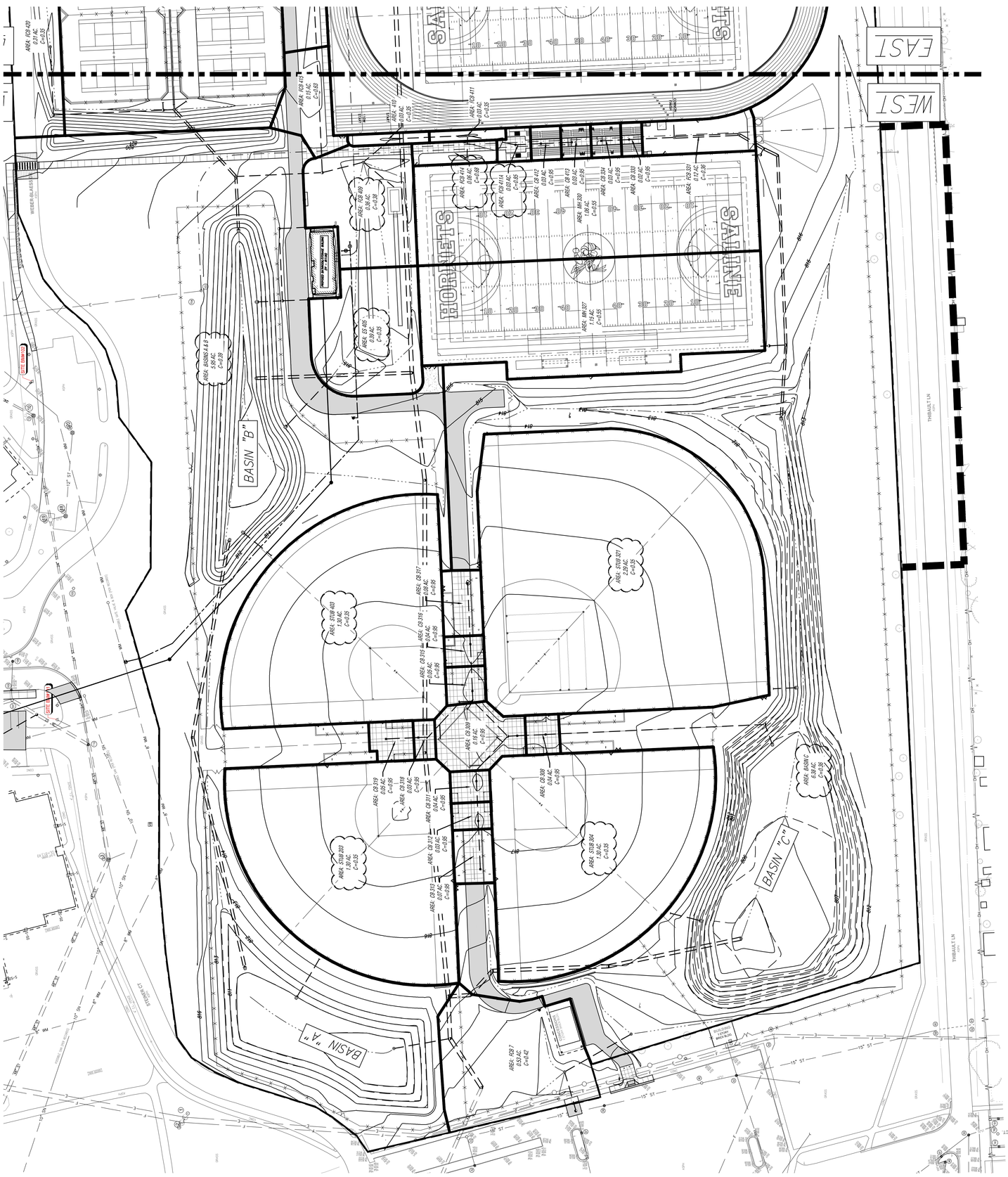
SHEET TITLE
Proposed Drainage Area Map - WEST

SHEET NO.
C3.12

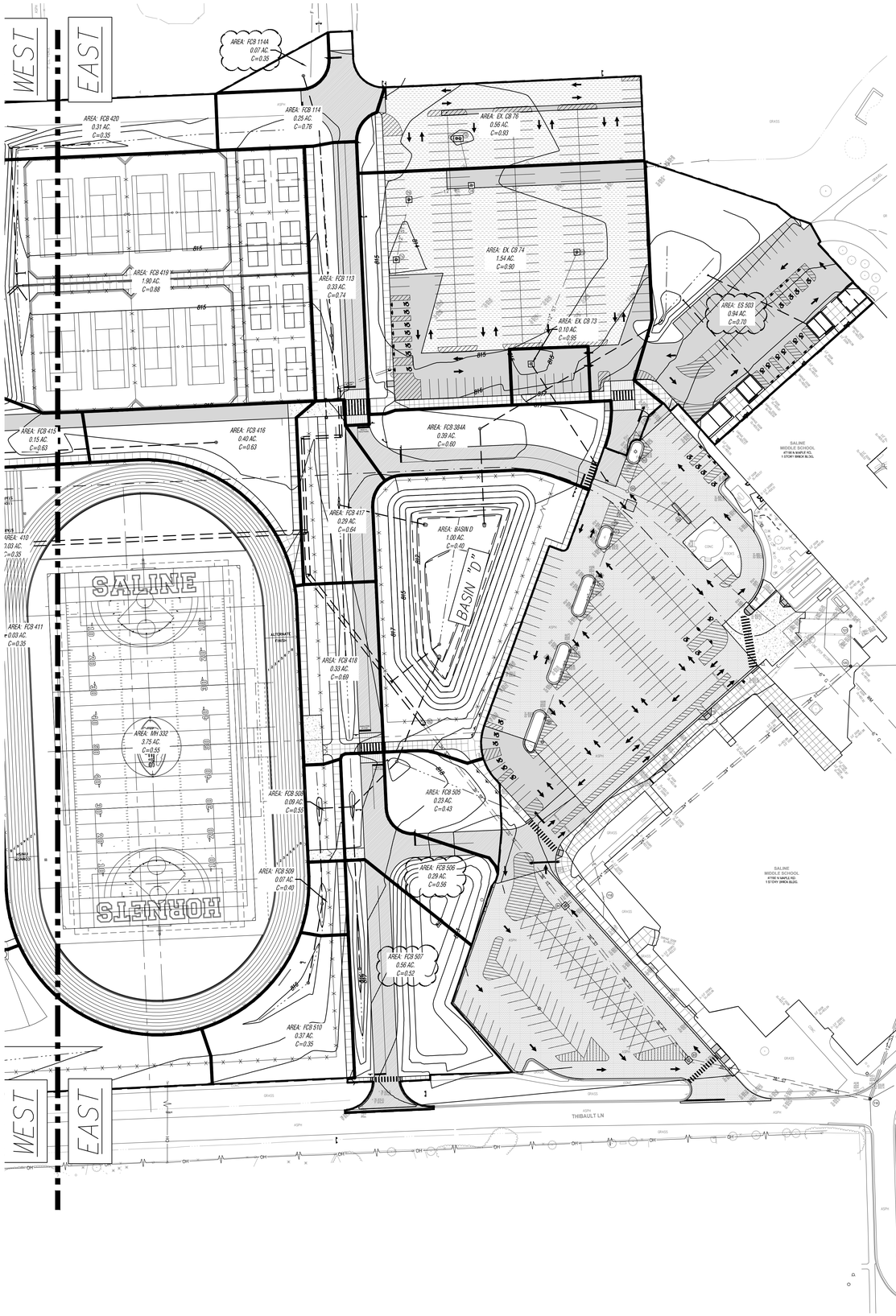
GRAPHIC SCALE
0 25 50 100
(IN FEET)
1 inch = 50 ft.

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (IN.)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/ FRAME & GRATE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE — STRUCT. NO.
- WATERMAIN STRUCTURE — STRUCT. NO. / STRUCT. TYPE
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- CRACK SEAL AND SEAL COAT



PLEASE RECYCLE



GRAPHIC SCALE

0 25 50 100

(IN FEET)

1 inch = 50 ft.

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- CRACK SEAL AND SEAL COAT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 / XXX — STRUCT. NO. / STRUCT. TYPE

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MS REC COMPLEX

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STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE

Proposed Drainage Area Map - EAST

SHEET NO.

C3.13

BASIN A ORIFICE CALCS

ORIFICE SIZING - FIRST FLUSH = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	1.5	Unit
Orifice diameter =	O_{FF-DIA} =	0.95	IN
Number of orifices at same elevation =	O_{FF-No} =	2	Dimensionless
Total head at V_{FF} water level=	h_{FF} =	1.39	FT
Average head at V_{FF} water level=	h_{FF-AVG} =	0.93	FT
Total head at V_{BK} water level=	h_{BK} =	1.90	FT
Average head at V_{BK} water level=	h_{BK-AVG} =	1.27	FT
Total head at V_{100} water level=	h_{100} =	3.62	FT
Average head at V_{100} water level=	$h_{100-AVG}$ =	2.41	FT
Area of First Flush orifice * # Orifices =	A_{FF} =	0.01	FT^2
Orifice coefficient =	C_O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S^2
Avg. outflow rate (Via V_{FF} orifice(s) W/ V_{FF} Event) =	$Q_{P-AVG-FF}$ =	0.05	CFS
First Flush Volume =	V_{FF} =	4,167	CFT
Drain Time for V_{FF} =	T_{FF} =	24.5	HR
Key Rule Check: First Flush volume must drain in > 24 hours.			PASS
Bankfull Volume =	V_{BK} =	9,368	CFT
Avg. outflow rate (Via V_{FF} orifice(s) W/ V_{BK} Event) =	$Q_{P-AVG-BK}$ =	0.06	CFS
Drain Time for V_{BK} =	T_{BK} =	47.2	HR
Key Rule Check: Bankfull Volume must drain in 36 Hrs < TBK < 48 Hrs. Does the First Flush orifice satisfy this? If not, Bankfull Orifice is Required.			PASS

ORIFICE SIZING - BANKFULL = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	Value	Unit
Orifice diameter =	O_{BK-DIA} =	1.75	IN
Number of orifices at same elevation =	O_{BK-No} =	1	Dimensionless
Area of Bankfull orifice * # Orifices =	A_{BK} =	0.02	FT^2
Total head at V_{BK} water level=	h_{BK} =	1.90	FT
Avg. head for Remainder thru FF Orifice =	h_{REM-FF} =	1.73	FT
Avg. head for Remainder thru BK Orifice =	h_{REM-BK} =	0.34	FT
Remainder Volume = $V_{REM-BK} = V_{BK} - V_{FF}$ =	V_{REM-BK} =	5200	CFT
Avg. outflow rate Via. V_{BK} Orifice for Remainder =	Q_{REM-BK} =	0.05	CFS
Avg. outflow rate Via. V_{FF} Orifice for Remainder =	Q_{REM-FF} =	0.06	CFS
Combined Outflow Rate for Remainder =	$Q_{REM-TOT}$ =	0.11	CFS
Drain Time for V_{REM} =	T_{REM} =	12.8	HR
Drain Time for V_{FF} =	T_{FF} =	24.5	HR
Combined Drain Time for V_{BK} & V_{FF} =	V_{TOT-1} =	37.3	HR
Key Rule Check: Bankfull Volume must drain between 36 and 48 Hours on sites where infiltration req. is not met.			PASS

ORIFICE SIZING - 100-YR STORM = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	Value	Unit
Orifice diameter =	$O_{100-DIA}$ =	1.50	IN
Number of orifices at same elevation =	O_{100-No} =	3	Dimensionless
Area of First Flush orifice * # Orifices =	A_{100} =	0.04	FT^2
Total head at V_{100} water level=	h_{100} =	3.62	FT
Avg. head for Remainder2 thru FF Orifice =	$h_{REM2-FF}$ =	3.05	FT
Avg. head for Remainder2 thru BK Orifice =	$h_{REM2-BK}$ =	1.66	FT
Avg. head for 100-yr Orifice =	h_{100-YR} =	1.15	
Remainder2 Volume = $V_{REM2} = V_{100} - V_{BK}$ =	V_{REM2} =	32834	CFT
Avg. outflow rate Via. V_{BK} Orifice for Remainder2 =	$Q_{REM2-BK}$ =	0.11	CFS
Avg. outflow rate Via. V_{FF} Orifice for Remainder2 =	$Q_{REM2-FF}$ =	0.09	CFS
Avg. outflow rate Via. V_{100} Orifice =	$Q_{REM2-100}$ =	0.20	CFS
Combined Outflow Rate for REM2 =	$Q_{REM2-TOT}$ =	0.39	CFS
Drain Time for V_{REM2} =	T_{REM2} =	23.5	HR
Combined Drain Time for V_{BK} & V_{FF} =	V_{TOT-1} =	37.3	HR
Total Drain Time for 100-Year Storm = T_{100} =	T_{100} =	60.8	HR
Key Rule Check: 100-Year Storm must drain in < 72 Hours.			PASS

ORIFICE SIZING - MAX 100-YEAR OUTFLOW RATE = $Q_{MAX-100}$			
Term	Variable	Value	Unit
Orifice diameter =	$O_{100-DIA}$ =	1.50	IN
Number of orifices at same elevation =	O_{100-No} =	3	Dimensionless
Total head at V_{100D} water level =	h =	3.62	FT
Area of orifice * # Orifices =	A_O =	0.04	FT^2
Orifice coefficient =	C_O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S^2
Max outflow rate [thru 100-year orifice(s)] =	$Q_{MAX-100}$ =	1.05	CFS

MAX COMBINED OUTFLOW RATE - ALL ORIFICES			
Max head from 100-yr storm =	h_{100} =	3.62	FT
Max Head on A_{FF} Orifice = h_{100} =	h_{FF-MAX} =	3.62	FT
Max Head on A_{BK} Orifice = $h_{100} - h_{FF}$ =	h_{BK-MAX} =	2.23	FT
Max Head on A_{100} Orifice = $h_{100} - h_{BK}$ =	$h_{100-MAX}$ =	1.72	FT
MAX 100-year release rate from A_{FF} Orifice =	Q_{100-FF} =	0.09	CFS
MAX 100-year release rate from A_{BK} Orifice =	Q_{100-BK} =	0.12	CFS
MAX 100-year release rate from A_{100} Orifice =	$Q_{100-100}$ =	0.24	CFS
Project Area =	A =	3.28	Ac
Allowable outflow rate (0.15 CFS/Ac * A) =	Q_{100-A} =	0.49	CFS
Provided 100-year post-dev peak release rate =	Q_{100-PR} =	0.46	CFS
Key Rule Check: Provided 100-year Peak Release Rate must be <= 0.15 CFS/Ac * A			PASS

BASIN B ORIFICE CALCS

ORIFICE SIZING - FIRST FLUSH = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	1.5	Unit
Orifice diameter =	O_{FF-DIA} =	1.00	IN
Number of orifices at same elevation =	O_{FF-No} =	5	Dimensionless
Total head at V_{FF} water level=	h_{FF} =	2.93	FT
Average head at V_{FF} water level=	h_{FF-AVG} =	1.95	FT
Total head at V_{BK} water level=	h_{BK} =	4.29	FT
Average head at V_{BK} water level=	h_{BK-AVG} =	2.86	FT
Total head at V_{100} water level=	h_{100} =	6.26	FT
Average head at V_{100} water level=	$h_{100-AVG}$ =	4.17	FT
Area of First Flush orifice * # Orifices =	A_{FF} =	0.03	FT^2
Orifice coefficient =	C_O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S^2
Avg. outflow rate (Via V_{FF} orifice(s) W/ V_{FF} Event) =	$Q_{P-AVG-FF}$ =	0.19	CFS
First Flush Volume =	V_{FF} =	17,315	CFT
Drain Time for V_{FF} =	T_{FF} =	25.4	HR
Key Rule Check: First Flush volume must drain in > 24 hours.			PASS
Bankfull Volume =	V_{BK} =	38,787	CFT
Avg. outflow rate (Via V_{FF} orifice(s) W/ V_{BK} Event) =	$Q_{P-AVG-BK}$ =	0.23	CFS
Drain Time for V_{BK} =	T_{BK} =	47.0	HR
Key Rule Check: Bankfull Volume must drain in 36 Hrs < TBK < 48 Hrs. Does the First Flush orifice satisfy this? If not, Bankfull Orifice is Required.			PASS

ORIFICE SIZING - BANKFULL = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	Value	Unit
Orifice diameter =	O_{BK-DIA} =	1.50	IN
Number of orifices at same elevation =	O_{BK-No} =	5	Dimensionless
Area of Bankfull orifice * # Orifices =	A_{BK} =	0.06	FT^2
Total head at V_{BK} water level=	h_{BK} =	4.29	FT
Avg. head for Remainder thru FF Orifice =	h_{REM-FF} =	3.84	FT
Avg. head for Remainder thru BK Orifice =	h_{REM-BK} =	0.91	FT
Remainder Volume = $V_{REM-BK} = V_{BK} - V_{FF}$ =	V_{REM-BK} =	21472	CFT
Avg. outflow rate Via. V_{BK} Orifice for Remainder =	Q_{REM-BK} =	0.29	CFS
Avg. outflow rate Via. V_{FF} Orifice for Remainder =	Q_{REM-FF} =	0.27	CFS
Combined Outflow Rate for Remainder =	$Q_{REM-TOT}$ =	0.56	CFS
Drain Time for V_{REM} =	T_{REM} =	10.7	HR
Drain Time for V_{FF} =	T_{FF} =	25.4	HR
Combined Drain Time for V_{BK} & V_{FF} =	V_{TOT-1} =	36.1	HR
Key Rule Check: Bankfull Volume must drain between 36 and 48 Hours on sites where infiltration req. is not met.			PASS

ORIFICE SIZING - 100-YR STORM = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	Value	Unit
Orifice diameter =	$O_{100-DIA}$ =	1.50	IN
Number of orifices at same elevation =	O_{100-No} =	5	Dimensionless
Area of First Flush orifice * # Orifices =	A_{100} =	0.06	FT^2
Total head at V_{100} water level=	h_{100} =	6.26	FT
Avg. head for Remainder2 thru FF Orifice =	$h_{REM2-FF}$ =	5.60	FT
Avg. head for Remainder2 thru BK Orifice =	$h_{REM2-BK}$ =	2.67	FT
Avg. head for 100-yr Orifice =	h_{100-YR} =	1.31	
Remainder2 Volume = $V_{REM2} = V_{100} - V_{BK}$ =	V_{REM2} =	75958	CFT
Avg. outflow rate Via. V_{BK} Orifice for Remainder2 =	$Q_{REM2-BK}$ =	0.50	CFS
Avg. outflow rate Via. V_{FF} Orifice for Remainder2 =	$Q_{REM2-FF}$ =	0.32	CFS
Avg. outflow rate Via. V_{100} Orifice =	$Q_{REM2-100}$ =	0.35	CFS
Combined Outflow Rate for REM2 =	$Q_{REM2-TOT}$ =	1.17	CFS
Drain Time for V_{REM2} =	T_{REM2} =	18.0	HR
Combined Drain Time for V_{BK} & V_{FF} =	V_{TOT-1} =	36.1	HR
Total Drain Time for 100-Year Storm = T_{100} =	T_{100} =	54.1	HR
Key Rule Check: 100-Year Storm must drain in < 72 Hours.			PASS

ORIFICE SIZING - MAX 100-YEAR OUTFLOW RATE = $Q_{MAX-100}$			
Term	Variable	Value	Unit
Orifice diameter =	$O_{100-DIA}$ =	1.50	IN
Number of orifices at same elevation =	O_{100-No} =	5.00	Dimensionless
Total head at V_{100D} water level =	h =	6.26	FT
Area of orifice * # Orifices =	A_O =	0.06	FT^2
Orifice coefficient =	C_O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S^2
Max outflow rate [thru 100-year orifice(s)] =	$Q_{MAX-100}$ =	3.82	CFS

MAX COMBINED OUTFLOW RATE - ALL ORIFICES			
Max head from 100-yr storm =	h_{100} =	6.26	FT
Max Head on A_{FF} Orifice = h_{100} =	h_{FF-MAX} =	6.26	FT
Max Head on A_{BK} Orifice = $h_{100} - h_{FF}$ =	h_{BK-MAX} =	3.33	FT
Max Head on A_{100} Orifice = $h_{100} - h_{BK}$ =	$h_{100-MAX}$ =	1.97	FT
MAX 100-year release rate from A_{FF} Orifice =	Q_{100-FF} =	0.34	CFS
MAX 100-year release rate from A_{BK} Orifice =	Q_{100-BK} =	0.56	CFS
MAX 100-year release rate from A_{100} Orifice =	$Q_{100-100}$ =	0.43	CFS
Project Area =	A =	9.00	Ac
Allowable outflow rate (0.15 CFS/Ac * A) =	Q_{100-A} =	1.35	CFS
Provided 100-year post-dev peak release rate =	Q_{100-PR} =	1.33	CFS
Key Rule Check: Provided 100-year Peak Release Rate must be <= 0.15 CFS/Ac * A			PASS

BASIN C ORIFICE CALCS

ORIFICE SIZING - FIRST FLUSH = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	1.5	Unit
Orifice diameter =	O_{FF-DIA} =	1.50	IN
Number of orifices at same elevation =	O_{FF-No} =	4	Dimensionless
Total head at V_{FF} water level=	h_{FF} =	2.25	FT
Average head at V_{FF} water level=	h_{FF-AVG} =	1.50	FT
Total head at V_{BK} water level=	h_{BK} =	3.30	FT
Average head at V_{BK} water level=	h_{BK-AVG} =	2.20	FT
Total head at V_{100} water level=	h_{100} =	5.85	FT
Average head at V_{100} water level=	$h_{100-AVG}$ =	3.90	FT
Area of First Flush orifice * # Orifices =	A_{FF} =	0.05	FT^2
Orifice coefficient =	C_O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S^2
Avg. outflow rate (Via V_{FF} orifice(s) W/ V_{FF} Event) =	$Q_{P-AVG-FF}$ =	0.30	CFS
First Flush Volume =	V_{FF} =	27,529	CFT
Drain Time for V_{FF} =	T_{FF} =	25.6	HR
Key Rule Check: First Flush volume must drain in > 24 hours.			PASS
Bankfull Volume =	V_{BK} =	62,202	CFT
Avg. outflow rate (Via V_{FF} orifice(s) W/ V_{BK} Event) =	$Q_{P-AVG-BK}$ =	0.36	CFS
Drain Time for V_{BK} =	T_{BK} =	47.7	HR
Key Rule Check: Bankfull Volume must drain in 36 Hrs < TBK < 48 Hrs. Does the First Flush orifice satisfy this? If not, Bankfull Orifice is Required.			PASS

ORIFICE SIZING - BANKFULL = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	Value	Unit
Orifice diameter =	O_{BK-DIA} =	3.00	IN
Number of orifices at same elevation =	O_{BK-No} =	2	Dimensionless
Area of Bankfull orifice * # Orifices =	A_{BK} =	0.10	FT^2
Total head at V_{BK} water level=	h_{BK} =	3.30	FT
Avg. head for Remainder thru FF Orifice =	h_{REM-FF} =	2.95	FT
Avg. head for Remainder thru BK Orifice =	h_{REM-BK} =	0.70	FT
Remainder Volume = $V_{REM-BK} = V_{BK} - V_{FF}$ =	V_{REM-BK} =	34673	CFT
Avg. outflow rate Via. V_{BK} Orifice for Remainder =	Q_{REM-BK} =	0.41	CFS
Avg. outflow rate Via. V_{FF} Orifice for Remainder =	Q_{REM-FF} =	0.42	CFS
Combined Outflow Rate for Remainder =	$Q_{REM-TOT}$ =	0.83	CFS
Drain Time for V_{REM} =	T_{REM} =	11.6	HR
Drain Time for V_{FF} =	T_{FF} =	25.6	HR
Combined Drain Time for V_{BK} & V_{FF} =	V_{TOT-1} =	37.2	HR
Key Rule Check: Bankfull Volume must drain between 36 and 48 Hours on sites where infiltration req. is not met.			PASS

ORIFICE SIZING - 100-YR STORM = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	Value	Unit
Orifice diameter =	$O_{100-DIA}$ =	2.00	IN
Number of orifices at same elevation =	O_{100-No} =	5	Dimensionless
Area of First Flush orifice * # Orifices =	A_{100} =	0.11	FT^2
Total head at V_{100} water level=	h_{100} =	5.85	FT
Avg. head for Remainder2 thru FF Orifice =	$h_{REM2-FF}$ =	5.00	FT
Avg. head for Remainder2 thru BK Orifice =	$h_{REM2-BK}$ =	2.75	FT
Avg. head for 100-yr Orifice =	h_{100-YR} =	1.70	
Remainder2 Volume = $V_{REM2} = V_{100} - V_{BK}$ =	V_{REM2} =	141001	CFT
Avg. outflow rate Via. V_{BK} Orifice for Remainder2 =	$Q_{REM2-BK}$ =	0.81	CFS
Avg. outflow rate Via. V_{FF} Orifice for Remainder2 =	$Q_{REM2-FF}$ =	0.55	CFS
Avg. outflow rate Via. V_{100} Orifice =	$Q_{REM2-100}$ =	0.71	CFS
Combined Outflow Rate for REM2 =	$Q_{REM2-TOT}$ =	2.06	CFS
Drain Time for V_{REM2} =	T_{REM2} =	19.0	HR
Combined Drain Time for V_{BK} & V_{FF} =	V_{TOT-1} =	37.2	HR
Total Drain Time for 100-Year Storm = T_{100} =	T_{100} =	56.2	HR
Key Rule Check: 100-Year Storm must drain in < 72 Hours.			PASS

ORIFICE SIZING - MAX 100-YEAR OUTFLOW RATE = $Q_{MAX-100}$			
Term	Variable	Value	Unit
Orifice diameter =	$O_{100-DIA}$ =	2.00	IN
Number of orifices at same elevation =	O_{100-No} =	5.00	Dimensionless
Total head at V_{100D} water level =	h =	5.85	FT
Area of orifice * # Orifices =	A_O =	0.11	FT^2
Orifice coefficient =	C_O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S^2
Max outflow rate [thru 100-year orifice(s)] =	$Q_{MAX-100}$ =	6.56	CFS

