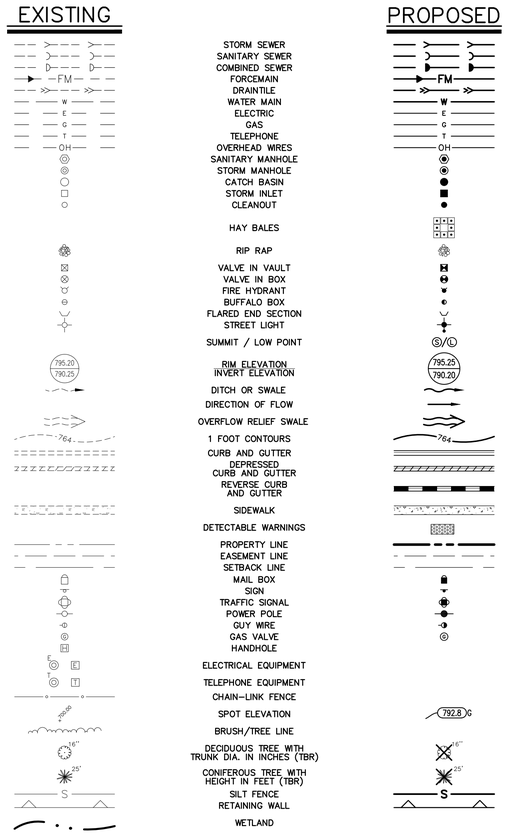
Proposed Improvements for

OAKTON COMMUNITY COLLEGE
BASEBALL FIELD PARKING LOT IMPROVEMENTS

1600 EAST GOLF ROAD
CITY OF DES PLAINES, ILLINOIS

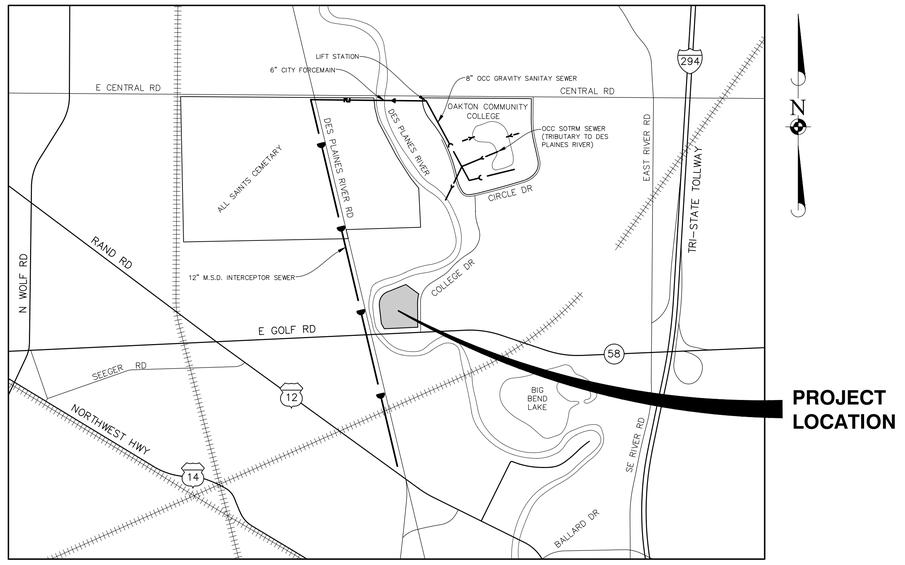
STANDARD SYMBOLS



ABBREVIATIONS

ADJ	ADJUST
AGG.	AGGREGATE
ARCH	ARCHITECT
B.A.M.	BITUMINOUS AGGREGATE MIXTURE
B-B	BACK TO BACK
B/C	BACK OF CURB
B/P	BOTTOM OF PIPE
B/W	BACK OF WALK
B-BOX	BUFFALO BOX
BIT.	BITUMINOUS
BM	BENCHMARK
B.O.	BY OTHERS
C.E.	COMMERCIAL ENTRANCE
CB	CATCH BASIN
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
CNTRL	CONTROL
CO	CLEANOUT
CONC.	CONCRETE
CY	CUBIC YARD
D	DITCH
DIA.	DIAMETER
DIP	DUCTILE IRON PIPE
DIWM	DUCTILE IRON WATER MAIN
DS	DOWNSPOUT
DT	DRAIN TILE
E	ELECTRIC
E-E	EDGE TO EDGE
ELEV.	ELEVATION
E/P	EDGE OF PAVEMENT
EX.	EXISTING
F.D.	FIELD ENTRANCE
F-F	FACE TO FACE
F.P.	FINISHED FLOOR
FES	FLARED END SECTION
F/L	FLOW LINE
FM	FORCE MAIN
G	GROUND
G/F	GRADE AT FOUNDATION
GW	GUY WIRE
HDWL	HEADWALL
HH	HANDHOLE
HWL	HIGH WATER LEVEL
HYD	HYDRANT
INL	INLET
INV	INVERT
IP	IRON PIPE
L.T	LEFT
HYD.	MAXIMUM
MB	MAILBOX
M/E	MEET EXISTING
MH	MANHOLE
MIN.	MINIMUM
NWL	NORMAL WATER LEVEL
P.E.	PRIVATE ENTRANCE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
PP	POWER POLE
PROP.	PROPOSED
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
P	PAVEMENT
P.U.D.E.	PUBLIC UTILITY & DRAINAGE EASEMENT
R	RADIUS
R.O.W.	RIGHT-OF-WAY
RCP	REINFORCED CONCRETE PIPE
REM	REMOVAL
REV	REVERSE
RR	RAILROAD
RT	RIGHT
SAN	SANITARY
SF	SQUARE FOOT
SHLD.	SHOULDER
SL	STREET LIGHT
SMH	SANITARY MANHOLE
ST	STORM
STA.	STATION
STD	STANDARD
SW	SIDEWALK
SY	SQUARE YARDS
TBR	TO BE REMOVED
T	TELEPHONE
T-A	TYPE A
T/C	TOP OF CURB
T/F	TOP OF FOUNDATION
T/P	TOP OF PIPE
T/W	TOP OF WALK
T/WALL	TOP OF WALL
TEMP	TEMPORARY
TRANS	TRANSFORMER
V.B.	VALVE BOX
VCP	VITRIFIED CLAY PIPE
V.V.	VALVE VAULT
WL	WATER LEVEL
WM	WATER MAIN

MANHARD CONSULTING, LTD. IS NOT RESPONSIBLE FOR THE SAFETY OF ANY PARTY AT OR ON THE CONSTRUCTION SITE. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND ANY OTHER PERSON OR ENTITY PERFORMING WORK OR SERVICES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR THE JOB SITE SAFETY OF PERSONS ENGAGED IN THE WORK OR THE MEANS OR METHODS OF CONSTRUCTION.



LOCATION MAP
N.T.S.

Contact the Metropolitan Water Reclamation District of Greater Chicago 2 days before starting work.

P (708) 588-4055
E WMOJobStart@mwrd.org

OAKTON COMMUNITY COLLEGE
1600 EAST GOLF ROAD
DES PLAINES, ILLINOIS 60016
847-635-1600

SURFACE WATER DRAINAGE STATEMENT

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DRAINAGE OF SURFACE WATERS WILL NOT BE CHANGED BY THE PROPOSED DEVELOPMENT. IF ANY DRAINAGE PATTERNS WILL BE CHANGED, REASONABLE PROVISIONS HAVE BEEN MADE FOR THE COLLECTION AND DIVERSION OF SUCH SURFACE WATERS IN TO THE PUBLIC AREA, OR DRAINS APPROVED FOR THE USE BY THE MUNICIPAL ENGINEER, AND THAT SUCH SURFACE WATERS ARE PLANNED FOR IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES SO AS TO REDUCE THE LIKELIHOOD OF DAMAGES TO ADJOINING PROPERTIES.

DATED THIS 14TH DAY OF OCTOBER, 2024.

OWNER

ENGINEER

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	EXISTING CONDITIONS AND DEMOLITION PLAN
3	SOIL EROSION AND SEDIMENT CONTROL PLAN
4	SOIL EROSION AND SEDIMENT CONTROL DETAILS
5	SITE DIMENSIONAL AND PAVING PLAN
6	GRADING AND UTILITY PLAN
7	GRADING DETAIL
8	CONSTRUCTION DETAILS
9	CONSTRUCTION DETAILS
10	CONSTRUCTION DETAILS
11	CONSTRUCTION SPECIFICATIONS
SW1	STORMWATER MANAGEMENT EXHIBIT
SW2	DETAINED AREA EXHIBIT

NOTE:

THE BOUNDARY LINES AND TOPOGRAPHY FOR THIS PROJECT ARE BASED ON A FIELD SURVEY COMPLETED BY MANHARD CONSULTING ON SEPTEMBER 10, 2024. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY MANHARD CONSULTING AND THE CLIENT IN WRITING OF ANY DIFFERING CONDITIONS.

BENCHMARKS:

REFERENCE BENCHMARK:
CITY OF DES PLAINES BENCHMARK#65: CHISELED SQUARE ON TOP OF HEADWALL ON THE SOUTH SIDE OF CENTRAL ROAD AND THE WEST SIDE OF DES PLAINES RIVER.

ELEVATION=639.60 DATUM=NAVD88

SITE BENCHMARK #1:
CUT BOX IN CONCRETE AT THE SOUTH END OF THE WEST HEADWALL OF A CULVERT ON COLLEGE DRIVE.

ELEVATION= 633.05 DATUM=NAVD88

SITE BENCHMARK #3:
CUT CROSS IN SOUTHERLY CURB RETURN OF ENTRANCE TO BASEBALL FIELDS LOCATED APPROXIMATELY 390' NORTHERLY OF THE CENTERLINE OF GOLF ROAD AND APPROXIMATELY 25 FEET WESTERLY OF THE CENTER OF PAVEMENT FOR COLLEGE DRIVE.

ELEVATION= 640.86 DATUM=NAVD88

UTILITY CONTACTS

ELECTRIC	WATER
COMED 4712 REILAND DRIVE JOLIET, IL 60433 (630) 576-7094 CONTACT:	CITY OF DES PLAINES 1420 MINER STREET DES PLAINES, IL 60016 (847) 391-5390 CONTACT: TIM OAKLEY
GAS	**TELEPHONE**
NICOR GAS 1844 FERRY ROAD NAPERVILLE, IL 60563 (630) 388-3830 CONTACT: CONSTANCE LANE	AT&T 65 N. WEBSTER ST JOLIET, IL 60431 (770) 750-6181 CONTACT: JIM EVERETT
SEWER	**CABLE**
CITY OF DES PLAINES 1420 MINER STREET DES PLAINES, IL 60016 (847) 391-5390 CONTACT: TIM OAKLEY	COMCAST 688 INDUSTRIAL DRIVE ELMHURST, IL 60126 (630) 600-6346 CONTACT: MARTHA GIERAS

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LICENSED PROFESSIONAL ENGINEER OF ILLINOIS
062-073357
SEAL

DATE	REVISIONS	DRAWN BY
03-13-25	FOR BID	KRK
05-23-25	ISSUE SET FOR BID	KRK
01-22-25	REVISED PER MWRD REVIEW	KRK
12-02-24	REVISED PER VILLAGE REVIEW	KRK

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OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS
TITLE SHEET

PROJ. MGR.:	KRK
PROJ. ASSOC.:	GRC
DRAWN BY:	MH
DATE:	10-14-24
SCALE:	N.T.S.

SHEET 1 OF 11
OCCDPIL16

March 13, 2025 - 13:39 Data Name: P:\Occdpil16\Data\Xref\Final Drawings\Final Plan Set\01-TITLE.dwg Updated By: Kklawans

DEMOLITION LEGEND

(light shading)	GRAVEL AND BASE TO BE REMOVED
(dark shading)	BITUMINOUS PAVEMENT AND BASE TO BE REMOVED
(stippled)	AGGREGATE TO BE REMOVED
— — —	SAWCUT LINE
× × ×	FENCE, POLES, CURB AND GUTTER, ETC. TO BE REMOVED
XXX	UTILITY STRUCTURE TO BE REMOVED
/// — /// — //	UTILITY LINE REMOVAL, FILL OR ABANDONMENT (REFER TO SPECIFICATIONS)
(crossed tree symbols)	TREE TO BE REMOVED
(TBR)	TO BE REMOVED
(TR)	TO REMAIN

06-01-16

EXISTING CONDITIONS AND DEMOLITION NOTES:

1. EXISTING CONDITIONS AND DEMOLITION PLAN REPRESENT SITE CONDITIONS AS OF SEPTEMBER 10, 2024. CONTRACTOR SHALL INSPECT SITE PRIOR TO BIDDING WORK TO VERIFY ACTUAL FIELD CONDITIONS AS PORTIONS OF THE DEMOLITION WORK MAY HAVE SINCE BEEN COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLETE ALL DEMOLITION WORK AS PER PLANS TO PREPARE THE SITE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS.
2. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.
3. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL AND DISPOSAL (IN A LOCATION APPROVED BY ALL JURISDICTIONAL GOVERNING ENTITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, ROAD, PARKING LOTS, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THESE PLANS CAN BE CONSTRUCTED. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
4. REFER TO SPECIFICATIONS SHEET FOR DEMOLITION NOTES.

DATE	REVISIONS	DRAWN BY
01-22-25	REVISED PER MWRD REVIEW	KRK

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OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS

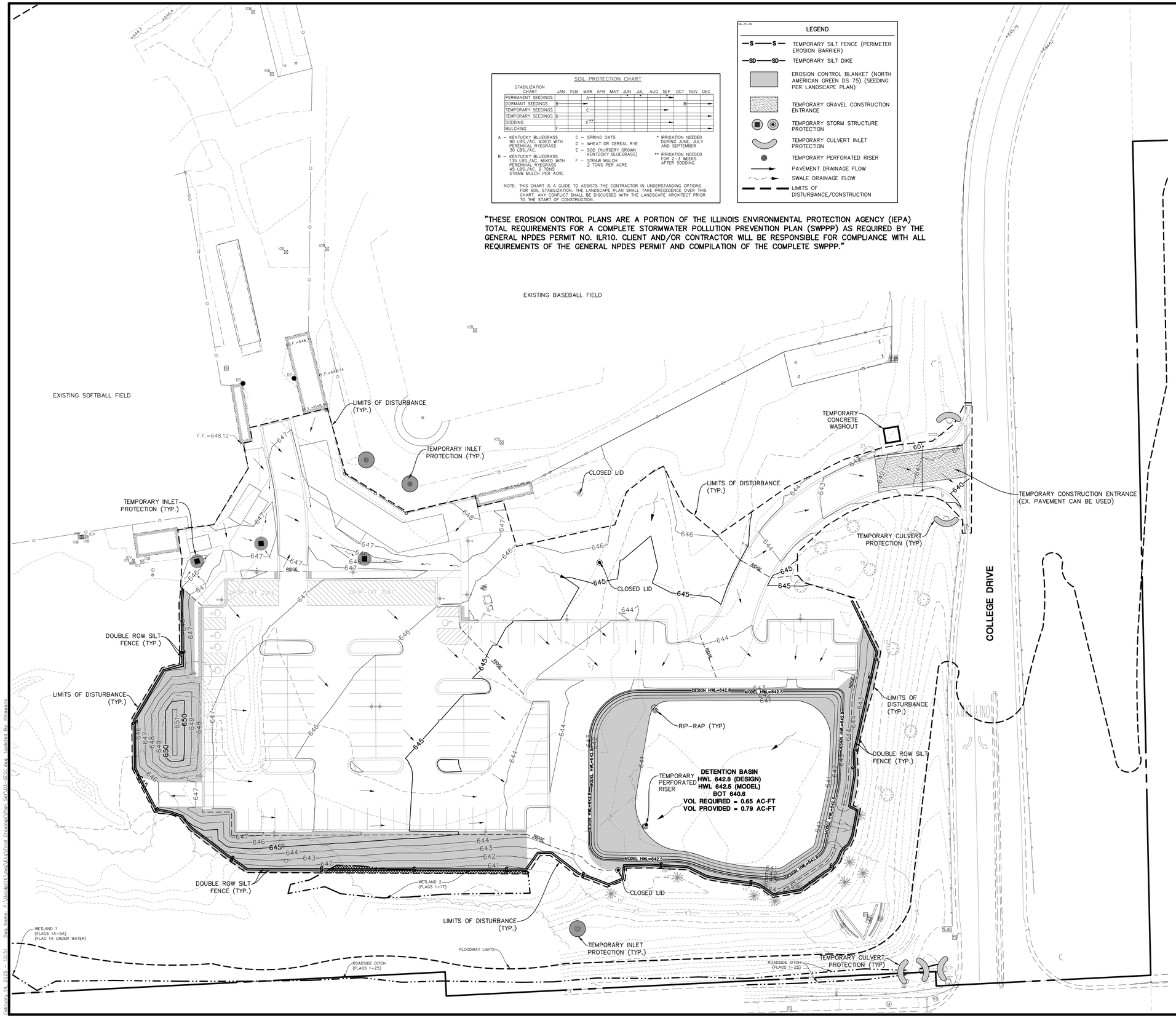
CITY OF DES PLAINES, ILLINOIS

EXISTING CONDITIONS AND DEMOLITION PLAN

PROJ. MGR.: KRK
PROJ. ASSOC.: GRC
DRAWN BY: ----
DATE: 10-14-24
SCALE: 1"=30'

SHEET **2** OF **11**

OCCDPIL16



SOIL PROTECTION CHART

STABILIZATION CHART	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDINGS			A→									
DORMANT SEEDINGS	B→										B→	
TEMPORARY SEEDINGS			C→									
TEMPORARY SEEDINGS	D→											
SODDING			E**									
MULCHING	F→											

A – KENTUCKY BLUEGRASS 90 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 30 LBS./AC.

B – KENTUCKY BLUEGRASS 135 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 45 LBS./AC. 2 TONS STRAW MULCH PER ACRE

C – SPRING OATS

D – WHEAT OR CEREAL RYE

E – SOD (NURSERY GROWN KENTUCKY BLUEGRASS)

F – STRAW MULCH 2 TONS PER ACRE

* IRRIGATION NEEDED DURING JUNE, JULY AND SEPTEMBER

** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER SODDING

NOTE: THIS CHART IS A GUIDE TO ASSISTS THE CONTRACTOR IN UNDERSTANDING OPTIONS FOR SOIL STABILIZATION. THE LANDSCAPE PLAN SHALL TAKE PRECEDENCE OVER THIS CHART. ANY CONFLICT SHALL BE DISCUSSED WITH THE LANDSCAPE ARCHITECT PRIOR TO THE START OF CONSTRUCTION.

LEGEND

- —S——S— TEMPORARY SILT FENCE (PERIMETER EROSION BARRIER)
- —SD——SD— TEMPORARY SILT DIKE
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN DS 75) (SEEDING PER LANDSCAPE PLAN)
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- TEMPORARY STORM STRUCTURE PROTECTION
- TEMPORARY CULVERT INLET PROTECTION
- TEMPORARY PERFORATED RISER
- PAVEMENT DRAINAGE FLOW
- SWALE DRAINAGE FLOW
- LIMITS OF DISTURBANCE/CONSTRUCTION

"THESE EROSION CONTROL PLANS ARE A PORTION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) TOTAL REQUIREMENTS FOR A COMPLETE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY THE GENERAL NPDES PERMIT NO. ILR10. CLIENT AND/OR CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE GENERAL NPDES PERMIT AND COMPILATION OF THE COMPLETE SWPPP."

0 15 30 60

SCALE: 1"=30'

N

CONSTRUCTION SEQUENCE:

1. INSTALL SILT FENCE AT LOCATIONS AS INDICATED ON THE PLANS.
2. PROVIDE STABILIZED CONSTRUCTION ENTRANCE.
3. CONSTRUCT TEMPORARY DITCHES, SWALES, SEDIMENT TRAPS AND/OR BASINS.
4. STRIP EXISTING TOPSOIL FROM PROPOSED LIMITS OF DISTURBANCE AND STOCKPILE WHERE SHOWN ON PLANS.
5. PROVIDE SILT FENCE AROUND THE BASE OF THE STOCKPILES.
6. CONSTRUCT STORMWATER MANAGEMENT (DETENTION) FACILITIES TO SUB-GRADE AND INSTALL OUTLET PIPES.
7. COMPLETE TOPSOIL PLACEMENT AND PERMANENT SEEDING AND SODDING OF STORMWATER MANAGEMENT FACILITIES.
8. CUT AND FILL SITE TO PLAN SUB-GRADE.
9. CONSTRUCT UNDERGROUND IMPROVEMENTS, i.e. STORM SEWER**, ETC.
10. CONSTRUCT PAVEMENT IMPROVEMENTS PER PLAN.
11. COMPLETE CONSTRUCTION OF SITE WITH PERMANENT STABILIZATION.
12. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.

** INSTALL INLET PROTECTION AROUND DRAINAGE STRUCTURES AS CONSTRUCTED.

SOIL EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:

1. ALL VEGETATIVE AND STRUCTURAL EROSION CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "ILLINOIS URBAN MANUAL".
2. MAINTENANCE AND REPLACEMENT OF EROSION CONTROL ITEMS, WHEN DIRECTED BY THE OWNER, SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER, OR EQUIVALENT SNOWFALL, WHEN THE SNOW MELTS AND THERE IS POTENTIAL FOR EROSION. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF SAID MEASURES SHALL BE MADE IMMEDIATELY. FOR SITES DISCHARGING DEWATERING WATER, AN INSPECTION MUST BE CONDUCTED DURING THE DISCHARGE, ONCE PER DAY ON WHICH THE DISCHARGE OCCURS AND DOCUMENTED AND KEPT IN THE SWPPP BOOKLET.
4. INSTALL ALL PERIMETER SILT FENCING PRIOR TO ANY CLEARING OR GRADING. ONSITE SEDIMENT CONTROL MEASURES AS SHOWN AND SPECIFIED BY THIS EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE CONSTRUCTED AND FUNCTIONAL PRIOR TO INITIATING CLEARING, GRADING, STRIPPING, EXCAVATION OR FILLING ACTIVITIES ON THE SITE.
5. STORM WATERS FALLING ON THE ENTIRE SITE SHALL BE DIVERTED INTO THE DETENTION BASIN, PRIOR TO BEGINNING MASS EXCAVATION, THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENTATION TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY AND CONVEY THEM TO THE DETENTION BASIN.
6. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA.
7. TEMPORARY SEED MIXTURE SHALL BE APPLIED AT 64 LBS/ACRE.
8. INLET PROTECTION SHALL BE INSTALLED UNDER THE GRATING OF EACH DRAINAGE STRUCTURE.
9. STABILIZATION OF TOPSOIL STOCKPILES SHALL BE INITIATED IMMEDIATELY UPON COMPLETION UNLESS THEY WILL BE DISTURBED WITHIN FOURTEEN (14) CALENDAR DAYS. STABILIZATION OF STOCKPILES MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA. ALL SOIL STORAGE PILES SHALL BE PROTECTED FROM EROSION WITH SILT FENCE ON THE DOWN SLOPE SIDE OF THE PILES.
10. DEWATERING DISCHARGES SHALL BE ROUTED THROUGH A SEDIMENT CONTROL (e.g. SEDIMENT TRAP OR BASIN, PUMPED WATER FILTER BAG) DESIGNED TO MINIMIZE DISCHARGES WITH VISUAL TURBIDITY. THE DISCHARGE SHALL NOT INCLUDE VISIBLE FLOATING SOLIDS OR FOAM. THE DISCHARGE MUST NOT CAUSE THE FORMATION OF A VISIBLE SHEEN ON THE WATER SURFACE, OR VISIBLE OILY DEPOSITS ON THE BOTTOM OR SHORELINE OF THE RECEIVING WATER. AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVISE SHALL BE USED TO TREAT OIL, GREASE, OR OTHER SIMILAR PRODUCTS IF DEWATERING WATER IS FOUND TO OR EXPECTED TO CONTAIN THESE MATERIALS. TO THE EXTENT FEASIBLE, USE WELL VEGETATED (e.g. GRASSY OR WOODED), UPLAND AREAS OF THE SITE TO INFILTRATE DEWATERING WATER BEFORE DISCHARGE. USING RECEIVING WATERS AS PART OF THE TREATMENT AREA IS PROHIBITED. TO MINIMIZE DEWATERING RELATED EROSION AND RELATED SEDIMENT DISCHARGES, USE STABLE, EROSION RESISTANT SURFACES (e.g. WELL-VEGETATED GRASSY AREAS, CLEAN FILTER STONE, GEOTEXTILE UNDERLAYMENT) TO DISCHARGE FROM DEWATERING CONTROLS. DO NOT PLACE DEWATERING CONTROLS, SUCH AS PUMPED WATER FILTER BAGS ON STEEP SLOPES (15% OR GREATER IN GRADE. BACKWASH WATER (WATER USED TO BACKWASH/CLEAN ANY FILTERS USED AS PART OF STORMWATER TREATMENT) MUST BE PROPERLY TREATED OR HAULED OFF-SITE FOR DISPOSAL. DEWATERING TREATMENT DEVICES SHALL BE PROPERLY MAINTAINED.
11. DUST CONTROL SHALL BE PERFORMED ON A DAILY BASIS USING WATER DISPERSED FROM A TRUCK MOUNTED TANK WITH STANDARD DISCHARGE HEADER TO PROVIDE A UNIFORM RATE OF APPLICATION.
12. TEMPORARY GRAVEL CONSTRUCTION ENTRANCES SHALL BE MAINTAINED, ADJUSTED OR RELOCATED AS NECESSARY TO PREVENT SEDIMENT FROM BEING TRACKED ONTO PUBLIC ROADWAYS. ANY SEDIMENT REACHING A PUBLIC ROAD SHALL BE REMOVED BY SHOVELING OR STREET CLEANING BEFORE THE END OF EACH WORKING DAY.
13. ANY LOOSE MATERIAL THAT IS DEPOSITED IN THE FLOW LINE OF ANY GUTTER OR DRAINAGE STRUCTURE DURING CONSTRUCTION OPERATIONS SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY.
14. OVERLAND FLOW SHALL BE DIRECTED TO THE DETENTION BASIN PRIOR TO LEAVING THE SITE.
15. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE CLIENT OR OTHER JURISDICTIONAL GOVERNMENTAL ENTITIES.
16. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL JURISDICTIONAL GOVERNMENTAL AGENCY REQUIREMENTS WITHIN 30 DAYS OF FINAL STABILIZATION.

DATE	REVISIONS	DRAWN BY
01-22-25	REVISED PER MWRD REVIEW	KRK

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OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS

CITY OF DES PLAINES, ILLINOIS

SOIL EROSION AND SEDIMENT CONTROL PLAN

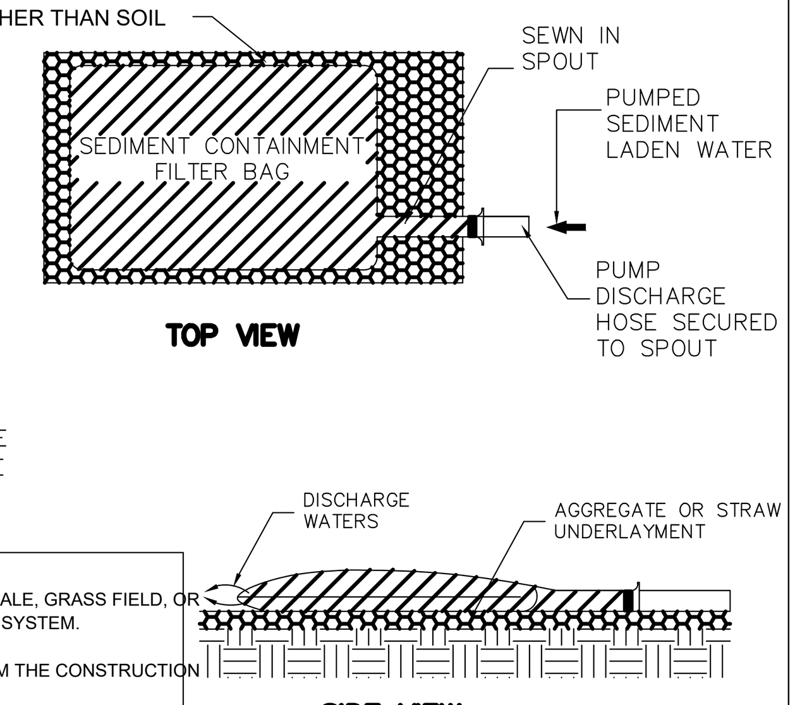
PROJ. MGR.:	KRK
PROJ. ASSOC.:	GRC
DRAWN BY:	----
DATE:	10-14-24
SCALE:	1"=30'

SHEET 3 OF 11

OCCDPIL16

February 14, 2025 - 12:51 Data Name: P:\Projects\8\data\Xref\Final Drawings\Plan Set\03-SESC.dwg Updated By: Kitkowski

SEDIMENT CONTAINMENT FILTER BAG



MAINTENANCE
1. CHANGE FILTER BAG WHEN NEEDED
2. REMOVE SEDIMENT FROM BAG

SPECIFICATIONS
FABRIC = 225EX (NEEDLEPUNCHED NONWOVEN)

SIZES
- 10' x 15' FOR 2" DISCHARGE HOSE
- 20' x 15' FOR 3" DISCHARGE HOSE
- 25' x 15' FOR 4" DISCHARGE HOSE
- 35' x 15' FOR 6" DISCHARGE HOSE

NOTES
1. DISCHARGE WATER ONTO A GRASS LINE SWALE, GRASS FIELD, OR INTO A SECONDARY SEDIMENT CONTAINMENT SYSTEM.
2. DISCHARGE WATER MUST FLOW AWAY FROM THE CONSTRUCTION AREA.
3. SEDIMENT CAPTURED BY THE FILTER BAG MUST BE REMOVED AND STABILIZED.

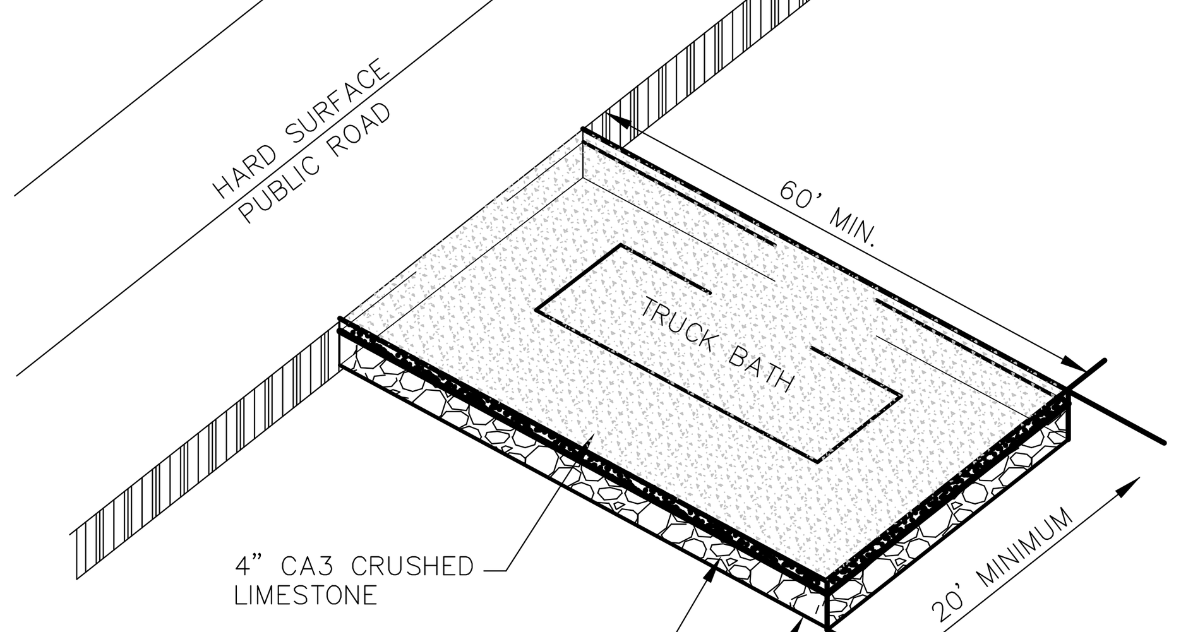
TYPICAL SOIL PROTECTION CHART

Stabilization Type:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Permanent Seeding			A ▬	▬	▬	XXX	XXX	X ▬	▬			
Dormant Seeding	B ▬	▬										
Temporary Seeding			C ▬	▬	▬	XXX	XXX	X ▬	▬			
Sodding			EXX	X ▬	▬	▬	▬	▬	▬			
Mulching	F ▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬

A = Kentucky Bluegrass @ 90 lbs/ac. Mixed with Perennial Ryegrass @ 30 lbs/ac.
B = Kentucky Bluegrass @ 135 lbs/ac. Mixed with Perennial Ryegrass @ 45 lbs/ac.
C = Spring Oats @ 100 lbs/ac.
D = Wheat or Cereal rye @ 150 lbs/ac.
E = Sod
F = Straw Mulch (Hydromulch or use Straw Blanket) @ 2 tons/ac.
XXX = Irrigation needed

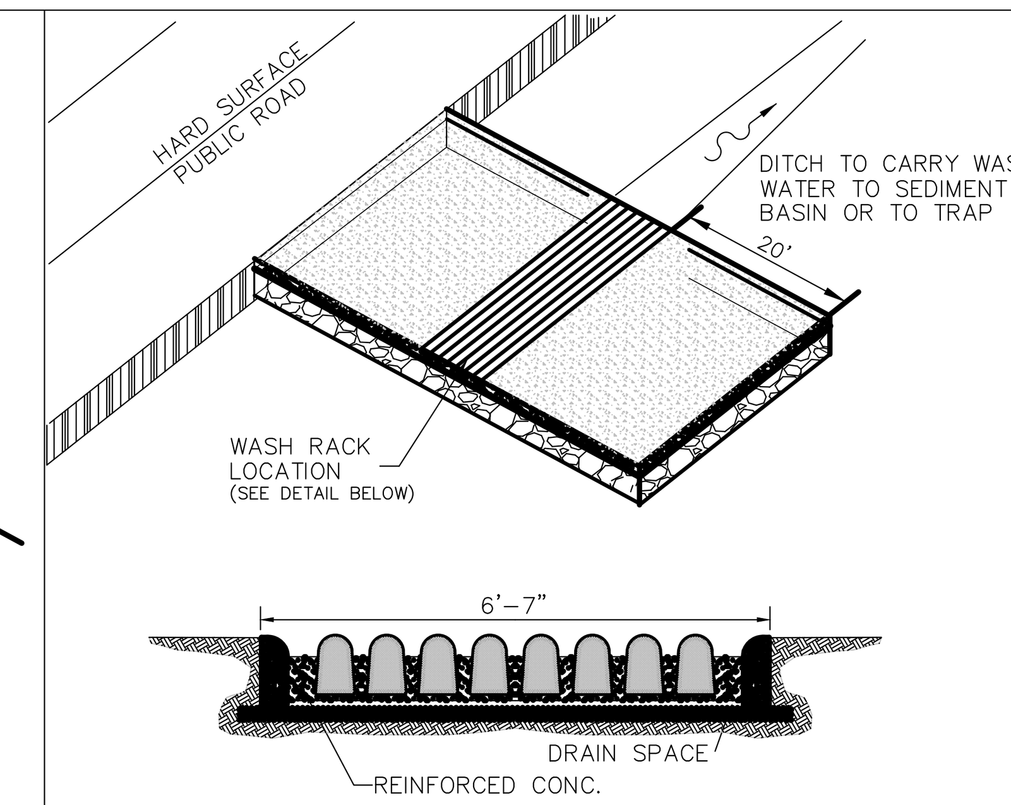
Irrigation should be provided as necessary to thoroughly establish intended growth.

