



## CERTIFICATE OF APPROPRIATENESS APPLICATION FORM

Incomplete applications will not be processed for Commission review.  
Please print legibly.

1. **HISTORIC NAME OF PROPERTY OR HISTORIC DISTRICT:** (if known)

**ADDRESS OF PROPERTY:**

2. **NAME AND ADDRESS OF OWNER:**

Name(s):

Address:

City:

State:

ZIP:

Email:

Telephone number (area code & number) Daytime:

Evening:

3. **APPLICANT, AGENT OR CONTRACTOR:** (if different from owner)

Name(s):

Address:

City:

State:

ZIP Code:

Email:

Telephone number (area code & number) Daytime:

Evening:

4. **ATTACHMENTS:** (Because projects can vary in size and scope, please call the HPC Office at 414-286-5712 for submittal requirements)

**A. REQUIRED FOR MAJOR PROJECTS:**

Photographs of affected areas & all sides of the building (annotated photos recommended)

Sketches and Elevation Drawings (1 full size and 1 reduced to 11" x 17" or 8 ½" x 11")  
A digital copy of the photos and drawings is also requested.

Material and Design Specifications (see next page)

**B. NEW CONSTRUCTION ALSO REQUIRES:**

Floor Plans (1 full size and 1 reduced to a maximum of 11" x 17")

Site Plan showing location of project and adjoining structures and fences

**PLEASE NOTE: YOUR APPLICATION CANNOT BE PROCESSED UNLESS  
BOTH PAGES OF THIS FORM ARE PROPERLY COMPLETED  
AND SIGNED.**



5. **DESCRIPTION OF PROJECT:**

Tell us what you want to do. Describe all proposed work including materials, design, and dimensions. Additional pages may be attached via email.

This project generally includes converting the existing natural grass football/soccer field to new synthetic turf. In addition the existing two lane asphalt track with rubber surfacing will be reconstructed with a new two lane track consisting of new asphalt and new rubber surfacing. A new long jump event is being constructed in the north D-zone of the track between the football field and the track. Two half-court basketball courts will be installed in the south D-zone of the track.

If budget allows, a storage building will be constructed in the grass area between the track and the high school building. Two trees will be removed to accommodate the new storage building. Four new trees will be planted in the project area compensate for losing the two existing trees. The storage building will be brick with concrete masonry block backup wall. See building floor plan, elevations, and details on drawing C13. The brick color will match closely to the existing brick color of the existing high school. The roof will be asphalt shingles (black or gray color) similar to the houses in the area. A small amount of trim will be painted to match the existing high school building color scheme.

If this new storage building is constructed, the existing shed at the northeast corner of the track will be removed and the area restored with new grass.

The existing chainlink fence around the track will remain in place and will not be modified.

An existing iron gate with masonry columns is present at the northeast corner of the track. The iron gate will be cleaned, primed, and repainted black to match existing conditions. The top five courses of brick on the columns will be removed and new brick installed to match existing conditions. The existing brick in the top five courses is damaged and deteriorated. The existing coping stones at the top of the columns will be removed and reinstalled in a new bed of mortar. See detail 9/C11.

An existing iron gate with masonry columns is present at the southwest corner of the track as well. The iron gate will be cleaned, primed, and repainted black to match existing conditions. The existing masonry columns are in good condition and will remain in place. No repairs are needed for these masonry columns.

6. **SIGNATURE OF APPLICANT:**

  
Signature

Dan Roehrdanz, P.E.

Please print or type name

March 29, 2022

Date

This form and all supporting documentation MUST arrive by 4:00 pm (11:59 pm via email) on the deadline date established to be considered at the next Historic Preservation Commission Meeting. Any information not provided to staff in advance of the meeting will not be considered by the Commission during their deliberation. Please call if you have any questions and staff will assist you.

**Mail or Email Form to:**

Historic Preservation Commission  
City Clerk's Office  
841 N. Broadway, Rm. B1  
Milwaukee, WI 53202

**PHONE: (414) 286-5712 or 286-5722**

[hpc@milwaukee.gov](mailto:hpc@milwaukee.gov)

[www.milwaukee.gov/hpc](http://www.milwaukee.gov/hpc)

Or click the **SUBMIT** button to automatically email this form for submission.

**SUBMIT**





## WASHINGTON HS PLAYFIELD

2525 N SHERMAN BLVD  
MILWAUKEE, WI 53210  
MAY 15, 2020

## CONCEPTUAL PLAYFIELD RENOVATIONS





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #1 – Existing Chainlink Fence to Remain along west side



Photo #2 Existing iron gate to be repainted at southwest corner of site



Photo #3 Existing iron gate to be repainted at southwest corner of site



Photo #4 Existing iron gate to be repainted at southwest corner of site





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #5 Existing iron gate to be repainted at southwest corner of site



Photo #6 Existing iron gate to be repainted at southwest corner of site



Photo #7 Existing iron gate to be repainted at southwest corner of site



Photo #8 Existing iron gate to be repainted at southwest corner of site





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #9 Existing iron gate to be repainted at southwest corner of site



Photo #10 Track and field southwest portion



Photo #11 Track and field south portion



Photo #12 Track and field south portion





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #13 Track and basketball courts - south portion



Photo #14 Water fountain on south side



Photo #15 South side fence to remain



Photo #16 South side fence to remain





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #17 Southeast corner fence to remain



Photo #18 East fence to remain



Photo #19 East side of track – fence to remain



Photo #20 East side of track – fence to remain





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #21 East side of track and field



Photo #22 South side of field



Photo #23 East fence to remain



Photo #24 – Shed at northeast corner to be removed if new storage building is built





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #25 Shed at northeast corner to be removed if new storage building is built



Photo #26 Shed at northeast corner to be removed if new storage building is built



Photo #27 Shed at northeast corner to be removed if new storage building is built



Photo #28 Iron Gate at NE corner – gate to be painted – top of columns repaired





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #29 Iron Gate at NE corner – gate to be painted – top of columns repaired



Photo #30 Iron Gate at NE corner – gate to be painted – top of columns repaired



Photo #31 Iron Gate at NE corner – gate to be painted – top of columns repaired



Photo #32 Iron Gate at NE corner – gate to be painted – top of columns repaired





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #33 Iron Gate at NE corner – gate to be painted – top of columns repaired



Photo #34 Iron Gate at NE corner – gate to be painted – top of columns repaired



Photo #35 Iron Gate at NE corner – gate to be painted – top of columns repaired



Photo #36 Iron Gate at NE corner – gate to be painted – top of columns repaired





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #37 Shed at northeast corner to be removed if new storage building is built



Photo #38 Shed at northeast corner to be removed if new storage building is built



Photo #39 Shed at northeast corner to be removed if new storage building is built



Photo #40 Shed at northeast corner to be removed if new storage building is built





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #41 Northeast area of existing track and field



Photo #42 Northeast area of existing track and field



Photo #43 Northeast area of existing track and field



Photo #44 Northeast area of existing track and field





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #4 North Portion of Track and Field



Photo #46 Basketball courts at south end of track



Photo #47 Parking lot between track and school



Photo #48 Parking lot between track and school





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #49 Parking lot between track and school



Photo #50 Washington High School – north elevation



Photo #51 Parking lot between track and school



Photo #52 Parking lot between track and school





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #53 Grass area for new storage building



Photo #54 Grass area for new storage building



Photo #55 Grass area for new storage building



Photo #56 Grass area for new storage building





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #57 Grass area for new storage building



Photo #58 Grass area for new storage building



Photo #59 Southeast corner of fencing to remain



Photo #60 East fencing to remain





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #61 East fencing to remain



Photo #62 Southeast corner – sidewalks outside fence



Photo #63 Southeast corner sidewalks outside fence



Photo #64 East side existing fence to remain





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #65 East side existing fence to remain



Photo #66 East side existing fence to remain



Photo #67 East side existing fence to remain



Photo #68 Northeast iron gate to be painted and top of columns repaired





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #69 Northeast iron gate to be painted and top of columns repaired



Photo #70 Northeast iron gate to be painted and top of columns repaired



Photo 71 Northeast iron gate to be painted and top of columns repaired



Photo 72 Northeast iron gate to be painted and top of columns repaired





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo 73 Northeast iron gate to be painted and top of columns repaired



Photo #74 Northeast iron gate to be painted and top of columns repaired



Photo #75 North fence to remain



Photo #76 North fence to remain





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #77 North fence to remain



Photo #78 North fence to remain



Photo #79 East fence to remain



Photo #80 East fence to remain





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #81 Northwest corner of existing fencing to remain



Photo #82 North fencing to remain



Photo #83 North fencing to remain



Photo #84 East fencing to remain





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #85 East fencing and city sidewalk to remain



Photo #86 East fencing to remain and city sidewalk to remain



Photo #87 East fencing to remain and city sidewalk to remain



Photo #88 East fencing to remain and city sidewalk to remain





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #89 East fencing to remain and city sidewalk to remain



Photo #90 East fencing to remain and city sidewalk to remain



Photo #91 East fencing to remain and city sidewalk to remain



Photo #92 Parking Lot between track and school





Existing Condition Photos – Washington High School – Track and Field Improvements – taken 03/05/2020

Photo #94 Parking Lot between track and school



Photo #93 Parking Lot between track and school



Photo #95 Parking Lot between track and school

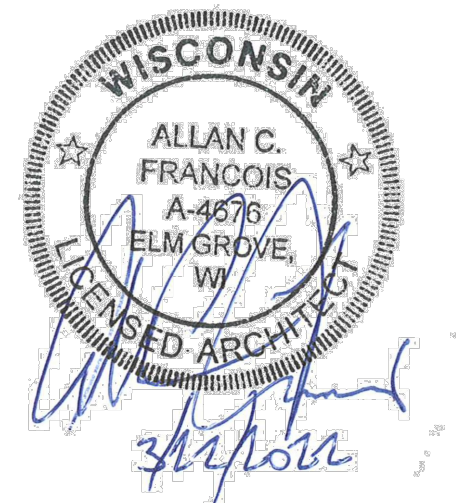
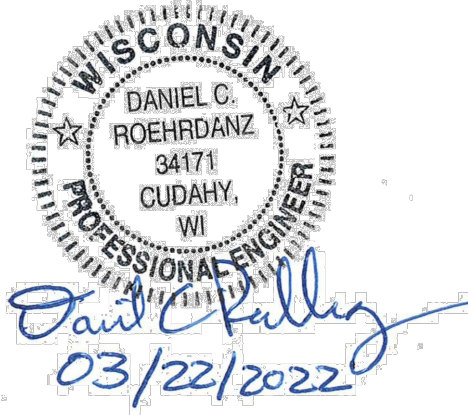




# TRACK AND FIELD IMPROVEMENTS WASHINGTON HIGH SCHOOL MILWAUKEE PUBLIC SCHOOLS MILWAUKEE, WISCONSIN

MILWAUKEE PUBLIC SCHOOLS PROJECT NO: 6232

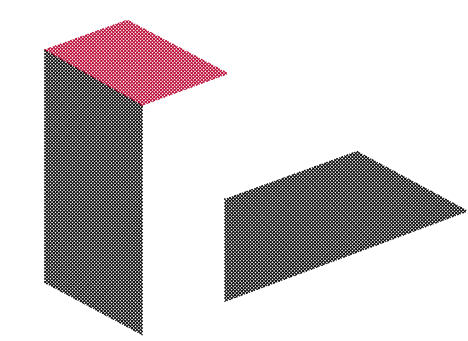
INSPEC PROJECT NO: 301705



## ENGINEER / ARCHITECT

Engineer: Dan Roehrdanz, P.E.

Architect: Allan Francois, A.I.A.



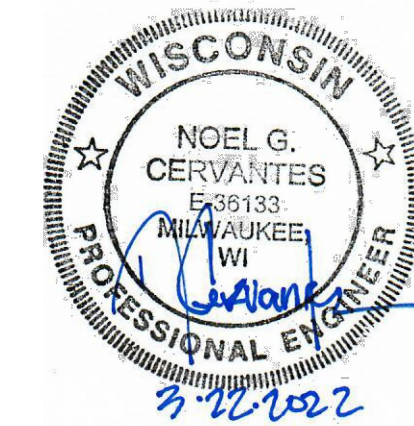
INSPEC

INSPEC, INC.  
126 North Jefferson St,  
Suite 120  
Milwaukee, WI 53202  
Ph. 414-744-6962

## TOPOGRAPHIC SURVEYOR

Project Manager: Rick Hillmann, RLS

Continental Surveying Services  
2386 Ball Drive  
Richfield, WI 53076  
Ph. 262-389-9200



## ELECTRICAL AND PLUMBING CONSULTANT

Project Manager: NOEL CERVANTES, P.E.

Cervantes Consulting Engineers, LLC  
3740 West Southland Drive  
Franklin, WI 53132  
Ph. 414-761-5502

### LEGEND

	EXISTING CONSTRUCTION
	NEW CONSTRUCTION
	PROPERTY LINE
	EXISTING DRAINAGE SWALE
	NEW DRAINAGE SWALE
	PAVEMENT STRIPING
	EXISTING BUILDING
	GRADING AND RESTORATION LIMITS
	EXISTING CONTOUR
	NEW CONTOUR
	NEW SPOT ELEVATION - FINISHED GRADE
	EXISTING SPOT ELEVATION
	EXISTING STORM SEWER
	NEW STORM SEWER
	EXISTING ELECTRIC LINE
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING TELEPHONE LINE
	EXISTING FIBER OPTIC LINE
	EXISTING WATER LINE
	EXISTING CABLE TV LINE
	S SIGN
	LP EXISTING LIGHT POLE
	EXISTING DECIDUOUS TREE
	EXISTING EVERGREEN TREE

### LIST OF DRAWINGS

- C1) Title Sheet
- C2) Topographic Survey
- C3) Erosion Control Plan
- C4) Removal Plan
- C5) New Conditions - Site Plan
- C6) New Conditions - Grading Plan
- C7) New Conditions - Plumbing and Utility Plan
- C8) Landscaping Plan
- C9) Details
- C10) Details
- C11) Details
- C12) Details
- C13) Details
- C100) For Plan Review Purposes Only - Existing Drainage Area Plan and Information
- C101) For Plan Review Purposes Only - New Drainage Area Plan and Information
- C102) For Plan Review Purposes Only - New Detained and Undetained Area Plan
- C103) For Plan Review Purposes Only - WinSLAMM MODELING NOTES
- E1) Legends, Symbols, Schedules, and New Work Plan
- P1) Legend, Symbols, Demolition and New Work Plan

### LIST OF BASE BID, ALTERNATES (IF ANY), AND UNIT PRICES

**BASE BID:**  
ALL WORK SHOWN MINUS THE ALTERNATES, IF ANY.

**MANDATORY ALTERNATE BID 1:**  
BIDDER TO STATE **ADDITION TO THE BASE BID** TO REMOVE EXISTING WOOD FRAMED SHED, CONSTRUCT NEW STORAGE BUILDING, AND PERFORM ALL ASSOCIATED WORK INCLUDING ONE CATCH BASIN, STORM SEWER PIPE, ASPHALT PAVING, AND NEW TREES SHOWN ON LANDSCAPING PLAN.

**MANDATORY ALTERNATE BID 2:**  
BIDDER TO STATE **ADDITION TO THE BASE BID** TO CONSTRUCT LONG/TRIPLE JUMP EVENT INCLUDING RUNWAY, SAND PIT WITH CONCRETE CURB, DRAIN TILE LINE, AND ALL ASSOCIATED WORK.

**MANDATORY ALTERNATE BID 3:**  
BIDDER TO STATE **ADDITION TO THE BASE BID** TO EXCAVATE 1,500 CUBIC YARDS OF TOPSOIL BELOW SUBGRADE AND BACKFILL WITH COMPACTED SUBSOIL FROM THE SITE OR BACKFILL WITH COMPACTED IMPORTED CLAY SOILS. EXCAVATED TOPSOIL SHALL BE DISPOSED OF OFF SITE.

**MANDATORY UNIT PRICE 1:**  
BIDDER TO STATE UNIT PRICE PER CUBIC YARD FOR EXCAVATION AND DISPOSAL OF TOPSOIL AREAS BELOW SUBGRADE AND BACKFILL WITH COMPACTED SUBSOILS FROM SITE.

**MANDATORY UNIT PRICE 2:**  
BIDDER TO STATE UNIT PRICE PER CUBIC YARD FOR EXCAVATION AND DISPOSAL OF TOPSOIL AREAS BELOW SUBGRADE AND BACKFILL WITH IMPORTED CLAY SOIL.

#### GENERAL NOTES:

—FENCE FABRIC, HORIZONTAL RAILS AND LOOP CAPS SHALL BE REMOVED AS NECESSARY TO FACILITATE SOIL AND PAVEMENT REMOVAL AND RE-CONSTRUCTION. RE-INSTALL AFTER CONSTRUCTION HAS BEEN COMPLETED.

—SAWTOOTH PAVEMENT WHEREVER PAVEMENT TO BE REMOVED ABUTS PAVEMENT TO REMAIN, PRIOR TO ANY PAVEMENT REMOVAL.

—USE EXISTING CONCRETE APPROACH OFF OF NORTH 44TH STREET AND PARKING LOTS SOUTH OF THE TRACK FOR TRUCK ACCESS TO SITE.

—CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO ANY CITY OF MILWAUKEE SIDEWALKS, CURBS, DRIVEWAYS, ETC..

—CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING PAVEMENT, CONCRETE, AND LANDSCAPING TO ORIGINAL CONDITION WHERE IT HAS BEEN DISTURBED BY CONSTRUCTION.

—WHERE NEW ASPHALT ABUTS EXISTING ASPHALT, CONCRETE OR SOD, A BUTT JOINT SHALL BE PROVIDED. WHERE NEW ASPHALT ABUTS EXISTING WOOD CHIPPED AREAS, A 45 DEGREE BEVEL JOINT SHALL BE PROVIDED.

—GRADE STAKES SHALL BE PROVIDED AT 25' GRID TO IDENTIFY REQUIRED LINES AND LEVELS FOR CONCRETE, ASPHALT, AND EARTHWORK GRADING. UTILIZE LASER GUIDED GRADING EQUIPMENT FOR GRADING BASE LAYERS UNDER SYNTHETIC TURF.

—CONTRACTOR TO SET NEW SURVEY CONTROL POINTS PRIOR TO CONSTRUCTION.

—ALL NEW DIMENSIONS FOR CURB AND GUTTER ARE BACK OF CURB TO BACK OF CURB.

—ALL NEW SPOT ELEVATIONS ARE TOP OF NEW PAVEMENT, TOP OF RUBBER SURFACING, TOP OF CURB, OR TOP OF SYNTHETIC INFILL AS NOTED ON PLANS.

#### CONSTRUCTION BARRICADE NOTES:

CONSTRUCTION BARRICADEING SHALL BE PROVIDED AS FOLLOWS:

- WHERE FENCE OPENINGS EXIST OR ARE CREATED WHEN FENCING HAS BEEN REMOVED, ORANGE PLASTIC FENCING SHALL BE INSTALLED TO CLOSE OFF ALL OPENINGS AND SHALL BE PROPERLY SECURED AND MAINTAINED UNTIL THE PROJECT IS COMPLETE OR UNTIL FENCE FABRIC IS RE-INSTALLED.
- FOR ALL OTHER CONDITIONS WHERE A SEPARATION IS NEEDED BETWEEN AN AREA TO BE RECONSTRUCTED AND AN AREA TO REMAIN, BUT THERE IS NO EXISTING FENCING, A TEMPORARY 6 FOOT HIGH CHAIN LINK FENCE, SELF SUPPORTED, FREE STANDING SHALL BE USED AND MAINTAINED UNTIL THE PROJECT IS COMPLETE.

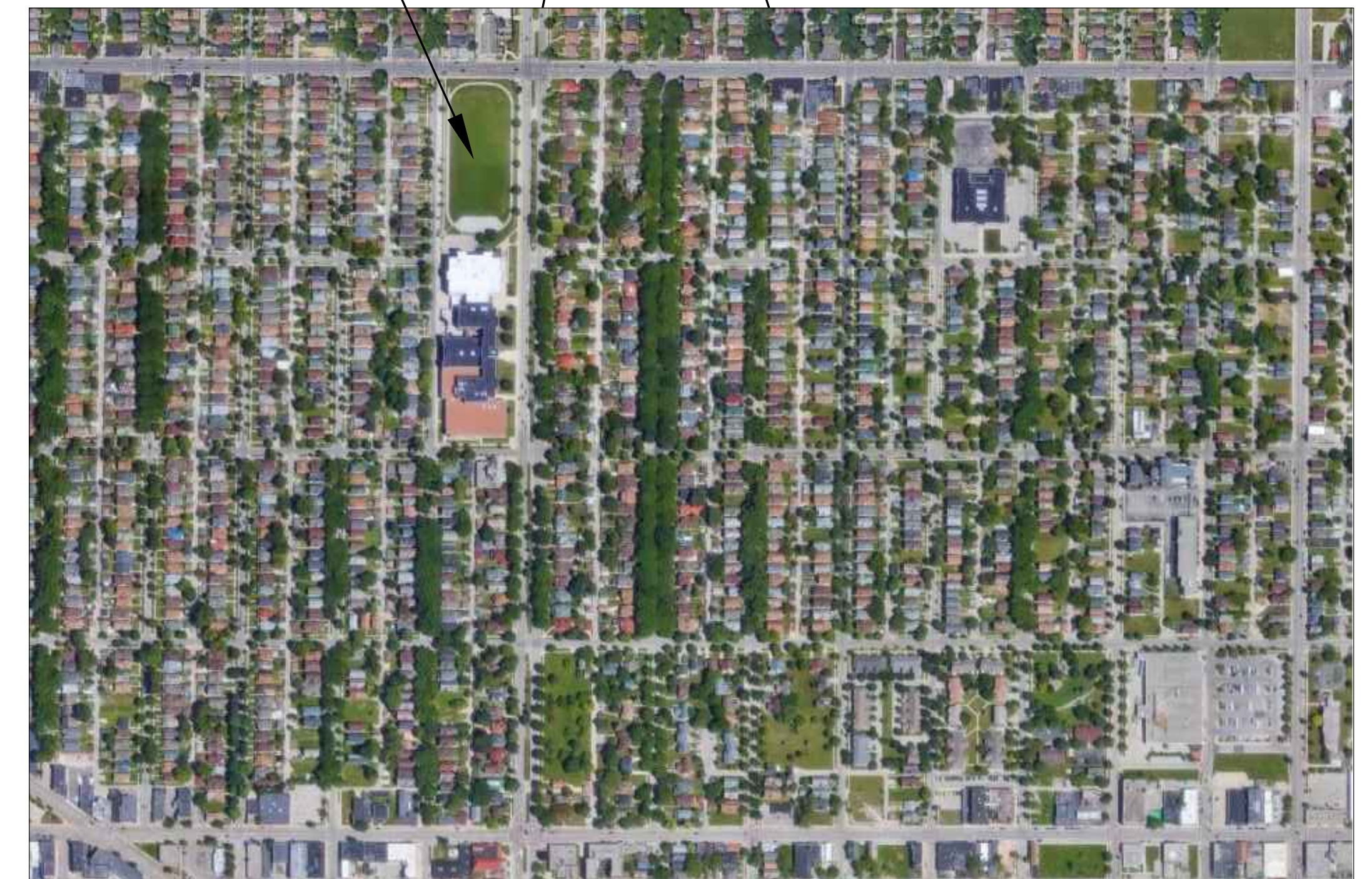
CONSTRUCTION BARRICADEING SHALL BE MAINTAINED ON A DAILY BASIS TO ASSURE THAT AT THE END OF EACH WORK DAY THE SITE IS SECURED.

### PROJECT LOCATION MAP

WEST CENTER STREET

WASHINGTON HIGH SCHOOL  
2525 NORTH SHERMAN BLVD.  
MILWAUKEE, WISCONSIN

PROJECT AREA



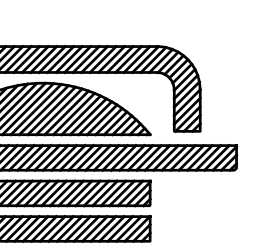
WEST NORTH AVE

NORTH SHERMAN BLVD

NORTH 35TH STREET



Milwaukee Public Schools  
Division of Facilities and Maintenance Services  
1124 North 11th Street  
P.O. BOX 05259  
Milwaukee, Wisconsin 53205-0259  
Phone : 414-253-4600  
Fax : 414-253-4662



INSPEC  
126 North Jefferson St,  
Suite 120  
Milwaukee, WI 53202  
Ph. 414-744-6962  
© 2020  
INSPEC PROJECT NO.  
301705

Title : TITLE SHEET GENERAL NOTES CONST. BARRICADE NOTES  
Project Title : TRACK AND FIELD IMPROVEMENTS  
Project Location : WASHINGTON HIGH SCHOOL  
Approved By : MARK BETHEL

REVISIONS	By
30% REVIEW	
90% REVIEW	
99% REVIEW UPDATE	
BID SET	

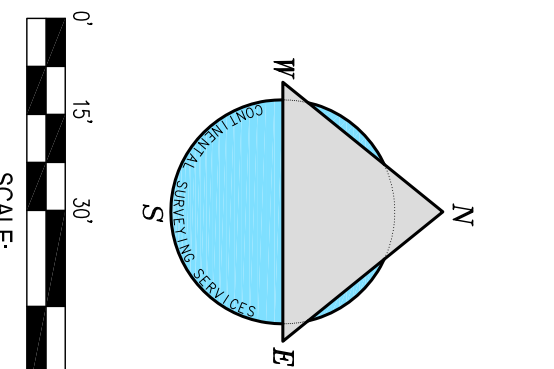
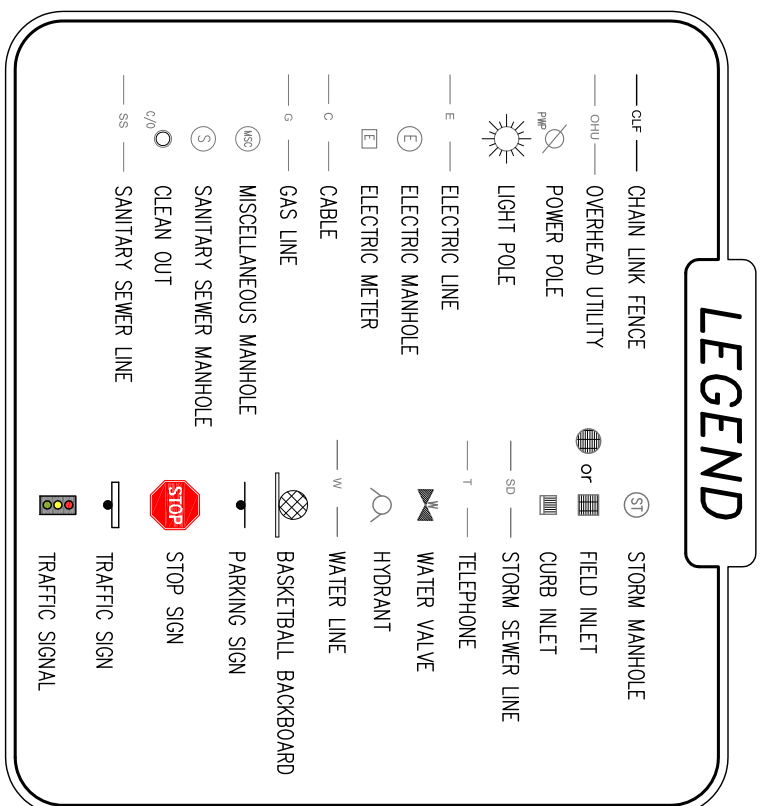
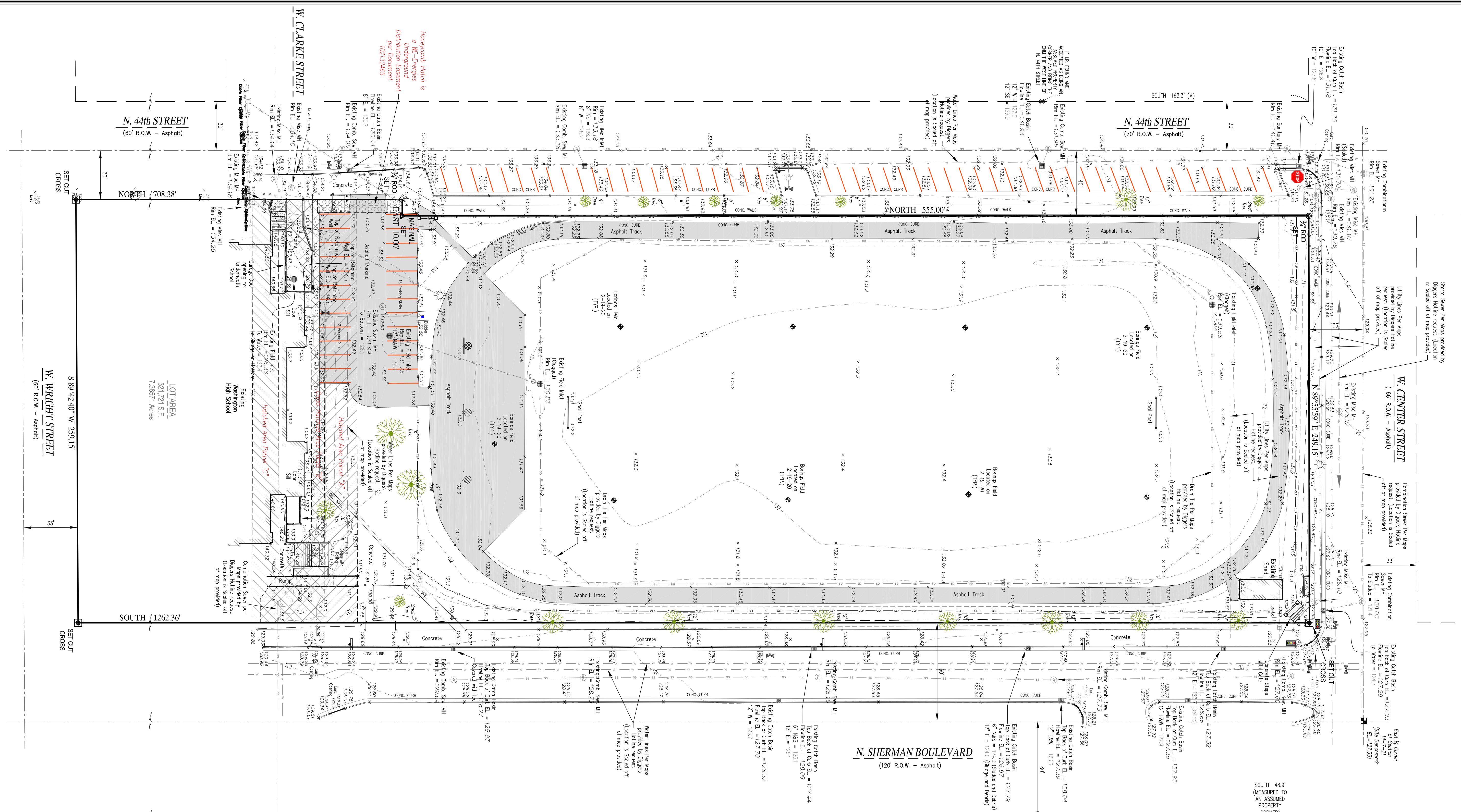
Drawn by : TR/DR  
Checked by : DR  
Date : 03-22-2022  
Scale : VARIES  
Site Number : 035  
Project Number : 6232  
Sheet Number :

C1



PLAT OF SURVEY

PROPERTY DESCRIPTION (Surveyed A/S)  
Lots 1-27 Block 8 and all of Wested W. Clarke Street adjacent to east Block 8, Lot 1-27 Block 9, and all of Wested Alley adjacent to Block 9, being a part of the South 555 feet of said Block 9, in the FIRST CONTINUATION OF JACKSON PARK, being a part of the Southwest 1/4 of Section 14, Township 7 North, Range 21 East, located in the City of Milwaukee, Milwaukee County, Wisconsin.



**UTILITY NOTE:**  
Underground Utilities have been taken from Maps provided by a Diggers Hotline request as a 3rd attempt. 2 prior requests were made for a Standard Locate Request of Utilities and on both attempts the utilities were not marked. Location of said utilities cannot be verified or guaranteed by Surveyor. Some plans provided were in conflict of each other. Diggers Hotline must be contacted again to request a utility Re-Locate.  
Diggers Hotline Tickets:  
20200200345 - Original (Requested on 1-6-20)  
20200300498 - 24 Hour Re-Locate (Requested on 1-13-20)  
20200506188 - Prints/Map Request (Requested on 1-31-20)  
2020105765 - Locate Request (Requested on 3-11-20)

**Parcel A, B, and C Note:**  
Parcel A, B, and C are GRANTS OF PERMISSON per Document 4517630. These grants give permission to construct, operate, inspect, maintain, repair, reconstruct, and enlarge a 54" Watermain, and a 30" Combined Sewer. Please refer to said Document for details.