MAX COMBINED OUTFLOW RATE - ALL ORIFICES			
Max head from 100-yr storm =	h_{100} =	5.85	FT
Max Head on A_{FF} Orifice = h_{100} =	h_{FF-MAX} =	5.85	FT
Max Head on A_{BK} Orifice = $h_{100} - h_{FF}$ =	h_{BK-MAX} =	3.60	FT
Max Head on A_{100} Orifice = $h_{100} - h_{BK}$ =	$h_{100-MAX}$ =	2.55	FT
MAX 100-year release rate from A_{FF} Orifice =	Q_{100-FF} =	0.59	CFS
MAX 100-year release rate from A_{BK} Orifice =	Q_{100-BK} =	0.93	CFS
MAX 100-year release rate from A_{100} Orifice =	$Q_{100-100}$ =	0.87	CFS
Project Area =	A =	16.68	Ac
Allowable outflow rate (0.15 CFS/Ac * A) =	Q_{100-A} =	2.50	CFS
Provided 100-year post-dev peak release rate =	Q_{100-PR} =	2.38	CFS
Key Rule Check: Provided 100-year Peak Release Rate must be <= 0.15 CFS/Ac * A			PASS

BASIN D ORIFICE CALCS

ORIFICE SIZING - FIRST FLUSH = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	1.5	Unit
Orifice diameter =	O_{FF-DIA} =	0.50	IN
Number of orifices at same elevation =	O_{FF-No} =	10	Dimensionless
Total head at V_{FF} water level=	h_{FF} =	1.90	FT
Average head at V_{FF} water level=	h_{FF-AVG} =	1.27	FT
Total head at V_{BK} water level=	h_{BK} =	2.72	FT
Average head at V_{BK} water level=	h_{BK-AVG} =	1.81	FT
Total head at V_{100} water level=	h_{100} =	5.48	FT
Average head at V_{100} water level=	$h_{100-AVG}$ =	3.65	FT
Area of First Flush orifice * # Orifices =	A_{FF} =	0.01	FT^2
Orifice coefficient =	C_O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S^2
Avg. outflow rate (Via V_{FF} orifice(s) W/ V_{FF} Event) =	$Q_{P-AVG-FF}$ =	0.08	CFS
First Flush Volume =	V_{FF} =	6,625	CFT
Drain Time for V_{FF} =	T_{FF} =	24.1	HR
Key Rule Check: First Flush volume must drain in > 24 hours.			PASS
Bankfull Volume =	V_{BK} =	14,845	CFT
Avg. outflow rate (Via V_{FF} orifice(s) W/ V_{BK} Event) =	$Q_{P-AVG-BK}$ =	0.09	CFS
Drain Time for V_{BK} =	T_{BK} =	45.1	HR
Key Rule Check: Bankfull Volume must drain in 36 Hrs < TBK < 48 Hrs. Does the First Flush orifice satisfy this? If not, Bankfull Orifice is Required.			PASS

ORIFICE SIZING - BANKFULL = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	Value	Unit
Orifice diameter =	O_{BK-DIA} =	2.00	IN
Number of orifices at same elevation =	O_{BK-No} =	1	Dimensionless
Area of Bankfull orifice * # Orifices =	A_{BK} =	0.02	FT^2
Total head at V_{BK} water level=	h_{BK} =	2.72	FT
Avg. head for Remainder thru FF Orifice =	h_{REM-FF} =	2.45	FT
Avg. head for Remainder thru BK Orifice =	h_{REM-BK} =	0.55	FT
Remainder Volume = $V_{REM-BK} = V_{BK} - V_{FF}$ =	V_{REM-BK} =	8220	CFT
Avg. outflow rate Via. V_{BK} Orifice for Remainder =	Q_{REM-BK} =	0.08	CFS
Avg. outflow rate Via. V_{FF} Orifice for Remainder =	Q_{REM-FF} =	0.11	CFS
Combined Outflow Rate for Remainder =	$Q_{REM-TOT}$ =	0.19	CFS
Drain Time for V_{REM} =	T_{REM} =	12.3	HR
Drain Time for V_{FF} =	T_{FF} =	24.1	HR
Combined Drain Time for V_{BK} & V_{FF} =	V_{TOT-1} =	36.4	HR
Key Rule Check: Bankfull Volume must drain between 36 and 48 Hours on sites where infiltration req. is not met.			PASS

ORIFICE SIZING - 100-YR STORM = $Q_{P-AVG-BK} = C_O \times A_O \times SQRT(2 \times g \times h)$			
Term	Variable	Value	Unit
Orifice diameter =	$O_{100-DIA}$ =	2.00	IN
Number of orifices at same elevation =	O_{100-No} =	5	Dimensionless
Area of First Flush orifice * # Orifices =	A_{100} =	0.11	FT^2
Total head at V_{100} water level=	h_{100} =	5.48	FT
Avg. head for Remainder2 thru FF Orifice =	$h_{REM2-FF}$ =	4.56	FT
Avg. head for Remainder2 thru BK Orifice =	$h_{REM2-BK}$ =	2.66	FT
Avg. head for 100-yr Orifice =	h_{100-YR} =	1.84	
Remainder2 Volume = $V_{REM2} = V_{100} - V_{BK}$ =	V_{REM2} =	39273	CFT
Avg. outflow rate Via. V_{BK} Orifice for Remainder2 =	$Q_{REM2-BK}$ =	0.18	CFS
Avg. outflow rate Via. V_{FF} Orifice for Remainder2 =	$Q_{REM2-FF}$ =	0.14	CFS
Avg. outflow rate Via. V_{100} Orifice =	$Q_{REM2-100}$ =	0.74	CFS
Combined Outflow Rate for REM2 =	$Q_{REM2-TOT}$ =	1.06	CFS
Drain Time for V_{REM2} =	T_{REM2} =	10.3	HR
Combined Drain Time for V_{BK} & V_{FF} =	V_{TOT-1} =	36.4	HR
Total Drain Time for 100-Year Storm = T_{100} =	T_{100} =	46.7	HR
Key Rule Check: 100-Year Storm must drain in < 72 Hours.			PASS

ORIFICE SIZING - MAX 100-YEAR OUTFLOW RATE = $Q_{MAX-100}$			
Term	Variable	Value	Unit
Orifice diameter =	$O_{100-DIA}$ =	2.00	IN
Number of orifices at same elevation =	O_{100-No} =	5.00	Dimensionless
Total head at V_{100D} water level =	h =	5.48	FT
Area of orifice * # Orifices =	A_O =	0.11	FT^2
Orifice coefficient =	C_O =	0.62	Dimensionless
Gravity constant =	g =	32.2	FT/S^2
Max outflow rate [thru 100-year orifice(s)] =	$Q_{MAX-100}$ =	6.35	CFS

MAX COMBINED OUTFLOW RATE - ALL ORIFICES			
Max head from 100-yr storm =	h_{100} =	3.00	FT
Max Head on A_{FF} Orifice = h_{100} =	h_{FF-MAX} =	3.00	FT
Max Head on A_{BK} Orifice = $h_{100} - h_{FF}$ =	h_{BK-MAX} =	1.10	FT
Max Head on A_{100} Orifice = $h_{100} - h_{BK}$ =	$h_{100-MAX}$ =	0.28	FT
MAX 100-year release rate from A_{FF} Orifice =	Q_{100-FF} =	0.12	CFS
MAX 100-year release rate from A_{BK} Orifice =	Q_{100-BK} =	0.11	CFS
MAX 100-year release rate from A_{100} Orifice =	$Q_{100-100}$ =	0.29	CFS
Project Area =	A =	3.62	Ac
Allowable outflow rate (0.15 CFS/Ac * A) =	Q_{100-A} =	0.54	CFS
Provided 100-year post-dev peak release rate =	Q_{100-PR} =	0.52	CFS
Key Rule Check: Provided 100-year Peak Release Rate must be <= 0.15 CFS/Ac * A			PASS

HYDRAULIC PIPE CALCULATIONS

STRUCTURE UP STREAM	STRUCTURE DOWN STREAM	A DRAINAGE AREA (ACRES)	C RUNOFF COEF.	EQUIV. AREA 100% ACRES (C x A)	TOTAL AREA 100% ACRES (SUM C x A)	T TIME (MIN.)	I INTENSITY (IN / HR)	Q FLOW (C.F.S.) (C x I x A)	CAPACITY OF PIPE (C.F.S.)	DIAM. OF PIPE (IN.)	LENGTH OF PIPE (FT.)	SLOPE OF PIPE (%)	MIN HG BASED ON "Q" (%)	HG (%)	VELOCITY (FT / SEC)	TIME OF FLOW (MIN.)	H.G.L. ELEV. UPPER END	H.G.L. ELEV. LOWER END	GROUND ELEV. UPPER END	GROUND ELEV. LOWER END	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END
ON-SITE DESIGN																						
110	109	0.00	0.00	0.00	0.00	10.00	5.00	0.00	44.99	42	54	0.20	0.00	0.20	4.7	0.20	809.85	809.74	817.70	817.02	806.35	806.24
109	108	0.00	0.00	0.00	0.00	10.20	4.97	0.00	44.99	42	137	0.20	0.00	0.20	4.7	0.50	809.74	809.47	817.02	816.68	806.24	805.97
108	107	0.00	0.00	0.00	0.00	10.70	4.90	0.00	44.99	42	44	0.20	0.00	0.20	4.7	0.20	809.47	809.38	816.68	816.68	805.97	805.88
107	106	0.00	0.00	0.00	0.46	10.90	4.87	2.24	44.99	42	352	0.20	0.00	0.20	4.7	1.30	809.38	808.68	816.68	815.92	805.88	805.18
106	105	0.00	0.00	0.00	0.46	12.20	4.70	2.24	44.99	42	246	0.20	0.00	0.20	4.7	0.90	808.68	808.19	815.92	816.48	805.18	804.68
105	104	0.00	0.00	0.00	0.46	13.10	4.59	2.24	44.99	42	126	0.20	0.00	0.20	4.7	0.40	808.19	807.93	816.48	814.78	804.68	804.43
104	103	0.00	0.00	0.00	0.46	13.50	4.55	2.24	44.99	42	316	0.20	0.00	0.20	4.7	1.10	807.93	807.30	814.78	817.55	804.43	803.80
103	102	0.00	0.00	0.00	0.46	14.60	4.42	2.24	44.99	42	284	0.20	0.00	0.20	4.7	1.00	807.30	806.73	817.55	814.78	803.80	803.23
102	101	0.00	0.00	0.00	0.46	15.60	4.31	2.24	44.99	42	49	0.20	0.00	0.20	4.7	0.20	806.73	806.64	814.78	813.41	803.23	803.14
101	100	0.00	0.00	0.00	0.46	15.80	4.29	2.24	44.99	42	68	0.20	0.00	0.20	4.7	0.20	806.64	806.50	813.41	811.55	803.14	803.00
114A	114	0.07	0.35	0.02	0.02	10.00	5.00	0.12	2.88	12	55	0.65	0.00	0.65	3.7	0.30	812.39	812.03	814.84	815.29	811.59	811.23
114	113	0.25	0.76	0.19	0.21	10.30	4.96	1.06	2.88	12	211	0.65	0.09	0.65	3.7	1.00	812.03	810.65	815.29	814.82	811.23	809.85
113	112	0.33	0.74	0.24	0.46	11.30	4.82	2.21	2.87	12	53	0.65	0.39	0.65	3.7	0.20	810.65	810.30	814.82	815.62	809.85	809.50
112	111A	0.00	0.00	0.00	0.46	11.50	4.79	2.21	11.08	24	49	0.24	0.01	0.24	3.5	0.20	809.44	809.32	815.62	815.75	807.44	807.32
111A	111	0.00	0.00	0.00	0.46	11.70	4.77	2.21	11.08	24	39	0.24	0.01	0.24	3.5	0.20	809.32	809.23	815.75	815.75	807.32	807.23
111	107	0.00	0.00	0.00	0.46	11.90	4.74	2.21	11.08	24	95	0.24	0.01	0.24	3.5	0.50	809.23	809.00	815.75	816.68	807.23	807.00
203	202	1.30	0.35	0.46	0.46	10.00	5.00	2.28	2.30	10	48	1.10	1.08	1.10	4.2	0.20	811.26	810.72	814.72	810.85	810.42	809.89
304	303	1.30	0.35	0.46	0.46	10.00	5.00	2.28	2.30	10	33	1.10	1.08	1.10	4.2	0.10	811.62	811.25	814.21	811.71	810.79	810.42
319	318	0.05	0.95	0.05	0.05	10.00	5.00	0.24	1.21	8	37	1.00	0.04	1.00	3.5	0.20	814.50	814.13	817.25	817.25	813.96	813.59
318	314-3	0.03	0.95	0.03	0.08	10.20	4.97	0.38	1.21	8	11	1.00	0.10	1.00	3.5	0.10	814.13	814.01	817.25	854.63	813.59	813.48
314-3	314-2	0.00	0.00	0.00	0.08	10.30	4.96	0.38	1.21	8	20	1.00	0.10	1.00	3.5	0.10	814.01	813.81	854.63	0.80	813.48	813.28
314-2	314-1	0.00	0.00	0.00	0.08	10.40	4.94	0.38	1.21	8	36	1.00	0.10	1.00	3.5	0.20	813.81	813.45	0.80	854.04	813.28	812.92
314-1	314	0.00	0.00	0.00	0.08	10.60	4.92	0.38	1.21	8	14	1.00	0.10	1.00	3.5	0.10	813.45	813.31	854.04	816.88	812.92	812.77
314	310	0.00	0.00	0.00	0.24	10.70	4.90	1.16	1.21	8	57	1.00	0.93	1.00	3.5	0.30	813.31	812.74	816.88	816.81	812.77	812.20
310	309	0.00	0.00	0.00	0.37	11.00	4.86	1.80	2.76	12	11	0.60	0.26	0.60	3.5	0.10	812.74	812.67	816.81	816.70	811.93	811.87
309	308	0.16	0.95	0.15	0.52	11.10	4.85	2.53	2.76	12	33	0.60	0.51	0.60	3.5	0.20	812.67	812.47	816.70	816.70	811.87	811.67
308	307A	0.04	0.95	0.04	0.56	11.30	4.82	2.70	2.76	12	255	0.60	0.58	0.60	3.5	1.20	812.47	810.94	816.70	811.60	811.67	810.14
307A	307	0.00	0.95	0.00	0.56	12.50	4.67	2.70	6.17	12	21	3.00	0.58	3.00	7.9	0.00	808.64	808.00	811.60	810.25	807.64	807.00
317	316	0.08	0.95	0.08	0.08	10.00	5.00	0.38	0.87	8	71	0.52	0.10	0.52	2.5	0.50	814.18	813.81	815.96	816.77	813.51	813.14
316	315	0.04	0.95	0.04	0.11	10.50	4.93	0.56	0.87	8	54	0.52	0.22	0.52	2.5	0.40	813.81	813.53	816.77	816.74	813.14	812.86
315	314	0.05	0.95	0.05	0.16	10.90	4.87	0.79	0.87	8	12	0.52	0.42	0.52	2.5	0.10	813.53	813.47	816.74	816.88	812.86	812.80
313	312	0.07	0.95	0.07	0.07	10.00	5.00	0.33	0.87	8	56	0.52	0.08	0.52	2.5	0.40	814.00	813.70	816.16	816.92	813.33	813.04
312	311	0.03	0.95	0.03	0.10	10.40	4.94	0.47	0.87	8	46	0.52	0.15	0.52	2.5	0.30	813.70	813.46	816.92	816.89	813.04	812.80
311	310-3	0.04	0.95	0.04	0.13	10.70	4.90	0.65	0.87	8	12	0.52	0.29	0.52	2.5	0.10	813.46	813.40	816.89	817.05	812.80	812.73
310-3	310-2	0.00	0.95	0.00	0.13	10.80	4.89	0.65	0.87	8	8	0.52	0.29	0.52	2.5	0.10	813.40	813.36	817.05	0.60	812.73	812.69
310-2	310-1	0.00	0.95	0.00	0.13	10.90	4.87	0.65	0.87	8	37	0.52	0.29	0.52	2.5	0.20	813.36	813.16	0.60	817.75	812.69	812.50
310-1	310	0.00	0.95	0.00	0.13	11.10	4.85	0.65	0.87	8	9	0.52	0.29	0.52	2.5	0.10	813.16	813.12	817.75	816.81	812.50	812.45
321	321A	2.29	0.35	0.80	0.80	10.00	5.00	4.01	4.10	10	23	3.50	3.35	3.50	7.5	0.10	810.86	810.03	814.19	810.16	810.02	809.20
334	333	0.03	0.95	0.03	0.03	10.00	5.00	0.14	1.05	8	32	0.75	0.01	0.75	3.0	0.20	813.51	813.27	816.70	816.70	812.57	812.33
333	332	0.02	0.95	0.02	0.05	10.20	4.97	0.24	1.05	8	52	0.75	0.04	0.75	3.0	0.30	813.27	812.87	816.70	816.31	812.33	811.94
332	331	0.00	0.00	0.00	2.11	10.50	4.93	10.40	13.38	24	75	0.35	0.21	0.35	4.3	0.30	812.87	812.61	816.31	816.40	810.87	810.61
331	329	0.12	0.36	0.04	2.15	10.80	4.89	10.53	13.38	24	33	0.35	0.22	0.35	4.3	0.10	812.61	812.49	816.40	816.95	810.61	810.49
329	328	0.00	0.95	0.00	2.74	10.90	4.87	13.34	13.38	24	18	0.35	0.35	0.35	4.3	0.10	812.49	812.43	816.95	816.86	810.49	810.43
328	325	0.00	0.95	0.00	2.74	11.00	4.86	13.34	13.38	24	220	0.35	0.35	0.35	4.3	0.90	812.43	811.66	816.86	815.44	810.43	809.66
325	324	0.00	0.95	0.00	3.37	11.90	4.74	15.98	16.00	24	82	0.50	0.50	0.50	5.1	0.30	811.66	811.25	815.44	812.81	809.66	809.25
327-1	327	1.15	0.55	0.63	0.63	10.00	5.00	3.16	1.21	8	10	1.00	6.85	1.00	3.5	0.00	813.67	812.99	816.36	816.75	812.35	812.25
327	325	0.00	0.00	0.00	0.63	10.00	5.00	3.16	3.56	12	20	1.00	0.79	1.00	4.5	0.10	812.99	812.79	816.75	815.44	811.99	811.79
330-1	330	1.06	0.55	0.58	0.58	10.00	5.00	2.92	1.21	8	10	1.00	5.82	1.00	3.5	0.00	813.56	812.98	0.39	816.94	812.35	812.25
330	329	0.00	0.00	0.00	0.58	10.00	5.00	2.92	3.56	12	8	1.00	0.67	1.00	4.5	0.00	812.98	812.90	816.94	816.95	811.98	811.90
332-1	332	3.75	0.55	2.06	2.06	10.00	5.00	10.31	0.90	8	15	0.55	72.84	0.55	2.6	0.10	822.31	811.69	0.39	816.31	811.10	811.02
403	402	1.30	0.35	0.46	0.46	10.00	5.00	2.28	2.30	10	39	1.10	1.08	1.10	4.2	0.20	811.13	810.70	814.77	810.96	810.30	809.87
405	404	0.39	0.35	0.14	0.14	10.00	5.00	0.68	3.49	12	73	0.96	0.04	0.96	4.4	0.30	815.00	814.30	0.75	814.95	814.00	813.30
413	412	0.03	0.95	0.03	0.03	10.00	5.00	0.14	0.90	8	36	0.55	0.01	0.55	2.6	0.20	814.08	813.88	816.70	816.70	813.15	812.95
412	411A	0.03	0.95	0.03	0.06	10.20	4.97	0.28	0.90	8	29	0.55	0.05	0.55	2.6	0.20	813.88	813.72	816.70	816.78	812.95	812.79
411A	411	0.00	0.00	0.00	0.06	10.40	4.94	0.28	0.90	8	57	0.55	0.05	0.55	2.6	0.40	813.72	813.41	816.78	815.80	812.79	812.47
411	410	0.03	0.35	0.01	0.11	10.80	4.89	0.55	1.55	10	89	0.50	0.06	0.50	2.8	0.50	813.41	812.97	815.80	815.80	812.34	811.90
410	409	0.03	0.35	0.01	0.12	11.30	4.82	0.59	1.55	10	42	0.50	0.07	0.50	2.8	0.20	812.97	812.76	815.80	815.47	811.90	811.69
409	408	0.36	0.38	0.14	0.26	11.50	4.79	1.25	2.52	12	49	0.50	0.12	0.50	3.2	0.30	812.76	812.51	815.47	816.47	811.55	811.31
408	407	0.00	0.00	0.00	0.26	11.80	4.76	1.25	5.75	18	100	0.30	0.01	0.30	3.3	0.50	812.51	812.21	816.47	817.01	810.91	810.61
407	406	0.00	0.00	0.00	2.04	12.30	4.69	9.57	13.38	24	59	0.35	0.18	0.35	4.3	0.20	812.21	812.00	817.01	812.19	810.21	810.00
414	411	0.06	0.75	0.05	0.05	10.00	5.00	0.23	1.47	10	25	0.45	0.01	0.45	2.7	0.20	813.30	813.18	815.50	815.80	812.46	812.35
420	419B	0.31	0.35	0.11	0.11	10.00	5.00	0.54	2.02	12	79	0.32	0.02	0.32	2.6	0.50	813.07	812.82	814.57	817.39	811.87	811.62
419B	419A	0.00	0.00	0.00	0.11	10.50	4.93	0.54	2.02	12	128	0.32	0.02	0.32	2.6	0.80	812.82	812.41	817.39	814.49	811.62	811.21
419A	419	0.00	0.00	0.00	0.11	11.30	4.82	0.54	2.02	12	13	0.32	0.02	0.32	2.6	0.10	812.41	812.37	814.49	814.23	811.21	811.17
419	407	1.90	0.88	1.67	1.78	11.40	4.81	8.56	8.76	24	105	0.15	0.14	0.15	2.8	0.60	812.37	812.21	814.23	817.01	810.37	810.21
418	417	0.33	0.69	0.23	0.23	10.00	5.00	1.14	2.02	12	158	0.32	0.10	0.32	2.6	1.00	813.50	813.00	814.92	814.92	812.50	812.00
417	417A	0.29	0.64	0.19	0.41	11.00	4.86	2.01	2.02	12	86	0.32	0.32	0.32	2.6	0.60	813.00	812.72	814.92	812.99	812.00	811.72
503	384A	0.94	0.70	0.66	0.66	10.00	5.00	3.29	3.67	12	212	1.06	0.85	1.07	4.7	0.80	815.60	813.34	817.50	815.40	814.50	812.24
384A	384	0.39	0.60	0.23	0.89	10.80	4.89	4.36	4.70	18	94	0.20	0.17	0.20	2.7	0.60	813.34	813.15	818.50	0.75	811.84	811.65
510	509	0.37	0.35	0.13	0.13	10.00	5.00	0.65	2.11	12	81	0.35	0.03	0.35	2.7	0.50	813.61	813.32	815.60	815.60	812.55	812.27
509	508	0.07	0.40	0.03	0.16	10.50	4.93	0.78	2.11	12	97	0.35	0.05	0.35	2.7	0.60	813.32	812.98	815.60	815.82	812.27	811.93
508	506	0.09	0.55	0.05	0.21	11.10	4.85	1.00	2.11	12	34	0.35	0.08	0.35	2.7	0.20	812.98	812.86	815.82	815.76	811.93	811.81
506	505	0.29	0.56	0.16	0.66	11.30	4.82	3.18	3.82	15	64	0.35	0.24	0.35	3.1	0.30	812.86	812.64	815.76	816.65	811.61	811.39
505	504	0.23	0.43	0.10	0.76	11.60	4.78	3.63	3.82	15	111	0.35	0.32	0.35	3.1	0.60	812.64	812.25	816.65	0.75	811.39	811.00
507	506	0.56	0.52	0.29	0.29	10.00	5.00	1.46	2.02	12	164	0.32	0.17	0.32	2.6	1.10	813.39	812.86	815.47	815.76	812.38	811.85

HYDRAULIC PIPE CALCULATIONS

KINGSCOTT

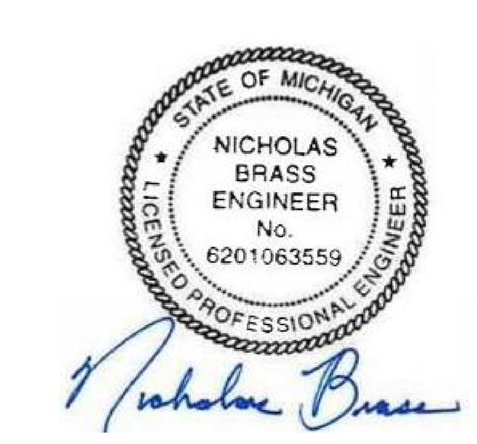
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

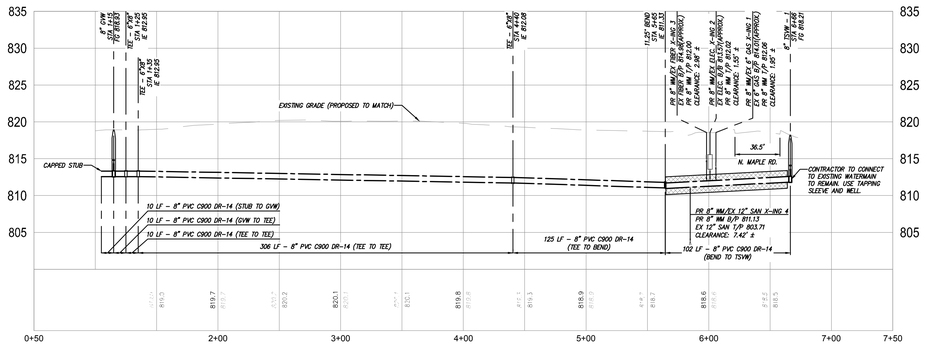
REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
DESIGN DEVELOPMENT	08/22/2024
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024