TEMPORARY CONSTRUCTION ENTRANCE



MAINTENANCE
1. STREET CLEANING
2. ENTRANCE CLEANING
3. TRUCK BATH CLEANOUT

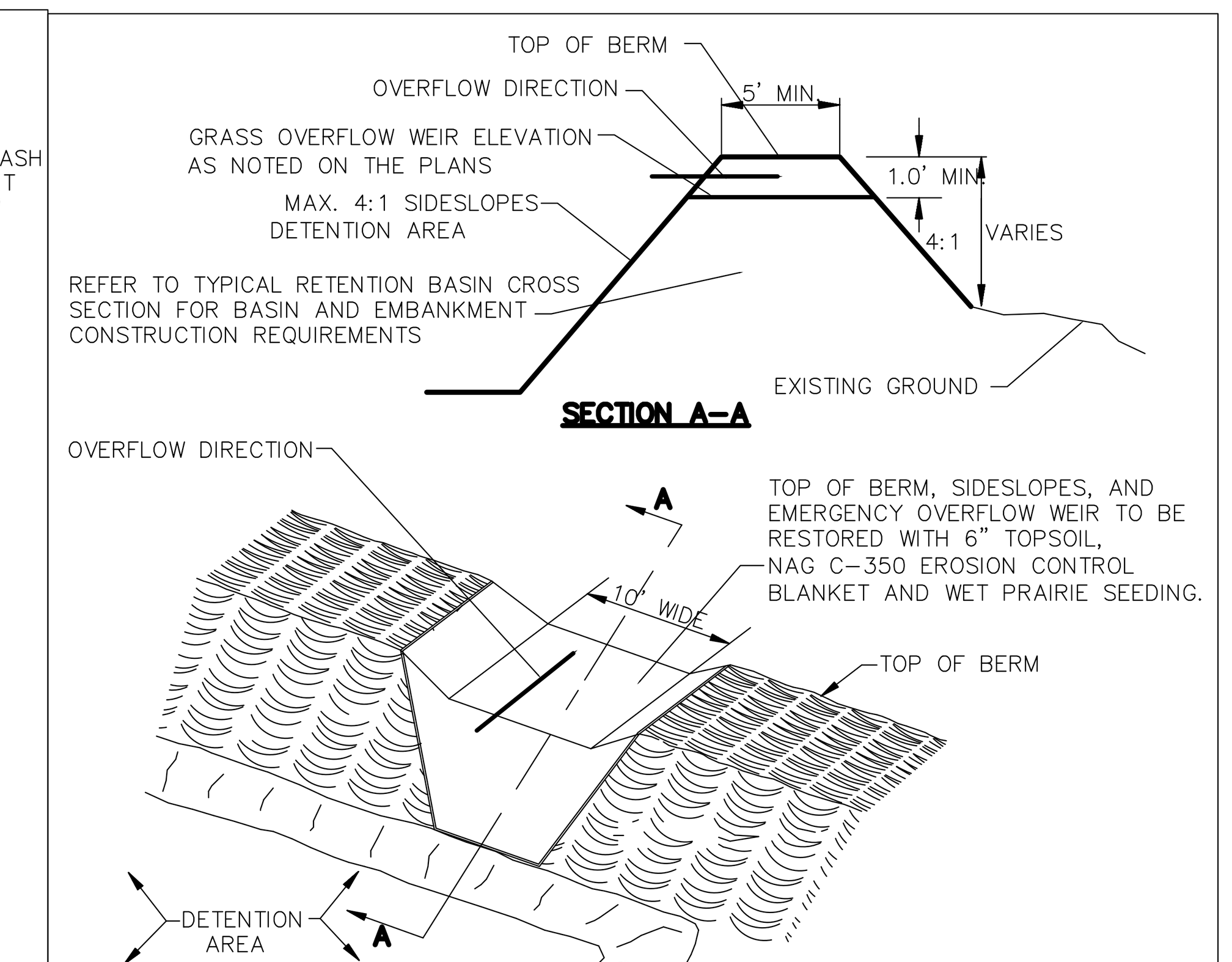
CONSTRUCTION ENTRANCE SUPPLEMENTAL WASH RACK



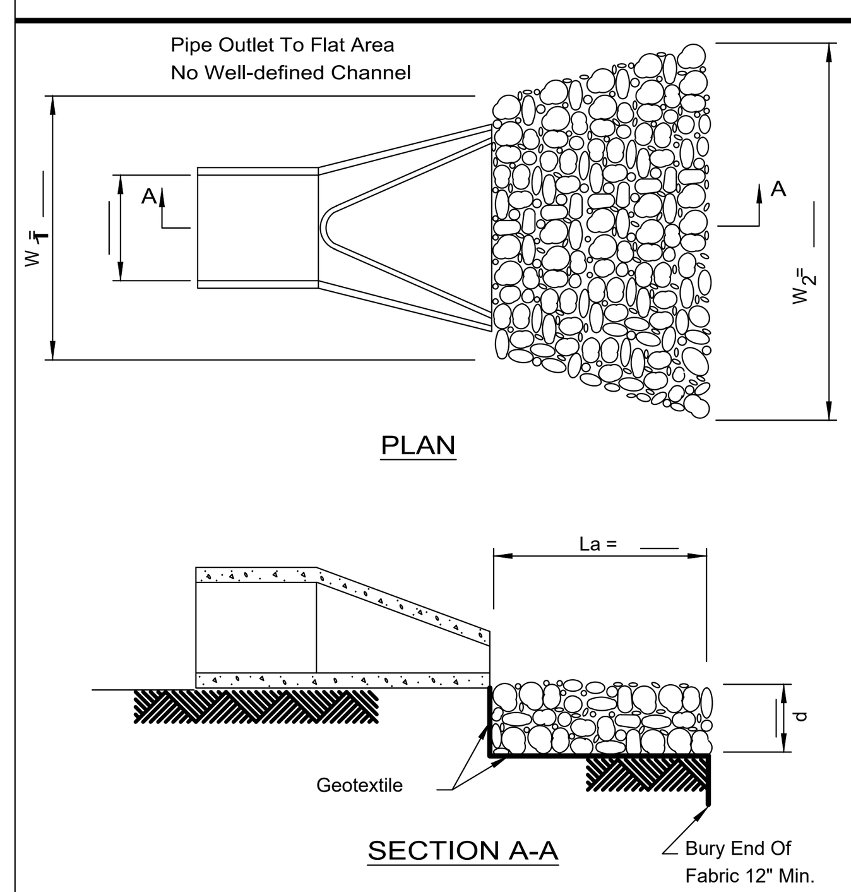
NOTE: WASH RACK MATERIAL MAY ALSO BE ALUMINIUM OR OTHER METAL

WASH RACK DETAIL

GRASS EMERGENCY OVERFLOW WEIR



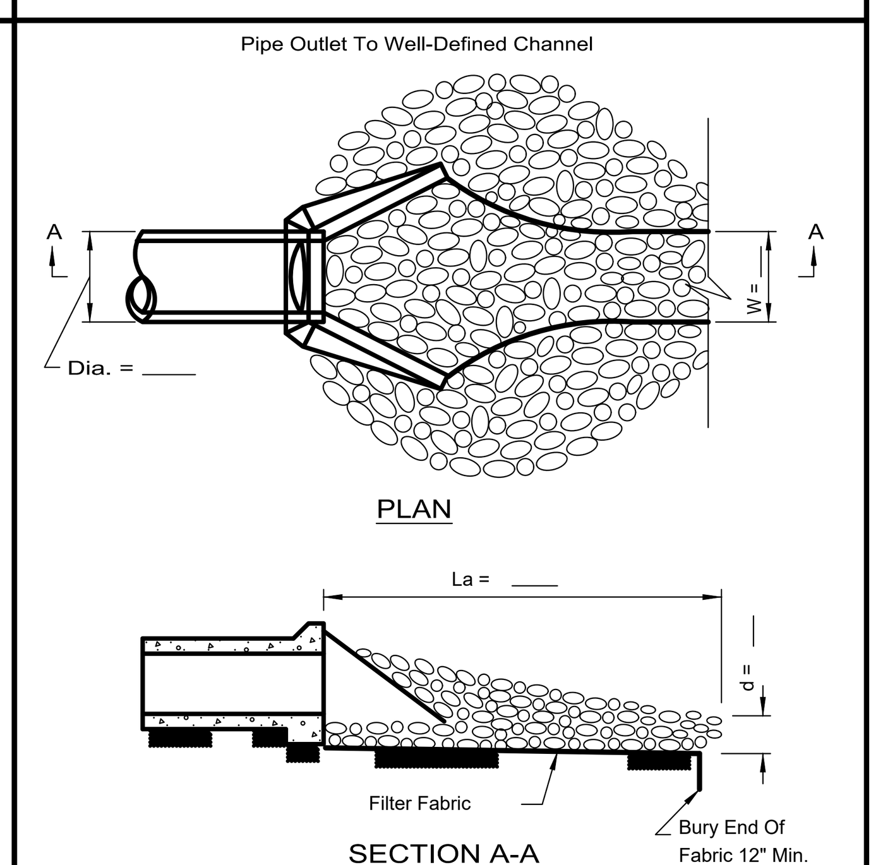
PIPE OUTLET TO FLAT AREA



NOTES:
1. The filter fabric shall meet the requirements in material specifications 592 GEOTEXTILE Table 1 or 2, class , or . I II III
2. The rock riprap shall shall meet the IDOT requirements for the following gradation: RR ~~, Quality~~ .
3. The riprap shall be placed according to construction specification 61 LOOSE ROCK RIPRAP. The rock may be equipment placed.

REFERENCE		STANDARD DWG. NO.
Project; Designed ___ Date ___; Checked ___ Date ___; Approved ___ Date ___	NRCS Natural Resources Conservation Service	IL-610; SHEET 1 OF 1; DATE 9-15-93

PIPE OUTLET TO CHANNEL



NOTES:
1. The filter fabric shall meet the requirements in material specification 592 GEOTEXTILE Table 1 or 2, Class , or . I II III
2. The rock riprap shall meet the IDOT requirements for the following gradation .
3. The riprap shall be placed according to construction specification 61 LOOSE ROCK RIPRAP. The rock may be equipment placed.

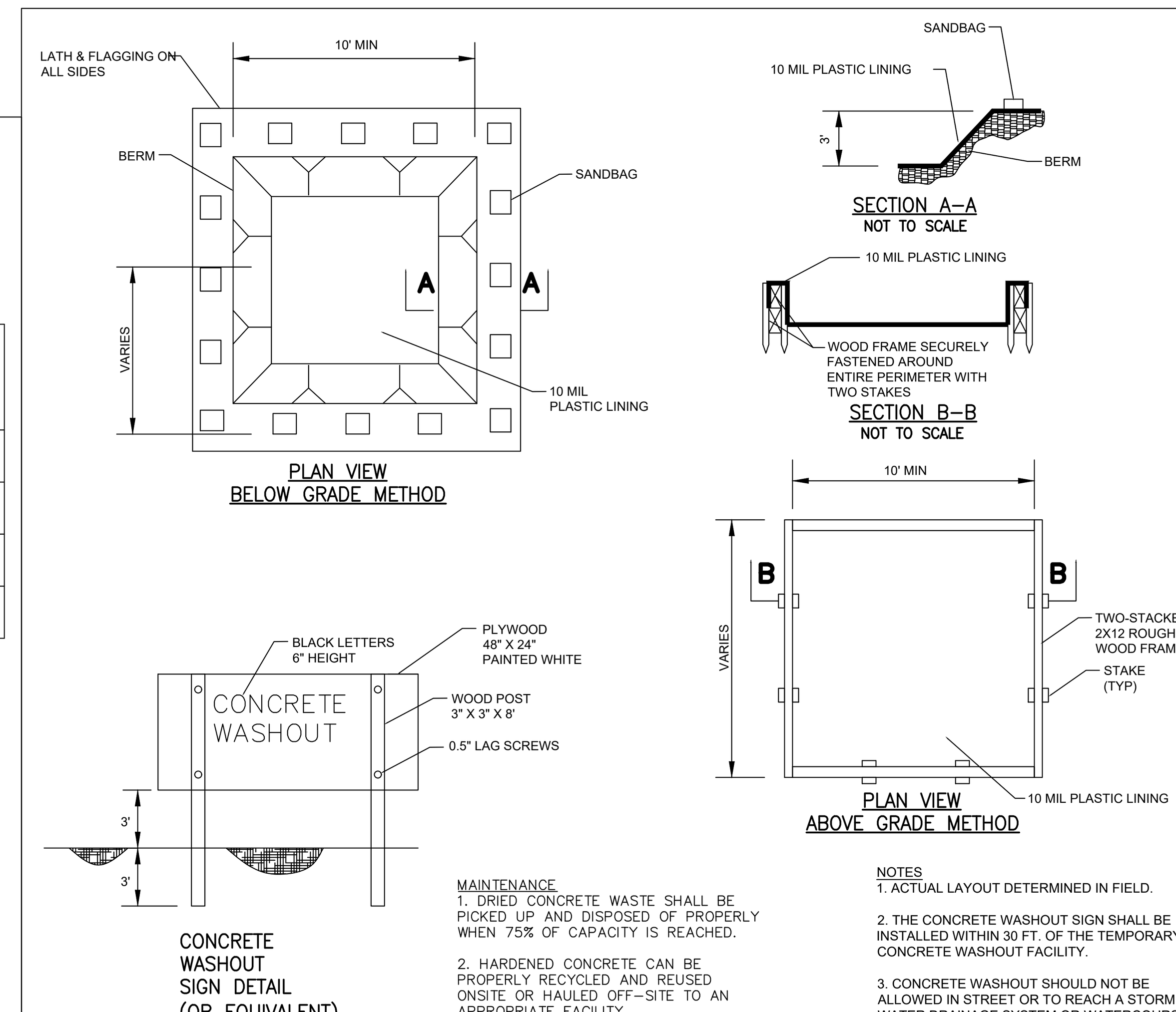
REFERENCE		STANDARD DWG. NO.
Project; Designed ___ Date ___; Checked ___ Date ___; Approved ___ Date ___	NRCS Natural Resources Conservation Service	IL-611; SHEET 1 OF 1; DATE 8-18-94

RIP-RAP SIZING REQUIREMENTS

Structure #	FES size	Rock Size	Rock Thickness (d)	Top Width W_1	Bottom Width W_2	Length La	Area (SY)
FES #	0" Dia	RR-3	0"	0'	0'	0'	0.0
FES #	0" Dia	RR-4	0"	0'	0'	0'	0.0
FES #	0" Dia	RR-3	0"	0'	0'	0'	0.0

All Geotextile shall be Non-woven Table 1 Class 2 material
Stone RIP-RAP shall conform to Quality and Gradation as noted in SEC 1005 of IDOT SSRB

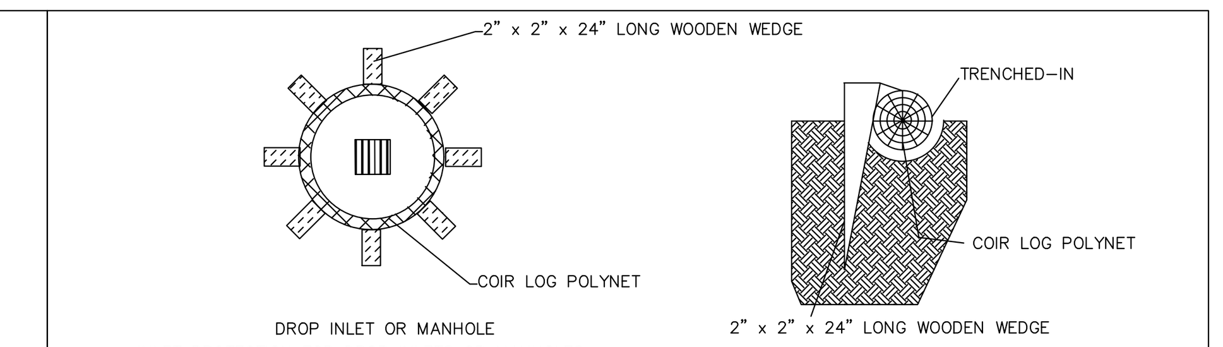
CONCRETE WASHOUT



MAINTENANCE
1. DRIED CONCRETE WASTE SHALL BE PICKED UP AND DISPOSED OF PROPERLY WHEN 75% OF CAPACITY IS REACHED.
2. HARDENED CONCRETE CAN BE PROPERLY RECYCLED AND REUSED ONSITE OR HAULED OFF-SITE TO AN APPROPRIATE FACILITY.

NOTES
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. CONCRETE WASHOUT SHOULD NOT BE ALLOWED IN STREET OR TO REACH A STORM WATER DRAINAGE SYSTEM OR WATERCOURSE.
4. CONCRETE WASHOUT AREA TO BE LOCATED AT LEAST 10' BEHIND CURB IF ADJACENT TO A PAVED ROAD.

COIR ROLL DETAIL INLET PROTECTION

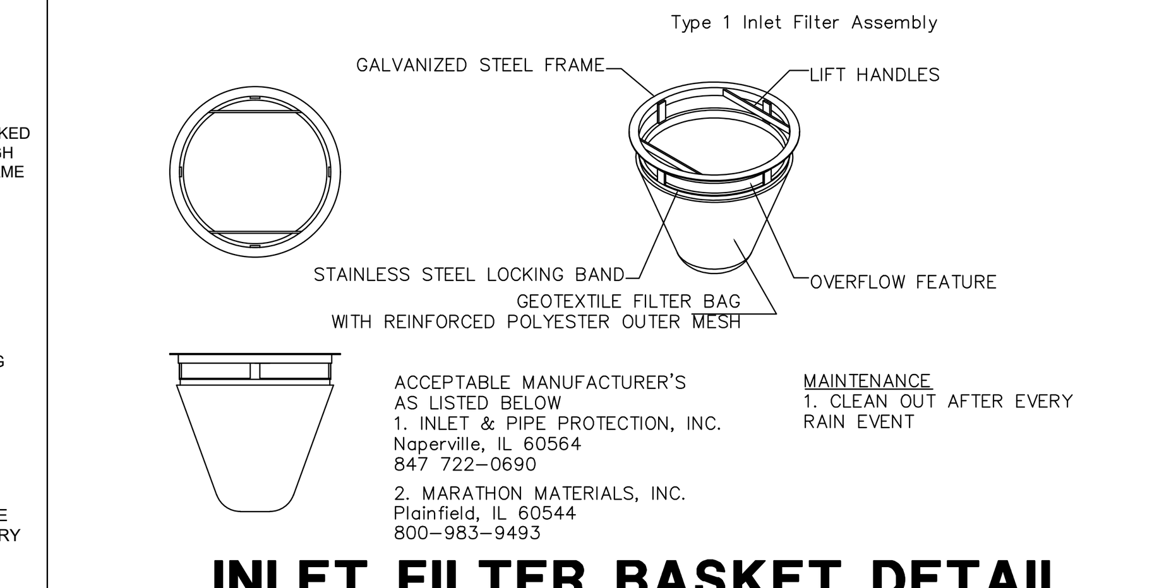


• USE 9LB DENSITY 12" DIAMETER, 20' LONG COIR LOG POLYNET FOR STANDARD CIRCULAR DRAINAGE STRUCTURES. PLACE THE COIR WATTLE AROUND THE STRUCTURE AND JOIN THE ENDS TOGETHER WITH COIR TWINE. USE 2"x2"x24" WOODEN WEDGES SPACED 3' APART TO HOLD DOWN LOG POLYNET.

NOTES:
1. DO NOT SCALE DRAWING.
2. REFER TO MANUFACTURER'S PRODUCT SPECIFICATIONS TO ENSURE QUALITY OF THE PRODUCTS

MAINTENANCE
1. CLEAN OUT SEDIMENT BEHIND LOG WHEN ½ FULL
2. RESECURE LOOSE LOGS
3. REPLACE LOGS AS NEEDED
4. REMOVE WHEN NOT NEEDED

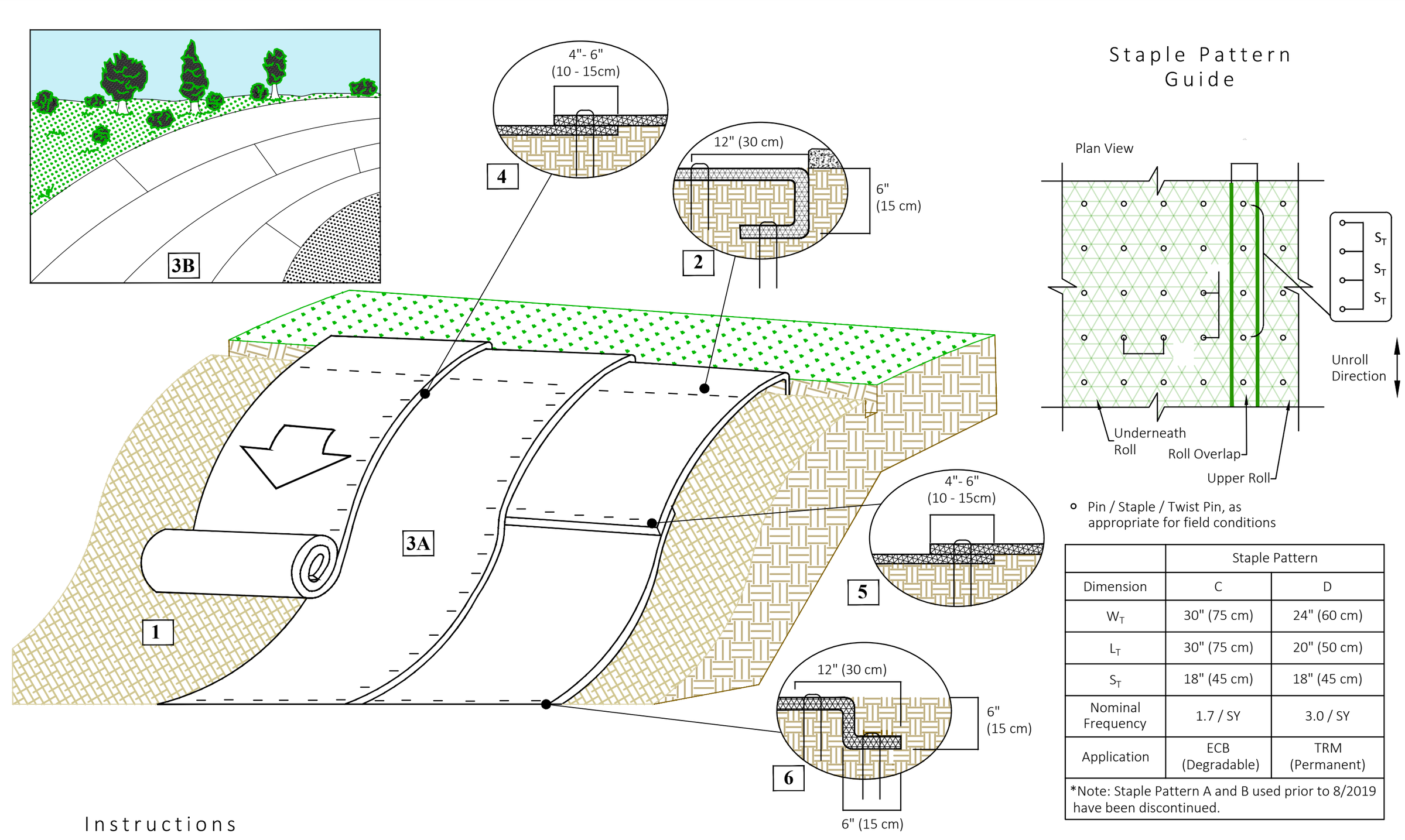
INLET FILTER BASKET DETAIL



ACCEPTABLE MANUFACTURER'S AS LISTED BELOW
1. INLET & PIPE PROTECTION, INC. Naperville, IL 60564 847 722-0690
2. MARATHON MATERIALS, INC. Plainfield, IL 60544 800-983-9493

MAINTENANCE
1. CLEAN OUT AFTER EVERY RAIN EVENT

EROSION CONTROL BLANKET SLOPE INSTALLATION

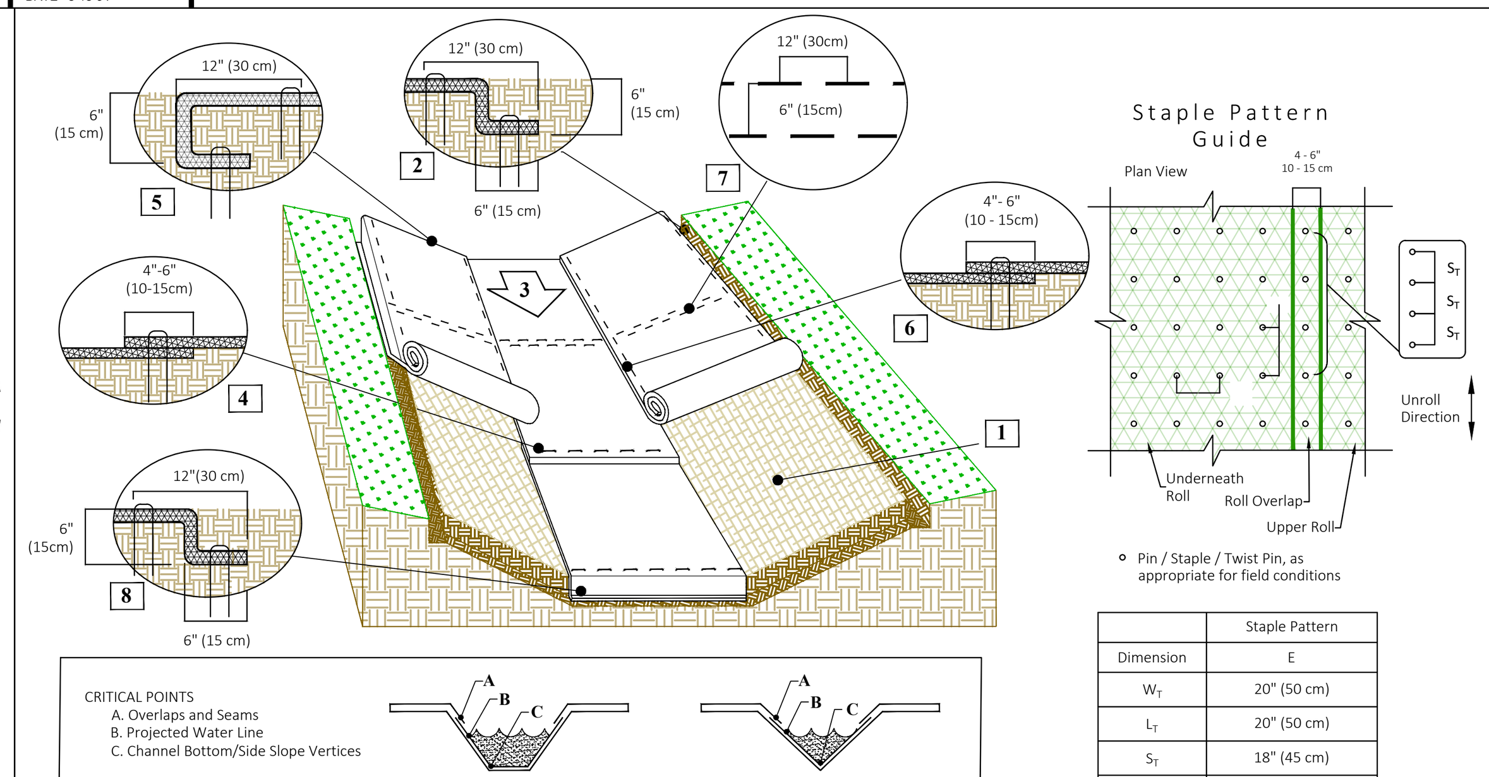


Dimension	C	D
W_T	30" (75 cm)	24" (60 cm)
L_T	30" (75 cm)	20" (50 cm)
S_T	18" (45 cm)	18" (45 cm)
Nominal Frequency	1.7 / SY	3.0 / SY
Application	ECB (Degradable)	TRM (Permanent)

*Note: Staple Pattern A and B used prior to 8/2019 have been discontinued.

Instructions
1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed. Ground surface must be free of debris, rocks, clay clods and raked smooth sufficient to allow intimate contact of the RECP with the soil over the entirety of the installation.
2. Begin at the top of the slope by anchoring the RECPs in a 6" (15 cm) deep X 6" (15 cm) wide trench. Anchor the RECPs with a row of staples/stakes/pins spaced at S_T apart in the bottom of the trench. Backfill and compact the trench after stapling and fold the roll over downslope. Secure RECPs over compacted soil with a row of staples/stakes/pins spaced at S_T apart across the width of the RECPs.
3. Roll the RECPs (A) down or (B) horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes/pins in appropriate locations as shown in the staple pattern guide. RollMax RECPs and ECBs should utilize Staple Pattern C, TRMs and VMax materials should utilize Staple Pattern D.
4. The edges of parallel RECPs must be stapled with approximately 4" - 6" (10 - 15 cm) overlap.
5. Consecutive RECPs spliced down the slope must overlapped with the upstream mat atop the downstream mat (shingle style). The overlap should be 4" - 6" (10 - 15 cm).
6. At the terminal end, secure each mat across the width with a row of staples/stakes/pins spaced at S_T. If exposed to flow, foot traffic, wind uplift or other disruption, trench the terminal end in as shown in detail.
7. Fasteners should provide a minimum of twenty pounds of pullout resistance. Six-inch (10 cm) X one-inch (2.5 cm) eleven gauge staples are typically adequate. In loose soils, longer staples may be necessary, twist pins can provide the greatest pullout resistance. In hard or rocky soils, straight pins may by used where staples or twist pins are refused, provided the minimum pullout requirements are met. Bio-degradable fasteners shall not be used with VMax (TRM) or TMax (HPTRM) materials.

EROSION CONTROL BLANKET CHANNEL INSTALLATION

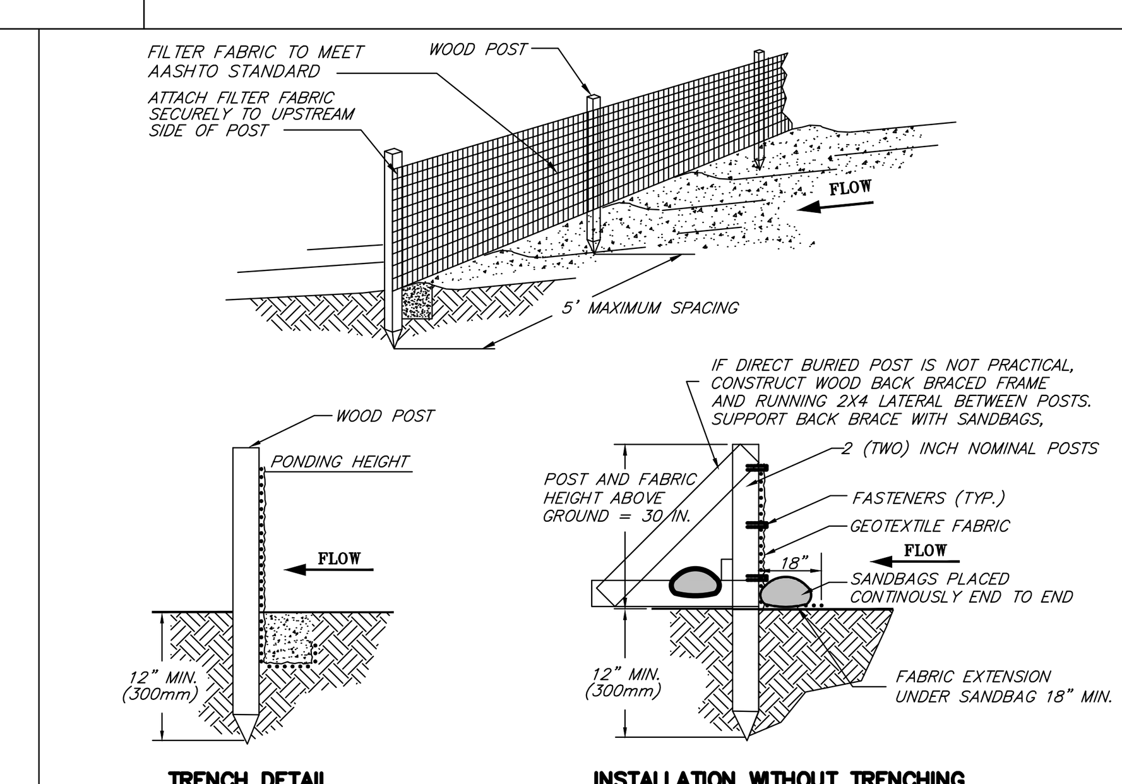


Dimension	Staple Pattern E
W_T	20" (50 cm)
L_T	20" (50 cm)
S_T	18" (45 cm)
Nominal Frequency	3.8 / SY

NOTES:
*Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

Instructions
1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed. Ground surface must be free of debris, rocks, clay clods and raked smooth sufficient to allow intimate contact of the RECP with the soil over the entirety of the installation.
2. Begin at the top of the channel by anchoring the RECPs in a 6" (15 cm) deep X 6" (15 cm) wide trench with approximately 12" (30 cm) of RECPs extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes/pins approximately 12" (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12" (30 cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes/pins spaced approximately 12" (30 cm) apart across the width of the RECPs.
3. Roll center RECPs in direction of water flow in bottom of channel. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes/pins in appropriate locations as shown in the staple pattern guide.
4. Place consecutive RECPs end-over-end (Shingle style) with a 4"- 6" (10 - 15 cm) overlap. Use a double row of staples staggered 4" apart and 4" on center to secure RECPs.
5. Full length edge of RECPs at top of side slopes must be anchored with a row of staples/stakes/pins spaced at S_T apart in a 6" (15 cm) deep X 6"(15 cm) wide trench. Backfill and compact the trench after stapling.
6. Adjacent RECPs must be overlapped approximately 4"- 6" (10 - 15 cm) and secured with staples/stakes/pins at S_T.
7. In high flow channel applications a staple check slot is recommended at 30 to 40 foot (9 -12m) intervals. Use a double row of staples staggered 6" (15 cm) apart and 12" (30 cm) on center over entire width of the channel.
8. The terminal end of the RECPs must be anchored with a row of staples/stakes/pins spaced at S_T apart in a 6" (15 cm) deep X 6" (15 cm) wide trench. Backfill and compact the trench after stapling.
9. Fasteners should provide a minimum of twenty pounds of pullout resistance. Six-inch (10 cm) X one-inch (2.5 cm) eleven gauge staples are typically adequate. In loose soils, longer staples may be necessary, twist pins can provide the greatest pullout resistance. In hard or rocky soils, straight pins may by used where staples or twist pins are refused, provided the minimum pullout requirements are met. Bio-degradable fasteners shall not be used with VMax (TRM) or TMax (HPTRM) materials.

SILT FENCE INSTALLATION DETAIL



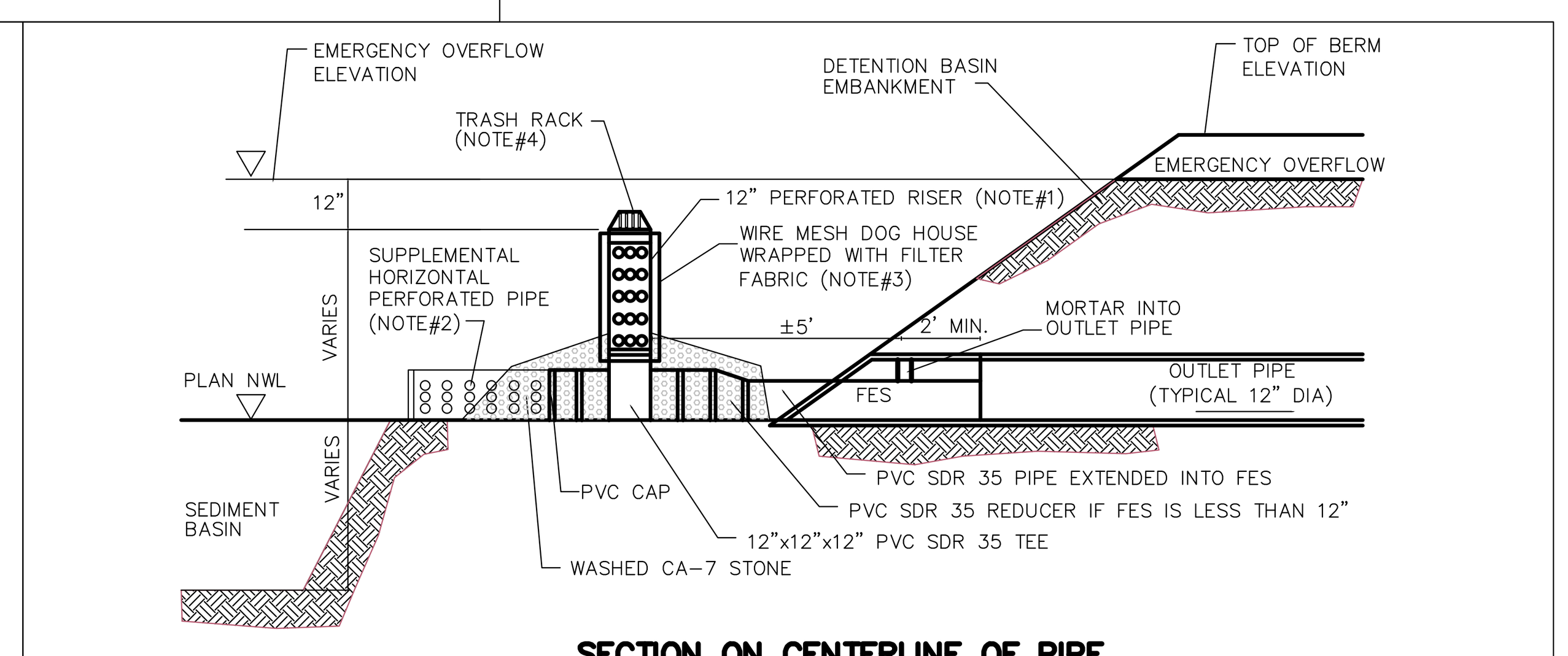
1. SET POSTS AND EXCAVATE OR SLIT-TRENCH A 6-INCH DEEP TRENCH UPSLOPE ALONG THE LINE OF THE POST
2. ATTACH GEOTEXTILE FILTER FABRIC TO EACH POST WITH A MINIMUM OF 3(THREE) FASTENERS PER POST AND EXTEND TO THE BOTTOM OF THE TRENCH. ACCEPTABLE FASTENERS INCLUDE STAPLES, ZIP-TIES, OR WIRE TIES.
3. BACKFILL AND COMPACT THE EXCAVATED SPOIL MATERIALS

Geotextile Requirement	Test Method	MARV
Grab Strength	ASTM D 4632	
-Machine direction		550 N
-X-machine direction		450 N
Permittivity	ASTM D 4491	0.05 sec-1
Apparent opening size*	ASTM D 4751	0.60 mm
Ultraviolet stability (retained strength)	ASTM D 4355	70% after 500 hours

Note: Value for apparent opening size represents maximum average roll value.

NOTES:
1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
4. FABRIC AND INSTALLATION SHALL MEET THE REQUIREMENTS OF ASSHTO STANDARD SPECIFICATION M-288-00.

SEDIMENT BASIN PERFORATED RISER



NOTES
1. 12" DIAMETER PERFORATED RISER SHALL CONSIST OF THIRTY 1" DIAMETER HOLES (± 24 SQ INCHES) PER LINEAR FOOT OF PIPE. USE OF 1"x4" SLOTS ARE PERMITTED. TOP OF PERFORATED RISER TO BE SET 12" BELOW EMERGENCY OVERFLOW ELEVATION. ADS HICKENBOTTOM 1"/SLOTTED HOLE MODEL OR APPROVED EQUAL.
2. IF PROPOSED PERFORATED RISER WILL BE 3 LINEAR FEET OR LESS, PROVIDE 4 LINEAR FEET OF HORIZONTAL PERFORATED PIPE. CHICKEN COOP WIRE SHALL BE WRAPPED DIRECTLY AROUND HORIZONTAL PERFORATED PIPE A MINIMUM OF THREE LAYERS AND FASTENED WITH WIRE OR PLASTIC TIES. THEN CHICKEN COOP WIRE SHALL BE WRAPPED A MINIMUM OF TWO TIMES WITH AMOCO 4553 NON-WOVEN FABRIC OR APPROVED EQUAL. FABRIC SHALL BE FASTENED TO EACH END OF PVC PIPE AND AT 12" SPACING USING PLASTIC TIES.
3. 15"-18" DIAMETER WIRE MESH CAGE WRAPPED A MINIMUM OF TWO TIMES WITH AMOCO 4553 NON-WOVEN FABRIC OR APPROVED EQUAL. FABRIC SHALL BE FASTENED TO WIRE MESH CAGE ONLY WITH WIRE OR PLASTIC TIES. WIRE CAGE TO BE SET INTO WASHED CA-7 STONE AND SIZED TO MATCH TOP OF PERFORATED RISER. WIRE CAGE MAY BE CONSTRUCTED USING FOUR LAYERS OF CHICKEN COOP WIRE FASTENED TO ITSELF OR AN 18" DIAMETER REBAR LIGHT STANDARD CAGE WRAPPED TWICE WITH CHICKEN COOP WIRE.
4. METAL TRASH RACK SHALL FIT FIRMLY AND CONSIST OF 12" ADS BAR GUARD, NEENAH R-4351-B, OR APPROVED EQUAL.
5. ALL PIPE AND FITTINGS MAYBE CONSTRUCTED OF STANDARD PVC SDR 35 PIPE, OR ORDERED THROUGH ADVANCED DRAINAGE SYSTEMS, INC (ADS), MOJO RISER BY EROSION CONTROL CONSULTING, OR APPROVED EQUALS.