**Conversion Table**

Decimal	Inches
0.1" = 1/16"	1" = 0.063"
0.2" = 1/8"	1" = 0.063"
0.3" = 3/16"	1" = 0.063"
0.4" = 1/4"	1" = 0.063"
0.5" = 1/2"	1" = 0.063"
0.6" = 3/4"	1" = 0.063"
0.7" = 7/8"	1" = 0.063"
0.8" = 1"	1" = 0.063"
0.9" = 15/16"	1" = 0.063"
1.0" = 1"	1" = 0.063"
1.1" = 1 1/16"	1" = 0.063"
1.2" = 1 1/8"	1" = 0.063"

**CONTINENTAL SURVEYING SERVICES LLC**  
1124 N. 11th Street  
Milwaukee, WI 53233  
Phone: (262) 389-9200  
Website: www.continental-surveying.com  
Email: suv@continental-surveying.com

**CLIENT:**  
WPS - Forestry Services  
1124 N. 11th Street  
Milwaukee, WI 53233

**PROPERTY ADDRESS:**  
2525 N Sherman Blvd  
Milwaukee

**PARCEL INFO:**  
TAX KEY NUMBER: 200701110  
PROVIDED BY: 200701110  
SERVICE REFERENCE: SEE

**LEGAL NOTICE:**  
RECORDING INFORMATION: ALTERATIONS AND OR MAKING CHANGES OF ANY KIND AND THEN USE AND OR DISTRIBUTE THIS MAP CONTINENTAL SURVEYING SERVICES LLC'S NAME OR THE SURVEYOR'S NAME MAY BE A FEDERAL OFFENSE IN VIOLATION OF COPYRIGHT AND OR PLAGIARISM LAWS WHICH MAY RESULT IN LEGAL ACTION.

**NOTE: Guarantees and Title Policy**  
This plat is a true and correct representation of the survey and is to be used as such for all purposes. The surveyor assumes no responsibility for the accuracy of the information or the results of the survey. The surveyor also does not accept responsibility for the accuracy of the information or the results of the survey. The surveyor also does not accept responsibility for the accuracy of the information or the results of the survey.

**NOTE: Underground Utilities**  
Location of underground utilities are not part of the original record and are shown as indicated on this map. Therefore, no guarantee is made for their location.

**Statement of Potential Encroachments:**  
At the time this map was prepared, the surveyor was not aware of any encroachments on the property. The surveyor assumes no responsibility for the accuracy of the information or the results of the survey. The surveyor also does not accept responsibility for the accuracy of the information or the results of the survey.

**WISCONSIN LAND SURVEYOR**  
RICK R. HILTMAN  
S-3005

Dated this 29th Day of January, 2020.  
Rick R. Hiltman S-3005



EROSION CONTROL NOTES:  
BASE BID

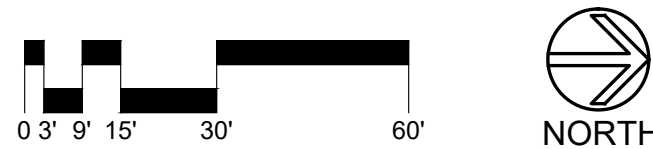
- A** INSTALL INLET PROTECTION TYPE D. SEE DETAIL ON SHEET C11. REMOVE INLET PROTECTION AT PROJECT COMPLETION.
- B** INSTALL STONE TRACKING PAD, 20" WIDE BY 50' LONG BY 12" MINIMUM THICK OVER FILTER FABRIC, PRIOR TO CONSTRUCTION. STONE AGGREGATE SHALL BE 3" TO 6" SIZE WITH ALL MATERIAL BEING RETAINED ON THE 3" SIEVE. SEE DETAIL 4/C11.
- C** INSTALL SILT LOG OVER EXISTING PAVEMENT OR GRASS WHERE SHOWN (TYPICAL THIS LINE TYPE). PROVIDE STAKES OR BALLAST TO HOLD SILT LOG IN PLACE. REMOVE SILT LOG AT PROJECT COMPLETION.
- D** INSTALL SILT FENCE. SEE DETAIL ON SHEET C11. REMOVE SILT FENCE A PROJECT COMPLETION WHEN GRASS IS ESTABLISHED ON NEW SLOPES.
- E** IMMEDIATELY REMOVE ANY SEDIMENT AND/OR OTHER MATERIALS TRACKED ONTO ADJACENT PARKING LOT AND/OR STREET VIA STREET CLEANING OTHER THAN FLUSHING

GENERAL CONSTRUCTION SCHEDULE FOR  
CITY OF MILWAUKEE PLAN REVIEW PURPOSES:  
MAY 1, 2022 CONSTRUCTION START  
AUGUST 31, 2022 CONSTRUCTION COMPLETED  
CONSTRUCTION SEQUENCE:

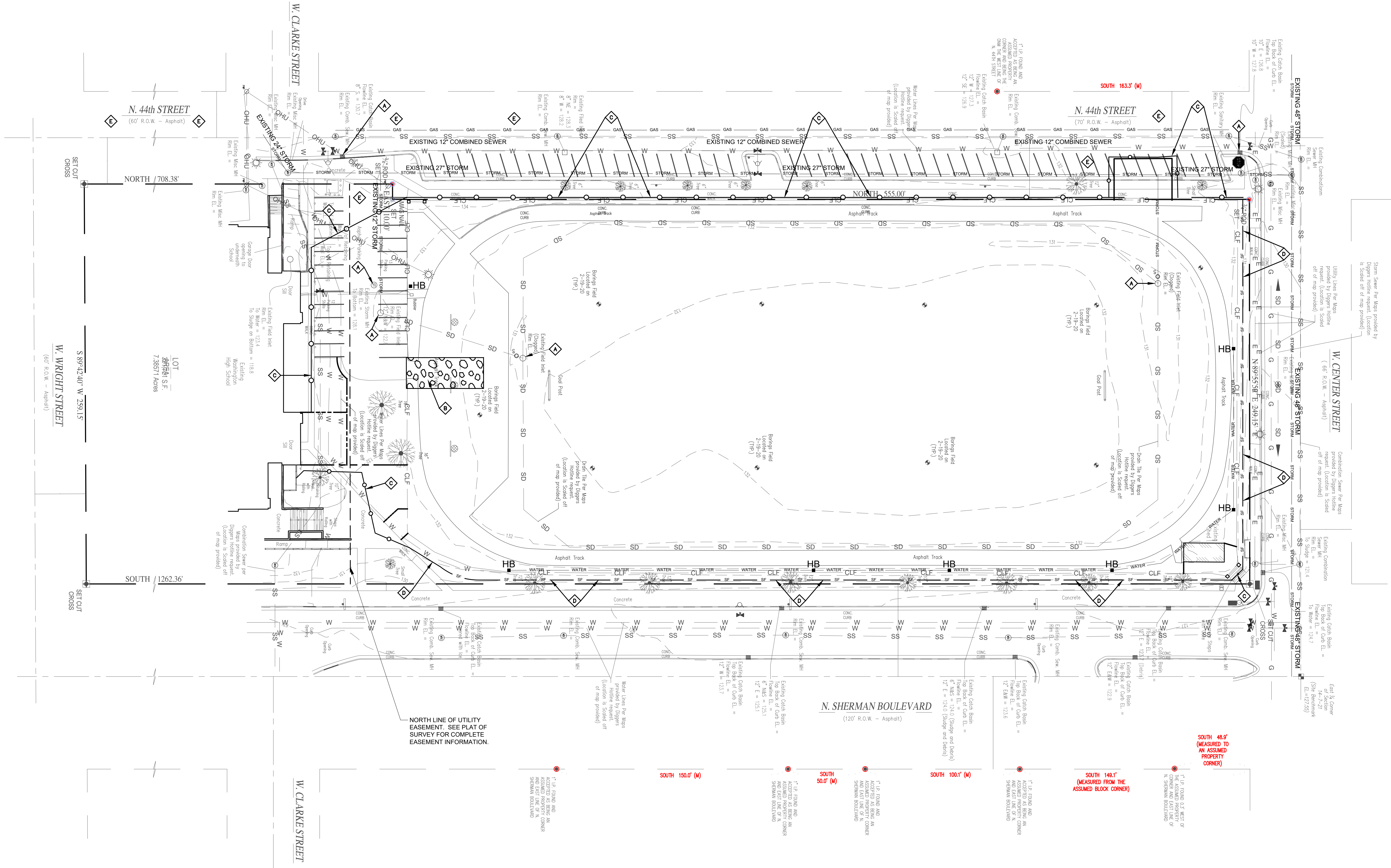
1. INSTALL EROSION CONTROL ITEMS LISTED ABOVE
2. REMOVALS, EXCAVATION, AND GRADING
3. INSTALL STORM SEWERS AND CATCH BASINS
4. INSTALL BELOW GRADE STORM WATER DETENTION CHAMBERS
5. INSTALL BASE AGGREGATE
6. INSTALL CONCRETE CURBING, CONCRETE FLATWORK, AND FIELD EVENTS
7. ASPHALT PAVING
8. INSTALL SYNTHETIC TURF
9. INSTALL RUBBER SURFACING FOR TRACK AND LONG JUMP RUNAWAY
10. INSTALL TOPSOIL, SEED, AND MULCH
11. REMOVE EROSION CONTROL ITEMS

EROSION CONTROL PLAN

1"=30'-0"



CAUTION:  
LOCATIONS OF UTILITIES ARE APPROXIMATE ONLY.  
CONTACT DIGGERS HOTLINE AT 1-800-242-8511 (FOR  
PUBLIC UTILITIES) AND CONTACT MPS INSPECTOR  
(FOR LOCATIONS OF PRIVATE UTILITIES) PRIOR TO  
DIGGING. CONTRACTOR SHALL PAY FOR MARKING  
EXACT LOCATIONS OF PRIVATE UTILITIES (IF  
PRESENT). ALL DAMAGED UTILITY LINES WILL BE  
REPAIRED AND PAID FOR BY THE CONTRACTOR.  
CONTRACTOR IS RESPONSIBLE FOR COORDINATION  
AND CONFLICT RESOLUTION WITH UTILITY OWNER.



Title : EROSION CONTROL PLAN	
Project Title :	TRACK AND FIELD IMPROVEMENTS
Project Location :	WASHINGTON HIGH SCHOOL
Approved By :	MARK BETHEL

REVISIONS	By
30% REVIEW	
90% REVIEW	
BID SET	

Drawn by :	TR/DR
Checked by :	DR
Date :	03-22-2022
Scale :	VARIES
Site Number :	035
Project Number :	6232
Sheet Number :	



REMOVAL NOTES:

BASE BID

- 1

REMOVE TOPSOIL AND SUBSOILS TO NEW SUBGRADE ELEVATIONS. REMOVE OBSOLETE SIGN/POLE FOOTINGS AND BACKFILL WITH COMPACTED TRAFFIC BOND STONE (1-1/4" GRADATION T.B.).
- 2

SAWCUT AND REMOVE ASPHALT PAVEMENT, BASE AGGREGATE, AND SUBSOILS TO NEW SUBGRADE ELEVATIONS.
- 3

SAWCUT AND REMOVE CONCRETE PAVEMENT, BASE AGGREGATE, AND SUBSOILS TO NEW SUBGRADE ELEVATIONS.
- 4

REMOVE GOAL POSTS. BACKFILL FOOTINGS WITH COMPACTED TRAFFIC BOND STONE (1-1/4" GRADATION T.B.).
- 5

REMOVE BASKETBALL GOAL, POLE, AND FOOTING. BACKFILL FOOTINGS WITH COMPACTED TRAFFIC BOND STONE (1-1/4" GRADATION T.B.).
- 6

REMOVE EXISTING INLET, CATCH BASIN, AND/OR MANHOLE. BACKFILL WITH COMPACTED TRAFFIC BOND STONE (1-1/4" GRADATION T.B.).
- 7

REMOVE EXISTING DRAIN TILE PIPE, AND DRAINAGE AGGREGATE. BACKFILL WITH COMPACTED TRAFFIC BOND STONE (1-1/4" GRADATION).
- 8

REMOVE EXISTING STORM SEWER PIPE. BACKFILL WITH COMPACTED TRAFFIC BOND STONE (1-1/4" GRADATION T.B.). NOTIFY ENGINEER IF ADDITIONAL STORM SEWER PIPES NOT SHOWN ON THE DRAWINGS ARE ENCOUNTERED DURING REMOVAL.
- 9

REMOVE EXISTING RADIUS MONUMENTS (IF FOUND) AND INSTALL NEW MONUMENTS AT NEW LOCATION. SEE DETAIL SIC11. RADIUS MONUMENT IS A PERMANENT MARKER FOR RADIUS POINT OF ATHLETIC TRACK. CONTRACTOR'S SURVEYOR SHALL STAKE EXACT LOCATION OF NEW RADIUS POINTS.
- 10

REMOVE EXISTING WATER FOUNTAIN AND WATER SUPPLY LINE - SEE PLUMBING PLAN DRAWING P1 FOR LIMITS OF WATER SUPPLY LINE REMOVAL.
- 11

REMOVE CONCRETE CURB.
- 12

REMOVE HOSE BIB. REMOVE WATER PIPE TO 12" BELOW GRADE. REMAINDER OF EXISTING PIPE SYSTEM TO BE ABANDONED IN PLACE.
- 13

REMOVE MASONRY AT TOP OF COLUMNS AS SHOWN IN DETAILS. SALVAGE CAPICOPING STONE FOR REINSTALLATION.

REMOVAL NOTES:

MANDATORY ALTERNATE BID 1

- A1

REMOVE TOPSOIL AND SUBSOILS TO NEW SUBGRADE ELEVATIONS. REMOVE OBSOLETE SIGN/POLE FOOTINGS AND BACKFILL WITH COMPACTED TRAFFIC BOND STONE (1-1/4" GRADATION T.B.).
- A2

SAWCUT AND REMOVE ASPHALT PAVEMENT, BASE AGGREGATE, AND SUBSOILS TO NEW SUBGRADE ELEVATIONS.
- A3

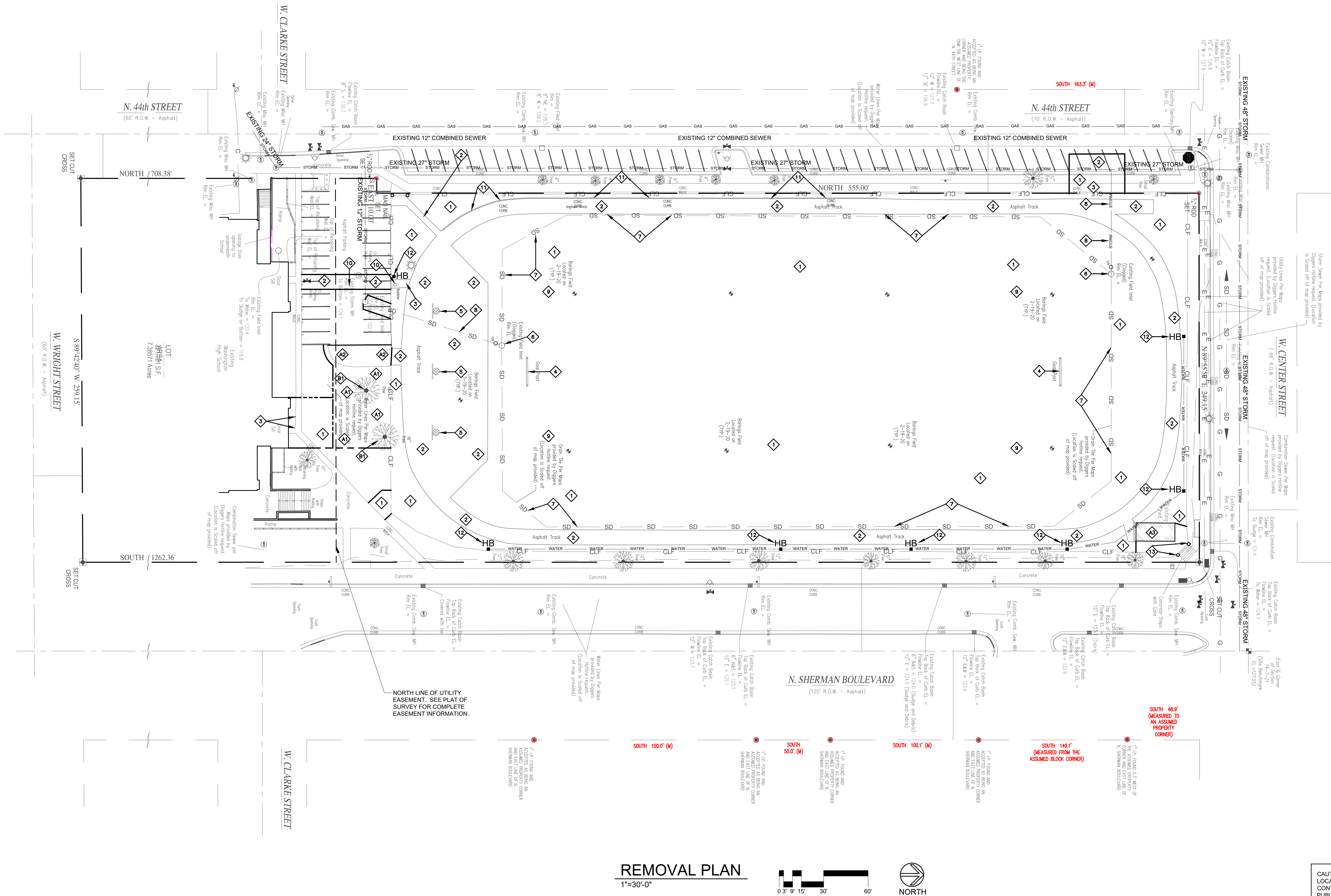
COMPLETELY REMOVE EXISTING WOOD FRAMED SHED. REMOVE CONCRETE FLOOR AND BASE AGGREGATE BELOW. FOUNDATION WALLS NOT PRESENT. BACKFILL WITH COMPACTED SUBSOIL BACKFILL FROM SITE. RESTORE WITH 6" TOPSOIL, SEED, AND MULCH.

OWNER REMOVAL ITEMS:

MANDATORY ALTERNATE BID 1

- B

PRIOR TO CONSTRUCTION, THE OWNER WILL REMOVE TREE, GRIND STUMP, AND REMOVE WOOD CHIPS FROM STUMP GRINDING



CAUTION:  
LOCATIONS OF UTILITIES ARE APPROXIMATE ONLY.  
CONTACT DIGGERS HOTLINE AT 1-800-242-8511 (FOR PUBLIC UTILITIES) AND CONTACT MPS INSPECTOR (FOR LOCATIONS OF PRIVATE UTILITIES) PRIOR TO DIGGING. CONTRACTOR SHALL PAY FOR MARKING EXACT LOCATIONS OF PRIVATE UTILITIES (IF PRESENT). ALL DAMAGED UTILITY LINES WILL BE REPAIRED AND PAID FOR BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND CONFLICT RESOLUTION WITH UTILITY OWNER.

Title : REMOVAL PLAN	
Project Title :	TRACK AND FIELD IMPROVEMENTS
Project Location :	WASHINGTON HIGH SCHOOL
Approved By :	MARK BETHEL

REVISIONS	By
30% REVIEW	
90% REVIEW	
BID SET	

Drawn by :	TR/DR
Checked by :	DR
Date :	03-22-2022
Scale :	VARIES
Site Number :	035
Project Number :	6232
Sheet Number :	





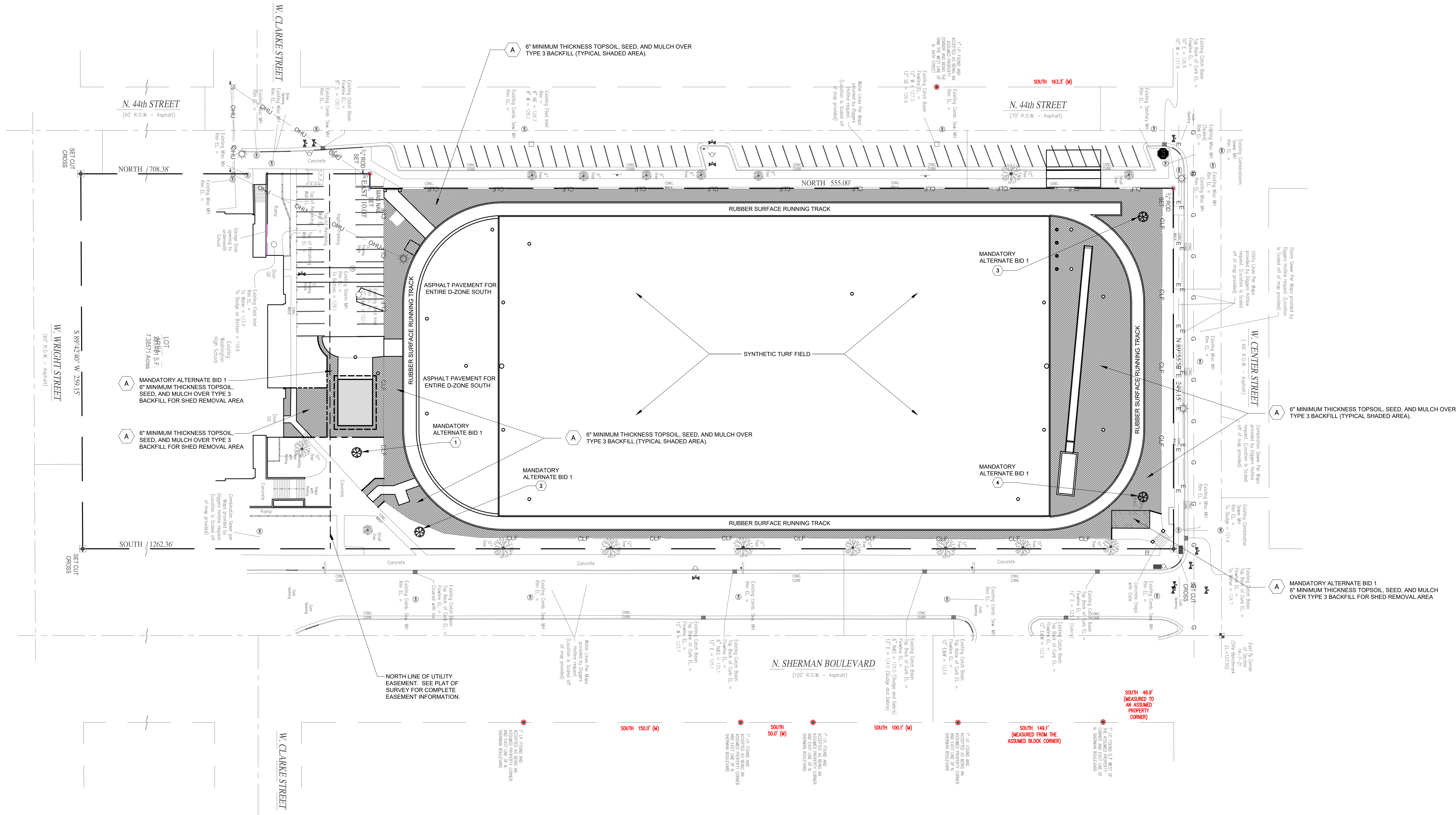




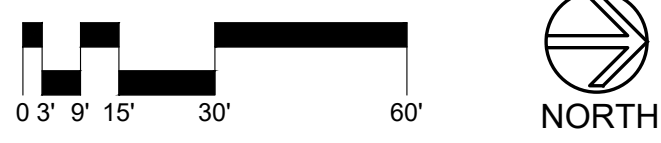








NEW CONDITIONS - LANDSCAPING PLAN  
1"=30'-0"



CAUTION:  
LOCATIONS OF UTILITIES ARE APPROXIMATE ONLY.  
CONTACT DIGGERS HOTLINE AT 1-800-242-8511 (FOR  
PUBLIC UTILITIES) AND CONTACT MFS INSPECTOR  
(FOR LOCATIONS OF PRIVATE UTILITIES) PRIOR TO  
DIGGING. CONTRACTOR SHALL PAY FOR MARKING  
EXACT LOCATIONS OF PRIVATE UTILITIES (IF  
PRESENT). ALL DAMAGED UTILITY LINES WILL BE  
REPAIRED AND PAID FOR BY THE CONTRACTOR.  
CONTRACTOR IS RESPONSIBLE FOR COORDINATION  
AND CONFLICT RESOLUTION WITH UTILITY OWNER.

LANDSCAPE NOTES:

BASE BID:

6" MINIMUM THICKNESS TOPSOIL, SEED, AND MULCH OVER TYPE 3 BACKFILL (TYPICAL SHADED AREA).

MANDATORY ALTERNATE BID 1:

TWO TREES AT NEW STORAGE BUILDING WILL BE REMOVED AND FOUR NEW TREES PLANTED THROUGHOUT SITE AS SHOWN.

6" MINIMUM THICKNESS TOPSOIL, SEED, AND MULCH OVER TYPE 3 BACKFILL (FOR SHED REMOVAL RESTORATION AREA).

NOTES FOR CITY PLAN REVIEW:

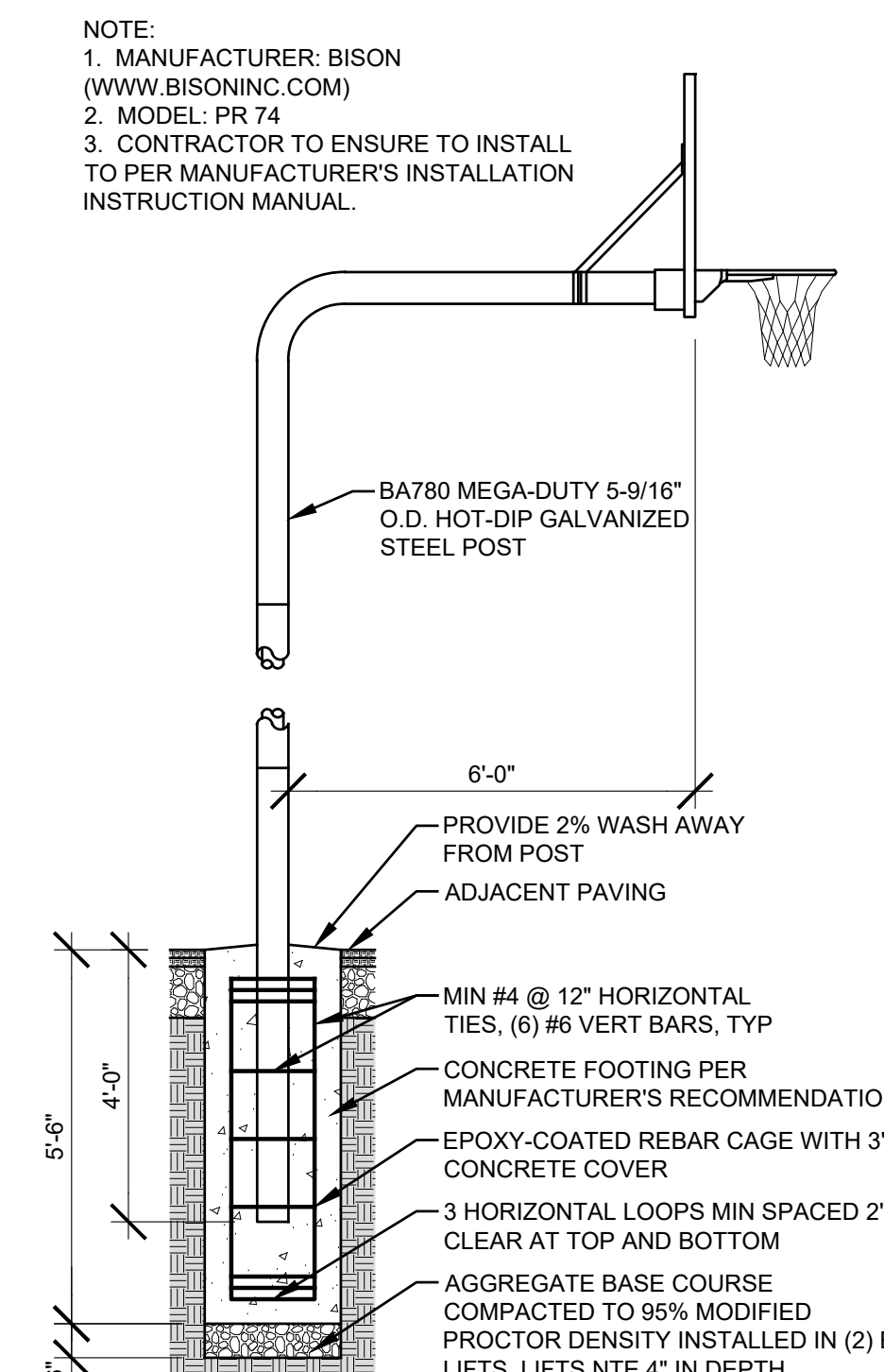
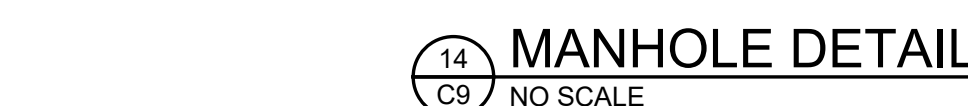
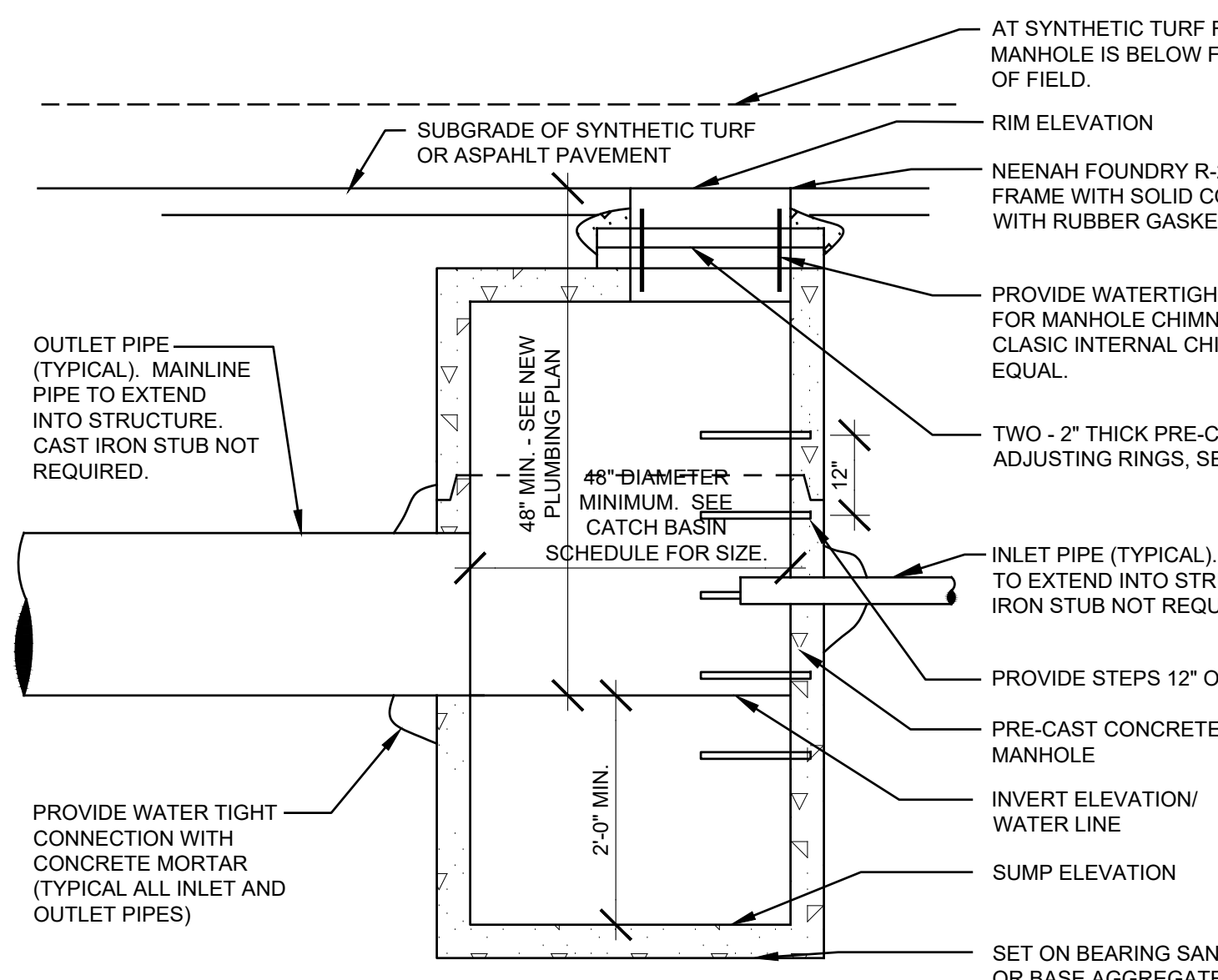
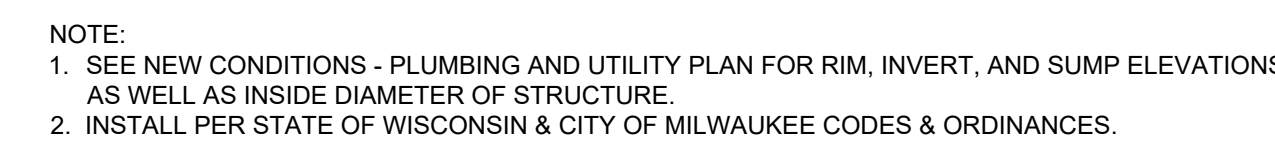
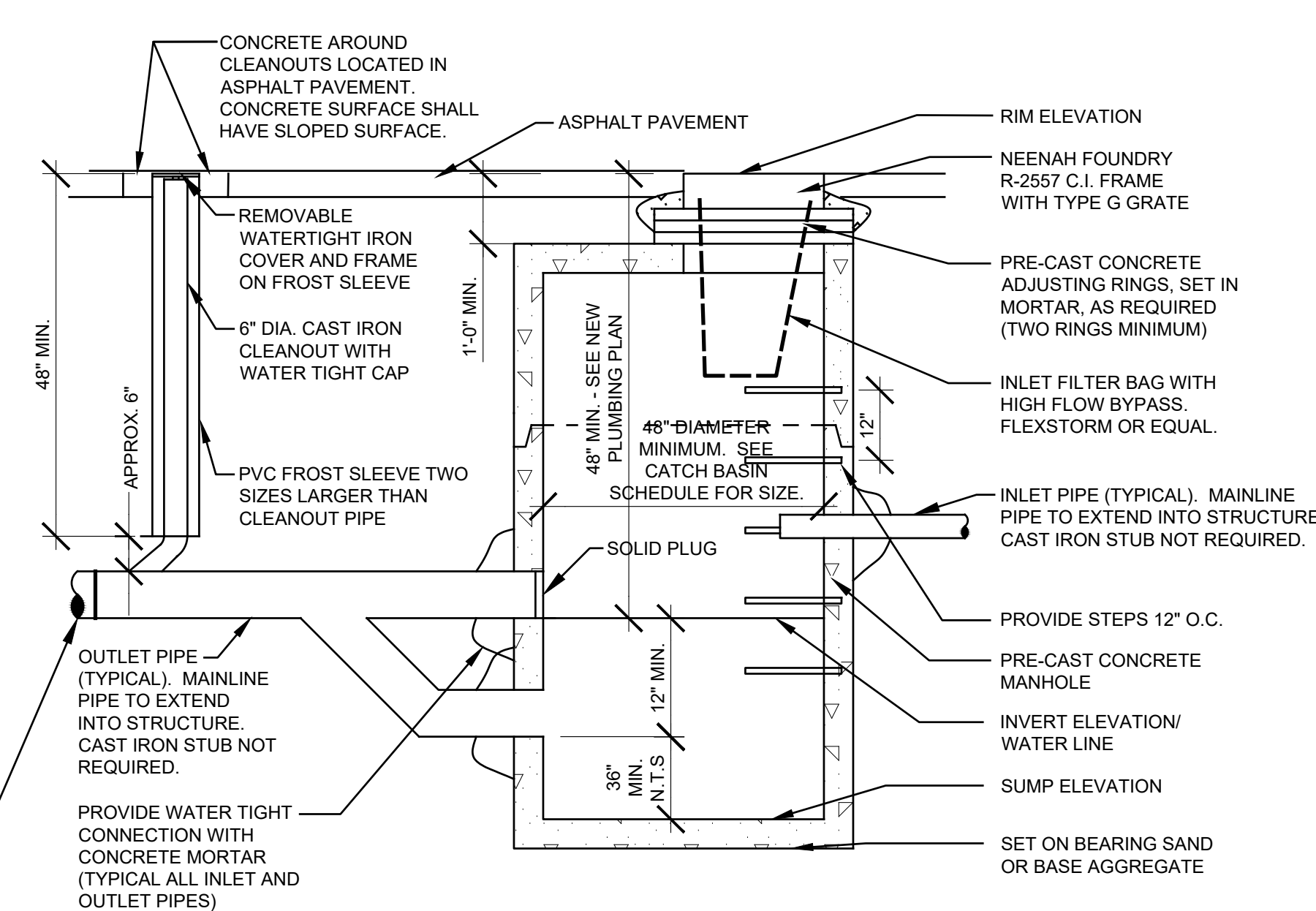
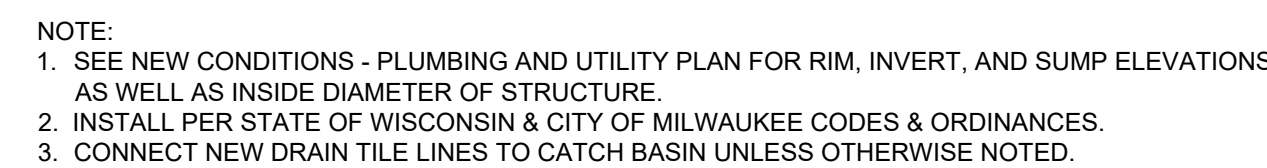
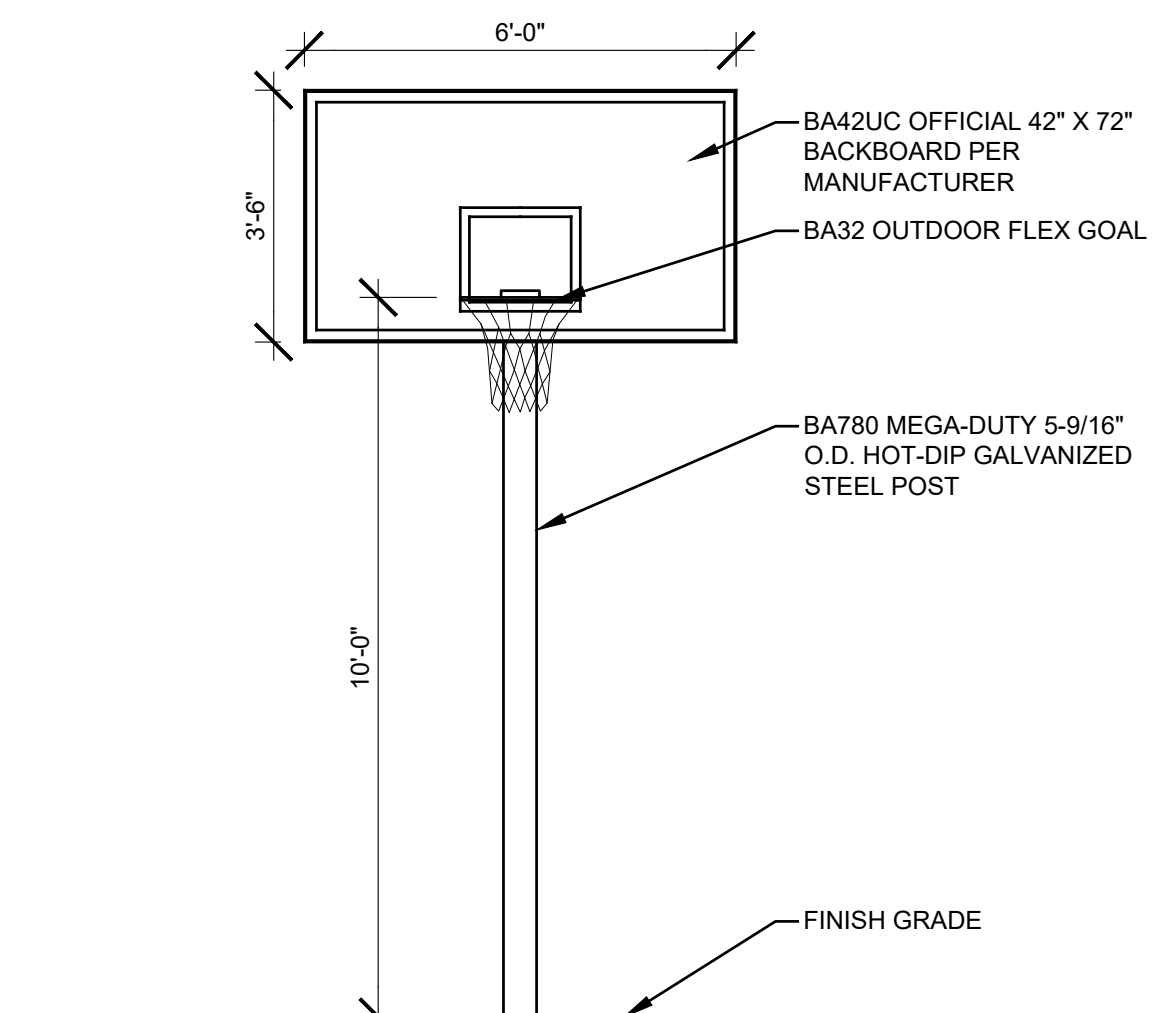
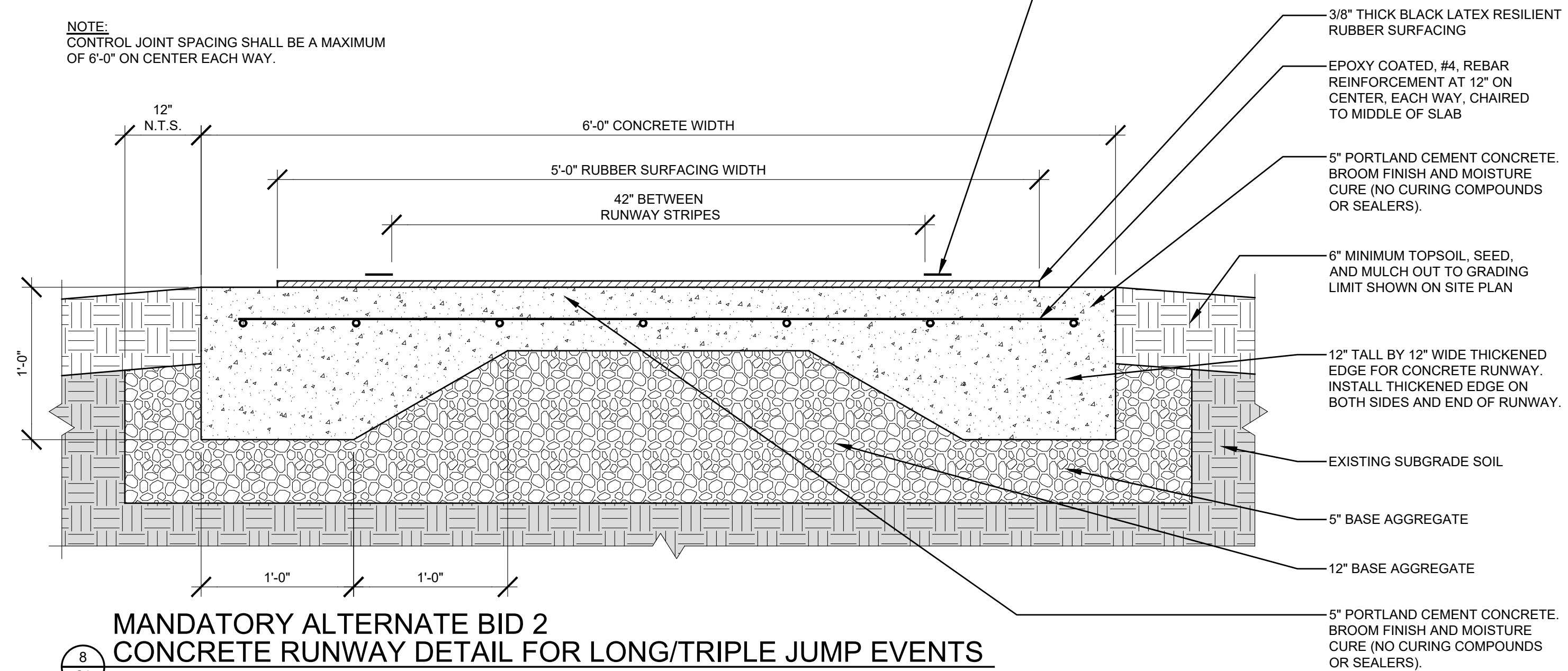
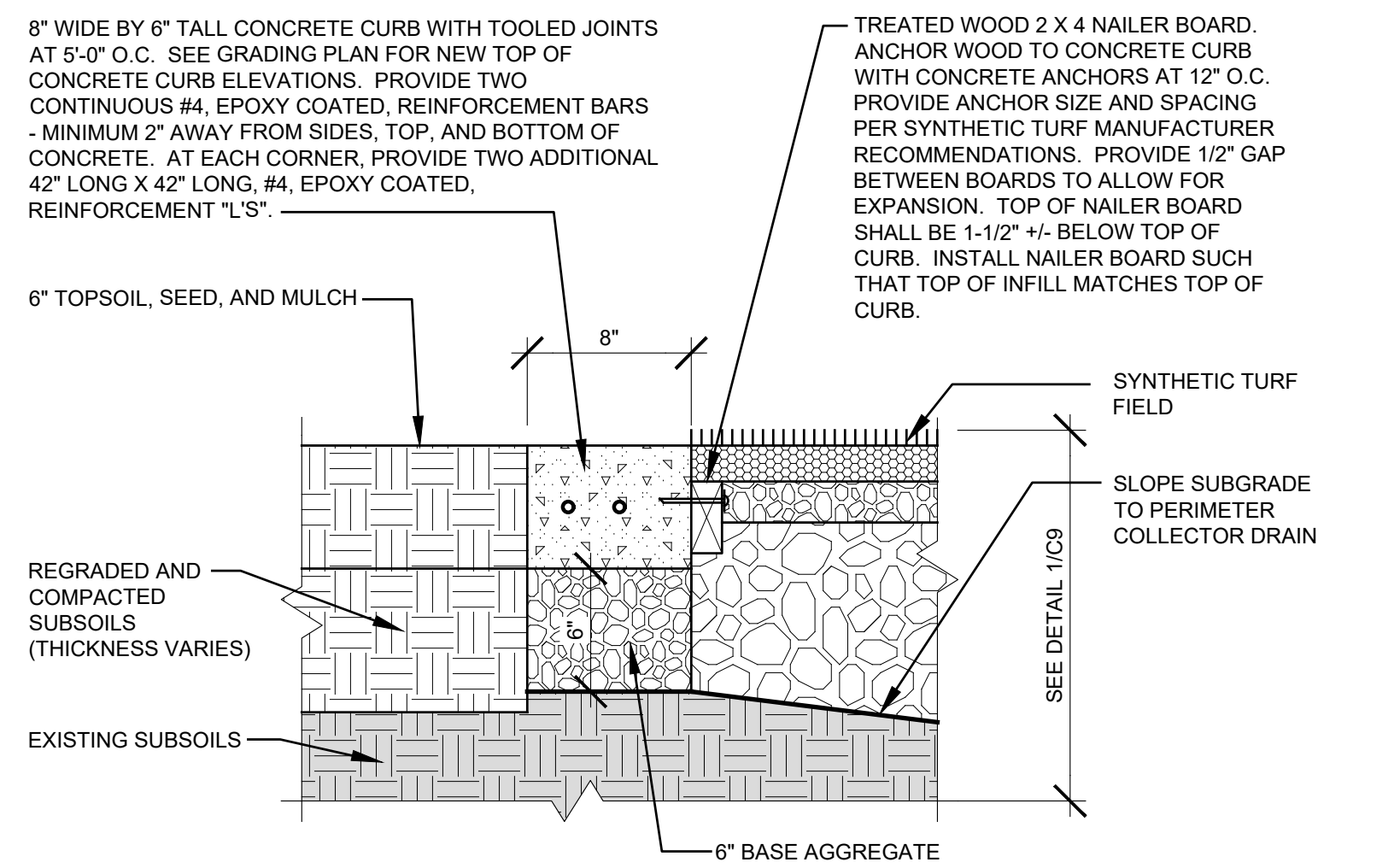
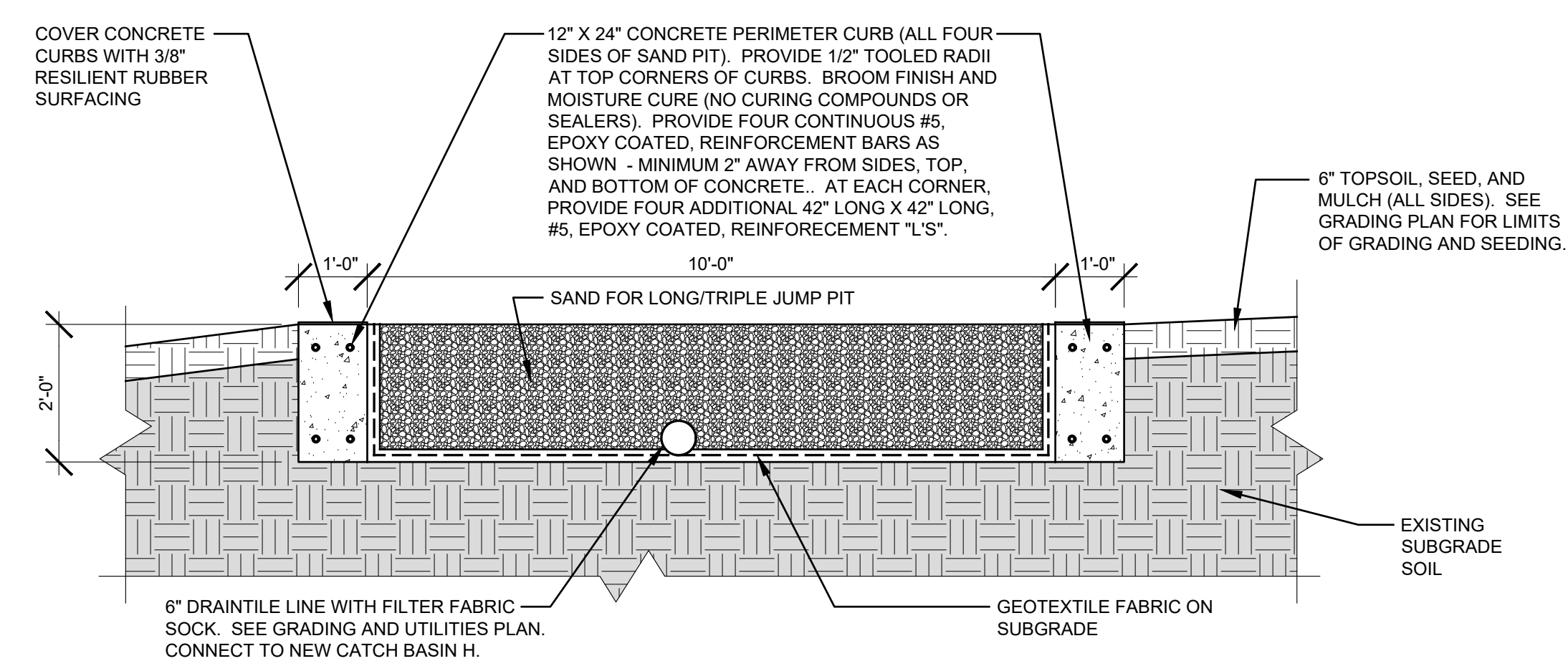
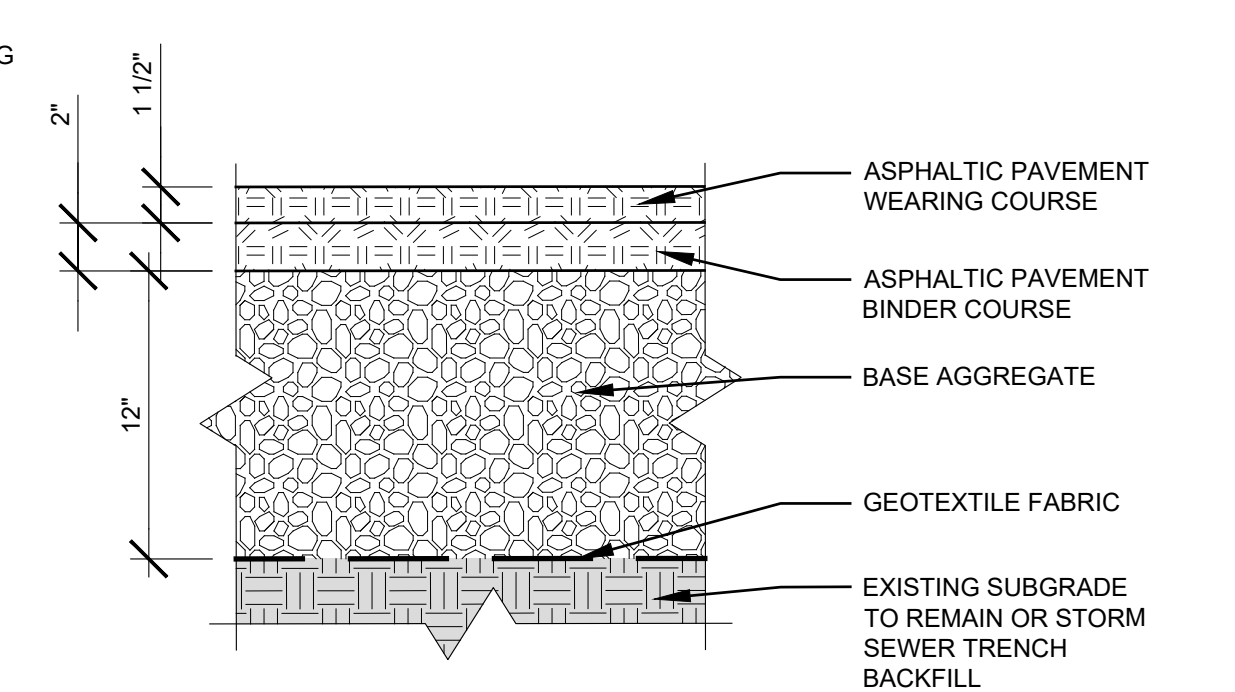
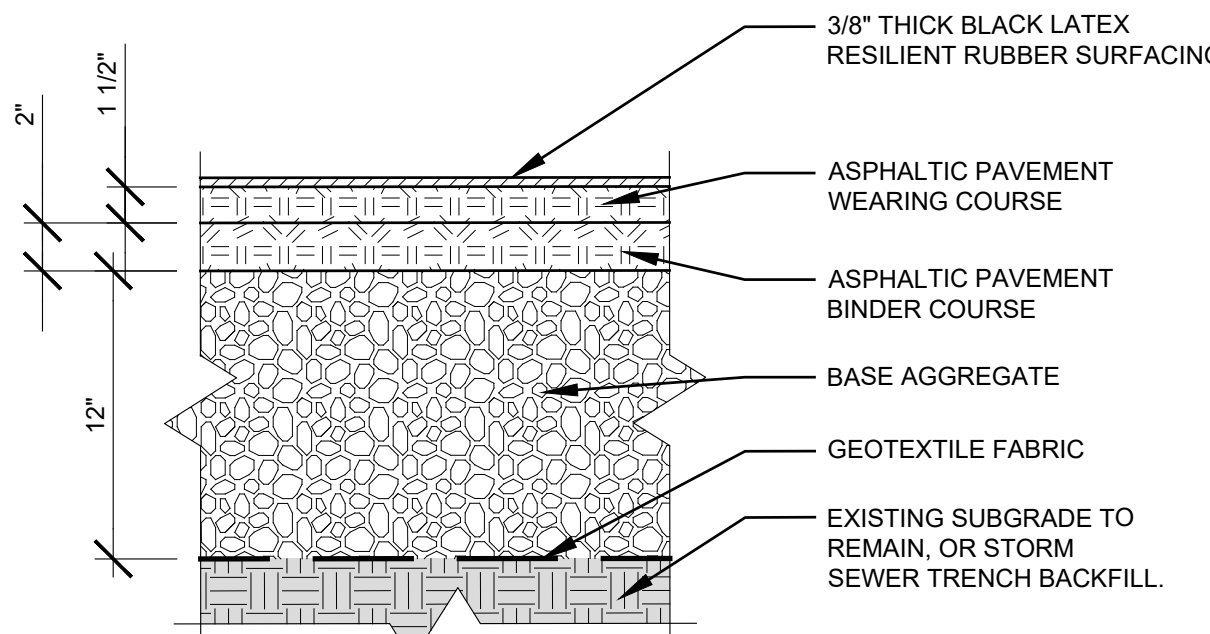
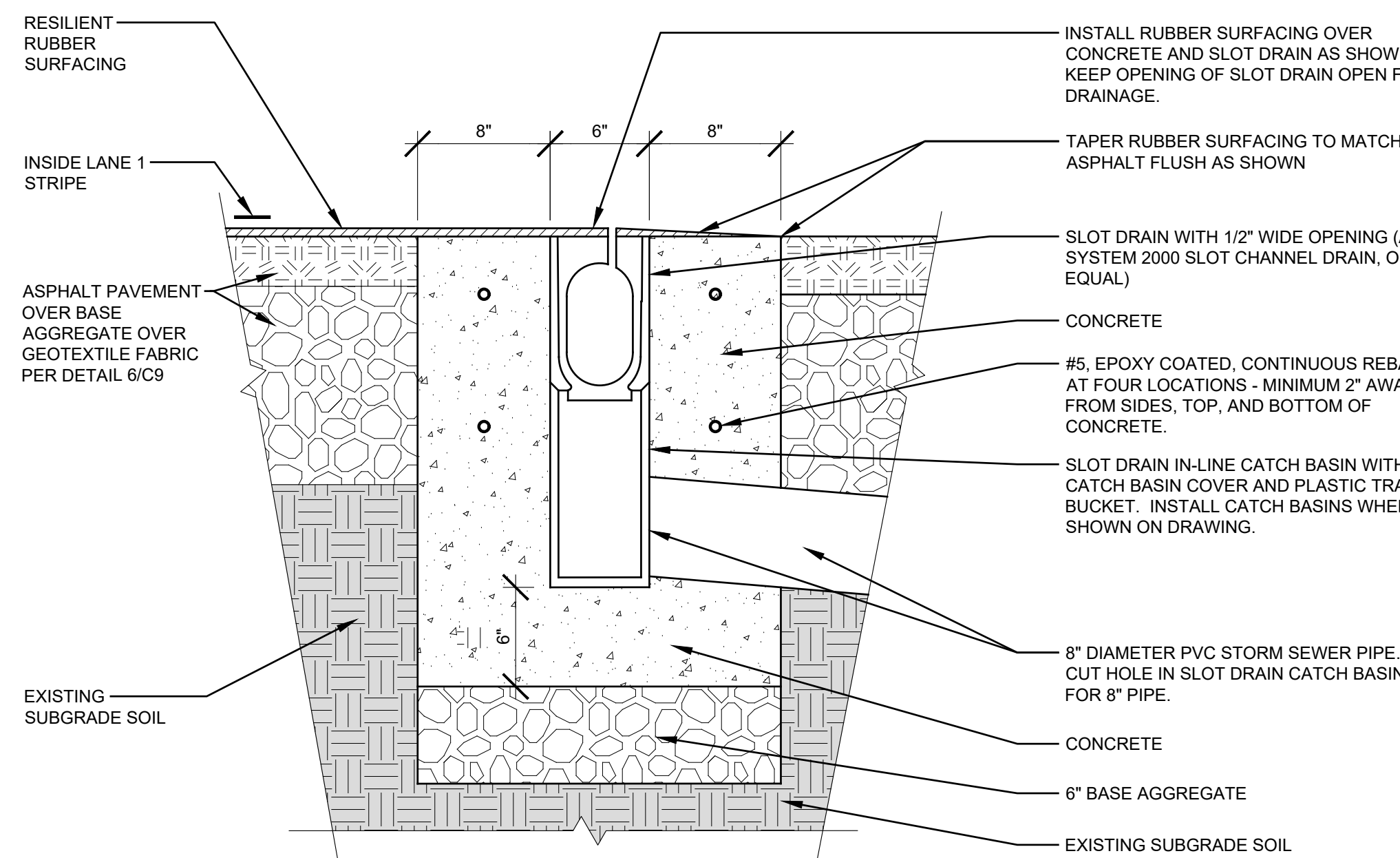
CITY OF MILWAUKEE LANDSCAPING REQUIREMENTS DO NOT APPLY TO THIS TYPE OF ATHLETIC FIELD PROJECT.

PARCEL IS ZONED TL  
TAX KEY # 3280791110

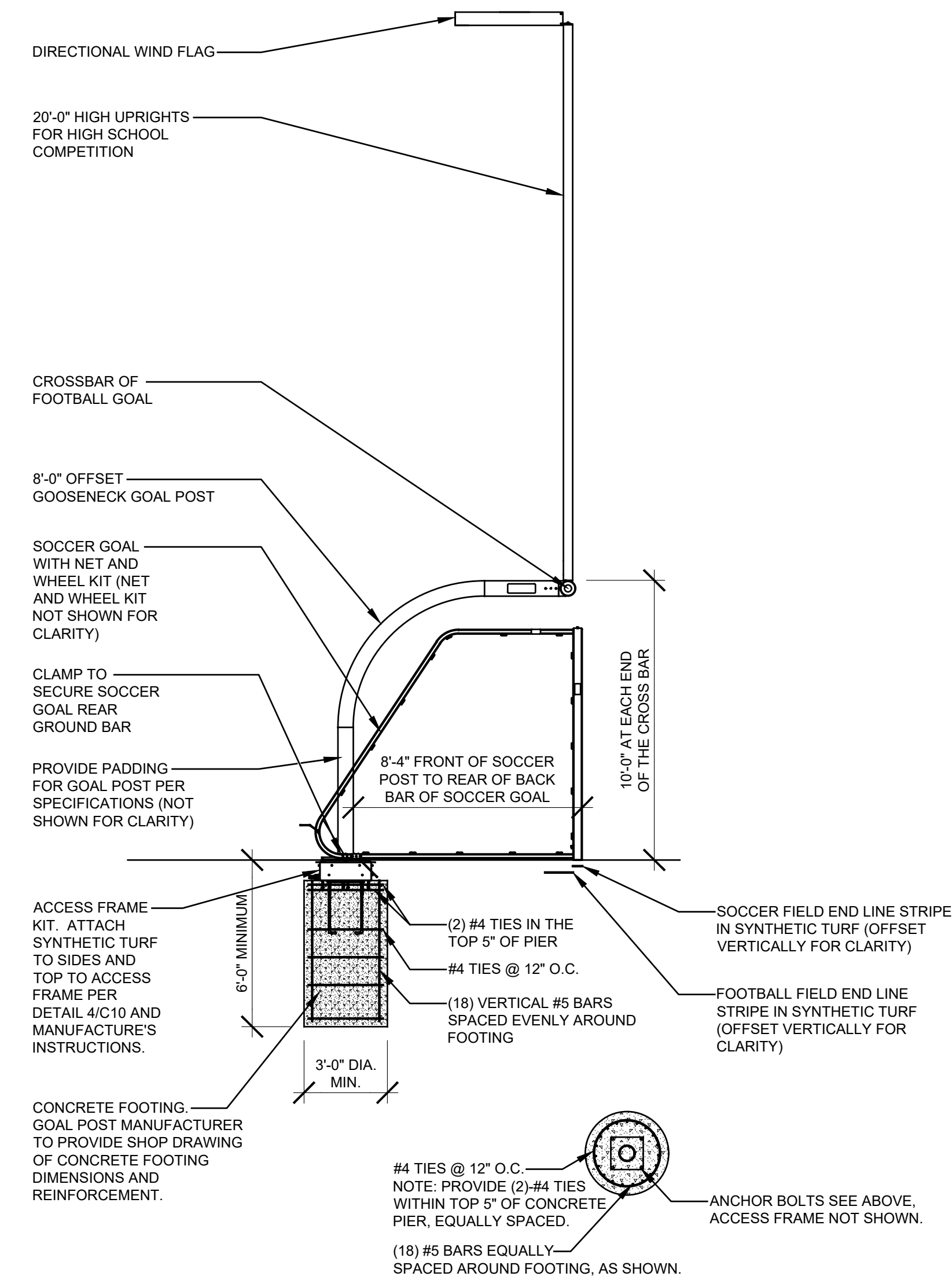
TREE SCHEDULE  
FOR MANDATORY  
ALTERNATE BID 1:

KEY	QUANTITY	REMARKS
1	1	3" CALIPER (MIN.) AUTUMN FANTASY FREEMAN MAPLE TREE
2	1	3" CALIPER (MIN.) REDMOND LINDEN TREE
3	1	3" CALIPER (MIN.) VALLEY FORGE ELM TREE
4	1	3" CALIPER (MIN.) IMPERIAL HONEYLOCUST TREE