JOB NO. **2900-09A**

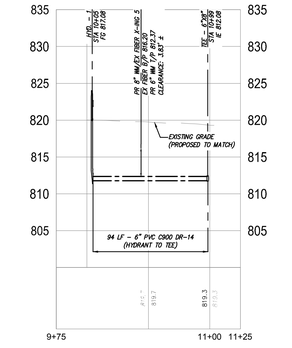
SHEET TITLE
Stormwater Calculations

SHEET NO.
C3.14



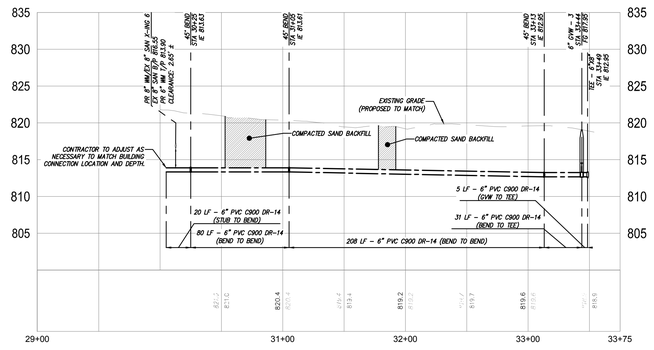
WATER MAIN PROFILE - EX WM TO STUB - EAST

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



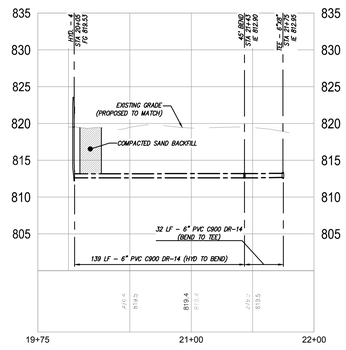
WATER MAIN PROFILE - HYDRANT 1 TO TEE - EAST

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



WATER MAIN PROFILE - BLDG LEAD TO TEE - EAST

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



WATER MAIN PROFILE - HYDRANT 4 TO TEE - EAST

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
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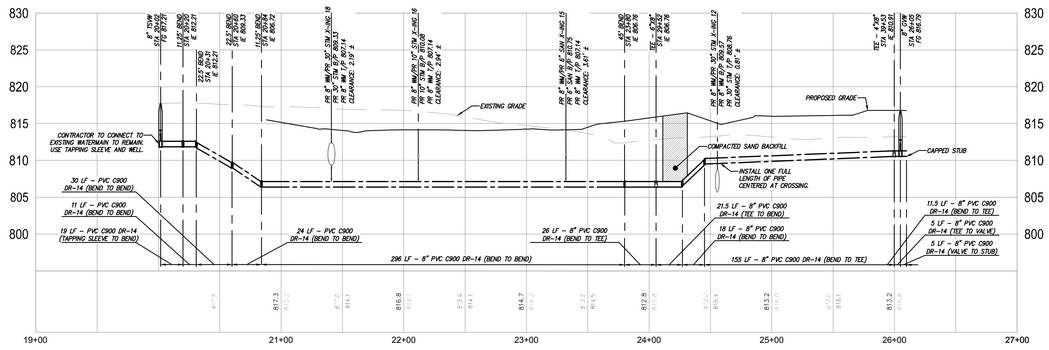
DESIGN DEVELOPMENT	08/22/2024
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

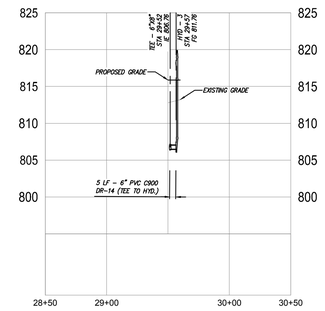
SHEET TITLE
Watermain Profiles (1 of 2)

SHEET NO.
C3.15



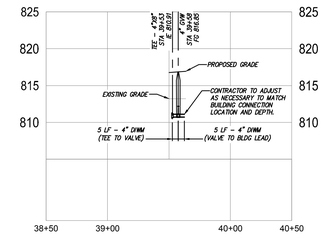
WATER MAIN PROFILE - EX WM TO STUB - WEST

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



WATER MAIN PROFILE - HYDRANT #3 - WEST

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



WATER MAIN PROFILE - TEE TO BLDG LEAD - WEST

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
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DESIGN DEVELOPMENT	08/22/2024
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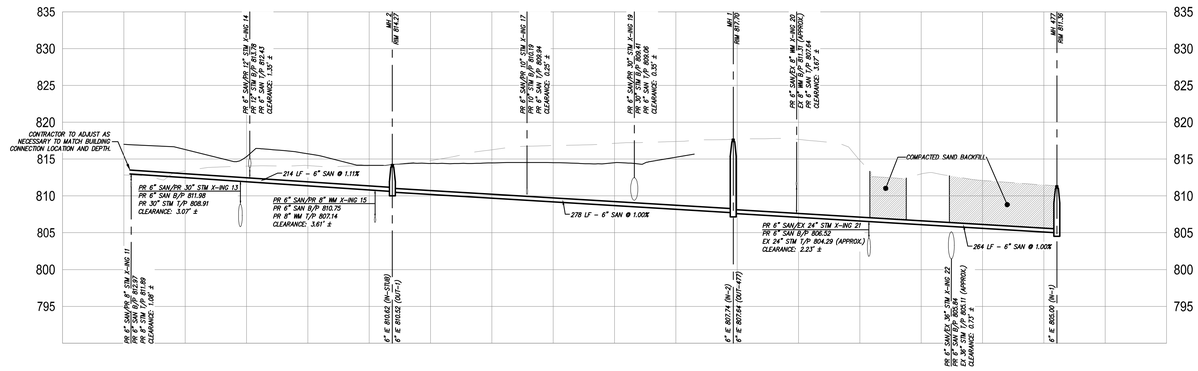
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
LICENSED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE
Watermain Profiles (2 of 2)

SHEET NO.
C3.16



SANITARY PROFILE - PR. BLDG TO EX. MH

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

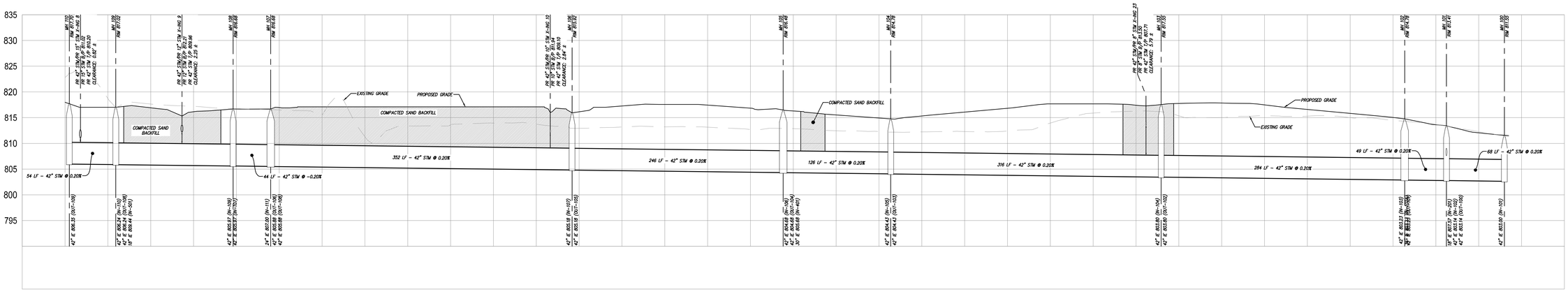
REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
DESIGN DEVELOPMENT	08/22/2024
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

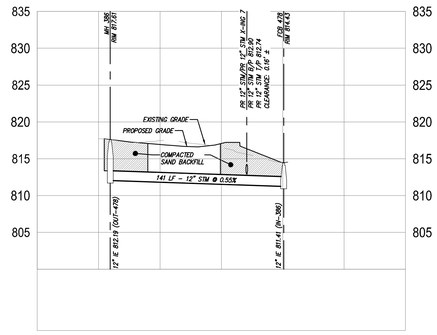
SHEET TITLE
Sanitary Profile

SHEET NO.
C3.17



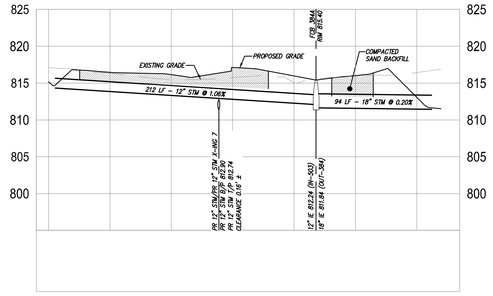
STORMWATER PROFILE - MH 100 TO MH 110

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



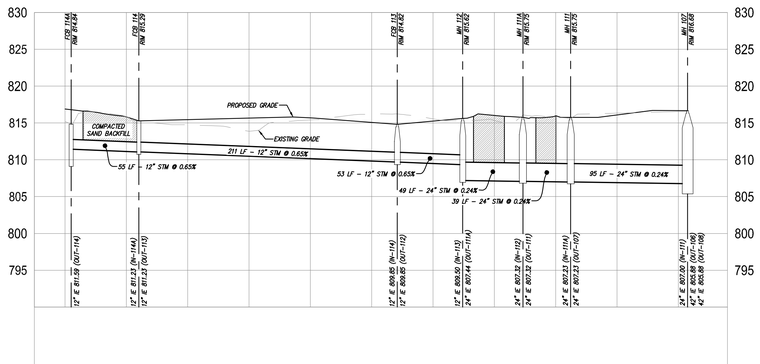
STORMWATER PROFILE - MH 386 TO EX. CB 73

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - ES 503 TO ES 384

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - FCB 114A TO MH 107

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
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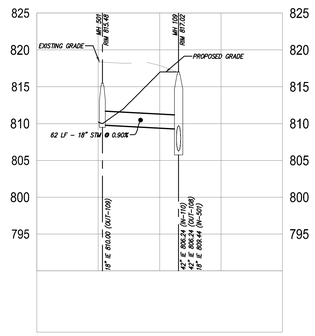
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

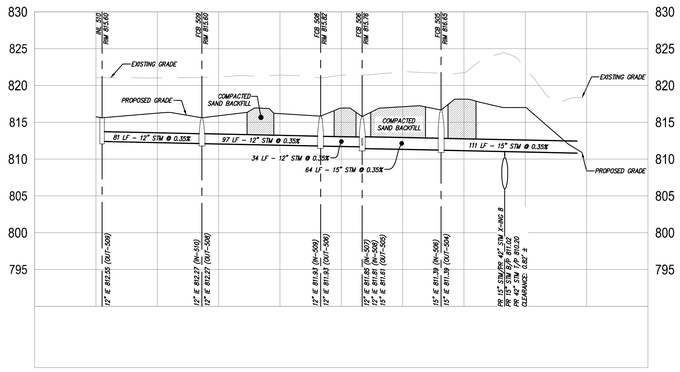
SHEET TITLE
Stormwater Profiles (1 of 4)

SHEET NO.
C3.18



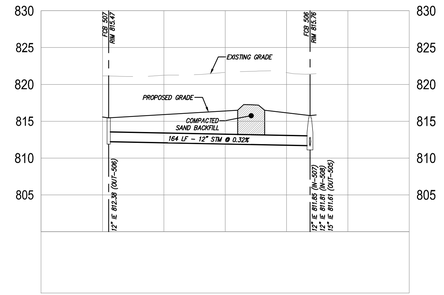
STORMWATER PROFILE - OCS 501 TO MH 109

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - FCB 510 TO ES 504

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - FCB 507 TO FCB 506

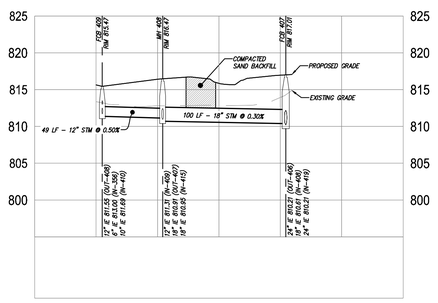
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

STORMWATER PROFILE - FCB 416 TO MH 408

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

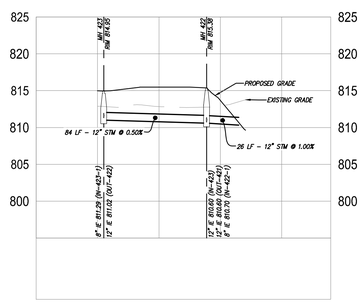
STORMWATER PROFILE - FCB 419 TO ES 406

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - FCB 409 TO FCB 407

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - MH 423 TO ES 421

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
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STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

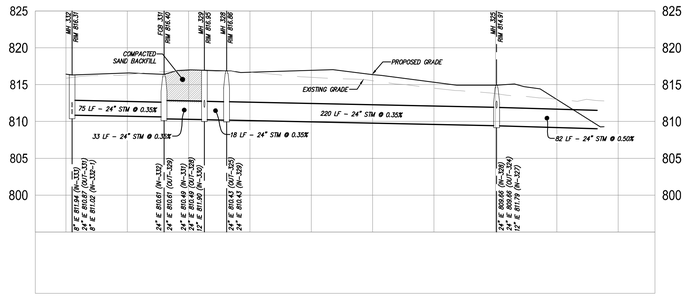
JOB NO. **2900-09A**

SHEET TITLE

Stormwater Profiles (2 of 4)

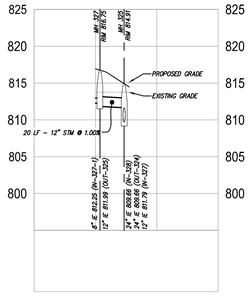
SHEET NO.

C3.19



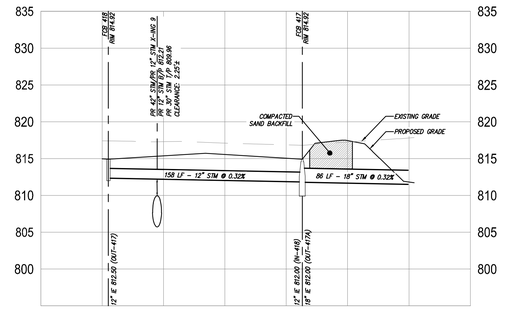
STORMWATER PROFILE - MH 332 TO ES 324

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



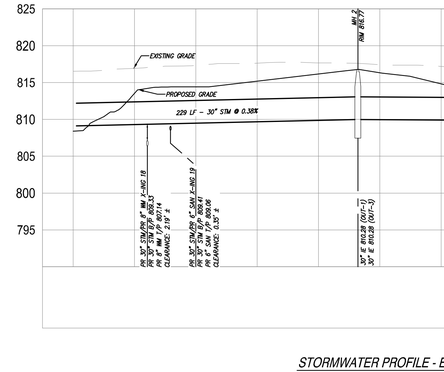
STORMWATER PROFILE - MH 330 TO MH 329

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



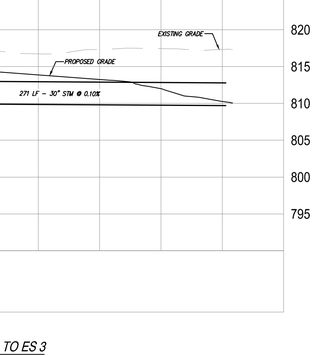
STORMWATER PROFILE - FCB 418 TO ES 417A

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



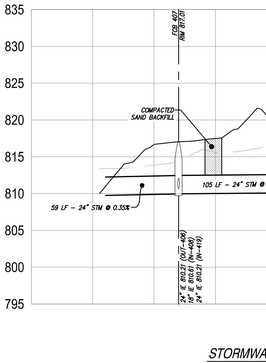
STORMWATER PROFILE - OCS 401 TO MH 105

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - ES 405 TO ES 404

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - MH 330 TO MH 329

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

STORMWATER PROFILE - ES 1 TO ES 3

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

STORMWATER PROFILE - FCB 420 TO ES 406

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

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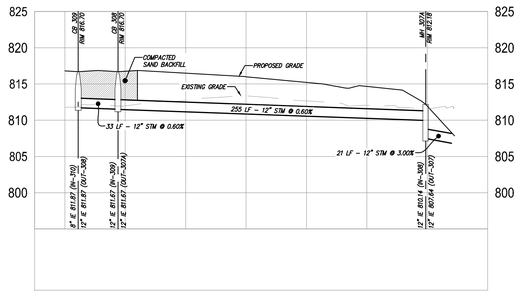
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

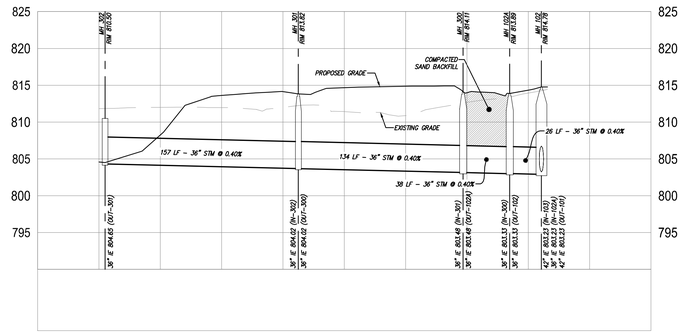
SHEET TITLE
Stormwater Profiles (3 of 4)

SHEET NO.
C3.20



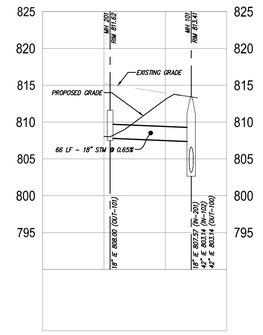
STORMWATER PROFILE - FCB 309 TO ES 307

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



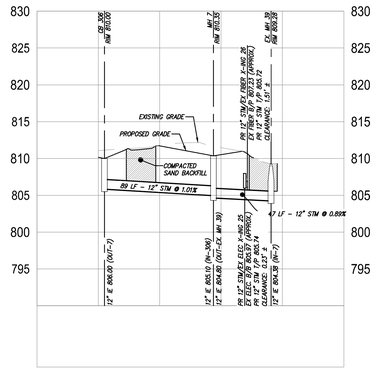
STORMWATER PROFILE - OCS 302 TO MH 102

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



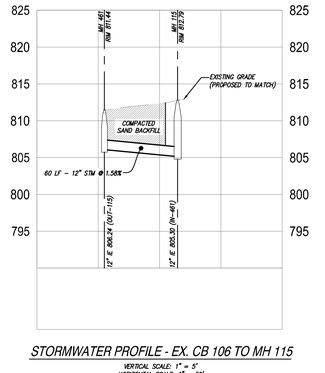
STORMWATER PROFILE - OCS 201 TO MH 101

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - FCB 306 TO EX. MH 39

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STORMWATER PROFILE - EX. CB 106 TO MH 115

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
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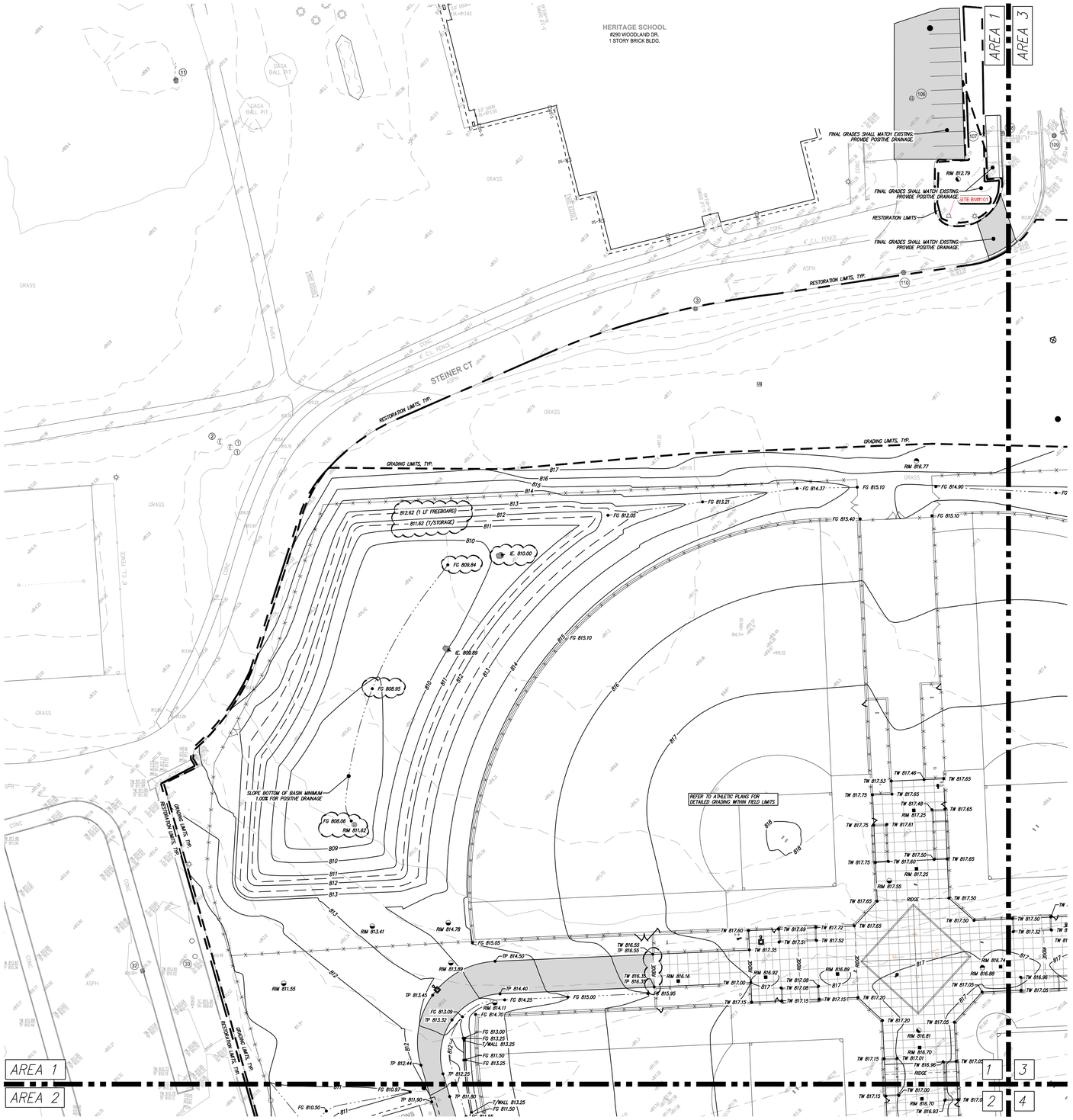
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE
Stormwater Profiles (4 of 4)

SHEET NO.
C3.21



LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 / XXX — STRUCT. NO. / STRUCT. TYPE

GRADING LEGEND

- EXISTING ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED GUTTER ELEVATION
- OUTSIDE GRADE ELEVATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- TP 000.00 — TOP OF PAVEMENT ELEVATION
- TW 000.00 — TOP OF WALK ELEVATION
- FG 000.00 — FINISH GRADE ELEVATION
- T/WALL 000.00 — TOP OF WALL ELEVATION
- ME 000.00 — MATCH EXISTING ELEVATION
- FLOW ARROW

GRADING NOTES

1. CONTRACTOR TO PLACE ALL NEW PAVEMENT TO THE GRADES INDICATED, OR MATCH ORIGINAL GRADES IF NEW GRADES ARE NOT SHOWN. CONTRACTOR SHALL CONFIRM MINIMUM 1% PAVEMENT SLOPES ARE ATTAINED IN ALL AREAS.
2. PROPOSED GRADES MAY BE BASED ON AN INTERPOLATION OF DATA SHOWN ON THE TOPOGRAPHIC SURVEY. THIS INTERPOLATED DATA IS APPROXIMATE AND COULD DIFFER SLIGHTLY, BASED ON THE ACCURACY OF THE SURVEY. CONTRACTOR SHALL CONFIRM THAT THE PROPOSED GRADES SHOWN ON THIS PLAN WILL NOT CREATE A STANDING WATER CONDITION (I.E. A LOW SPOT OR PAVEMENT SLOPES LESS THAN 1%) OR AN UNSAFE CONDITION WITH SLOPES IN EXCESS OF 5%. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF THEY BELIEVE THAT ONE OF THESE SITUATIONS WILL OCCUR BASED ON THE PROPOSED GRADES.
3. ALL PAVEMENT PLACED WITHIN BARRIER FREE PARKING AREAS (STALLS AND ACCESS AISLES) SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION, INCLUDING MEASURED DIAGONALLY ACROSS THE AREAS. CONTRACTOR SHALL ADJUST SLOPES AS NECESSARY TO PROVIDE ADA COMPLIANT SLOPES AS WELL AS PROVIDING RE-GRADED TRANSITION SLOPES OUTSIDE OF THE BARRIER FREE PARKING AREAS. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF TRANSITION ZONES WILL EXCEED MAXIMUM 5% SLOPES. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE PATTERNS WITH ALL NECESSARY PAVEMENT RE-GRADING.
4. ALL BARRIER FREE RAMPS AND ADA ACCESSIBLE ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSION OF MDOT DETAIL R-28 "SIDEWALK RAMP AND DETECTABLE WARNING DETAILS".
5. CONTRACTOR IS RESPONSIBLE FOR CONTROLLING STORM WATER RUNOFF DURING CONSTRUCTION OPERATIONS. OF PARTICULAR CONCERN WILL BE THE TIME PERIOD AFTER THE SITE HAS BEEN STRIPPED AND NOT YET RESTORED, BUILT UPON, OR PAVED. CONTRACTOR MUST INSTALL OR CONSTRUCT APPROPRIATE TEMPORARY MEASURES TO PROTECT ADJACENT PROPERTIES.

RESTORATION NOTE

RESTORE ALL NON-PAVED AREAS WITH 3" OF CLEAN TOPSOIL AND SEED MIX (30% KENTUCKY BLUEGRASS, 30% PERENNIAL RYEGRASS, 50% CREEPING RED FESCUE). PLACE MULCH IN ALL SEEDED AREAS. ON SLOPES IN EXCESS OF 10 HORIZONTAL TO 1 VERTICAL PLACE NORTH AMERICAN GREEN DS150 MULCH BLANKET IMMEDIATELY AFTER SEEDING. USE METAL STAPLES PER MANUFACTURERS RECOMMENDATIONS TO HOLD MATTING IN PLACE.

GRAPHIC SCALE
0 15 30 60
(IN FEET)
1 inch = 30 ft.