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

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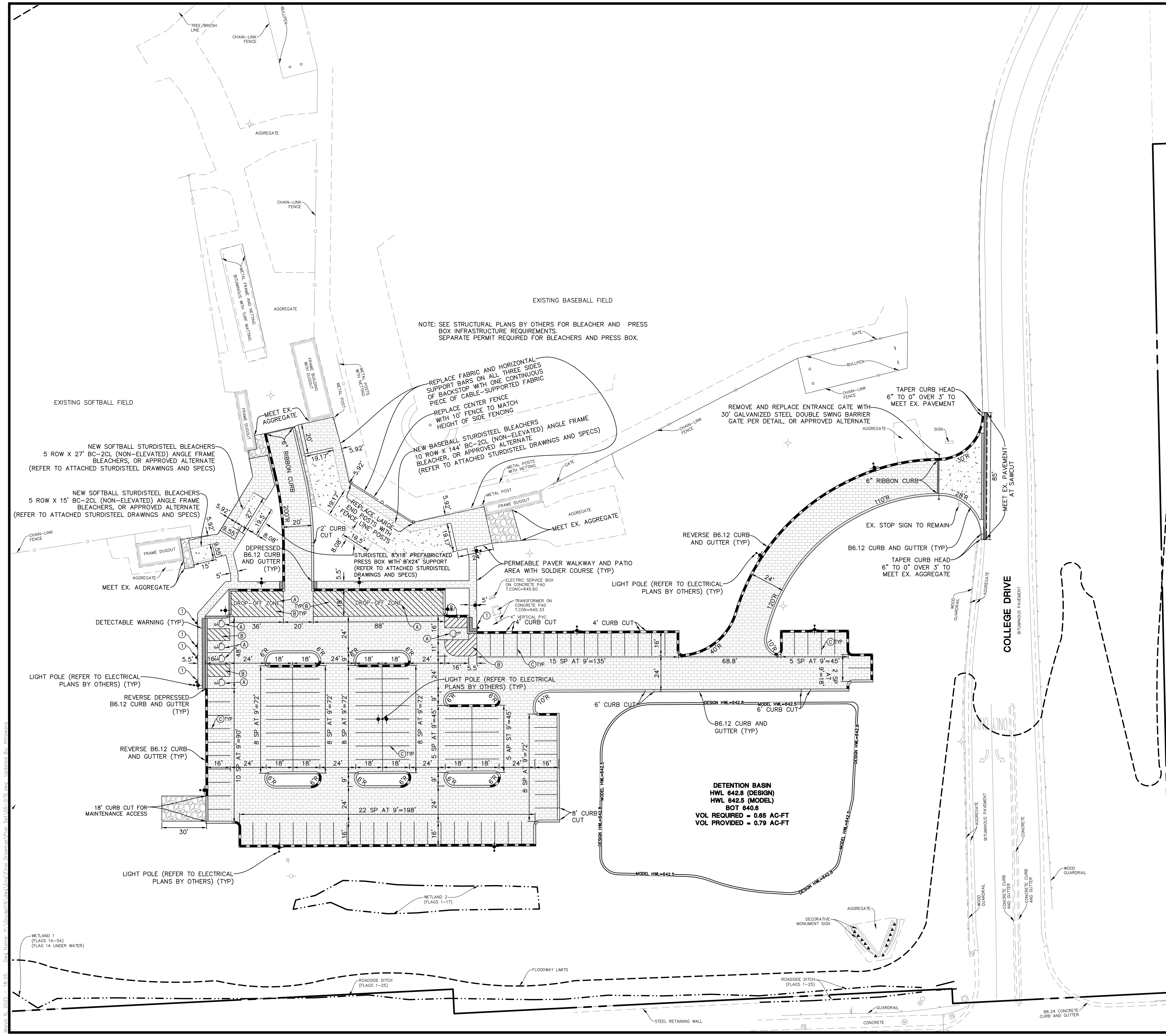
Construction Managers • Environmental Scientists • Landscape Architects • Planners

OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS
SOIL EROSION AND SEDIMENT CONTROL DETAILS

DATE	REVISIONS	DRAWN BY
01-22-25	REVISED PER MWRD REVIEW	KRK

PROJ. MGR.: KRK
PROJ. ASSOC.: GRC
DRAWN BY: ----
DATE: 10-14-24
SCALE: N.T.S.

SHEET 4 OF 11
OCCDPIL16



SIGN LEGEND

1. R7-8 HANDICAP PARKING SIGN
2. R1-1 STOP SIGN

PAVEMENT MARKING LEGEND

- (A) LETTERS AND SYMBOLS PAVEMENT MARKINGS
- (B) 4" YELLOW DIAGONAL AT 45° SPACED 2' O.C. W/ 4" YELLOW BORDER
- (C) 4" YELLOW LINE
- (D) 6" SOLID WHITE
- (E) 24" WHITE STOP BAR

SITE DATA

IMPROVEMENT AREA	±2.8 ACRES
STANDARD PARKING PROVIDED	104 SPACES
HANDICAP PROVIDED	5 SPACES
TOTAL PARKING PROVIDED	109 SPACES

06-01-16

SITE DIMENSIONAL AND PAVING NOTES:

1. ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
2. ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
4. TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2-#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
5. ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
6. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
7. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
8. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.

PAVEMENT LEGEND

PERMEABLE PAVERS (SEE DETAIL)
3.1" PAVER (UNILOCK ECO-PRIORA OR APPROVED EQUAL)
1 1/2" CA-16 SETTING BED AND CHOKE LAYER
11" CA-1 AGGREGATE FOR STORAGE VOLUME

CONCRETE PAVEMENT
8" PORTLAND CEMENT CONCRETE PAVEMENT W/6X6 W1.4WWF
4" COMPACTED AGGREGATE BASE, TYPE B

AGGREGATE
6" MIN. COMPACTED LIMESTONE SCREENING

STANDARD DUTY PAVEMENT
2" HMA SURFACE COURSE, IL-9.5, MIX D, N50
6" HMA BASE COURSE, IL-19, N50
4" COMPACTED CA-6 SUB-BASE

DATE	REVISIONS	DRAWN BY
01-22-25	REVISED PER MWRD REVIEW	KRK

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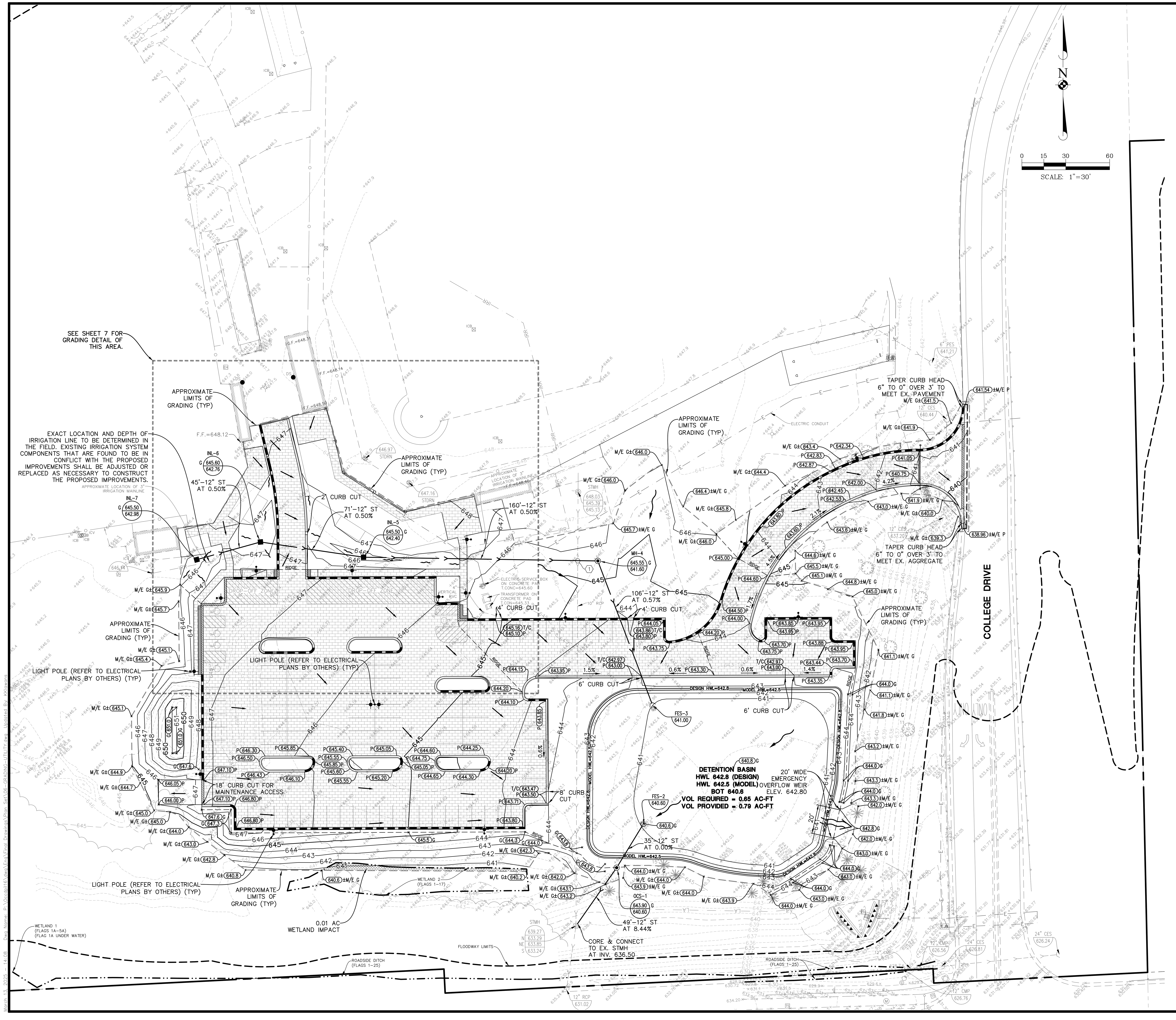
OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS

CITY OF DES PLAINES, ILLINOIS

SITE DIMENSIONAL AND PAVING PLAN

PROJ. MGR.:	KRK
PROJ. ASSOC.:	GRC
DRAWN BY:	----
DATE:	10-14-24
SCALE:	1"=30'



UTILITY NOTES:

06-01-22

1. ALL UTILITY DIMENSIONS ARE TO CENTER OF PIPE OR CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
3. ROUTING OF GAS, ELECTRIC AND TELEPHONE SERVICES IF SHOWN ARE APPROXIMATE ONLY AND SUBJECT TO CHANGE BASED UPON FINAL REVIEW AND APPROVAL BY RESPECTIVE UTILITY COMPANIES AND OWNER. CONTRACTOR SHALL CONTACT EACH UTILITY COMPANY AND COORDINATE FINAL LOCATIONS FOR ALL UTILITY SERVICES PRIOR TO START OF CONSTRUCTION.
4. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
5. LIGHTING AND UNDERGROUND CABLE IF SHOWN ON PLANS ARE FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR SPECIFICATIONS AND DETAILS.
6. THE CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF ALL EXISTING STRUCTURES TO PROPOSED FINISH GRADES.
7. AT LOCATIONS WHERE WATER MAIN CROSSES BENEATH OR LESS THAN 18" ABOVE A SEWER, PROVIDE WATER MAIN PROTECTION PER STANDARD SPECIFICATIONS FOR SEWER AND WATER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.
8. ELEVATIONS GIVEN FOR STORM SEWER STRUCTURES LOCATED IN CURB LINE ARE PAVEMENT ELEVATIONS.
9. ALL EXISTING UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT ELEVATION OR LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES.
10. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HERE ON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED.
11. ALL STORM SEWER LENGTHS SHOWN ARE CENTER OF MANHOLE TO CENTER OF MANHOLE OR STORM MANHOLE TO FES.
12. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.

UTILITY CROSSINGS

⟨1⟩ EX. 10" ST OVER 12" ST
B/P EX. ST = 643.1
T/P ST = 642.8
CRITICAL CROSSING

NOTE: WATER AND SEWER CROSSINGS SHALL MEET STATE EPA SEPARATION AND PIPE MATERIAL REQUIREMENTS. (SEE DETAIL SHEET)

GRADING PLAN LEGEND

Symbol	Description
764	PROPOSED 1 FOOT CONTOURS
792.8 G	PROPOSED SPOT ELEVATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE
(ditch symbol)	PROPOSED DITCH OR SWALE
(arrow)	PROPOSED DIRECTION OF FLOW
(double arrow)	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
(0.5')	PROPOSED DEPTH OF PONDING

GRADING NOTES:

06-01-16

1. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
2. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
3. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
5. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
8. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
9. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING ON SEPTEMBER 10, 2024. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
10. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.
11. EXCAVATION, GRADING, AND COMPACTION TO BE COMPLETED IN ACCORDANCE WITH RECOMMENDATIONS OF GEOTECHNICAL REPORT.

DATE	REVISIONS	DRAWN BY
01-22-25	REVISED PER MWRD REVIEW	KRK

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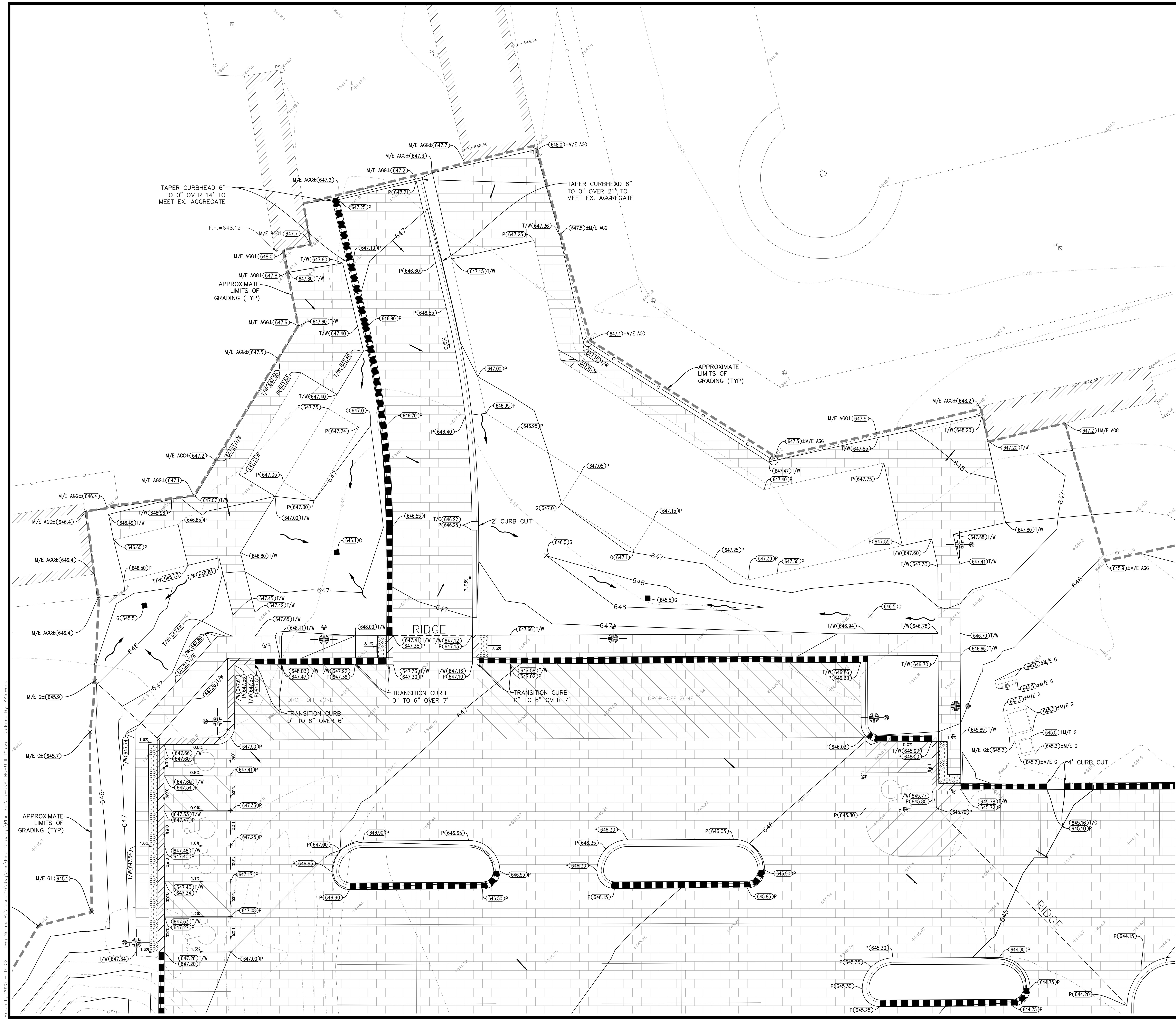
OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS

CITY OF DES PLAINES, ILLINOIS

GRADING AND UTILITY PLAN

PROJ. MGR.:	KRK
PROJ. ASSOC.:	GRC
DRAWN BY:	----
DATE:	10-14-24
SCALE:	1"=30'



01-01-16

GRADING PLAN LEGEND

Symbol	Description
764	PROPOSED 1 FOOT CONTOURS
(792.8) G	PROPOSED SPOT ELEVATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
(0.5')	PROPOSED DEPTH OF PONDING

06-01-16

GRADING NOTES:

1. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
2. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
3. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
5. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
8. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
9. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING ON SEPTEMBER 10, 2024. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
10. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.
11. EXCAVATION, GRADING, AND COMPACTION TO BE COMPLETED IN ACCORDANCE WITH RECOMMENDATIONS OF GEOTECHNICAL REPORT.

DRAWN BY	REVISIONS	DATE

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OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS

CITY OF DES PLAINES, ILLINOIS

GRADING DETAIL

PROJ. MGR.:	KRK
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DATE:	10-14-24
SCALE:	1"=10'

SHEET 7 OF 11

OCCDPIL16

A. REFERENCED SPECIFICATIONS

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE FOLLOWING, EXCEPT AS MODIFIED HEREIN OR ON THE PLANS:
   * STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT SS) FOR ALL IMPROVEMENTS EXCEPT SANITARY SEWER AND WATER MAIN CONSTRUCTION;
   * STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION (SSWS) FOR SANITARY SEWER AND WATER MAIN CONSTRUCTION;
   * CITY OF DES PLAINES MUNICIPAL CODE;
   * THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO (MWRD) WATERSHED MANAGEMENT ORDINANCE AND TECHNICAL GUIDANCE MANUAL;
   * IN CASE OF CONFLICT BETWEEN THE APPLICABLE ORDINANCES NOTED, THE MORE STRINGENT SHALL TAKE PRECEDENCE AND SHALL CONTROL ALL CONSTRUCTION.

B. NOTIFICATIONS

1. THE MWRD LOCAL SEWER SYSTEMS SECTION FIELD OFFICE MUST BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO THE COMMENCEMENT OF ANY WORK (CALL 708-588-4055 OR SEND EMAIL NOTIFICATION WITH PROJECT NAME, LOCATION AND PERMIT NUMBER TO WMOJOBSTART@MWRD.ORG).

2. THE CITY OF DES PLAINES ENGINEERING DEPARTMENT AND PUBLIC MUST BE NOTIFIED AT LEAST 24 HOURS PRIOR TO THE START OF CONSTRUCTION AND PRIOR TO EACH PHASE OF WORK. CONTRACTOR SHALL DETERMINE ITEMS REQUIRING INSPECTION PRIOR TO START OF CONSTRUCTION OR EACH WORK PHASE.

3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION FOR THE EXACT LOCATIONS OF UTILITIES AND FOR THEIR PROTECTION DURING CONSTRUCTION. IF EXISTING UTILITIES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, IMMEDIATELY NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED. CALL J.U.L.I.E. AT 1-800-892-0123.

C. GENERAL NOTES

1. ALL ELEVATIONS SHOWN ON PLANS REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). CONVERSION FACTOR IS 0.00 FT.

2. MWRD, THE MUNICIPALITY AND THE OWNER OR OWNER'S REPRESENTATIVE SHALL HAVE THE AUTHORITY TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION IMPROVEMENTS.

3. THE CONTRACTOR(S) SHALL INDEMNIFY THE OWNER, ENGINEER, MUNICIPALITY, MWRD, AND THEIR AGENTS, ETC., FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, OR TESTING OF THIS WORK ON THE PROJECT.

4. THE PROPOSED IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING PLANS AS APPROVED BY MWRD AND THE MUNICIPALITY UNLESS CHANGES ARE APPROVED BY MWRD, THE MUNICIPALITY, OR AUTHORIZED AGENT. THE CONSTRUCTION DETAILS, AS PRESENTED ON THE PLANS, MUST BE FOLLOWED. PROPER CONSTRUCTION TECHNIQUES MUST BE FOLLOWED ON THE IMPROVEMENTS INDICATED ON THE PLANS.

5. THE LOCATION OF VARIOUS UNDERGROUND UTILITIES WHICH ARE SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND REPRESENT THE BEST KNOWLEDGE OF THE ENGINEER. VERIFY LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING THE CONSTRUCTION OPERATIONS.

6. ANY EXISTING PAVEMENT, SIDEWALK, DRIVEWAY, ETC., DAMAGED DURING CONSTRUCTION OPERATIONS AND NOT CALLED FOR TO BE REMOVED SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

7. MATERIAL AND COMPACTION TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MUNICIPALITY, MWRD, AND OWNER.

8. THE UNDERGROUND CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS TO NOTIFY ALL INSPECTION AGENCIES.

9. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS DISTURBED DURING CONSTRUCTION SHALL BE ADJUSTED TO FINISH GRADE PRIOR TO FINAL INSPECTION.

10. RECORD DRAWINGS SHALL BE KEPT BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER AS SOON AS UNDERGROUND IMPROVEMENTS ARE COMPLETED. FINAL PAYMENTS TO THE CONTRACTOR SHALL BE HELD UNTIL THEY ARE RECEIVED. ANY CHANGES IN LENGTH, LOCATION OR ALIGNMENT SHALL BE SHOWN IN RED. ALL WYES OR BENDS SHALL BE LOCATED FROM THE DOWNSTREAM MANHOLE. ALL VALVES, B-BOXES, TEES OR BENDS SHALL BE TIED TO A FIRE HYDRANT.

D. SANITARY SEWER

1. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT ANY POLLUTED WATER, SUCH AS GROUND AND SURFACE WATER, FROM ENTERING THE EXISTING SANITARY SEWERS.

2. A WATER-TIGHT PLUG SHALL BE INSTALLED IN THE DOWNSTREAM SEWER PIPE AT THE POINT OF SEWER CONNECTION PRIOR TO COMMENCING ANY SEWER CONSTRUCTION. THE PLUG SHALL REMAIN IN PLACE UNTIL REMOVAL IS AUTHORIZED BY THE MUNICIPALITY AND/OR MWRD AFTER THE SEWERS HAVE BEEN TESTED AND ACCEPTED.

3. DISCHARGING ANY UNPOLLUTED WATER INTO THE SANITARY SEWER SYSTEM FOR THE PURPOSE OF SEWER FLUSHING OF LINES FOR THE DEFLECTION TEST SHALL BE PROHIBITED WITHOUT PRIOR APPROVAL FROM THE MUNICIPALITY OR MWRD.

4. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS (LATEST EDITION).

5. ALL FLOOR DRAINS SHALL DISCHARGE TO THE SANITARY SEWER SYSTEM.

6. ALL DOWNSPOUTS AND FOOTING DRAINS SHALL DISCHARGE TO THE STORM SEWER SYSTEM.

7. ALL SANITARY SEWER PIPE MATERIALS AND JOINTS (AND STORM SEWER PIPE MATERIALS AND JOINTS IN A COMBINED SEWER AREA) SHALL CONFORM TO THE FOLLOWING:

PIPE MATERIAL	PIPE SPECIFICATIONS	JOINT SPECIFICATIONS
VITRIFIED CLAY PIPE	ASTM C-700	ASTM C-425
REINFORCED CONCRETE SEWER PIPE	ASTM C-76	ASTM C-443
CAST IRON SOIL PIPE	ASTM A-74	ASTM C-564
DUCTILE IRON PIPE	ANSI A21.51	ANSI A21.11
POLYVINYL CHLORIDE (PVC) PIPE 6-INCH TO 15-INCH DIAMETER SDR 26 18-INCH TO 27-INCH DIAMETER F/DY=46	 ASTM D-3034 ASTM F-679	 ASTM D-3212 ASTM D-3212
HIGH DENSITY POLYETHYLENE (HDPE)	ASTM D-3350 ASTM D-3035	ASTM D-3261,F-2620 (HEAT FUSION) ASTM D-3212,F-477 (GASKETED)
WATER MAIN QUALITY PVC 4-INCH TO 36-INCH 4-INCH TO 12-INCH 14-INCH TO 48-INCH	 ASTM D-2241 AWWA C900 AWWA C905	 ASTM D-3139 ASTM D-3139 ASTM D-3139

THE FOLLOWING MATERIALS ARE ALLOWED ON A QUALIFIED BASIS SUBJECT TO DISTRICT REVIEW AND APPROVAL PRIOR TO PERMIT ISSUANCE. A SPECIAL CONDITION WILL BE ADDED TO THE PERMIT WHEN THE PIPE MATERIAL BELOW IS USED FOR SEWER CONSTRUCTION OR A CONNECTION IS MADE.

PIPE MATERIAL	PIPE SPECIFICATIONS	JOINT SPECIFICATIONS
POLYPROPYLENE (PP) PIPE		
12-INCH TO 24-INCH DOUBLE WALL	ASTM F-2736	D-3212, F-477
30-INCH TO 60-INCH TRIPLE WALL	ASTM F-2764	D3212, F-477

8. ALL SANITARY SEWER CONSTRUCTION (AND STORM SEWER CONSTRUCTION IN COMBINED SEWER AREAS), REQUIRES STONE BEDDING WITH STONE ¼ " TO 1" IN SIZE, WITH MINIMUM BEDDING THICKNESS EQUAL TO ¼ THE OUTSIDE DIAMETER OF THE SEWER PIPE, BUT NOT LESS THAN FOUR (4) INCHES NOR MORE THAN EIGHT (8) INCHES. MATERIAL SHALL BE CA-7, CA-11 OR CA-13 AND SHALL BE EXTENDED AT LEAST 12" ABOVE THE TOP OF THE PIPE WHEN USING PVC.

9. NON-SHEAR FLEXIBLE-TYPE COUPLINGS SHALL BE USED IN THE CONNECTION OF SEWER PIPES OF DISSIMILAR PIPE MATERIALS.

10. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS. SANITARY LIDS SHALL BE CONSTRUCTED WITH A CONCEALED PICKHOLE AND WATERTIGHT GASKET WITH THE WORD "SANITARY" CAST INTO THE LID.

11. WHEN CONNECTING TO AN EXISTING SEWER MAIN BY MEANS OTHER THAN AN EXISTING WYE, TEE, OR AN EXISTING MANHOLE, ONE OF THE FOLLOWING METHODS SHALL BE USED:
    a) A CIRCULAR SAW-CUT OF SEWER MAIN BY PROPER TOOLS ("SHEWER-TAP" MACHINE OR SIMILAR) AND PROPER INSTALLATION OF HUBWYE SADDLE OR HUB-TEE SADDLE.
    b) REMOVE AN ENTIRE SECTION OF PIPE (BREAKING ONLY THE TOP OF ONE BELL) AND REPLACE WITH A WYE OR TEE BRANCH SECTION.
    c) WITH PIPE CUTTER, NEATLY AND ACCURATELY CUT OUT DESIRED LENGTH OF PIPE FOR INSERTION OF PROPER FITTING, USING "BAND SEAL" OR SIMILAR COUPLINGS TO HOLD IT FIRMLY IN PLACE.

12. WHENEVER A SANITARY/COMBINED SEWER CROSSES UNDER A WATERMAIN, THE MINIMUM VERTICAL DISTANCE FROM THE TOP OF THE SEWER TO THE BOTTOM OF THE WATERMAIN SHALL BE 18 INCHES. FURTHERMORE, A MINIMUM HORIZONTAL DISTANCE OF 10 FEET BETWEEN SANITARY/COMBINED SEWERS AND WATERMAINS SHALL BE MAINTAINED UNLESS: THE SEWER IS LAID IN A SEPARATE TRENCH, KEEPING A MINIMUM 18" VERTICAL SEPARATION; OR THE SEWER IS LAID IN THE SAME TRENCH WITH THE WATERMAIN LOCATED AT THE OPPOSITE SIDE ON A BENCH OF UNDISTURBED EARTH, KEEPING A MINIMUM 18" VERTICAL SEPARATION. IF EITHER THE VERTICAL OR HORIZONTAL DISTANCES DESCRIBED CANNOT BE MAINTAINED, OR THE SEWER CROSSES ABOVE THE WATER MAIN, THE SEWER SHALL BE CONSTRUCTED TO WATER MAIN STANDARDS OR IT SHALL BE ENCASED WITH A WATER MAIN QUALITY CARRIER PIPE WITH THE ENDS SEALED.

13. ALL EXISTING SEPTIC SYSTEMS SHALL BE ABANDONED. ABANDONED TANKS SHALL BE FILLED WITH GRANULAR MATERIAL OR REMOVED.

14. ALL SANITARY MANHOLES, (AND STORM MANHOLES IN COMBINED SEWER AREAS), SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48 INCHES, AND SHALL BE CAST IN PLACE OR PRE-CAST REINFORCED CONCRETE.

15. ALL SANITARY MANHOLES, (AND STORM MANHOLES IN COMBINED SEWER AREAS), SHALL HAVE PRECAST "RUBBER BOOTS" THAT CONFORM TO ASTM C-923 FOR ALL PIPE CONNECTIONS. PRECAST SECTIONS SHALL CONSIST OF MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS.

16. ALL ABANDONED SANITARY SEWERS SHALL BE PLUGGED AT BOTH ENDS WITH AT LEAST 2 FEET LONG NON-SHRINK CONCRETE OR MORTAR PLUG.

17. EXCEPT FOR FOUNDATION/FOOTING DRAINS PROVIDED TO PROTECT BUILDINGS, OR PERFORATED PIPES ASSOCIATED WITH VOLUME CONTROL FACILITIES, DRAIN TILES/FIELD TILES/UNDERDRAINS/PERFORATED PIPES ARE NOT ALLOWED TO BE CONNECTED TO OR TRIBUTARY TO COMBINED SEWERS, SANITARY SEWERS, OR STORM SEWERS TRIBUTARY TO COMBINED SEWERS IN COMBINED SEWER AREAS. CONSTRUCTION OF NEW FACILITIES OF THIS TYPE IS PROHIBITED; AND ALL EXISTING DRAIN TILES AND PERFORATED PIPES ENCOUNTERED WITHIN THE PROJECT AREA SHALL BE PLUGGED OR REMOVED, AND SHALL NOT BE CONNECTED TO COMBINED SEWERS, SANITARY SEWERS, OR STORM SEWERS TRIBUTARY TO COMBINED SEWERS.

18. A BACKFLOW PREVENTER IS REQUIRED FOR ALL DETENTION BASINS TRIBUTARY TO COMBINED SEWERS. REQUIRED BACKFLOW PREVENTERS SHALL BE INSPECTED AND EXERCISED ANNUALLY BY THE PROPERTY OWNER TO ENSURE PROPER OPERATION, AND ANY NECESSARY MAINTENANCES SHALL BE PERFORMED TO ENSURE FUNCTIONALITY. IN THE EVENT OF A SEWER SURCHARGE INTO AN OPEN DETENTION BASIN TRIBUTARY TO COMBINED SEWERS, THE PERMITTEE SHALL ENSURE THAT CLEAN UP AND WASH OUT OF SEWAGE TAKES PLACE WITHIN 48 HOURS OF THE STORM EVENT.

E. EROSION AND SEDIMENT CONTROL

1. THE CONTRACTOR SHALL INSTALL THE EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

2. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE FUNCTIONAL PRIOR TO HYDROLOGIC DISTURBANCE OF THE SITE.

3. ALL DESIGN CRITERIA, SPECIFICATIONS, AND INSTALLATION OF EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL.

4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

5. INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:
   a) UPON COMPLETION OF INITIAL EROSION AND SEDIMENT CONTROL MEASURES, PRIOR TO ANY SOIL DISTURBANCE.
   b) ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.

6. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE CO-PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.

7. A STABILIZED MAT OF CRUSHED STONE MEETING THE STANDARDS OF THE ILLINOIS URBAN MANUAL SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.

8. CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL AND SHALL BE INSTALLED PRIOR TO ANY ON SITE CONSTRUCTION ACTIVITIES INVOLVING CONCRETE.

9. MORTAR WASHOUT FACILITIES SHALL BE CONSTRUCTED IN ADDITION TO CONCRETE WASHOUT FACILITIES FOR ANY BRICK AND MORTAR BUILDING ENVELOPE CONSTRUCTION ACTIVITIES.

10. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN. VOLUME CONTROL FACILITIES SHALL NOT BE USED AS TEMPORARY SEDIMENT BASINS.

11. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) DAYS.

12. ALL FLOOD PROTECTION AREAS AND VOLUME CONTROL FACILITIES SHALL, AT A MINIMUM, BE PROTECTED WITH A DOUBLE-ROW OF SILT FENCE (OR EQUIVALENT).

13. VOLUME CONTROL FACILITIES SHALL NOT BE CONSTRUCTED UNTIL ALL OF THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

14. SOIL STOCKPILES SHALL, AT A MINIMUM, BE PROTECTED WITH PERIMETER SEDIMENT CONTROLS. SOIL STOCKPILES SHALL NOT BE PLACED IN FLOOD PROTECTION AREAS OR THEIR BUFFERS.

15. EARTHEN EMBANKMENT SIDE SLOPES SHALL BE STABILIZED WITH APPROPRIATE EROSION CONTROL BLANKET.

16. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY APPROPRIATE SEDIMENT CONTROL MEASURES.

17. THE CONTRACTOR SHALL EITHER REMOVE OR REPLACE ANY EXISTING DRAIN TILES AND INCORPORATE THEM INTO THE DRAINAGE PLAN FOR THE DEVELOPMENT. DRAIN TILES CANNOT BE TRIBUTARY TO A SANITARY OR COMBINED SEWER. DRAIN TILES ALLOWED IN COMBINED SEWER AREA FOR GREEN INFRASTRUCTURE PRACTICES.

18. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE SITE INSPECTOR MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.

19. THE CONTRCTOR SHALL BE RESPONSIBLE FOR TRENCH DEWATERING AND EXCAVATION FOR THE INSTALLATION OF SANITARY SEWERS, STORM SEWERS, WATERMAINS AS WELL AS THEIR SERVICES AND OTHER APPURTENANCES. ANY TRENCH DEWATERING, WHICH CONTAINS SEDIMENT SHALL PASS THROUGH A SEDIMENT SETTLING POND OR EQUALLY EFFECTIVE SEDIMENT CONTROL DEVICE. ALTERNATIVES MAY INCLUDE DEWATERING INTO A SUMP PIT, FILTER BAG OR EXISTING VEGETATED UPSLOPE AREA. SEDIMENT LADEN WATERS SHALL NOT BE DISCHARGE TO WATERWAYS, FLOOD PROTECTION AREAS OR THE COMBINED SEWER SYSTEM.

20. ALL PERMANENT EROSION CONTROL PRACTICES SHALL BE INITIATED WITHIN SEVEN (7) DAYS FOLLOWING THE COMPLETION OF SOIL DISTURBING ACTIVITIES.

21. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AND REPAIRED AS NEEDED ON A YEAR-ROUND BASIS DURING CONSTRUCTION AND ANY PERIODS OF CONSTRUCTION SHUTDOWN UNTIL PERMANENT STABILIZATION IS ACHIEVED.

22. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER PERMANENT SITE STABILIZATION.

23. THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, SITE INSPECTOR, OR MWRD.

TECHNICAL GUIDANCE MANUAL

MWRD GENERAL NOTES

10/13/2022

STD. DWG. NO.18

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DRAWN BY | REVISIONS | DATE

OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS
CONSTRUCTION DETAILS

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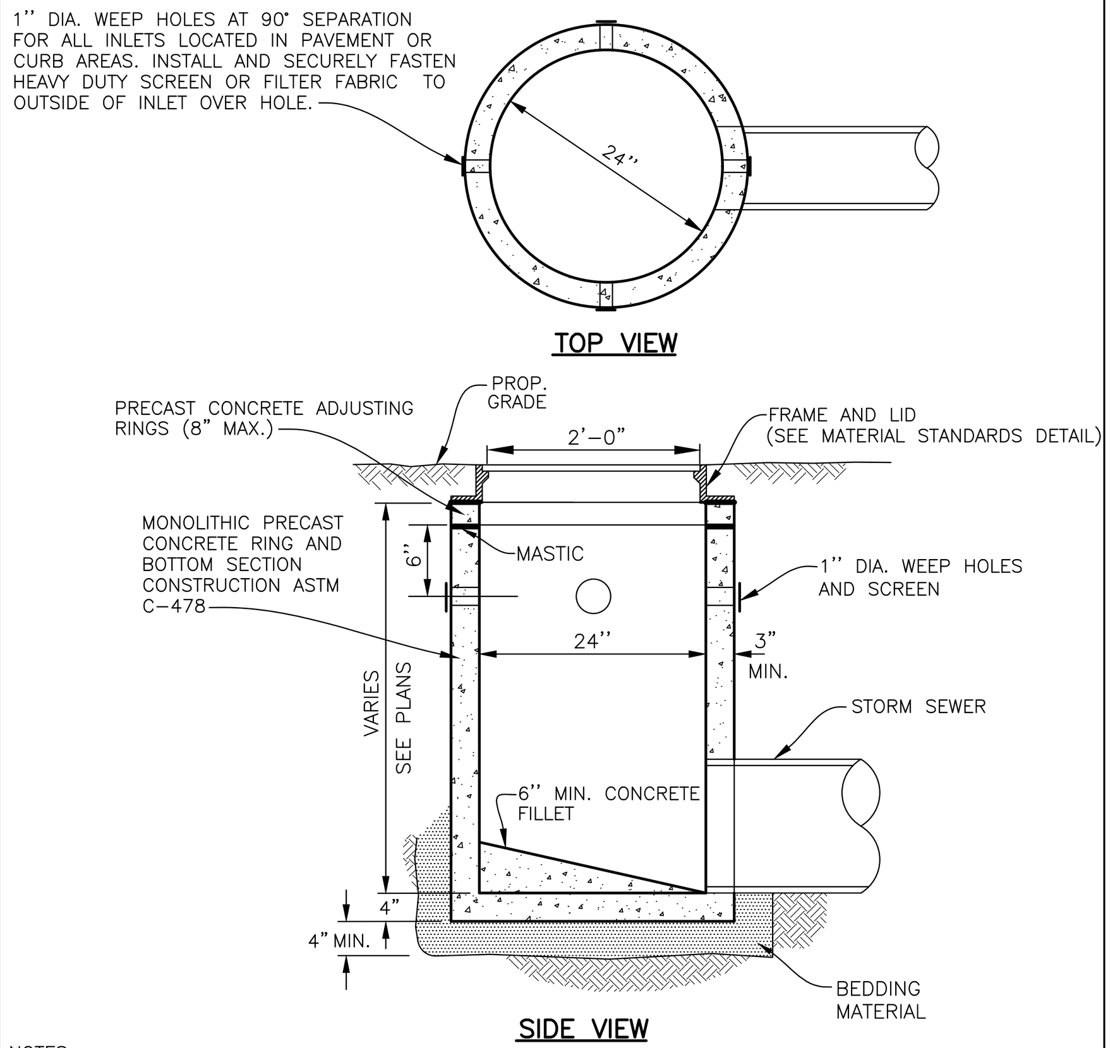
SHEET 8 OF 11
OCCDPIL16

March 13, 2025 - 13:41 Dwg. Name: P:\Occdpil16\Civil\Eng\Final Drawings\Plan Set\07-09 DETAILS.dwg Updated By: KKrawiec

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

INLET DETAIL



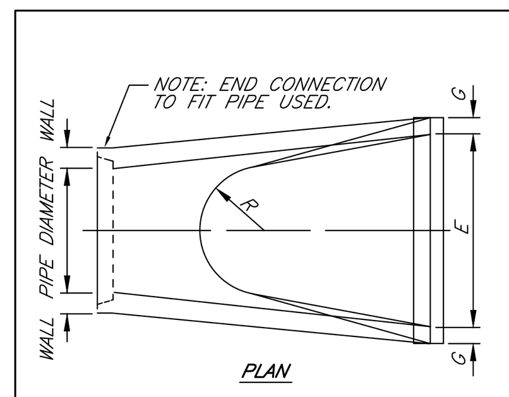
NOTES:
1. INSTALL MINIMUM 4" OF BEDDING MATERIAL UNDER STRUCTURE BOTTOM SECTION & FILL ENTIRE EXCAVATION ALL AROUND STRUCTURE UP TO C.L. OF PIPE WITH BEDDING AND HAUNCHING MATERIAL.
2. PIPE OPENINGS SHALL BE CAST IN TO WALL.
3. STRUCTURE FRAME, ADJUSTING RINGS, AND ALL CONCRETE SECTIONS SHALL BE SET ON AND SEALED WITH BITUMINOUS MASTIC JOINT MATERIAL AND MORTARED ON INSIDE IF STRUCTURE LIES IN PAVEMENT.
4. FILL LUG HOLES WITH BITUMINOUS JOINING COMPOUND.
5. CURB & GUTTER TYPE FRAME AND GRATES OF INLETS IN PARKING LOT CORNERS SHALL BE LOCATED 2'-0" FROM THE FACE OF ADJACENT CURB TO CENTERLINE OF FRAME & GRATE.

06-01-15

INLET DETAIL

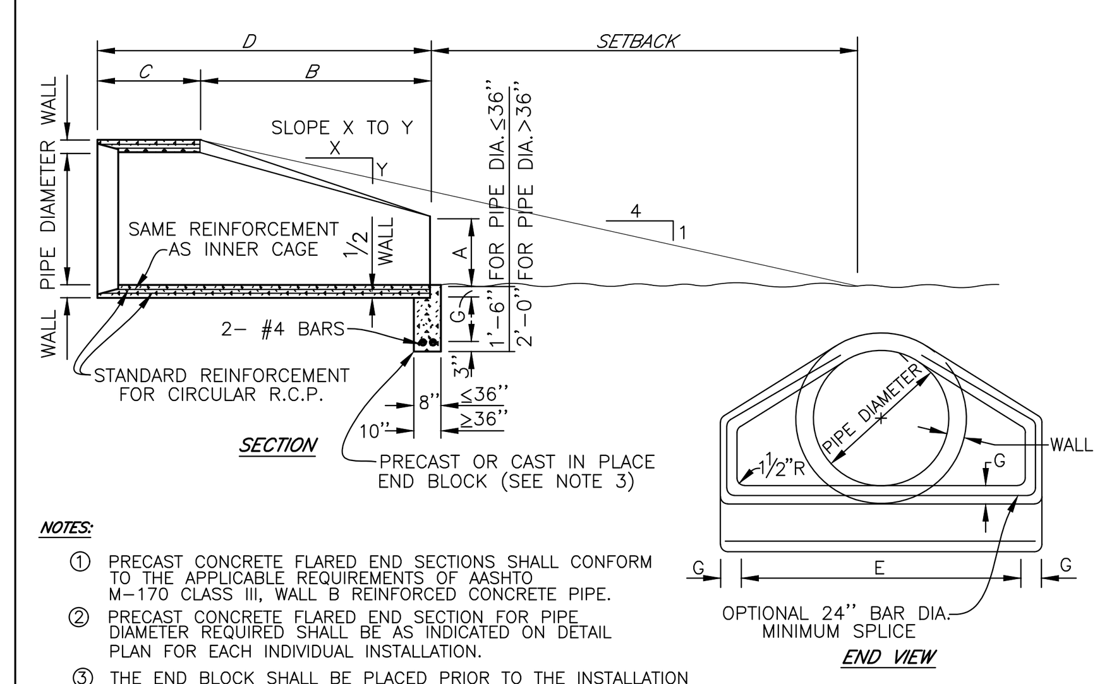
S-ST-INLET

CONCRETE FLARED END SECTION DETAIL



PIPE DIA.	APPROX. WT. (LBS.)	WALL	A	B	C	D	E	G	R	SLOPE	SET BACK
12"	530	2"	4"	2'-0"	4'-0⅞"	6'-0⅞"	2'-0"	2"	9"	3:1	0
15"	740	2¼"	6"	2'-3"	3'-10"	6'-1"	2'-6"	2¼"	11"	3:1	0
18"	990	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	2½"	12"	3:1	0
21"	1280	2¾"	9"	2'-11"	3'-2"	6'-1"	3'-6"	2¾"	13"	3:1	0
24"	1520	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3"	14"	3:1	0
27"	1930	3¼"	10"	4'-0"	2'-1½"	6'-1½"	4'-6"	3¼"	14½"	3:1	0
30"	2190	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3½"	15"	3:1	0
33"	3200	3¾"	1'-1½"	4'-10½"	3'-3¼"	8'-1¾"	5'-6"	3¾"	17½"	3:1	6
36"	4100	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	4"	20"	3:1	7
42"	5380	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	4½"	22"	3:1	7
48"	6550	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	5"	22"	3:1	10
54"	8240	5½"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"	5½"	24"	2.4:1	12
60"	8730	6"	2'-11"	5'-0"	3'-3"	8'-3"	8'-0"	5"	*	2:1	14
66"	10710	6½"	2'-6"	6'-0"	2'-3"	8'-3"	8'-6"	5½"	*	2:1	16
72"	12520	7"	3'-0"	6'-6"	1'-9"	8'-3"	9'-0"	6"	*	1.86:1	17
78"	14770	7½"	3'-0"	7'-6"	1'-9"	9'-3"	9'-6"	6½"	*	1.82:1	18
84"	18160	8"	3'-0"	7'-6½"	1'-9"	9'-3½"	10'-0"	6½"	*	1.5:1	20

* RADIUS AS FURNISHED BY MANUFACTURER



NOTES:
1. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS III, WALL B REINFORCED CONCRETE PIPE.
2. PRECAST CONCRETE FLARED END SECTION FOR PIPE DIAMETER REQUIRED SHALL BE AS INDICATED ON DETAIL PLAN FOR EACH INDIVIDUAL INSTALLATION.
3. THE END BLOCK SHALL BE PLACED PRIOR TO THE INSTALLATION OF THE FLARED END SECTION. THE END BLOCK SHALL BE CONSTRUCTED IN ACCORDANCE WITH IDOT STANDARD SPECIFICATIONS
4. ALL FLARED END SECTIONS SHALL HAVE GRATINGS AS PER IDOT STANDARD.
5. PROVIDE CLAY DAM UNDER COLLAR AND AROUND UPSTREAM END OF FES AND FIRST PIPE THE FULL WIDTH OF TRENCH AND 10 FEET LONG AT LOCATIONS WHERE THEY DISCHARGE INTO A DETENTION BASIN.
6. PROVIDE SETBACK FROM NORMAL WATER LEVEL OR TOE OF SIDE SLOPE ON DRY BASINS, STREAMS OR CHANNELS FOR PIPE 33" AND LARGER.

06-01-15

CONCRETE FLARED END SECTION DETAIL

S-ST-FLARED-END

RIP-RAP

PIPE DIAMETER (IN.) D	STONE RIP-RAP: QUALITY DESIGNATION	GRADATION NUMBER RR	MINIMUM THICKNESS (IN.) A	MINIMUM LENGTH (FT.) 4D	WEIGHT RANGE (#)	WEIGHT AVERAGE (#)	SIZE AVERAGE (IN.)	BEDDING: MINIMUM THICKNESS (IN.)
12"	B	3	8"	4'	1-50	10	4.5"	N/A
15"	B	3	8"	5	1-50	10	4.5"	N/A
18"	B	4	16"	6'	1-150	40	7"	6"
21"	B	4	16"	7'	1-150	40	7"	6"
24"	B	4	16"	8'	1-150	40	7"	6"
27"	B	4	16"	9'	1-150	40	7"	6"
30"	B	4	16"	10'	1-150	40	7"	6"
36"	B	5	22"	12'	3-400	90	10"	8"
42"	B	5	22"	14'	3-400	90	10"	8"
48"	B	6	26"	16'	6-600	170	12"	10"
54"	B	6	26"	18'	6-600	170	12"	10"
60"	B	6	26"	20'	6-600	170	12"	10"
72"	B	6	26"	24'	6-600	170	12"	10"

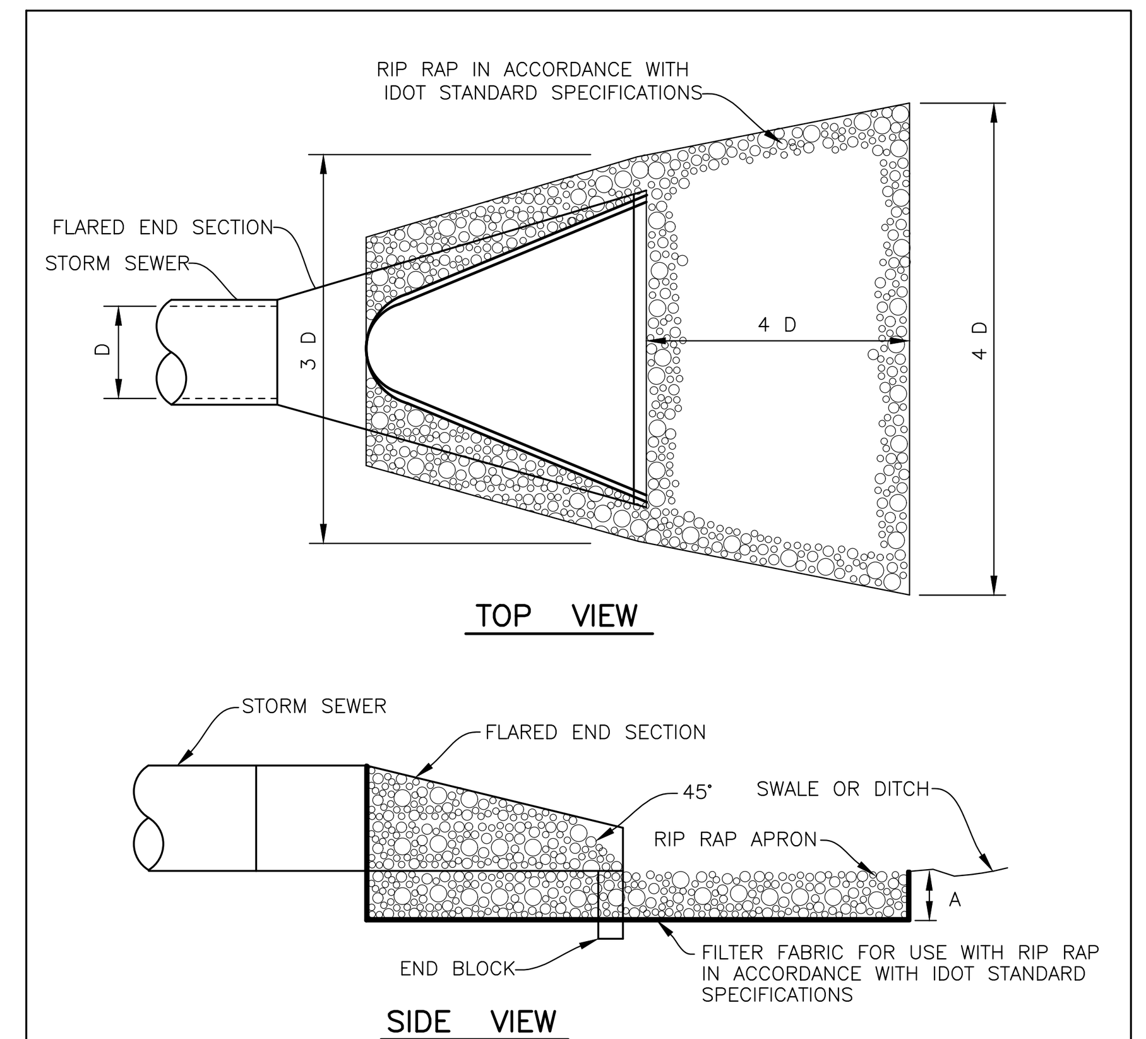
NOTE:
1. FOR PIPE LARGER THAN 72" A SPECIAL DESIGN OF RIP-RAP OR APRON IS REQUIRED.
2. REFER TO I.D.O.T. SPECIFICATIONS AND STANDARDS FOR BEDDING GRADTION.

06-01-15

STONE RIP RAP DETAIL

S-ST-RIPRAP-STONE

RIP RAP DETAIL



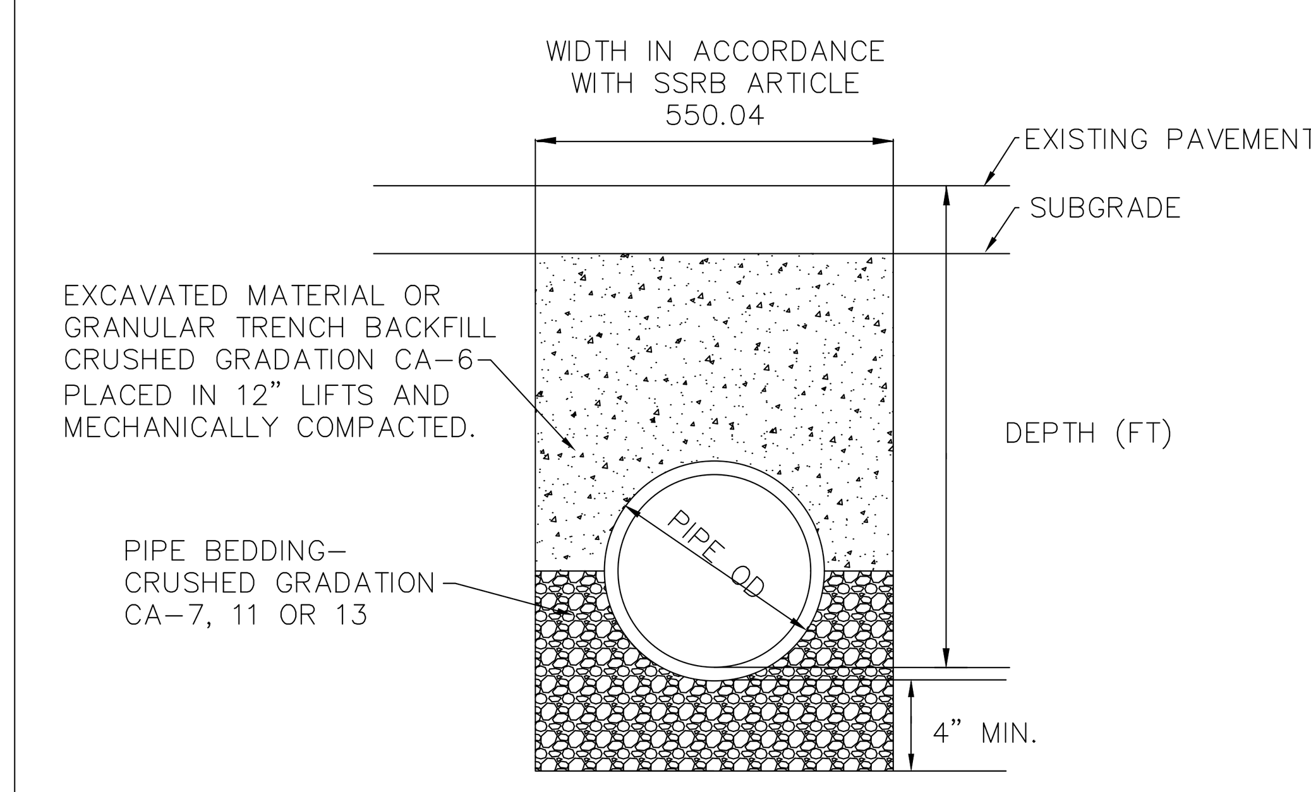
06-01-15

RIP RAP DETAIL (DISCHARGE TO DITCH)

S-ST-RIPRAP-DITCH

TRENCH BACKFILL DETAIL

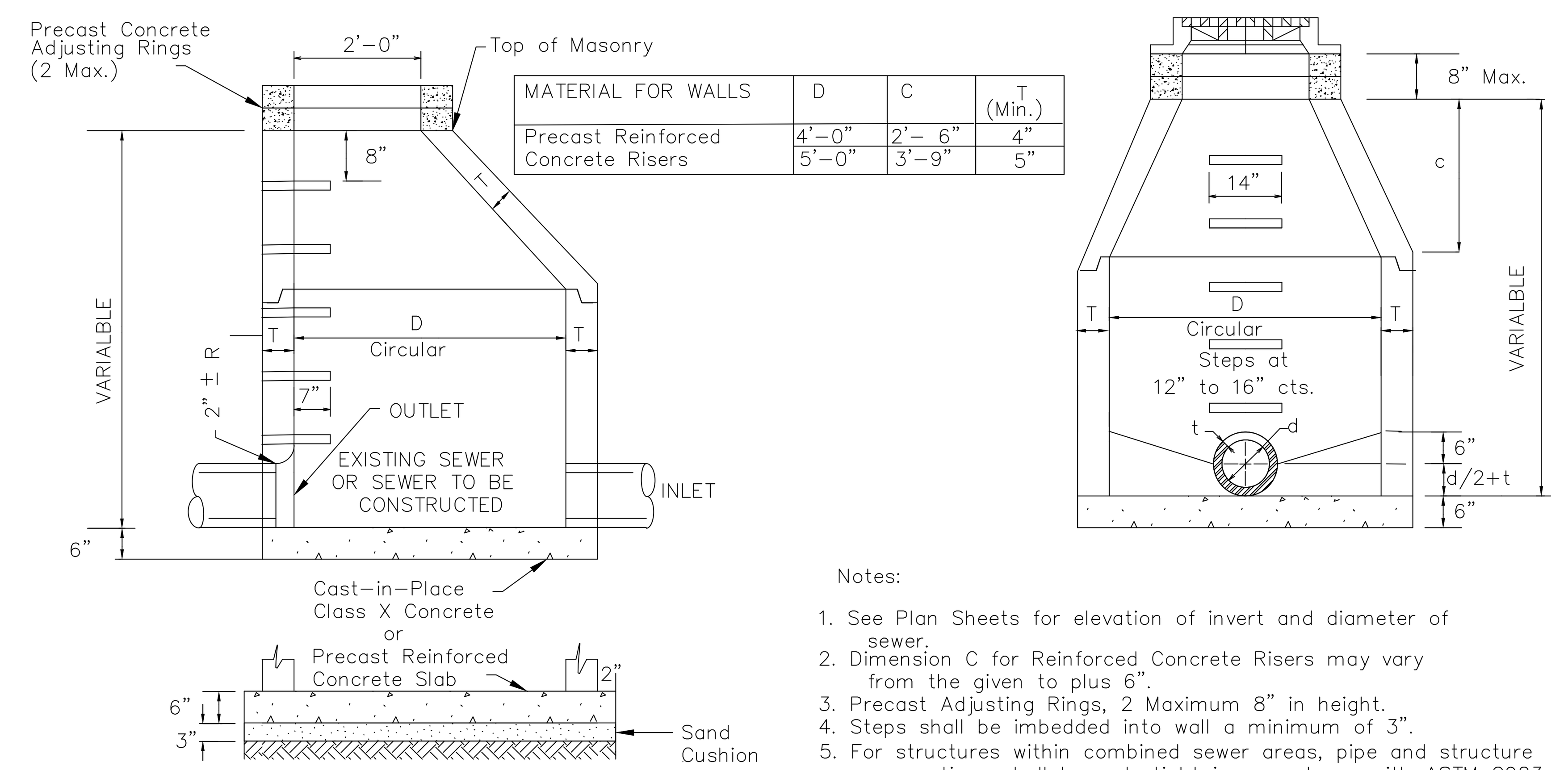
ALL TRENCH BACKFILL WILL BE MEASURED USING THE IDOT TRENCH BACKFILL TABLES



TRENCH BACKFILL DETAIL
ALL SEWER AND WATER
(EXCEPT PVC)

CITY OF DES PLAINES
2/7/23

STANDARD DESIGN FOR STORM MANHOLE (TYPE A)



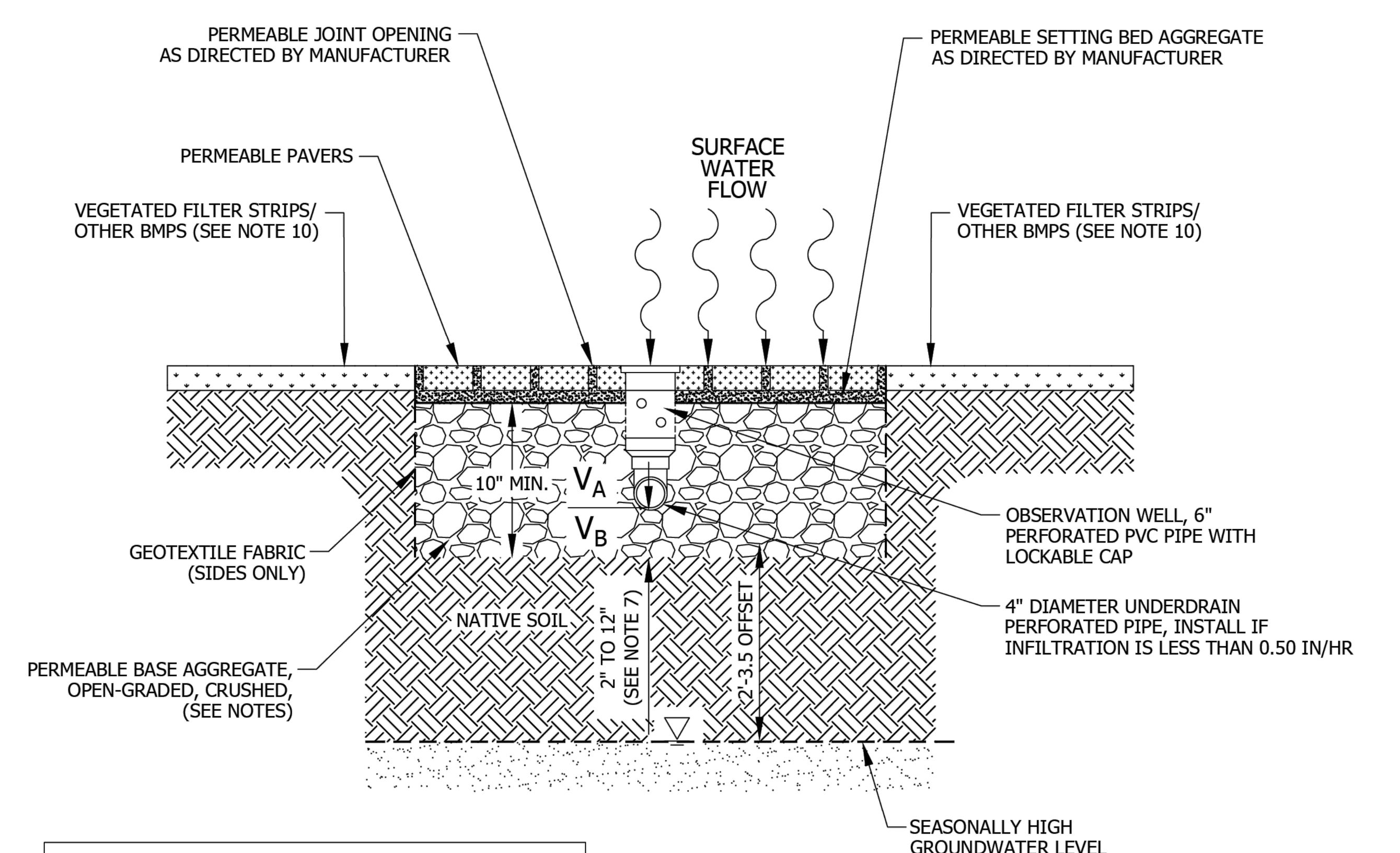
MATERIAL FOR WALLS	D	C	T (Min.)
Precast Reinforced Concrete Risers	4'-0" 5'-0"	2'-6" 3'-9"	4" 5"

Notes:
1. See Plan Sheets for elevation of invert and diameter of sewer.
2. Dimension C for Reinforced Concrete Risers may vary from the given to plus 6".
3. Precast Adjusting Rings, 2 Maximum 8" in height.
4. Steps shall be imbedded into wall a minimum of 3".
5. For structures within combined sewer areas, pipe and structure connections shall be watertight in accordance with ASTM C923.

STANDARD DESIGN FOR STORM MANHOLE (TYPE A)

CITY OF DES PLAINES
2/7/23

PERMEABLE PAVERS DETAIL



BOTTOM OF THE FACILITY:	ELEV.	639.4
SEASONALLY HIGH GROUNDWATER:	ELEV.	637.0
SEPARATION:	FEET	2.4

VOLUME TYPE	SURFACE AREA	DEPTH	POROSITY	STORAGE VOLUME	VOLUME PROVIDED
V_A : COARSE AGGREGATE (ABOVE INVERT)	1.11 AC	0.67	0.36	0.50 X 0.36 X V_A	0.134 AC-FT
V_B : COARSE AGGREGATE (BELOW INVERT)	1.11 AC	0.25	0.36	0.36 X V_B	0.100 AC-FT
				TOTAL	0.234 AC-FT

NOTES:
1. THE PERIMETER OF THE VOLUME CONTROL FACILITY SHALL MAINTAIN THE MINIMUM HORIZONTAL SEPARATION DISTANCE OF: 10-FEET FROM FOUNDATIONS, UNLESS WATERPROOFED; 20-FEET FROM ROADWAY GRAVEL SHOULDER; AND 100-FEET FROM POTABLE WATER WELLS, SEPTIC TANKS/FIELDS, OR OTHER UNDERGROUND TANKS.
2. SANITARY OR COMBINED SEWERS SHALL NOT BE LOCATED WITHIN THE VOLUME CONTROL FACILITY. SANITARY OR COMBINED SEWERS SHALL NOT BE LOCATED BELOW THE FOOTPRINT OF THE VOLUME CONTROL FACILITY. WHEN LOCAL CONDITIONS PREVENT THE SEWER FROM BEING LOCATED OUTSIDE THE FOOTPRINT OF THE FACILITY THE SEWER SHALL BE CONSTRUCTED TO WATER MAIN QUALITY STANDARDS, OR IT SHALL BE ENCASED WITH A WATER MAIN QUALITY CARRIER PIPE WITH THE ENDS SEALED.
3. AVOID INSTALLATION ON SLOPES GREATER THAN 3.00%. AVOID COMPACTING NATIVE SOILS. SCARIFY ANY COMPACTED SOIL.
4. GEOTEXTILE FABRIC SHALL MEET REQUIREMENTS OF IUM MATERIAL SPECIFICATION 592. FOR WOVEN: APPARENT OPENING SIZE OF 0.50 MM (TABLE 1, CLASS I). FOR NON WOVEN: APPARENT OPENING SIZE OF 0.30 MM (TABLE 2, CLASS II).
5. STONE STORAGE OPTIONS ARE IDOT CA-1, CA-3, CA-7, DISTRICT VULCAN MIX, OR APPROVED ALTERNATE. NO RECYCLED MATERIALS.
6. MINIMUM DISTANCE OF 2 FEET (3.5 FEET IN COMBINED SEWER AREAS) BETWEEN BOTTOM OF BMP AND SEASONALLY HIGH GROUNDWATER LEVEL.
7. UNDERDRAINS ARE REQUIRED IN TYPICAL CLAYEY SOILS WHERE INFILTRATION RATES ARE LESS THAN 0.5 INCH/HOUR. MAXIMUM OF 1 UNDERDRAIN PER 30 FEET. PROVIDE A SOIL REPORT DOCUMENTING NATIVE INFILTRATION RATE TO FOREGO UNDERDRAINS.
8. MINIMUM UNDERDRAIN BEDDING OF TWO INCHES, MAXIMUM OF 12 INCHES.
9. ONE OBSERVATION WELL REQUIRED PER 6,000 SQUARE FEET OF SURFACE AREA.
10. FOLLOW THE REQUIRED PRETREATMENT MEASURES LISTED ON THE VOLUME CONTROL PRETREATMENT MEASURES DETAIL.
11. MAINTENANCE REQUIREMENTS INCLUDE ANNUAL VACUUMING AND LOW-PRESSURE POWER WASHING OF PAVEMENT SURFACE. ADJACENT VEGETATED AREAS SHALL BE WELL-MAINTAINED. BARE SPOTS AND ERODED AREAS SHALL BE REPLANTED AND STABILIZED IMMEDIATELY. DO NOT SEALCOAT OR APPLY DE-ICING SAND/GRAVEL/SALT. APPROPRIATE SIGNAGE REQUIRED FOR FACILITY, REFER TO THE TYPICAL SIGNAGE FOR PERMEABLE PAVEMENT DETAIL.

NOT TO SCALE

TECHNICAL GUIDANCE MANUAL — 8/24/18

PERMEABLE PAVERS DETAIL — STD. DWG. NO.9 — PAGE NO. 10 - FC

TYPICAL SIGNAGE FOR PERMEABLE PAVEMENT AREA

18" (TYPICAL)

12" (TYPICAL)

PERMEABLE PAVEMENT AREA

ENVIRONMENTALLY FRIENDLY PARKING LOT

BENEFITS OF THE TECHNOLOGY INCLUDE:

• REDUCES STORMWATER RUNOFF • IMPROVE WATER QUALITY
• CLEANS AND FILTERS STORMWATER

MAINTENANCE WITH CARE:

NO STORAGE OR DISPERSING OF GRANULAR MATERIALS

DO NOT SEAL COAT

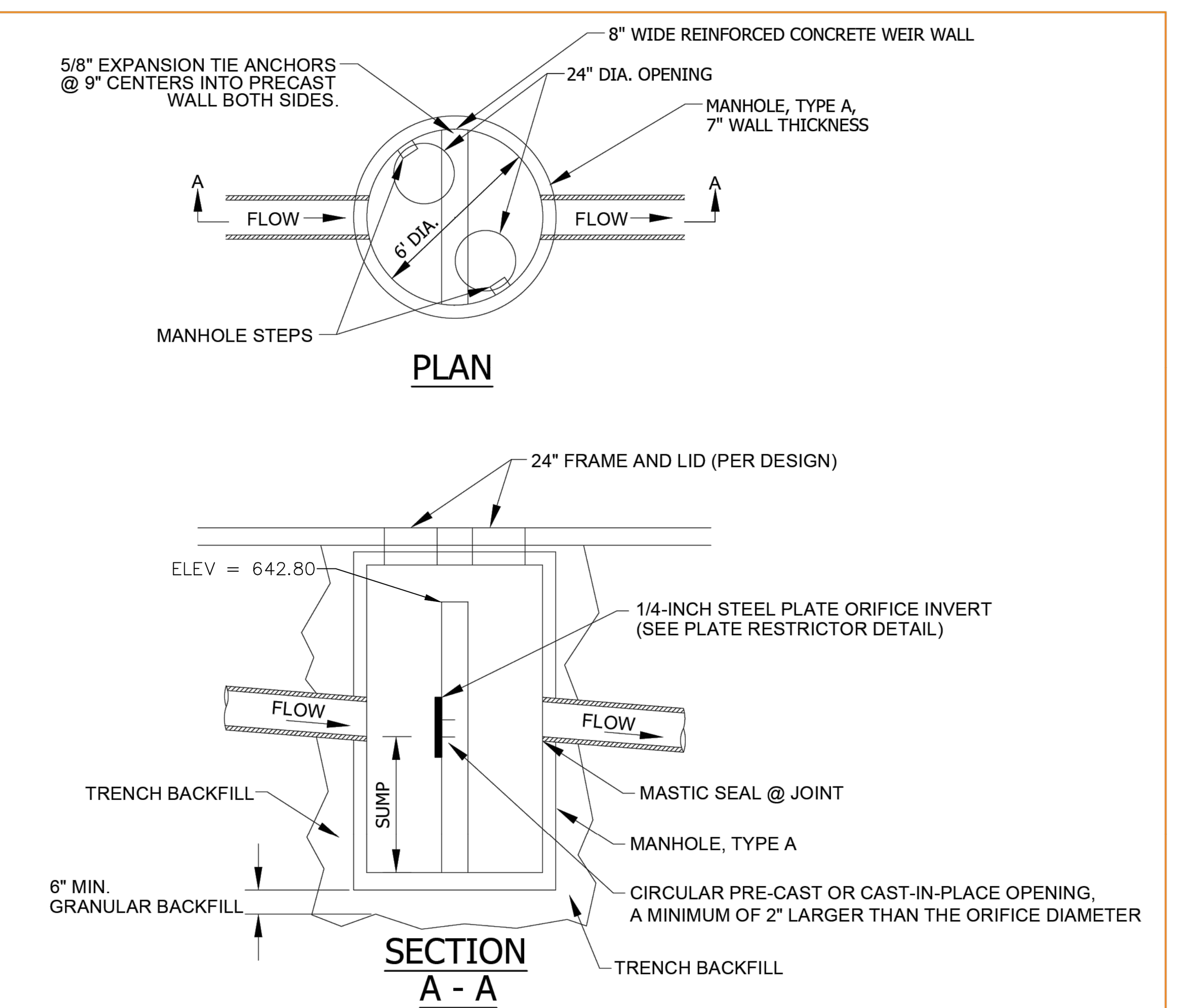
NOTES:
1. ONE SIGN SHALL BE POSTED PER 40 PARKING SPACES.

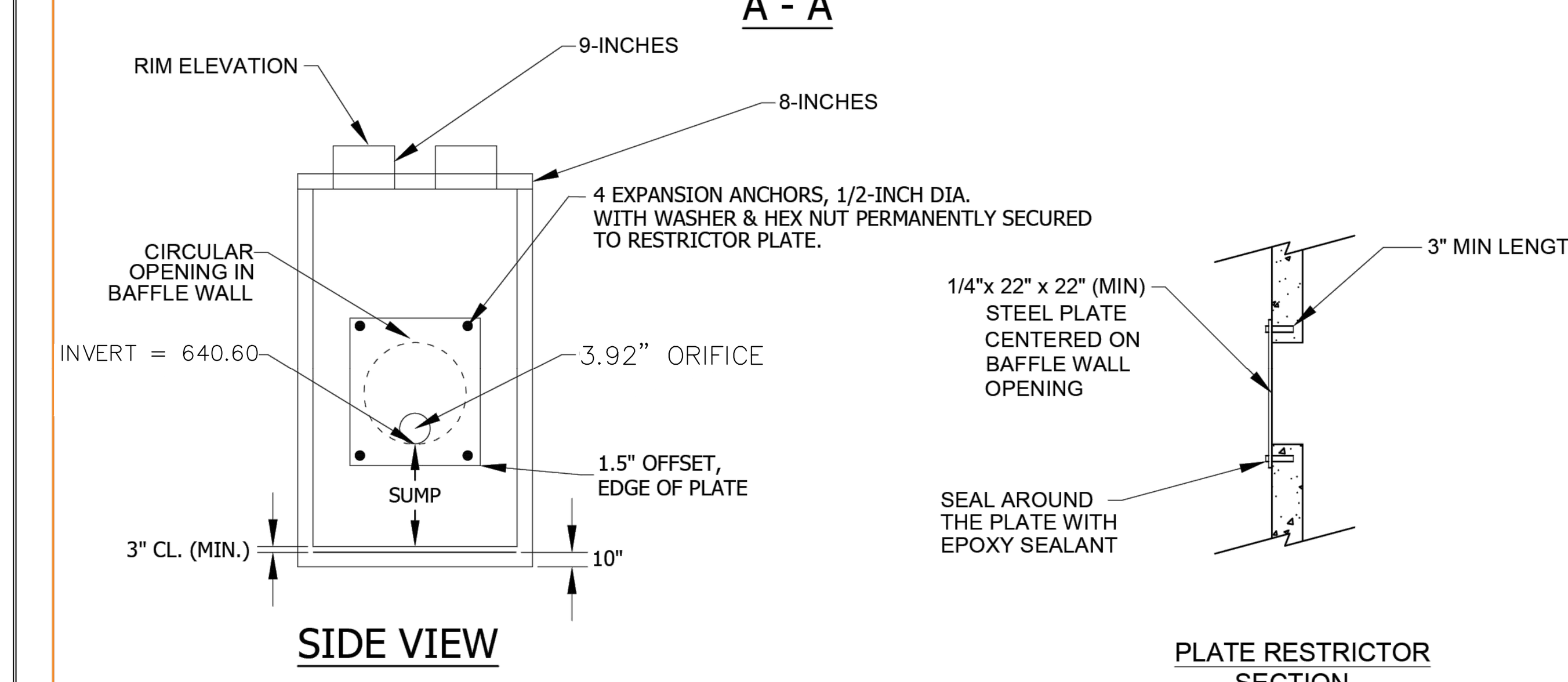
NOT TO SCALE

TECHNICAL GUIDANCE MANUAL — 6/24/16

TYPICAL SIGNAGE FOR PERMEABLE PAVEMENT AREA — STD. DWG. NO.13 — PAGE NO. 14

TYPICAL OUTLET CONTROL STRUCTURE (WALL) DETAIL





NOTES:
1. STRUCTURE AND BAFFLE WALL FABRICATED USING REINFORCED PORTLAND CEMENT CONCRETE.
2. RESTRICTORS LESS THAN 4" IN DIAMETER PROVIDE HOOD/SNOUT OR WIRE MESH
3. BAFFLE WALL PERMANENTLY INSTALLED AS PRECAST OR CAST-IN-PLACE
4. PIPE TO STRUCTURE CONNECTIONS SHALL BE ASTM C923 IN COMBINED SEWER AREAS.
5. CAUTION: 1/4-INCH STEEL PLATE DIMENSIONS TO BEST FIT PROPOSED STRUCTURE.
6. ANCHOR EMBEDMENT SHALL BE 3-INCHES MINIMUM.
7. SEE STRUCTURAL PLANS FOR REINFORCEMENT DETAILS.