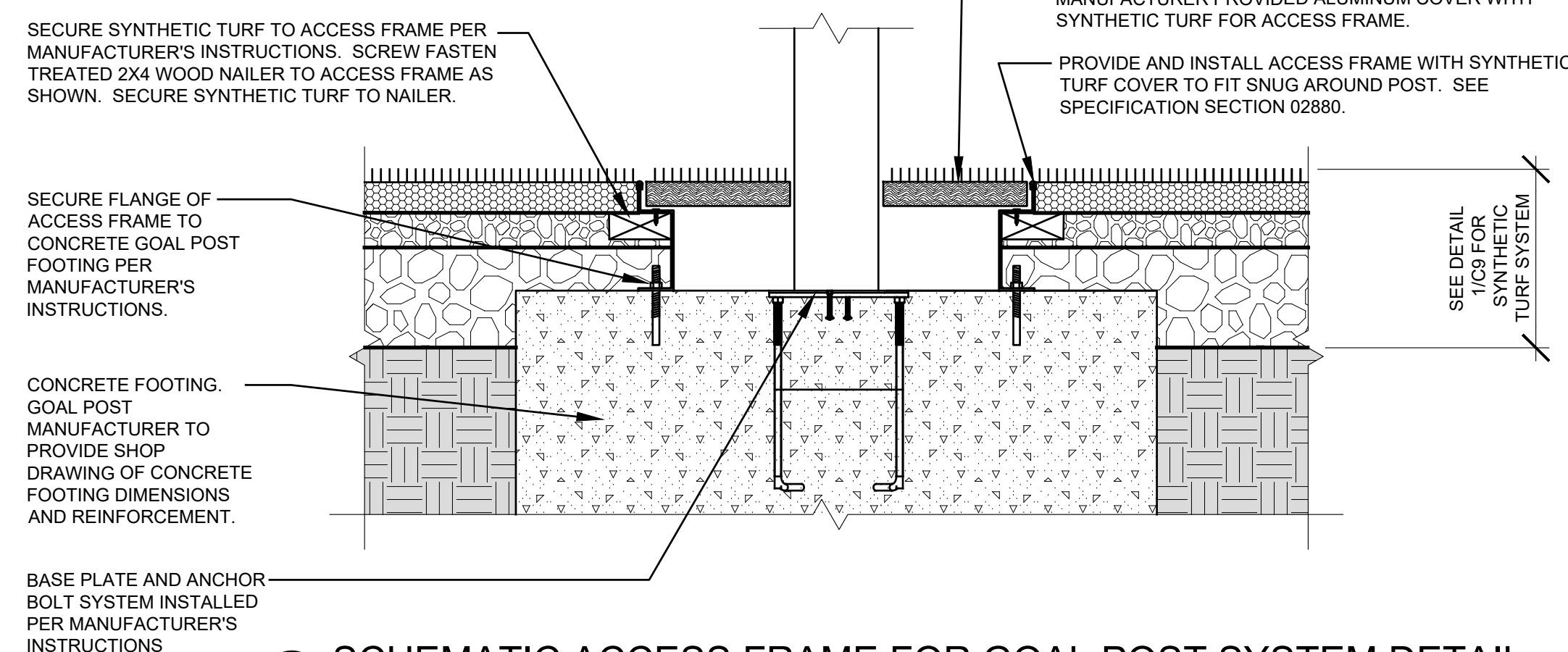




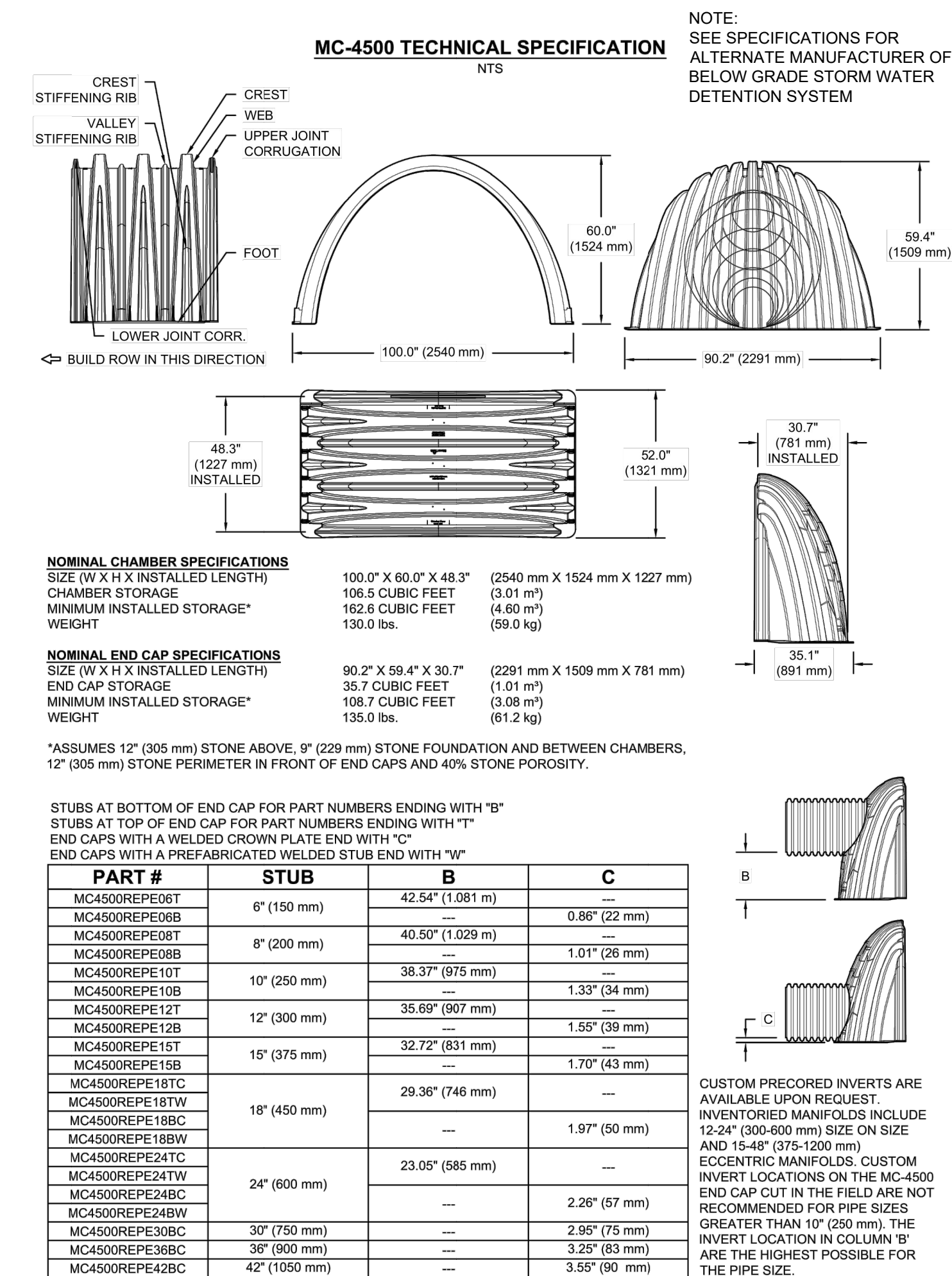




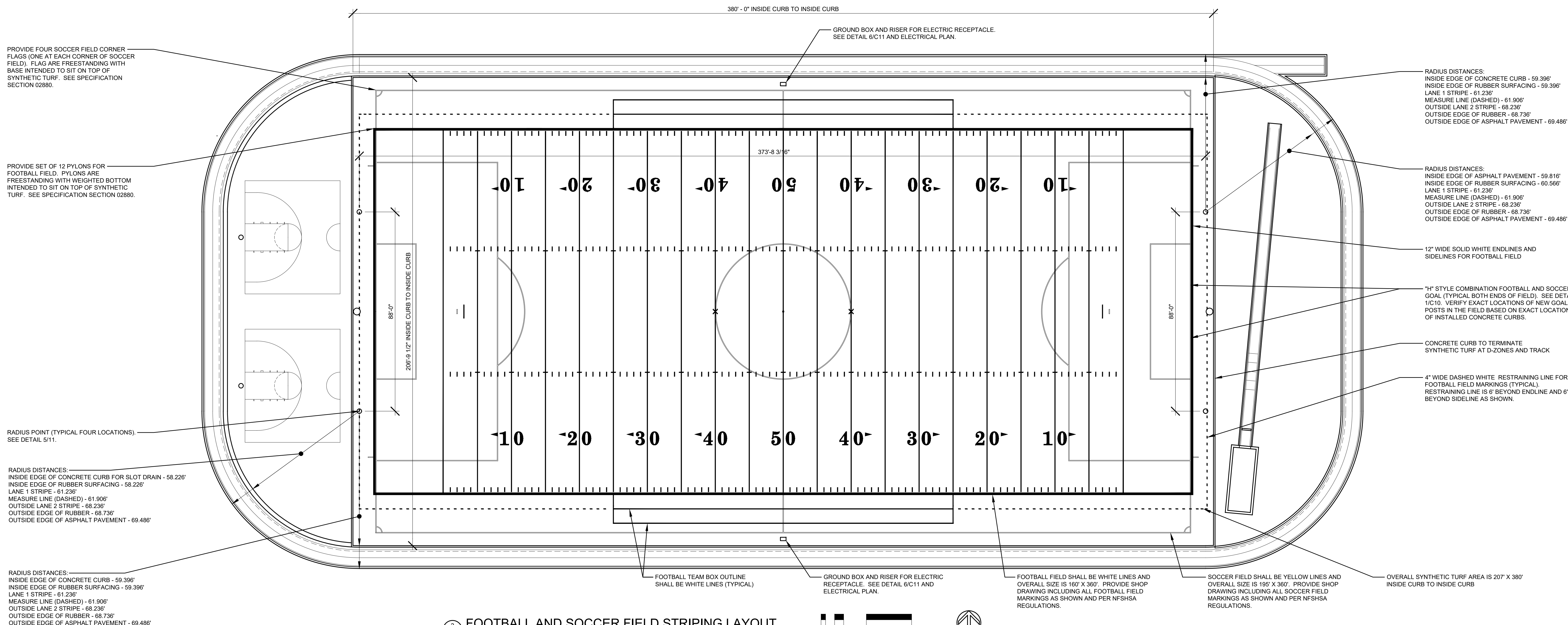
**1 FOOTBALL GOAL AND SOCCER GOAL SYSTEM DETAIL**  
C10 1/4" = 1'-0" APPROX.



**4 SCHEMATIC ACCESS FRAME FOR GOAL POST SYSTEM DETAIL**  
C10 NO SCALE



**2 BELOW GRADE STORM WATER DETENTION SYSTEM - TYPICAL DETAILS**  
C10 NO SCALE



**3 FOOTBALL AND SOCCER FIELD STRIPING LAYOUT**  
C10 1" = 20'-0"

Milwaukee Public Schools

Division of Facilities and Maintenance Services

1124 North 11th Street

P.O. BOX 05259

Milwaukee, Wisconsin 53205-0259

Phone : 414-253-4600

Fax : 414-253-4662

INSPEC

126 North Jefferson St.

Suite 120

Milwaukee, WI 53202

Ph. 414-744-6962

© 2020

INSPEC PROJECT NO. 301705

Project Title : TRACK AND FIELD IMPROVEMENTS

Project Location : WASHINGTON HIGH SCHOOL

Approved By : MARK BETHEL

REVISIONS

By

30% REVIEW

90% REVIEW

80% SET

Drawn by : TR/DR

Checked by : DR

Date : 03-22-2022

Scale : VARIES

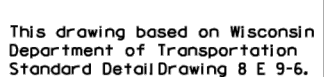
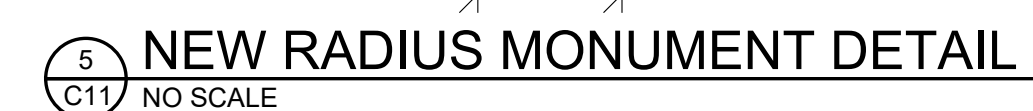
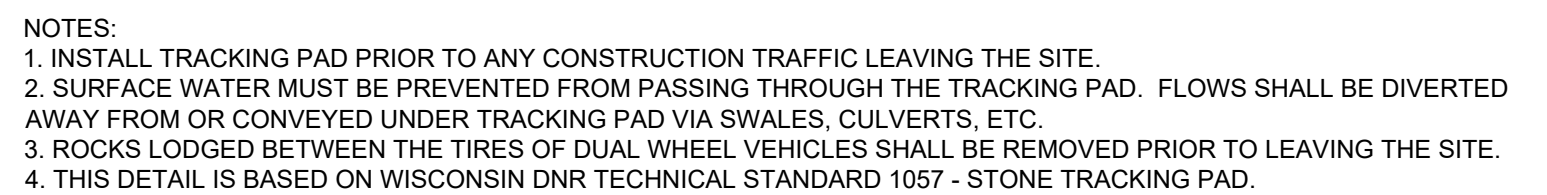
Site Number : 035

Project Number : 0222

Sheet Number :

C10



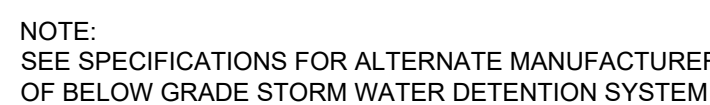






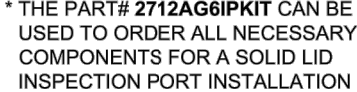
1. MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F727 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS TO BE USED TO ACHIEVE THE BEARING CAPACITY AND ALLOWABLE BEARING CAPACITY OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. IF LAYER 2'S ARE CLAYED, ANY SOL/MATERIAL CAN BE PLACED IN LAYER 2' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 2' OR 2' AT THE SITE DESIGN ENGINEER'S DISCRETION.

3 TYPICAL BELOW GRADE STORM WATER DETENTION SYSTEM  
C12 NO SCALE



STEP 1	INSPECT ISOLATOR ROW FOR SEDIMENT
A1	INSPECTION PORTS (IF PRESENT)
A2	REMOVE OPEN LID ON UP-CAST NULINE DRAIN
A3	REMOVE AND CLEAN FLEXOSTOP FILTER IF INSTALLED
A4	USE A FLASH-LIGHT TO VISUALLY CHECK DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
A5	LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
B1	IF SEDIMENT IS AT OR ABOVE 10% OF MAXIMUM DEPTH, PROCEED TO STEP 2
B2	IF ALL ISOLATOR ROWS
B3	REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
B4	USE A FLASH-LIGHT; INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
B5	IF SEDIMENT ON POLES OR CABLES MAY BE USED TO AVOID A CONFIRMED DEPTH
B6	IF FOLLOWING OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MAINLINE
B7	IF SEDIMENT IS AT OR ABOVE 10% OF MAXIMUM DEPTH, PROCEED TO STEP 2; IF NOT, PROCEED TO STEP 3.
STEP 2	CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
A	A. FIXED CUMULATIVE CLEANING NOZZLE WITH REAR FACING SCREEN OF 47.1 mm (OR MORE) IS PREFERRED
B	B. MAXIMUM FIVE PASSES OF 100 mm (4 INCH) BACKWASH SURFACE CLEAN OF
C	C. VACUUM STRUCTURE SUMP AS REQUIRED
STEP 3	REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
STEP 4	INSPECT AND CLEAN BARRIERS AND MANHOLES UPSTREAM OF THE STORMWATER SYSTEM.

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



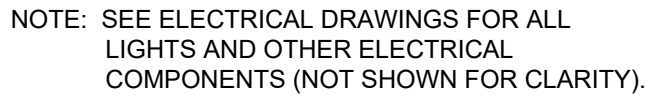
4  
C12

TYPICAL - ISOLATOR ROW DETAIL FOR BELOW GRADE STORM WATER DETENTION SYSTEM

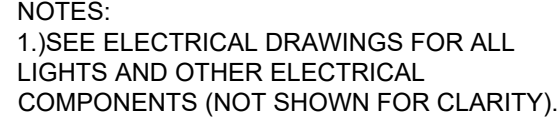
NO SCALE

C12

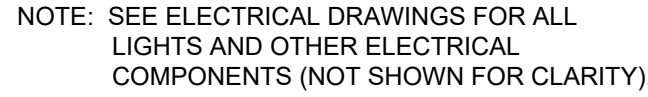




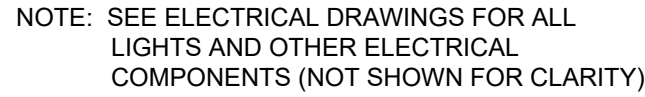
1  
C13



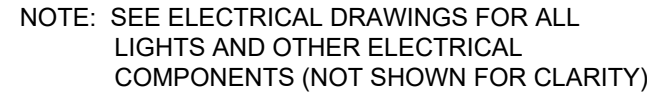
2  
C13



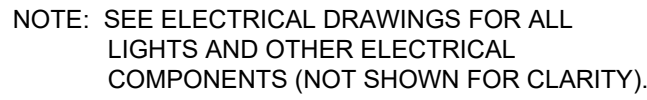
3  
C13



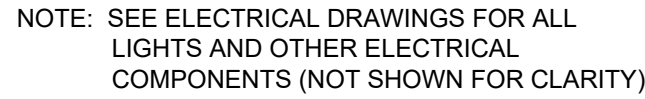
4  
C13



5  
C13




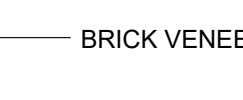
6  
C13



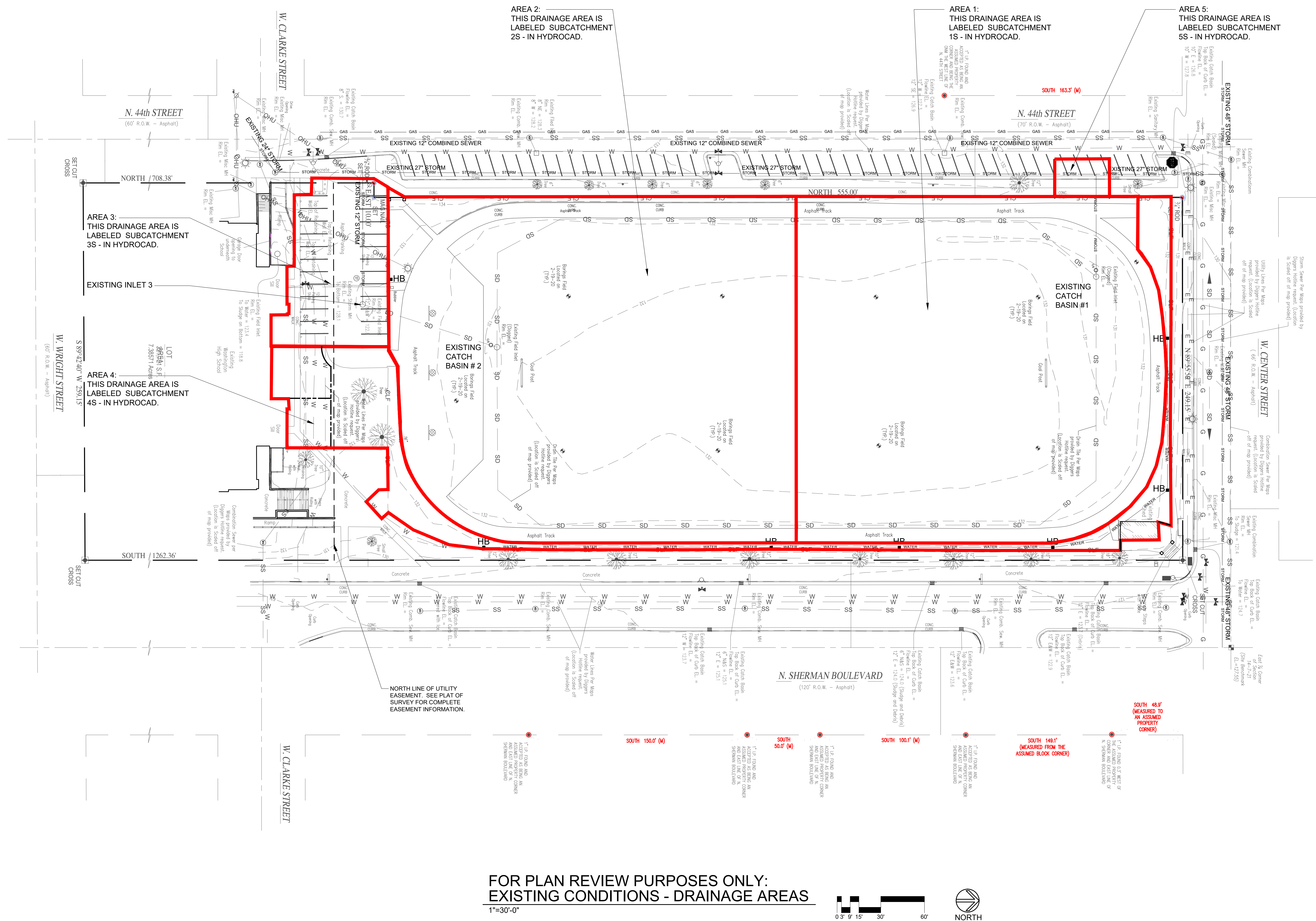
7  
C13





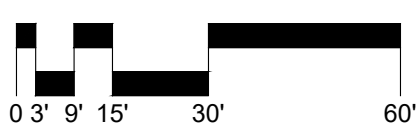






FOR PLAN REVIEW PURPOSES ONLY:  
EXISTING CONDITIONS - DRAINAGE AREAS

1"=30'-0"

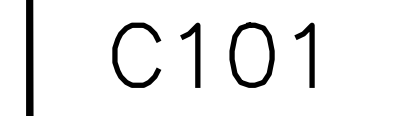


Title : EROSION CONTROL PLAN	
Project Title :	TRACK AND FIELD IMPROVEMENTS
Project Location :	WASHINGTON HIGH SCHOOL
Approved By :	MARK BETHEL

REVISIONS	By
30% REVIEW	
90% REVIEW	
BID SET	

Drawn by :	TR/DR
Checked by :	DR
Date :	03-22-2022
Scale :	VARIES
Site Number :	035
Project Number :	6232
Sheet Number :	





Project Title :	NEW CONDITIONS – GRADING PLAN
Project Location :	TRACK AND FIELD IMPROVEMENTS
Approved By :	WASHINGTON HIGH SCHOOL MARK BETHEL

C101

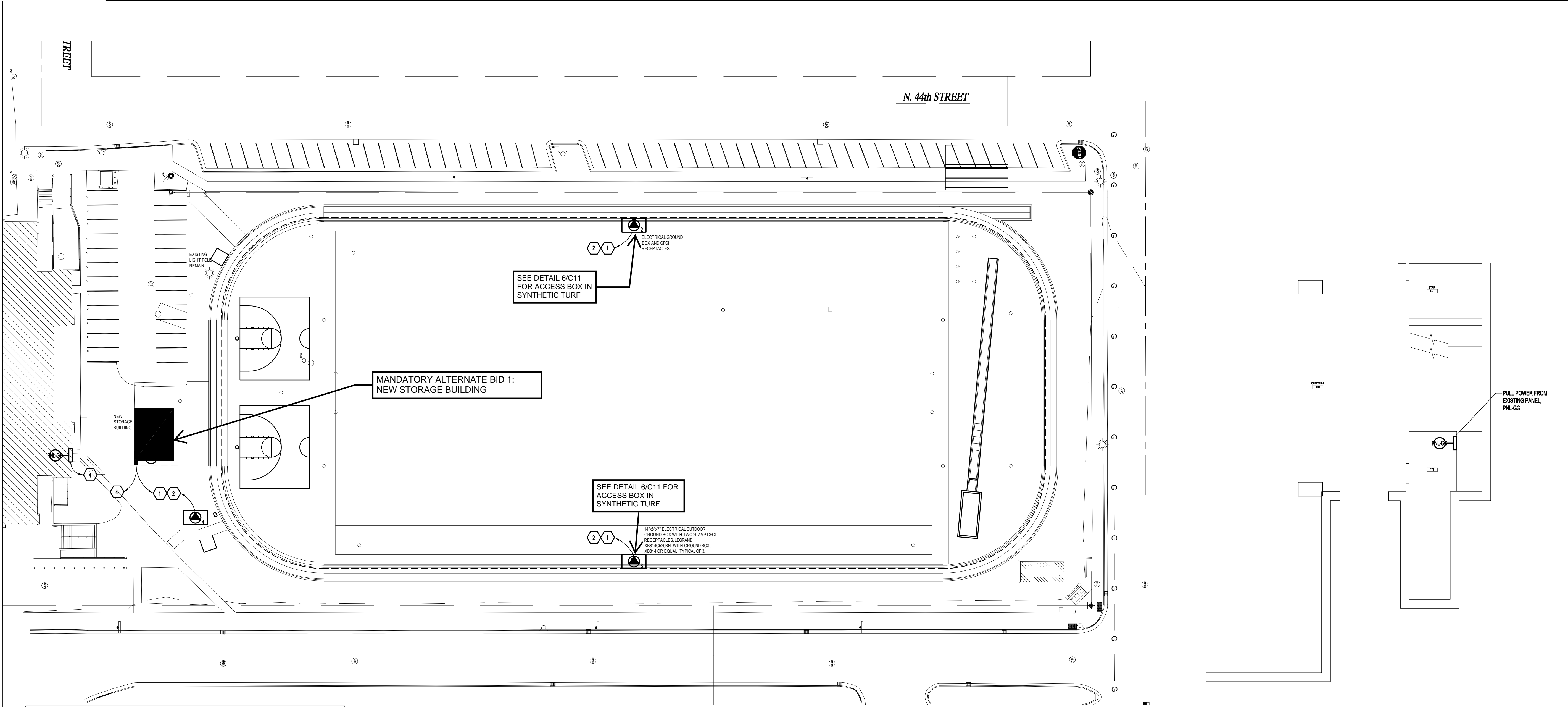




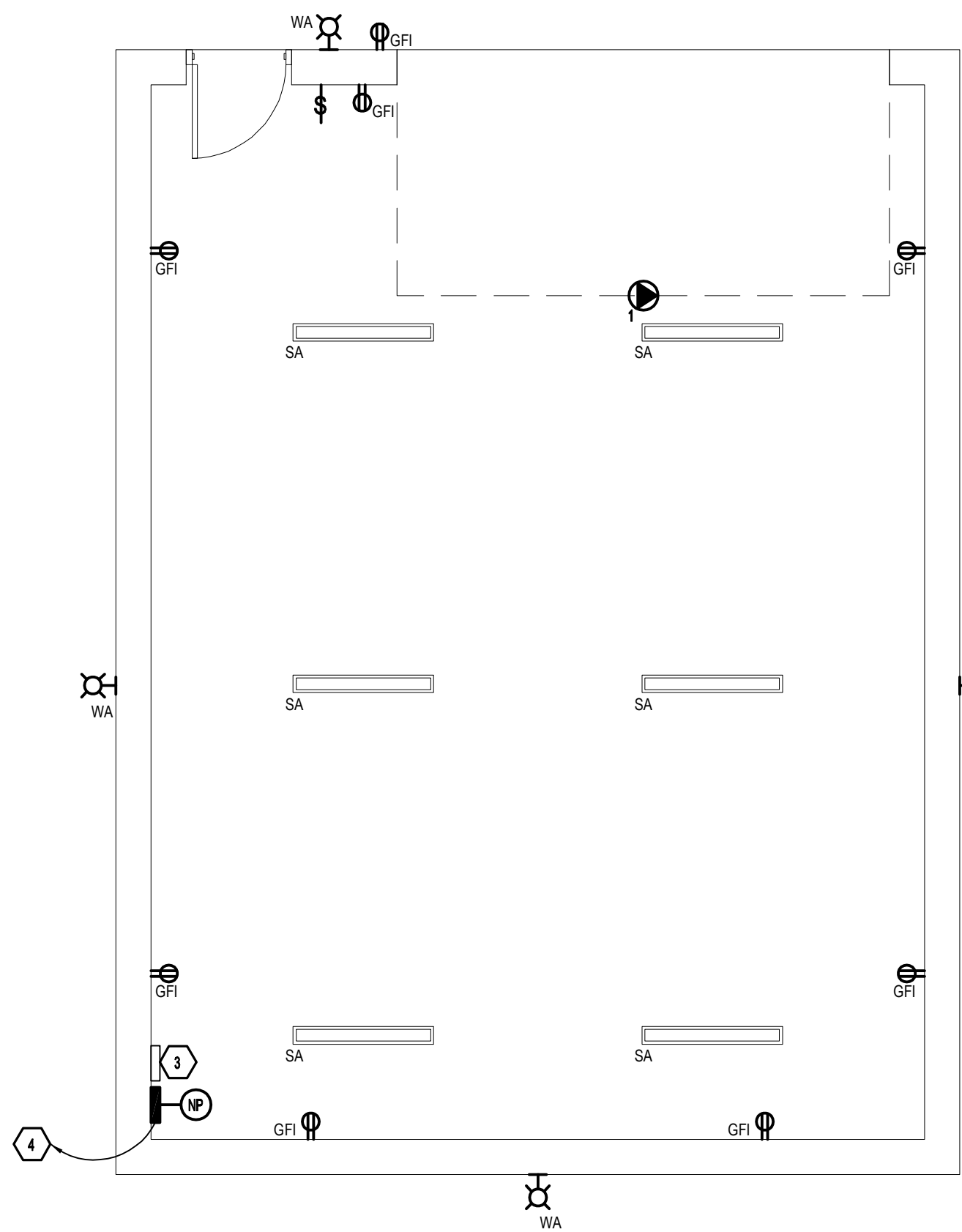








- NEW WORK SHEET NOTES**
- GENERAL NOTES:
- ELECTRICAL CONTRACTOR TO FIELD VERIFY EXACT CONDUIT ROUTE WITH GENERAL CONTRACTOR. INCLUDE SAW CUTTING AND PATCHING OF PAVEMENT.
  - NEW LIGHTING SHALL BE CONNECTED TO EXISTING EMS, MPS TO PROGRAM. CONTRACTOR TO CONNECT TO EXISTING LIGHTING CONTROL AND EXTEND TO EMS AND FIXTURES.
  - VERIFY EXACT LOCATION OF BUILDING ON CIVIL DRAWINGS.
  - VERIFY LOCATION OF ALL NEW EQUIPMENT WITH ENGINEER.
  - ALL RECEPTACLES SHOWN ON PLAN, INCLUDING GROUND RECEPTACLES SHALL BE GRAYBAR TAMPER PROOF RECEPTACLES.
- 1 3/42 AWG & 1-42 AWG GREEN GROUND IN 1-1/2" CONDUIT. PROVIDE WIRING WITH XHHW/HHW-2 CONDUCTOR INSULATION. CONNECT TO NEW PANEL "NP" CIRCUIT NO. 1 AND 3.
- 2 CONNECT TO NEW ELECTRICAL PANEL, "NP" LOCATED IN NEW STORAGE BUILDING.
- 3 PROVIDE MPS WITH-ASTROMATIC TIME CLOCK FOR THE EXTERIOR LIGHTING.
- 4 4/41 THWN & 1-46 AWG GREEN GROUND IN 1-1/2" CONDUIT. TO EXISTING PANEL, PNL-GG IN ROOM 078, USE 100 AMP CIRCUIT BREAKER, CIRCUIT NOS. 15, 17 & 19.



MANDATORY ALTERNATE BID 1:

3 Floor Plan - Storage Building

Scale: 1/8" = 1'-0"

1 Site Plan - New Work

Scale: 1/32" = 1'-0"

2 Enlarged Plan - Room 178

Scale: 1/8" = 1'-0"

## ELECTRICAL LEGEND

(NOT ALL SYMBOLS SHOWN ARE USED)

- FLUORESCENT RECESSED CEILING MOUNTED FIXTURE
- FLUORESCENT PENDANT OR SURFACE MOUNTED FIXTURE
- FLUORESCENT WALL MOUNTED FIXTURE
- FLUORESCENT STRIP LIGHT
- LIGHT FIXTURE - CEILING SURFACE
- LIGHT FIXTURE - WALL SURFACE
- LIGHT FIXTURE - CEILING RECESS

### NOTES:

- SHADING OF ANY OF THE LIGHTING FIXTURES ABOVE INDICATES UNITS WIRED TO AN EMERGENCY OR NIGHT LIGHTING CIRCUIT. SEE LIGHT FIXTURE SCHEDULE FOR EXACT FIXTURE WIDTH AND/OR DIAMETER FOR ALL SURFACE AND PENDANT UNITS.
- SEE LIGHT FIXTURE SCHEDULE FOR EXACT FIXTURE WIDTH AND/OR DIAMETER FOR ALL SURFACE AND PENDANT UNITS.
- MOUNTING HEIGHTS FOR DEVICES & EQUIPMENT TO BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE, UNLESS NOTED OTHERWISE.