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS
7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
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DESIGN DEVELOPMENT	08/22/2024
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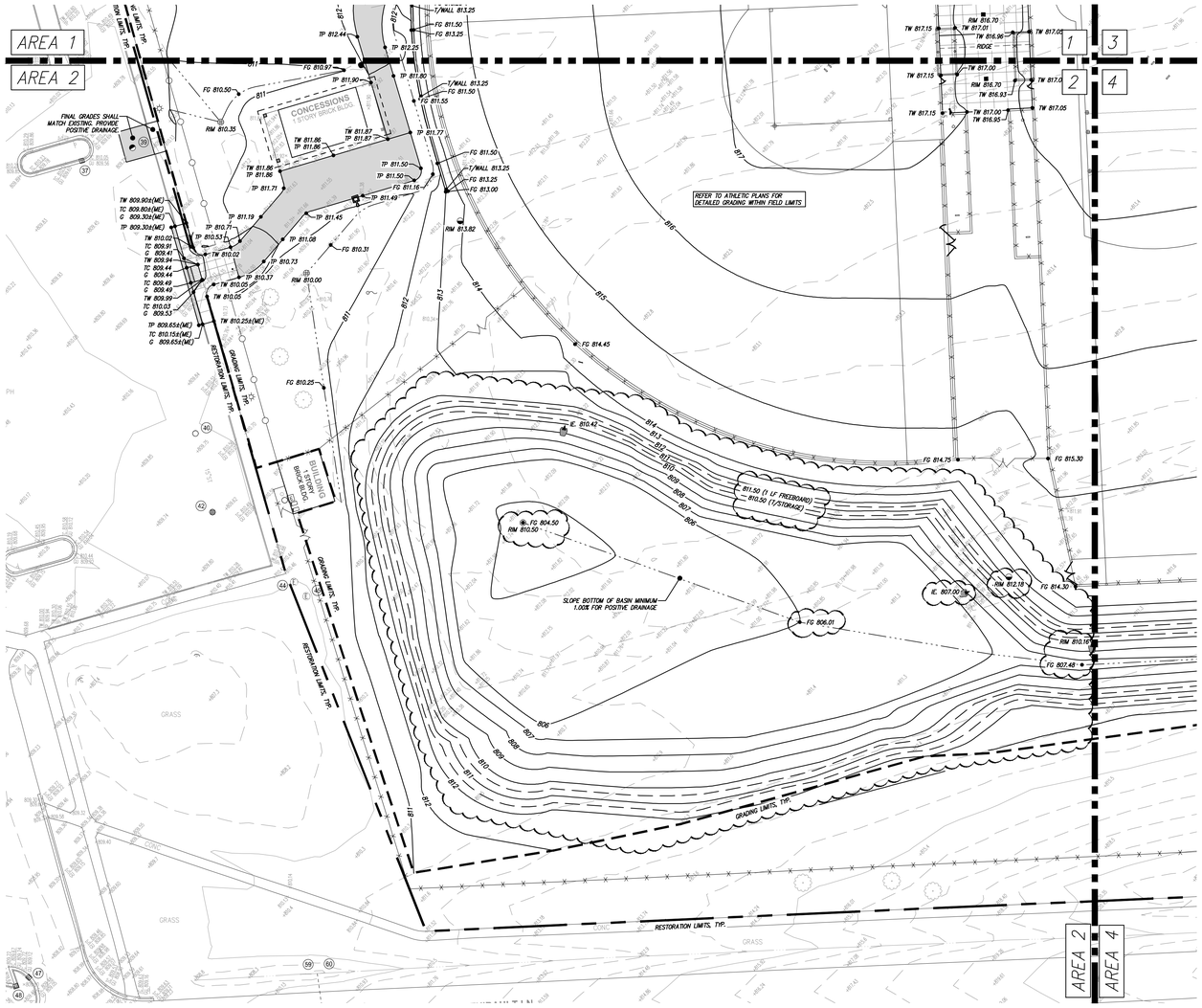
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE
Grading Plan - (Area 1)

SHEET NO.
C6.1



LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 / XXX — STRUCT. NO. / STRUCT. TYPE

GRADING LEGEND

- EXISTING ELEVATION
- TC 000.00 / G 000.00 — PROPOSED TOP OF CURB ELEVATION / PROPOSED GUTTER ELEVATION
- +OG 000.00 — OUTSIDE GRADE ELEVATION
- 112 — EXISTING CONTOURS
- 113.50 — PROPOSED CONTOURS
- + TP 000.00 — TOP OF PAVEMENT ELEVATION
- + TW 000.00 — TOP OF WALK ELEVATION
- + FG 000.00 — FINISH GRADE ELEVATION
- + T/WALL 000.00 — TOP OF WALL ELEVATION
- + ME 000.00 — MATCH EXISTING ELEVATION
- FLOW ARROW

GRADING NOTES

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2. PROPOSED GRADES MAY BE BASED ON AN INTERPOLATION OF DATA SHOWN ON THE TOPOGRAPHIC SURVEY. THIS INTERPOLATED DATA IS APPROXIMATE AND COULD DIFFER SLIGHTLY BASED ON THE ACCURACY OF THE SURVEY. CONTRACTOR SHALL CONFIRM THAT THE PROPOSED GRADES SHOWN ON THIS PLAN WILL NOT CREATE A STANDING WATER CONDITION (I.E. A LOW SPOT OR PAVEMENT SLOPES LESS THAN 1%) OR AN UNSAFE CONDITION WITH SLOPES IN EXCESS OF 5%. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF THEY BELIEVE THAT ONE OF THESE SITUATIONS WILL OCCUR BASED ON THE PROPOSED GRADES.
3. ALL PAVEMENT PLACED WITHIN BARRIER FREE PARKING AREAS (STALLS AND ACCESS AISLES) SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION, INCLUDING MEASURED DIAGONALLY ACROSS THE AREAS. CONTRACTOR SHALL ADJUST SLOPES AS NECESSARY TO PROVIDE ADA COMPLIANT SLOPES AS WELL AS PROVIDING RE-GRADED TRANSITION SLOPES OUTSIDE OF THE BARRIER FREE PARKING AREAS. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF TRANSITION ZONES WILL EXCEED MAXIMUM 5% SLOPES. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE PATTERNS WITH ALL NECESSARY PAVEMENT RE-GRADING.
4. ALL BARRIER FREE RAMPS AND ADA ACCESSIBLE ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSION OF MDOT DETAIL R-28 "SIDEWALK RAMP AND DETECTABLE WARNING DETAILS".
5. CONTRACTOR IS RESPONSIBLE FOR CONTROLLING STORM WATER RUNOFF DURING CONSTRUCTION OPERATIONS. OF PARTICULAR CONCERN WILL BE THE TIME PERIOD AFTER THE SITE HAS BEEN STRIPPED AND NOT YET RESTORED, BUILT UPON, OR PAVED. CONTRACTOR MUST INSTALL OR CONSTRUCT APPROPRIATE TEMPORARY MEASURES TO PROTECT ADJACENT PROPERTIES.

RESTORATION NOTE

RESTORE ALL NON-PAVED AREAS WITH 3" OF CLEAN TOPSOIL AND SEED MIX (30% KENTUCKY BLUEGRASS, 20% PERENNIAL RYEGRASS, 50% CREEPING RED FESCUE). PLACE MULCH IN ALL SEEDED AREAS. ON SLOPES IN EXCESS OF 10 HORIZONTAL TO 1 VERTICAL PLACE NORTH AMERICAN GREEN, C125D MULCH BLANKET IMMEDIATELY AFTER SEEDING. USE METAL STAPLES PER MANUFACTURERS RECOMMENDATIONS TO HOLD MATTING IN PLACE.

GRAPHIC SCALE
0 15 30 60
(IN FEET)
1 inch = 30 ft.

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS
7190 N. Maple Rd. Saline, MI 48176

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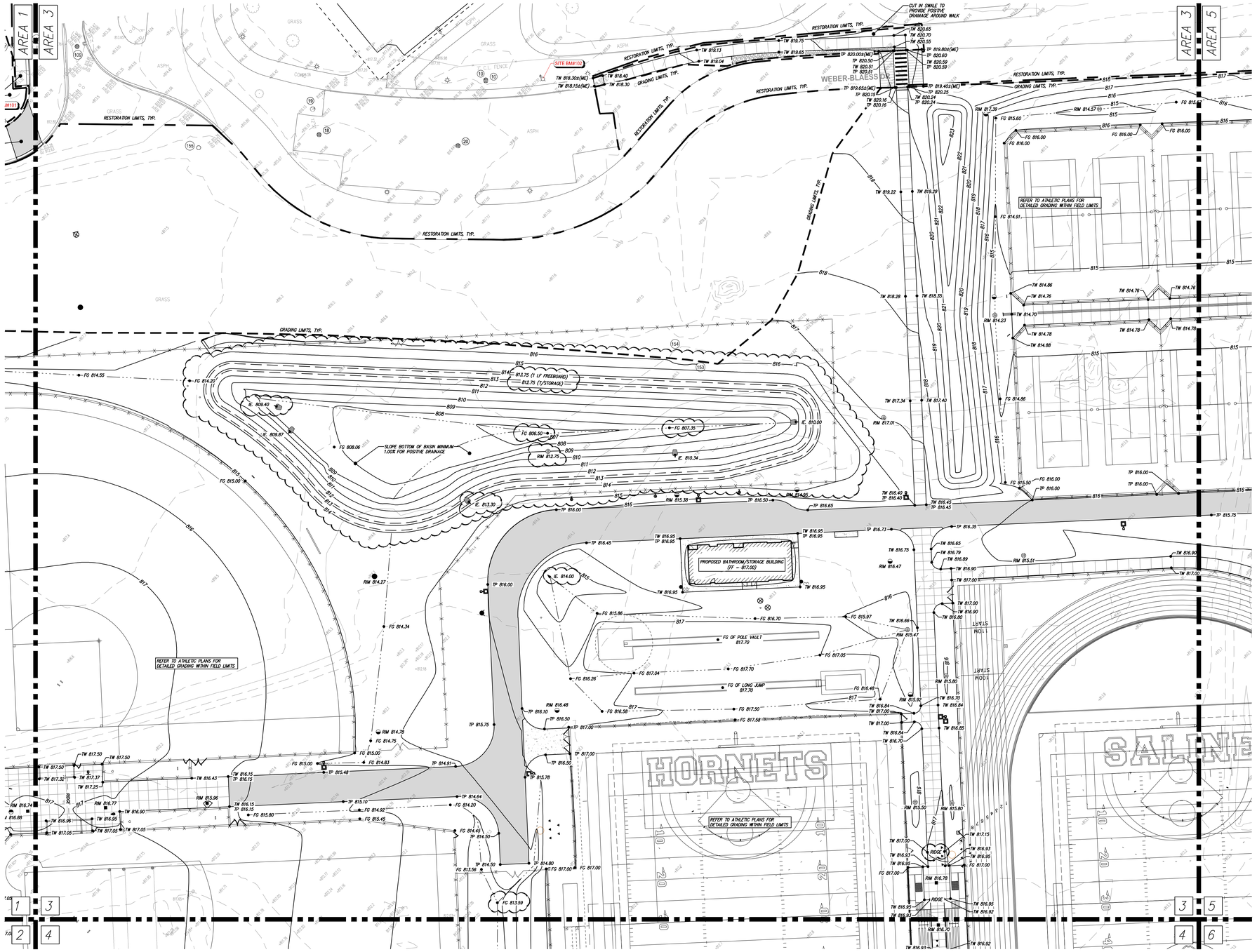
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. **2900-09A**

SHEET TITLE
Grading Plan - (Area 2)

SHEET NO.
C6.2



GRAPHIC SCALE

0 15 30 60

(IN FEET)

1 inch = 30 ft.

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/RESERVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 / XXX — STRUCT. NO. / STRUCT. TYPE

GRADING LEGEND

- EXISTING ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED GUTTER ELEVATION
- OUTSIDE GRADE ELEVATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- TP 000.00 TOP OF PAVEMENT ELEVATION
- TW 000.00 TOP OF WALK ELEVATION
- FG 000.00 FINISH GRADE ELEVATION
- T/WALL 000.00 TOP OF WALL ELEVATION
- ME 000.00 MATCH EXISTING ELEVATION
- FLOW ARROW

GRADING NOTES

1. CONTRACTOR TO PLACE ALL NEW PAVEMENT TO THE GRADES INDICATED, OR MATCH ORIGINAL GRADES IF NEW GRADES ARE NOT SHOWN. CONTRACTOR SHALL CONFIRM MINIMUM 1% PAVEMENT SLOPES ARE ATTAINED IN ALL AREAS.
2. PROPOSED GRADES MAY BE BASED ON AN INTERPOLATION OF DATA SHOWN ON THE TOPOGRAPHIC SURVEY. THIS INTERPOLATED DATA IS APPROXIMATE AND COULD DIFFER SLIGHTLY BASED ON THE ACCURACY OF THE SURVEY. CONTRACTOR SHALL CONFIRM THAT THE PROPOSED GRADES SHOWN ON THIS PLAN WILL NOT CREATE A STANDING WATER CONDITION (I.E. A LOW SPOT OR PAVEMENT SLOPES LESS THAN 1%) OR AN UNSAFE CONDITION WITH SLOPES IN EXCESS OF 5%. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF THEY BELIEVE THAT ONE OF THESE SITUATIONS WILL OCCUR BASED ON THE PROPOSED GRADES.
3. ALL PAVEMENT PLACED WITHIN BARRIER FREE PARKING AREAS (STALLS AND ACCESS AISLES) SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION, INCLUDING MEASURED DIAGONALLY ACROSS THE AREAS. CONTRACTOR SHALL ADJUST SLOPES AS NECESSARY TO PROVIDE ADA COMPLIANT SLOPES AS WELL AS PROVIDING RE-GRADED TRANSITION SLOPES OUTSIDE OF THE BARRIER FREE PARKING AREAS. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF TRANSITION ZONES WILL EXCEED MAXIMUM 5% SLOPES. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE PATTERNS WITH ALL NECESSARY PAVEMENT RE-GRADING.
4. ALL BARRIER FREE RAMPS AND ADA ACCESSIBLE ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSION OF MDOT DETAIL R-28 "SIDEWALK RAMP AND DETECTABLE WARNING DETAILS".
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RESTORATION NOTE

RESTORE ALL NON-PAVED AREAS WITH 3" OF CLEAN TOPSOIL AND SEED MIX (30% KENTUCKY BLUEGRASS, 20% PERENNIAL RYEGRASS, 50% CREEPING RED FESCUE). PLACE MULCH IN ALL SEEDED AREAS. ON SLOPES IN EXCESS OF 10 HORIZONTAL TO 1 VERTICAL PLACE NORTH AMERICAN GREEN, DS150 MULCH BLANKET IMMEDIATELY AFTER SEEDING. USE METAL STAPLES PER MANUFACTURERS RECOMMENDATIONS TO HOLD MATTING IN PLACE.

KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
DESIGN DEVELOPMENT	08/22/2024
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

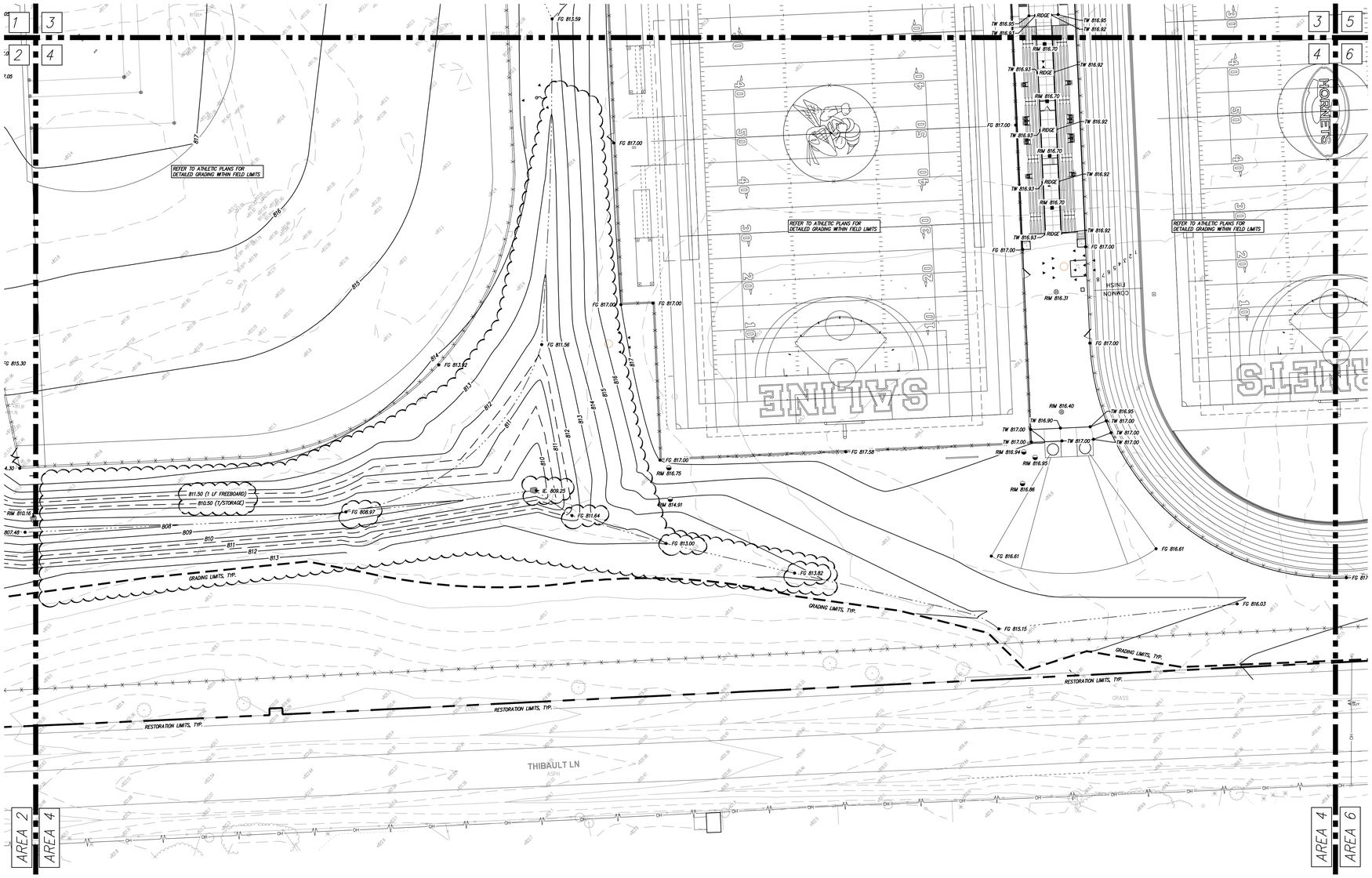
JOB NO. **2900-09A**

SHEET TITLE

Grading Plan - (Area 3)

SHEET NO.

C6.3



LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
- PROPOSED STORM MANHOLE (MH)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET (INL)
- PROPOSED END SECTION (ES)
- PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
- STANDARD BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 / XXX — STRUCT. NO. / STRUCT. TYPE

GRADING LEGEND

- EXISTING ELEVATION
- TC 000.00 / G 000.00 — PROPOSED TOP OF CURB ELEVATION / PROPOSED GUTTER ELEVATION
- OG 000.00 — OUTSIDE GRADE ELEVATION
- 1130 — EXISTING CONTOURS
- 1130 — PROPOSED CONTOURS
- TP 000.00 — TOP OF PAVEMENT ELEVATION
- TW 000.00 — TOP OF WALK ELEVATION
- FG 000.00 — FINISH GRADE ELEVATION
- T/WALL 000.00 — TOP OF WALL ELEVATION
- ME 000.00 — MATCH EXISTING ELEVATION
- FLOW ARROW

GRADING NOTES

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RESTORATION NOTE

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GRAPHIC SCALE
0 15 30 60
(IN FEET)
1 inch = 30 ft.

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS
7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
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DESIGN DEVELOPMENT	08/22/2024
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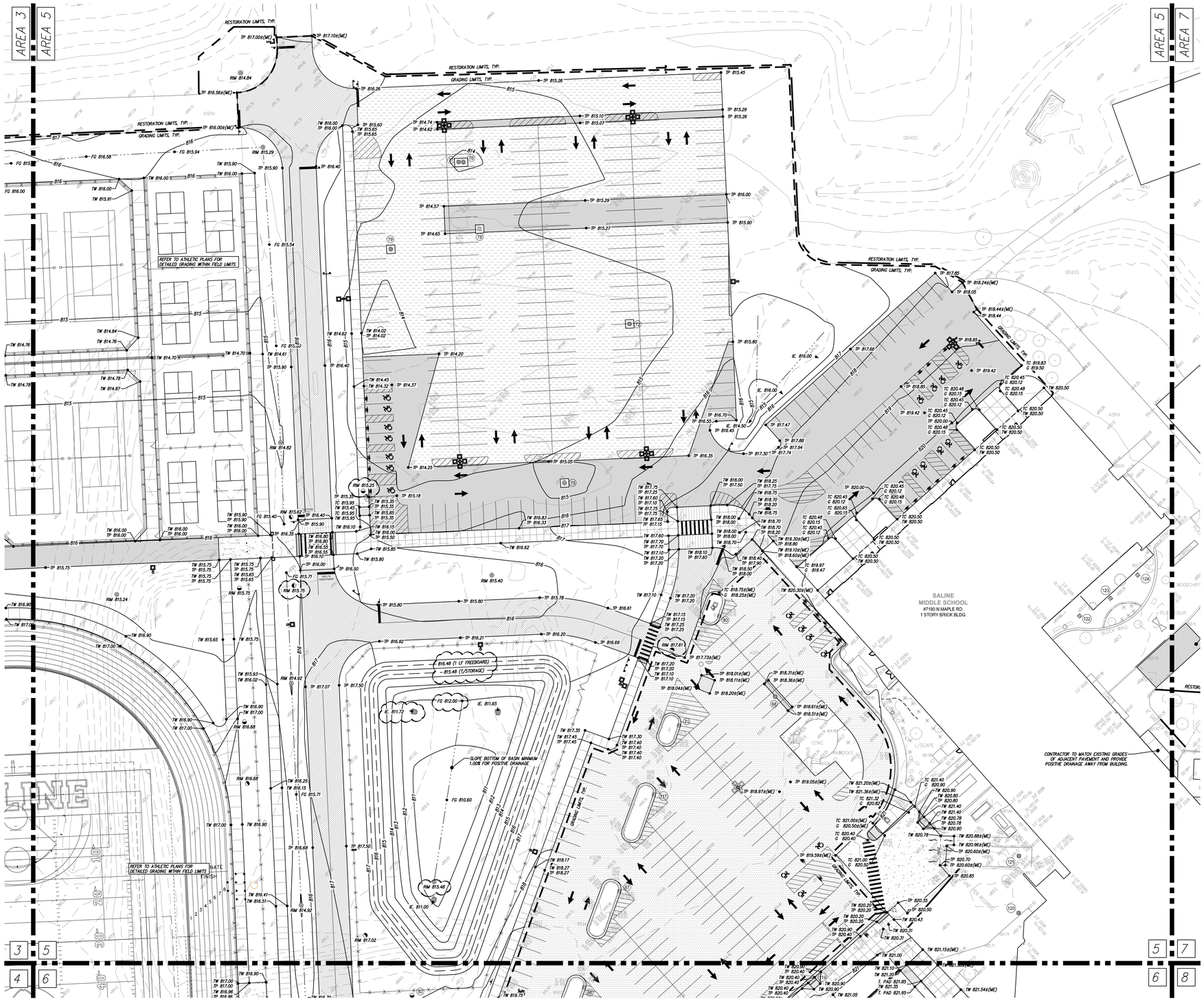
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

JOB NO. 2900-09A

SHEET TITLE
Grading Plan - (Area 4)

SHEET NO.
C6.4



GRAPHIC SCALE

0 15 30 60

(IN FEET)

1 inch = 30 ft.

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
- PROPOSED ELECTRIC
- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
- PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)
- PROPOSED SAN MANHOLE (SAN)
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- PROPOSED CATCH BASIN (CB)
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- DEEP STRENGTH BITUMINOUS PAVEMENT
- BITUMINOUS PAVEMENT OVERLAY
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- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 / XXX — STRUCT. NO. / STRUCT. TYPE

GRADING LEGEND

- EXISTING ELEVATION
- TC 000.00 / G 000.00 — PROPOSED TOP OF CURB ELEVATION / PROPOSED GUTTER ELEVATION
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- FG 000.00 — FINISH GRADE ELEVATION
- T/WALL 000.00 — TOP OF WALL ELEVATION
- ME 000.00 — MATCH EXISTING ELEVATION
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KINGSCOTT

KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
DESIGN DEVELOPMENT	08/22/2024
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

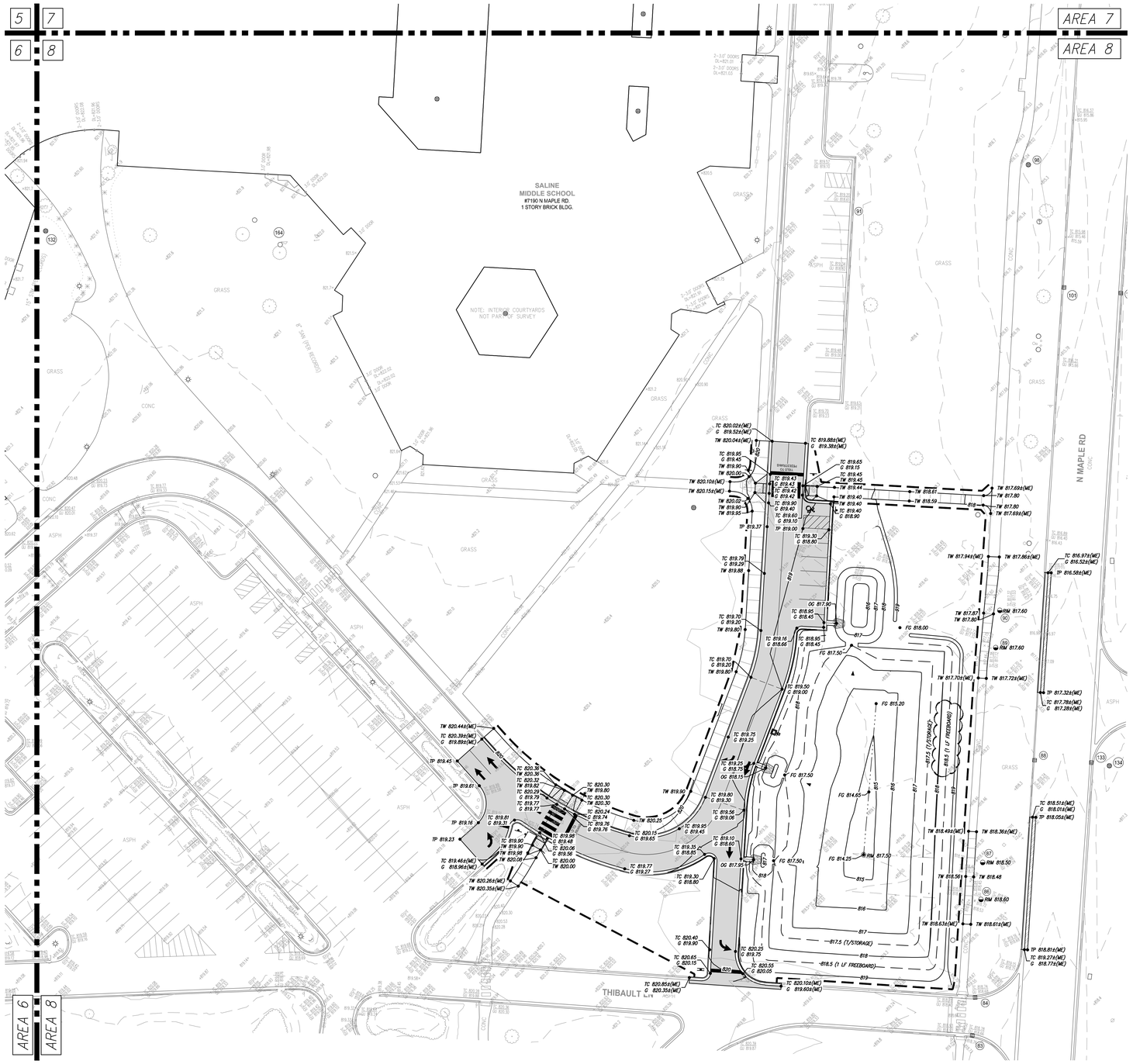
JOB NO. **2900-09A**

SHEET TITLE

Grading Plan - (Area 5)

SHEET NO.