NOT TO SCALE

TECHNICAL GUIDANCE MANUAL — 10/04/2019

TYPICAL OUTLET CONTROL STRUCTURE (WALL) DETAIL — STD. DWG. NO.25 — PAGE NO. 26

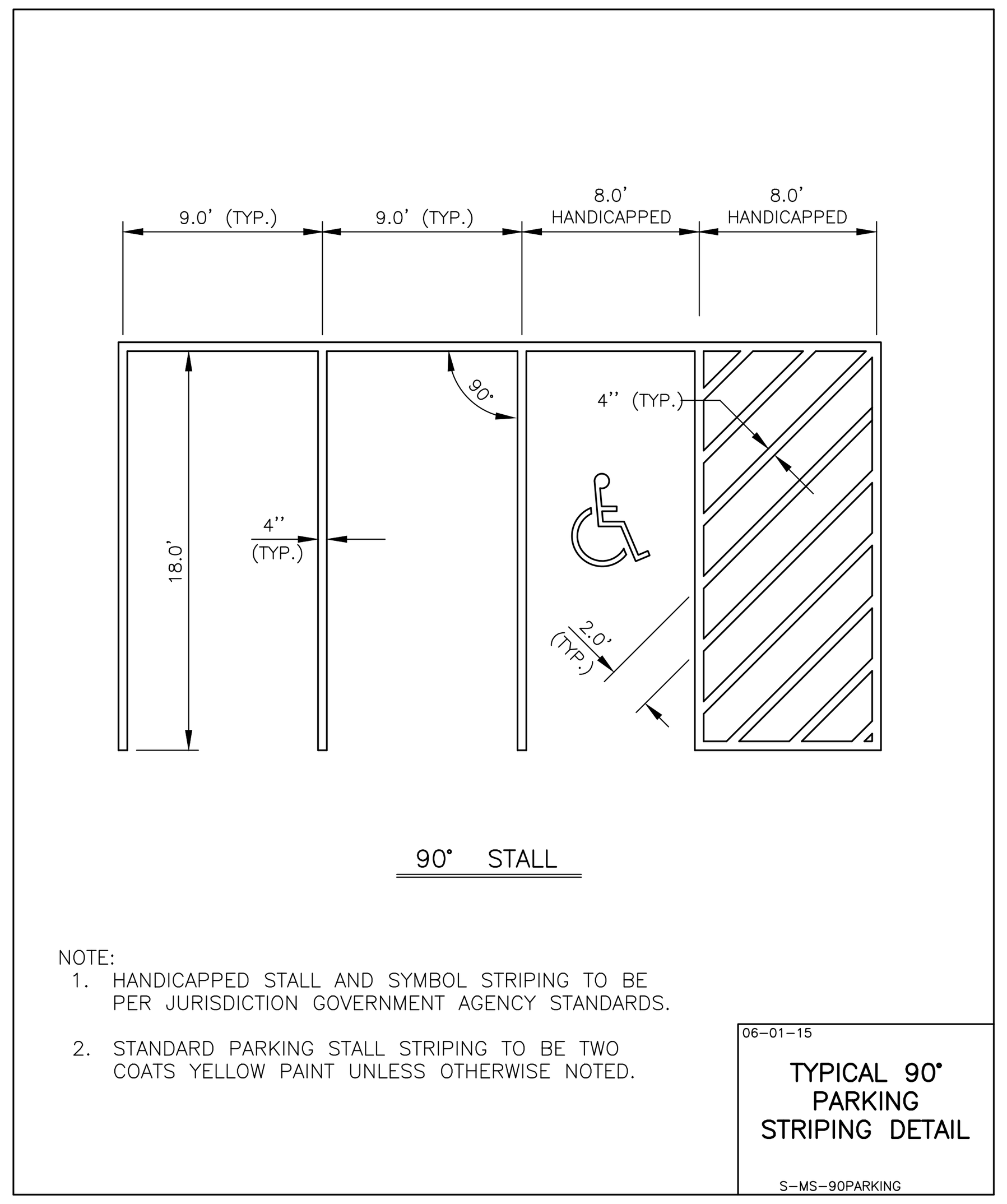
Manhard CONSULTING

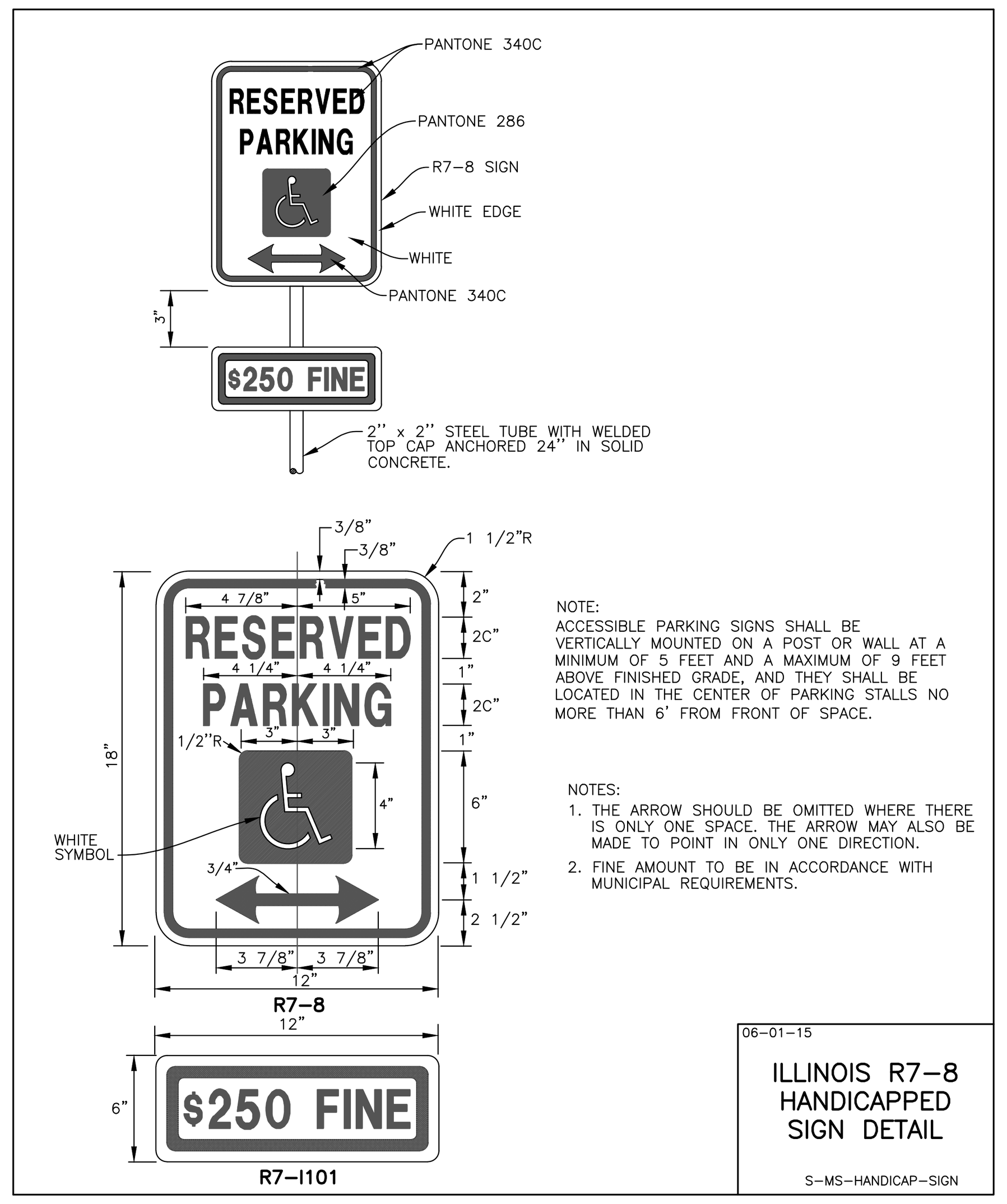
One Overlook Point, Suite 290, Lincolnshire, IL 60069 ph:847.634.5550 fx:847.634.0095 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

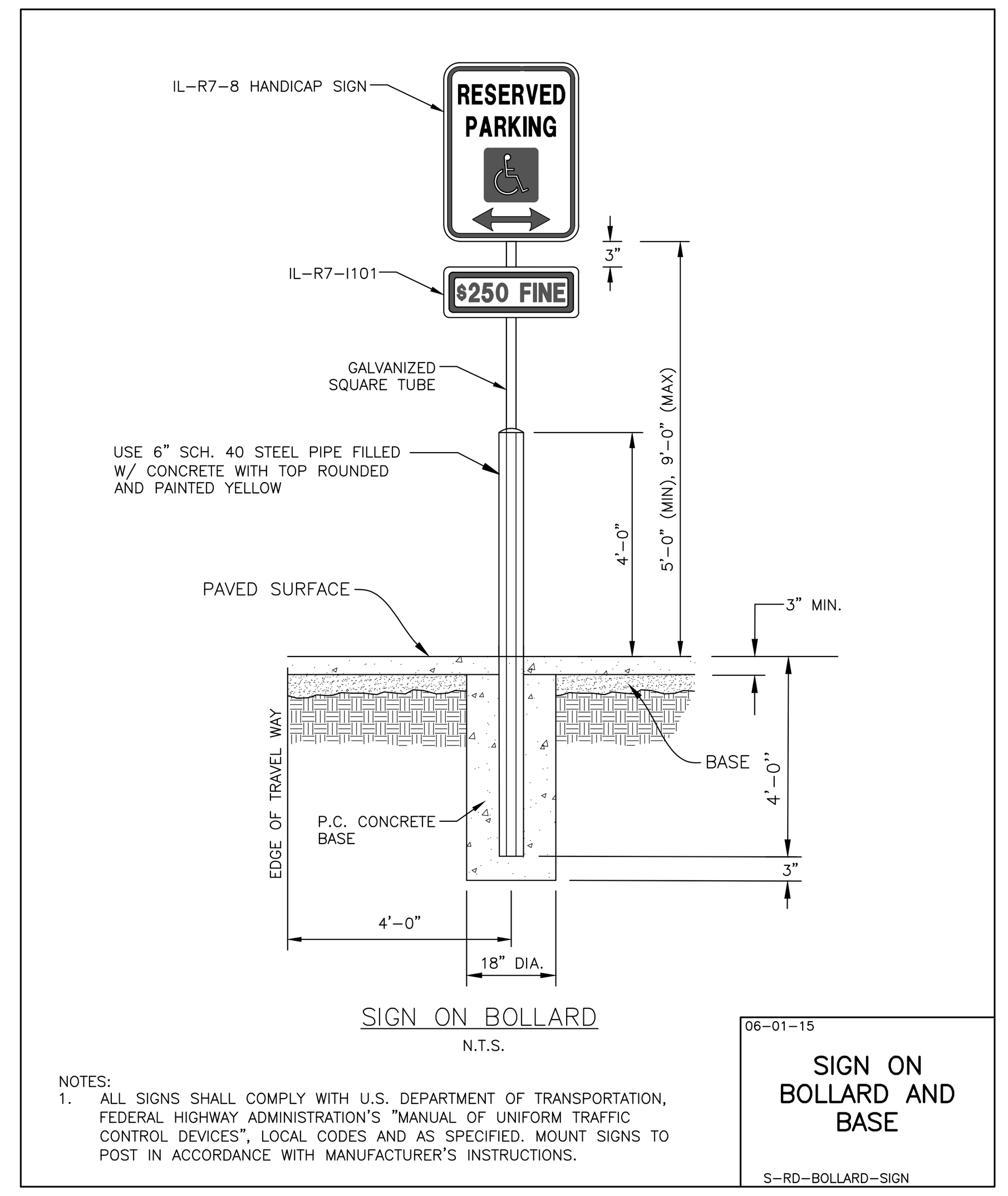
OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS
CONSTRUCTION DETAILS

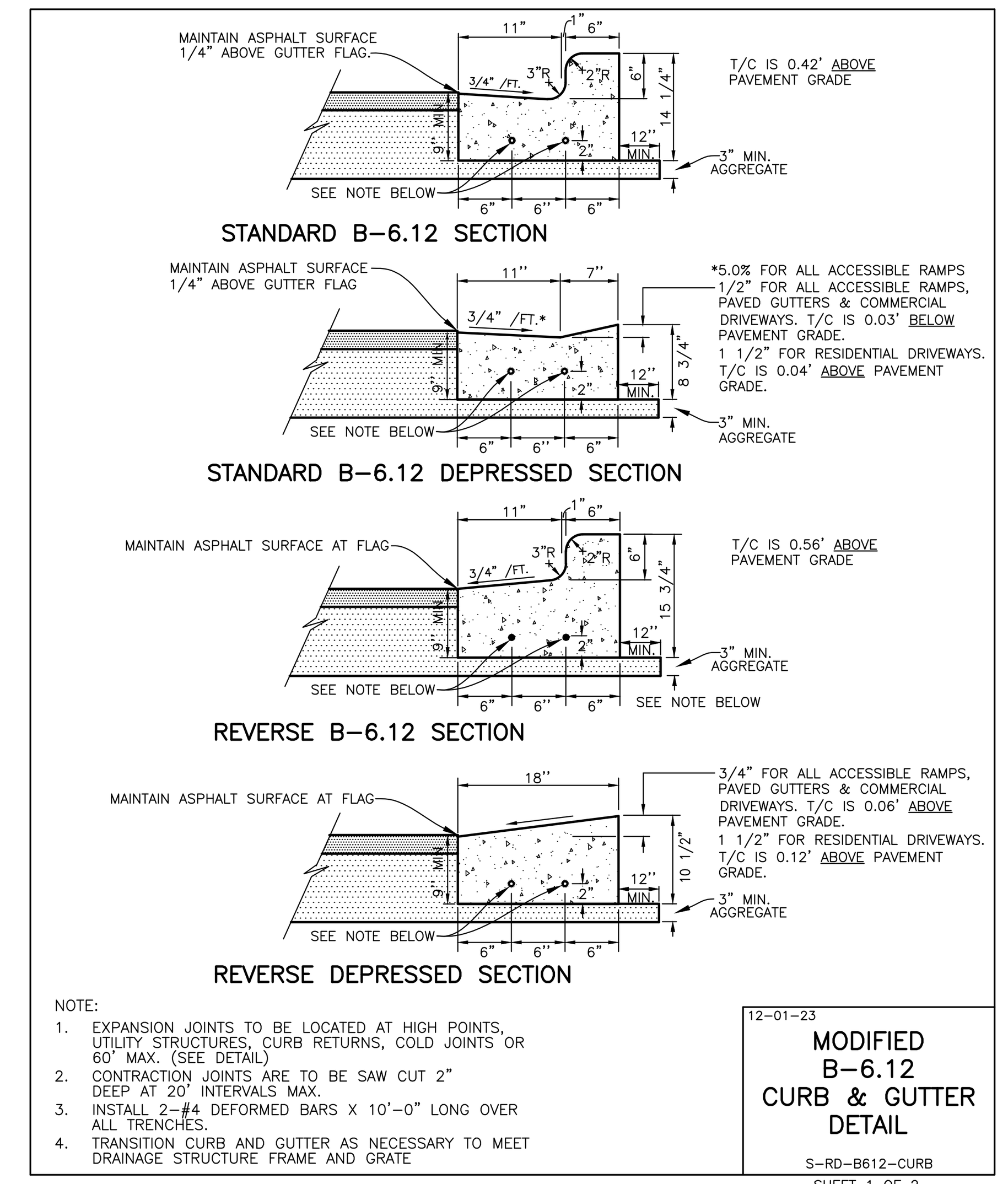
PROJ. MGR.: KRK
PROJ. ASSOC.: GRC
DRAWN BY: ----
DATE: 10-14-24
SCALE: N.T.S.

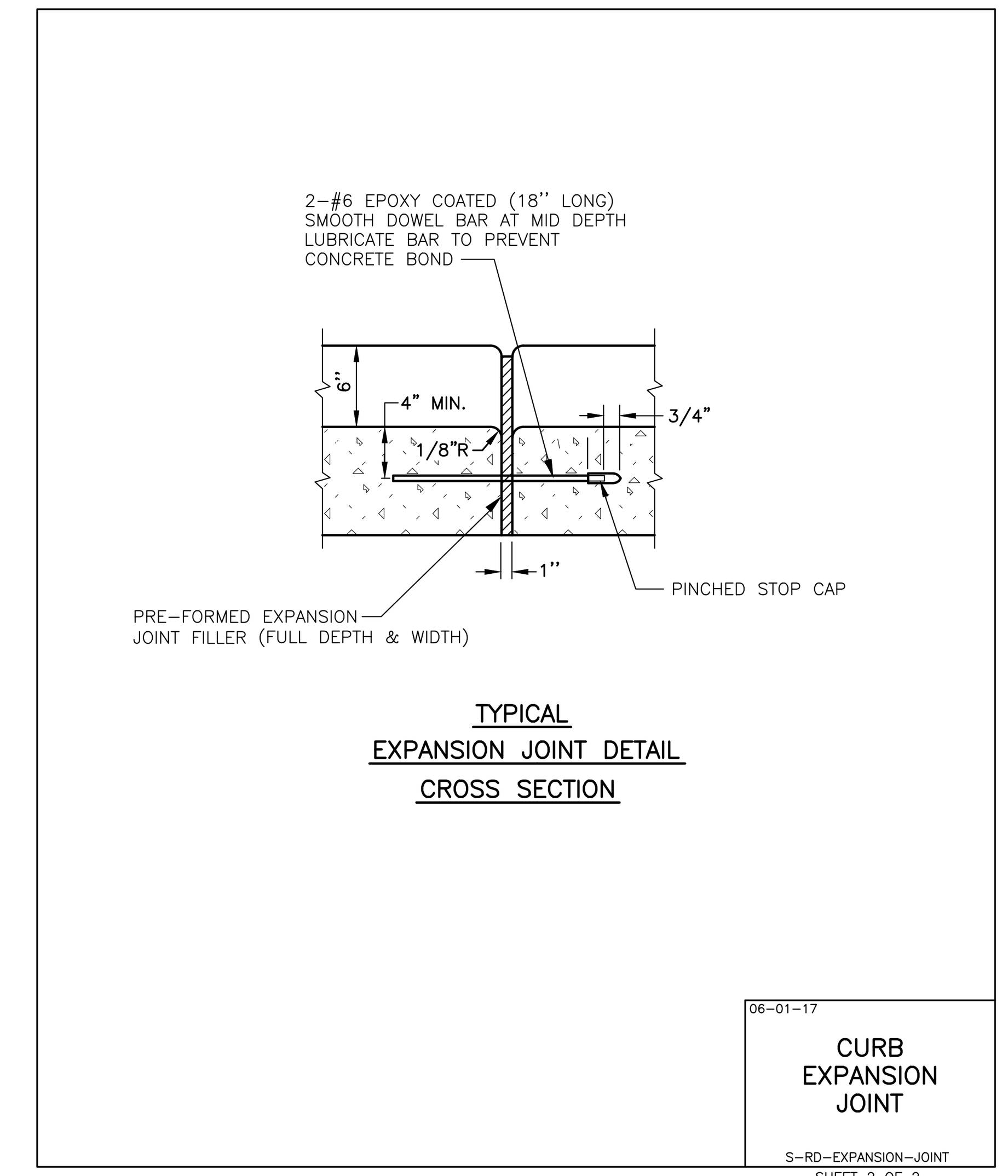
SHEET 9 OF 11
OCCDPIL16

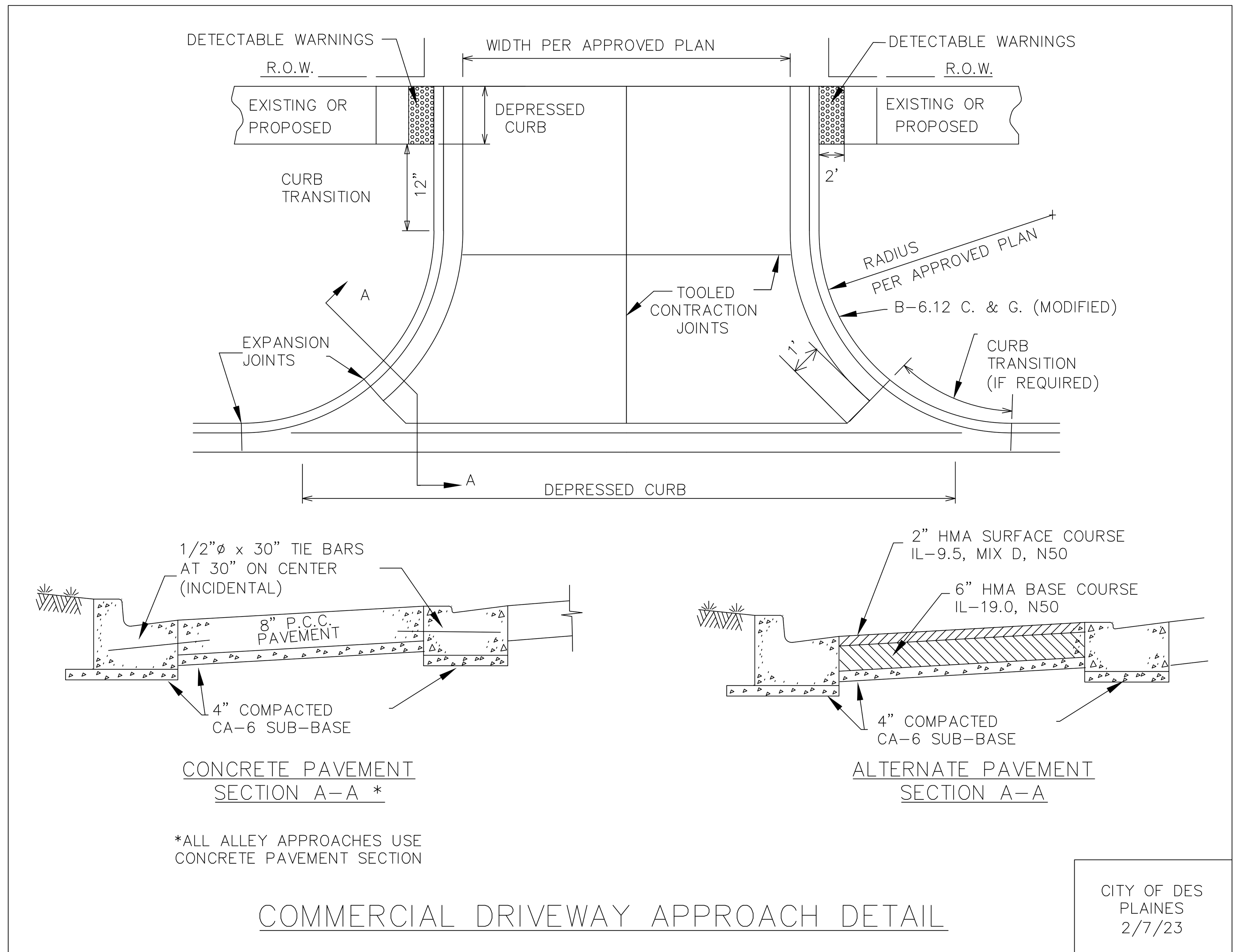

9.0' (TYP.)
9.0' (TYP.)
8.0' HANDICAPPED
8.0' HANDICAPPED
90°
4" (TYP.)
18.0'
4" (TYP.)
2.0' (TYP.)
90° STALL
NOTE:
1. HANDICAPPED STALL AND SYMBOL STRIPING TO BE PER JURISDICTION GOVERNMENT AGENCY STANDARDS.
2. STANDARD PARKING STALL STRIPING TO BE TWO COATS YELLOW PAINT UNLESS OTHERWISE NOTED.
06-01-15
TYPICAL 90° PARKING STRIPING DETAIL
S-MS-90PARKING

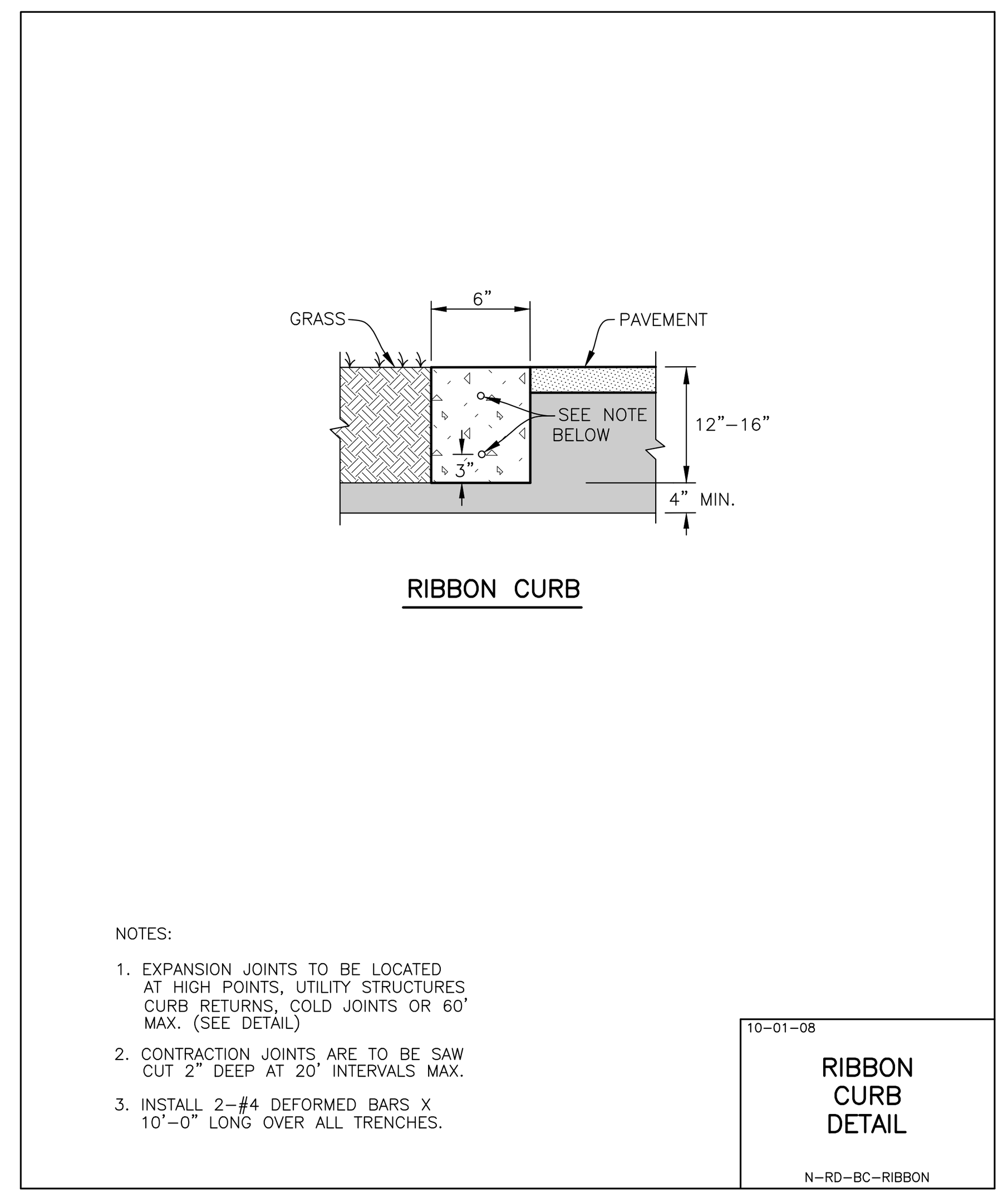

RESERVED PARKING
PANTONE 340C
PANTONE 286
R7-8 SIGN
WHITE EDGE
WHITE
PANTONE 340C
$250 FINE
2" x 2" STEEL TUBE WITH WELDED TOP CAP ANCHORED 24" IN SOLID CONCRETE.
NOTE:
ACCESSIBLE PARKING SIGNS SHALL BE VERTICALLY MOUNTED ON A POST OR WALL AT A MINIMUM OF 5 FEET AND A MAXIMUM OF 9 FEET ABOVE FINISHED GRADE, AND THEY SHALL BE LOCATED IN THE CENTER OF PARKING STALLS NO MORE THAN 6" FROM FRONT OF SPACE.
NOTES:
1. THE ARROW SHOULD BE OMITTED WHERE THERE IS ONLY ONE SPACE. THE ARROW MAY ALSO BE MADE TO POINT IN ONLY ONE DIRECTION.
2. FINE AMOUNT TO BE IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.
WHITE SYMBOL
R7-8
R7-I101
06-01-15
ILLINOIS R7-8 HANDICAPPED SIGN DETAIL
S-MS-HANDICAP-SIGN

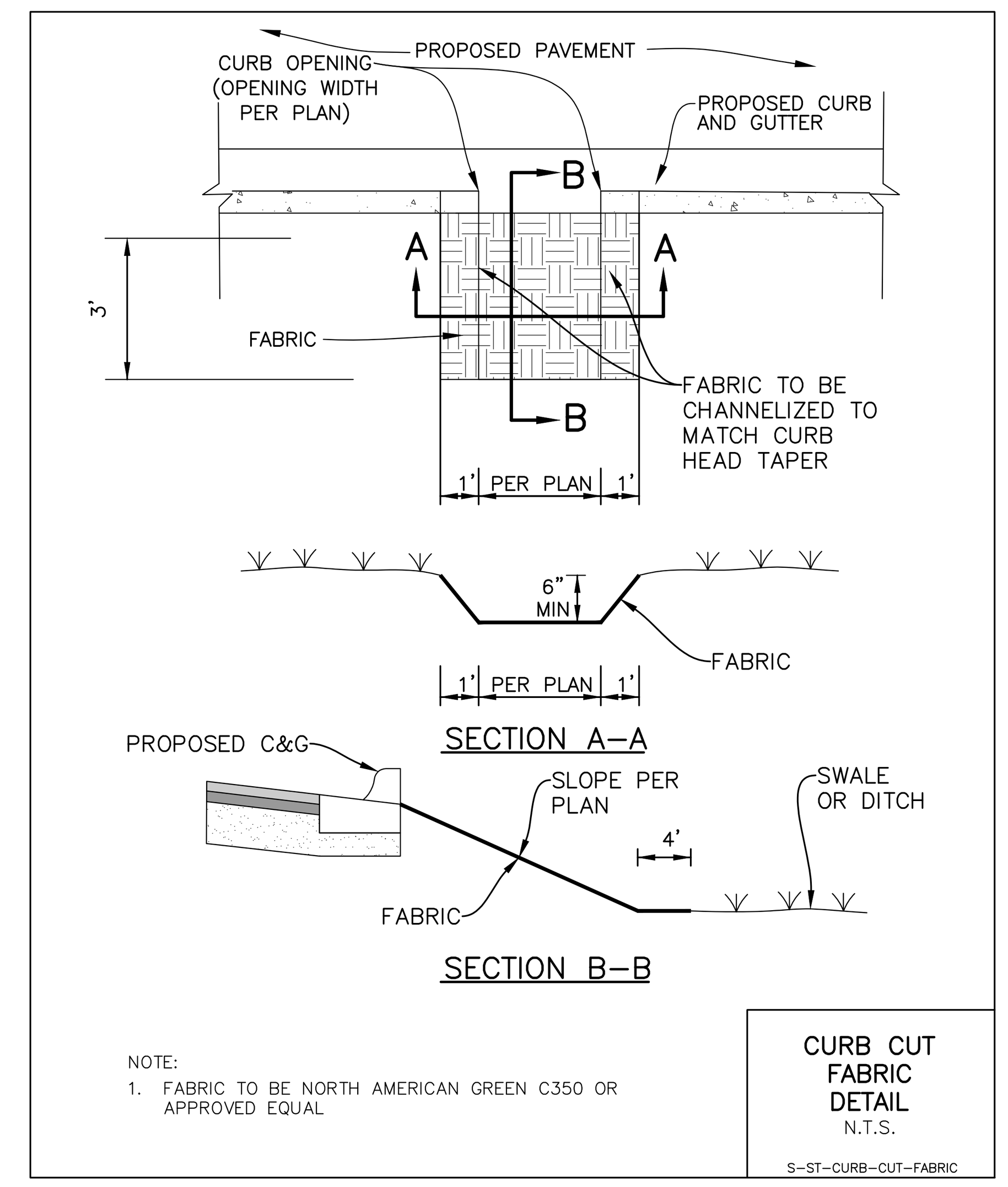

IL-R7-8 HANDICAP SIGN
RESERVED PARKING
IL-R7-I101
$250 FINE
GALVANIZED SQUARE TUBE
USE 6" SCH. 40 STEEL PIPE FILLED W/ CONCRETE WITH TOP ROUNDED AND PAINTED YELLOW
PAVED SURFACE
3" MIN.
BASE
P.C. CONCRETE BASE
EDGE OF TRAVEL WAY
4'-0"
18" DIA.
5'-0" (MIN), 9'-0" (MAX)
SIGN ON BOLLARD
N.T.S.
NOTES:
1. ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
06-01-15
SIGN ON BOLLARD AND BASE
S-RD-BOLLARD-SIGN

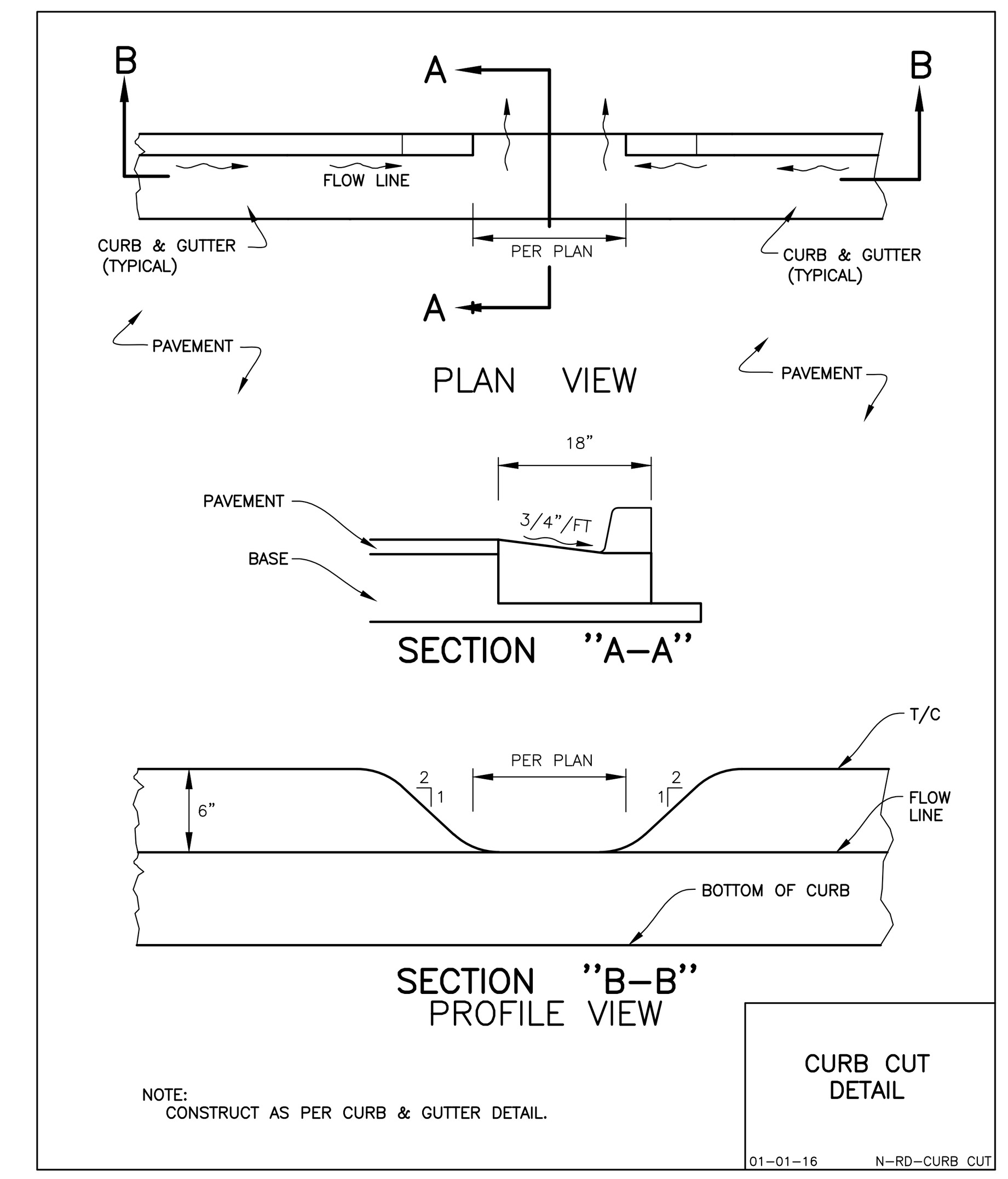

MAINTAIN ASPHALT SURFACE 1/4" ABOVE GUTTER FLAG
T/C IS 0.42' ABOVE PAVEMENT GRADE
SEE NOTE BELOW
3" MIN. AGGREGATE
STANDARD B-6.12 SECTION
*5.0% FOR ALL ACCESSIBLE RAMPS 1/2" FOR ALL ACCESSIBLE RAMPS, PAVED GUTTERS & COMMERCIAL DRIVEWAYS. T/C IS 0.03' BELOW PAVEMENT GRADE. 1 1/2" FOR RESIDENTIAL DRIVEWAYS. T/C IS 0.04' ABOVE PAVEMENT GRADE.
STANDARD B-6.12 DEPRESSED SECTION
MAINTAIN ASPHALT SURFACE AT FLAG
T/C IS 0.56' ABOVE PAVEMENT GRADE
REVERSE B-6.12 SECTION
3/4" FOR ALL ACCESSIBLE RAMPS, PAVED GUTTERS & COMMERCIAL DRIVEWAYS. T/C IS 0.06' ABOVE PAVEMENT GRADE. 1 1/2" FOR RESIDENTIAL DRIVEWAYS. T/C IS 0.12' ABOVE PAVEMENT GRADE.
REVERSE DEPRESSED SECTION
NOTE:
1. EXPANSION JOINTS TO BE LOCATED AT HIGH POINTS, UTILITY STRUCTURES, CURB RETURNS, COLD JOINTS OR 60' MAX. (SEE DETAIL)
2. CONTRACTION JOINTS ARE TO BE SAW CUT 2" DEEP AT 20' INTERVALS MAX.
3. INSTALL 2-#4 DEFORMED BARS X 10'-0" LONG OVER ALL TRENCHES.
4. TRANSITION CURB AND GUTTER AS NECESSARY TO MEET DRAINAGE STRUCTURE FRAME AND GRATE
12-01-23
MODIFIED B-6.12 CURB & GUTTER DETAIL
S-RD-B612-CURB
SHEET 1 OF 2