- DUPLEX RECEPTACLE - MOUNTED 18" AFF.
- DUPLEX RECEPTACLE - GROUND FAULT CIRCUIT INTERRUPTER TYPE
- SPECIAL PURPOSE OUTLET - SEE SCHEDULE
- MOTOR - SEE MOTOR SCHEDULE. ALSO SEE MECHANICAL AND ELECTRICAL SHEETS FOR ELECTRICAL INFORMATION OF HVAC EQUIPMENT INDICATED ON DRAWINGS.
- DISCONNECT SWITCH - SEE SHEETS FOR MORE INFORMATION
- COMBINATION STARTER/CONNECT SWITCH WITH HMA FEATURE - SEE DRAWINGS FOR MORE INFORMATION
- JUNCTION BOX
- EXIT SIGN - CEILING MOUNTED. PROVIDE ARROWS AS INDICATED.
- EXIT SIGN - WALL MOUNTED. PROVIDE ARROWS AS INDICATED.
- SITE LIGHTING POLE MOUNTED FIXTURE
- SINGLE POLE ROCKER SWITCH - MOUNT 48" ABOVE FLOOR TO TOP OF BOX.
- 3-WAY
- 4-WAY
- P WITH PILOT LIGHT
- DLS DUAL LEVEL SWITCHING
- DM DIMMER SWITCH
- OC DUAL LEVEL TECHNOLOGY WALL BOX OCCUPANCY SENSOR WALL (PASSIVE INFARED) WITH SINGLE RELAY. MOUNT AT 48" ABOVE FLOOR TO TOP OF BOX.
- CEILING MOUNTED OCCUPANCY SENSOR - DUAL TECHNOLOGY UNLESS MARKED OTHERWISE (SEE SPECS FOR OS TYPES/EQUALS)
- TELECOMMUNICATIONS DROP (1) ONE INCH CONDUIT AND 4-1/16" X 4-1/16" X 2-1/8" BACK BOX.
- SMOKE DETECTOR.
- DUCT SMOKE DETECTOR.
- EXISTING - FIRE ALARM CONTROL PANEL
- ELECTRICAL DISTRIBUTION PANEL - EXISTING
- ELECTRICAL DISTRIBUTION PANEL - NEW
- INDICATES SHEET NOTE NUMBER FOR NEW WORK. SEE NEW WORK SHEET NOTE
- INDICATES SHEET NOTE NUMBER FOR DEMOLITION WORK. SEE DEMOLITION SHEET NOTE
- EXISTING - LOW VOLTAGE LIGHTING CONTROL PANEL
- AMPS TRIP
- CIRCUIT BREAKER
- NO OF POLES

## ELECTRICAL SHEET INDEX

E-1 LEGEND, SYMBOLS, SCHEDULES AND NEW WORK PLAN

## RENOVATION AND DEMOLITION NOTES:

- ELECTRICAL DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE. FOR AREAS BEING REMODELED, WORK SHOWN REFLECTS INFORMATION SHOWN ON AS-BUILT PLANS AND FIELD OBSERVATION. IT IS NOT GUARANTEED 100% ACCURATE. THIS CONTRACTOR MUST FIELD VERIFY CONDITIONS AND MAKE NECESSARY ADJUSTMENTS WITHOUT EXTRA COSTS TO THE PROJECT TO SUIT ACTUAL NEEDS.
- THE CONTRACTOR SHALL REWIRE/RELOCATE/TERMINATE, AS REQUIRED DUE TO CONSTRUCTION, ALL EXISTING CIRCUITS AND EQUIPMENT WHICH ARE TO CONTINUE IN OPERATION.
- MAINTAIN THE INTEGRITY OF ALL SYSTEMS AFFECTED BY THE REMOVAL OR ADDITION OF ELECTRICAL DEVICES AND CONTROLS IN REMODELED AREAS.
- ALL ELECTRICAL PANELS SHALL REMAIN IN PLACE AS IS, UNLESS INDICATED OTHERWISE.
- PROVIDE COMPLETE UPDATED DIRECTORIES FOR ALL PANELS AFFECTED BY CONSTRUCTION. HAND WRITTEN IS NOT ACCEPTABLE.
- CIRCUITS INDICATED ARE INTENDED TO DENOTE WHICH DEVICES/FIXTURES ARE TO BE WIRED TO A COMMON CIRCUIT BREAKER, AND NOT ITS POSITION IN THE PANEL. UTILIZE RELIEF/SPARE CIRCUIT BREAKER MOUNTING SPACES, PROVIDE CIRCUIT BREAKERS AS REQUIRED. RESIDUAL LOADS BETWEEN PHASES (MAX. 75%) UPON COMPLETION OF WORK.
- ALL EXISTING DEVICES WHICH ARE NOT SHOWN ON THESE DRAWINGS OR DIRECTED BY THE ENGINEER SHALL REMAIN IN PLACE AS IS.
- IN ALL LOCATIONS WHERE RE-USE OR EXTENDING OF AN EXISTING CIRCUIT IS INDICATED ON THE PLANS, THE CONTRACTOR SHALL VERIFY THAT THE EXISTING CIRCUIT HAS ENOUGH CAPACITY TO HANDLE THE ADDITIONAL LOAD. IF REQUIRED CAPACITY DOES NOT EXIST, THE CONTRACTOR SHALL EXTEND A NEW CIRCUIT TO FEED THE NEW EQUIPMENT. NO MORE THAN 6 DUPLEX RECEPTACLES SHALL BE ON ONE CIRCUIT.
- FIRE AND/OR SMOKE RATINGS OF WALLS, FLOORS AND CEILINGS SHALL BE MAINTAINED. IF THE INTEGRITY IS SACRIFICED THEN THE BARRIER SHALL BE REPAIRED TO ITS ORIGINAL RATING. ALL PENETRATIONS SHALL BE PROPERLY SEALED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING AND AIMING ALL FIXTURES TO THE OPTIMUM DISTRIBUTION AND OWNER'S SATISFACTION.
- THE CONTRACTOR SHALL NOTE THAT THE EXISTING BUILDING WILL REMAIN IN SERVICE DURING CONSTRUCTION. AREAS OF THE BUILDING WILL BE VACATED AS REQUIRED TO FACILITATE CONSTRUCTION. PROCEED WITH THE COMPLETION OF THE WORK IN SUCH A MANNER AS TO CAUSE THE LEAST POSSIBLE INTERFERENCE WITH OWNER'S OPERATION. ALL WORK SHALL BE DONE IN A MANNER AND TIME ACCEPTABLE TO OWNER. OUTAGES AND OTHER WORK REDUCING EXISTING EQUIPMENT INOPERATIVE SHALL BE HELD TO A MINIMUM. PRIOR ARRANGEMENTS FOR EACH SHALL BE MADE WITH OWNER AND SHALL BE ACCEPTABLE AS TO TIME AND DURATION. ALL SHUTDOWNS SHALL BE COORDINATED WITH OWNER 2 WEEKS IN ADVANCE.
- THE CONTRACTOR SHALL DO THE NECESSARY DEMOLITION WORK IN THE AFFECTED AREAS INCLUDING THE REMOVAL OF LIGHTING FIXTURES, LAMPS, WIRING, ACCESSIBLE CONDUIT, CEILING TILE AND ELECTRICAL EQUIPMENT. IN ADDITION, PRECEDING DEMOLITION WORK, HE SHALL DE-ENERGIZE ALL CIRCUITS IN THE AFFECTED AREAS AND WHERE WIRING IS ROUTED THROUGH THESE AREAS SERVING AREAS OF THE BUILDING REMAINING IN SERVICE, PROVIDE TEMPORARY AND/OR PERMANENT WIRING AS REQUIRED. ALSO, WHERE NECESSARY TO MAINTAIN SERVICE IN OTHER AREAS, PROVIDE NECESSARY AND REQUIRED SOURCES OF POWER AND TEMPORARY WIRING. REMOVE ALL CONDUIT AND WIRING OF EQUIPMENT BEING REMOVED AND/OR ABANDONED BACK TO SOURCE.
- CONTRACTOR SHALL RUN CONDUIT WITHIN CEILING CAVITY, WALLS, ETC. REMOVE CEILING TILE TO GAIN ACCESS AS NEEDED AND REINSTALL TILE WHEN COMPLETE. REPLACE BROKEN TILE IF DAMAGED IN THE PROCESS.

## ELECTRICAL LIGHTING SCHEDULE

KEY	DESCRIPTION	LAMP DATA		VOLT	DEPTH	LIGHTING FIXTURE			BALLAST TYPE	MOUNTING	MOUNTING SURFACE	SEE NOTE LF_
		QTY	TYPE			MANUFACTURER	MODEL OR SERIES	OPTIONS / ACCESSORIES				
SA	SURFACE MOUNT		LED	120/277		FAILSAFE	FPS-4-LED-2-STD-40-CLR-U NV-EDC-1-ABP-X	12, 23, WHITE	DRIVER	SURF	SURF	
SB	SUSPENDED		LED	120/277		FAILSAFE	FPS-4-LED-2-STD-40-CLR-U NV-EDC-1-ABP-2595	12, 23, WHITE	DRIVER	CHAIN		
WA	WALL PACK		25W LED	120/277		CREE	XSPW-A-G-2-F-G-U-Z-X	BROWN	DRIVER	WALL		

### ABBREVIATIONS:

AR	AS REQUIRED	GRD	GROUND	NA	NOT APPLICABLE	S	STANDARD (HID)	VAR	VARIES
CB	CONCRETE BASE	GYP	GYPSUM BOARD	PS	PULSE START BALLAST	SPEC	SPECIAL	LAS	LENGTH AS SHOWN
E	ELECTRONIC	LAS	LENGTH AS SHOWN	PEND	PENDANT	STAN	STANTION		
EXP	EXPOSED STRUCTURE	LIG	LAY-IN GRID	REC	RECESSED	SURF	SURFACE		

### OPTIONS / ACCESSORIES CODE LISTING:

01. 0.125" PATTERN 12 ACRYLIC LENS	10. CUSTOM COLOR	20. FURNISH WITH UNIVERSAL ARROWS AND RED STENCIL FACE
02. HOLOPHANE 8246 LENS	11. PENDANT MOUNT	21. QUARTZ RESTRIKE
03. PAINT AFTER FABRICATION	12. SAFETY CHAIN	22. EMERGENCY OPERATION- INTEGRAL NICAD BATTERY
04. SPRING LOADED LATCHES	13. NEMA HOOK, CORD AND PLUG	23. VANDAL RESISTANT
05. FLUSH ALUMINUM DOOR FRAME	14. WIRE GUARD	24. SLOPE ADAPTER
06. ELECTRONIC BALLAST, TOTAL HARMONIC DISTORTION < 10%	15. WALL MOUNT ARM	25. TWO BALLAST COVERS PARABOLIC & LAMP ONLY
07. FLUORESCENT DIMMING BALLAST	16. TOP AND BOTTOM LENSING	26. STANDARD FINISH TO BE SELECTED BY ARCHITECT
08. WHITE TRIM RING	17. TIME DELAY	27. 277/24 VOLT TRANSFORMER
09. SEMI-DIFFUSE, LOW-IRIDESCENT CLEAR ALZAK REFLECTOR	18. WET LOCATION LABEL	28. LEAD-CALCIUM BATTERY
	19. DAMP LOCATION CONSTRUCTION	29. INCLUDE SELF-DIAGNOSTICS

### NOTES:

- LF-1 LIGHTS SHALL BE SEALED FOR HIGH MOISTURE ENVIRONMENT - WET LISTED
- LF-2 PROVIDE LIGHT FIXTURE OVER EXIT DOORS WITH BATTERY BACK-UP OPTION. BATTERY TO PROVIDE 50% OF LUMEN OUTPUT FOR 90 MINUTES.

### GENERAL NOTES:

## SPECIAL OUTLET SCHEDULE

NO.	TO FEED	LOCATION	FEED FROM		BREAKER		WIRING				TERMINAL			VOLT	%	LOAD (KW)	SEE NOTE
			PANEL	CKT.	SIZE	POLE	NO.	SIZE	GND.	COND.	R	D	B				
1	GARAGE DOOR	STORAGE BUILDING	NP		20	1	2	12	12	3/4"	X			120	1		1
2	GROUND RECEPTACLES	SEE SITE PLAN	NP		20	1	2	1	2	1-1/2"	X			120	1		1
3	GROUND RECEPTACLES	SEE SITE PLAN	NP		20	1	2	1	2	1-1/2"	X			120	1		1
4	GROUND RECEPTACLES	SEE SITE PLAN	NP		20	1	2	1	2	1-1/2"	X			120	1		1

### NOTE:

1. BREAKERS SHALL BE RATED FOR 22,000 AIC

## PANEL SCHEDULE

NO.	CIRCUIT BREAKERS			1 POLE SPACES	MAINS BUSING	VOLTS	AIC	LOCATION	CABINET	REMARKS	SEE NOTE
	QTY	POLE	AMP								
NP	8	1	20			208/120, SINGLE PHASE, 4 WIRE	18,000	SEE PLAN	RECESSED	20 CIRCUITS	1, 2, & 3
	1	2	20		100 MLO						
	1	3	20								

### NOTES:

- SQUARE D TYPE "QOD" PANELBOARD OR EQUIVALENT.
- RELOCATE ACTIVE CIRCUITS TO NEW PANEL. PANEL SHALL BE LOCATED IN EXACT LOCATION AS EXISTING. CUT EXISTING CONDUITS TO LENGTH TO ACCOMMODATE PANEL.
- THIS PANEL IS TYPICAL AND SHALL BE MODIFIED OR ADJUSTED AS REQUIRED TO ACCOMMODATE ACTUAL FIELD CONDITIONS.

Milwaukee Public Schools

Division of Facilities and Maintenance Services

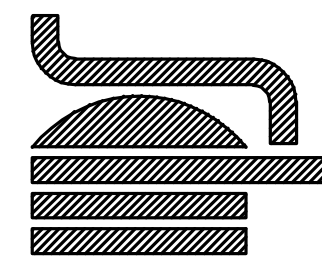
126 North Jefferson St.  
Suite 120  
Milwaukee, WI 53202  
Ph: 414-744-6962

3140 W. Southeast Drive  
Franklin, Wisconsin 53132  
Phone: 414-761-5502  
CCE Project No. 28-02101

INSPEC

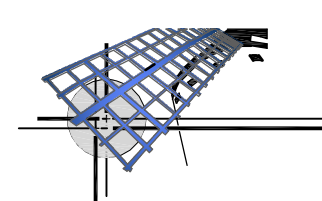
126 North Jefferson St.  
Suite 120  
Milwaukee, WI 53202  
Ph: 414-744-6962

© 2020



INSPEC

© 2020



Cervantes Consulting Engineers, LLC

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101

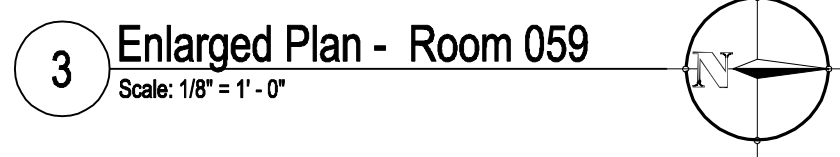
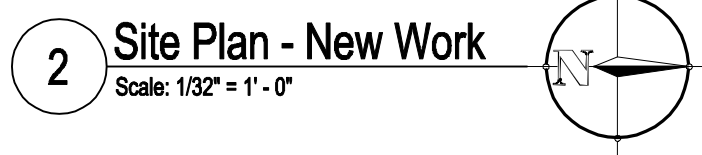
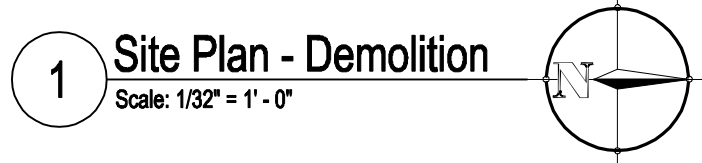
3140 W. Southeast Drive

Franklin, Wisconsin 53132

Phone: 414-761-5502

CCE Project No. 28-02101





1	2" COLD WATER PIPING TO SERVE THE WEST FENCE HOSE BIBBS, SEE SITE - PLAN NEW WORK.
2	1-1/2" COLD WATER PIPING TO SERVE THE DRINKING FOUNTAINS, SEE SITE - PLAN NEW WORK.
3	2" COLD WATER PIPING TO SERVE THE EAST FENCE HOSE BIBBS, SEE SITE - PLAN NEW WORK.

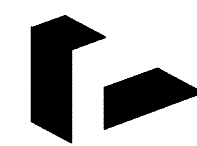
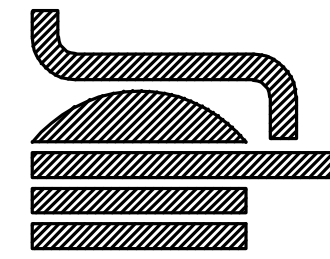


SYMBOL	ABBR.	DESCRIPTION
	CW	COLD WATER PIPING
	CS	COLD SOFT WATER PIPING
	HW	HOT WATER PIPING
	HWR	HOT WATER RETURN PIPING
	SPWP	SOL. OR WASTE PIPING ABOVE GROUND
	SPWP	SOL. OR WASTE PIPING BELOW GROUND
	CLW	CLEAR WATER WASTE PIPING ABOVE GROUND
	CLW	CLEAR WATER WASTE PIPING BELOW GROUND
	VP	VENT PIPING ABOVE GROUND
	VP	VENT PIPING BELOW GROUND
	CLV	CLEAR WATER VENT PIPING ABOVE GROUND
	RC	ROOF CONDUCTOR PIPING ABOVE GROUND
	ST	STORM OR CLEAR WATER WASTE PIPING ABOVE GROUND
	ST	STORM OR CLEAR WATER WASTE PIPING BELOW GROUND
	UP	PIPING UP
	DN	PIPING DOWN
	C.O.	CLEANOUT
	HBWH	HOSE BIB/WALL HYDRANT
	FCO	FLOOR CLEANOUT
		BALL VALVE
		CHECK VALVE
		BUTTERFLY VALVE
		BALANCING VALVE
		UNION
	F.D.	FLOOR DRAIN
	H.D.	HUB DRAIN
	R.D.	ROOF DRAIN
		PIPING WITHIN BOUNDARY HAS BEEN ABATED AND SHALL BE INSULATED BY THE PLUMBING CONTRACTOR
	IE	INVERT ELEVATION
		WASTE FIXTURE UNITS
		COLD WATER FIXTURE UNITS
		HOT WATER FIXTURE UNITS
		ISOMETRIC TAG
		POINT OF CONNECTION NEW TO EXISTING
	S-	SINK
	L-	LAVATORY
	WC-	WATER CLOSET
	UR-	URINAL
	ENC-	ELECTRIC WATER COOLER
	MB-	MOP BASIN
	MS-	MOLDED SHOWER
	WH	WALL HYDRANT
	HB	HOSE BIBB
	DF-1	DRINKING FOUNTAIN

P-1 LEGEND, SYMBOLS, DEMOLITION AND  
NEW WORK PLAN

1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF DPSW WISCONSIN ADMINISTRATIVE CODE SPS 382 FOR PLUMBING, LOCAL AND STATE CODE REQUIREMENTS, INTERNATIONAL PLUMBING CODE 2015, AND LOCAL MUNICIPAL CODE OF THE CITY OF GREENFIELD FOR PLUMBING, LOCAL, AND STATE CODE REQUIREMENTS. ALL INSTALLATIONS INCLUDING ANY PERIODIC RENEW-IN SHALL BE APPROVED BY LOCAL MUNICIPALITY PLUMBING INSPECTION.
2. INSTALL PLUMBING EQUIPMENT WHERE INDICATED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND CODE REQUIREMENTS. COORDINATE EQUIPMENT LOCATION WITH PIPES, HVAC, CONDENSATE AND EQUIPMENT OF OTHER TRADES TO ALLOW SUFFICIENT CLEARANCES. LOCATE EQUIPMENT AND ARRANGE HVAC PIPING TO PROVIDE ACCESS SPACE FOR SERVICING ALL COMPONENTS.
3. INSTALL ALL WORK SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. DEVIATIONS FROM LOCATIONS OF PIPING INDICATED ON THE DRAWINGS MAY HAVE TO BE MADE AT NO ADDITIONAL COST TO THE OWNER IN ORDER TO CLEAR THE WORK OF THE OTHER TRADES. HOWEVER, ALL SUCH DEVIATIONS SHALL BE PREVIOUSLY APPROVED BY THE OWNER'S REPRESENTATIVE.
4. ALL UNDERGROUND PLUMBING PIPING IS TO BE SCOPED AND CLEANED AS A PART OF THIS CONTRACT. IT SHALL REPLACE OR REPAIR ANY COLLAPSED, DAMAGED, OR CRACKED PIPING. CONTRACTOR SHALL SUBMIT UNIT COSTS ASSOCIATED WITH ANY REPLACEMENT OF PIPING DUE TO DAMAGED PROBLEMATIC.
5. DRAWINGS OF ALL OTHER TRADES SHALL BE REVIEWED. COORDINATE THE INSTALLATION AND SCHEDULING OF THE WORK WITH OTHER TRADES TO PREVENT INTERFERENCE WITH THEIR RESPECTIVE INSTALLATION.
6. FOR DETAILS, EQUIPMENT CONNECTIONS, AND PIPES SIZES NOT SHOWN ON FLOOR PLANS, REFER TO DETAILS, ISOMETRICS AND SCHEDULES.
7. PIPE ROUTING IS SHOWN IN APPROXIMATE LOCATIONS.
8. PLUMBING CONTRACTOR SHALL COORDINATE WITH MECHANICAL AND ALL GENERAL CONTRACTORS FOR VERTICAL CHASE AND WALL REQUIREMENTS.
9. VERIFY ALL PLUMBING EQUIPMENT CONNECTION REQUIREMENTS BEFORE INSTALLATION.
10. FINISHED FLOOR ELEVATION = 100.00 UNLESS DENOTED OTHERWISE.
11. PLUMBING CONTRACTOR SHALL PROVIDE ACCESSIBILITY TO ALL VALVES AND CONTROL DEVICES. FURNISH ACCESS PANELS WHERE SHOWN OR REQUIRED FOR ACCESS TO ALL CONCEALED VALVES OR OTHER EQUIPMENT FURNISHED UNDER THIS CONTRACT WHERE NO OTHER MEANS IS PROVIDED.
12. PLUMBING CONTRACTOR TO SEE ARCHITECTURAL PLANS FOR CHANGES IN CEILING HEIGHTS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL REQUIRED PIPING OFFSETS FOR COMPLETE PLUMBING SYSTEM INSTALLATION.
14. DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK, AND IS PARTIALLY DIAGRAMMATIC. DRAWING SHALL NOT BE SCALED.

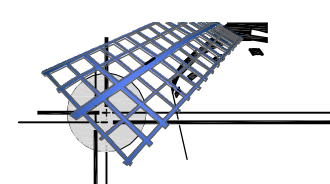
**Milwaukee Public Schools**  
Division of Facilities and Maintenance Services  
1124 North 11th Street  
P.O. BOX 05259  
Milwaukee, Wisconsin 53205-0259  
Phone : 414 283-4600  
Fax : 414 283-4682



INSPEC

126 North Jefferson St,  
Suite 120  
Milwaukee, WI 53202  
Ph. 414-744-6962

© 2020

INSPEC PROJECT NO.  
301705

**Cervantes**  
**Consulting Engineers, LLC**  
3740 W Southland Drive  
Franklin Wisconsin 53132  
Phone: 414 761-5502  
CCE Project No. 20-Q2101

**Title :** LEGEND, SYMBOLS, DEMOLITION AND NEW WORK PLAN

**Project Title :**

## TRACK AND FIELD IMPROVEMENTS

Approved By :  
WILLIAM WANDRACHEK

REVISONS	By
UPDATED 99%	NC
REVIEW SET	NC
BID SET	NC
3.22.2022	NC
Drawn by : AEC	
Checked by : NC	
Date 3.22.2022	
Scale :	
Site Number : 035	
Project Number : 6232	
Sheet Number :	

P-1



**TRACK AND FIELD IMPROVEMENTS**

**WASHINGTON HIGH SCHOOL**

**MILWAUKEE PUBLIC SCHOOLS**

**SPECIFICATIONS TABLE OF CONTENTS**

**TECHNICAL SECTIONS**

02072	Minor Demolition for Remodeling .....	pages
02080	Exterior Work for Sewers and Water Main .....	pages
02101	Erosion Control .....	pages
02110	Site Clearing .....	pages
02211	Rough Grading .....	pages
02222	Excavation .....	pages
02223	Backfill .....	pages
02321	Aggregates and Base Course .....	pages
02510	Asphalt Paving .....	pages
02514	Concrete Pavement .....	pages
02630	Exterior Sewers and Storm Drainage .....	pages
02712	Subgrade Drainage Systems for Paving .....	pages
02760	Pavement Markings and Signage .....	pages
02793	Synthetic Turf .....	pages
02795	Synthetic Running Track Surfacing .....	pages
02880	Track and Field Equipment .....	pages
02936	Seeding .....	pages
02950	Trees, Plants and Ground Cover .....	pages
03100	Concrete Formwork .....	pages
03200	Concrete Reinforcement .....	pages
03300	Cast-in-Place Concrete .....	pages
04100	Masonry Mortar and Grout .....	pages
04300	Unit Masonry System .....	pages
04500	Masonry Restoration and Cleaning .....	pages
06100	Rough Carpentry Work .....	pages
06175	Shop-Fabricated Roof Trusses .....	pages
07311	Asphalt Shingles .....	pages
07464	Siding and Trim .....	pages
07620	Sheet Metal Flashing and Trim .....	pages
08121	Standard Steel Frames .....	pages
08131	Standard Steel Doors .....	pages



## TRACK AND FIELD IMPROVEMENTS

### WASHINGTON HIGH SCHOOL

#### MILWAUKEE PUBLIC SCHOOLS

##### SPECIFICATIONS TABLE OF CONTENTS

08360	Sectional Overhead Doors .....	pages
08712	Door Hardware .....	pages
09900	Paints and Coatings .....	pages
10522	Fire Extinguishers, Cabinets, and Accessories .....	pages
15400	Plumbing General Requirements .....	pages
15401	Plumbing Pipe and Pipe Fittings .....	pages
15410	Plumbing Valves .....	pages
15426	Plumbing Systems Insulation .....	pages
15430	Plumbing Specialties .....	pages
15440	Plumbing Fixtures and Trim .....	pages
16010	General Electrical Requirements .....	pages
16111	Raceways, Conduits and Fittings .....	pages
16113	Openings, Sleeves and Fire Stoppings .....	pages
16115	Cable Trays .....	pages
16120	Wires, Cables and Connectors .....	pages
16121	Feeder Circuits .....	pages
16122	Branch Circuits .....	pages
16130	Electrical Boxes .....	pages
16140	Wiring Devices .....	pages
16170	Grounding and Bonding .....	pages
16190	Hangers, Support Systems and Anchors .....	pages
16470	Panelboards .....	pages
16510	Interior Lighting Fixtures, Lamps, and Ballasts ....	pages

#### **A-2 CONTRACT DRAWINGS**

C1	Title Sheet, List of Participants, and General Project Notes
C2	Topographic Survey Sheet
C3	Erosion Control Plan
C4	Removal Plan
C5	New Conditions - Site Plan
C6	New Conditions - Grading Plan
C7	New Conditions - Plumbing and Utility Plan
C8	Landscaping Plan
C9	Details
C10	Details
C11	Details



**TRACK AND FIELD IMPROVEMENTS**

**WASHINGTON HIGH SCHOOL**

**MILWAUKEE PUBLIC SCHOOLS**

**SPECIFICATIONS TABLE OF CONTENTS**

C12	Details
C13	Details
C100	For Plan Review Purposes Only - Existing Drainage Area Plan and Information
C101	For Plan Review Purposes Only - New Drainage Area Plan and Information
C102	For Plan Review Purposes Only - New Detained and Undetained Area Plan
C103	For Plan Review Purposes Only - WinSLAMM Modeling Notes
E1	Legend, Symbols, Schedules and New Work Plan
P1	Legend, Symbols, Demolition and New Work Plan



Page Intentionally Left Blank



## **SECTION 04100**

### **MASONRY MORTAR AND GROUT**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes mortar and grout for masonry.
- B. Related Sections:
  - 1. Section 04300 - Unit Masonry System.
  - 2. Section 04500 - Masonry Restoration and Cleaning.
  - 3. Section 08121 - Standard Steel Frames: Grouting door frames.
  - 4. Section 08712 - Door Hardware: Grouting of exterior door thresholds.

##### **1.2 REFERENCES**

- A. American Concrete Institute:
  - 1. ACI 530 - Building Code Requirements for Masonry Structures.
  - 2. ACI 530.1 - Specifications for Masonry Structures.
- B. ASTM International:
  - 1. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
  - 2. ASTM C150 - Standard Specification for Portland Cement.
  - 3. ASTM C206 - Standard Specification for Finishing Hydrated Lime.
  - 4. ASTM C270 - Standard Specification for Mortar for Unit Masonry.
  - 5. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.
  - 6. ASTM C476 - Standard Specification for Grout for Masonry.
  - 7. ASTM C387 - Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.

##### **1.3 SUBMITTALS**

- A. Section 01300 - Submittals: Submittal requirements.
- B. Samples: Submit two samples of mortar, illustrating mortar color and color range.



## MASONRY MORTAR AND GROUT

- C. Design Data: Submit design mix when Property specification of ASTM C270 is to be used, required environmental conditions, and admixture limitations.
- D. Manufacturer's Installation Instructions: Submit premix mortar manufacturer's installation instructions.

### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 530 and ACI 530.1.
- B. Use same brand of materials throughout project to maintain uniform appearance.

### 1.5 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements.
- B. Maintain materials and surrounding ambient temperature above 40 degrees F prior to, during and 48 hours after completion of work.
- C. Hot Weather Requirements: In accordance with ACI 530.1 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Portland Cement: ASTM C150, Type I, non-staining without air entrainment; natural color, low alkali.
  - 1. Use Type III high-early strength for use in cold weather.
- B. Mortar Aggregate: ASTM C144 and C404.
- C. Pre-Mixed Mortar: ASTM C387; commercially prepared, low alkali Portland cement, hydrated lime and aggregates; Type M, S and N as required.
  - 1. Mortar Technolgy pre-mixed mortars.
  - 2. QUIKRETE Mason Mix, as manufactured by Spec Mix.
- D. Latex Bonding Agent; acrylic-polymer latex; SikalateX, as manufactured by Sika Corp.



## MASONRY MORTAR AND GROUT

- E. Hydrated Lime: ASTM C207, Type S without air entrainment.
- F. Water: Clean and potable.
- G. Mortar Color: Premixed, non-fading, concentrated, mineral oxide pigment, capable of addition of Portland cement-lime mortar mix.
  - 1. Tamms Industries or equal.
- H. Calcium chloride or other admixtures is not permitted upon written permission of MPS Project Inspector or Project Architect.

### 2.2 MIXES

- A. Mortar Mixes:
  - 1. Load Bearing Walls and Partitions: Type S.
  - 2. Masonry in contact with earth: Type M.
  - 3. Pointing Mortar: Type N, Property Specifications.
  - 4. Rebuilding Mortar: Type N; 1 part Portland Cement, 1 part hydrated lime, 3 parts masonry aggregate.
  - 5. Resetting Copings: Type N; 1 part Portland Cement, 1 part hydrated lime, 3 parts masonry aggregate.
- B. Mortar Mixing:
  - 1. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.
  - 2. Achieve uniformly damp sand immediately before mixing process.
  - 3. Add mortar color to achieve uniformity of mix and coloration.
  - 4. Use mortar within two hours after mixing at temperatures of 80 degrees F, or two-and-one-half hours at temperatures under 50 degrees F.
  - 5. If water is lost by evaporation, re-temper only within two hours of mixing.
  - 6. Mix and add latex bonding agent per manufacturer's instructions.
- C. Grout Mixes:
  - 1. Grout for Non-Structural Masonry: 2,000 psi strength at 28 days; 8-11 inch slump.



## MASONRY MORTAR AND GROUT

2. Grout for Structural Masonry: 3,000 psi strength at 28 days; 8-11 inch slump.
3. Application:
  - a. Coarse Grout: For grouting spaces with minimum 4 inches dimension in every direction.
  - b. Fine Grout: For grouting other spaces.
- D. Grout Mixing:
  1. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476.
  2. Add admixtures; mix uniformly.

### **PART 3 EXECUTION**

#### **3.1 EXAMINATION**

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Request inspection of spaces to be grouted.

#### **3.2 PREPARATION**

- A. Apply bonding agent to existing surfaces.

#### **3.3 INSTALLATION**

- A. Install mortar and grout in accordance with Section 04300.
- B. Work grout into cores and cavities to eliminate voids. Do not attempt grouting in lifts over 4 foot increments.
- C. Do not displace reinforcing steel when placing grout.
- D. Clean concrete grout spaces of excess mortar and debris.

**END OF SECTION**



## **SECTION 04300**

### **UNIT MASONRY SYSTEM**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Concrete Masonry Units.
  - 2. Brick Units.
  - 3. Bond Beams, complete with reinforcing steel and concrete fill.
  - 4. Reinforcement, Anchorage, and Accessories.
  - 5. Flashings.
  - 6. Cleaning.
  - 7. Anchor Bolts.
- B. Related Sections:
  - 1. Section 03100 - Cast-in-Place Concrete: Special anchors for placement in concrete.
  - 2. Section 04100 - Masonry Mortar and Grout.
  - 3. Section 07900 - Sealant.
  - 4. Section 08121 - Standard Steel Frames: Placement of frame anchors in masonry walls.
  - 5. Section 09900 - Painting.

##### **1.2 REFERENCES**

- A. American Concrete Institute (ACI):
  - 1. ACI 530 - Building Code Requirements for Masonry Structures.
- B. ASTM International:
  - 1. ASTM A153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
  - 2. ASTM A167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
  - 3. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
  - 4. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.