C6.5



GRAPHIC SCALE
0 15 30 60
(IN FEET)
1 inch = 30 ft.

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED STORM SEWER
- PROPOSED GAS MAIN
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- PROPOSED HYDRANT
- PROPOSED GATE VALVE & WELL (GVW)
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- CONCRETE SIDEWALK
- MILL PAVEMENT
- UTILITY CROSSING (SEE DATA TABLE)
- STORM SEWER STRUCTURE: CB 2 — STRUCT. TYPE / STRUCT. NO.
- SANITARY SEWER STRUCTURE: 20
- WATERMAIN STRUCTURE: 10 XXX — STRUCT. NO. / STRUCT. TYPE

GRADING LEGEND

- 000.00 EXISTING ELEVATION
- TC 000.00 / G 000.00 PROPOSED TOP OF CURB ELEVATION / PROPOSED GUTTER ELEVATION
- +OG 000.00 OUTSIDE GRADE ELEVATION
- 1150 EXISTING CONTOURS
- 1150 PROPOSED CONTOURS
- + TP 000.00 TOP OF PAVEMENT ELEVATION
- + TW 000.00 TOP OF WALK ELEVATION
- + FG 000.00 FINISH GRADE ELEVATION
- + T/WALL 000.00 TOP OF WALL ELEVATION
- + ME 000.00 MATCH EXISTING ELEVATION
- FLOW ARROW

GRADING NOTES

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KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
SCHEMATIC DESIGN	05/02/2024
DESIGN DEVELOPMENT	08/22/2024
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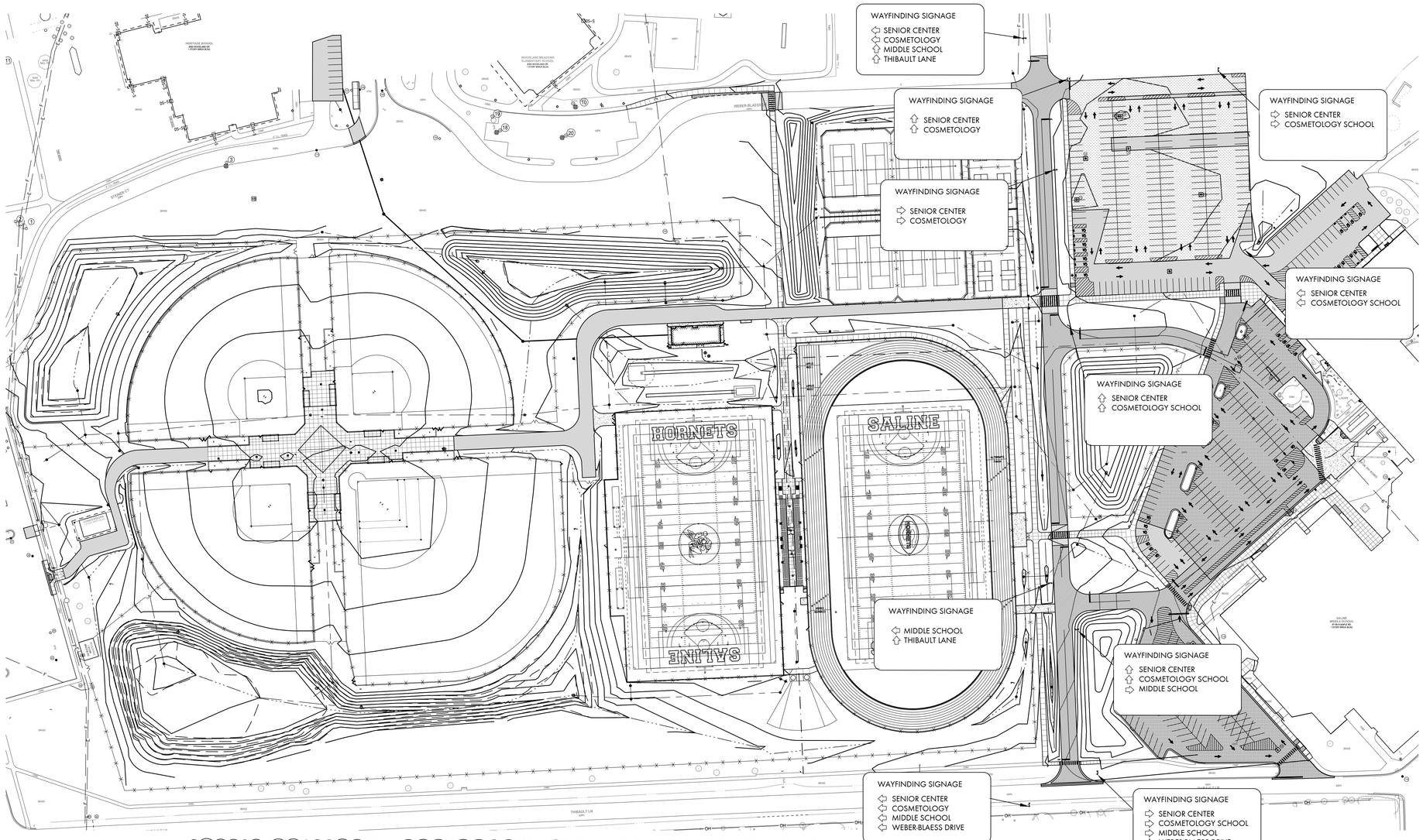
STATE OF MICHIGAN
NICHOLAS BRASS
ENGINEER
No. 6201063559
REGISTERED PROFESSIONAL ENGINEER

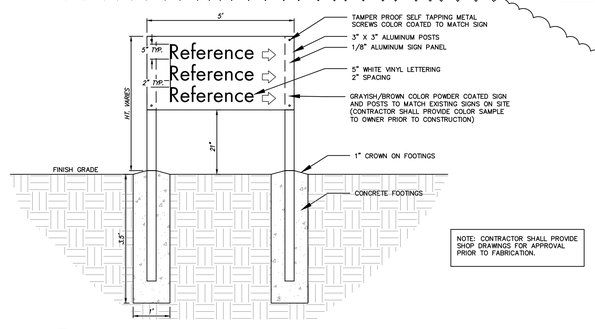
JOB NO. **2900-09A**

SHEET TITLE
Grading Plan - (Area 8)

SHEET NO.
C6.8



EXAMPLE OF EXISTING SIGN ON SITE



WS / LA2.0 TYPICAL WAYFINDING SIGN DETAIL
NOT TO SCALE

N

GRAPHIC SCALE
0 35 70 140
(IN FEET)
1 inch = 70 ft.

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REVISIONS/REVIEW	DATE
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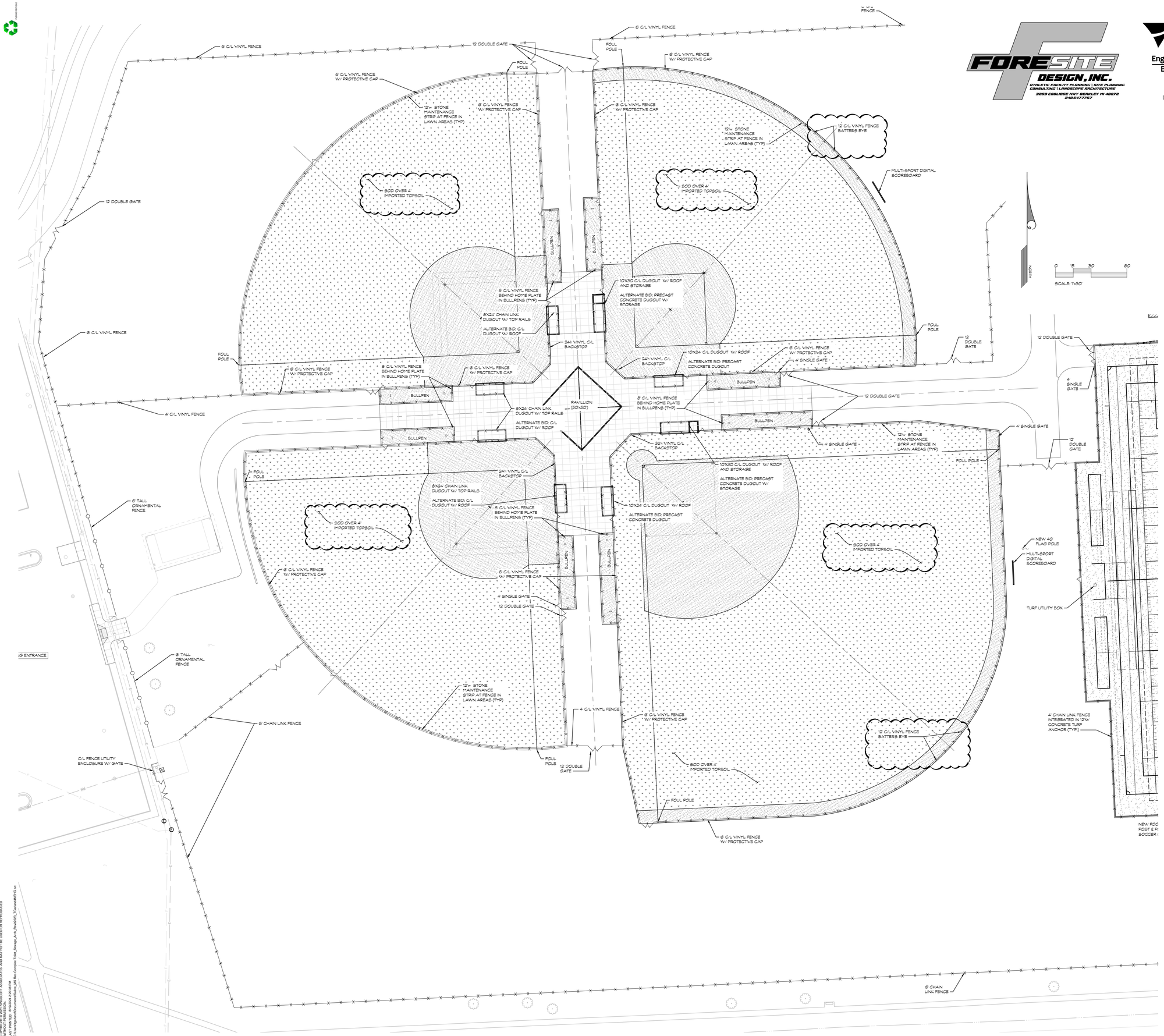
ADDENDUM #1	11/20/2024

JOB NO. 2900–09A

SHEET TITLE
WAYFINDING PLAN

SHEET NO.
LA2.0



FORESITE DESIGN, INC.
ATHLETIC FACILITY PLANNING | SITE PLANNING
CONSULTING | LANDSCAPE ARCHITECTURE
3003 COOLIDGE HWY BERKLEY MI 48072
2485477757

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(800) 598-1600

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

ISSUANCES	DATE
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

JOB NO. 2900.09B

SHEET TITLE

BASEBALL AND SOFTBALL SITE PLAN

SHEET NO.

L2.01

FORESITE DESIGN, INC.
ATHLETIC FACILITY PLANNING | SITE PLANNING
CONSULTING | LANDSCAPE ARCHITECTURE
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KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

REFER TO SDA SHEETS FOR OVERALL SITE GRADING

NORTH

SCALE: 1"=30'

ISSUANCES	DATE
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

JOB NO. 2900.09B

SHEET TITLE

BASEBALL AND SOFTBALL - GRADING PLAN

SHEET NO.

L2.04

FORESITE DESIGN, INC.
ATHLETIC FACILITY PLANNING | SITE PLANNING
CONSULTING | LANDSCAPE ARCHITECTURE
3869 COOLIDGE HWY BERKLEY MI 48072
2485477757

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KINGSCOTT
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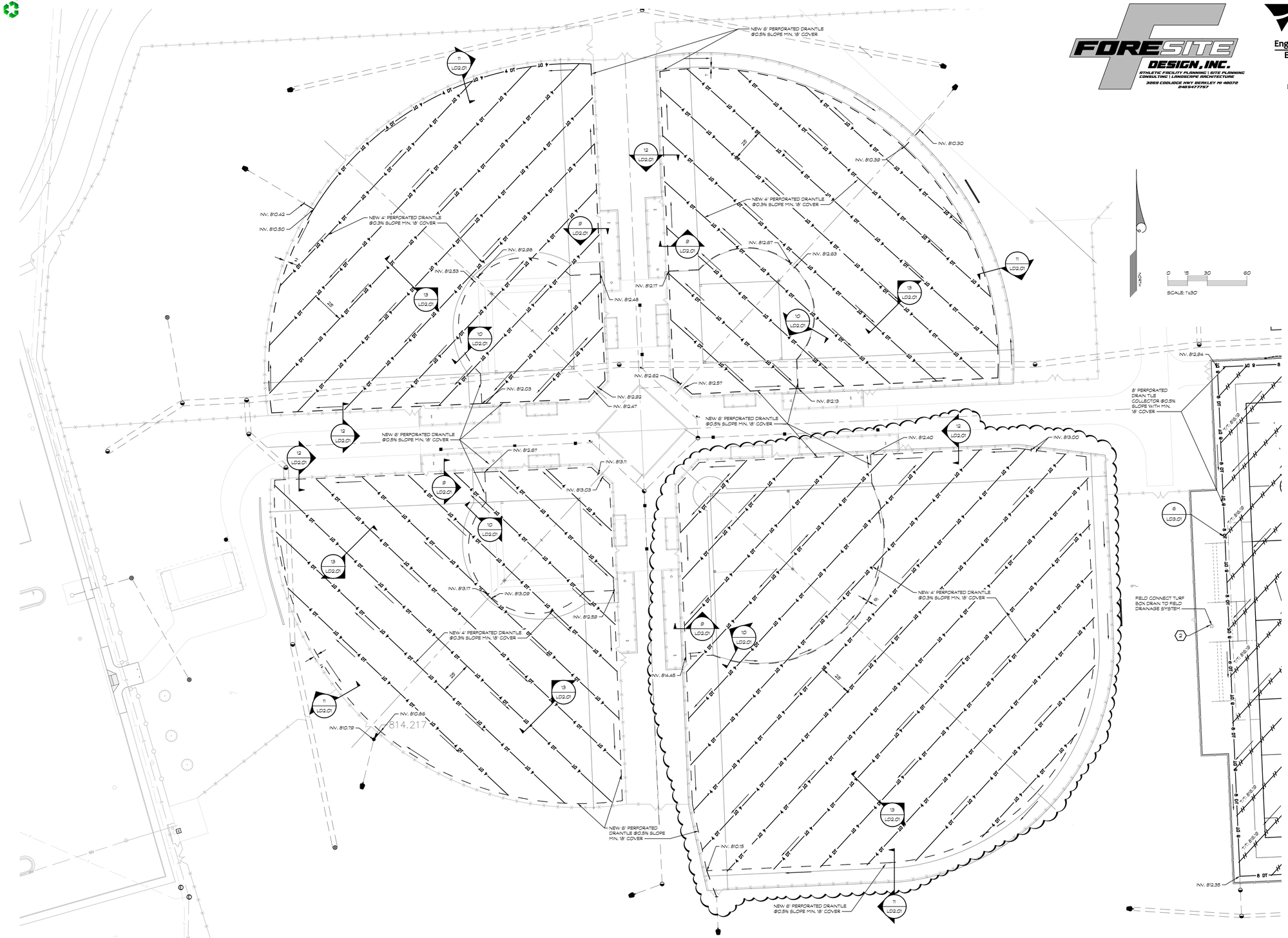

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

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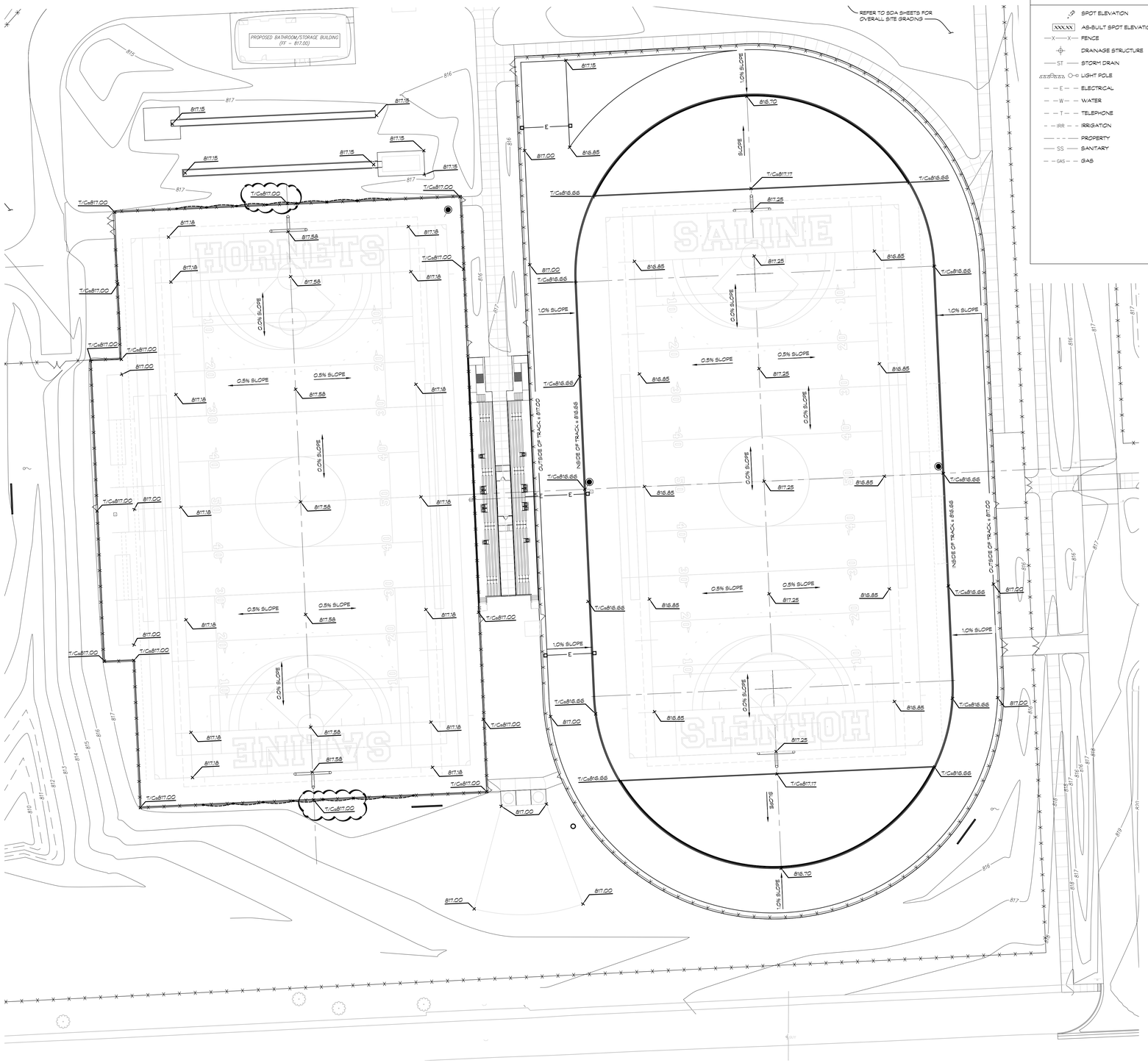
JOB NO. 2900.09B

SHEET TITLE

BASEBALL AND SOFTBALL - DRAINAGE AND UTILITY PLAN

SHEET NO.

L2.05



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SCALE: 1"=30'

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LEGEND

EXISTING

- SPOT ELEVATION
- AS-BUILT SPOT ELEVATION
- FENCE
- DRAINAGE STRUCTURE
- STORM DRAIN
- LIGHT POLE
- ELECTRICAL
- WATER
- TELEPHONE
- IRRIGATION
- PROPERTY
- SANITARY
- GAS

PROPOSED

- SPOT GRADE
- TOP OF WALL ELEVATION
- TOP OF CURB ELEVATION
- MATCH EXISTING ELEVATION
- TOP OF TRENCH ELEVATION
- DRAINAGE SWALE
- CHAINLINK FENCE - SEE PLANS FOR HT.
- ORNAMENTAL FENCE - SEE PLANS FOR HT.
- DRAINAGE STRUCTURE
- STORM DRAIN
- FLAT DRAIN
- 4" PERFORATED DRAINTILE
- 6" PERFORATED DRAINTILE
- 8" PERFORATED DRAINTILE
- LIGHT POLE
- ELECTRICAL
- WATER
- TELEPHONE
- IRRIGATION
- LIMITS OF CONSTRUCTION

- ALL-WEATHER SURFACE OVER ATHLETIC VIRGIN ASPHALT (2 LIFTS) OVER 21AA LIMESTONE BASE
- ACRYLIC COATING OVER POST-TENSION CONCRETE OVER 6" SAND BASE
- ALL-WEATHER SURFACE OVER REINFORCED CONCRETE OVER COMPACTED SAND BASE
- NON-REINFORCED CONCRETE OVER COMPACTED SAND BASE
- TOPSOIL AND SOD
- CRUSHED LIMESTONE ATHLETIC MEAL
- CRUSHER DUST
- MASON SAND
- SYNTHETIC TURF
- ASPHALT OVER 21AA LIMESTONE BASE

MS REC COMPLEX

SALINE AREA SCHOOLS

7190 N. Maple Rd. Saline, MI 48176

ISSUANCES	DATE
CONSTRUCTION DOCUMENTS	10/24/2024
ADDENDUM #1	11/20/2024

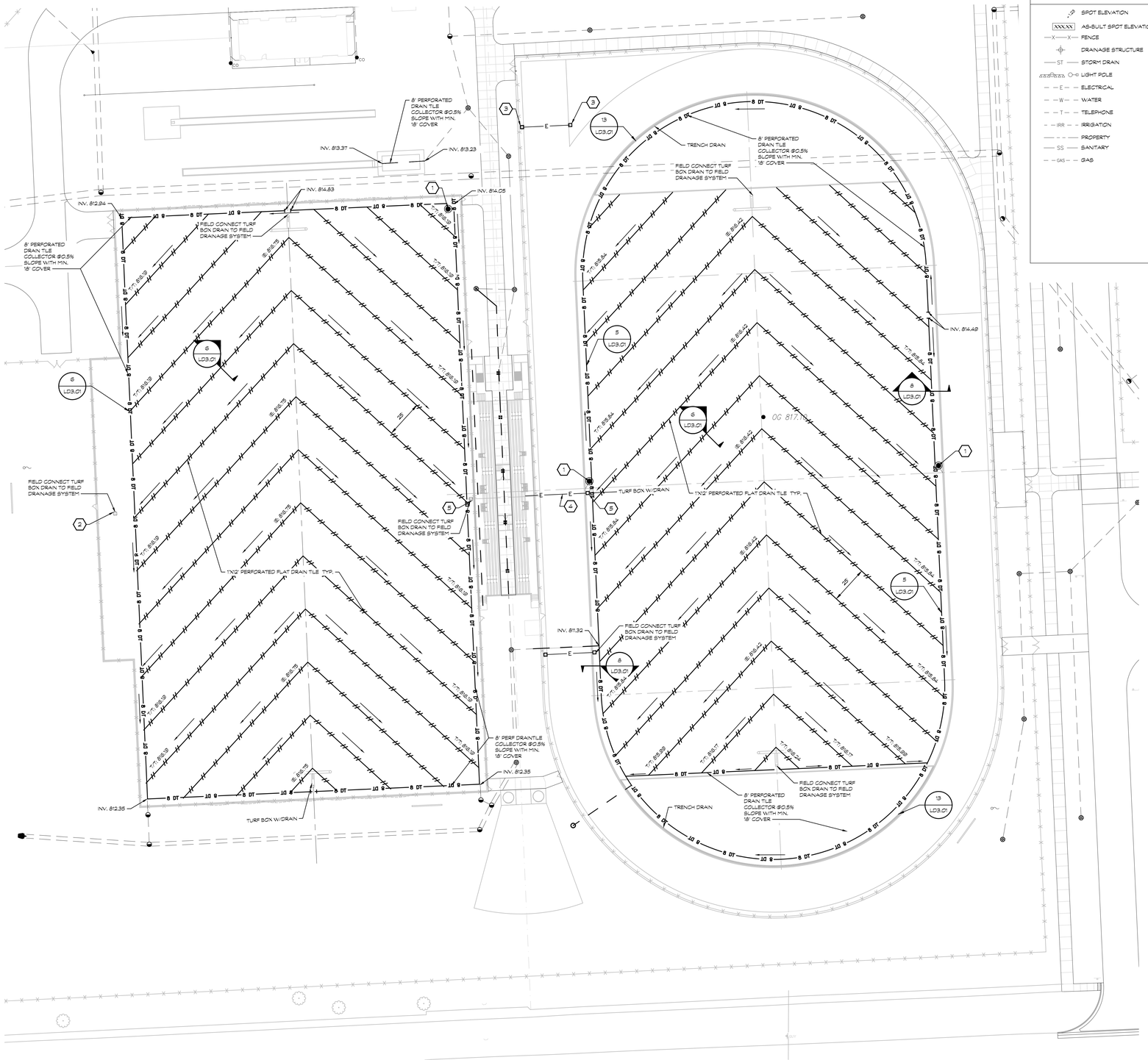
JOB NO. 2900.09B

SHEET TITLE

STADIUM AND AUXILIARY FIELD GRADING PLAN

SHEET NO.