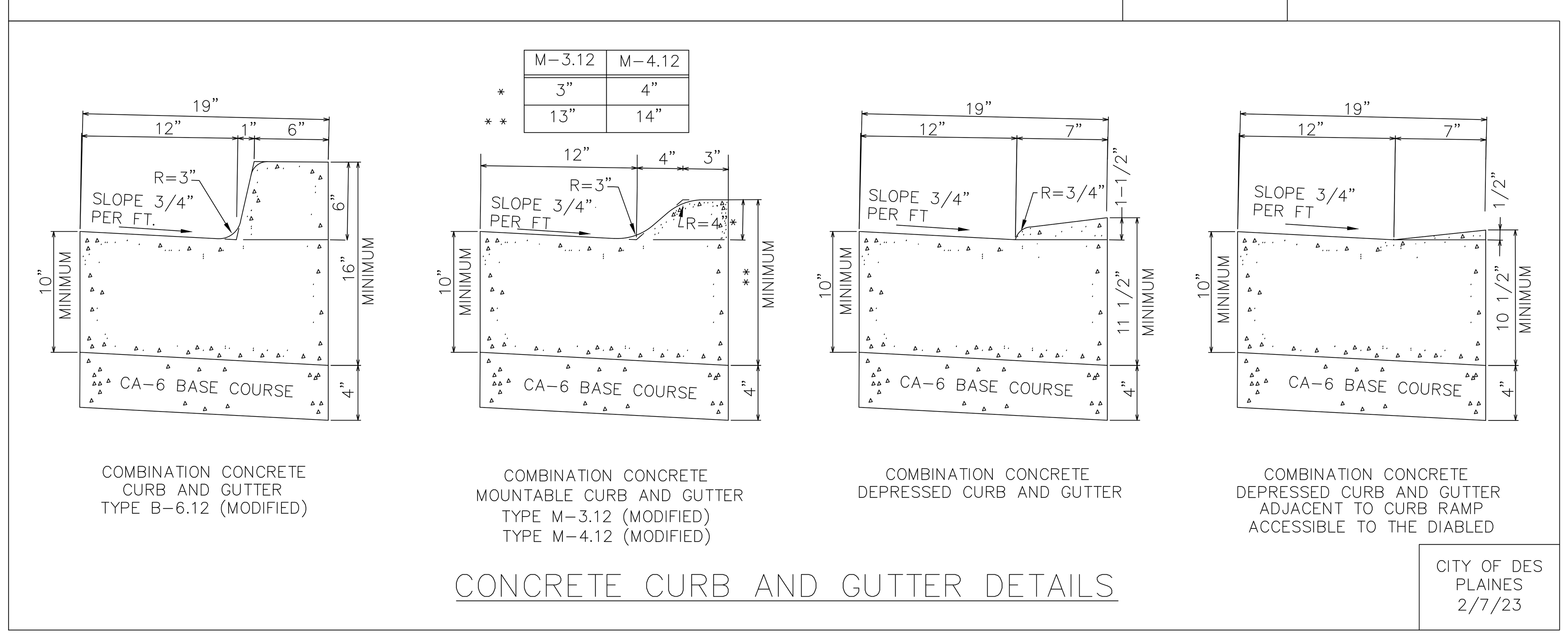

2-#6 EPOXY COATED (18" LONG) SMOOTH DOWEL BAR AT MID DEPTH LUBRICATE BAR TO PREVENT CONCRETE BOND
4" MIN.
1/8"R
3/4"
1"
PRE-FORMED EXPANSION JOINT FILLER (FULL DEPTH & WIDTH)
PINCHED STOP CAP
TYPICAL EXPANSION JOINT DETAIL CROSS SECTION
06-01-17
CURB EXPANSION JOINT
S-RD-EXPANSION-JOINT
SHEET 2 OF 2

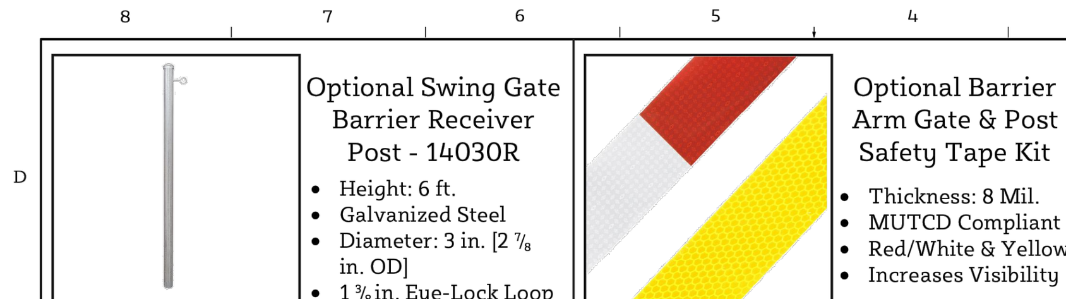

DETECTABLE WARNINGS
R.O.W.
WIDTH PER APPROVED PLAN
DETECTABLE WARNINGS
R.O.W.
EXISTING OR PROPOSED
DEPRESSED CURB
EXISTING OR PROPOSED
CURB TRANSITION
12'
2'
RADIUS PER APPROVED PLAN
TOOLED CONTRACTION JOINTS
B-6.12 C. & G. (MODIFIED)
EXPANSION JOINTS
CURB TRANSITION (IF REQUIRED)
DEPRESSED CURB
1/2"ø x 30" TIE BARS AT 30" ON CENTER (INCIDENTAL)
8" P.C.C. PAVEMENT
4" COMPACTED CA-6 SUB-BASE
CONCRETE PAVEMENT SECTION A-A *
2" HMA SURFACE COURSE IL-9.5, MIX D, N50
6" HMA BASE COURSE IL-19.0, N50
4" COMPACTED CA-6 SUB-BASE
ALTERNATE PAVEMENT SECTION A-A
*ALL ALLEY APPROACHES USE CONCRETE PAVEMENT SECTION
COMMERCIAL DRIVEWAY APPROACH DETAIL
CITY OF DES PLAINES 2/7/23


GRASS
6"
PAVEMENT
SEE NOTE BELOW
12"-16"
4" MIN.
RIBBON CURB
NOTES:
1. EXPANSION JOINTS TO BE LOCATED AT HIGH POINTS, UTILITY STRUCTURES CURB RETURNS, COLD JOINTS OR 60' MAX. (SEE DETAIL)
2. CONTRACTION JOINTS ARE TO BE SAW CUT 2" DEEP AT 20' INTERVALS MAX.
3. INSTALL 2-#4 DEFORMED BARS X 10'-0" LONG OVER ALL TRENCHES.
10-01-08
RIBBON CURB DETAIL
N-RD-BC-RIBBON

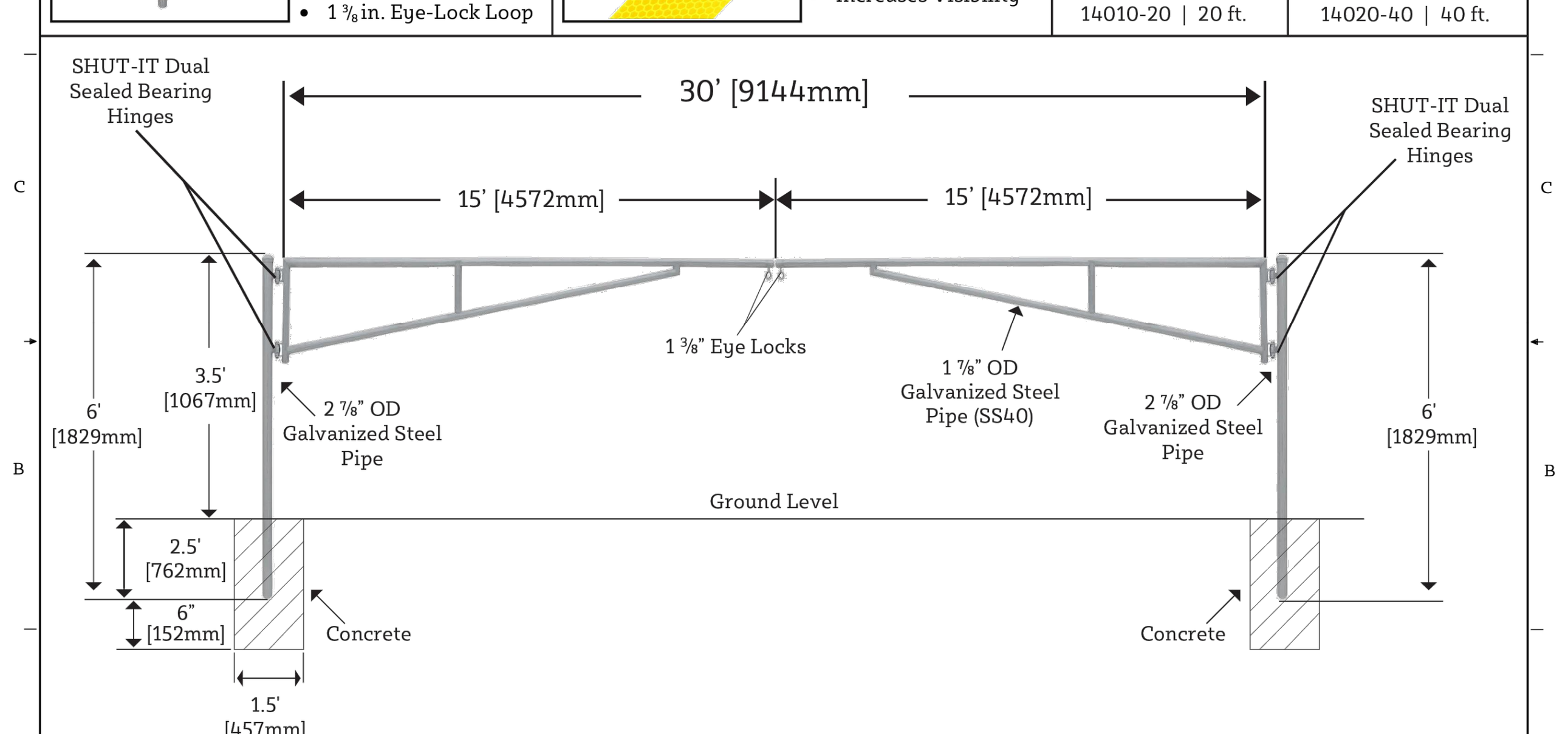

CURB OPENING (OPENING WIDTH PER PLAN)
PROPOSED PAVEMENT
PROPOSED CURB AND GUTTER
FABRIC
FABRIC TO BE CHANNELIZED TO MATCH CURB HEAD TAPER
1' PER PLAN 1'
6" MIN
FABRIC
SECTION A-A
PROPOSED C&G
SLOPE PER PLAN
SWALE OR DITCH
FABRIC
SECTION B-B
NOTE:
1. FABRIC TO BE NORTH AMERICAN GREEN C350 OR APPROVED EQUAL
CURB CUT FABRIC DETAIL
N.T.S.
S-ST-CURB-CUT-FABRIC


FLOW LINE
CURB & GUTTER (TYPICAL)
PER PLAN
CURB & GUTTER (TYPICAL)
PAVEMENT
PLAN VIEW
PAVEMENT
18"
3/4"/FT
PAVEMENT
BASE
SECTION "A-A"
T/C
PER PLAN
FLOW LINE
BOTTOM OF CURB
SECTION "B-B" PROFILE VIEW
NOTE:
CONSTRUCT AS PER CURB & GUTTER DETAIL.
CURB CUT DETAIL
01-01-16
N-RD-CURB CUT


19"
12"
1"
6"
R=3"
SLOPE 3/4" PER FT.
10" MINIMUM
16" MINIMUM
CA-6 BASE COURSE
COMBINATION CONCRETE CURB AND GUTTER TYPE B-6.12 (MODIFIED)
M-3.12 | M-4.12
* 3" | 4"
** 13" | 14"
12"
4"
3"
R=3"
R=4"
SLOPE 3/4" PER FT
COMBINATION CONCRETE MOUNTABLE CURB AND GUTTER TYPE M-3.12 (MODIFIED) TYPE M-4.12 (MODIFIED)
R=3/4"
1-1/2"
11 1/2" MINIMUM
COMBINATION CONCRETE DEPRESSED CURB AND GUTTER
10 1/2" MINIMUM
COMBINATION CONCRETE DEPRESSED CURB AND GUTTER ADJACENT TO CURB RAMP ACCESSIBLE TO THE DIABLED
CONCRETE CURB AND GUTTER DETAILS
CITY OF DES PLAINES 2/7/23



Single Gate Models:	Double Gate Models:
14010-10 | 10 ft.	14020-20 | 20 ft.
14010-12 | 12 ft.	14020-24 | 24 ft.
14010-14 | 14 ft.	14020-28 | 28 ft.
14010-15 | 15 ft.	14020-30 | 30 ft.
14010-16 | 16 ft.	14020-32 | 32 ft.
14010-20 | 20 ft.	14020-40 | 40 ft.


SHUT-IT Dual Sealed Bearing Hinges
30' [9144mm]
15' [4572mm]
15' [4572mm]
SHUT-IT Dual Sealed Bearing Hinges
1 3/8" Eye Locks
3.5' [1067mm]
2 7/8" OD Galvanized Steel Pipe
1 7/8" OD Galvanized Steel Pipe (SS40)
2 7/8" OD Galvanized Steel Pipe
6' [1829mm]
6' [1829mm]
Ground Level
2.5' [762mm]
6" [152mm]
Concrete
Concrete
1.5' [457mm]

Contact Information:	Manufacturer:	Part Number:	Product Description:	Product Specifications:
Web: www.TigerTeethStore.com Phone: (800) 878-7829 Email: Sales@TigerTeethStore.com	Barrier Gate Brands™	14020-30	SENTINEL 30 ft. Manual Double Swing Barrier Gate	• Width: 30 ft. • Material: Galvanized Steel • Installation Type: In-Ground • Barrier Gate Type: Manual Double Swing Gate

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

Manhard CONSULTING

One Overlook Point, Suite 290, Lincolnshire, IL 60069 ph:847.634.5550 fx:847.634.0095 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

DATE	REVISIONS	DRAWN BY
01-22-25	REVISED PER MWRD REVIEW	KRK
12-02-24	REVISED PER VILLAGE REVIEW	KRK

OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS
CONSTRUCTION DETAILS

PROJ. MGR.: KRK
PROJ. ASSOC.: GRC
DRAWN BY: ----
DATE: 10-14-24
SCALE: N.T.S.

SHEET 10 OF 11

OCCDPIL16

March 13, 2025 – 13:41 Dwg Name: P:\Occdpil16\dwg\Eng\Final Drawings\Plan Set\07-09 DETAILS.dwg Updated By: KKlewans

06-01-16

MANHARD CONSULTING
STANDARD SPECIFICATIONS

GENERAL CONDITIONS

CONTRACTOR acknowledges and agrees that the use and reliance of these Plans and Specifications is sufficient consideration for CONTRACTOR'S covenants stated herein.

DEFINITION OF TERMS

a. "CLIENT" shall mean OAKTON COMMUNITY COLLEGE, which is the person or entity with whom Manhard Consulting has contracted with to prepare Civil Engineering PLANS and SPECIFICATIONS.
b. "ENGINEER" shall mean Manhard Consulting, a Civil Engineering consultant on the subject project.
c. "PLANS and SPECIFICATIONS" shall mean the Civil Engineering PLANS and SPECIFICATIONS prepared by the ENGINEER, which may be a part of the contract documents for the subject project.
d. "CONTRACTOR" shall mean any person or entity performing any work described in the PLANS and SPECIFICATIONS.
e. "JURISDICTIONAL GOVERNMENTAL ENTITY" shall mean any municipal, county, state or federal unit of government from whom an approval, permit and/or review is required for any aspect of the subject project.

INTENT OF THE PLANS AND SPECIFICATIONS

The intent of the PLANS and SPECIFICATIONS is to set forth certain requirements of performance, type of equipment and structures, and standards of materials and construction. They may also identify labor and materials, equipment and transportation necessary for the proper execution of the work but are not intended to be infinitely determined so as to include minor items obviously required as part of the work. The PLANS and SPECIFICATIONS require new material and equipment unless otherwise indicated, and to require complete performance of the work in spite of omissions of specific references to any minor component part. It is not intended, however, that materials or work not covered by or properly inferred from any heading, branch, class or trade of the SPECIFICATIONS shall be supplied unless distinctly so noted. Materials or work described in words, which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.

INTERPRETATION OF PLANS AND SPECIFICATIONS

a. The CLIENT and/or CONTRACTOR shall promptly report any errors or ambiguities in the PLANS and SPECIFICATIONS to the ENGINEER. Questions as to meaning of PLANS and SPECIFICATIONS shall be interpreted by the ENGINEER, whose decision shall be final and binding on all parties concerned.
b. The ENGINEER will provide the CLIENT with such information as may be required to show revised or additional details of construction.
c. Should any discrepancies or conflicts on the PLANS or SPECIFICATIONS be discovered either prior to or after award of the contract, the ENGINEER's attention shall be called to the same before the work is begun thereon and the proper corrections made. Neither the CLIENT nor the CONTRACTOR may take advantage of any error or omissions in the PLANS and SPECIFICATIONS. The ENGINEER will provide information when errors or omissions are discovered.

GOVERNING BODIES

All works herein proposed shall be completed in accordance with all requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, and all such pertinent laws, directives, ordinances and the like shall be considered to be a part of these SPECIFICATIONS. If a discrepancy is noted between the PLANS and SPECIFICATIONS and requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, the CLIENT and/or the CONTRACTOR shall immediately notify the ENGINEER in writing.

LOCATION OF UNDERGROUND FACILITIES AND UTILITIES

When the PLANS and SPECIFICATIONS include information pertaining to the location of existing underground facilities and utilities (including but not limited to water mains, sanitary sewers, storm sewers, electric, telephone, gas and cable TV lines), such information represents only the opinion of the ENGINEER as to the approximate location and elevation of such facilities and utilities. At the locations wherein detailed positions of these facilities and utilities become necessary to the new construction, including all points of connection, the CONTRACTOR shall furnish all labor and tools to verify or definitely establish the horizontal location, elevation, size and material (if appropriate) of the facilities and utilities. The CONTRACTOR shall notify the ENGINEER at least 48 hours prior to construction if any discrepancies in existing utility information or conflicts with existing utilities exist. The ENGINEER assumes no responsibility whatever with respect to the sufficiency or accuracy of the information shown on the PLANS and SPECIFICATIONS relative to the location of underground facilities and utilities, nor the manner in which they are removed or adjusted.

It shall be the CONTRACTOR's responsibility prior to construction, to notify all Utility Companies of the intent to begin construction and to verify the actual location of all such facilities and utilities. The CONTRACTOR shall also obtain from the respective Utility Companies the working schedules for removing or adjusting these facilities.

UNSUITABLE SOILS

The PLANS have been prepared by the ENGINEER based on the assumption that all soils on the project are suitable to support the proposed improvements shown. The CLIENT or CONTRACTOR shall immediately notify the ENGINEER if he discovers or encounters an obstruction that prevents the installation of the improvement according to the line and grades shown on the PLANS.

PROTECTION OF TREES

All trees that are not to be removed shall be protected from damage. Trees shall not be removed unless requested to do so in writing by the CLIENT.

NOTIFICATION OF OWNERS OF FACILITIES AND UTILITIES

The CONTRACTOR shall notify all applicable Jurisdictional Governmental Entities or utility companies, i.e., water, sewer, electric, telephone, gas and cable TV prior to beginning any construction so that said entity or company can establish the location and elevation of underground pipes, conduits or cables adjoining or crossing proposed construction.

TRAFFIC CONTROL

The CONTRACTOR shall provide when required by any JURISDICTIONAL GOVERNMENTAL ENTITY, all signs, equipment, and personnel necessary to provide for safe and efficient traffic flow in all areas where the work will interrupt, interfere or cause to change in any form, the conditions of traffic flow that existed prior to the commencement of any portions of the work. The CLIENT may, at his discretion, require the CONTRACTOR to furnish traffic control under these or other circumstances where in his opinion it is necessary for the protection of life and property. Emergency vehicle access shall be maintained at all times. Unless authorized by the CLIENT or CLIENT's construction representative, all existing access points shall be maintained at all times by the CONTRACTOR. The need for traffic control shall be anticipated by the CLIENT.

WORK AREA

The CONTRACTOR, his agents and employees and their employees and all equipment, machinery and vehicles shall confine their work within the boundaries of the project or work area specified by the Client. The CONTRACTOR shall be solely liable for damage caused by him or his agents and employees and their equipment, machinery and vehicles on adjacent property or areas outside designated work areas.

UTILITY POLES

It shall be the responsibility of the CONTRACTOR to arrange for the relocation or bracing of existing utility poles that may be within the working limits of this contract. It is expressly understood that all work and costs connected with the maintenance of these utility poles, their temporary relocations, etc., shall be the responsibility of the CLIENT or the CONTRACTOR.

RESTORATION

It is the intent of these SPECIFICATIONS that clean-up and final restoration shall be performed immediately upon completion of each phase of the work, both inside and outside the Project, or when so directed by the CLIENT so that these areas will be restored as nearly as possible to their original condition or better, and shall include but not be limited to, restoration of maintained lawns and rights-of-way, roadways, driveways, sidewalks, ditches, bushes, hedges, trees, shrubs, fences, mailboxes, sewers, drain tiles, water mains, etc.

CLEANING UP

The CONTRACTOR shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish, tools, scaffolding and surplus materials and shall leave his work "broom clean" or its equivalent, unless more exactly specified.

ROAD CLEANING

The CONTRACTOR shall maintain roadways adjoining the project site free from mud and debris at all times. If mud and/or debris is carried onto the roadways from vehicles entering onto the highway from either the CONTRACTOR's trucks, his employees' vehicles, or his material suppliers, the CONTRACTOR shall immediately remove said mud and/or debris.

SAFETY AND PROTECTION

The CONTRACTOR shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. The CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR's duties and responsibilities for safety and for protection of the work shall continue until such time as all work is completed and the CLIENT has notified CONTRACTOR that the work is acceptable. The duties of the ENGINEER do not include review of the adequacy of either the CONTRACTOR's or the general public's safety in, on, or near the construction site.

HOLD HARMLESS

To the fullest extent permitted by law, any CONTRACTOR; material supplier or other entity by use of these plans and specifications hereby waives any right of contribution and agrees to indemnify, defend, save and hold harmless the CLIENT and ENGINEER and its agents, employees and consultants from and against all manner of claims, causes, causes of action, damages, losses and expenses, including but not limited to, attorneys' fees arising out of, resulting from or in connection with the performance of any work, pursuant to or with respect to these plans and specifications. However, this indemnity shall not be construed to indemnify ENGINEER, its consultants, agents or employees against its own negligence.

Claims, damages, losses and expenses as these words are used in the Agreement shall mean and include, but not be limited to (1) injury or damage occurring by reason of the failure of or use or misuse of any hoist, riggings, blocking, scaffolding or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by any part or entity, including any contractor; (2) all attorneys' fees and costs incurred in bringing an action to enforce the provisions of this indemnity; (3) costs for time expended by the indemnified party and its employees, at its usual rates plus costs or travel, long distance telephone and reproduction of documents and (4) consequential damages.

In any and all claims against the CLIENT or ENGINEER or any of their agents or employees and consultants by any party, including any employee of the CONTRACTOR or any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount of type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts or any insurance maintained by CONTRACTOR or any Subcontractor or any other party.

INSURANCE

Any party using or relying on these plans, including any contractor, material supplier, or other entity shall obtain, (prior to commencing any work) general public liability insurance insuring against all damages and claims for any bodily injuries, death or property damage arising out of any work, including the construction work provided for in these plans, and shall name the CLIENT and ENGINEER and its consultants, agents and representatives as additional insureds to the limits of such insurance policies; provided that any party using or relying on these plans having obligations to maintain specific insurance by reason of any agreement with CLIENT or any CONTRACTOR or ENGINEER shall provide evidence and certificates of insurance as required by such contract or agreement. Such insurance must contain a clause stating that the insurance is primary coverage for ENGINEER and ENGINEER's other applicable coverage is considered secondary. Policies shall contain a waiver of subrogation against Manhard and Client. Such insurance shall not limit any liability of any party providing work or services or providing materials.

THIRD PARTY BENEFICIARY

Manhard Consulting, the ENGINEER, is intended to be a third party beneficiary of this willing agreement and requirement.

DETAILED SPECIFICATIONS

*I. DEMOLITION

The CONTRACTOR shall coordinate with respective utility companies prior to the removal and/or relocation of utilities. The CONTRACTOR shall coordinate with the utility company concerning portions of work which may be performed by the Utility Company's forces and any fees which are to be paid to the utility company for their services. The CONTRACTOR is responsible for paying for all fees and charges.

Should removal and/or relocation activities damage features indicated to remain, the CONTRACTOR shall provide new materials/structures in accordance with the contract documents. Except for materials designed to be relocated on this plan, all other construction materials shall be new.

Prior to demolition occurring, all erosion control devices are to be installed.

All existing utility lines and conduits located under proposed buildings shall be removed and properly backfilled. All utility lines and conduits located under drives, on-site roads, parking lots or sidewalks shall be filled with a flowable backfill and end plugged. All existing structures shall be removed. All existing utility lines located under landscape areas shall be left in place and plugged at all structures.

The CONTRACTOR is responsible for demolition, removal and disposal (in a location approved by all JURISDICTIONAL GOVERNING ENTITIES) of all structures, pads, walls, flumes, foundations, road, parking lots, drives, drainage structures, utilities, etc., such that the improvements shown on these plans can be constructed. All demolition work shall be in accordance with all applicable federal, state and local requirements. All facilities to be removed shall be undercut to suitable material and brought to grade with suitable compacted fill material per the specifications.

The CONTRACTOR is responsible for obtaining all permits required for demolition and disposal.

Electrical, telephone, cable, water, fiber optic cable and/or gas lines needing to be removed shall be coordinated by the CONTRACTOR with the affected utility company.

CONTRACTOR must protect the public at all times with fencing, barricades, enclosures, and other appropriate best management practices.

Continuous access shall be maintained for surrounding properties at all times during demolition.

All fire access lanes within the project area shall remain in service, clean of debris, and accessible for use by emergency vehicles.

CONTRACTOR shall maintain all existing parking areas, sidewalks, drives, etc. clear and free from any construction activity and/or material to ensure easy and safe pedestrian and vehicular traffic to and from the site. CONTRACTOR shall coordinate/phase all construction activity within proximity of the building and utility interruptions with the facility manager to minimize disturbance and inconvenience to facility operations.

CONTRACTOR may limit saw-cut and pavement removal to only those areas where it is required as shown on these construction plans, however if any damage is incurred on any of the surrounding pavement, etc. the CONTRACTOR shall be responsible for ITS removal and repair.

Any existing wells encountered shall be exposed and sealed 3' below proposed finish grade by the CONTRACTOR in accordance with Section 920.120 (latest edition) of the Illinois Water Well Construction Code, Department of Public Health, and all applicable local rules and regulations. CONTRACTOR is responsible for obtaining all permits required by JURISDICTIONAL GOVERNMENTAL ENTITIES for abandoning existing wells.

Any existing septic tanks and grease traps encountered shall have all liquids and solids removed and disposed of by a licensed commercial hauler in accordance with JURISDICTIONAL GOVERNING ENTITY regulations, and the tank and grease traps shall then be filled with suitable materials or removed from the site and disposed of by the CONTRACTOR.

Voids left by any item removed under any proposed building, pavement, walk, etc. or within 24" thereof shall be filled and compacted with suitable materials by the CONTRACTOR.

Any material containing asbestos found within existing structures shall be removed from the site and disposed of off-site by the CONTRACTOR in accordance with County, State and Federal regulations.

CONTRACTOR shall develop and implement a daily program of dust control and shall submit and obtain JURISDICTIONAL GOVERNING ENTITY approval of dust control procedures prior to demolition of any structures. Modification of dust control procedures shall be performed by the CONTRACTOR to the satisfaction of the JURISDICTIONAL GOVERNING ENTITY as requested.

The CONTRACTOR shall coordinate all demolition with the JURISDICTIONAL GOVERNING ENTITY and CLIENT to ensure protection and maintenance of sanitary sewer and water utilities as necessary and to provide stormwater conveyance until new facilities are constructed, tested and placed into operation.

The locations of all existing utilities shown on this plan have been determined from the best information available and are given for the convenience of the CONTRACTOR and are not to be interpreted as the exact location, or as the only obstacles that may occur on the site. The ENGINEER assumes no responsibility for their accuracy. Prior to the start of any demolition activity, the CONTRACTOR shall notify the utility companies for location of existing utilities and shall verify existing conditions and proceed with caution around any anticipated features.

The CONTRACTOR is responsible for removing the existing irrigation system in the areas of proposed improvements. The contractor shall cap the existing irrigation system to remain such that the remaining system shall continue to function properly.

The parking lot shall be completed in sections such that it does not interrupt the facility operations. The CONTRACTOR shall coordinate with the construction manager for work to be performed.

II. EARTHWORK

STANDARDS

This work shall be completed in conformance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition except as modified below.

SOIL BORING DATA

Copies of results of soil boring and reports, if such borings were taken by the CLIENT in the vicinity of the proposed construction site, should be made available by the CLIENT to the CONTRACTOR. These borings are presented for whatever purpose the CONTRACTOR chooses to make of them. The ENGINEER makes no representation or warranty regarding the number, location, spacing or depth of borings taken, nor of the accuracy or reliability of the information given in the results thereof.

Further, the ENGINEER does not assume responsibility for the possibility that during construction, the soil and groundwater condition may be different than indicated. Neither does the ENGINEER assume responsibility for variations of soil and groundwater at location between borings. The CONTRACTOR is required to make its own borings, explorations and observations to determine soil and groundwater conditions.

EARTHWORK CALCULATIONS AND CROSS SECTIONS

The CONTRACTOR understands that any earthwork calculations, quantities or cross sections that have been furnished by the ENGINEER are for information only and are provided without any guarantee by the CLIENT or ENGINEER whatsoever as to their sufficiency or accuracy. CONTRACTOR warrants that he has performed his own subsurface investigations as necessary and his own calculations and cross sections to determine site soil conditions and earthwork volumes. The ENGINEER makes no representation or guarantee regarding earthwork quantities or that the earthwork for this project will balance due to the varying field conditions, changing soil types, allowable construction to tolerances and construction methods that are beyond the control of the ENGINEER.

CLEARING, GRUBBING AND TREE REMOVAL

The site shall be cleared, grubbed, and trees and stumps removed where designated on the PLANS. Trees designated to remain shall be protected from damage.

TOPSOIL STRIPPING

Upon completion of demolition, clearing, grubbing and tree removal, all topsoil shall be stripped from under all buildings and pavements areas, and other areas necessary to complete the work. Topsoil stripped shall be placed in stockpiles in locations as designated by the CLIENT.

TOPSOIL RESPREAD

Upon completion of roadway and/or parking lot improvements and installation of underground utilities a minimum of six inches (6") of topsoil shall be respread over all unpaved areas which have been disturbed by earthwork construction, except building pads and other designated areas, which shall be kept free from topsoil.

SEEDING

Upon completion of topsoil respread, the CONTRACTOR shall apply seed and fertilizer to all respread areas in accordance with IDOT standards or as designated on landscape drawings and specifications provided by the CLIENT.

SODDING

Upon completion of topsoil respread, the CONTRACTOR shall install sod to all areas designated on the plans or as designated on the landscape drawings and specifications provided by the CLIENT.

EXCAVATION AND EMBANKMENT

Upon completion of topsoil stripping, all excavation and embankments shall be completed as shown on the PLANS. All suitable excavated materials shall be hauled, placed (moisture conditioned if necessary) and compacted in the embankment areas. The CONTRACTOR shall include all dewatering, temporary ditching and culverts necessary to complete the excavation and embankment.

Specifically included in the scope of Excavation and Embankments is grading and shaping of all cut or fill areas including swales and ditches; handling of sewer spoil, etc., and all work required to provide positive drainage at the end of each working day and upon completion of a section.

The CONTRACTOR shall be responsible for the excavation of all swales and ditches and for the excavation or filling of the roads, building pads and parking lots within the work limits to lines & grades shown on the plans. He shall be responsible for obtaining compaction in accordance with the minimum values listed in the table below for all embankments unless more stringent values are listed in the soils report or are approved by the CLIENT, and to use any method approved by the CLIENT necessary to obtain this compaction (i.e., soil fabric or any undercutting that may be required).

Type Material	Percent Compaction Standard	Pavement & Floor Slabs	Grass Areas
Sandy Soils	Modified Proctor	95%	90%
Clayey Soils	Standard Proctor	95%	90%

The CONTRACTOR shall notify the CLIENT if proper compaction cannot be obtained so that the CLIENT may determine what remedial measures may be needed.

A soils testing firm employed by the CLIENT shall determine which soils are unsuitable. Materials in their natural state being defined as unsuitable that would be suitable material if moisture conditioned, shall be conditioned by the CONTRACTOR and used as suitable embankment material or hauled from the site.

For purposes of definition, unsuitable material shall be as follows unless determined otherwise by the Soils Engineer:

1. Any soil whose optimum moisture content exceeds 25%.
2. Any cohesive soil with an unconfined compressive strength of 1.5 tons per square foot or less.
3. Any soil whose silt content exceeds 60% by weight.
4. Any soil whose maximum density is less than 100 pounds per cubic foot.
5. Any soil containing organic, deleterious, or hazardous material.

Upon completion of excavation and shaping of the water retention areas intended to maintain a permanent pool of water, all silt seams and granular or sandy soils shall be removed to a minimum depth of three feet below the subgrade and replaced with an impermeable clay liner, including adjacent to and under storm sewer inlets and outlets. It is the intent of these PLANS and SPECIFICATIONS that the CONTRACTOR shall prepare the lake bottoms, side slopes, and compaction thereof such that the lakes will maintain the proposed normal water level and that leakage does not exceed ½ inch per week.

Ditches and swales are to be excavated to the lines and grades indicated on the PLANS. All suitable materials excavated from the ditches shall be used in construction of the embankments.

The CONTRACTOR shall notify the CLIENT immediately upon encountering groundwater during excavation. If in the opinion of the CLIENT or the JURISDICTIONAL GOVERNING ENTITY this condition necessitates the installation of perforated drain tile bedded in washed gravel or open storm sewer joints wrapped with fabric, the CONTRACTOR shall install the same.

During excavation and embankment, grades may be adjusted to achieve an overall site earthwork balance. The CONTRACTOR shall cooperate fully with the CLIENT in adjustment of grades, construction methods and placement of material to meet the above goals and shall immediately advise CLIENT if he believes that the earthwork will not balance.

It is the intent of these PLANS that storm waters falling on the site be diverted into sedimentation / lake / detention basins during construction. The CONTRACTOR shall construct and maintain any temporary ditches or swales that are necessary to accomplish this prior to beginning mass excavation.

EROSION CONTROL

Suitable erosion control practices shall be maintained by the CONTRACTOR in accordance with Illinois Urban Manual and all applicable Soil Erosion and Sedimentation Control ordinances and the PLANS.

UNDERCUTTING DURING EARTHWORK

If the subgrade cannot be dried adequately by discing as outlined above for placement of material to planned grades and if the CLIENT determines that the subgrade does not meet the standards set forth above, the CLIENT may require undercutting.

MISCELLANEOUS CONTRACT ITEMS

The following items may be required at the CLIENT's option, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY:

(1) **GEOTEXTILE FABRIC**

Geotextile fabric or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY where proper compaction of embankments over existing soft soils is not possible. Geotextile fabric shall meet the material specifications of and shall be installed in accordance with the above standards.

(2) **EROSION CONTROL BLANKET**

Erosion control blanket or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY for the stabilization of disturbed areas. Erosion control blanket shall meet the material specifications of and shall be installed in accordance with the above standards, the Illinois Urban Manual and/or the details shown on the PLANS.