## UNIT MASONRY SYSTEM

5. ASTM A951 - Standard Specification for Masonry Joint Reinforcement.
  6. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.
  7. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units ASTM International Made From Clay or Shale).
  8. ASTM C67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
  9. ASTM C90 - Standard Specification for Load bearing Concrete Masonry Units.
  10. ASTM C126 - Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
  11. ASTM C129 - Standard Specification for Non-load bearing Concrete Masonry Units.
  12. ASTM C140 - Standard Test Methods of Sampling and Testing Concrete Masonry Units.
  13. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).
  14. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- C. International Building Code (IBC):
1. 2009 International Building Code
- D. International Masonry Institute (IMI).

### 1.3 SUBMITTALS

- A. Section 01300 - Submittals: Submittal requirements.
- B. Product Data: Submit data for decorative, pre-faced, or glass masonry units; reinforcement, wall ties, anchors, and flashings.
- C. Samples: Submit a minimum of four (4) face brick units, decorative units, and glass block units, to illustrate color, texture, and extremes of color range.



#### **1.4 QUALIFICATIONS**

- A. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

#### **1.5 MOCK-UP**

- A. Section 01400 - Quality Control: Mock-up requirements.
- B. Construct a mock-up panel, approximately 4' x 4', indicating the proposed range of color, texture, and workmanship to be expected of completed work.
- C. Locate where directed by the Project Inspector.
- D. Retain accepted mock-up as a standard for judging completed masonry work. The accepted panel may be incorporated into the work at the discretion of the Project Inspector.

#### **1.6 PRE-INSTALLATION MEETINGS**

- A. Section 01039 - Coordination and Meetings: Pre-installation meeting.
- B. Convene minimum one week prior to commencing work of this section.

#### **1.7 DELIVERY, STORAGE AND HANDLING**

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Upon delivery of brick to the job site, Contractor shall immediately have each load sampled and compared with the approved sample and shall report any deviations immediately to the Project Inspector. All units used in the work shall conform to requirements specified herein. Any improper brick shall be culled out and immediately removed from the site. Brick shall be resorted or culled as necessary, especially when plant palletted, to avoid spotty or irregular ranges of color or texture in the finished wall. The responsibility for meeting these specifications and the approved sample rests with the Contractor. Brick shall be carefully unloaded and



## UNIT MASONRY SYSTEM

neatly stacked on or near the project, undamaged, and adequately protected at all times.

### 1.8 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.
- B. Hot and Cold Weather Requirements: IMI specifications.

## PART 2 PRODUCTS

### 2.1 COMPONENTS

- A. Face Brick: ASTM C216, Type FBS, Grade SW; 4" x 8" x 3 courses per 8" height; color as selected by Architect.
- B. Hollow Load Bearing Concrete Masonry Units: ASTM C90, Type I - Moisture Controlled; normal weight.
- C. Solid Load Bearing Concrete Masonry Units: ASTM C90, Type I - Moisture Controlled; light weight.
- D. Hollow Non-Load Bearing Concrete Masonry Units: ASTM C129, Type I - Moisture Controlled; normal weight.
- E. Pre-Faced Concrete Masonry Units:
- F. Concrete Brick Units: ASTM C55, Grade N, Type I - Moisture Controlled; normal weight of same grade, type and weight of block units.
- G. Bond Beams: Type and finish to match concrete units; minimum 8" bearing each end; fill with 4000 psi min. concrete (refer to Section 03300) and steel reinforcing bars as required (refer to Section 03200).
- H. Special Shapes: Provide special shapes where shown and where required for lintels, corners, jambs, control joints, headers, bonding, pilasters, and other special conditions. Provide bullnose block for exposed outside corners on all interior partitions, unless noted otherwise.



## UNIT MASONRY SYSTEM

### 2.2 ACCESSORIES

- A. Single Wythe Joint Reinforcement: Truss or Ladder type; steel wire hot dip galvanized (after fabrication) to ASTM A153; 3/16 inch, epoxy coated, side rods and No. 9 wire cross ties.
- B. Multiple Wythe Joint Reinforcement: Hook-and-Eye with proper hooks recommended; without moisture drip; steel wire hot dip galvanized (after fabrication) to ASTM A153 or approved equal; 3/16 inch, epoxy coated, side rods and No. 9 wire cross ties.
- C. Wall Ties:
  - 1. Rebuilding Work: For new/reused brick and concrete block back-up: Dur-O-Wal D/A 213 Veneer Anchors, or approved equal; co-polymer coated screws.
  - 2. New Work: hot dip galvanized finish (after fabrication) to ASTM A153 or approved equal; Dur-O-Wal Ladur-Eye or Truss-Eye.
- D. Reinforcing Steel: As specified in Section 03200.
- E. Flashing: Stainless steel; ASTM A167, Type 304, soft temper; smooth finish, with 40 mil thick EPDM sheet, uncured.
- F. Preformed Control Joints: Premolded compressible foam rods. See Section 07900 for sealant requirements.
- G. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self-expanding.
- H. Mortar Drainage System: Mortar Net Drainage System, as manufactured by Mortar Net, or equal.
- I. Anchor bolts: 1/2 inch x 8 inch galvanized steel L hook bolts.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.



## UNIT MASONRY SYSTEM

- B. Verify items provided by other Sections of work are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

### 3.2 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied to other Sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

### 3.3 INSTALLATION *Edit the following according to design.*

- A. Provide all work in accordance with 2009 IBC and ACI 530.
- B. Establish lines, levels, and coursing indicated. Protect from displacement.
- C. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints to uniform thickness.
- D. Coursing of Concrete Masonry Units:
  - 1. Bond: Running.
  - 2. Coursing: One unit and one mortar joint to equal 8 inches.
  - 3. Mortar Joints: Concave.
- E. Coursing of Brick Units:
  - 1. Bond: Running
  - 2. Coursing: Three units and one mortar joint to equal 8 inches.
  - 3. Mortar Joints: Concave.
- F. Coursing of Pre-Faced/Decorative Units:
  - 1. Bond:
  - 2. Coursing:
  - 3. Mortar Joints:
- G. Placing and Bonding:
  - 1. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.



## UNIT MASONRY SYSTEM

2. Lay hollow masonry units with face shell bedding on head and bed joints.
3. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
4. Remove excess mortar as Work progresses.
5. Interlock and fully bond intersections and internal and external corners.
6. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustments must be made, remove mortar and replace.
7. Perform jobsite cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
8. Cut mortar joints flush and verify mortar has not protruded, where wall tile is scheduled, cement parging is required, resilient base is scheduled, cavity insulation and vapor barrier adhesive is applied, or bitumen dampproofing is applied.
9. Isolate masonry partitions from vertical structural framing members with a control/movement joint.
10. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

### H. Joint Reinforcement and Anchorage:

1. Single Wythe Masonry:
  - a. Install horizontal joint reinforcement 16 inches oc.
  - b. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
  - c. Place joint reinforcement continuous in first and second joint below top of walls.
  - d. Lap joint reinforcement ends minimum 6 inches.
  - e. Reinforce stack bonded unit joint corners and intersections with strap anchors, 16 inches oc.
2. Masonry Veneer:
  - a. Install horizontal joint reinforcement 16 inches oc.
  - b. Place masonry joint reinforcement in first and second horizontal joints above and below



## UNIT MASONRY SYSTEM

- openings. Extend minimum 16 inches each side of opening.
  - c. Place joint reinforcement continuous in first and second joint below top of walls.
  - d. Lap joint reinforcement ends minimum 6 inches.
  - e. Secure veneer anchors to bond veneer at maximum 16 inches oc vertically and 24 inches oc horizontally. Place at maximum 3 inches on each way around perimeter of openings, within 12 inches of openings.
3. Cavity Wall Masonry:
- a. Install horizontal joint reinforcement 16 inches oc.
  - b. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
  - c. Place joint reinforcement continuous in first and second joint below top of walls.
  - d. Lap joint reinforcement ends minimum 6 inches.
  - e. Secure veneer anchors to bond veneer at maximum 16 inches oc vertically and 24 inches oc horizontally. Place at maximum 3 inches on each way around perimeter of openings, within 12 inches of openings.
- I. Masonry Flashings:
- 1. Extend flashings horizontally through outer wythe at foundation walls, above shelf angles and lintels, under parapet caps, and at bottom of walls, and turn down on outside face to form drip. Keep flashing edge a minimum 1" from the face of the drip edge to avoid any flashing seepage out of the wall.
  - 2. Turn flashing up minimum 8 inches and anchor to the wall with proper fasteners and termination bar. Approved sealant to be used above termination bar and wall penetrated anchors.
  - 3. Lap end joints minimum 6 inches and seal watertight.
  - 4. Turn flashing, fold, and seal at corners, bends, and interruptions. Properly constructed end dams are required at intersections and openings.



## UNIT MASONRY SYSTEM

5. Drip edge construction must extend back from masonry face a minimum of 2" and be constructed of a non-corrosive metal. Lap edges a minimum of 4" and all drip edges must be adhered with an approved adhesive. All corners constructed must be properly fabricated and sealed. Factory manufactured, seam welded corners must be properly sized. Obtain Project Inspector's documented approval if field fabricated corners are requested.

### J. Lintels:

1. Install loose steel and/or precast concrete lintels over openings.
2. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
3. Openings up to 42 inches wide: Place two (2) No. 4 reinforcing bars 1 inch from bottom web.
4. Openings from 42 inches up to 78 inches wide: Place two (2) No. 5 reinforcing bars 1 inch from bottom web.
5. Openings over 78 inches: Reinforce openings as detailed on Drawings.
6. Do not splice reinforcing bars.
7. Support and secure reinforcing bars from displacement.
8. Place and consolidate grout fill without displacing reinforcing.
9. Allow masonry lintels to attain specified strength before removing temporary supports.
10. Maintain minimum 4 inch bearing on each side of opening.

### K. Grouted Components:

1. Reinforce bond beams with bars as detailed on Drawings.
2. Lap splices bar diameters required by code.
3. Support and secure reinforcing bars from displacement.
4. Place and consolidate grout fill without displacing reinforcing.
5. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.
6. Embed anchor bolts minimum 6" depth.



## UNIT MASONRY SYSTEM

### L. Reinforced Masonry:

1. Lay masonry units with core vertically aligned and cavities between wythes clear of mortar and unobstructed.
2. Place reinforcement bars as indicated on Drawings.
3. Splice reinforcement in accordance with Section 03200.
4. Support and secure reinforcement from displacement.
5. Place and consolidate grout fill without displacing reinforcing.
6. If block wall design is 6 to 8 inches, reinforced grout lifts must not exceed 4 feet in height. Block larger than 8 inches may be grouted in 8 foot lifts.

### M. Built-In Work:

1. As work progresses, build-in metal door and glazed frames, fabricated metal frames, wood nailing strips, anchor bolts, plates, ductwork, piping, and other items furnished by other Sections. Point up all joints between masonry and built-in work.
2. Install build-in items plumb and level.
3. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
4. Do not build in materials subject to deterioration.

### N. Cutting and Fitting:

1. Cut and fit for chases, pipes, conduit, sleeves, and grounds. Coordinate with other Sections of work to provide correct size, shape, and location.
2. Obtain Inspector's approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

### O. Parging:

1. Dampen masonry walls prior to parging.
2. Scarify each parging coat to ensure full bond to subsequent coat.



## UNIT MASONRY SYSTEM

3. Parge masonry walls in two uniform coats of mortar to a total thickness of 3/4 inch.
4. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot.
5. Strike top edge of parging at 45 degrees.

### 3.4 ERECTION TOLERANCES

- A. Maximum Variation from Alignment of Columns/Pilasters: 1/4 inch maximum.
- B. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 feet and 1/2 inch in 20 feet or more.
- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 feet, 1/4 inch in 10 feet, 1/2 inch in 30 feet.
- F. Maximum Variation of Joint Thickness: 1/8 inch in 3 feet.
- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.
- H. Maximum Variation for Steel Reinforcement:
  1. Plus or minus 1/2 inch when distance from centerline of steel to opposite face of masonry is 8 inches or less.
  2. Plus or minus 1 inch when distance is between 8 and 24 inches.
  3. Plus or minus 1 1/4 inch when distance is greater than 24 inches.
  4. Plus or minus 2 inches from location along face of wall.

### 3.5 FIELD QUALITY CONTROL

- A. Section 01400 - Quality Control: Testing and Inspection Services.
- B. Brick: Test each type in accordance with ASTM C67, 5 random units for each 50,000 units installed.



## UNIT MASONRY SYSTEM

- C. Concrete Masonry Units: Test each type in accordance with ASTM C140.
- D. In the event the tests indicate non-compliance, the materials are automatically rejected.

### 3.6 CLEANING

- A. Remove excess mortar and mortar smears and replace defective mortar as needed, matching adjacent work.
- B. Wash and scrub brick and exposed masonry with stiff fiber or nylon bristled brushes and manufacturer recommended, MPS approved masonry cleaner. Thoroughly rinse with clean water immediately to remove all cleaning solutions, dirt and excess mortar.
- C. Clean glass block surfaces with manufacturer recommended, MPS approved cleaning solution and non-metallic tools to avoid scratching glass. Rinse with clean water.
- D. All masonry cleaners must meet the manufacturer's recommendations and be approved through the MPS submittal process.
- E. Without damaging completed work, provide protective boards at exposed external corners which may be damaged by other construction activities.

**END OF SECTION**



## **SECTION 04500**

### **MASONRY RESTORATION AND CLEANING**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes:
  - 1. Water cleaning of exterior masonry and stone surfaces.
  - 2. Repointing mortar joints, to match existing.
  - 3. Repair and replacement of damaged masonry, to match existing.
  - 4. All work of this Section shall be completed to replicate the original masonry construction in all aspects of appearance, color, texture, bond, patterns, etc.
- B. Related Sections:
  - 1. Section 04100 - Masonry Mortar and Grout.
  - 2. Section 04300 - Unit Masonry System.
  - 3. Section 07900 - Joint Sealers.
  - 4. Section 09900 - Paints and Coatings: Water-blasting of painted surfaces.

##### **1.2 REFERENCES**

- A. American Concrete Institute:
  - 1. ACI 530 - Building Code Requirements for Masonry Structures.
  - 2. ACI 530.1 - Specifications for Masonry Structures.

##### **1.3 SUBMITTALS**

- A. Section 01300 - Submittals: Submittal procedures.
- B. Shop Drawings: Indicate setting details for installation of stone and masonry, and details for shoring, bracing and any temporary or permanent support required by the work.
- C. Samples: Submit four (4) samples of face brick and stone units to illustrate color, texture, and extremes of color range to match existing.



#### **1.4 QUALIFICATIONS**

- A. Installer: Company specializing in performing masonry restoration work of this Section with minimum five (5) years documented experience, and have completed a minimum of five (5) projects of a similar size and scope.
- B. Comply with all local and State requirements, including the Department of Natural Resources (DNR) and Environmental Protection Agency (EPA) requirements for proper use and removal of cleaning materials.
  - 1. The existing paint materials on the masonry surfaces may contain lead, so care must be taken to prevent damaging the paint on these surfaces.
  - 2. Comply with proper procedures for removal and disposal of hazardous substances.
- C. Obtain all permits and make all submittals for local and State approvals.
- D. Follow all local, state and OSHA safety procedures.

#### **1.5 PRE-INSTALLATION CONFERENCE**

- A. Section 01039 - Coordination and Meetings: Pre-installation conferences.
- B. Convene a pre-installation conference one week prior to commencing work of this Section.
- C. Require attendance of parties directly affecting work of this Section.
- D. Review conditions of installation, installation procedures, and coordination with related work.

#### **1.6 DELIVERY, STORAGE AND HANDLING**

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Deliver masonry neatly stacked and tied on pallets. Store clear of ground with adequate waterproof covering.
- C. Store mortar ingredients in manufacturer's packaging, or when delivered loose, with adequate weatherproof covering.



## MASONRY RESTORATION AND CLEANING

- D. Under no circumstances shall any materials be stored on any roofs.

### 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements.
- B. Do not lay masonry, stone work, repoint, caulk, wash down or wet surfaces when temperature may drop below 40 degrees F within 24 hours.

### 1.8 SEQUENCING AND SCHEDULING

- A. Section 01010 - Summary of Work: Work sequence.
- B. Perform and complete masonry restoration work on one elevation at a time, and continue work procedure around building.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Brick: Match existing size and appearance, with approval of Project Inspector. Where applicable, Cream city brick or approved equal high absorption brick.
- B. Mortar: Colored and proportioned to match existing work - refer to Section 04100.
- C. Wall Ties:
  - 1. Rebuilding Work: For new/reused brick and concrete block back-up: hot dip galvanized (after fabrication) to ASTM A153 or approved equal; Dur-O-Wal HB-213 Adjustable Veneer Anchors, or approved equal; co-polymer coated screws.
  - 2. New Work: hot dip galvanized (after fabrication) to ASTM A153 or approved equal; Dur-O-Wal, Ladur-Eye, Truss-Eye, or approved equal.
- D. Reinforcing:
  - 1. Single Wythe Joint Reinforcement: Truss or Ladder type; steel wire hot dip galvanized (after fabrication) to ASTM A153; 3/16 inch epoxy coated, side rods and No. 9 hot dip galvanized



## MASONRY RESTORATION AND CLEANING

- (after fabrication) to ASTM A153 or approved equal wire cross ties.
- 2. Multiple Wythe Joint Reinforcement: Hook-and-Eye or Ladder type; without moisture drip; steel wire hot dip galvanized (after fabrication) to ASTM A153; 3/16 inch epoxy coated side rods and No. 9 hot dip galvanized (after fabrication) to ASTM A153 or approved equal wire cross ties.
- E. Hole Patching: Right Crete Thin Repair, as manufactured by Right/Pointe Company, or approved equal.
- F. Strap Anchors: 7/8" wide, 16 gage thick bent steel with galvanized finish or approved equal.
- G. Wall Tie Anchors: Ramset/Redhead Hammer-Set Heavy Duty Nail Drive Anchor, as manufactured by ITW Brands; 1/4" x 1-1/2", mushroom head.
- H. Expansion Foam: 3/8" Polyethylene Foam.
- I. Flashings:
  - 1. Stainless Steel; ASTM A167, Grade/Type 304, soft temper; 24 gauge; smooth finish.

### 2.2 ACCESSORIES

- A. Water: Clean and potable.
- B. Sealant: Refer to Section 07900.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Verify that surfaces to be restored are acceptable and are ready to receive work of this Section.

### 3.2 PREPARATION

- A. Protect elements surrounding the work of this Section from damage or disfiguration.



## MASONRY RESTORATION AND CLEANING

- B. Protect roof membrane and flashings from damage. Lay 1/2 inch plywood on roof surfaces over full extent of work area and traffic route.
- C. Unless otherwise indicated, the existing roofing membrane and base flashing behind or below existing metal counterflashing **shall not be disturbed.**
- D. Set up rubbish chutes to contain dirt, dust and debris to a minimum. Provide and maintain enclosed lockable dumpsters to be removed from site when full - refer to Section 02072.
- E. Carefully remove and store or securely cover fixtures, fittings, finishing hardware and accessories.
- F. Close off areas, materials, and surfaces not receiving work of this Section to protect from damage. Protect area below cleaning operation and keep free of masonry cleaner and dissolved mortar continuously for duration of cleaning.
- G. Screen roof drains to prevent any debris from washing into drain system.
- H. Remove and cut Work in an MPS approved dustless manner to minimize damage and to provide a means of restoring to original condition. Use of hand-operated saws with diamond blades shall be utilized wherever possible.
- I. Immediately remove stains, efflorescence, or other excess resulting from work of this section.

### 3.3 INSTALLATION

- A. Rebuilding:
  - 1. Cut out damaged and deteriorated masonry and stone with care in a manner to prevent damage to any adjacent remaining materials.
  - 2. Support structure as necessary in advance of cutting out units to maintain stability of remaining materials.
  - 3. Cut away loose or unsound adjoining masonry, stone and mortar to provide firm and solid bearing for new work.
  - 4. Bricks with cracks less than 1/32" may be caulked with sealant.



## MASONRY RESTORATION AND CLEANING

5. Build in new masonry and stone units to match and align with existing, with joints and coursing true and level, faces plumb and in line. Build in openings, accessories and fittings.
6. Brick shall be thoroughly watered down before laid in mortar, when applicable, to prevent excessive moisture absorption out of the mortar. Lay units in full mortar bed, compressing vertical joints tight.
7. Mortar Mix: Colored and proportioned to match existing work - refer to Section 04100.
8. Ensure anchors, ties, reinforcing, stone dowels, and flashings are correctly located and built in.
9. Build in wall reinforcing as required. Provide new flashings at original locations. Lap end joints minimum 6 inches and seal watertight with approved, material compatible, adhesive (Refer to Section 07900)
10. Where new work abuts or aligns with existing, perform a smooth and even transition. Repaired/rebuilt work to match adjacent Work in texture and appearance.
11. Weeps and Vents: Refer to Section 04300.

### B. Repointing:

1. Cut out loose or disintegrated mortar in joints to a 5/8 inch minimum depth. Utilize power-driven saws with diamond/abrasive blades/wheels **only after test cuts determine no damage to masonry units results.** No other mechanical or vibratory tools allowed.
2. Include cutting out of all spalled mortar joints and brick edges. If mortar is unsound at this depth, cut joint deeper until only sound material remains. Fully expose all joint sides - do not exceed existing joint width. Cut away loose or unsound adjoining masonry and mortar to provide firm and solid bearing for new work.
3. Do not damage masonry units.
4. When cutting is complete, remove dust and loose material with water jet.
5. Premoisten joint and apply mortar using hawk and tuck pointing trowel which is narrower than mortar joints being filled. Pack tightly in maximum 1/4 inch layers, to form fully packed joint. Leave joint until it stiffens (about time



## MASONRY RESTORATION AND CLEANING

of so-called initial set), and then tool joint under strong pressure to concave joint.

6. Moist cure for 72 hours.

C. Cleaning Existing Masonry:

1. Verify mortar is fully set and cured.
2. Clean surfaces and remove large particles with wood scrapers and nylon wire brushes.
3. Thoroughly rinse and wash off dirt and mortar crumbs using clean, pressurized water.

D. If required, cover freshly laid and repaired masonry to prevent too rapid drying or damage from inclement weather.

### 3.4 CLEANING

- A. Section 01700 - Project Closeout: Final cleaning.
- B. As work proceeds and on completion, remove excess mortar, smears, droppings, and mortar dust from all windows and sills.
- C. Clean surrounding surfaces.

**END OF SECTION**



Page Intentionally Left Blank



## **SECTION 06100**

### **ROUGH CARPENTRY WORK**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

**A.** Section includes rough carpentry, including non-structural framing and sheathing; wood blocking and nailers in wall openings; wood furring and grounds; concealed wood blocking for support of accessories; electrical backboards; preservative treatment of wood;

**B. Related Sections:**

1. Section 04300 - Unit Masonry: Blocking and nailers.
2. Section 07311 - Asphalt Shingles: Sleepers and decking.
3. Roofing: Curbs, blocking and nailers.
4. Section 09900 - Paints and Coatings: Finish on wood mounting blocks.

##### **1.2 REFERENCES**

**A. American National Standards Institute:**

1. ANSI A135.4 - Basic Hardboard.

**B. American Wood-Preservers' Association:**

1. AWPA C1 - All Timber Products - Preservative Treatment by Pressure Process.

**C. National Forest Products Association (NFPA).**

**D. National Institute of Standards and Technology:**

1. NIST PS 20 - American Softwood Lumber Standard.

##### **1.3 QUALITY ASSURANCE**

**A. Perform Work in accordance with the following:**

1. Lumber Grading Agency: Certified by NIST PS 20 or agency certified by NFPA.

#### **PART 2 PRODUCTS**

##### **2.1 MATERIALS**

**A. Blocking:** NIST PS 20; Douglas Fir species; maximum moisture content of 19 percent.



## ROUGH CARPENTRY WORK

### B. Plywood: APA Rated Sheathing:

1. Roof Sheathing: Structural I, Exterior Grade C-D; 4 x 8 foot sheets; thickness as indicated on Drawings.

## 2.2 ACCESSORIES

### A. Fasteners and Anchors:

1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
2. Anchors:
  - a. Hollow Masonry: Toggle bolt type.
  - b. Solid Masonry or Concrete: Expansion shield and lag bolt type.
  - c. Steel: Bolt or ballistic fastener.

## 2.3 FACTORY WOOD TREATMENT

- A. Wood Preservative: AWPA C1 using water borne preservative with 0.25 percent retainage for above ground applications.
- B. Fire Retardant Treatment: Pressure treatment, AWPA C20 for lumber and AWPA C27 for plywood, Interior type; chemically treated and pressure impregnated; capable of providing a maximum flame spread/fuel contribution/smoke development rating of 25/450, or as dictated by the applicable building code.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
- B. Verify substrate conditions are ready to receive blocking, curbing and framing.

### 3.2 PREPARATION

- A. Coordinate placement of blocking, curbing and framing items.

### 3.3 INSTALLATION

- A. Set members level and plumb, in correct position.



## ROUGH CARPENTRY WORK

- B. Place horizontal members, crown side up.
- C. Space framing and furring maximum 24 inches oc, unless otherwise indicated on Drawings.
- D. Construct members of continuous pieces of longest possible lengths.
- E. Provide backing and blocking for items furnished and installed by Owner (MPS) or Contractor or furnished by Owner (MPS) and installed by Contractor.

### 3.4 SHEATHING

- A. Secure roof sheathing with longer edge (strength axis) perpendicular to framing members and with ends staggered and sheet ends over bearing.
- B. Use sheathing clips between sheets between roof framing members. Install solid edge blocking between sheets.
- C. Install plywood to simple span, or in combination single and two span continuous, or as required by Drawings.
- D. Install electrical panel back board with plywood sheathing material where required. Size back board 12 inches beyond size of electrical panel.

### 3.5 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment.
- B. Brush apply two coats of preservative treatment on wood in contact with cementitious materials and roofing and related metal flashings. Treat site-sawn cuts.
- C. Allow preservative to dry prior to erecting members.

**END OF SECTION**



Page Intentionally Left Blank



## **SECTION 06175**

### **SHOP-FABRICATED WOOD TRUSSES**

#### **PART 1 GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Wood roof trusses.

##### **1.3 DEFINITIONS**

- A. Metal-Plate-Connected Wood Trusses: Planar structural units consisting of metal-plate-connected members fabricated from dimension lumber and cut and assemble before delivery to Project Site.

##### **1.4 ACTION SUBMITTALS**

- A. Shop Drawings: Show fabrication and installation details for trusses.
  - 1. Show location, pitch, span, camber, configuration, and spacing for each type of truss required.
  - 2. Indicate sizes, stress grades, and species of lumber.
  - 3. Indicate locations of permanent bracing required to prevent buckling of individual truss members due to design loads.
  - 4. Indicate locations, sizes, and materials for permanent truss members due to design loads.
  - 5. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.
  - 6. Show splice details and bearing details.



- B. Delegated-Design Submittal: For metal-plate-connected wood trusses indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

## **1.5 INFORMATIONAL SUBMITTALS**

- A. Qualification Data: For metal connector-plate manufacturer, professional engineer, and fabricator.
- B. Material Certificates: For dimension lumber specified to comply with minimum specific gravity. Indicate species and grade selected for each use and specific gravity.
- C. Product Certificates: For metal-plate-connected wood trusses, signed by officer of truss-fabricating firm.
- D. Evaluation Reports: For the following, from ICC-ES:
  - 1. Metal-plate connectors.
  - 2. Metal truss accessories.

## **1.6 QUALITY ASSURANCE**

- A. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.
  - 1. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
  - 2. Engineering Responsibilities: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
- B. Fabricator Qualifications: Shop that participates in a recognized quality-assurance program, complies with quality-control procedures in TPI 1, and involves third-party inspection by an independent testing and inspecting agency acceptable to Architect and authorities having jurisdiction and is certified for



chain of custody by an FSC-accredited certification body.

- C. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

## **1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Handle and store trusses to comply with recommendations in SBCA, BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."
  - 1. Store trusses flat, off of ground, and adequately supported to prevent lateral bending.
  - 2. Protect trusses from weather by covering with waterproof sheeting, securely anchored.
  - 3. Provide for air circulation around stacks and under coverings.
- B. Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damped or defective.

## **PART 2 PRODUCTS**

### **2.1 PERFORMANCE REQUIREMENTS**

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01400 "Quality Requirements," to design metal-plate-connected wood trusses.
- B. Structural Performance: Metal-plate-connected wood trusses shall be capable of withstanding design loads within limits and under conditions indicated. Comply



**Error! Reference source not found.**

with requirements in TPI 1 unless more stringent requirements are specified below.

1. Design Loads: As indicated.
2. Maximum Deflection under Design Loads:
  - a. Roof Trusses: Vertical deflection of 1/240 of span.
- C. Comply with applicable requirements and recommendations of TPI 1, TPI DSB, and SBCA BCSI.
- D. Wood Structural Design Standard: Comply with applicable requirements in AF&PA's "National Design Specifications for Wood Construction: and its "Supplement."

## **2.2 DIMENSION LUMBER**

- A. Lumber: DOC PS 20 and applicable rules of any rules-writing agency certified by the American Lumber Standard Committee (ALSC) Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  1. Factory mark each piece of lumber with grade stamp of grading agency.
  2. For exposed lumber indicated to receive a stained or natural finish, omit grade stamp and provide certificates of grade compliance issued by grading agency.
  3. Provide dressed lumber, S4S.
  4. Provide dry lumber with 15 percent maximum moisture content at time of dressing.
- B. Minimum Chord Size for Roof Trusses: 2 by 6 inches nominal (38 by 140 mm actual) for both top and bottom chords.
- C. Minimum Specific Gravity for Top Chords: 0.50
- D. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in Section 06100 "Rough Carpentry".



### 2.3 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- B. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

### 2.4 METAL CONNECTOR PLATES

- A. General: Fabricate connector plates to comply with TPI 1.
- B. Hot-Dip Galvanized Steel Sheet: ASTM A 653/A 653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G60 (Z180) coating designation; and not less than 0.036 inch (0.9 mm) thick.
  - 1. Use for interior locations unless otherwise indicated.
- C. Stainless-Steel Sheet: ASTM A 666, Type 304, and not less than 0.035 inch (0.88 mm) thick.

### 2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Provide fasteners for use with metal framing anchors that comply with written recommendations of metal framing manufacturer.
  - 2. Where trusses are exposed to weather, in ground contact, made from pressure-preservative treated wood, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M of Type 304 stainless steel.
- B. Nails, Brads, and Staples: ASTM F 1667.



## **2.6 METAL FRAMING ANCHORS AND ACCESSORIES**

- A. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.
  - 1. Use for interior locations unless otherwise indicated.
- C. Stainless-Steel Sheet: ASTM A 666, Type 304.
  - 1. Use for exterior locations and where indicated.
- D. Hurricane Tie-Downs: Per Code.

## **2.7 MISCELLANEOUS MATERIALS**

- A. Galvanizing Repair Paint: SSPC-Paint 20, with dry film containing a minimum of 92 percent zinc dust by weight.

## **2.8 FABRICATION**

- A. Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints.
- B. Fabricate metal connector plates to sizes, configurations, thicknesses, and anchorage details required to withstand design loads for types of joint designs indicated.
- C. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly, with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated.
  - 1. Fabricate wood trusses within manufacturing tolerances in TPI 1.



**Error! Reference source not found.**

- D. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

## **2.9 SOURCE QUALITY CONTROL**

- A. Special Inspections: Owner will engage a qualified special inspector to perform special inspections.
  - 1. Provide special inspector with access to fabricator's documentation of detailed fabrication and quality-control procedures that provide a basis for inspection control of the workmanship and the fabricator's ability to conform to approved construction documents and referenced standards.
  - 2. Provide special inspector with access to places where wood trusses are being fabricated to perform inspections.
- B. Correct deficiencies in Work that special inspections indicate do not comply with the Contract Documents.

## **PART 3 EXECUTION**

### **3.1 INSTALLATION**

- A. Install wood trusses only after supporting construction is in place and is braced and secured.
- B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.
- C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.
- D. Install and brace trusses according to TPI recommendations and as indicated.
- E. Install trusses plumb, square, and true to line and securely fasten to supporting construction.



**Error! Reference source not found.**

- F. Spaces trusses 24 inches (610 mm) o.c. as indicated; adjust and align trusses in location before permanently fastening.
- G. Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in metal framing anchors according to manufacturer's fastening schedules and written instructions.
- H. Securely connect each truss ply required for forming built-up girder trusses.
- I. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.
  - 1. Install bracing to comply with Section 06100 "Rough Carpentry."
  - 2. Install and fasten strongback bracing vertically against vertical web of parallel-chord floor trusses at centers indicated.
- J. Install wood trusses within installation tolerances in TPI 1.
- K. Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.
- L. Replace wood trusses that are damaged or do not comply with requirements.
  - 1. Damaged trusses may be repaired according to truss repair details signed and sealed by the qualified professional engineer responsible for truss design, when approved by Architect.

### **3.2 REPAIRS AND PROTECTION**

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.