L3.04



LEGEND

EXISTING

- SPOT ELEVATION
- XXX.XX — AS-BUILT SPOT ELEVATION
- X — X — FENCE
- DRAINAGE STRUCTURE
- ST — STORM DRAIN
- LIGHT POLE
- E — ELECTRICAL
- W — WATER
- T — TELEPHONE
- IRR — IRRIGATION
- PROPERTY
- SS — SANITARY
- GAS — GAS

PROPOSED

- XXX.XX — SPOT GRADE
- T/WALLXXX.XX — TOP OF WALL ELEVATION
- T/CURBXXX.XX — TOP OF CURB ELEVATION
- ME = XXX.XX — MATCH EXISTING ELEVATION
- T/TRENXXX.XX — TOP OF TRENCH ELEVATION
- DRAINAGE SWALE
- CHAINLINK FENCE - SEE PLANS FOR HT.
- ORNAMENTAL FENCE - SEE PLANS FOR HT.
- DRAINAGE STRUCTURE
- ST — STORM DRAIN
- FLAT DRAIN
- 4" PERFORATED DRAINTILE
- 6" PERFORATED DRAINTILE
- 8 DT — 8" PERFORATED DRAINTILE
- LIGHT POLE
- E — ELECTRICAL
- W — WATER
- T — TELEPHONE
- IRR — IRRIGATION
- LIMITS OF CONSTRUCTION

- ALL-WEATHER SURFACE OVER ATHLETIC VIRGIN ASPHALT (2 LIFTS) OVER 21AA LIMESTONE BASE
- ACRYLIC COATING OVER POST-TENSION CONCRETE OVER 6" SAND BASE
- ALL-WEATHER SURFACE OVER REINFORCED CONCRETE OVER COMPACTED SAND BASE
- NON-REINFORCED CONCRETE OVER COMPACTED SAND BASE
- TOPSOIL AND SOD
- CRUSHED LIMESTONE ATHLETIC MEAL
- CRUSHER DUST
- MASON SAND
- SYNTHETIC TURF
- ASPHALT OVER 21AA LIMESTONE BASE

STADIUM UTILITY LEGEND:

1. NEW PRE-MANUFACTURED TURF BOX FOR QUICK COUPLER (3 TOTAL). PROVIDE NEW ¾" SCH. 40 PVC, RATED NSF, FOR QUICK COUPLER VALVES, NEW QUICK COUPLER VALVE AS REQUIRED. BOX SHALL ABUT FIELD SIDE OF CURB
2. NEW PRE-MANUFACTURED TURF BOX FOR FUTURE TRACK TIMING SYSTEM (AT FINISH LINES AND 100 START). BOX SHALL ABUT FIELD SIDE OF CURB
3. NEW PRE-MANUFACTURED COMMUNICATION BOX FOR FUTURE TRACK TIMING SYSTEM IN ASPHALT
4. (2) 1" CONDUITS & (2) M1/2" CONDUITS FROM TURF GROUND BOX TO GROUND BOX IN ASPHALT, EXTEND RUN INTO PROPOSED PRESSBOX
5. NEW PRE-MANUFACTURED TURF BOX FOR JUNCTION OF CONDUIT FROM FIELD TO PRESSBOX. (18"X30") BOX SHALL ABUT FIELD SIDE OF CURB

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7190 N. Maple Rd. Saline, MI 48176

ISSUANCES	DATE
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ADDENDUM #1	11/20/2024

JOB NO. 2900.09B

SHEET TITLE

STADIUM AND AUXILIARY FIELD DRAINAGE AND UTILITY PLAN

SHEET NO.

L3.05

Last Plotted: 11/20/2024 2:20:24 PM
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FIBER WAN & SITE FIBER PROJECT NOTES:

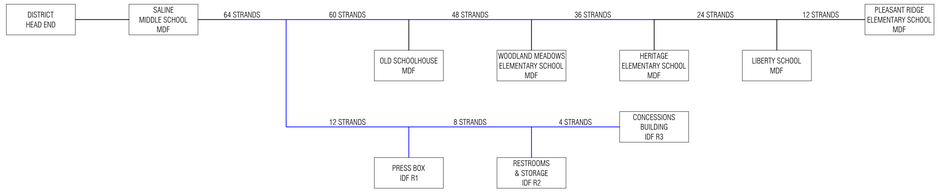
1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. CONTRACTORS SHALL PROVIDE ALL INCIDENTAL MATERIALS AND LABOR FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

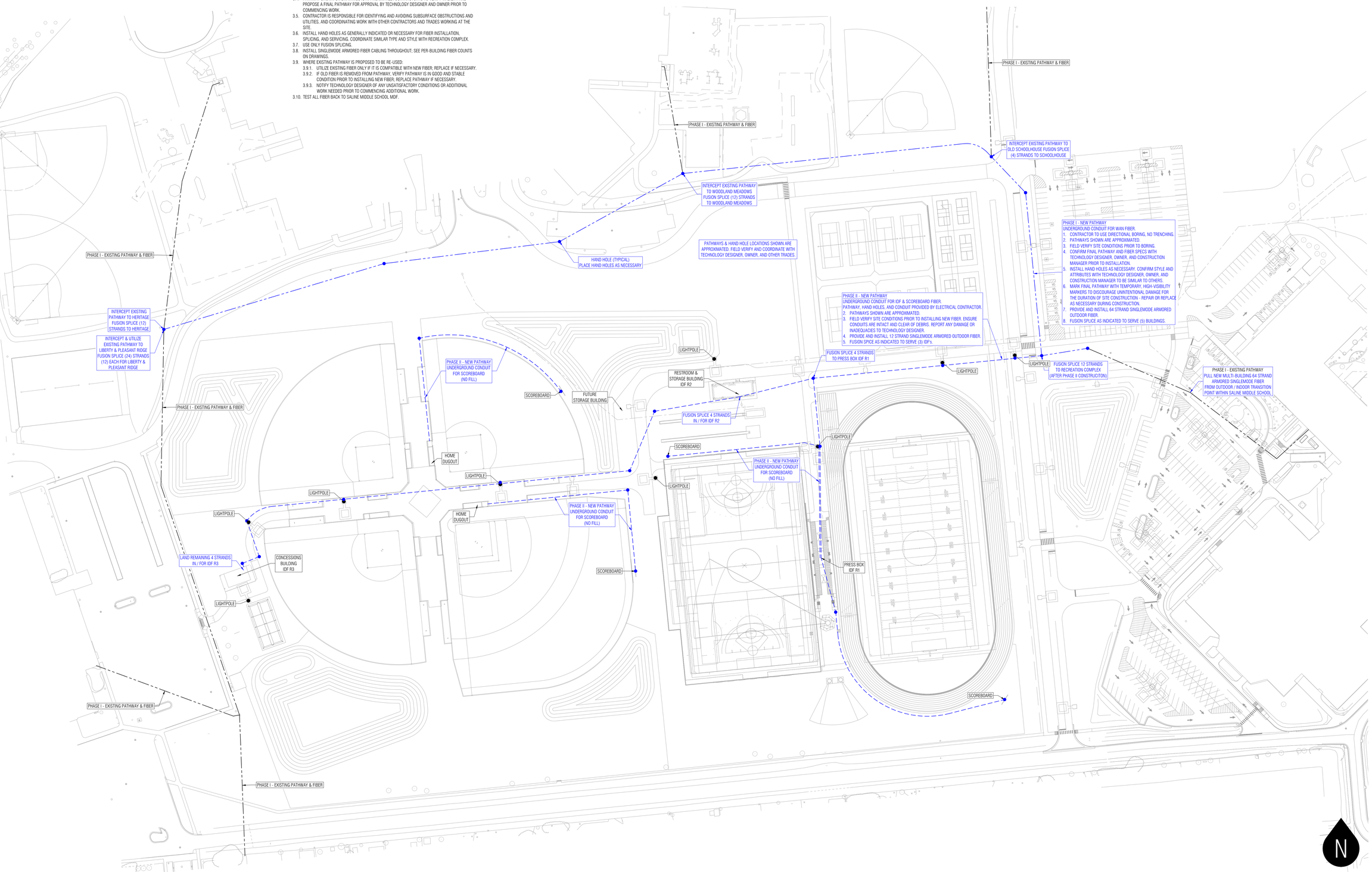
2. PRIOR TO BEGINNING WORK, CONTRACTORS ARE TO REVIEW BUILDING PLANS, INSTALLATION LOCATIONS, AND SITE CONDITIONS. NOTIFY THE TECHNOLOGY DESIGNER OF ANY CONDITIONS THAT MAY: PREVENT PROPER INSTALLATION AND OPTIMAL PERFORMANCE OF THE SYSTEMS; VOID THE MANUFACTURER'S WARRANTY; OR THAT CONFLICT WITH THE INTENT OF THE PROJECT. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN RESOLVED. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL WORK RELATED TO CORRECTING UNREPORTED CONFLICTS AND ISSUES, AT NO ADDITIONAL COST TO THE OWNER.

3. CONTRACTOR SHALL INSTALL NEW, AND MODIFY OLD FIBER WAN PATHWAY AS INDICATED ON THE DRAWINGS. *THIS WORK IS TO BE COMPLETED EARLY SUMMER 2025.*
   - 3.1. CUT-OVER FROM EXISTING TO NEW FIBER MUST BE COORDINATED AND BE PERFORMED AT THE DIRECTION OF THE TECHNOLOGY DIRECTOR AND OWNER TO MITIGATE SERVICE DISRUPTIONS.
   - 3.2. THIS FIBER WAN SERVICES (5) BUILDINGS: OLD SCHOOLHOUSE, WOODLAND MEADOWS ELEMENTARY SCHOOL; HERITAGE ELEMENTARY SCHOOL; LIBERTY SCHOOL; AND PLEASANT RIDGE ELEMENTARY SCHOOL.
   - 3.3. DIRECTIONAL BORING MUST BE USED AS THE PRIMARY METHOD OF INSTALLING NEW PATHWAY; TRENCHING IS TO BE LIMITED, FOR GOOD REASON, AND APPROVED BY TECHNOLOGY DESIGNER PRIOR TO WORK.
   - 3.4. PATHWAY SHOWN ON DRAWINGS IS APPROXIMATED. CONTRACTOR IS TO VERIFY VIABILITY AND PROPOSE A FINAL PATHWAY FOR APPROVAL BY TECHNOLOGY DESIGNER AND OWNER PRIOR TO COMMENCING WORK.
   - 3.5. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND AVOIDING SUBSURFACE OBSTRUCTIONS AND UTILITIES, AND COORDINATING WORK WITH OTHER CONTRACTORS AND TRADES WORKING AT THE SITE.
   - 3.6. INSTALL HAND HOLES AS GENERALLY INDICATED OR NECESSARY FOR FIBER INSTALLATION, SPLICING, AND SERVICING. COORDINATE SIMILAR TYPE AND STYLE WITH RECREATION COMPLEX.
   - 3.7. USE ONLY FUSION SPLICING.
   - 3.8. INSTALL SINGLEMODE ARMORED FIBER CABLING THROUGHOUT; SEE PER-BUILDING FIBER COUNTS ON DRAWINGS.
   - 3.9. WHERE EXISTING PATHWAY IS PROPOSED TO BE RE-USED:
     - 3.9.1. UTILIZE EXISTING FIBER ONLY IF IT IS COMPATIBLE WITH NEW FIBER; REPLACE IF NECESSARY.
     - 3.9.2. IF OLD FIBER IS REMOVED FROM PATHWAY, VERIFY PATHWAY IS IN GOOD AND STABLE CONDITION PRIOR TO INSTALLING NEW FIBER; REPLACE PATHWAY IF NECESSARY.
     - 3.9.3. NOTIFY TECHNOLOGY DESIGNER OF ANY UNSATISFACTORY CONDITIONS OR ADDITIONAL WORK NEEDED PRIOR TO COMMENCING ADDITIONAL WORK.
   - 3.10. TEST ALL FIBER BACK TO SALINE MIDDLE SCHOOL MDF.

4. CONTRACTOR SHALL INSTALL NEW SITE FIBER IN PATHWAY PROVIDED BY RECREATION COMPLEX ELECTRICAL CONTRACTOR AS INDICATED ON THE DRAWINGS. *THIS WORK IS TO BE COMPLETED PER THE RECREATION COMPLEX SCHEDULE, ANTICIPATED IN SUMMER 2026.*
   - 4.1. THIS SITE FIBER SERVICES (3) IDF CLOSETS: IDF R1 - PRESS BOX; IDF R2 - RESTROOM & STORAGE BUILDING; AND IDF R3 - CONCESSIONS BUILDING.
   - 4.2. USE ONLY FUSION SPLICING AT LOCATIONS INDICATED ON THE DRAWINGS.
   - 4.3. INSTALL SINGLEMODE ARMORED FIBER CABLING THROUGHOUT; SEE PER-IDF FIBER COUNTS ON DRAWINGS.
   - 4.4. VERIFY PATHWAY IS IN GOOD AND STABLE CONDITION PRIOR TO INSTALLING NEW FIBER. NOTIFY TECHNOLOGY DESIGNER AND CONSTRUCTION SUPERVISOR OF ANY UNSATISFACTORY CONDITIONS.
   - 4.5. PROVIDE, INSTALL, AND TERMINATE FIBER PATCH PANEL IN EACH IDF CABINET. INCLUDE 10 FOOT SERVICE LOOP AT EACH CABINET.
   - 4.6. TEST ALL FIBER BACK TO SALINE MIDDLE SCHOOL MDF.

5. PROPOSED FIBER SCHEMATIC:





Barton Malow

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248.436.5000
www.bartonmalow.com

Owner:

Saline Area Schools
Saline, Michigan

Project Number: 230112
Project Manager: Michael Terrell
Drawn By: Bill Dawson, CTS
Checked By: Brian Jessie, CTS

Issued For	Date
DESIGN COORDINATION	10/08/2024
DESIGN COORDINATION	10/22/2024

NOT FOR CONSTRUCTION

Key Plan:

Native Page Size: 42" X 30"

Scale: 1/64" = 1'

0'1632' 64' 128'

BP #
BP TITLE

Saline Middle School
Recreation Complex

Site Plan
Fiber Network Infrastructure

T2

STRUCTURED CABLING SYMBOL STYLES & ABBREVIATIONS:

CABLING OUTLET / WALL PLATE

WIRELESS ACCESS POINT LOCATION, INCLUDE 1 CAT6A DROP

INFORMACAST DEVICE LOCATION, INCLUDE 1 CAT6 DROP

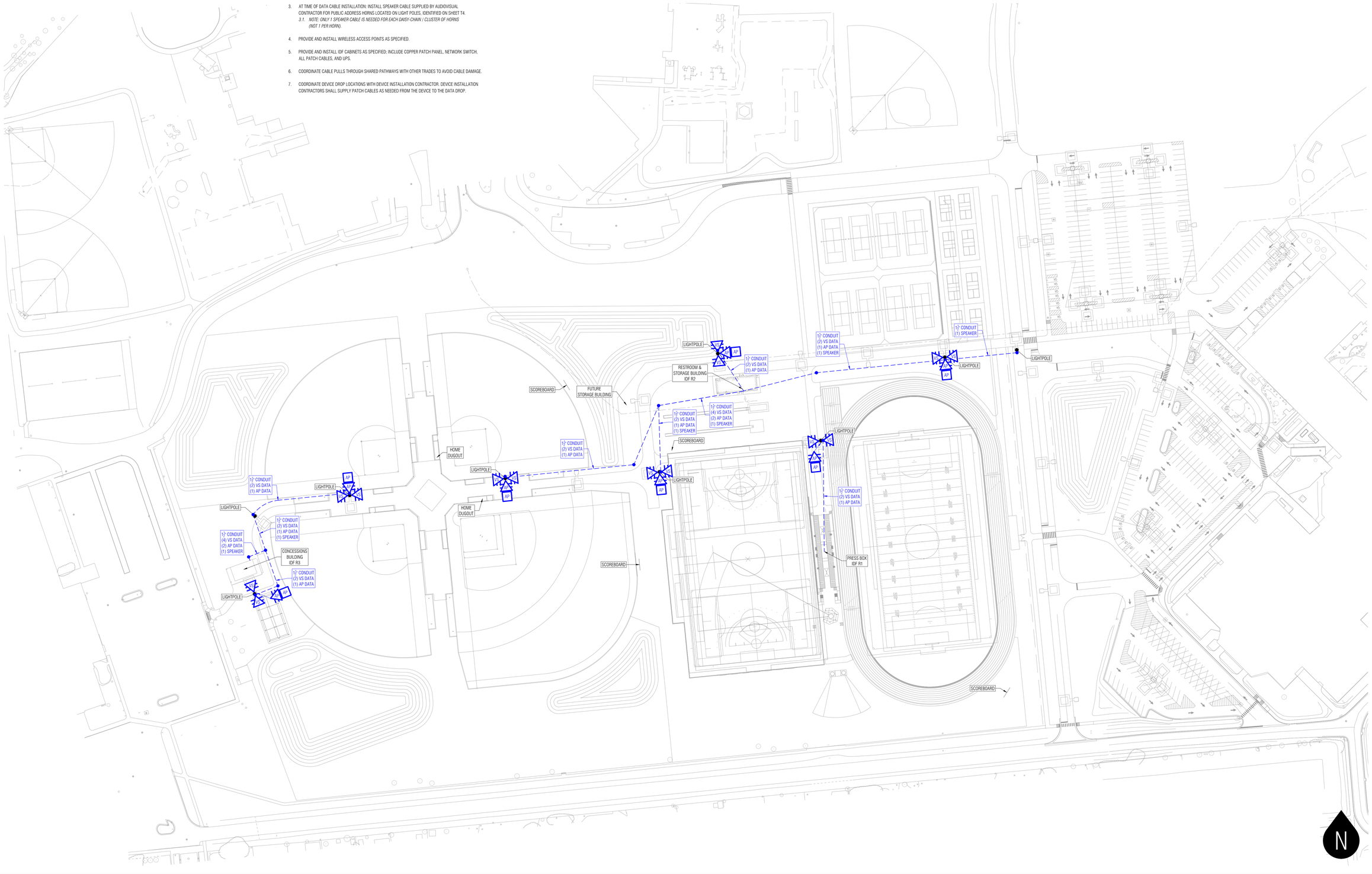
VIDEO SURVEILLANCE CAMERA LOCATION, INCLUDE 1 CAT6 DROP

STRUCTURED CABLING HARDWARE:

AP WIRELESS ACCESS POINT

STRUCTURED CABLING PROJECT NOTES:

1. UNDERGROUND AND ABOVE-GROUND PATHWAY, HAND HOLES, AND PENETRATIONS PROVIDED BY ELECTRICAL CONTRACTOR. VERIFY SITE CONDITIONS AND PATHWAY INTEGRITY PRIOR TO PULLING CABLE. NOTIFY TECHNOLOGY DESIGNER OF ANY DEFICIENCIES.
2. PROVIDE AND INSTALL CATEGORY 6 AND CATEGORY 6A, OUTDOOR RATED CABLING AS SPECIFIED.
3. AT TIME OF DATA CABLE INSTALLATION: INSTALL SPEAKER CABLE SUPPLIED BY AUDIOVISUAL CONTRACTOR FOR PUBLIC ADDRESS HORNS LOCATED ON LIGHT POLES, IDENTIFIED ON SHEET T4.
   3.1. NOTE: ONLY 1 SPEAKER CABLE IS NEEDED FOR EACH DAISY-CHAIN / CLUSTER OF HORNS (NOT 1 PER HORN).
4. PROVIDE AND INSTALL WIRELESS ACCESS POINTS AS SPECIFIED.
5. PROVIDE AND INSTALL IDF CABINETS AS SPECIFIED; INCLUDE COPPER PATCH PANEL, NETWORK SWITCH, ALL PATCH CABLES, AND UPS.
6. COORDINATE CABLE PULLS THROUGH SHARED PATHWAYS WITH OTHER TRADES TO AVOID CABLE DAMAGE.
7. COORDINATE DEVICE DROP LOCATIONS WITH DEVICE INSTALLATION CONTRACTOR. DEVICE INSTALLATION CONTRACTORS SHALL SUPPLY PATCH CABLES AS NEEDED FROM THE DEVICE TO THE DATA DROP.



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Key Plan:

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BP #
BP TITLE

Saline Middle School
Recreation Complex

Site Plan
Structured Cabling

T3

Barton Malow

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Owner:

Saline Area Schools
Saline, Michigan

Project Number: 230112
Project Manager: Michael Terrell
Drawn By: Bill Dawson, CTS
Checked By: Brian Jessie, CTS

Issued For	Date
DESIGN COORDINATION	10/08/2024
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PUBLIC ADDRESS SYSTEM HARDWARE:

DC DIGITAL CLOCK / PA / STROBE - AUDIO ENHANCEMENTS: IPSWD-RWB

HN ANALOG PAGING HORN - ATLAS IED: AP-15T

PUBLIC ADDRESS SYSTEM PROJECT NOTES:

1. PROVIDE AND INSTALL DIGITAL CLOCK IN PRESS BOX AND CONCESSIONS AS SHOWN.

2. PROVIDE AND INSTALL PAGING HORNS ON LIGHT POLES AND PRESS BOX AS SHOWN.
   2.1. PAGING SYSTEM IS INTENDED TO BE ON AT ALL TIMES TO PROVIDE CRITICAL NOTIFICATIONS.
   2.2. NOTE: CABLING FOR HORNS ON LIGHT POLES WILL BE INSTALLED BY STRUCTURED CABLING CONTRACTOR DURING DATA CABLING INSTALLATION. PROVIDE STRUCTURED CABLING CONTRACTOR APPROPRIATELY SIZED, OUTDOOR RATED CABLE.

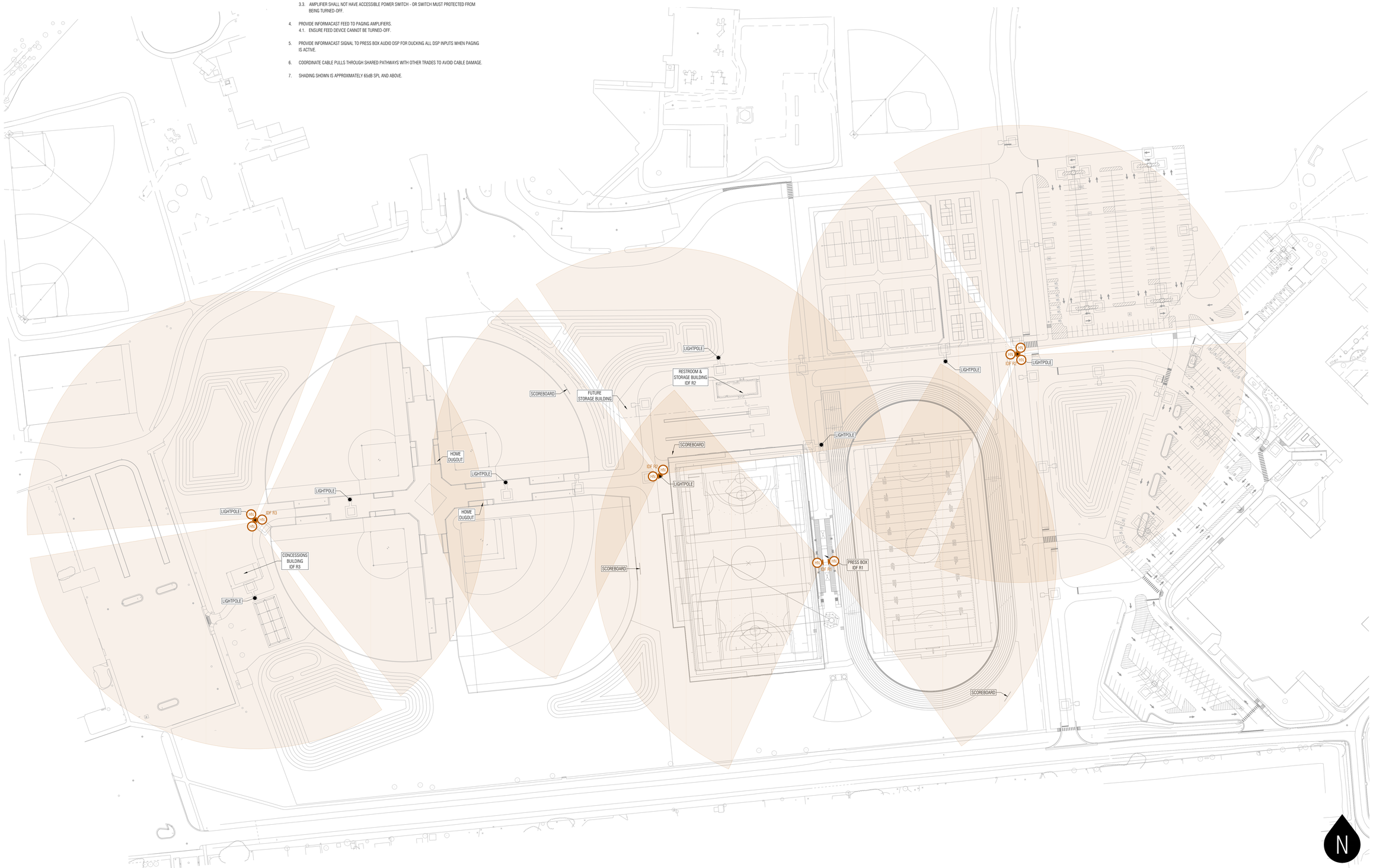
3. PROVIDE AND INSTALL PAGING AMPLIFIER IN EACH IDF CABINET AS SHOWN, SIZED TO HANDLE MAXIMUM WATTAGE FOR THE TOTAL NUMBER OF PAGING HORNS CONNECTED TO EACH AMPLIFIER, PLUS 30% HEADROOM.
   3.1. COORDINATE RACK SPACE AND LAYOUT WITH STRUCTURED CABLING CONTRACTOR.
   3.2. AMPLIFIER IS TO BE PLACED ON THE UPS SUPPLIED BY OTHERS.
   3.3. AMPLIFIER SHALL NOT HAVE ACCESSIBLE POWER SWITCH - OR SWITCH MUST PROTECTED FROM BEING TURNED-OFF.