III. UNDERGROUND IMPROVEMENTS

A. GENERAL

STANDARDS

All underground improvements shall be constructed and tested in accordance with the Standard Specifications for Water and Sewer Construction in Illinois and Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition. In the event of conflicting guidelines, the more restrictive shall govern.

SELECTED GRANULAR BACKFILL

Selected Granular Backfill shall be required for all sewer and water main trenches lying under existing or proposed streets, driveways, parking lots and within 24" thereof, and where noted on PLANS. All material placed in such trenches shall be in accordance with the above standards.

MANHOLES, CATCH BASIN, INLETS & VALVE VAULTS

All Manholes, Catch Basins, Inlets, and Valve Vaults shall be constructed of reinforced precast concrete ring construction with tongue and groove joints in conformance with the latest revision of ASTM designation C-478. All joints between sections and frames (except sanitary manholes, see Section IIIB Manholes, below) shall be sealed with mastic type bituminous jointing compound. CONTRACTOR shall remove all excess mastic on inside of structure and butter joints with mortar. Manholes are to have offset cones except that no cone shall be used on storm manholes 6'-0" deep or less in which case a reinforced concrete flat top section shall be used, and Valve Vaults shall have concentric cones. Only concrete adjustment rings will be permitted where necessary and shall be limited to two adjustment rings totaling not more than 8" in height. All manholes and catch basin steps shall be copolymer polypropylene with continuous ½" steel reinforcement as manufactured by MA Industries, or approved equal.

***AUGER/BORING AND CASING** - INTENTIONALLY OMITTED

***AUGER (OPEN BORE)** - INTENTIONALLY OMITTED

HORIZONTAL AND VERTICAL SEPARATION OF WATER AND SEWER MAINS

Horizontal and vertical separation of water and sewer mains shall be in accordance with Standard Specifications for Water and Sewer Construction in Illinois Section 41-2.01A and 41-2.01B and Standard Drawing 18, 19, 20, 21, 22, 23 and 24.

STRUCTURE ADJUSTMENTS

Structures shall be adjusted to the finished grade as shown on PLANS.

*B. SANITARY SEWERS AND APPURTENANCES - INTENTIONALLY OMITTED

*C. WATER MAINS AND APPURTENANCES - INTENTIONALLY OMITTEED

D. STORM SEWERS AND APPURTENANCES

***STORM SEWER PIPE**

Storm sewer pipe shall conform to the following:

(1) Reinforced concrete pipe minimum Class IV in conformance with the latest revision of ASTM designation C76 with C-361 joints only.

Precast tees, bends, and manholes may be used if permitted by the JURISDICTIONAL GOVERNMENTAL ENTITY.

Storm sewer shall include bedding and trench backfill.

MANHOLES, INLETS & CATCH BASINS

Manholes, Inlets and Catch Basins shall be constructed in conformance with Section IIIA Manholes, etc. above. The space between connecting pipes and the wall of the manhole shall be completely filled with non-shrink hydraulic cement mortar. Frames and lids shall be Neenah or approved equal unless specified otherwise on the PLANS. All frames and grates shall be provided such that the flange fully covers the opening plus 2" of the structure as a minimum. * Provide **"Vane"** Type frame & grate for all structures located in curb where gradient exceed 2.0%. Manholes shall include steps, frame & grate, bedding and trench backfill.

FLARED END SECTION

Flared end sections shall be pre-cast reinforced concrete flared end section with an end block cast separate as per the Illinois Department of Transportation Standard 542301 and shall be installed where shown on the PLANS. All flared end sections for storm sewers 12" in diameter and larger shall be installed with a grating per Standard 542311 and/or as detailed on the PLANS. Work shall include end block.

RIP RAP

Stone rip rap consisting of pieces of "A" quality stone 4" to 8" in diameter shall be furnished and installed in accordance with IDOT Specifications and shall be placed where shown on the plans, to a minimum thickness of 12" and a width as indicated on the plans. Broken concrete or concrete blocks will not be acceptable.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

UNDERDRAINS

Pipe underdrains shall be corrugated flexible plastic pipe conforming to AASHTO Designation M252 perforated corrugated polyethylene pipe (PE) with a smooth interior of the diameter indicated on the PLANS and wrapped in a soil filter fabric supplied and installed by the CONTRACTOR. Perforations may be circular or slotted, but shall provide a minimum inlet area of 1.0 square inch per 2.0 linear feet of pipe. CONTRACTOR shall submit fabric and pipe catalogue Specifications for approval by the CLIENT. CONTRACTOR shall bed and backfill the underdrain in one of the following IDOT gradations of aggregate (CA-5, CA-7, CA-11, CA-14 or CA-15).

MISCELLANEOUS

(1) All existing field drainage tile or storm sewers encountered or damaged during construction shall either be restored to their original condition, properly rerouted and/or connected to the storm sewer system.

(2) Footing drains shall be connected to sump pumps or discharged directly into storm sewers. Footing drains or drainage tile shall not be connected to the sanitary sewer.

CONNECTION FOR STORM SERVICE TO STORM MAIN

Connections of storm sewer services to storm sewer mains should be made with manufactured tees when available. Availability of manufactured tees will be a function of the storm sewer material and pipe diameter size of the service sewer and main. If manufactured tees are not reasonably available, connections should be made in accordance with manufacturer's recommendations for all storm sewer other than concrete pipe. For concrete pipe connections without manufactured tees the storm sewer main shall be machine cored and the service sewer connected using non-shrink grout for the void between pipes. The service sewer shall be cut flush with the inside wall of the sewer main and not extend into the inside flow area of the main or otherwise impede flow.

IV. ROADWAY AND PARKING LOT IMPROVEMENTS

STANDARDS

Work shall be completed in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition (hereinafter referred to collectively as the "Standard Specifications") except as modified below and except that payment will be defined as detailed in the contract documents between the CLIENT and the CONTRACTOR. Supplementing the Standard Specifications shall be the applicable sections of the latest editions of the "Supplemental Specifications and Recurring Special Provisions", the "Manual on Uniform Traffic Control Devices for Streets and Highways" and the Illinois Supplement thereto, (hereinafter referred to collectively as the "MUTCD"). Any references to "ENGINEER" in the "Standard Specifications" shall be interpreted as the CLIENT or CLIENT's Construction Representative.

SUBGRADE PREPARATION

The CONTRACTOR shall be responsible for all subgrade compaction and preparation to the lines and grades shown on the plans.

AGGREGATE BASE COURSE TYPE 'B'

Aggregate Base Course Type B shall be limited to CA-6 or CA-10 gradation. Aggregate base courses shall be proof rolled as outlined below.

PROOF ROLL

The CONTRACTOR shall proof roll the subgrade with either a 2-axle truck loaded to 27,000 lbs. Or a 3-axle truck loaded to 45,000 lbs. or as specified by the JURISDICTIONAL GOVERNING ENTITY. The CLIENT and JURISDICTIONAL GOVERNING ENTITY shall observe and approve the proof rolling of the subgrade and the base course. Proof rolling tolerances shall be a maximum deflection of 1" for the subgrade and ½" for the base course. The above criteria is intended as a maximum deflection standard and that proof rolling of a majority of the area will have less deflection than specified above. In any case of deficiency, the subgrade and/or base course shall be repaired and retested before proceeding with the pavement construction.

Pavement subgrade material shall not be removed, placed or disturbed after proof roll testing has been completed prior to the pavement construction. Additional testing will be required if the pavement subgrade is disturbed and/or material is removed from or placed on the pavement subgrade after proof rolling approval.

Trucks or heavy equipment shall not travel on any pavement subgrade after final testing prior to pavement construction.

HOT-MIX ASPHALT BASE COURSE

HMA Base Course shall meet the requirements of IDOT or N50 mix design as indicated and shown on the plans. The maximum amount of recycled asphalt pavement allowed shall be 30% in a N30 mix design and 25% in a N50 mix design.

HOT-MIX ASPHALT BINDER AND SURFACE COURSE

HMA binder and surface courses, shall be constructed to the compacted thickness as shown on the PLANS. The base course shall be cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. The surface course shall be placed after the base and courses have gone through one winter season, or as directed by the CLIENT. Before applying the surface course, the binder course shall be thoroughly cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. Prior to the placement of the surface course, the JURISDICTIONAL GOVERNING ENTITY shall examine the completed pavement, including curb and gutter, and all failures shall be corrected by the CONTRACTOR.

CONCRETE PAVEMENTS

Concrete pavements shall be constructed in accordance with American Concrete Institute Standard ACI330R-08 and as shown on the PLANS.

Slabs and driveway aprons shall be constructed with 6" x 6" - W1.4 x W1.4 welded wire fabric positioned on steel chair supports. Placing fabric during the concrete pouring operation will not be allowed.

Sawing of joints shall commence as soon as the concrete has cured and hardened sufficiently to permit sawing without excessive raveling, but no later than eight hours after the concrete has been placed. All joints shall be sawed to a depth equal to 1/3 of the pavement thickness before uncontrolled shrinkage cracking take place. If necessary, the sawing operation shall occur during the day or at night, regardless of weekends, holidays or weather conditions. The CONTRACTOR shall be aware of jurisdictional noise ordinances and holiday restrictions for scheduling purposes.

The CONTRACTOR is responsible to guard fresh concrete until it sets and hardens sufficiently to prevent people from writing, walking, riding bicycles or otherwise permanently marking, defacing or causing depressions of any type in the concrete. Any concrete so marked will be removed and replaced by the CONTRACTOR at the CONTRACTOR's expense.

The CONTRACTOR shall protect the pavement against all traffic, including that of their own employees or other workers, until test specimens have attained the specified strength.

SIDEWALKS

Concrete sidewalks shall be constructed to width and thickness as shown on the PLANS. Sidewalks shall be thickened to a minimum of 6" at all driveways. All sidewalks shall be IDOT Class SI concrete, on aggregate base as shown on the detail. A ¾" expansion joint shall be provided when meeting existing sidewalk.

CURB AND GUTTER

Curb and gutter shall be as per the detail shown on the PLANS, which shall include compacted aggregate base course under the curb and gutter. All contraction and expansion joints shall be constructed as per the detail.

CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT

The CONTRACTOR shall saw cut and remove the existing concrete curb where shown on the PLANS and install a curb of similar cross section and pavement to that removed (or depressed curb and gutter if shown on the PLANS). Upon completion of the curb and gutter any voids between the existing pavement and the new curb shall be filled with concrete to within 2" of the final surface, which is to be filled with bituminous pavement. The area behind the curb shall be filled and compacted with embankment material within 6" of the top of the new curb. The CONTRACTOR shall then restore the remaining 6" to its original condition (i.e., sod, gravel, topsoil). Where proposed curb connects to an existing curb, the existing curb shall be saw cut and then two 18" long x ¾" (#6) dowel bars shall be drilled and installed 9" into the existing and proposed curb. Bars shall be installed in a location similar to the expansion joint in the curb.

FRAME ADJUSTMENTS

The road contractor shall be responsible for making final adjustments and the setting on a bituminous mastic jointing compound all castings located in the roadway, sidewalks, and parking areas prior to construction of any curbing, sidewalk, or final surface. Any structures that need to be lowered, or raised in excess of 4" shall be completed and the work backcharged against the underground contractor. This Contractor shall also be responsible for cleaning all of the above structures immediately upon completion of his phase of work. This work shall be incidental to the cost of the pavement.

PAVEMENT MARKING - PAINT

The CONTRACTOR shall furnish and apply painted marking lines, letters & symbols of the patterns, sizes and colors where shown on the PLANS. Paint pavement marking shall be applied in accordance with the IDOT Standard Specifications.

***PAVEMENT MARKING - THERMOPLASTIC** - INTENTIONALLY OMITTED

QUALITY CONTROL

The CONTRACTOR shall provide all testing necessary to ensure improvements are in accordance with the project specifications and provide testing documentation that specifications were met.

SHOULD A CONFLICT ARISE BETWEEN THE MANHARD SPECIFICATIONS AND THE CITY SPECIFICATIONS, THE CITY SPECIFICATIONS TAKE PRECEDENCE.

DRAWN BY | REVISIONS | DATE

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS
CONSTRUCTION SPECIFICATIONS

PROJ. MGR.: KRK
PROJ. ASSOC.: GRC
DRAWN BY: ----
DATE: 10-14-24
SCALE: N.T.S.

October 15, 2024 – 15:32 Dwg Name: P:\Occdpil16\dwg\Eng\Final Drawings\Plan Set\10-SPECS.dwg Updated By: KKlawans

COVERAGE SUMMARY

	TOTAL AREA	IMPERVIOUS	PERMEABLE PAVERS	GRAVEL	PERVIOUS	C-VALUE	CN
	ACRES	ACRES	ACRES	ACRES	ACRES		
DEVELOPMENT AREA	2.73	0.07	1.11	0.03	1.52	0.59	85
UNRESTRICTED AREA	0.34	0.00	0.02	0.01	0.31	0.48	81
DETAINED AREA	2.39	0.07	1.10	0.02	1.20	0.60	86
UPSTREAM TRIB AREA	0.32	0.00	0.00	0.11	0.21	0.55	84
MAINTENANCE AREA	0.13	0.04	0.06	0.00	0.03	0.73	91

RELEASE RATE SUMMARY

		MWRD
RELEASE RATE	CFS/AC	0.20
GROSS ALLOWABLE RELEASE RATE	CFS	0.546
UNRESTRICTED RELEASE	CFS	0.000
NET ALLOWABLE RELEASE RATE	CFS	0.546

DEVELOPMENT AREA

DETAINED AREA	UNRESTRICTED AREA	UPSTREAM TRIBUTARY AREA
IMPERVIOUS AREA	IMPERVIOUS AREA	IMPERVIOUS AREA
PERVIOUS AREA	PERVIOUS AREA	PERVIOUS AREA
GRAVEL	GRAVEL	GRAVEL
PERMEABLE PAVERS	PERMEABLE PAVERS	

MAINTENANCE AREA

N

0 15 30 60

SCALE: 1"=30'

EXISTING BASEBALL FIELD

EXISTING SOFTBALL FIELD

COLLEGE DRIVE

DETENTION BASIN
HWL 642.8 (DESIGN)
HWL 642.5 (MODEL)
BOT 640.8
VOL REQUIRED = 0.65 AC-FT
VOL PROVIDED = 0.79 AC-FT

DESIGN HWL=642.8
MODEL HWL=642.5

WETLAND 1
(FLAGS 1A-5A)
(FLAG 1A UNDER WATER)

WETLAND 2
(FLAGS 1-17)

FLOODWAY LIMITS

ROADSIDE DITCH
(FLAGS 1-25)

DRAWN BY			KRK
REVISIONS			
DATE			
	01-22-25	REVISED PER MWRD REVIEW	

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OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS

CITY OF DES PLAINES, ILLINOIS

STORMWATER MANAGEMENT EXHIBIT

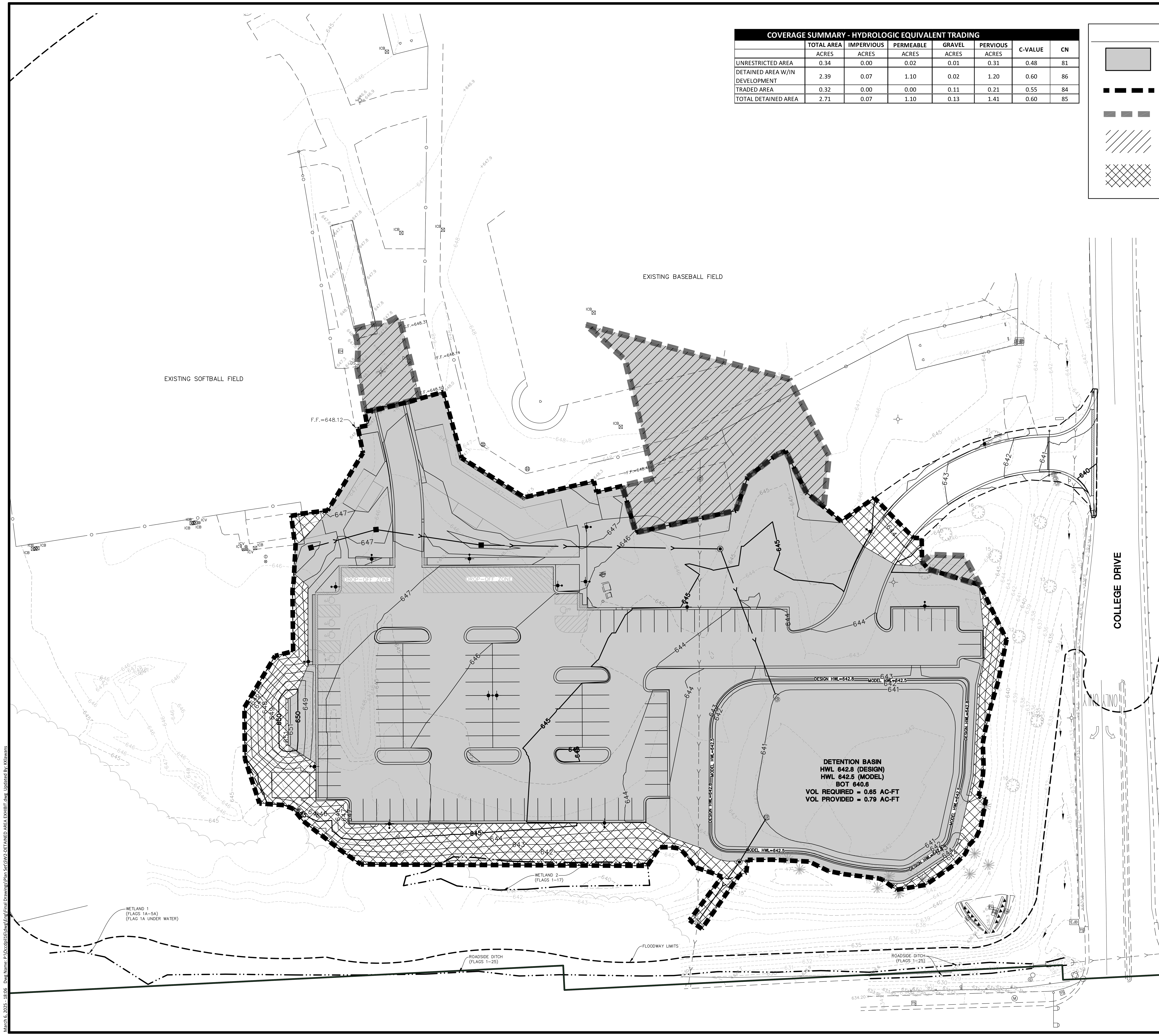
PROJ. MGR.:	KRK
PROJ. ASSOC.:	GRC
DRAWN BY:	KRK
DATE:	10-14-24
SCALE:	1"=30'

SHEET

SW1

OCCDPIL16

March 6, 2025 - 18:06 Dwg Name: P:\Occdpil16\dwg\Eng\Final Drawings\Plan Set\SW1-STORMWATER MANAGEMENT EXHIBIT.dwg, Updated by: KStevens



COVERAGE SUMMARY - HYDROLOGIC EQUIVALENT TRADING	TOTAL AREA	IMPERVIOUS	PERMEABLE	GRAVEL	PERVIOUS	C-VALUE	CN
	ACRES	ACRES	ACRES	ACRES	ACRES		
UNRESTRICTED AREA	0.34	0.00	0.02	0.01	0.31	0.48	81
DETAINED AREA W/IN DEVELOPMENT	2.39	0.07	1.10	0.02	1.20	0.60	86
TRADED AREA	0.32	0.00	0.00	0.11	0.21	0.55	84
TOTAL DETAINED AREA	2.71	0.07	1.10	0.13	1.41	0.60	85

UNRESTRICTED AREA RUNOFF VOLUME

RUNOFF VOLUME - UNRESTRICTED AREA

PROJECT: Oakton College Parking Lot Improvements **PROJECT NUMBER:** OCC.DPIL16

LOCATION: Village of Des Plaines, Illinois **DATE:** 3/6/2025

DEVELOPMENT INFORMTION			
1. Area, A		0.34	acres
2. Curve Number, CN		81	
3. 100-year, 24-hr Rainfall Depth, P		8.57	inches
RUNOFF DEPTH (NRCS RUNOFF EQUATIONS)			
4. Maximum Retention, S	$S = \frac{1000}{CN} - 10$	2.35	inches
5. Runoff Depth, Q_D	$Q_D = \frac{(P-0.2S)^2}{(P+0.8S)}$	6.28	inches
RUNOFF VOLUME			
6. Runoff Volume, V_R	$V_R = Q_D A\left(\frac{1}{12\frac{in}{ft}}\right)$	**0.18**	ac-ft

UPSTREAM TRADED AREA RUNOFF VOLUME

RUNOFF VOLUME - UPSTREAM TRADED AREA

PROJECT: Oakton College Parking Lot Improvements **PROJECT NUMBER:** OCC.DPIL16

LOCATION: Village of Des Plaines, Illinois **DATE:** 10/10/2024

DEVELOPMENT INFORMTION			
1. Area, A		0.32	acres
2. Curve Number, CN		84	
3. 100-year, 24-hr Rainfall Depth, P		8.57	inches
RUNOFF DEPTH (NRCS RUNOFF EQUATIONS)			
4. Maximum Retention, S	$S = \frac{1000}{CN} - 10$	1.90	inches
5. Runoff Depth, Q_D	$Q_D = \frac{(P-0.2S)^2}{(P+0.8S)}$	6.64	inches
RUNOFF VOLUME			
6. Runoff Volume, V_R	$V_R = Q_D A\left(\frac{1}{12\frac{in}{ft}}\right)$	**0.18**	ac-ft

DATE	REVISIONS	DRAWN BY
01-22-25	REVISED PER MWRD REVIEW	KRK

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OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS
DETAINED AREA EXHIBIT

PROJ. MGR.: KRK
PROJ. ASSOC.: GRC
DRAWN BY: KRK
DATE: 10-14-24
SCALE: 1"=30'

SHEET
SW2
OCCDPIL16

FINAL LANDSCAPE PLAN
for
OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS

1600 EAST GOLF ROAD
CITY OF DES PLAINES, ILLINOIS

INDEX OF SHEETS	
Sheet Number	Sheet Title
L1	TITLE SHEET & LANDSCAPE SUMMARY
L2	LANDSCAPE PLAN
L3	LANDSCAPE DETAILS
L4	LANDSCAPE SPECIFICATIONS

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER		REMARKS
DECIDUOUS TREES							
AA	8	Acer rubrum 'Armstrong'	Armstrong Red Maple	2.5" Cal.	B&B		Native to Chicago Region
GS	10	Gleditsia triacanthos inermis 'Skyline'	Skyline Honey Locust	2.5" Cal.	B&B		Native to Chicago Region
QB	5	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B		
TD	9	Taxodium distichum	Bald Cypress	2.5" Cal.	B&B		
ZS	8	Zelkova serrata	Japanese Zelkova	2.5" Cal.	B&B		
EVERGREEN TREES							
PB	5	Picea glauca densata	Black Hills Spruce	6` Ht.	B&B		Native to North America
DECIDUOUS SHRUBS							
CA	19	Ceanothus americanus	New Jersey Tea	3 gal.	Pot		
RG	12	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac	5 gal.	Pot		
EVERGREEN SHRUBS							
TD2	50	Taxus x media 'Densiformis'	Dense Anglo-Japanese Yew	5 gal.	Pot		24" HT.
ORNAMENTAL GRASSES							
CK	30	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	1 gal.	Pot		
CODE	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**	**SPACING**	**REMARKS**
GROUND COVERS							
EC	79	Euonymus fortunei 'Coloratus'	Purple-leaf Wintercreeper	1 gal.	Pot	24" o.c.	
VD	103	Vinca minor 'Dart's Blue'	Dart's Blue Periwinkle	1 gal.	Pot	24" o.c.	

TURF SEED/SOD

CONCEPT PLANT SCHEDULE

STORMWATER SEED MIX — **13,114 sf**
STANTEC SEED MIX - REF L3 FOR SPECIFICATION

ECONOMY PRAIRIE SEED MIX — **6,805 sf**
STANTEC SEED MIX - REF L3 FOR SPECIFICATION

City of Des Plaines Required Landscaping

INTERIOR PARKING LOT LANDSCAPING

- Requirement: Minimum of five percent of the interior of a parking lot shall be devoted to landscaping. Interior parking One shade tree shall be provided for every one hundred square feet of landscaping area.

Required - 36,142 sf parking area*.05 = 1,807sf. 18 trees required.
On Plan - 3,403sf / 20 canopy trees provided

Landscape Notes:

1. Seed/ Sod limit line is approximate. Seed/ Sod to limits of grading and disturbance. Contractor responsible for restoration of any unauthorized disruption outside of designated construction area.
2. Contractor responsible for erosion control in all seeded/ sodded areas.
3. Tree mulch rings in turf areas are 5' diameter. Contractor shall provide a mulch ring around all existing trees within the limits of work. Remove all existing grass from area to be mulched and provide a typical spade cut edge. Landscape Fabric shall not be installed under mulch.
4. Bedlines are to be spade cut to a minimum depth of 3". Curved bedlines are to be smooth and not segmented.

All planting, beds shall receive top dressing of mulch. Landscape fabric shall not be installed under mulch. Root flares shall be at or above grade, per specifications, and all rope/cord shall be removed from the base of tree trunks.

5. Do not locate plants within 10' of utility structures or within 5' horizontally of underground utility lines unless otherwise shown on plans. Consult with Landscape Architect if these conditions exist.
6. For Lump Sum Contracts, plants and other materials are quantified and summarized for the convenience of the Owner and jurisdictional agencies only. Confirm and install sufficient quantities to complete the work as drawn and specified. No additional payments will be made for materials required to complete the work as drawn and specified.
7. For Unit Price Contracts, payments will be made based on actual quantities installed as measured in place by the Owner's Representative.
8. It is the responsibility of the contractor to locate and provide plant material as specified on this plan. The contractor may submit a request to provide substitutions for the specified plant material under the following conditions:
   a. Any substitutions proposed shall be submitted to the project owner's representative within two weeks of the award of contract. Substitutions must meet equivalent design and functional goals of the original materials as determined by the owner's representative. Any changes must have the approval of the owner's representative,
   b. The request will be accompanied by at least three notices from plant material suppliers that the plant material specified is not available and will not be available prior to construction.
10. Verify site conditions and information on drawings. Promptly report any concealed conditions, mistakes, discrepancies or deviations from the information shown in the Contract Documents. The Owner is not responsible for unauthorized changes or extra work required to correct unreported discrepancies. Commencement of work shall constitute acceptance of conditions and responsibility for corrections
11. A minimum of two working days before performing any digging, call underground service alert for information on the location of natural gas lines, electric cables, telephone cables, etc. The contractor shall be responsible for location and protection of all utilities, and repair of any damage resulting from his work at no additional cost to the owner.
12. Contractor shall promptly repair all damages to existing site at no cost to owner.
13. Refer to landscape specifications for additional conditions, standards, and notes.

LICENSED LANDSCAPE ARCHITECT
MYLES URBANO ABURTO
157-001848
STATE OF ILLINOIS
SEAL
Date: 3/12/25

Myles Urbano Aburto, ASLA, PLA
Illinois Registered Landscape Architect
157-001848
Expires 08/31/2025

JULIE
ILLINOIS ONE-CALL SYSTEM
Simply Call 811

DRAWN BY | REVISIONS | DATE

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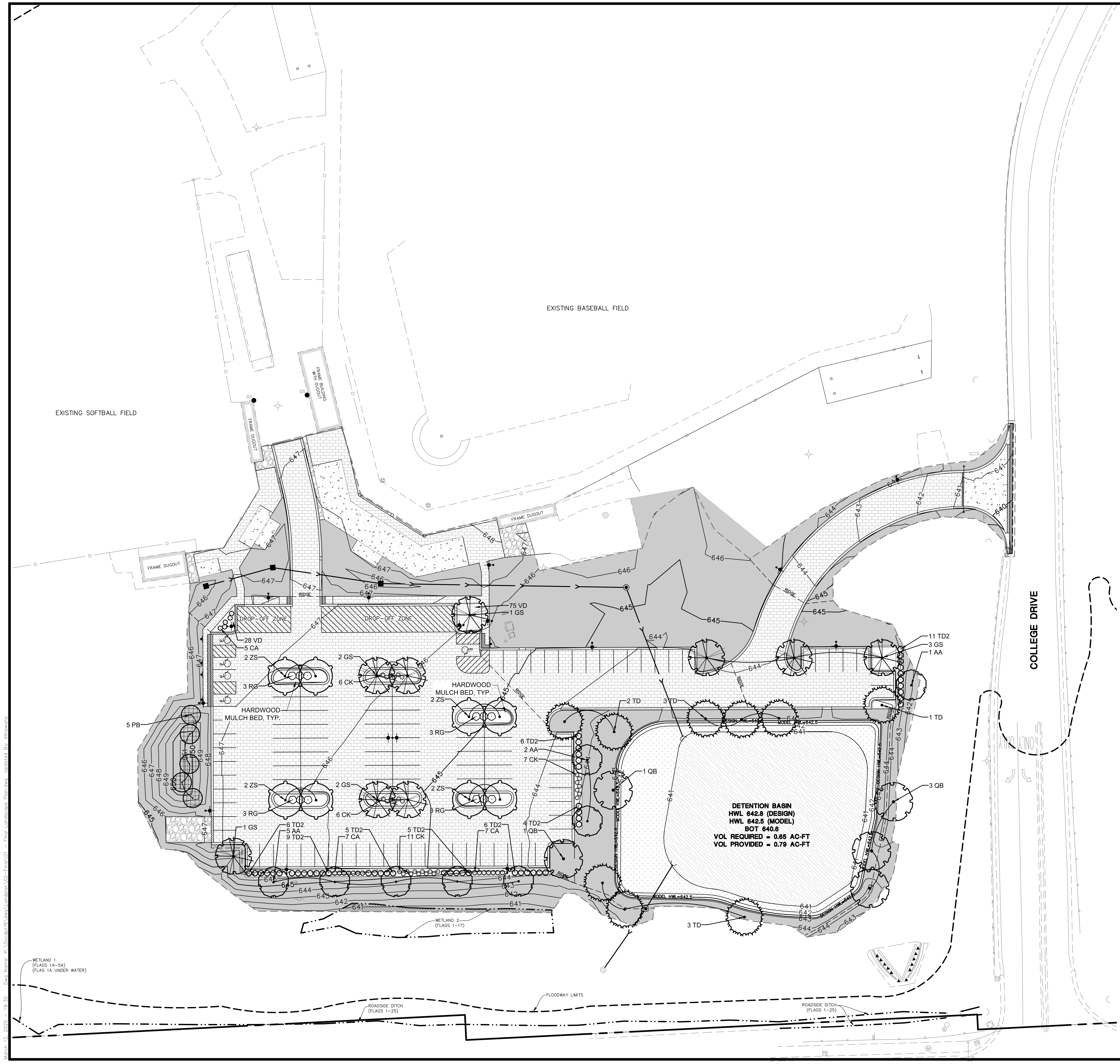
OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
DES PLAINES, ILLINOIS
TITLE SHEET & LANDSCAPE SUMMARY

PROJ. MGR.: KRK
PROJ. ASSOC.: MN
DRAWN BY: MUA
DATE: 3/12/2025
SCALE: N.T.S.

SHEET
L1 OF L4
OCC.DPIL16

March 11, 2025 - 14:31 Dwg Name: P:\Occdpil16\Arch\Landscape\02-Final\01 - Final Landscape Plan.dwg Updated By: mdburke



PLANT SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME
DECIDUOUS TREES		
AA	Acer rubrum 'Armstrong'	Armstrong Red Maple
GS	Gleditsia triacanthos inermis 'Skyline'	Skyline Honey Locust
QB	Quercus bicolor	Swamp White Oak
TD	Taxodium distichum	Bald Cypress
ZS	Zelkova serrata	Japanese Zelkova
EVERGREEN TREES		
PB	Picea glauca densata	Black Hills Spruce
DECIDUOUS SHRUBS		
CA	Ceanothus americanus	New Jersey Tea
RG	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac
EVERGREEN SHRUBS		
TD2	Taxus x media 'Densiformis'	Dense Anglo-Japanese Yew
ORNAMENTAL GRASSES		
CK	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass
GROUND COVERS		
EC	Euonymus fortunei 'Coloratus'	Purple-leaf Wintercreeper
VD	Vinca minor 'Dart's Blue'	Dart's Blue Periwinkle

TURF SEED/SOD

CONCEPT PLANT SCHEDULE

STORMWATER SEED MIX 13,114 sf
STANTEC SEED MIX - REF L3 FOR SPECIFICATION

ECONOMY PRAIRIE SEED MIX 6,805 sf
STANTEC SEED MIX - REF L3 FOR SPECIFICATION

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NORTH

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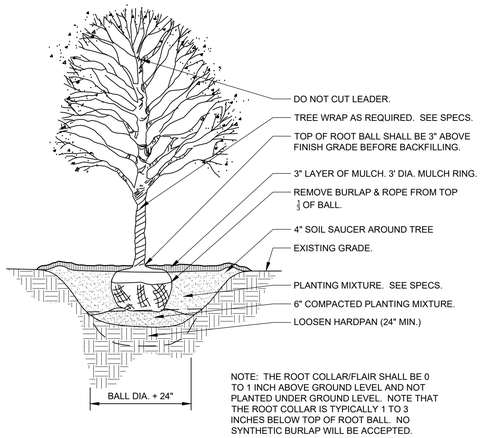
OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
DES PLAINES, ILLINOIS
LANDSCAPE PLAN

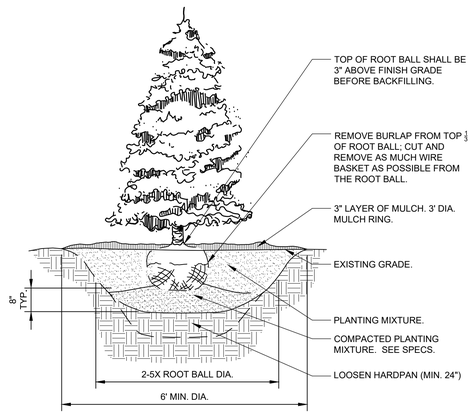
PROJ. MGR.:	KRK
PROJ. ASSOC.:	MN
DRAWN BY:	MUA
DATE:	3/12/2025
SCALE:	1"=30'

SHEET
L2 OF L4
OCC.DPIL16



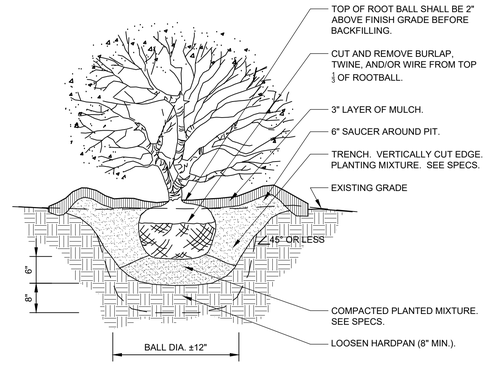
1 DECIDUOUS TREE PLANTING

1/4" = 1'-0" 329343.33-20



2 CONIFER TREE PLANTING

1/4" = 1'-0" 32 9343.23-01



3 SHRUB PLANTING DETAIL

3/4" = 1'-0" 329333.16-05

Stormwater Seed Mix
Provided by Stantec or Equal

Note: Double seed installation rates (do not double cover crop)

Application Rate (including cover crop)		***42.63 PLS Lbs/AC***
Botanical Name	**Common Name**	**Ounces/Acre (PLS)**
Permanent Grasses:		
Bolboschoenus fluviatilis	River Bulrush	4.00
Carex cristatella	Crested Oval Sedge	0.50
Carex lurida	Bottlebrush Sedge	2.00
Carex vulpinoidea	Brown Fox Sedge	2.00
Eleocharis obtusa	Blunt Spike Rush	0.50
Elymus virginicus	Virginia Wild Rye	24.00
Glyceria striata	Fowl Manna Grass	1.00
Juncus effusus	Common Rush	1.00
Leersia oryzoides	Rice Cut Grass	1.00
Panicum virgatum	Switch Grass	2.00
Schoenoplectus tabernaemontani	Great Bulrush	3.00
Scirpus atrovirens	Dark Green Rush	2.00
Scirpus cyperinus	Wool Grass	1.00
	Total	**44.00**
Forbs:		
Alisma subcordatum	Common Water Plantain	2.50
Asclepias incarnata	Swamp Milkweed	2.00
Bidens spp.	Bidens (Various Mix)	2.00
Eupatorium perfoliatum	Common Boneset	1.00
Helenium autumnale	Sneezeweed	2.00
Iris spp.	Blue Flag Species	4.00
Lycopus americanus	Common Water Horehound	0.50
Mimulus ringens	Monkey Flower	1.00
Penthorum sedoides	Ditch Stonecrop	0.50
Polygonum spp.	Pinkweed Species	2.00
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	1.00
Rudbeckia triloba	Brown-Eyed Susan	1.50
Sagittaria latifolia	Common Arrowhead	1.00
Senna hebecarpa	Wild Senna	2.00
Symphyotrichum lanceolatum	Panicled Aster	0.50
Symphyotrichum novae-angliae	New England Aster	0.50
Thalictrum dasycarpum	Purple Meadow Rue	2.00
	Total	**26.00**
Temporary Cover:		
Avena sativa	Common Oat	512.00
Lolium multiflorum	Annual Rye	100.00
	Total	**612.00**

Notes:
1) For best results install Myco Seed Treat inoculum to above seed mix at 4 oz per 100 lbs of seed, or equal
2) Install proper erosion control (blanket or heavy hydro-mulching) immediately after installation

4 ORNAMENTAL GRASS PLANTING

1" = 1'-0" 329313-01

5 PERENNIAL / ANNUAL PLANTING

1" = 1'-0" 329313-02

6 CONTINUOUS MULCH EDGING

1" = 1'-0" 329113.26-01

Economy Prairie Seed Mix
Provided by Stantec or Equal

Note: Double installation rates shown below

Application Rate (including cover crop)		***41.16 PLS Lbs/AC***
Botanical Name	**Common Name**	**Ounces/Acre (PLS)**
Permanent Grasses:		
Andropogon gerardii	Big Bluestem	12.00
Bouteloua curtipendula	Side Oats Grama	16.00
Carex spp.	Prairie Sedge Mix	3.00
Elymus canadensis	Canada Wild Rye	24.00
Panicum virgatum	Switch Grass	2.50
Schizachyrium scoparium	Little Bluestem	32.00
Sorghastrum nutans	Indian Grass	12.00
	Total	**101.50**
Forbs:		
Asclepias syriaca	Common Milkweed	3.00
Asclepias tuberosa	Butterfly Weed	1.00
Chamaecrista fasciculata	Partridge Pea	10.00
Coreopsis lanceolata	Sand Coreopsis	6.00
Echinacea purpurea	Broad-leaved Purple Coneflower	8.00
Heliopsis helianthoides	False Sunflower	0.50
Monarda fistulosa	Wild Bergamot	0.50
Penstemon digitalis	Foxglove Beard Tongue	2.00
Ratibida pinnata	Yellow Coneflower	4.00
Rudbeckia hirta	Black-Eyed Susan	8.00
Solidago speciosa	Showy Goldenrod	0.50
Symphyotrichum laeve	Smooth Blue Aster	1.00
Symphyotrichum novae-angliae	New England Aster	0.50
	Total	**45.00**
Temporary Cover:		
Avena sativa	Common Oat	512.00
	Total	**512.00**

Notes:
1) For best results install Myco Seed Treat inoculum to above seed mix at 4 oz per 100 lbs of seed, or equal
2) Install proper erosion control (blanket or heavy hydro-mulching) immediately after installation

Manhard CONSULTING
One Overlook Point, Suite 250, Lincolnshire, IL 60069 p:847.634.5500 f:847.634.0066 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

DRAWN BY | REVISIONS | DATE

OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
DES PLAINES, ILLINOIS
LANDSCAPE DETAILS

PROJ. MGR.: KRK
PROJ. ASSOC.: MN
DRAWN BY: MUA
DATE: 3/12/2025
SCALE: AS NOTED

SHEET
L3 OF L4
OCC.DPIL16

GENERAL PLANTING SPECIFICATIONS:

PART 1 - GENERAL

1-01 DESCRIPTION:

A. PROVIDE TREES, SHRUBS, PERENNIALS AND GROUNDCOVERS AS SHOWN AND SPECIFIED. THIS WORK INCLUDES:

1. SPREADING OF TOPSOIL OR SOIL PREPARATION
2. TREES, SHRUBS, PERENNIALS AND GROUNDCOVERS
3. PLANTING MIXES
4. MULCH AND PLANTING ACCESSORIES
5. FERTILIZER AND HERBICIDE
6. MAINTENANCE
7. WARRANTY OF PLANT MATERIAL

B. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO BIDDING AND REPORT ANY DISCREPANCIES TO THE OWNER OR HIS/HER REPRESENTATIVE.