**Error! Reference source not found.**

- B. Protect wood trusses from weather. If, despite protection, wood trusses become wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- C. Repair damaged galvanized coatings on exposed surfaces according to ASTM A 780/A and manufacturer's written instructions.

### **3.3 FIELD QUALITY CONTROL**

- A. Special Inspections: Owner will engage a qualified special inspector to perform special inspections to verify that temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.

**END OF SECTION**



Page Intentionally Left Blank



## **SECTION 07311**

### **ASPHALT SHINGLES**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Asphalt shingles.
  - 2. Ice dam membrane.
  - 3. Underlayment.
  - 4. Metal flashings and accessories.
  - 5. Ridge, eave and roof vents.
- B. Related Sections:
  - 1. Section 06100 - Rough Carpentry: Wood blocking, curbing, nailers and cants.
  - 2. Section 07050 - Preparation for Reroofing: Removal of existing shingles and roofing materials.
  - 3. Section 07620 - Sheet Metal Flashing and Trim: Edge and cap flashings.
  - 4. Section 09900 - Painting: Prime and finish painting.
  - 5. Section 16010 - General Electrical Requirements: Electrical items penetrating roof.

##### **1.2 REFERENCES**

- A. ASTM International:
  - 1. ASTM A755 - Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products.
  - 2. ASTM D1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
  - 3. ASTM D3018 - Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules.
  - 4. ASTM D3161 - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).
  - 5. ASTM D4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.



## ASPHALT SHINGLES

6. ASTM D4869 - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing.
  7. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings.
  8. ASTM F1667 - ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- B. National Roofing Contractors Association (NRCA):
1. NRCA - The NRCA Steep Roofing.
- C. Sheet Metal and Air Conditioning Contractors (SMACNA):
1. SMACNA Architectural Sheet Metal Manual.
- D. Underwriters Laboratories, Inc (UL):
1. UL 790 - Tests for Fire Resistance of Roof Covering Materials.

### 1.3 PERFORMANCE REQUIREMENTS

- A. Wind Resistance: ASTM D3161; Class F, passes 110 mph test velocity.

### 1.4 SUBMITTALS

- A. Section 10300 - Submittals: Submittal procedures.
- B. Shop Drawings: Indicate specially configured metal flashings, jointing methods and locations, fastening methods and locations, and installation details.
- C. Product Data: Submit data indicating material characteristics, performance criteria, and limitations.
- D. Samples: Submit two (2) 12 inch X 12 inch samples of each shingle color indicating color range and finish texture/pattern; for color and texture selection.
- E. Manufacturer's Installation Instructions: Submit installation criteria and procedures.
- F. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- G. Inspection Report: Submit report of roof inspection verifying shingles are sealed. Indicate extent of areas



## ASPHALT SHINGLES

that did not properly self-seal and what corrective measures were required.

### 1.5 QUALITY ASSURANCE

- A. Perform all work of this Section in accordance with NRCA Steep Roofing Manual.
- B. Roof Covering Fire Classification: Minimum Class A when tested in accordance with ASTM E108 or UL 790.
- C. Apply label from agency approved by authority having jurisdiction to identify each roof assembly component
- D. Installer: Company specializing in asphalt shingle roofing work with five years minimum experience.

### 1.6 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements: Product requirements.
- B. Do not install ice dam membrane, underlayment or shingles when ambient air temperature is below 45 degrees F.
- C. No openings in roof cover shall be attempted in threatening weather and any openings must be resealed prior to suspension of work for the same day.

### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 - Product Requirements: Product delivery, storage and handling requirements.
- B. Deliver products in manufacturer's original packaging, dry, undamaged, with seals and labels intact.
- C. Do not store materials on new roofing, or load on the roof structure to cause overloading of roof's design capacity.
- D. Store shingles on raised platforms a minimum of six (6) inches off the ground and moisture, and protect with coverings while providing adequate air circulation. Coverings to extend down sides completely. Do not stack bundles of shingles more than 4'-0" high.



## ASPHALT SHINGLES

- E. Stand roll materials on end.

### 1.8 EXTRA STOCK

- A. Section 01700 - Project Closeout: Spare Parts and Maintenance Products.
- B. Provide a minimum of three (3) extra bundles of shingles for Owner's future repairs.

### 1.9 WARRANTY

- A. Section 01700 - Project Closeout: Warranties.
  - 1. Shingle Material Warranty: Lifetime.
  - 2. Installation Warranty: 2 years.
- B. Warranty: Cover damage resulting from failure to resist penetration of water. Repair leaks and replace or repair roofing and flashing exhibiting any defects in either materials or workmanship during the warranty period without charge of any kind.

## PART 2 PRODUCTS

### 2.1 ASPAHLT SHINGLES

- A. Asphalt Shingles: ASTM D 3018, Class A, Type I - Self Sealing; glass fiber mat base, mineral granule surfaced type; 215-245 lbs/100 square feet weight; dimensional type; color as selected by MPS Project Inspector.

### 2.2 COMPONENTS

- A. Ice Dam Membrane: ASTM D1970; self adhering polymer modified bituminous sheet material, slip resistant surface, 40 mils thick, 36 inches wide, with strippable release paper to expose adhesive surface. Approved Manufacturers:
  - 1. Ice and Water Shield, by W.R. Grace.
  - 2. Nordshield Ice and WaterGard Sure Grip, by Nord Bitumi U.S. Inc.
  - 3. WeatherWatch, by GAF Building Products.
- B. Underlayment: ASTM D226, Type 1, No. 15 (2 plies) or Type II, No. 30 (1 ply); unperforated asphalt saturated felts, as recommended for use in waterproofing and built-up roofs; 36 inch wide rolls



## ASPHALT SHINGLES

- C. Ridge Vents:
  - 1. Ridgeline Vent, by Ridgeline Corporation.
  - 2. ShingleVent, by CertainTeed.
  - 3. Include interior weather baffle, starter and end caps.

### 2.3 ACCESSORIES

- A. Nails: ASTM F1667; standard round wire shingle type, hot-dipped galvanized steel type; minimum 0.105 inch diameter shank, minimum 0.375 inch diameter head; of sufficient length to penetrate through roof sheathing. Staples are not allowed.
- B. Plastic Cement: ASTM 4586; Asphalt type with mineral fiber components, free of toxic solvents and asbestos; capable of setting within 24 hours at temperature of approximately 75 degrees F and 50 percent RH.
- C. Lap Cement: Fibrated cutback asphalt type, as recommended for use as an adhesive in the cold application of asphalt roofing or underlayment; free of toxic solvents and asbestos.
- D. Flashing Materials:
  - 1. Sheet Flashings: ASTM A755; prefinished 24 gauge galvanized steel, G90 zinc coating; shop pre-coated with three coat fluoropolymer top coat; color to be selected by MPS Project Inspector.
  - 2. Bituminous Paint: Acid and alkali resistant type; black color.

### 2.4 FABRICATION

- A. Form flashings to profiles indicated on Drawings and to protect roofing materials from physical damage and shed water.
- B. Form eave edge and gable edge flashings to extend minimum 2 inches onto roof and minimum 1/4 inch below sheathing.
- C. Form flashing sections square and accurate to profile, in maximum possible lengths, free from distortion or defects detrimental to appearance or performance.



## ASPHALT SHINGLES

- D. Hem exposed edges of flashings minimum 1/4 inch on underside.
- E. Apply bituminous paint on concealed surfaces of flashings and between dissimilar materials.

### **PART 3 EXECUTION**

#### **3.1 EXAMINATION**

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Verify roof penetrations and plumbing stacks are in place and flashed to deck surface.
- C. Verify roof openings are correctly framed.
- D. Verify deck surfaces are dry, free of ridges, warps, or voids.

#### **3.2 PREPARATION**

- A. Fill knot holes and surface cracks with latex filler at areas of bonded ice dam membrane.
- B. Broom clean deck surfaces under ice dam membrane and underlayment.

#### **3.3 INSTALLATION**

- A. Ice Dam Membrane Installation:
  - 1. Place eave and gable edge metal flashings tight with fascia boards. Weather lap joints minimum 2 inches and seal with plastic cement. Secure flange with nails at maximum 12 inches on center.
  - 2. Install ice dam membrane parallel with eave edge, flush with face of eave edge flashing with edges lapped shingle style and ends lapped and staggered between rows.
  - 3. Extend ice dam membrane minimum 3'-0" up slope beyond interior face of exterior wall.
- B. Underlayment Installation:



## ASPHALT SHINGLES

1. Slopes 4 in 12 or Greater: Place underlayment over substrate not covered by ice dam membrane, with ends and edges weather-lapped minimum 6 inches. Stagger end laps of each consecutive layer. Nail underlayment to hold in place.
  2. Slopes Less than 4 in 12:
    - a. Place 19 inch wide ply of underlayment over substrate not covered by ice dam membrane, with ends and edges weather-lapped minimum 6 inches. Nail underlayment to hold in place.
    - b. Place second ply of underlayment over first layer, lapping first layer 19 inches. Lap ends minimum 2 inches. Stagger end laps of each consecutive layer. Nail underlayment to hold in place.
  3. Weather lap and seal items projecting through or mounted on roof with plastic cement.
- C. Metal Flashing and Accessories Installation:
1. Weather lap joints minimum 2 inches and seal watertight with plastic cement.
  2. Secure in place with nails. Conceal flashings.
  3. Flash and seal work weather tight, projecting through or mounted on roofing with plastic cement.
- D. Asphalt Shingles Installation:
1. Place shingles in straight coursing pattern with minimum 5 inch weather exposure to produce double thickness over entire roof area. Provide double course of shingles at eaves.
  2. Project first course of shingles 3/4 inch beyond face of fascia boards.
  3. Extend shingles 1/2 inch beyond face of gable edge fascia boards.
  4. Lay shingles in plastic cement at valleys, edges, ridges and areas where shingles lay on flashing.
  5. Cap hips and ridges with individual shingles, maintaining 5 inch minimum weather exposure. Place to avoid exposed nails.
  6. Install ridge vents centered over ridge.
  7. Coordinate installation of roof mounted components or items projecting through roof with weather tight placement of counterflashings. Shingles to fit neatly around pipes, ventilators, and at vertical surfaces.



## ASPHALT SHINGLES

8. Complete installation to provide weather tight service.

### 3.4 FIELD QUALITY CONTROL

- A. Section 01700 - Project Closeout: Field inspecting, testing, adjusting, and balancing.
- B. Before Substantial Completion, inspect roof to verify shingles self-sealed from exposure to prevent wind uplift. Apply plastic cement to secure shingles that failed to seal. Report results of inspection and required corrective measures.

### 3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01700 - Project Closeout: Protecting installed construction.
- B. Do not permit traffic over finished roof surface.

**END OF SECTION**



## **SECTION 07464**

### **COMPOSITION SIDING**

#### **REVISED PER ADDENDUM 1**

## **PART 1 GENERAL**

### **1.1 SUMMARY**

- A. Section includes:
  - 1. Fiber cement cladding.
  - 2. Fiber cement soffit panels.
  - 3. Fiber cement trim and fascia.
  - 4. Sealant.
  - 5. Flashing.

### **1.2 COORDINATION**

- A. Coordinate installation with flashings and other adjoining construction to ensure proper sequencing for weathertight performance.
- B. Coordinate with finish coat to be applied over primed cladding, soffits, and trim. Comply with coating manufacturer's written requirements for substrate primer.

### **1.3 ACTION SUBMITTALS**

- A. Product Data:
  - 1. Fiber cement cladding.
  - 2. Fiber cement soffit panels.
  - 3. Fiber cement trim and fascia boards.
  - 4. Sealant.
  - 5. Flashing.
- B. Sustainable Design Submittals:



- C. Shop Drawings:
  - 1. Included details of construction and installation.
- D. Samples: For each exposed product and texture specified, 12 inches long.

#### **1.4 INFORMATIONALL SUBMITTALS**

- A. Manufacturer Certificates: Signed by manufacturer certifying that fiber cement cladding complies with requirements specified in "Performance Requirements" Article.
  - 1. Submit evidence of meeting performance requirements.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for fiber cement wood cladding.
- C. Research/Evaluation Reports: For each type of fiber cement cladding required, from ICC-ES.
- D. Sample Warranty: For warranty (Reference 1.10).

#### **1.5 CLOSEOUT SUBMITTALS**

- A. Maintenance Data: For each type of product.

#### **1.6 MAINTENANCE MATERIAL SUBMITTALS**

- A. Furnish extra materials that match products installed in packaging acceptable to cladding manufacturer for storage with labels clearly describing contents.
  - 1. Furnish full lengths of fiber cement cladding, soffit, and trim and fascia including related accessories, in a quantity equal to 2 percent of amount installed.

#### **1.7 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in cement fiber cladding and trim installation work with five years minimum experience.



## **1.8 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.
- B. Store products in manufacturer's labeled packaging until ready for installation. Protect from damage.
- C. Store products off the ground, on a flat surface, and under a roof or separate waterproof covering.

## **1.9 FIELD CONDITIONS**

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's limits.

## **1.10 WARRANTY**

- A. Manufacturer's Standard Warranty

# **PART 2 PRODUCTS**

## **2.1 MANUFACTURERS**

- A. Manufacturer: Subject to compliance with requirements:
  - 1. JamesHardie lap siding, soffit panels, and trim boards
  - 2. Or equivalent manufacturer
- B. Source Limitations: Obtain products, including related accessories, from single source from single manufacturer.

## **2.2 FIBER CEMENT CLADDING**

- A. Fiber Cement Lap Siding:
  - 1. Description: Exterior grade fiber cement siding: embossed texture; edges beveled and sealed for moisture resistance; acrylic primed for painting.



**Error! Reference source not found.**

2. Fire Rating: 1 hour per ASTM E119; ASTM E 84 Class C flamespread.
3. Texture: Embossed rough-sawn Cedar.
4. Nominal Thickness: 3/8 inch (9.5mm).
5. Width: 16 inches (406 mm) nominal.
6. Length: 16 feet (4877 mm).

## **2.3 SOFFIT**

### **A. Fiber Cement Lap Panels:**

1. Description: Exterior grade fiber cement siding: acrylic primed for painting; no grooves;
2. Fire Rating: 1 hour per ASTM E119; ASTM E 84 flamespread.
3. Finish: Embossed rough-sawn Cedar.
4. Type: Vented, Cut-to-Width Soffit Panel.
5. Thickness: 0.315 inch
6. Width: 24 inches nominal
7. Length: 12 feet

## **2.4 TRIM AND FASCIA**

### **A. Fiber Cement Trim and Fascia:**

1. Description: Exterior grade fiber cement siding: acrylic primed for painting; no grooves;
2. Fire Rating: 1 hour per ASTM E119; ASTM E 84 flamespread.
3. Finish: Embossed rough-sawn Cedar.
4. Thickness: 0.75 inch
5. Width: 3.5 inch, 5.5 inch, 7.25 inch, and 11.25 inch



6. Length: 12 feet

## **2.5 ACCESSORIES**

- A. Fasteners: ASTM A153, hot-dip galvanized or stainless steel nails with 0.113 inch diameter shank and 0.27 inch diameter head, long enough to achieve 1 1-1/2 inch penetration into structural sheathing and framing.
- B. Sealant: ASTM C290, minimum Class 25 sealant.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Verify location of concealed framing for support and anchorage of fiber cement cladding, soffit, and trim and fascia.
- B. Verify that substrate has been installed to permit installation of fiber cement cladding, soffit, and trim and fascia.

### **3.2 PREPARATION**

- A. Prepare substrates using methods recommended in writing by the cladding manufacturer.
- B. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected.
- C. Commencement of installation constitutes acceptance of conditions.

### **3.3 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
  - 1. Install in accordance with conditions stated in ICC-ES-ESR-1301.
  - 2. Properly space joints to allow for equilibration.



**Error! Reference source not found.**

- B. Do not install to green wood or crooked structural framing. Do not install over rain soaked or buckled materials. Do not install if excessive moisture is present in the interior, including that from curing concrete and plaster.
- C. Do not cut cladding to fabricate trim; use trim components.
- D. After installation, seal and flash joints except the overlapping horizontal lap joints. Seal around penetrations. Paint exposed cut edges.
- E. Paint all cladding, soffit, and trim and fascia per section 09900 Paint and Coatings

### **3.4 ADJUSTING AND CLEANING**

- A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.
- B. Clean finished surfaces according to manufacturer's instructions written instructions and maintain in a clean condition during construction.

### **3.5 PROTECTION**

- A. Protect installed products until completion of project.

Touch-up, repair or replace damaged products.

**END OF SECTION**



## **SECTION 07620**

### **SHEET METAL FLASHING AND TRIM**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes:
  - 1. Flashings and counterflashings.
  - 2. Gutters and downspouts.
- B. Related Sections:
  - 1. Section 04300 - Unit Masonry System Installation of reglets.
  - 2. Section 06100 - Rough Carpentry Work: Wood blocking, curbing, nailers and cants.
  - 3. Section 07311 - Asphalt Shingles.
  - 4. Section 09900 - Painting: Prime and finish painting.

##### **1.2 REFERENCES**

- A. ASTM International:
  - 1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - 2. ASTM A755 - Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products.
- B. NRCA (National Roofing Contractors Association).
  - 1. Roofing and Waterproofing Manual.
- C. SMACNA (Sheet Metal and Air Conditioning Contractors).
  - 1. Architectural Sheet Metal Manual.

##### **1.3 SYSTEM DESCRIPTION**

- A. Work of this Section is to physically protect masonry and membrane roofing, base flashings, and other areas from damage that would permit water leakage to building interior.

##### **1.4 WSUBMITTALS**



## SHEET METAL FLASHING AND TRIM

- A. Section 01300 - Submittals: Submittal requirements.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Product Data: Submit data on manufactured components metal types, finishes, and characteristics.
- D. Samples: Submit two samples 4 inch X 4 inch in size illustrating metal finish color.

### 1.5 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA and NRCA standard details and requirements.
- B. Fabricator and Installer: Company specializing in sheet metal flashing work with five years minimum experience.
- C. Gutter and Downspout Components: Conform to applicable code for size and method of rain water discharge.

### 1.6 STORAGE AND HANDLING

- A. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation.
- B. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

### 1.7 COORDINATION

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Coordinate with Work of Section 04300 for installing recessed flashing reglets.

### 1.8 WARRANTY

- A. Section 01700 - Project Closeout: Warranty requirements.
- B. Warranty: Cover all flashing and sheet metal work of this Section for a period of five years.



## **PART 2 PRODUCTS**

### **2.1 SHEET MATERIALS**

- A. Pre-Finished Aluminum Sheet: **ASTM B209**; alloy and temper as required for application and finish; **0.040** inch thick; finish shop pre-coated with polyester three coat fluoropolymer top coat; color to be selected by Owner from manufacturer's standard colors.

### **2.2 GUTTER AND DOWNSPOUT COMPONENTS**

- A. Gutters:  
  
5" Type K Gutter prefinished aluminum. Color to be selected by owner.
- B. Downspouts: ~~Profile to match existing.~~  
  
4" X 3" prefinished aluminum. Color to be selected by owner.
- C. Anchorage Devices: per SMACNA requirements.
- D. Supports: Bracket straps.
- E. Accessories: End caps, downspout outlets and headers profiled to suit gutters and downspouts.

### **2.3 FABRICATION**

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats and starter strips of same material as sheet, interlockable with sheet.
- C. Form pieces in longest practical lengths.
- D. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity and seal with sealant.
- F. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.



## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Verify membrane termination and base flashings are in place, sealed and secured.

### **3.2 PREPARATION**

- A. Install starter, edge strips and cleats before starting installation.

### **3.3 INSTALLATION**

- A. Conform to drawing details of SMACNA/NRCA Manual.
- B. Fascia and roof edges: Extend fascia and edges down over continuous gutter back. Fasten edge strip or cleats at 8" centers.
- C. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Inspector.
- D. Lap and seal all joints. Sections shall be uniform, accurately fitted so as to line up straight and true and rigidly secured in place, without kinks or buckles.
- E. Apply plastic cement compound between metal flashings and felt flashings.
- F. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- G. Seal metal joints watertight.
- H. Remove protective strippable film from pre-coated materials immediately following installation.

### **3.4 GUTTER AND DOWNSPOUT INSTALLATION**

- A. Join lengths with seams sealed and waterproof.
- B. Downspouts: Face all vertical seams away from building.
- C. Flash and seal gutters to downspouts and accessories.



SHEET METAL FLASHING AND TRIM

- D. Slope gutters to downspouts.
- E. Connect downspouts to existing cast iron downspout leaders/storm sewer. Grout/seal connection watertight.

**3.5 SCHEDULE**

- A. Cleats: 22 gauge.
- B. Aluminum .040" mill finished.

**END OF SECTION**



Page Intentionally Left Blank



## **SECTION 08121**

### **STANDARD STEEL FRAMES**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes fire rated, non-rated, thermally insulated steel frames.
  - 1. Provide frames for interior and exterior glazed lights.
- B. Related Sections:
  - 1. Section 04100 - Mortar: Mortar fill of metal frames at interior and exterior.
  - 2. Section 04300 - Unit Masonry System: Placement of anchors into wall construction.
  - 3. Section 08131 - Standard Steel Doors.
  - 4. Section 08150 - Fiberglass Reinforced Polyester Doors and Frames.
  - 5. Section 08712 - Door Hardware: Hardware and weatherstripping.
  - 6. Section 08800 - Glass and Glazing.
  - 7. Section 09900 - Painting: Field painting of frames.

##### **1.2 REFERENCES**

- A. American National Standards Institute:
  - 1. ANSI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
- B. ASTM International:
  - 1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. National Fire Protection Association:
  - 1. NFPA 80 - Standard for Fire Doors, Fire Windows.
  - 2. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.
- D. Underwriters Laboratories Inc.:
  - 1. UL 10B - Fire Tests of Door Assemblies.
  - 2. UL 10C - Positive Pressure Fire Tests of Door Assemblies.



## STANDARD STEEL FRAMES

### 3. UL 1784 - Air Leakage Tests of Door Assemblies.

#### 1.3 SUBMITTALS

- A. Section 01300 - Submittals: Submittal procedures.
- B. Shop Drawings: Indicate frame elevations, reinforcement, anchor types and spacing, location of cut-outs for hardware, and finish.
- C. Product Data: Submit frame configuration and finishes.
- D. Manufacturer's Installation Instructions: Submit special installation instructions.

#### 1.4 QUALITY ASSURANCE

- A. Conform to requirements of ANSI A250.8.
- B. Fire Rated Frame Construction: Conform to NFPA 252.
- C. Attach label from agency approved by authority having jurisdiction to identify each fire rated door frame.

#### 1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Accept frames on site in manufacturer's packaging. Inspect for damage.
- C. Break seal on-site to permit ventilation.

#### 1.7 COORDINATION

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Coordinate Work with frame opening construction, door, and hardware installation.



## STANDARD STEEL FRAMES

- C. Sequence installation to accommodate required door hardware electric wire connections.

### **PART 2 PRODUCTS**

#### **2.1 STEEL FRAMES**

- A. Exterior Frames: 14 gage thick material; minimum four inches wide.

#### **2.2 ACCESSORIES**

- A. Removable Stops: Rolled steel channel shape, mitered corners; prepared for countersink style tamper proof screws.
- B. Bituminous Coating: Non-asbestos fibered asphalt emulsion.
- C. Primer: ANSI A250.10 rust inhibitive type.
- D. Silencers: Resilient rubber fitted into drilled hole.
- E. Weatherstripping: Specified in Section 08712.
- F. Jamb Anchors: Furnish jamb anchors as required to secure jamb to adjacent construction, formed of not less than 16 gage galvanized steel.
  - 1. Masonry Construction: Adjustable, flat or corrugated or perforated, T-shaped to suit frame size with leg not less than 2" wide by 10" long. Provide at least three (3) anchors per jamb.
  - 2. Stud Partitions: Insert type with notched clip to engage metal stud, welded to back of frames. Provide at least four (4) anchors per jamb.

#### **2.3 FABRICATION**

- A. Fabricate frames as welded unit.
- B. Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.
- C. Fabricate frames for masonry wall coursing with 4 inch head members where required.
- D. Prepare frames for silencers.



## STANDARD STEEL FRAMES

1. Provide three (3) single silencers for single doors and mullions of double doors on strike side.
  2. Provide two (2) single silencers on frame head at double doors without mullions.
- E. Configure exterior frames with special profile to receive recessed weatherstripping where specified in Section 08712.
- F. Attach fire rated label to each fire rated frame.

### 2.4 SHOP FINISHING

- A. Steel Sheet: Galvanized to ASTM A653 A40.
- B. Primer: Baked.
- C. Coat inside of frame profile with bituminous coating to a thickness of 1/16 inch. Coating may be shop or field applied, specify accordingly.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Verify opening sizes and tolerances are acceptable.

### 3.2 INSTALLATION

- A. Install frames in accordance with ANSI A250.8.
- B. Coordinate with masonry wall construction for anchor placement.
- C. Grout both interior and exterior frames in masonry walls solid.
- D. Coordinate installation of glass and glazing specified in Section 08800.
- E. Coordinate installation of frames with installation of hardware specified in Section 08712 and doors in Section 08131, 08150, and 08210.



### 3.3 ERECTION TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.

**END OF SECTION**



Page Intentionally Left Blank



## **SECTION 08131**

### **STANDARD STEEL DOORS**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes non-rated, fire rated, thermally insulated, and acoustic steel doors, panels and door louvers.
- B. Related Sections:
  - 1. Section 03300 - Cast-in Place Concrete: Placement of anchors into wall construction.
  - 2. Section 08121 - Standard Steel Frames.
  - 3. Section 08712 - Door Hardware: Hardware.
  - 4. Section 08800 - Glazing: Door lites.
  - 5. Section 09900 - Painting: Field finishing of doors.

##### **1.2 REFERENCES**

- A. American National Standards Institute:
  - 1. ANSI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
- B. ASTM International:
  - 1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. Hollow Metal Manufacturers Association:
  - 1. HMMA 810 - Hollow Metal Doors.
- D. National Fire Protection Association:
  - 1. NFPA 80 - Standard for Fire Doors, Fire Windows.
  - 2. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.
  - 3. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.
- E. Steel Door Institute:
  - 1. SDI 108 - Recommended Selection and Usage Guide for Standard Steel Doors.



## STANDARD STEEL DOORS

- F. Underwriters Laboratories Inc.:
  - 1. UL 10B - Fire Tests of Door Assemblies.
  - 2. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
  - 3. UL 723 - Tests for Surface Burning Characteristics of Building Materials.
  - 4. UL 1784 - Air Leakage Tests of Door Assemblies.

### 1.3 SUBMITTALS

- A. Section 01300 - Submittals: Submittal procedures.
- B. Shop Drawings: Indicate door elevations, internal reinforcement, closure method, and cut-outs for glazing, louvers, and finishes.
- C. Product Data: Submit door configurations, location of cut-outs for hardware reinforcement.
- D. Manufacturer's Installation Instructions: Submit special installation instructions.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

### 1.4 QUALITY ASSURANCE

- A. Conform to requirements of ANSI A250.8
- B. Fire Rated Door and Panel Construction: Conform to NFPA 252.
- C. Fire Rated Stair Doors: Rate of rise of 450 degrees F across door thickness.
- D. Installed Fire Rated Door and Panel Assembly: Conform to NFPA 80 for fire rated class as indicated on Drawings.
- E. Attach label from agency approved by authority having jurisdiction to identify each fire rated door.



### **1.5 QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

### **1.6 DELIVERY, STORAGE AND PROTECTION**

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Accept doors on site in manufacturer's packaging. Inspect for damage.
- C. Break seal on site to permit ventilation.

### **1.7 COORDINATION**

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Coordinate Work with door opening construction, door frame, and door hardware installation.
- C. Sequence installation to accommodate required door hardware electric wire connections

## **PART 2 PRODUCTS**

### **2.1 STANDARD STEEL DOORS**

- A. Exterior Doors: SDI Level 3; Extra Heavy-duty, nominal 16 gage thick face sheets, full flush design.

### **2.2 COMPONENTS**

- A. Face: Steel sheet in accordance with ANSI A250.
- B. End Closure: Channel, 0.04 inches thick, flush.
- C. Core: Polystyrene foam.

### **2.3 ACCESSORIES**

- A. Removable Stops: Rolled steel, channel shape, mitered corners; prepared for countersink style tamper proof screws.



## STANDARD STEEL DOORS

- B. Primer: ANSI A250.10 rust inhibitive type.
- C. Weatherstripping: Specified in Section 08712.

### 2.4 FABRICATION

- A. Fabricate doors with hardware reinforcement welded in place.
- B. Attach astragal to inactive leaf of pairs of doors.
- C. Configure exterior doors with edge profile to receive recessed weatherstripping where specified.
- D. Attach fire rated label to each door.

### 2.5 SHOP FINISHING

- A. Steel Sheet: Galvanized to ASTM A653 A40.
- B. Primer: Baked.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Verify opening sizes and tolerances are acceptable

### 3.2 INSTALLATION

- A. Install doors in accordance with ANSI A250.8.
- B. Install door louvers, plumb and level.
- C. Coordinate installation of glass and glazing specified in Section 08800.
- D. Coordinate installation of doors with installation of frames specified in Section 08121 and hardware specified in Section 08710.
- E. Touch-up damaged shop finishes.



## STANDARD STEEL DOORS

### 3.3 ERECTION TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

### 3.4 ADJUSTING

- A. Section 01700 - Project Closeout: Requirements for adjusting.
- B. Adjust door for smooth and balanced door movement.

**END OF SECTION**



Page Intentionally Left Blank



## **SECTION 08360**

### **SECTIONAL OVERHEAD DOORS**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes electric overhead sectional door and operating hardware,
- B. Related Sections:
  - 1. Section 03300 - Cast-In-Place Concrete: Prepared opening in concrete. Execution requirements for placement of anchors in concrete wall construction.
  - 2. Section 04310 - Unit Masonry Systems: Prepared opening in masonry. Execution requirements for placement of anchors in masonry wall construction.
  - 3. Section 06100 - Rough Carpentry Work: Rough wood framing and blocking for door opening.
  - 4. Section 08712 - Door Hardware: Cylinder locks.
  - 5. Section 09900 - Paints and Coatings: Field paint finish.
  - 6. Section 16010 - General Electrical Provisions: Conduit from control stations to door operator and electrical service to disconnect located near door operator.

##### **1.2 REFERENCES**

- A. American National Standards Institute:
  - 1. ANSI A135.4 - Basic Hardboard.
- B. ASTM International:
  - 1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - 2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
  - 3. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- C. National Electrical Manufacturers Association:



## SECTIONAL OVERHEAD DOORS

### 1. NEMA MG 1 - Motors and Generators.

#### 1.3 SYSTEM DESCRIPTION

- A. Panels: Flush steel, embossed, insulated
- B. Lift Type: High lift operating style with track and hardware.
- C. Operation: **electric**.
- D. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code.

#### 1.4 SUBMITTALS

- A. Section 01300 - Submittals: Submittal procedures.
- B. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
- C. Product Data: Submit component construction, anchorage method, and hardware.
- D. Manufacturer's Installation Instructions: Submit special procedures, and perimeter conditions requiring special attention.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Section 01700 - Project Closeout: Closeout procedures.
- B. Operation and Maintenance Data:
  - 1. Include electrical control adjustment recommendations.
  - 2. Include data for motor and transmission, shaft and gearing, lubrication frequency, periodic adjustments required, and spare part sources.

#### 1.6 QUALITY ASSURANCE

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc., as suitable for purpose specified.



## SECTIONAL OVERHEAD DOORS

- B. Surface Burning Characteristics:
  - 1. Foam Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
- C. Apply label from agency approved by authority having jurisdiction to identify each foam plastic insulation board.

### 1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

### 1.8 WARRANTY

- A. Section 01700 - Project Closeout: Product warranties and product bonds.
- B. Furnish six-year manufacturer warranty for electric operating equipment.

## PART 2 PRODUCTS

### 2.1 SECTIONAL OVERHEAD DOORS

- A. Product Description: Steel overhead sectional doors, **electric** operation, stock configuration and hardware.
  - 1. Door Nominal Thickness: 2 inches thick.
  - 2. Flush Steel Panel Construction: Outer steel sheet of minimum 0.058 inch thick, v-grooved profile; inner steel sheet of minimum 0.058 inch thick, flat profile; core reinforcement of sheet steel roll formed to channel or Z-shape, rabbeted weather joints at meeting rails; insulated.

### 2.2 COMPONENTS

- A. Sheet Steel: ASTM A653 galvanized to G90, pre-coated with manufacturer's standard thermosetting finish, stucco embossed surface.



## SECTIONAL OVERHEAD DOORS

- B. Insulation: Rigid polystyrene or polyurethane, nominal R-Value of 6, bonded to facing.
- C. Metal Primer Paint: Zinc chromate type.
- D. Glazing: Polycarbonate; set in place with security glazing stops.