4. PROVIDE INFORMACAST FEED TO PAGING AMPLIFIERS.
   4.1. ENSURE FEED DEVICE CANNOT BE TURNED-OFF.

5. PROVIDE INFORMACAST SIGNAL TO PRESS BOX AUDIO DSP FOR DUCKING ALL DSP INPUTS WHEN PAGING IS ACTIVE.

6. COORDINATE CABLE PULLS THROUGH SHARED PATHWAYS WITH OTHER TRADES TO AVOID CABLE DAMAGE.

7. SHADING SHOWN IS APPROXIMATELY 65dB SPL AND ABOVE.



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Key Plan:

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0'1632' 64' 128'

BP #
BP TITLE

Saline Middle School
Recreation Complex

Site Plan
Public Address System

T4

VIDEO SURVEILLANCE SYSTEM HARDWARE:

VIDEO SURVEILLANCE CAMERA; SHADING INDICATES DIRECTION OF VIEW, NOT COVERAGE

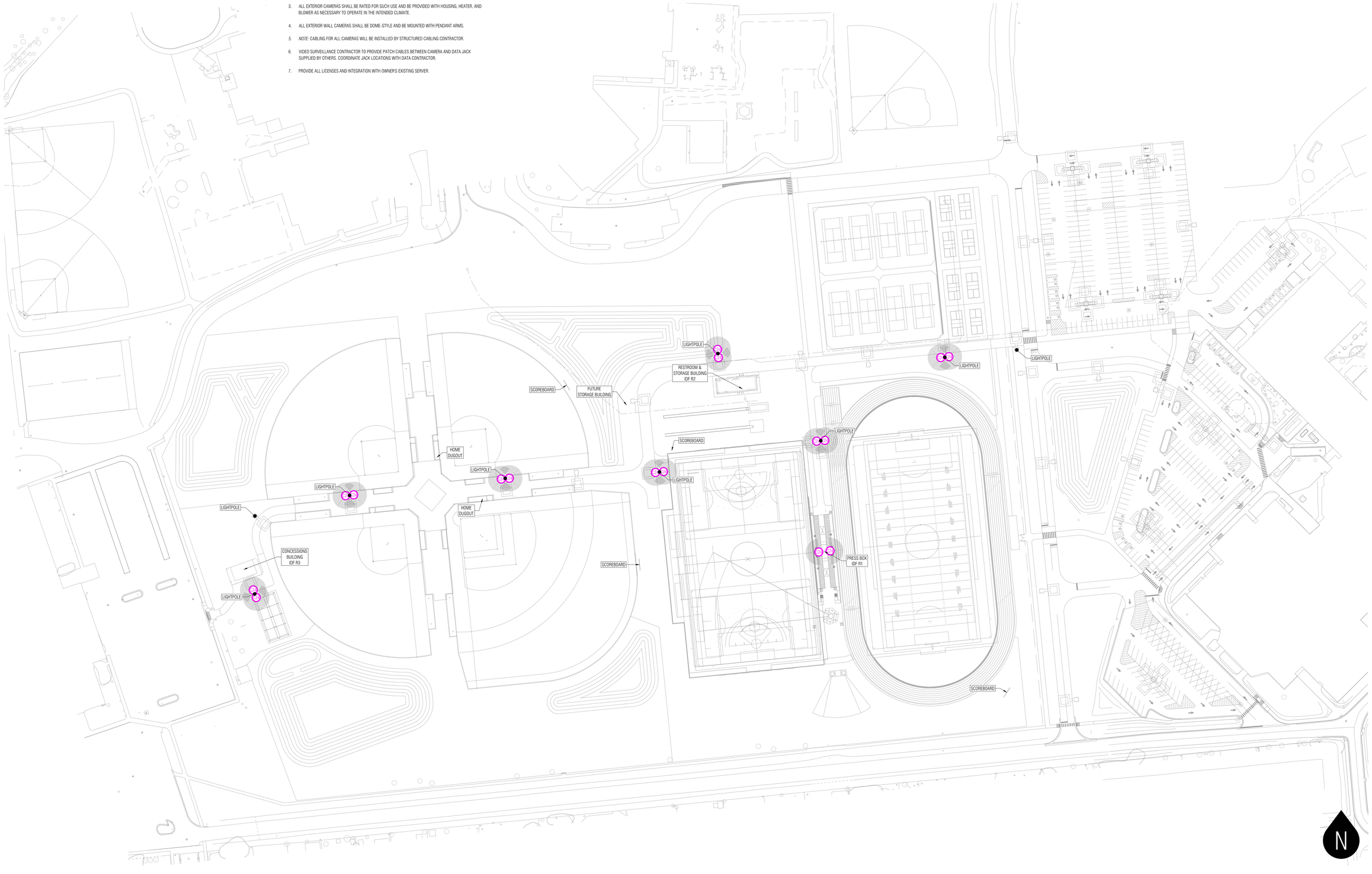
24C 24 MEGAPIXEL OUTDOOR 180°: 24C-H5A-3MH-180

24C 24 MEGAPIXEL OUTDOOR 270°: 24C-H5A-3MH-270

12.0 12 MEGAPIXEL OUTDOOR FISHEYE: 12.0W-H5A-FE-DO1-IR

VIDEO SURVEILLANCE SYSTEM PROJECT NOTES:

1. CONFIRM ALL MOUNTING LOCATIONS WITH TECHNOLOGY DESIGNER PRIOR TO INSTALLATION. LIGHT POLE CAMERAS ARE TO HAVE THEIR LOWEST POINT AT 12 FEET ABOVE FINISHED GRADE.
2. REVIEW AND CONFIRM ALL CAMERA VIEWS AND SETTINGS WITH TECHNOLOGY DESIGNER AND OWNER PRIOR TO ACCEPTANCE; ADJUST AS NECESSARY TO OWNER'S SATISFACTION.
3. ALL EXTERIOR CAMERAS SHALL BE RATED FOR SUCH USE AND BE PROVIDED WITH HOUSING, HEATER, AND BLOWER AS NECESSARY TO OPERATE IN THE INTENDED CLIMATE.
4. ALL EXTERIOR WALL CAMERAS SHALL BE DOME-STYLE AND BE MOUNTED WITH PENDANT ARMS.
5. *NOTE:* CABLING FOR ALL CAMERAS WILL BE INSTALLED BY STRUCTURED CABLING CONTRACTOR.
6. VIDEO SURVEILLANCE CONTRACTOR TO PROVIDE PATCH CABLES BETWEEN CAMERA AND DATA JACK SUPPLIED BY OTHERS. COORDINATE JACK LOCATIONS WITH DATA CONTRACTOR.
7. PROVIDE ALL LICENSES AND INTEGRATION WITH OWNER'S EXISTING SERVER.



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Key Plan:

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Scale: 1/64" = 1'

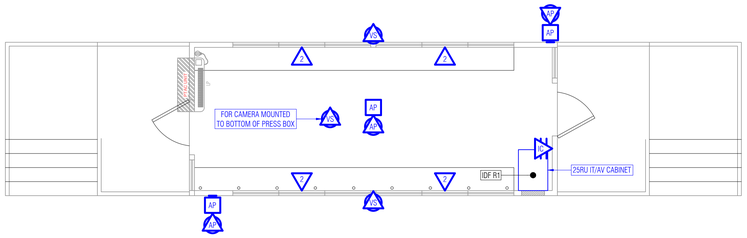
0' 16 32' 64' 128'

BP #
BP TITLE

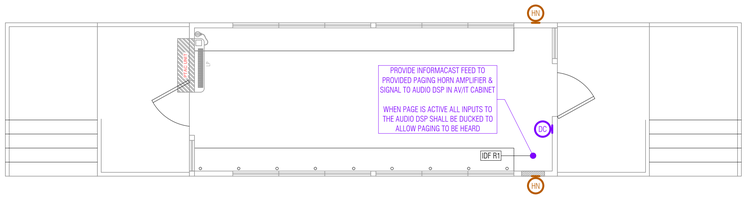
Saline Middle School
Recreation Complex

Site Plan
Video Surveillance System

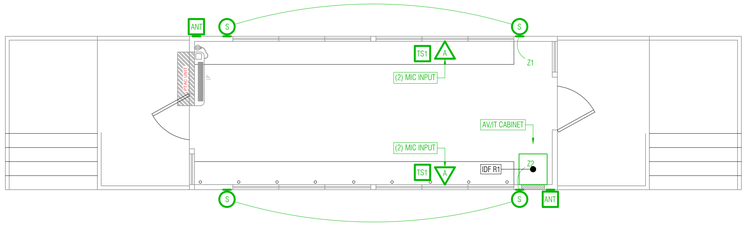
T7



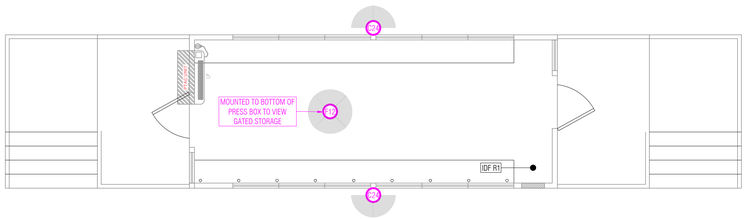
Press Box - Structured Cabling
SCALE: 1/4" = 1'



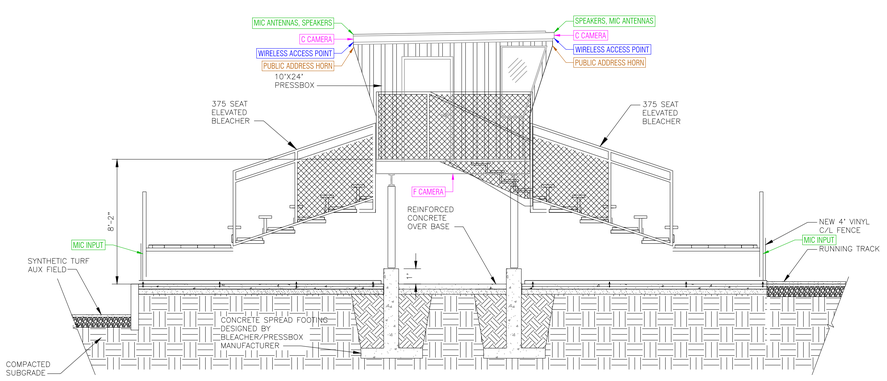
Press Box - Public Address System
SCALE: 1/4" = 1'



Press Box - Audio System
SCALE: 1/4" = 1'



Press Box - Video Surveillance System
SCALE: 1/4" = 1'



Press Box Side Elevation
SCALE: 1/4" = 1'

STRUCTURED CABLING SYMBOL STYLES & ABBREVIATIONS:

CABLING OUTLET / WALL PLATE

WAP — WIRELESS ACCESS POINT LOCATION, INCLUDE 1 CAT6A DROP

IAP — INFORMACAST DEVICE LOCATION, INCLUDE 1 CAT6 DROP

VC — VIDEO SURVEILLANCE CAMERA LOCATION, INCLUDE 1 CAT6 DROP

STRUCTURED CABLING HARDWARE:

AP — WIRELESS ACCESS POINT

STRUCTURED CABLING PROJECT NOTES:

1. UNDERGROUND AND ABOVE-GROUND PATHWAY, HAND HOLES, AND PENETRATIONS PROVIDED BY ELECTRICAL CONTRACTOR. VERIFY SITE CONDITIONS AND PATHWAY INTEGRITY PRIOR TO PULLING CABLE. NOTIFY TECHNOLOGY DESIGNER OF ANY DEFICIENCIES.
2. PROVIDE AND INSTALL CATEGORY 6 AND CATEGORY 6A, OUTDOOR RATED CABLING AS SPECIFIED.
3. AT TIME OF DATA CABLE INSTALLATION: INSTALL SPEAKER CABLE SUPPLIED BY AUDIOVISUAL CONTRACTOR FOR PUBLIC ADDRESS HORNS LOCATED ON LIGHT POLES, IDENTIFIED ON SHEET T4.
   3.1. NOTE: ONLY 1 SPEAKER CABLE IS NEEDED FOR EACH DAISY-CHAIN / CLUSTER OF HORNS (NOT 1 PER HORN).
4. PROVIDE AND INSTALL WIRELESS ACCESS POINTS AS SPECIFIED.
5. PROVIDE AND INSTALL IDF CABINETS AS SPECIFIED; INCLUDE COPPER PATCH PANEL, NETWORK SWITCH, ALL PATCH CABLES, AND UPS.
6. COORDINATE CABLE PULLS THROUGH SHARED PATHWAYS WITH OTHER TRADES TO AVOID CABLE DAMAGE.
7. COORDINATE DEVICE DROP LOCATIONS WITH DEVICE INSTALLATION CONTRACTOR. DEVICE INSTALLATION CONTRACTORS SHALL SUPPLY PATCH CABLES AS NEEDED FROM THE DEVICE TO THE DATA DROP.

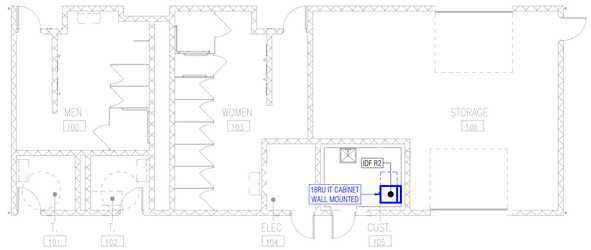
PUBLIC ADDRESS SYSTEM HARDWARE:

DC — DIGITAL CLOCK / PA / STROBE - AUDIO ENHANCEMENTS: IPSWD-RWB

HN — ANALOG PAGING HORN - ATLAS IED: AP-15T

PUBLIC ADDRESS SYSTEM PROJECT NOTES:

1. PROVIDE AND INSTALL DIGITAL CLOCK IN PRESS BOX AND CONCESSIONS AS SHOWN.
2. PROVIDE AND INSTALL PAGING HORNS ON LIGHT POLES AND PRESS BOX AS SHOWN.
   2.1. PAGING SYSTEM IS INTENDED TO BE ON AT ALL TIMES TO PROVIDE CRITICAL NOTIFICATIONS.
   2.2. NOTE: CABLING FOR HORNS ON LIGHT POLES WILL BE INSTALLED BY STRUCTURED CABLING CONTRACTOR DURING DATA CABLING INSTALLATION. PROVIDE STRUCTURED CABLING CONTRACTOR APPROPRIATELY SIZED, OUTDOOR RATED CABLE.
3. PROVIDE AND INSTALL PAGING AMPLIFIER IN EACH IDF CABINET AS SHOWN, SIZED TO HANDLE MAXIMUM WATTAGE FOR THE TOTAL NUMBER OF PAGING HORNS CONNECTED TO EACH AMPLIFIER, PLUS 30% HEADROOM.
   3.1. COORDINATE RACK SPACE AND LAYOUT WITH STRUCTURED CABLING CONTRACTOR.
   3.2. AMPLIFIER IS TO BE PLACED ON THE UPS SUPPLIED BY OTHERS.
   3.3. AMPLIFIER SHALL NOT HAVE ACCESSIBLE POWER SWITCH - OR SWITCH MUST PROTECTED FROM BEING TURNED-OFF.
4. PROVIDE INFORMACAST FEED TO PAGING AMPLIFIERS.
   4.1. ENSURE FEED DEVICE CANNOT BE TURNED-OFF.
5. PROVIDE INFORMACAST SIGNAL TO PRESS BOX AUDIO DSP FOR DUCKING ALL DSP INPUTS WHEN PAGING IS ACTIVE.
6. COORDINATE CABLE PULLS THROUGH SHARED PATHWAYS WITH OTHER TRADES TO AVOID CABLE DAMAGE.
7. SHADING SHOWN IS APPROXIMATELY 65dB SPL AND ABOVE.



Restroom & Storage Building Plan
SCALE: 1/8" = 1'

Concessions Building Plan
SCALE: 1/8" = 1'

AUDIO SYSTEM CABLING OUTLET / WALL PLATE:

S — AUDIO INPUT/OUTPUT WALL PLATE AS DESCRIBED, LOW ON WALL

HARDWARE:

TS — TOUCH SCREEN CONTROLLER LOCATION

S — SPEAKER LOCATION

ANT — WIRELESS MICROPHONE ANTENNA LOCATION

AUDIO SYSTEMS PROJECT NOTES:

1. PROVIDE AND INSTALL COMPLETE STADIUM AUDIO SYSTEM IN / ON PRESS BOX TO INCLUDE THE FOLLOWING FUNCTIONS AND MEET THE FOLLOWING NEEDS:
   1.1. TWO ZONES OF SPEECH AND MUSIC SOUND REINFORCEMENT: ONE ZONE FOR THE FOOTBALL SIDE; AND ONE ZONE FOR THE SOCCER SIDE. THESE ZONES SHALL BE ABLE TO COMBINE.
   1.2. SPEAKER COVERAGE ON EACH SIDE OF THE PRESS BOX SHALL INTELLIGIBLY COVER THE ENTIRE BLEACHERS AND AT LEAST 20 FEET OUT FROM THE EDGE OF THE BLEACHER PLATFORM WALKWAY.
      1.2.1. COVERAGE OF THE ENTIRE FIELDS IS NOT REQUIRED, HOWEVER SUCH COVERAGE IS NOT DISCOURAGED. ADDITIONAL EQUIPMENT REQUIRED TO COVER THE ENTIRE FIELDS MAY BE PROPOSED AS AN ADDITIONAL ALTERNATE.
   1.3. EACH SIDE COUNTER WITHIN THE PRESS BOX SHALL BE EQUIPPED WITH THE FOLLOWING CONNECTIONS AND DEVICES:
      1.3.1. (2) INPUT MICROPHONE WALL PLATE BELOW THE COUNTER (A).
      1.3.2. (2) 18" GOOSENECK MICROPHONES WITH DESKTOP BASE HAVING PUSH-TO-TALK/MUTE BUTTON AND LED STATUS INDICATOR.
      1.3.3. 7" TOUCH SCREEN CONTROLLER FOR THE CONTROL OF INPUT AND OUTPUT AUDIO LEVELS, AND MULTIMEDIA PLAYER SOURCES (WHEN APPLICABLE).
   1.4. ADDITIONALLY, (1) INPUT MICROPHONE WALL PLATE WILL BE LOCATED ON THE FIELD-FACE OF EACH SIDE OF THE BLEACHERS AS INDICATED ON THE DRAWINGS. COORDINATE ACCESS THROUGH THE CHAINLINK FENCE WITH THE FENCE INSTALLER.
      1.4.1. PROVIDE (1) WIRED HANDHELD MICROPHONE WITH SWITCH AND 25' OUTDOOR RATED MICROPHONE CORD FOR USE WITH THESE INPUTS.
   1.5. TWO CHANNELS OF WIRELESS MICROPHONE CAPABILITY SHALL BE INSTALLED. EACH CHANNEL WILL BE ROUTABLE TO EITHER OR BOTH ZONES. EACH CHANNEL WILL BE PROVIDED A HANDHELD WIRELESS MICROPHONE, AND BODYPACK TRANSMITTER WITH LAPEL AND DISCREET HEADSET MICROPHONES. ANTENNA DISTRIBUTION SHALL BE USED TO ALLOW FOR ANY MICROPHONE TO BE USED ON EITHER SIDE OF THE PRESS BOX, THROUGHOUT THE BLEACHERS AND ENTIRETY OF THE FIELDS UNDER NOMINAL WEATHER AND ATTENDANCE CONDITIONS.
   1.6. A COMMON MULTIMEDIA PLAYER WILL BE LOCATED IN THE AV/IT CABINET TO INCLUDE THE FOLLOWING SOURCES: BLUETOOTH (RANGE LIMITED TO TRANSMITTING DEVICE INSIDE PRESS BOX); CD; USB; AND AM/FM RADIO (PROVIDE HIGH-GAIN ANTENNA MOUNTED OUTSIDE PRESS BOX).
   1.7. AN AUDIO DIGITAL SIGNAL PROCESSOR (DSP) SHALL BE USED TO MIX, PROCESS, DISTRIBUTE, AND CONTROL AUDIO SIGNALS.
2. RACK MOUNTED EQUIPMENT SHALL BE PLACED IN THE SHARED IT / AV CABINET SUPPLIED AND INSTALLED BY THE STRUCTURED CABLING CONTRACTOR.
   2.1. PROVIDE AND INSTALL BLANK PANELS AS REQUIRED AND A 3RU DRAWER FOR THE STORAGE OF WIRELESS MICROPHONES AND ACCESSORIES, AND THE WIRED MICROPHONE AND CORD.
   2.2. COORDINATE RACK SPACE AND LAYOUT WITH STRUCTURED CABLING CONTRACTOR.
3. COORDINATE CABLE PULLS THROUGH SHARED PATHWAYS WITH OTHER TRADES TO AVOID CABLE DAMAGE.

VIDEO SURVEILLANCE SYSTEM HARDWARE:

VIDEO SURVEILLANCE CAMERA; SHADING INDICATES DIRECTION OF VIEW, NOT COVERAGE

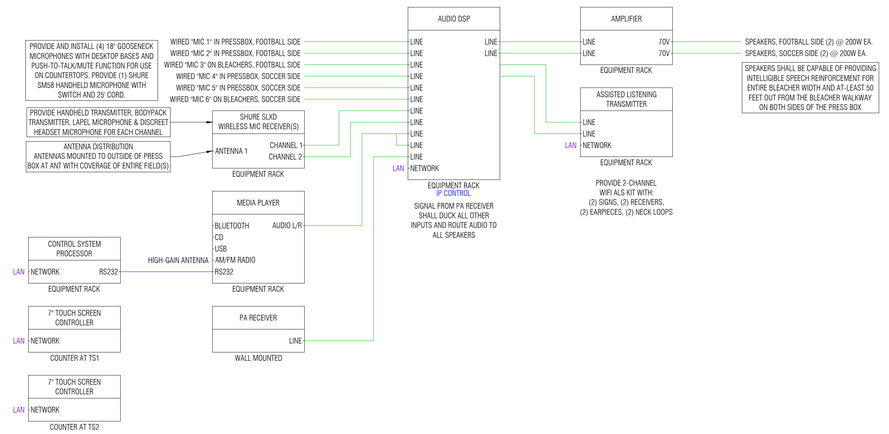
Z3 — 24 MEGAPIXEL OUTDOOR 180°: 24C-HSA-3MH-180

Z2 — 24 MEGAPIXEL OUTDOOR 270°: 24C-HSA-3MH-270

Z1 — 12 MEGAPIXEL OUTDOOR FISHEYE: 12.0W-H5A-FE-DO1-IR

VIDEO SURVEILLANCE SYSTEM PROJECT NOTES:

1. CONFIRM ALL MOUNTING LOCATIONS WITH TECHNOLOGY DESIGNER PRIOR TO INSTALLATION. LIGHT POLE CAMERAS ARE TO HAVE THEIR LOWEST POINT AT 12 FEET ABOVE FINISHED GRADE.
2. REVIEW AND CONFIRM ALL CAMERA VIEWS AND SETTINGS WITH TECHNOLOGY DESIGNER AND OWNER PRIOR TO ACCEPTANCE; ADJUST AS NECESSARY TO OWNER'S SATISFACTION.
3. ALL EXTERIOR CAMERAS SHALL BE RATED FOR SUCH USE AND BE PROVIDED WITH HOUSING, HEATER, AND BLOWER AS NECESSARY TO OPERATE IN THE INTENDED CLIMATE.
4. ALL EXTERIOR WALL CAMERAS SHALL BE DOME-STYLE AND BE MOUNTED WITH PENDANT ARMS.
5. *NOTE:* CABLING FOR ALL CAMERAS WILL BE INSTALLED BY STRUCTURED CABLING CONTRACTOR.
6. VIDEO SURVEILLANCE CONTRACTOR TO PROVIDE PATCH CABLES BETWEEN CAMERA AND DATA JACK SUPPLIED BY OTHERS. COORDINATE JACK LOCATIONS WITH DATA CONTRACTOR.
7. PROVIDE ALL LICENSES AND INTEGRATION WITH OWNER'S EXISTING SERVER.



Press Box Audio System Schematic

Barton Malow

Barton Malow Builders
26500 American Drive
Southfield, MI 48034

248.436.5000
www.bartonmalow.com

Owner:

Saline Area Schools
Saline, Michigan

Project Number: 230112
Project Manager: Michael Terrell
Drawn By: Bill Dawson, CTS
Checked By: Brian Jessie, CTS

Issued For	Date
DESIGN COORDINATION	10/08/2024
DESIGN COORDINATION	10/22/2024

NOT FOR CONSTRUCTION

Key Plan:

Native Page Size: 42" X 30"

Scale: As Noted

BP #
BP TITLE

Details

Floor Plans
Audio Schematic

T9

Request for Information

Detailed

0186

Saline Area Schools 2022 Bond Program (23-2914)

7265 Ann Arbor Street
Saline, MI 48176

0186 - BP-3 : Saline MS Rec Complex - CAD File Request for Civil

Subject

BP-3 : Saline MS Rec Complex - CAD File Request for Civil

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:31 PM

Can the CAD files please be made available to the bidding contractors to use at their own risk for bidding?

ANSWER Matt Wielechowski on 11/20/2024 12:34 PM (Promoted by Matt Wielechowski on 11/20/2024 12:34 PM)

CAD files will not be supplied during the bidding process. Contractors are responsible for their own takeoffs.