### 2.3 ACCESSORIES

- A. Track: Rolled galvanized steel, 0.120 inch thick; 3 inch wide, continuous one piece for each side; galvanized steel mounting brackets minimum 1/4 inch
- B. Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of stainless steel; floating hardened steel bearing rollers, located at top and bottom of each panel, each side.
- C. Lift Mechanism: Torsion spring on cross head shaft, with braided stainless steel lifting cables. Manual operation to require maximum exertion of 25 lbs force.
- D. Sill Weather-stripping: Resilient neoprene strip, one piece; fitted to bottom of door panel, full length contact.
- E. Jamb Weather-stripping: Roll formed steel section full height of jamb, fitted with resilient weather-stripping, placed in moderate contact with door panels.
- F. Head Weather-stripping: EPDM rubber seal, one piece full length.
- G. Panel Joint Weather-stripping: Neoprene foam seal, one piece full length.
- H. Lock: Inside center mounted, adjustable keeper, spring activated latch bar with feature to retain in locked or retracted position; interior and exterior handle; lock keyed with Section 08712.
- I. Overhead door push button operator.
- J. Two remote control operators.

### 2.4 ELECTRICAL CHARACTERISTICS AND COMPONENTS



## SECTIONAL OVERHEAD DOORS

- A. Electrical Characteristics: In accordance with Section 16010 and the following:
  - 1. 1/2 hp; manually operable in case of power failure; transit speed of nominal 12 inches per second.
  - 2. 115 volts, single phase, 60 Hz.
- B. Motor Type: NEMA MG1.
- C. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated.
- D. Disconnect Switch: Factory mount disconnect switch on equipment.
- E. Electric Operator: Center mounted on cross head shaft or draw bar assembly, adjustable safety friction clutch; brake system actuated by independent voltage solenoid controlled by motor starter; enclosed gear driven limit switch; enclosed magnetic cross line reversing starter; mounting brackets and hardware. Provide means to disengage motor to allow manual operation in event of power failure.
- F. Control Station: Standard three button (open-close-stop) momentary pressure type, control for each electric operator; 24 volt circuit, surface mounted. Include key operated switch located at inside door jamb.
- G. Safety Edge: At bottom of door panel, full width; electro-mechanical sensitized type, wired to reverse door upon striking object; hollow neoprene covered to provide weatherstrip seal.
- H. Photoelectric Sensor: Furnish system which detects obstruction and reverses door without requiring door to contact obstruction.

### **PART 3 EXECUTION**

#### **3.1 EXAMINATION**

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.



## SECTIONAL OVERHEAD DOORS

- B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.
- C. Verify electric power is available and of correct characteristics.

### 3.2 PREPARATION

- A. Prepare opening to permit correct installation of door unit to perimeter air and vapor retarder seal.
- B. Apply primer to wood frame.

### 3.3 INSTALLATION

- A. Anchor assembly to wall construction and building framing without distortion or stress.
- B. Securely brace door tracks suspended from structure. Secure tracks to structural members only.
- C. Fit and align door assembly including hardware.
- D. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.
- E. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07900.
- F. Install perimeter weather-stripping.

### 3.4 ERECTION TOLERANCES

- A. Maximum Variation from Plumb: 1/16 inch.
- B. Maximum Variation from Level: 1/16 inch.
- C. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 foot straight edge.
- D. Maintain dimensional tolerances and alignment with adjacent work.

### 3.5 ADJUSTING



## SECTIONAL OVERHEAD DOORS

- A. Section 01700 - Project Closeout: Testing, adjusting, and balancing.
- B. Adjust door assembly to smooth operation and in full contact with weather-stripping.

### **3.6 CLEANING**

- A. Section 01700 - Project Closeout: Final cleaning.
- B. Clean doors, frames and glazing.
- C. Remove temporary labels and visible markings.

### **3.7 PROTECTION OF INSTALLED CONSTRUCTION**

- A. Section 01700 - Project Closeout: Protecting installed construction.
- B. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

**END OF SECTION**



Page Intentionally Left Blank



## **SECTION 08712**

### **DOOR HARDWARE**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Finish Hardware for hollow steel doors.
  - 2. Door gaskets, including weatherstripping and seals, and thresholds.
  - 3. Cabinet locks.
  - 4. Include hardware required for doors, and the like shown on drawings, but not necessarily scheduled. If not scheduled, furnish hardware like that specified for similar location as far as practical.
- B. Related Work:
  - 1. Section 08131 - Standard Steel Doors and Frames.
  - 2. Section 08331 - Overhead Coiling Doors.

##### **1.2 REFERENCES**

- A. American National Standards Institute:
  - 1. ANSI A156 - Complete Set of 24 BHMA Standards (A156 Series).
- B. National Fire Protection Association:
  - 1. NFPA 80 - Standard for Fire Doors and Windows.
- C. Underwriter's Laboratory:
  - 1. UL 10B - Fire Test of Door Assemblies.
  - 2. UL 305 - Panic Hardware.
  - 3. UL - Building Materials Directory.

##### **1.3 SUBMITTALS**

- A. Section 01300 - Submittals: Submittal requirements.
  - 1. Hardware schedule, including manufacturer's parts lists, templates, and installation instructions.
  - 2. Indicate locations and mounting heights of each type of hardware specified.



## DOOR HARDWARE

- B. Manufacturer's Installation Instructions: Submit instructions, special procedures, and perimeter conditions requiring special attention.

### 1.4 CLOSEOUT SUBMITTALS

- A. Section 01700 - Contract Closeout: Closeout procedures.
- B. Project Record Documents: Record actual locations of installed cylinders and their master key code.
- C. Operation and Maintenance Data: Submit data on operating hardware.
- D. Provide maintenance tools and accessories supplied by hardware component manufacturer.
- E. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with the following requirements:
  - 1. ANSI A156 Series.
  - 2. NFPA 80.
  - 3. UL 305.

### 1.6 QUALIFICATIONS

- A. Manufacturers: Companies specializing in manufacturing door hardware with minimum five years experience.
- B. Hardware Supplier: Company specializing in supplying commercial door hardware with three years experience, and approved by primary hardware manufacturer.
- C. Products Requiring Electrical Connections: Listed and classified by Underwriter's Laboratories, Inc., as suitable for purpose specified and indicated.

### 1.7 PRE-INSTALLATION MEETINGS

- A. Section 01039 - Coordination and Meetings: Pre-installation meetings.



## DOOR HARDWARE

- B. Convene minimum one (1) week prior to commencing work of this Section.
- C. Include persons involved with the installation of doors, frames and hardware.

### 1.8 COORDINATION

- A. Section 01039 - Coordination and Meetings: Project coordination requirements.
- B. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
  - 1. Provide templates or actual hardware as required to ensure proper preparation of doors and frames.
- C. Sequence installation to accommodate required utility connections.

### 1.9 REGULATORY REQUIREMENTS

- A. Conform to applicable codes for requirements applicable to the work specified herein.
- B. Conform to appropriate sections of NFPA 10B with regard to applicable requirements for fire rated doors and frames.

### 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Delivery, storage and handling.
- B. Package hardware items individually; label and identify package with door opening code to match hardware schedule.
- C. Deliver keys to Owner by security shipment direct from hardware supplier.
- D. Protect hardware from theft by cataloging and storing in secure area.



### **1.11 WARRANTY**

- A. Section 01700 - Contract Closeout: Warranty requirements.
- B. Warranty: Provide manufacturer's warranties as follows:
  - 1. Locksets: Minimum five (5) year warranty.
  - 2. Door Closers: Minimum ten (10) year warranty.
  - 3. Exit Devices: Minimum three (3) year warranty.

## **PART 2 PRODUCTS**

### **2.1 COMPONENTS**

- A. General Hardware Requirements: Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational doors.
  - 1. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
  - 2. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
  - 3. Fasteners: Furnish all necessary screws, nuts, bolts, expansion shields, etc., as recommended by hardware manufacturer and as required to secure hardware.
  - 4. Finish: Match hardware item being fastened.
  - 5. Fire Ratings: Provide hardware with UL listings for type of application involved.
  - 6. Electrical Devices: Make provisions and coordinate requirements for electrical devices and connections for hardware.
- B. All hardware shall be as specified. No substitutions will be considered except as specified herein.
- C. All custom casework and finish carpentry locksets specified in Section 06410 - Custom Casework shall match this Section.

### **2.2 LOCKSETS**

- A. Approved Manufacturer: Schlage ND Series, Rhodes Lever Design, no substitutions allowed.



## DOOR HARDWARE

- B. Latches: ND10S.
- C. Storeroom: ND96 VandlGuard.
- D. Deadbolt: B660P.
  - 1. For Primus keyed cylinders, use B760P.
- E. Verify correct key system type with MPS Lock Shop prior to proceeding.
- F. Backset shall be 2-3/4 inch for all locks, latches and deadbolts. Doors with sound seals to have 5 inch backset. Strikes shall be box type with wide enough lip projection to protect door frame but not to exceed 3/16 inch beyond face of frame and lipped to fit the details.
- G. All locks and cylinders shall have not less than six (6) pins.
- H. Furnish Schlage master-keyed rim or mortise cylinders as required for exterior, overhead and roll-up doors.
- I. Locks having bolts or latches engaging with mullions or jambs of hollow metal construction shall have strikes with curved lips to fit the details.

### 2.3 BUTTS

- A. Approved Manufacturers:
  - 1. Ives.
  - 2. PBB.
  - 3. Hager.
  - 4. McKinney.
  - 5. Stanley.
- B. Ball bearing non-rising loose pin, flat button tip, unless specified to the contrary. Exterior door butts to have non-removable pins.
- C. Butts to be non-ferrous for exterior, toilet, bath, locker and other wet areas.
- D. Provide 1 1/2 pair BB Butts on all doors up to 7'-2" and 2 pair BB Butts on doors over 7'-2" and dutch doors.
- E. Butt size requirements:
  - 1. Interior doors up to 37" wide: 4-1/2 x 4-1/2.



## DOOR HARDWARE

2. Interior doors over 37" wide: 5 x 4-1/2.
3. Exterior doors: 4-1/2 x 4-1/2.

- F. Door butt legend (unless otherwise noted in Schedule):
1. Exterior doors: SL24HD continuous hinge (swing clear where required).

### 2.4 CONTINUOUS HINGES

- A. Approved Manufacturers: Select Hinges.

### 2.5 DOOR CLOSERS

- A. Approved Manufacturer: LCN, no substitutions allowed.
- B. LCN Model 4040 XP Regular (RW/PA) OR S-CUSHParallel Arms, thru-bolted (no thru-bolt at FRP doors) and as indicated in the Hardware Matrix
1. All hollow metal door frames must be reinforced at door closer mounting point.
- C. Mount closers to provide maximum opening permitted by building construction or equipment, and note on schedule this maximum swing per location for other trades involved in reinforcement or installation.
- D. Closers shall bear UL approval.
- E. Provide flush panel adaptors where required.

### 2.6 PUSH/HARDWARE AND KICKPLATES

- A. Approved Manufacturers:
1. Ives.
  2. Hager.
  3. Hiawatha.
  4. Rockwood.
  5. Trimco.
- B. Gauge: 16 gauge.
- C. Plates shall be beveled on all sides and have countersunk screw holes at intervals not over 6" on all sides. Screws shall be stainless steel, oval head, finish to match plates.
- D. Size of kick, armor and mop plates:



## DOOR HARDWARE

1. Single door, pull side: 1/2" less than door width.
  2. Single door, push side: 1-1/2" less than door width.
- E. All plates to be factory notched when specified with lock or deadbolt.

### 2.7 STOPS, BUMPERS AND OVERHEAD HOLDERS

- A. Approved Manufacturers:
1. ABH.
  2. Glynn-Johnson.
  3. Ives.
  4. Rockwood.
  5. Trimco.
- B. Provide 406/407 convex or concave bumper wherever possible. If construction prohibits its use, provide FS436 Floor Stop type, or overhead type as noted in schedule.
- C. Provide a bumper behind each door.
- D. Where two doors interfere with each other in swinging, provide roller bumper Ives RB471 as required.
- E. Door Coordinators: Ives COR Series with filler bars and mounting brackets.
- F. Fasteners: Provide expansion shield and machine screws.
- G. Overhead stops to be installed to limit the door swing so door does not hit building details.

### 2.8 SURFACE BOLTS

- A. Approved Manufacturers: Ives; SB1600 Series; mounted to suit application.

### 2.9 WEATHERSTRIPPING & THRESHOLDS

- A. Approved Manufacturers: Zero, NGP or equal.
- B. Jamb Seals, Door Bottoms and Thresholds: Refer to Door Schedule.



## DOOR HARDWARE

- C. Weatherstripping: Must be continuous at jambs and head (except at strike).
- D. Thresholds: Minimum .125 inch thickness X 1/4 inch height; minimum 6 inch width or larger as required to cover any removed mullions and original threshold scarring; double leg support below; slip-resistant non-skid surface; full length of opening with return miters and coped at intermediate mullions.
- E. Sweeps: Brush type or neoprene.

### 2.10 DOOR WRAPS

- A. Approved Manufacturers: Bonafide Safe & Lock Co., (262) 790-9400.
- B. Door Wraps/Shields: Minimum 16 gauge stainless steel heavy-duty reinforcing wrap for locks/latches;
  - 1. Flush Doors: Minimum 4-1/2 inch x 12 inch X door width.
- C. Provide minimum four (4) bored holes per side of door for security screws.

### 2.11 KEYING

- A. All keyed cylinders to be factory master keyed to MPS system. Contact Mr. John Sterba at MPS Lock Shop, (414) 283-4604, to coordinate keying.
- B. All keyed cylinders to have Schlage Everest D key way, unless otherwise noted.
- C. At a minimum, provide four (4) each Grand Master Keys and Master Keys, and two (2) each change keys per key set.

#### ***New Construction Projects - High Schools and Middle Schools:***

- 1. Great Grand Master Key system on Schlage Everest Primus D family.
- 2. Provide four (4) Great Grand Master keys, Grand Master Keys, and Master Keys, and two (2) each change keys per key set. All keys must be marked with visual keying symbols.



## 2.12 FINISHES

- A. US26D Dull Chrome, or US32D Stainless Steel.
- B. Thresholds: US28 Aluminum.
- C. FRP Doors - Door Pulls, Continuous Hinges and Sweeps: Match door finish color as specified in Section 08150.
- D. All other hardware shall be finished with same finish throughout the building.

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. Verify existing field conditions, including threshold dimensions, locations, removal of previous door retrofits, mullion and frame conditions. Notify MPS of any structural mullions prior to removal.
- B. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.
- C. Verify that existing doors that are to remain and receive new hardware are properly prepared to receive new hardware. New hardware shall match existing holes, size, etc., of original hardware.

### 3.2 INSTALLATION

- A. Install door hardware in accordance with manufacturer's instructions and requirements of ANSI 156.
- B. Use the templates provided by hardware item manufacturer. All hardware shall be mounted and fastened to substrate, doors, frames, etc., at all manufactured mounting holes with manufacturer's specified fasteners - **no openings shall be left without fasteners or anchors.**
  - 1. If incorrect holes or openings are cut for strikes in hollow door frames, **frames must be replaced.**
  - 2. **No hardware shall be attached to metal frames with self-drilling, self-tapping or sheet metal**



## DOOR HARDWARE

**screws. Failure to follow this requirement may require replacement of the door and/or frame.**

3. All hollow metal frames must be reinforced at door closer mounting points.
- C. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, install each item completely and then remove and store in a secure place during the finish application. After completion of the finishes, reinstall each item. Do not install surface mounted items until finishes have been completed on the substrate.
- D. Install door closers and limiters on interior, unless noted otherwise on Drawings.
- E. Provide labeled doors with all hardware necessary to meet UL or local fire and safety requirements.
- F. Thresholds: Mount all thresholds in a full bed of quick-set mortar or non-shrink grout and caulk all edges of threshold.
- G. Stops: Coordinate stop position with existing conditions.

**END OF SECTION**



## **SECTION 09900**

### **PAINT AND COATINGS**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes surface preparation and field application of paints and other coatings, including:
  - 1. Iron Gates
  - 2. Storage Building related items

##### **1.2 REFERENCES**

- A. ASTM International:
  - 1. ASTM D16 - Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
  - 2. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials

##### **1.3 DEFINITIONS**

- A. Conform to ASTM D16 for interpretation of terms used in this Section.

##### **1.4 SUBMITTALS**

- A. Section 01300 - Submittals: Submittal requirements.
- B. Product Data: Submit data on finishing products.
- C. Samples:
  - 1. Submit a minimum of two paper chip samples, 6 x 6 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.
- D. Manufacturer's Installation Instructions: Submit special surface preparation procedures, and substrate conditions requiring special attention.

##### **1.5 CLOSEOUT SUBMITTALS**

- A. Section 01700 - Project Closeout: Closeout procedures.



## PAINT AND COATINGS

- B. Operation and Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

### 1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section.
- B. Applicator: Company specializing in commercial painting and finishing with three years documented experience.

### 1.7 PRE-INSTALLATION MEETINGS

- A. Section 01039 - Coordination and Meetings: Pre-installation meeting.
- B. Convene minimum one week prior to commencing work of this section.

### 1.8 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Deliver products to site in sealed and labeled containers; inspect to verify acceptance.
- C. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- D. Paint Materials: Store at minimum ambient temperature of 45 degrees and maximum of 90 degrees, in ventilated area, and as required by manufacturer's instructions.
- E. Paints shall be kept covered at all times and precautionary measures shall be taken to prevent fire hazards and spontaneous combustion.

### 1.9 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Materials and Equipment.



## PAINT AND COATINGS

- B. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.
- C. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product manufacturer.
- D. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 foot-candles measured mid-height at substrate surface.

### 1.10 SEQUENCING

- A. Section 01010 - Summary of Work: Work sequence.
- B. Sequence application to the following:
  - 1. Do not apply finish coats until paintable sealant is applied.
  - 2. Back prime wood trim before installation of trim

### 1.11 EXTRA MATERIALS

- A. Section 01700 - Project Closeout: Spare parts and maintenance products.
- B. Supply one (1) unopened gallon container of each color, type, and surface texture used, also any open containers used on project and store where directed by School Engineer.
- C. Supply to MPS Paint Shop (414-283-4609) two (2) copies of material, product and color selection lists of all painted areas using Manufacturer's name and color number upon completion of project, re: finish schedule
- D. Label each container with color, date and room locations, in addition to the manufacturer's label.



**PART 2 PRODUCTS**

**2.1 PAINTS AND COATINGS**

- A. Acceptable Manufacturers: The following manufacturer's materials are to be utilized. Each container shall bear specific brand name or number as listed.
- B. Exterior Latex Masonry Primer:
  - 1. ICI Decrad-Shield #DS 8716.
  - 2. Sherwin-Williams A24W8300 Loxon Primer.
  - 3. Hallman/Lindsey Prime Guard #112.
  - 4. Diamond Vogel Weather Plate Primer BU1510.
- C. Exterior Masonry/Wood Latex Finish:
  - 1. ICI Ultra Hide #2418.
  - 2. Sherwin-Williams Super Paint #A84
  - 3. Hallman/Lindsey Weather Guard #172.
  - 4. Diamond Vogel Permacryl Satin BS1530.
- D. Exterior Epoxy Metal Primer:
  - 1. Rust-Oleum 9100 System DTM Epoxy Mastic (must use the 9101 Activator)
- E. Exterior Epoxy Metal Finish:
  - 1. Rust-Oleum AS5400 System, Anti-slip One Step Epoxy
- F. Exterior Oil Metal Primer:
  - 1. ICI DevGuard #4160
  - 2. Sherwin-Williams Metal Primer B50WZ1.
  - 3. Hallman/Lindsey Metal Guard #332 or #330.
  - 4. Diamond Vogel Cote-All AZ #1400 or AZ #5400
- G. Exterior Latex Metal Finish Paint:
  - 1. ICI Devflex W.B. #4208 Acrylic Coating.
  - 2. Sherwin Williams B66W101 DTM Acrylic Coating.
  - 3. Hallman/Lindsey Metal Kote #178.
  - 4. Diamond Vogel VersAcryl 203 MC1520.
- H. Exterior Oil Metal Finish Paint:
  - 1. Hallman/Lindsey Aluminum Kote #320.
  - 2. Hallman/Lindsey #311
  - 3. Sherwin Williams B-54W101



## 2.2 COMPONENTS

- A. Coatings: Ready-mixed, except field catalyzed coatings.  
Prepare coatings:
  - 1. To soft paste consistency, capable of being readily and uniformly dispersed to homogeneous coating.
  - 2. For good flow and brushing properties.
  - 3. Capable of drying or curing free of streaks or sags.
- B. Accessory Materials:
  - 1. Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated, but required to achieve the finishes specified; commercial quality.
  - 2. Deodorizer: Bio-Zapp Laboratories, and distributed by Devoe, Better Paint, or equal.
- C. Materials shall be used as they come from the container. If any reduction of the coating's viscosity is necessary, it shall be done in accordance with the manufacturer's label directions.
- D. Refer to schedule at end of Section for surface finish schedule.
- E. Colors: To be selected by Owner.
  - 1. Exterior Projects: There may be a minimum of five (5) colors required, including accents.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Verify surfaces and substrate conditions are ready to receive Work as instructed by product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report conditions capable of affecting proper application.



## PAINT AND COATINGS

- D. Test shop applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
  - 1. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
  - 2. Concrete Floors: 8 percent.

### 3.2 PREPARATION

- A. Also see Part 3.4 - Application.
- B. Contractor to provide all scaffolding, lifts, and/or cranes as required for the work.
  - 1. For any exterior scaffolding provided, the base of the scaffolding shall include a solid plywood enclosure a minimum of 8' high and secured with a lockable door.
- C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, signage, grilles, and fittings prior to preparing surfaces or finishing. Re-install at project completion.
  - 1. Include guards, signage and miscellaneous devices mounted on doors and frames and prefinished aluminum windows.
  - 2. Mask, cover and protect adjacent surfaces against spatter and overspray. Cover all materials and surfaces, fixtures, and furniture adjoining, below or adjacent to work in progress, with clean drop cloths, plastic sheeting or canvas.
  - 3. Include PVC and plastic-coated insulation coverings, valve stems, electrical devices, steam specialties, controls, expansion joint covers, etc.
  - 4. Protect exposed hardware, valves, and traps on radiators when painting radiators or wall behind radiators.
- D. Surfaces: Correct defects and clean all surfaces capable of affecting work of this section. Remove or repair existing coatings exhibiting surface defects.



## PAINT AND COATINGS

- E. Marks: Seal marks which may bleed through surface finishes, including water stained areas, markers, graffiti, etc., with BIN Primer-Sealer, or equal.
- F. Impervious surfaces: Remove mildew by scrubbing with tri-sodium or equivalent cleaner. Rinse with clean water and allow to dry.
- G. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation by solvent washing and clean.
- H. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton. Do not paint PVC or plastic-coated insulation coverings.
- I. Concrete Floors: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- J. Galvanized Surfaces: Remove surface contamination, corrosion, and oils and wash with solvent. Prime with bonding coat primer.
- K. Concrete and Unit Masonry Surfaces: Remove dirt, loose mortar, scale, salt or alkali powder and any other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals.
  - 1. Concrete and Unit Masonry Surfaces Scheduled to receive Epoxy Finish: Surfaces must be tested for compatibility of epoxy finish with existing paint finish for adherence, etc., prior to application of any new coating. Incompatible existing surface finishes such as rubber-based products will have to be removed, prior to application of epoxy finish.
  - 2. Glazed Masonry Surfaces Scheduled to receive Paint Finish: Surface must be abraded by either scuff sanding or use of a soft chemical abrasive, with wash and rinse, in accordance with finish manufacturer's instructions.
- L. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by power tool wire



## PAINT AND COATINGS

brushing. Weld joints, bolts and nuts are to be similarly cleaned. Treat with rust stop and spot prime with oil base primer after repairs.

- M. Shop Primed and Previously Painted Steel Surfaces: Sand and scrape to remove loose primer and rust. Treat with rust stop and spot prime with oil base primer after repairs. Prime bare steel and all metal items not previously painted scheduled to be painted.
  - 1. Radiators: Do **not** remove radiators for refinishing.
  - 2. Metal Locker Surfaces Scheduled to Receive Spray Paint Finish:
    - a. Sand deep gouges, scratches, rusted areas, etc. Wash all surfaces with a strong tri-sodium and water solution, steel wool and rinse with clean water. Apply coat of bonding agent that is compatible with the finish coat after lockers are washed and dried.
    - b. Properly mask walls and surrounding surfaces to prevent damage from overspray. Mask all numbers, chrome plated handles and metal signs using tape or other satisfactory means.
    - c. Electrostatic Spray: Chemically etch metal surfaces as required and scrub with solvent; remove impurities such as wax, tape, silicone flaking, paint, stains and elements inhibiting adherence of coating. Sand and prime rusted areas.

### 3.3 EXISTING WORK

- A. Extend existing paint and coatings installations using materials and methods compatible with existing installations and as specified.

### 3.4 APPLICATION

- A. Paint shall be applied in strict accordance with manufacturer's instructions. Primer coat materials **must be** compatible with existing finish/surface. When applying acrylic or waterborne products, all existing finishes must be primed with a bonding primer if these



## PAINT AND COATINGS

products will not adhere to Kril-Gard. Test for adhesion first.

- B. Paint shall be applied in strict accordance with manufacturer's instructions. Primer coat materials **must be** compatible with existing finish/surface.
- C. All products shall be applied so as to be free from sags, runs, skips, crawls, or other defective brushing. All materials are to be free of skins, lumps, or other foreign matter when used.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- E. All materials scheduled to receive finish are to be completely finished throughout, wherever surfaces are exposed to view.
  - 1. Trim is to be painted only where existing trim is painted.
  - 2. All shelter signs, exit signs, and fire extinguisher signs that are stenciled, are to be sealed and painted over and re-stenciled.
- F. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless specified otherwise.
- G. Sand wood surfaces lightly between coats to achieve required finish.
- H. Vacuum clean surfaces of loose particles with a HEPA VAC. Use tack cloth to remove dust and particles just prior to applying next coat.
- I. Where clear finishes are required, tint fillers to match wood. Work fillers into grain before set. Wipe excess from surface.
- J. Prime concealed surfaces of interior and exterior woodwork with appropriate primer paint.
- K. Doors: Finish tops, bottoms and edges of doors same as face and back.
- L. Finishing Mechanical And Electrical Equipment:



## PAINT AND COATINGS

1. Remove unfinished louvers, covers, and access panels for mechanical and electrical systems from location and paint separately to color of paint adjacent wall or ceiling surface.
2. Paint interior surfaces of air ducts, convectors and baseboard heating cabinets that are visible through grilles and louvers with one coat of appropriate coating, to limit of sight line. Paint dampers exposed immediately behind louvers, grilles, convector and baseboard cabinets to match face panels.
3. Rust Stop, Oil Prime and paint insulated and exposed pipes, gas piping and gas meters, conduit, boxes, insulated and exposed ducts, hangers, brackets, vents, wall vents, vents in doors, radiators and covers, braces, collars, stringer rods, and all supports in finished areas, to specified color.
4. Replace identification markings on mechanical or electrical equipment when painted accidentally.
5. Color code equipment, piping, conduit and exposed ductwork in accordance with existing requirements.
6. Replace all louvers, cover plates, access panels and fittings, prior to completion.

### 3.5 CLEANING

- A. Section 01700 - Project Closeout: Final Cleaning.
- B. Collect cotton waste, cloths, and material which may constitute a fire hazard, placed in closed metal containers and remove daily from site.
- C. Wipe entire surfaces of glass to remove paint specks, dust and dirt associated with the work of this section.
- D. Remove empty paint containers from site.
- E. Upon completion of work, remove all staging and scaffolding from site.

### 3.6 SCHEDULE - INTERIOR SURFACES

- A. All interior surfaces shall be finished.



## PAINT AND COATINGS

- B. All other existing finished surfaces to be finished unless indicated above.
- C. New Concrete Floors:
  - 1. Four coats concrete sealer or
  - 2. One coat 50/50 reduced finish and two coats finish.
- D. Metal - Door Frames:
  - 1. Apply Rust-Oleum Rust Stop to rusted areas.
  - 2. One coat oil base primer sealer.
  - 3. Two coats latex waterborne high-gloss finish.

### 3.7 EXTERIOR SURFACES

- A. All exterior surfaces shall be painted, excluding the following:
  - 1. Non-ferrous metals, excluding aluminum.
  - 2. Masonry.
  - 3. Galvanized Door Covers: Only painted those previously painted.
  - 4. Any paint found on these items shall be removed.
- B. Metal:
  - 1. Conduit, electrical, protective devices, etc.:
    - a. Apply Rust Stop and spot oil prime all rusted areas.
    - b. Two coats of exterior latex, color as selected by Owner.
  - 2. Picket iron gates; door guards; metal doors, overhead doors; screen doors; transom grilles; roof railings; loading dock and ash pit doors, etc.:
    - a. Oil prime rusted areas.
    - b. One coat finish.
- C. Masonry: All masonry surfaces shall be prepared prior to painting as follows:
  - 1. Scrape all loose surfaces to a tight substrate and prime with one coat exterior masonry/wood primer on all raw bricks and masonry joints.
  - 2. Two coats exterior latex masonry paint.

## END OF SECTION



Page Intentionally Left Blank



## **SECTION 10522**

### **FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Fire extinguishers.
  - 2. Cabinets.
  - 3. Mounting hardware.
- B. Related Sections:
  - 1. Section 04300 Unit Masonry System: Wall substrate.
  - 2. Section 06100 - Rough Carpentry Work: Wood blocking.
  - 3. Section 09260 - Gypsum Wallboard Systems: Wall substrate.

##### **1.2 REFERENCES**

- A. National Fire Protection Association:
  - 1. NFPA 10 - Standard for Portable Fire Extinguishers.
- B. Underwriters Laboratories Inc.:
  - 1. UL - Fire Protection Equipment Directory.

##### **1.3 PERFORMANCE REQUIREMENTS**

- A. Conform to NFPA 10 and applicable code.
- B. Provide extinguishers classified and labeled by Underwriters Laboratories Inc.
- C. Provide fire extinguisher cabinets classified and labeled by Underwriters Laboratories Inc.

##### **1.4 SUBMITTALS**

- A. Section 01300 - Submittals: Submittal procedures.
- B. Shop Drawings: Indicate cabinet physical dimensions, rough-in measurements for recessed cabinets, wall bracket mounted measurements, location, and fire ratings.



## FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

- C. Product Data: Submit extinguisher operational features, color and finish, and anchorage details.
- D. Manufacturer's Installation Instructions: Submit special criteria and wall opening coordination requirements.

### 1.5 CLOSEOUT SUBMITTALS

- A. Section 01700 Project Closeout: Closeout procedures.
- B. Operation and Maintenance Data: Submit test, refill or recharge schedules and re-certification requirements.

### 1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not install extinguishers when ambient temperatures may cause freezing.

## PART 2 PRODUCTS

### 2.1 FIRE EXTINGUISHERS

- A. Manufacturers:
  - 1. Larsen Manufacturing.
  - 2. J.L. Industries.
- B. Dry Chemical Type: Stainless or cast steel tank, with pressure gage; multi-purpose type Class A-B-C with an extinguishing agent and compressed, non-flammable gas as a propellant; size and classification as scheduled.
- C. Extinguisher Finish: Red.

### 2.2 FIRE EXTINGUISHER CABINETS

- A. Manufacturers:
  - 1. Larsen Manufacturing.
  - 2. J.L. Industries.
- B. Metal: Formed stainless steel; 0.036 inch thick base metal.
- C. Configuration: Recessed, semi-recessed, or surface type as indicated in Schedule; sized to accommodate accessories.
- D. Trim Type: Returned to wall surface.



## FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

- E. Door: 0.016 inch thick, reinforced for flatness and rigidity.
- F. Door Glazing: Plastic, clear, 1/8 inch thick polycarbonate.
- G. Mounting Hardware: Appropriate to cabinet.
- H. Form cabinet enclosure with right angle inside corners and seams. Form perimeter trim.
- I. Pre-drill for anchors.
- J. Hinge doors for 180 degree opening with continuous piano hinge. Furnish roller type catch.
- K. Weld, fill, and grind components smooth.
- L. Glaze doors with resilient channel gasket glazing.
- M. Finishing Cabinet Exterior Trim and Door: Satin chrome No. 4 finish.
- N. Finishing Cabinet Interior: White baked enamel.

### 2.3 ACCESSORIES

- A. Extinguisher Brackets: Formed steel, galvanized white enamel finish.
- B. Graphic Identification: "Fire Extinguisher" on glazing.

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. Section 01039 - Coordination and Meetings: Coordination and project conditions.
- B. Verify rough openings for cabinet are correctly sized and located.

### 3.2 INSTALLATION

- A. Install cabinets plumb and level in wall openings maximum 48 inches from finished floor to top of extinguisher handle.



## FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

- B. Install wall brackets, maximum 48 inches from finished floor to top of extinguisher handle.
- C. Secure rigidly in place.
- D. Place extinguishers and accessories in cabinets and on wall brackets.

### 3.3 SCHEDULE

- A. Storage Building: Type A-B-C, 10 gallon capacity, hung from masonry walls on brackets; locate minimum of two (2) in storage building.

**END OF SECTION**