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/25/2024

0187 - BP-3 : SMS Rec Complex - Disposal of Asphalt and Concrete above UST System

Subject
BP-3 : SMS Rec Complex - Disposal of Asphalt and Concrete above UST System

Status
Closed by Clark

Discipline	Phase	Location
Civil	Preconstruction	Bid Pack #3 – Saline MS Rec Complex
Created On	**Due Date**	**Date Resolved**
11/18/2024	11/25/2024	11/20/2024

Author	Resolved By
Matt Wielechowski Clark Construction Company	Matt Wielechowski Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:33 PM

Can the asphalt and concrete above the USTs system be recycled instead of disposed of at a landfill?

ANSWER Matt Wielechowski on 11/20/2024 02:00 PM (Promoted by Matt Wielechowski on 11/20/2024 02:00 PM)

The pavement will be disposed of at an approved landfill pending waste characterization sampling results. If pavement is not contaminated, it may be recycled, however this will be handled post bid through a change order.

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/25/2024

0188 - BP-3 - SMS Rec Complex - Unit Price Unit of Measure for Landfill Disposal

Subject

BP-3 - SMS Rec Complex - Unit Price Unit of Measure for Landfill Disposal

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:34 PM

The current unit of measure for the landfill disposal is by the cubic yard. Landfill disposal is charged by the Ton at all facilities. This requires the contractor to assume a unit weight of soil which can result in a higher cost to the owner. Can the unit of measure for the landfill disposal item be revised to Ton?

ANSWER Matt Wielechowski on 11/20/2024 12:06 PM (Promoted by Matt Wielechowski on 11/20/2024 12:06 PM)

Yes, the unit of measure for landfill disposal can be revised to Ton. This will be modified in "BuildingConnected".

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/25/2024

0189 - BP-3 - SMS Rec Complex - UST System Removal Scope Clarification

Subject

BP-3 - SMS Rec Complex - UST System Removal Scope Clarification

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:36 PM

Is there an Allowance for the UST System Removal bid package?

ANSWER Matt Wielechowski on 11/20/2024 12:07 PM (Promoted by Matt Wielechowski on 11/20/2024 12:09 PM)

See response to RFI-0190.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/25/2024

0190 - BP-3 : SMS Rec Complex - 600 CY Sand Backfill Note for UST Tank Removal

Subject

BP-3 : SMS Rec Complex - 600 CY Sand Backfill Note for UST Tank Removal

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:37 PM

Demolition Note 17 on plan sheet C2.5 call for the site contractor to assume 600 CY of sand backfill for the UST tank removal. Should this be added as an allowance in the specifications? Will this be based on a unit a price?

ANSWER Matt Wielechowski on 11/20/2024 12:44 PM (Promoted by Matt Wielechowski on 11/20/2024 12:44 PM)

Backfill, including the 600 CY allowance is the responsibility of Bid Category 02 - UST System Removal. See revised Bid Category 02 - UST System Removal published in Addendum 001.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/25/2024

Trevor Garland (Kingscott Associates, Inc.) Due On 11/25/2024

0193 - BP-3 : SMS - Rec Complex - Site Logistics Plan and Temporary Road

Subject

BP-3 : SMS - Rec Complex - Site Logistics Plan and Temporary Road

Status

Closed by Clark

Discipline
All Disciplines

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:44 PM

The milestone schedule item 4.B and 6.B. notes “Temp Road.” Is there a logistics plan for this project? Who will be responsible for the temp road and other logistic items if required?

ANSWER Matt Wielechowski on 11/20/2024 12:47 PM (Promoted by Matt Wielechowski on 11/20/2024 12:47 PM)

See Addendum 002 for site logistics plan. Site specific requirements for site logistics are to be bid per notes listed in each Bid Category Specific Notes.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/25/2024

0194 - BP-3 : SMS Rec Complex - Project Software Cost

Subject

BP-3 : SMS Rec Complex - Project Software Cost

Status

Closed by Clark

Discipline
All Disciplines

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:45 PM

Section 002413-2.1 states, trades are to purchase and utilize the project software utilized by the Construction Manager on-site. Please provide the software and fees this project will utilize.

ANSWER Matt Wielechowski on 11/20/2024 12:50 PM (Promoted by Matt Wielechowski on 11/20/2024 12:50 PM)

There are no fees associated with the project software, ProjectSight. Fees for utilizing the payment management for invoices is listed in Specification 012900 - Payment Procedures.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/25/2024

0196 - BP-3 : SMS Rec Complex - SESC/NPDES Permit Requirement Clarification

Subject

BP-3 : SMS Rec Complex - SESC/NPDES Permit Requirement Clarification

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION

Matt Wielechowski on 11/18/2024 03:49 PM

Sec. 311018 requires the “site” contractor to obtain the SESC/NPDES permit and perform the required inspections for the entire project. This project has a long duration, multiple contractors, and scopes of work the site contractor does not control that fall under the SESC permit. (Ie. Landscaping/Turf) Please consider having the General Contractor obtain the SESC/NPDES permit, perform the inspections, and police all the trades that affect the SESC aspects of the project.

ANSWER

Matt Wielechowski on 11/20/2024 12:55 PM (Promoted by Matt Wielechowski on 11/20/2024 12:55 PM)

Bid Category 31A is responsible for SESC/NPDES permits as required by authorities having jurisdiction per the milestone schedule and phasing plan. Any impact to SESC caused by other trades will be the responsibility of the trade causing the impact to correct and re-establish.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/25/2024

0197 - BP-3 : SMS Rec Complex - Performance Bond Required for the SESC / NPDES Permit

Subject
BP-3 : SMS Rec Complex - Performance Bond Required for the SESC / NPDES Permit

Status
Closed by Clark

Discipline	Phase	Location
Civil	Preconstruction	Bid Pack #3 – Saline MS Rec Complex
Created On	**Due Date**	**Date Resolved**
11/18/2024	11/25/2024	11/20/2024

Author	Resolved By
Matt Wielechowski Clark Construction Company	Matt Wielechowski Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:50 PM

Is there a performance bond required for the SESC/NPDES permit?

ANSWER Matt Wielechowski on 11/20/2024 01:02 PM (Promoted by Matt Wielechowski on 11/20/2024 01:02 PM)

Yes, there is a performance deposit required through Washtenaw County. Refer to local jurisdiction requirements for applicable permitting costs.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/25/2024

0198 - BP-3 : SMS Rec Complex - Temporary Water Supply

Subject

BP-3 : SMS Rec Complex - Temporary Water Supply

Status

Closed by Clark

Discipline
All Disciplines

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:51 PM

Will temporary water be supplied to all contractors?

ANSWER Matt Wielechowski on 11/20/2024 01:11 PM (Promoted by Matt Wielechowski on 11/20/2024 01:12 PM)

Access will be allowed to supply contractors with temporary water. Site logistics plan will be published in Addendum 002 showing locations to obtain water.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/25/2024

0199 - BP-3 : SMS Rec Complex - Stripped Topsoil Stockpile Location

Subject

BP-3 : SMS Rec Complex - Stripped Topsoil Stockpile Location

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:52 PM

Sec. 311000-1.4-A. notes stripped topsoil to remain on owner's property. Please provide the location all stripped topsoil for this project is to be stockpiled.

ANSWER Matt Wielechowski on 11/20/2024 01:13 PM (Promoted by Matt Wielechowski on 11/20/2024 01:13 PM)

Site logistics plan will be published in Addendum 002 showing location of stripped topsoil.

ASSIGNMENTS

Robyn Anes (Clark Construction Company) Due On 11/25/2024

0200 - BP-3 : SMS Rec Complex - Pre-Construction Video of the Site

Subject

BP-3 : SMS Rec Complex - Pre-Construction Video of the Site

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:54 PM

Who is responsible for providing preconstruction photo/site video as noted in Sec. 311000.1.5.A? Can the GC/Owner perform a pre-construction video of the site and provide all sub-contractors for their records?

ANSWER Matt Wielechowski on 11/20/2024 01:17 PM (Promoted by Matt Wielechowski on 11/20/2024 01:17 PM)

Bid Category 31A is responsible for preconstruction photos listed in Specification Section 311000.1.5.A. Construction Manager will also complete a pre-construction site survey prior to construction document pre-construction conditions.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/25/2024

0201 - BP-3 : SMS Rec Complex - Site Balance Requirements per Spec Section 311000-2.1-A.1

Subject

BP-3 : SMS Rec Complex - Site Balance Requirements per Spec Section 311000-2.1-A.1

Status

Closed by Clark

Discipline	Phase	Location
Civil	Preconstruction	Bid Pack #3 – Saline MS Rec Complex

Created On	Due Date	Date Resolved
11/18/2024	11/25/2024	11/20/2024

Author	Resolved By
Matt Wielechowski Clark Construction Company	Matt Wielechowski Clark Construction Company

QUESTION

Matt Wielechowski on 11/18/2024 03:56 PM (Edited by Matt Wielechowski on 11/20/2024 01:20 PM)

Sec. 311000-2.1-A.-1. States the contractor is to provide a balanced site. To provide a balanced site the bidding site contractors will need to know the quantity of all other trade spoils, how the other trade spoils are to be tracked and quantified in the field, and the current quantity of soil stockpiled onsite. Making assumptions on the above items can lead to unnecessary costs to the owner. Please consider allowing all excess material to be stockpiled onsite and hauled off as directed per a unit price and import of structural fill by the ton if needed?

ANSWER

Matt Wielechowski on 11/20/2024 01:20 PM (Promoted by Matt Wielechowski on 11/20/2024 01:22 PM)

All contractors need to be responsible for their own soils. Therefore, the site contractor should be responsible for providing a balanced site for their own work, ie mass grading and utilities (storm, sanitary, water). Soils generator from other trades (footings, electrical, fiber, etc) should be assumed to be hauled off-site.

Also, please be aware of this note in the demolition plans, "Contractor is responsible for doing an earthwork calculation for cut and fill requirements and is responsible for including import and export of materials in their bid. All excess material (including topsoil, clean fill, and waste material) shall be removed from the site".

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/25/2024

0202 - BP-3 : SMS Rec Complex - Section 312000-3 - Suitable Soil for Backfill

Subject

BP-3 : SMS Rec Complex - Section 312000-3 - Suitable Soil for Backfill

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location
Bid Pack #3 – Saline MS Rec Complex

Created On
11/18/2024

Due Date
11/25/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/18/2024 03:58 PM

Sec. 312000-3.12-A. states, “Provide borrow soil materials without additional cost to Owner when sufficient satisfactory soil materials are not available from excavations.” Sec. 312000-2.1-C list unsatisfactory soil classifications for this project. The provided geotechnical report, which utilizes the same classification standard, indicates most of the soil is CL or ML. This soil type is not allowed for fill under any improvements as outlined in Sec. 312000-3.12-C. of the project specifications. There will be a significant cost implication if the cut during the mass grade operations and utility trench spoils cannot be used as fill for the project. Should it be assumed all excavated material can be used for onsite fills and if not suitable to be stockpiled onsite or hauled off? Please clarify how all bidding contractors need to consider this in our bids?

ANSWER Matt Wielechowski on 11/20/2024 01:29 PM (Edited by Matt Wielechowski on 11/20/2024 02:05 PM)

CL or ML soils may be used in greenbelt areas. Material shall be placed and compacted per contract documents. Verification testing will be by the on-site materials engineer.

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/25/2024

0204 - BP-3 : SMS Rec Complex - Responsibility for Placement of Topsoil

Subject

BP-3 : SMS Rec Complex - Responsibility for Placement of Topsoil

Status

Closed by Clark

Discipline
All Disciplines

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/19/2024 10:27 AM

Please verify the landscape contractor is responsible for placement of all topsoil on the site. If not, please specify the limits and requirements per varying scope.

ANSWER Matt Wielechowski on 11/20/2024 01:32 PM (Promoted by Matt Wielechowski on 11/20/2024 01:32 PM)

Landscape contractor, Bid Category 32F, is responsible for placement of topsoil with the exception of topsoil for baseball/softball fields. Topsoil within the baseball/softball field fence line are the responsibility of Bid Category 31B.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/26/2024

0205 - BP-3 : SMS Rec Complex - Buried Topsoil Shown in Geotech Report

Subject

BP-3 : SMS Rec Complex - Buried Topsoil Shown in Geotech Report

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION

Matt Wielechowski on 11/19/2024 10:29 AM

The geotechnical report borings indicate areas of buried topsoil and fill. Please confirm all, exploration, removal and replacement will be directed in the field and paid under unit prices?

ANSWER

Matt Wielechowski on 11/20/2024 01:37 PM (Promoted by Matt Wielechowski on 11/20/2024 01:37 PM)

1. Buried topsoil shows up below the pavement. I do not see any buried topsoil in the site. Topsoil and any organics should be removed when exposed, especially below pavements where repairs/replacement are taking place
2. Fill shows up in a few other boring but those are in bermed areas. Therefore, these are somewhat expected to be fill. The contractor should perform a proof roll that is observed by the onsite material tester. Removal will be determined in the field based on proof roll results. For undercuts and unforeseen conditions, the Bid Category Allowances will be utilized along with Unit Prices.
3. I expect much of "fill" areas will be removed during site balancing operations

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/26/2024

Trevor Garland (Kingscott Associates, Inc.) Due On 11/26/2024

0206 - BP-3 : SMS Rec Complex - Hydrant Lead Clarification

Subject

BP-3 : SMS Rec Complex - Hydrant Lead Clarification

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION

Matt Wielechowski on 11/19/2024 10:31 AM

The standard city detail and specifications calls for DI for hydrant leads. The plans call out C-900. Please confirm the hydrant lead material for this project.

ANSWER

Matt Wielechowski on 11/20/2024 01:37 PM (Promoted by Matt Wielechowski on 11/20/2024 01:37 PM)

All water mains shall be C900. The hydrant assembly (valve to hydrant) shall be ductile iron. Plans will be reviewed by the City and State for permitting and are subject to change based on their formal review. All water main shop drawings will be required to be reviewed and approved by the City.

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/26/2024

0207 - BP-3 : SMS Rec Complex - Hydrant Lead Length Clarification

Subject

BP-3 : SMS Rec Complex - Hydrant Lead Length Clarification

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/19/2024 03:53 PM

Are hydrant leads longer than 40’ supposed to be 8” pipe up to the lead?

ANSWER Matt Wielechowski on 11/20/2024 01:38 PM (Promoted by Matt Wielechowski on 11/20/2024 01:38 PM)

Bid per plans and specs. Plans will be reviewed by the City and State for approval. Pipe sizing modifications will be per the direction of the City.

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/26/2024

0208 - BP-3 : SMS Rec Complex - New Water Main to Existing Middle School

Subject
BP-3 : SMS Rec Complex - New Water Main to Existing Middle School

Status
Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/19/2024 03:55 PM

The new water service to the existing middle school is not depicted in the front-end phasing documents. Please confirm if this work is to take place during phase two of the milestone schedule or can it be completed in phase 1?

ANSWER Matt Wielechowski on 11/20/2024 01:41 PM (Promoted by Matt Wielechowski on 11/20/2024 01:41 PM)

This work is to take place during phase 2 milestone schedule. Work that doesn't impact school functions can take place during Phase 1, however, site access and logistics to perform the work will be required to work around school activities. Temporary safety measures would also likely be required.

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/26/2024

0209 - BP-3 : SMS Rec Complex - Tapping Existing Sanitary Restrictions

Subject

BP-3 : SMS Rec Complex - Tapping Existing Sanitary Restrictions

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION

Matt Wielechowski on 11/19/2024 03:56 PM

Are there any time restrictions for tapping the existing sanitary structure and installing the proposed 264’ of 6” pipe at Heritage School. Currently it is shown to be constructed in PH1 of the front-end documents. Will this work need to be completed in PH2 over the summer shut down to not conflict with Heritage School?

ANSWER

Matt Wielechowski on 11/20/2024 01:41 PM (Promoted by Matt Wielechowski on 11/20/2024 01:41 PM)

Installation of the sewer crossing Heritage pavement should be completed in phase 2. However, we have no objection to installing the remainder of the sewer outside of the pavement during non-summer months. Plans have been modified for Addendum 1

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/26/2024

0210 - BP-3 : SMS Rec Complex - Bedding Detail for Class "B" Bedding

Subject

BP-3 : SMS Rec Complex - Bedding Detail for Class "B" Bedding

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/19/2024 03:57 PM

Please provide a bedding/backfill detail for the varying storm pipe material or clarify what material is class “B” Bedding.

ANSWER Matt Wielechowski on 11/20/2024 01:42 PM (Promoted by Matt Wielechowski on 11/20/2024 01:42 PM)

A detailed has been added to the plans in Addendum 1 to clarify bedding and backfill requirements

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/26/2024

0211 - BP-3 : SMS Rec Complex - 8" HDPE Storm Pipe Clarification

Subject

BP-3 : SMS Rec Complex - 8" HDPE Storm Pipe Clarification

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/19/2024 03:59 PM

What is the material specification for the 8” HDPE storm pipe shown on the Utility plans? Should it be SDR26?

ANSWER Matt Wielechowski on 11/20/2024 01:42 PM (Promoted by Matt Wielechowski on 11/20/2024 01:42 PM)

HDPE pipe note will be removed in Addendum 1. 8" storm should be SDR26 per utility notes

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/26/2024

0212 - BP-3 : SMS Rec Complex - Water Main Fitting Clarification

Subject

BP-3 : SMS Rec Complex - Water Main Fitting Clarification

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/19/2024 04:00 PM

In the plan set it calls for any WM dips to be lowered with 22.5 bends and the City of Saline Specifications call out 45 Bends, what is to be used?

ANSWER Matt Wielechowski on 11/20/2024 01:43 PM (Promoted by Matt Wielechowski on 11/20/2024 01:43 PM)

Profiles will be included in Addendum 1. Bid should include bends per plan and profile

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/26/2024

0213 - BP-3 : SMS Rec Complex - Alternative Pipe Material Acceptable

Subject

BP-3 : SMS Rec Complex - Alternative Pipe Material Acceptable

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/19/2024 04:02 PM

Would alternative pipe material for the temporary storm, such as N12 be acceptable?

ANSWER Matt Wielechowski on 11/20/2024 01:43 PM (Promoted by Matt Wielechowski on 11/20/2024 01:43 PM)

I have no issue with an alternative pipe material for the temporary storm sewer. The contractor is responsible for controlling runoff during construction, so it is somewhat means and methods.

ASSIGNMENTS

Trevor Garland (Kingscott Associates, Inc.) Due On 11/26/2024

0215 - BP-3 : SMS Rec Complex - Working Hours Clarification

Subject

BP-3 : SMS Rec Complex - Working Hours Clarification

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/19/2024 04:04 PM

The work hours are set to be from 7:00 A.M- 3:30 P.M, and it is strictly enforced or if we can work later with GC permission.

ANSWER Matt Wielechowski on 11/20/2024 01:47 PM (Promoted by Matt Wielechowski on 11/20/2024 01:47 PM)

Standard work hours are 7:00 am - 3:30 pm, however work can be coordinated with the CM outside of these hours as needed. Note that there are local noise ordinances that must be followed for start and stop times.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/26/2024

0216 - BP-3 : SMS Rec Complex - Dust Control and Track Out

Subject

BP-3 : SMS Rec Complex - Dust Control and Track Out

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/19/2024

Due Date
11/26/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION Matt Wielechowski on 11/19/2024 04:04 PM

To what extent is the contractor responsible for Dust Control and Track Out?

ANSWER Matt Wielechowski on 11/20/2024 02:52 PM (Promoted by Matt Wielechowski on 11/20/2024 02:52 PM)

Dust control and track out is the responsibility of each trade contractor to keep the adjacent roads clean. Construction access road shown on C7.1 and additional requirements listed in Bid Category 31A - Sitework is meant to keep mud tracking down, however, each trade contractor is responsible for sweeping and controlling dust and track out for the extend of the work listed in each specific bid category.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/26/2024

0220 - BP-3 : SMS Rec Complex - Bleacher Concrete Scope Clarification

Subject

BP-3 : SMS Rec Complex - Bleacher Concrete Scope Clarification

Status

Closed by Clark

Discipline
Civil

Phase
Preconstruction

Location

Created On
11/20/2024

Due Date
11/27/2024

Date Resolved
11/20/2024

Author
Matt Wielechowski
Clark Construction Company

Resolved By
Matt Wielechowski
Clark Construction Company

QUESTION

Matt Wielechowski on 11/20/2024 02:12 PM

I wanted to get clarification that since the bleacher system is called out as "Delegated Design" that we are to include the concrete used for our bleacher/press box in our scope of work? Thank you for clarifying this.

ANSWER

Matt Wielechowski on 11/20/2024 02:14 PM (Promoted by Matt Wielechowski on 11/20/2024 02:14 PM)

The concrete footings and the concrete underneath the bleacher system is to be the responsibility of Bid Category 13B - Press Box and Grandstand. See Addendum 001 for Bid Category Scope clarifying this.

ASSIGNMENTS

Matt Wielechowski (Clark Construction Company) Due On 11/27/2024

Saline Area Schools 2022 Bond Program

BP #3 - MS Rec Complex

Clark

Bid Package Overview

- Bidding Information
- Bid Proposal Requirements / Bid Form
- Instruction to Bidders
- Bid Categories
- Project Overview
- Optional Site Walk Through

SALINE MS REC COMPLEX (BP #3)
PRE-BID CONFERENCE

BID INFORMATION

- Bid Location / Due Date
  - Location
    - Liberty School, 7625 N. Ann Arbor Street, Saline, MI 48901
    - Building Connected
  - Due Date
    - December 5th, 2025 @ 2:00 PM
    - Broadcasted on MS Teams

Proposal Requirements

- **ALL ITEMS REQUIRED TO BE SUBMITTED WITH BID PROPOSAL**
  - **Bid Security not less than 5%**
  - **Bids must be submitted through Building Connected**
    - ***Hard copy bids will be accepted if submitted before due date and time.***
    - ***No oral, fax or emailed Bids will be accepted or opened***
  - **IRAN Economic Sanctions Act – Notarized Statement**
  - **Familial Disclosure – Notarized Statement**
  - **Criminal Background Check Affidavit (ICHAT)**

Instructions to Bidders

- Substitutions
- Prequalification
- Bid Security
- Performance and Labor and Material Payment Bonds
- Late Bids

Bid Categories

3. BID CATEGORIES

02 – UST System Removal	03 – Concrete
04 – Masonry	06 – General Trades
07 – Roofing	09 – Painting
11 – Scoreboards	13A – Metal Shelter (Pavilion)
13B – Press Box & Grandstand	22 – Plumbing & HVAC
26 – Electrical	31A – Site Demo, Sitework, Utilities
31B – Baseball/Softball Sitework	32A – Asphalt
32B – Synthetic Turf	32C – Synthetic Running Track
32D – Tennis Courts Surfacing	32E – Fencing
32F – Landscaping	

SALINE MS – REC COMPLEX
PRE-BID CONFERENCE

MILESTONE SCHEDULE (Phase 1)

A.	MOBILIZATION	MARCH 25th, 2025
B.	SECURITY FENCING / TEMP ROAD	MARCH 25TH – MARCH 29TH, 2025
C.	SITEWORK/UTILITIES	APRIL 4TH, 2025
D.	SUBSTANTIAL COMPLETION	NOVEMBER 14TH, 2025

MILESTONE SCHEDULE (Phase 2) Parking Lot and MS Connector

A.	LAST DAY OF SCHOOL	JUNE 13TH, 2025
B.	MOBILIZATION	JUNE 14TH, 2025
C.	SUBSTANTIAL COMPLETION	AUGUST 15TH 2025

MILESTONE SCHEDULE PHASE 3 – Baseball Fields / Pavilion

A.	MOBILIZATION	MARCH 25th, 2026
B.	SECURITY FENCING / TEMP ROAD	MARCH 25TH – MARCH 29TH, 2026
C.	SITEWORK/UTILITIES	APRIL 4TH, 2026
D.	SUBSTANTIAL COMPLETION	NOVEMBER 13TH 2026

Questions?

Clark
CONSTRUCTION COMPANY

2914 - Saline Area Schools (BP#3 - Saline MS Rec Complex) Pre-Bid Walk Through Sign-In

11/14/24 @ 2pm

	Name	Company	Email and/or Phone #
1	Mike Haeussler	E.T. Mackenzie Company	mhaeussler@mackenzieco.com 734-260-1732 517-667-9303
2	BRETT LOCKRIDGE	E.T. MACKENZIE CO	BLOCKRIDGE@MACKENZIECO.COM
3	Richard Hinson	Verdeterre	RICHARD@Verdeterre 734 355 5599 not
4	Travis Collins	Spence Brothers	248-444-4309 travicollins@spencebrothers.com
5	Niko Schmieder	Monroe Plumbing & Heating	734-731-4578
6	Luke Duquette	LMM	lduquette@lmm.us 248-762-2282
7	Jackson Wentworth	Eagle Excavation	jwentworth@eagleexcavation.com
8	Nick Brass	Spalding DeDecker	nbrass@sda-eng.com
9	TIM LANCE	D&R EARTHMOVING	TLANCE@DREARTHMOVING.COM
10	Mark Skehan	Superior Electric	MSKEHAN@SETRICO.COM
11	Laura Roughton	SETRICO	LRoughton@Setrico.com
12	Sonya Harmon	Huron Valley Electric	Sharmon@huronvalleyelectric.com 734-474-9753 419 389 0766
13	Joe Rutherford	Gardner Corp.	jrutherford@gardnercorp.com
14	Amy Veitengruber	J Ranck Electric	aveitengruber@jranck.com
15	BOB UNDERHILL	INNOVATED ENERGY CONTROLS LLC	TUNDERHILL@IECCOMPANY.COM
16	Jefferson Barber Musco Lighting Jefferson.barber@musco.com 616-510-7146		
17			
18	DENNIS RECTOR	WATER MGMT.	WMSINC2016@GMAIL.COM

	Name	Company	Email and/or Phone #
20	Jeff Musa	ILE Excavating	jeffmusa@ileexcavatingjnc.com
21	Nick Lieder	HM Environmental	NLieder@HMENV.com
23	Connor Golas	AG Sports Services	connor@allweathertracks.com
24	Todd DeWolfe	AstroTurf Great Lakes	Todd@AstroTurfGreatLakes.com
25	Shawn Dresch	Boone & Darr	Shawn d@Boone-Darr.com
26	Nate Crittenden	Hopp electric	ncrittenden@hopp-electric.com
27	Ethan Barrett	Fessler Bowman	ebarrett@fesslerbowman.com
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