1-02 QUALITY ASSURANCE:

A. COMPLY WITH SITE WORK REQUIREMENTS

B. PLANT NAMES INDICATED MUST COMPLY WITH 'STANDARDIZED PLANT NAMES' AS ADOPTED BY THE LATEST EDITION OF THE AMERICAN JOINT COMMITTEE OF HORTICULTURAL NOMENCLATURE. NAMES OF VARIETIES WHICH ARE NOT LISTED SHOULD CONFORM WITH THOSE GENERALLY ACCEPTED BY THE NURSERY TRADE. STOCK SHOULD BE LEGIBLY TAGGED.

C. ALL PLANT MATERIALS SHALL CONFORM TO THE 'AMERICAN STANDARDS FOR NURSERY STOCK' (ASNS), LATEST EDITION, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, WASHINGTON, D.C.

D. ALL PLANT MATERIAL SHALL BE GROWN AND SUPPLIED WITHIN A 50 MILE RADIUS OF THE PROJECT FOR A MINIMUM OF TWO FULL GROWING SEASONS.

E. ADHERE TO SIZING REQUIREMENTS AS LISTED IN THE PLANT LIST AND/OR BID FORM FOR THE PROJECT. A PLANT SHALL BE MEASURED IN ITS NATURAL STANDING POSITION.

F. STOCK THAT IS FURNISHED SHALL BE AT LEAST THE MINIMUM SIZE SHOWN. WITH PERMISSION OF THE LANDSCAPE ARCHITECT, SUBSTITUTION FROM THE SPECIFIED PLANT LIST WILL BE ACCEPTED ONLY WHEN SATISFACTORY EVIDENCE IN WRITING IS SUBMITTED TO THE LANDSCAPE ARCHITECT, SHOWING THAT THE PLANT SPECIFIED IS NOT AVAILABLE. REQUESTS FOR APPROVAL OF SUBSTITUTE PLANT MATERIAL SHALL INCLUDE COMMON AND BOTANICAL NAMES AND SIZE OF SUBSTITUTE MATERIAL. ONLY THOSE SUBSTITUTIONS OF AT LEAST EQUIVALENT SIZE AND CHARACTER TO THAT OF THE SPECIFIED MATERIAL WILL BE APPROVED. STOCK WHICH IS LARGER THAN THAT WHICH IS SPECIFIED IS ACCEPTABLE WITH PERMISSION OF THE LANDSCAPE ARCHITECT, PROVIDING THERE IS NO ADDITIONAL COST AND THAT THE LARGER PLANT MATERIAL WILL NOT BE CUT DOWN IN ORDER TO CONFORM TO THE SIZE INDICATED.

G. ALL SHRUBS SHALL BE DENSE IN FORM. SHRUB LINERS DO NOT MEET THESE SPECIFICATIONS. SHRUBS SPECIFIED BY HEIGHT SHALL HAVE A SPREAD THAT IS EQUAL TO THE HEIGHT MEASUREMENT. SHRUBS WHICH ARE SPECIFIED BY SPREAD SHALL EXHIBIT THE NATURAL GROWTH HABIT OF THE PLANT BY HAVING A GREATER SPREAD THAN HEIGHT.

H. ALL PLANT MATERIALS ARE SUBJECT TO INSPECTION AND APPROVAL. THE LANDSCAPE ARCHITECT AND OWNER RESERVE THE RIGHT TO SELECT AND TAG ALL PLANT MATERIAL AT THE NURSERY PRIOR TO PLANTING. THE LANDSCAPE ARCHITECT AND OWNER RESERVE THE RIGHT TO INSPECT PLANT MATERIAL FOR SIZE AND CONDITION OF ROOT SYSTEMS, THE PRESENCE OF INSECTS AND DISEASES, INJURIES AND LATENT DEFECTS (DUE TO CONTRACTOR NEGLIGENCE OR OTHERWISE), AND TO REJECT UNACCEPTABLE PLANT MATERIAL AT ANY TIME DURING PROGRESS OF THE PROJECT.

I. CONTAINER GROWN DECIDUOUS AND/OR EVERGREEN SHRUBS WILL BE ACCEPTABLE IN LIEU OF BALLED AND BURLAPPED SHRUBS SUBJECT TO SPECIFIED LIMITATIONS FOR CONTAINER GROWN STOCK. SIZE OF CONTAINER GROWN MATERIAL MUST CONFORM TO SIZE/HEIGHT REQUIREMENTS OF PLANT LIST.

1-03 DELIVERY, STORAGE & HANDLING:

A. FERTILIZER SHALL BE DELIVERED IN ORIGINAL, UNOPENED AND UNDAMAGED PACKAGING. CONTAINERS SHALL DISPLAY WEIGHT, ANALYSIS AND MANUFACTURER'S NAME. STORE FERTILIZER IN A MANNER THAT WILL PREVENT WETTING AND DETERIORATION.

B. TAKE ALL PRECAUTIONS CUSTOMARY CONCERNING PROPER TRADE PRACTICE IN PREPARING PLANTS FOR TRANSPORT. PLANTS SHALL BE DUG, PACKED AND TRANSPORTED WITH CARE TO ENSURE PROTECTION AGAINST INJURY. INSPECTION CERTIFICATES REQUIRED BY LAW SHALL ACCOMPANY EACH SHIPMENT INVOICE OR ORDER TO STOCK AND ON ARRIVAL, THE CERTIFICATE SHALL BE FILED WITH THE LANDSCAPE ARCHITECT . ALL PLANTS MUST BE PROTECTED FROM DRYING OUT. IF PLANT MATERIAL CANNOT BE PLANTED IMMEDIATELY UPON DELIVERY, SAID MATERIAL SHOULD BE PROPERLY PROTECTED IN A MANNER THAT IS ACCEPTABLE TO THE LANDSCAPE ARCHITECT . HEELED-IN PLANTS MUST BE WATERED DAILY. NO PLANT SHALL BE BOUND WITH ROPE OR WIRE IN A MANNER THAT COULD STRIP BARK OR BREAK OR SHEAR BRANCHES.

C. PLANT MATERIAL TRANSPORTED ON OPEN VEHICLES SHOULD BE COVERED WITH A PROTECTIVE COVERING TO PREVENT WIND BURN.

D. DRY, LOOSE TOPSOIL SHALL BE PROVIDED FOR PLANTING BED MIXES. MUDDY OR FROZEN TOPSOIL IS UNACCEPTABLE AS WORKING WITH MEDIUM IN THIS CONDITION WILL DESTROY ITS STRUCTURE, MAKING ROOT DEVELOPMENT MORE DIFFICULT.

1-04 PROJECT CONDITIONS:

A. NOTIFY LANDSCAPE ARCHITECT AT LEAST SEVEN (7) WORKING DAYS PRIOR TO INSTALLATION OF PLANT MATERIAL.

B. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING ABOVE AND BELOW GROUND UTILITIES. UTILITIES CAN BE LOCATED AND MARKED (IN ILLINOIS) BY CALLING J.U.L.I.E. AT (800)892-0123.

C. THE CONTRACTOR SHALL PROVIDE, AT HIS/HER OWN EXPENSE, PROTECTION AGAINST TRESPASSING AND DAMAGE TO SEEDED AREAS, PLANTED AREAS, AND OTHER CONSTRUCTION AREAS UNTIL THE PRELIMINARY ACCEPTANCE. THE CONTRACTOR SHALL PROVIDE BARRICADES, TEMPORARY FENCING, SIGNS, AND WRITTEN WARNING OR POLICING AS MAY BE REQUIRED TO PROTECT SUCH AREAS. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY THE OWNER AFTER SUCH WARNING HAS BEEN ISSUED.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF CROWNS, TRUNKS AND ROOTS OF EXISTING TREES, PLUS SHRUBS, LAWNS, PAVED AREAS AND OTHER LANDSCAPED AREAS THAT ARE TO REMAIN INTACT. EXISTING TREES, WHICH MAY BE SUBJECT TO CONSTRUCTION DAMAGE, SHALL BE BOXED, FENCED OR OTHERWISE PROTECTED BEFORE ANY WORK IS STARTED. THE OWNER DESIRES TO PRESERVE THOSE TREES WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION EXCEPT THOSE SPECIFICALLY INDICATED TO BE REMOVED ON THE DRAWINGS. THE CONTRACTOR SHALL ERECT PROTECTIVE TREE FENCING AND TREE ARMOR AT LOCATIONS INDICATED ON THE DRAWINGS AND AROUND ALL TREES ON SITE WHICH ARE TO BE PRESERVED. PROTECTIVE FENCING SHALL BE ERECTED BETWEEN THE LIMITS OF CONSTRUCTION AND ANY TREE PRESERVATION AREAS SHOWN ON THE DRAWINGS.

E. A COMPLETE LIST OF PLANTS INCLUDING A SCHEDULE OF SIZES, QUANTITIES AND OTHER REQUIREMENTS IS SHOWN ON THE DRAWINGS AND ON THE BID FORM. IN THE EVENT THAT QUANTITY DISCREPANCIES OR MATERIAL OMISSIONS OCCUR IN THE PLANT MATERIALS LIST, THE PLANTING PLANS SHALL GOVERN.

1-05 PRELIMINARY ACCEPTANCE:

A. ALL PLANTINGS SHALL BE MAINTAINED BY THE CONTRACTOR FOR A PERIOD OF 90 DAYS AFTER PRELIMINARY ACCEPTANCE BY THE OWNER OR HIS/HER REPRESENTATIVE. MAINTENANCE SHALL INCLUDE, BUT IS NOT LIMITED TO: MOWING AND EDGING TURF, PULLING WEEDS, WATERING TURF AND PLANT MATERIAL AND ANNUAL FLOWER MAINTENANCE.

1-06 WARRANTY:

A. ALL PLANT MATERIAL (EXCLUDING ANNUAL COLOR), SHALL BE WARRANTEED FOR ONE (1) YEAR AFTER THE END OF THE 90 DAY MAINTENANCE PERIOD. THE END OF THE MAINTENANCE PERIOD IS MARKED BY THE FINAL ACCEPTANCE OF THE CONTRACTOR'S WORK BY THE OWNER OR HIS/HER REPRESENTATIVE. PLANT MATERIALS WILL BE WARRANTEED AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS WHICH ARE BEYOND THE CONTROL OF THE CONTRACTOR. THE WARRANTY COVERS A MAXIMUM OF ONE REPLACEMENT PER ITEM.

PART 2 - PRODUCTS

2-01 PLANT MATERIALS:

A. PLANTS: PROVIDE TYPICAL OF THEIR SPECIES OR VARIETY, WITH NORMAL, DENSELY DEVELOPED BRANCHES AND VIGOROUS, FIBROUS ROOT SYSTEMS. ONLY SOUND, HEALTHY, VIGOROUS PLANTS WHICH ARE FREE FROM SUNSCALD INJURIES, DISFIGURING KNOTS, FROST CRACKS, ABRASIONS OF THE BARK, PLANT DISEASES, INSECT EGGS, BORERS, AND ALL FORMS OF INFESTATION SHALL BE PROVIDED. ALL PLANTS SHALL HAVE A FULLY DEVELOPED FORM WITHOUT VOIDS AND OPEN PATCHES.

1. BALLED AND BURLAPPED PLANTS SHALL HAVE A FIRM NATURAL BALL OF EARTH OF SUFFICIENT DIAMETER AND DEPTH TO ENCOMPASS A ROOT SYSTEM NECESSARY FOR A FULL RECOVERY OF THE PLANT. ROOT BALL SIZES SHALL COMPLY WITH THE LATEST EDITION OF THE 'AMERICAN STANDARDS FOR NURSERY STOCK' (ASNS). ROOT BALLS THAT ARE CRACKED OR MUSHROOMED ARE UNACCEPTABLE.

2. CONTAINER GROWN STOCK SHOULD BE GROWN FOR AN AMOUNT OF TIME THAT IS OF SUFFICIENT LENGTH FOR THE ROOT SYSTEM TO HAVE DEVELOPED ENOUGH TO HOLD ITS SOIL TOGEHTER, FIRM AND WHOLE. PLANTS WILL NOT BE LOOSE IN THEIR CONTAINERS, NOR SHALL THEY BE POT-BOUND AND ALL CONTAINER GROWN STOCK WILL COMPLY WITH THE SIZES STATED ON THE PLANT LIST.

3. NO EVIDENCE OF WOUNDS OR PRUNING CUTS SHALL BE ALLOWED UNLESS APPROVED BY THE LANDSCAPE ARCHITECT.

4. EVERGREEN TREES SHALL BE BRANCHED TO THE GROUND. THE HEIGHT OF EVERGREEN TREES ARE DETERMINED BY MEASURING FROM THE GROUND TO THE FIRST LATERAL BRANCH CLOSEST TO THE TOP. HEIGHT AND/OR WIDTH OF OTHER TREES ARE MEASURED BY THE MASS OF THE PLANT NOT THE VERY TIP OF THE BRANCHES.

5. SHRUBS AND SMALL PLANTS SHALL MEET THE REQUIREMENTS FOR SPREAD AND/OR HEIGHT INDICATED IN THE PLANT LIST. THE HEIGHT MEASUREMENT SHALL BE TAKEN FROM GROUND LEVEL TO THE AVERAGE HEIGHT OF THE TOP OF THE PLANT, NOT THE LONGEST BRANCH. SINGLE STEM OR THIN PLANTS WILL NOT BE ACCEPTED. SIDE BRANCHES SHALL BE FLUSHED WITH GROWTH AND HAVE GOOD FORM TO THE GROUND. PLANTS SHALL BE IN A MOIST, VIGOROUS CONDITION, FREE FROM DEAD WOOD, BRUISES OR OTHER ROOT OR BRANCH INJURIES.

2-02 ACCESSORIES:

A. TOPSOIL:

1. TOPSOIL SHALL BE FERTILE, NATURAL TOPSOIL OF A LOAMY CHARACTER, WITHOUT ADMIXTURE OF SUBSOIL MATERIAL. TOPSOIL SHALL BE REASONABLY FREE FROM CLAY, LUMPS, COARSE SAND, STONES, PLANTS, ROOTS, STICKS AND OTHER FOREIGN MATERIALS WITH A PH BETWEEN 6.5 TO 7.0.

B. TOPSOIL FOR SEED AREAS SHALL BE A MINIMUM OF 6".

C. SOIL AMENDMENTS SHALL BE AS FOLLOWS:

1. FOR TREES AND SHRUBS THE PLANT PIT WILL BE BACKFILLED WITH PULVERIZED BLACK DIRT.

2. FOR PERENNIALS AND ORNAMENTAL GRASSES THE SOIL MIXTURE WILL BE AS FOLLOWS: CM-63 GENERAL PURPOSE PEAT BASED MIX AS SUPPLIED BY MIDWEST TRADING. TOP BEDS WITH 8" OF CM-63 AND TILL INTO EXISTING BEDS TO A DEPTH OF 8". SOIL MIXTURES ARE AVAILABLE FROM MIDWEST TRADING. MIDWEST TRADING, ST. CHARLES, IL 60174 (630) 365-1990

D. FERTILIZER:

1. FOR TREES AND SHRUBS USE: 14-4-6 BRIQUETTES 17 G OR EQUIVALENT AVAILABLE FROM ARTHUR CLESEN, INC. FOLLOW MANUFACTURER'S RECOMMENDATION FOR APPLICATION. ARTHUR CLESEN, INC. 543 DIENS DRIVE, WHEELING, IL 60090 (847)537-2177

2. FOR TURF AREAS USE 6-24-16 CLESEN FAIRWAY WITH MICRONUTRIENTS WITH MINOR ELEMENTS 3.0 % S, .02% B, .05% CU, 1.0% FE, .0006% MO, .10% MN AVAILABLE FROM ARTHUR CLESEN OR APPROVED EQUAL.

E. HERBICIDE:

1. ROUND-UP OR APPROVED EQUAL

F. MULCH:

1. BARK MULCH SHALL BE FINELY SHREDDED HARDWOOD BARK WHICH HAS BEEN SCREENED AND IS FREE OF ANY GREEN FOLIAGE, TWIGS, ROCKS, SAWDUST, WOOD SHAVINGS, GROWTH OR GERMINATION INHIBITING INGREDIENTS, OR OTHER FOREIGN MATERIALS. BARK MULCH IS AVAILABLE FROM MIDWEST TRADING.

2. MUSHROOM COMPOST AS AVAILABLE FROM MIDWEST TRADING.

G. WATER:

1. WATER SERVICE WILL BE AVAILABLE ON THE SITE, WITH THE COST OF WATER BEING PAID BY THE OWNER. TRANSPORTING OF THE WATER FROM THE SOURCE TO THE WORK AREAS SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. ALL NECESSARY HOSE, PIPING, TANK TRUCK, ETC. SHALL BE SUPPLIED BY THE LANDSCAPE CONTRACTOR.

H. GUYING:

1. STAKES: 5/8" X 40" STEEL EYE ANCHOR WITH 4" HELIX

2. CABLE:
   a. TREES UNDER 5": FLEXIBLE 1/8" GALVANIZED AIRCRAFT CABLE, 7X7 STRAND OR APPROVED EQUAL
   b. TREES 5" AND OVER: FLEXIBLE 3/16" GALVANIZED AIRCRAFT CABLE, 7X7 STRAND OR APPROVED EQUAL.

3. TURNBUCKLES: 5/16", EYE AND EYE, WITH 4" TAKEUP.

4. HOSE: NEW TWO-PLY REINFORCED RUBBER HOSE, MINIMUM 1/2" I.D.

I. TREE WRAP: BURLAP TREE WRAP 4" WIDE.

J. TWINE: SOFT NURSERY JUTE.

PART 3 - INSTALLATION OF PLANT MATERIAL

3-01 FIELD VERIFICATION:

A. EXAMINE PROPOSED PLANTING AREAS AND CONDITIONS OF INSTALLATION. DO NOT START PLANTING WORK UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

3-02 PREPARATION:

A. ALL PLANTING TECHNIQUES AND METHODS SHALL BE CONSISTENT WITH THE LATEST EDITION OF 'HORTICULTURE STANDARDS OF NURSERYMEN, INC.' AND AS DETAILED ON THESE DRAWINGS.

B. PLANTING SHALL BE PERFORMED BY EXPERIENCED WORKMEN FAMILIAR WITH PLANTING PROCEDURES UNDER THE SUPERVISION OF A QUALIFIED SUPERVISOR.

C. ALL UNDERGROUND UTILITIES MUST BE LOCATED AND MARKED CLEARLY.

D. APPLY ROUND-UP OR APPROVED EQUIVALENT TO KILL ANY EXISTING VEGETATION IN ALL AREAS TO BE PLANTED. CONFIRM LENGTH OF WAITING PERIOD BETWEEN CHEMICAL APPLICATION AND PLANT INSTALLATION WITH MANUFACTURER. DO NOT BEGIN PLANTING OPERATIONS UNTIL PRESCRIBED POST-APPLICATION WAITING PERIOD HAS ELAPSED. TAKE EXTREME CARE TO AVOID CHEMICAL DRIFT TO ADJOINING PROPERTIES OF LANDSCAPE PLANTINGS.

E. PRIOR TO ALL PLANTING, ROTOTILL ALL AREAS TO BE LANDSCAPED TO PREPARE FOR PLANT INSTALLATION TO A MINIMUM DEPTH OF 12". ELIMINATE UNEVEN AREAS AND LOW SPOTS. MAINTAIN LINES, LEVELS, PROFILES AND CONTOUR. CHANGES IN GRADE ARE TO BE GRADUAL. BLEND SLOPES INTO LEVEL AREAS. REMOVE ALL DEBRIS, WEEDS AND UNDESIRABLE PLANTS AND THEIR ROOTS FROM AREAS TO BE PLANTED. REMOVE ALL CONCRETE SLAG LARGER THAN 2" IN DIAMETER.

F. TOPSOIL SHALL BE SPREAD OVER THE SITE AT A MINIMUM DEPTH OF 6". FOR THOSE AREAS WHICH ARE INDICATED AS PRAIRIE OR NATURAL AREAS ON THE DRAWINGS, A TOPSOIL DEPTH OF 18" IS RECOMMENDED WHERE POSSIBLE.

G. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO PREPARE ALL SEEDED AREAS BY DISKING AND RAKING PRIOR TO PLANTING SEED. SOIL SHALL BE LOOSENED AND SCARIFIED TO A MINIMUM DEPTH OF 6". FINE GRADING OF ALL SEEDED AREAS IS REQUIRED. MAXIMUM SIZE OF STONE OR TOPSOIL LUMP IS 1".

H. LOCATE ALL PLANT MATERIAL AS INDICATED OR AS APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT. IF OBSTRUCTIONS ARE ENCOUNTERED WHICH ARE NOT SHOWN ON THE DRAWINGS, THEN DO NOT PROCEED WITH PLANTING OPERATIONS UNTIL ALTERNATE PLANT LOCATIONS HAVE BEEN SELECTED.

I. PLANTING HOLES SHALL BE CONSTRUCTED AS SHOWN ON THE PLANTING DETAILS. HOLES SHALL BE HAND DUG OR MACHINE DUG. GREAT CARE WILL BE TAKEN TO NOT EXCAVATE THE HOLE DEEPER THAN THE ROOT BALL AND THE DIAMETER SHALL BE A MINIMUM OF TWO TIMES THE ROOT BALL WIDTH. REMOVE ANY MATERIALS ENCOUNTERED IN EXCAVATION THAT MAY BE INJURIOUS TO PLANT GROWTH, INCLUDING STONES LARGER THAN 2" IN DIAMETER OR OTHER DEBRIS. SOIL TO BE USED AS BACKFILL SHOULD BE PULVERIZED.

J. PROVIDE PRE-MIXED PLANTING MIXTURE FOR USE AROUND ROOT SYSTEMS AND ROOT BALLS OF THE PLANTS. THE MIXTURES ARE OUTLINED IN SECTION B OF PART 2-02.

K. PRIOR TO PLANTING, PROVIDE ADDITIONAL TOPSOIL TO ALL PLANTING BEDS TO BRING THE FINISH GRADE OF THE BED TO 2" ABOVE LAWN GRADE AND TO FINISH GRADE OF ADJACENT HARD SURFACE GRADES.

L. ADD 2" THICKNESS OF MUSHROOM COMPOST TO ALL ANNUAL, PERENNIAL AND GROUNDCOVER BEDS. FINISH GRADE BED AND INSTALL PLANTS.

3-03 PLANTING PROCEDURES:

A. SET PLANT MATERIAL IN THE PLANTING HOLE TO PROPER GRADE AND ALIGNMENT. SET PLANTS UPRIGHT AND PLUMB. SET PLANT MATERIAL 2" ABOVE THE ADJACENT FINISH GRADE. REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL. REMOVE TREATED BURLAP (GREEN). CUT AND REMOVE OR CUT AND FOLD DOWN UPPER HALF OF WIRE BASKET, DEPENDENT UPON TREE SIZE. BACKFILL HOLE BY FIRMLY TAMPING SOIL TO AVOID ANY AIR POCKETS OR VOIDS.

B. SET BALLED AND BURLAPPED PLANTS IN THE PLANTING HOLE AND COMPACT 8" OF SOIL AROUND THE BASE OF THE BALL. BACKFILL REMAINING SPACE WITH PLANTING MIXTURE. WATER PLANTS IMMEDIATELY AFTER PLANTING TO ELIMINATE ALL VOIDS AND THOROUGHLY SOAK THE PLANT ROOT BALL.

C. SPACE GROUNDCOVER PLANTS ACCORDING TO DIMENSIONS GIVEN ON THE PLANS. ADJUST SPACING AS NECESSARY TO EVENLY FILL PLANTING BED WITH INDICATED NUMBER OF PLANTS. PLANT TO WITHIN 18" OF THE TRUNKS OF TREES AND SHRUBS OR AT THE EDGE OF THE PLANT BALL, WHICHEVER IS CLOSEST. PLANT TO WITHIN 12" OF EDGE OF BED.

D. MULCHING:

1. INSTALL 4" DEPTH OF MULCH AROUND ALL TREE AND SHRUB BEDS AS INDICATED ON DRAWINGS OR PLANTING DETAILS. MULCH SHRUB PLANTING AREAS AS CONTINUOUS BEDS. DO NOT PLACE MULCH DIRECTLY AGAINST TREE TRUNK; FORM MULCH TO CREATE AN INVERTED CONE AROUND TRUNK.

2. MULCH PERENNIAL, GROUNDCOVER AND ANNUAL PLANTING BEDS WITH 2" MUSHROOM COMPOST. WATER MULCHED AREAS THOROUGHLY AFTER PLACING MULCH.

E. TREE WRAPPING IS NOT REQUIRED, UNLESS THE CONTRACTOR FEELS IT IS NECESSARY DUE TO CHARACTERISTICS OF A PARTICULAR SPECIES OR PAST EXPERIENCE WITH THE SPECIES. THE LANDSCAPE ARCHITECT WILL BE NOTIFIED AS TO WHICH TREES ARE TO BE WRAPPED AND SHALL INSPECT THE TRUNK(S) BEFORE WRAPPING. TREE WRAP WILL NOT BE USED TO COVER DAMAGE OR DEFECTS. WHEN WRAPPING IS DONE, TRUNKS WILL BE WRAPPED SPIRALLY WITH APPROVED TREE WRAPPING TAPE THAT IS NOT LESS THAN 4" WIDE, AND SECURELY TIED WITH SUITABLE CORD AT THE TOP, BOTTOM AND 2" INTERVALS ALONG THE TRUNK. WRAP FROM GROUND TO THE HEIGHT OF THE FIRST BRANCH.

F. STAKING AND GUYING OF TREES IS OPTIONAL. IF THE CONTRACTOR CHOOSES TO STAKE ALL OR PART OF THE TREES, HE/SHE SHALL USE THE METHOD SPECIFIED IN THE PLANTING DETAILS. ONE (1) STAKE IS TO BE USED ON TREES OF 1" CALIPER AND UNDER, OR 4' HEIGHT AND UNDER. TWO (2) STAKES ARE TO BE USED ON TREES OF 1" TO 2 3/4" CALIPER. GUY TREES OF 3" CALIPER OR LARGER AT THREE (3) PER TREE. THE ROOT BALL WILL NOT BE PIERCED WITH A STAKE. STAKES ARE TO BE DRIVEN AT LEAST EIGHTEEN (18) INCHES INTO SUBSOIL BELOW THE PLANTING HOLE. STAKES AND WIRE ATTACHMENTS SHALL BE REMOVED AFTER THREE MONTHS FOR SPRING PLANTED MATERIAL AND BY THE FOLLOWING MAY FOR FALL PLANTED STOCK BY THE CONTRACTOR. STAKING AND GUYING SHOULD BE DONE IMMEDIATELY AFTER LAWN SEEDING OR SODDING OPERATIONS.

G. SEEDING OF SPECIFIED LAWN AREAS ON PLANS WILL BE TREATED AS FOLLOWS:

1. TOPSOIL SHALL BE SPREAD OVER ALL AREAS TO BE SEEDED TO A MINIMUM DEPTH OF 6" WHEN COMPACTED (TO BE PERFORMED BY OTHERS).

2. SEED MIXTURE AND APPLICATION RATE - USE PREMIUM SEED MIX AS SUPPLIED BY ARTHUR CLESEN, INC. APPLY AT A RATE OF 5 LBS./1000 S.F.

3. APPLY FERTILIZERS AND CONDITIONERS AT THE RATE SPECIFIED PER SOIL TEST FINDINGS. IN LIEU OF SOIL TEST RESULTS, APPLY TWO (2) TONS OF GROUND AGRICULTURAL LIMESTONE AND 1000 LBS. 10-10-10 OR EQUIVALENT ANALYSIS FERTILIZER PER ACRE. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE OF AN ORGANIC ORIGIN.

4. SOIL PREPARATION AREAS WHERE VEHICULAR TRAFFIC HAS COMPACTED THE SOIL SHALL BE LOOSENED/SCARIFIED TO A MINIMUM DEPTH OF 6" BEFORE FERTILIZING AND SEEDING. FINE GRADING OF ALL SEEDED AREAS IS REQUIRED. MAXIMUM SIZE OF STONE OR TOPSOIL LUMP IS 1".

5. WATERING SEEDED AREAS SHALL BE DONE TO ENSURE PROPER GERMINATION. ONCE SEEDS HAVE GERMINATED, WATERING MAY BE DECREASED BUT THE SEEDLINGS MUST NEVER BE ALLOWED TO DRY OUT COMPLETELY. FREQUENT WATERING SHOULD BE CONTINUED APPROXIMATELY FOUR (4) WEEKS AFTER GERMINATION OR UNTIL GRASS HAS BECOME SUFFICIENTLY ESTABLISHED TO WARRANT WATERING ON AN 'AS NEEDED' BASIS.

6. TURF IS BEING ESTABLISHED ON A VARIETY OF SLOPE CONDITIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE AND IMPLEMENT WHATEVER PROCEDURES HE/SHE DEEMS NECESSARY TO ESTABLISH THE TURF AS PART OF HIS/HER WORK. SEEDED AREAS WILL BE ACCEPTED WHEN ALL AREAS SHOW A UNIFORM STAND OF THE SPECIFIED GRASS IN HEALTHY CONDITION AND AT LEAST 90 DAYS HAVE ELAPSED SINCE THE COMPLETION OF THIS WORK. THE CONTRACTOR SHALL SUBMIT WITH HIS/HER BID A DESCRIPTION OF THE METHODS AND PROCEDURES HE/SHE INTENDS TO USE.

H. EROSION CONTROL BLANKET

1. EROSION CONTROL BLANKET SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION IN ALL AREAS SHOWN ON THE PLAN.

2. INSTALL S-75 EROSION CONTROL BLANKET AS MANUFACTURED BY NORTH AMERICAN GREEN OR APPROVED EQUAL.

3. BLANKET SHOULD BE PREMARKED WITH STAPLE PATTERN.

4. STAPLES SHOULD BE 8" WIRE STAPLES, APPLIED AT TWO (2) PER SQUARE YARD MINIMUM.

5. SUITABLE EROSION CONTROL PRACTICES SHALL BE MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH ILLINOIS URBAN MANUAL AND ALL APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCES AND THE PLANS.

I. SODDING OF SPECIFIED LAWN AREAS ON PLANS WILL BE COMPLETED AS FOLLOWS:

1. RAKE SOIL SURFACE TO RECEIVE SOD TO COMPLETELY REMOVE ANY SOIL CRUST NO MORE THAN ONE DAY PRIOR TO LAYING SOD.

2. MOISTEN PREPARED SURFACE IMMEDIATELY PRIOR TO LAYING SOD. WATER THOROUGHLY AND ALLOW SURFACE MOISTURE TO DRY BEFORE PLANTING LAWNS. DO NOT CREATE A MUDDY SOIL CONDITION.

3. SOD SHALL BE LAID WITHIN 24 HOURS FROM THE TIME OF STRIPPING. DO NOT PLANT DORMANT SOD OR IF THE GROUND IS FROZEN.

4. LAY SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. BUTT ENDS AND SIDES OF SOD STRIPS; DO NOT OVERLAP. STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES. WORK FROM BOARDS TO AVOID DAMAGE TO SUBGRADE OR SOD. WORK SIFTED SOIL INTO MINOR CRACKS BETWEEN PIECES OF SOD; REMOVE EXCESS TO AVOID SMOTHERING OF ADJACENT SOD.

5. PLACE TOP ELEVATION OF SOD 1/2 INCH BELOW ADJOINING EDGING OR PAVING.

6. WATER SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING.

7. AFTER SOD AND SOIL HAVE DRIED, ROLL SEEDED AREAS TO ENSURE A GOOD BOND BETWEEN THE SOD AND SOIL, AND TO REMOVE MINOR DEPRESSIONS AND IRREGULARITIES.

8. SODDED SLOPES 3:1 OR GREATER SHALL BE STAKED TO PREVENT EROSION AND WASHOUT.

9. WARRANTY SODDING FOR A PERIOD OF ONE (1) YEAR FROM THE END OF THE 90 DAY MAINTENANCE PERIOD. IF SOD FAILS OR LACKS VIGOR AND FULL GROWTH AS DETERMINED BY THE LANDSCAPE ARCHITECT, THE CONTRACTOR WILL REPEAT SITE PREPARATION OPERATIONS AND RE-SOD AFFECTED AREAS AT THE CONTRACTOR'S EXPENSE.

10. NOTE: SOD SHALL BE A PREMIUM KENTUCKY BLUEGRASS BLEND, AND IS REQUIRED IN ALL AREAS INDICATED ON THE PLANS AS WELL AS AREAS WHICH HAVE BEEN AFFECTED BY CONSTRUCTION. SOD CAN BE PLACED AS LONG AS WATER IS AVAILABLE AND THE GROUND SURFACE CAN BE PROPERLY PREPARED. SOD SHALL NOT BE LAID ON FROZEN OR SNOW-COVERED GROUND. SOD SHALL BE STRONGLY ROOTED, NOT LESS THAN TWO (2) YEARS OLD AND FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES. SOD SHOULD BE MACHINE CUT TO PAD THICKNESS OF 3/4" (PLUS OR MINUS 1/4"), EXCLUDING TOP GROWTH AND THATCH. PROVIDE ONLY SOD CAPABLE OF VIGOROUS GROWTH AND DEVELOPMENT WHEN PLANTED (VIABLE, NOT DORMANT). PROVIDE SOD OF UNIFORM PAD SIZES WITH MAXIMUM 5% DEVIATION IN EITHER LENGTH OR WIDTH. BROKEN PADS OR PADS WITH UNEVEN ENDS WILL NOT BE ACCEPTABLE. SOD PADS INCAPABLE OF SUPPORTING THEIR OWN WEIGHT WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10% OF PAD WILL NOT BE ACCEPTED.

J. TIMING OF PLANT MATERIAL AND SEEDING OPERATIONS:

1. SEEDING OF SPECIFIED AREAS SHALL OCCUR WHEN THE SOIL TEMPERATURE IS ABOVE 55° F. NO SEED SHALL BE SOWN DURING PERIODS OF HIGH WINDS, OR WHEN THE GROUND IS NOT IN PROPER CONDITION FOR SEEDING (SEE SECTION 3-02 (G)). SEEDING OPERATIONS FOR THE SPECIFIED MIXES SHALL OCCUR IN THE SPRING TIME FRAME OF APRIL 15 THROUGH JUNE 30 AND IN THE SUMMER TIME FRAME OF AUGUST 15 THROUGH DECEMBER 1. THE MIXES CONTAINING BLUEGRASS AND FESCUE SEED MUST HAVE SIX WEEKS TO HARDEN OFF FOR WINTER SURVIVAL.

2. SOD SHALL BE INSTALLED WHEN THE GROUND IS NOT FROZEN OR SNOW COVERED AND TEMPERATURES ARE LESS THAN 80° F. IT SHALL NOT BE PLACED DURING A PERIOD OF EXTENDED DROUGHT.

3. HERBACEOUS ORNAMENTAL PLANTS SHALL BE PLANTED BETWEEN MAY 1 AND JUNE 15 OR BETWEEN AUGUST 15 AND DECEMBER 1.

4. SPRING PLANTING OF WOODY ORNAMENTAL PLANTS SHALL BE PERFORMED FROM THE TIME THE SOIL CAN BE EASILY WORKED UNTIL JUNE 1, EXCEPT THAT EVERGREEN PLANTING SHALL END ON MAY 15. OAK, HAWTHORN AND RED MAPLE SPECIES WILL ONLY BE PLANTED DURING THIS SPRING PLANTING PERIOD. FALL PLANTING WILL BEGIN AUGUST 15 AND WILL CONTINUE UNTIL THE GROUND CANNOT BE WORKED SATISFACTORILY, EXCEPT THAT EVERGREEN PLANTING SHALL BE PERFORMED BETWEEN AUGUST 15 AND DECEMBER 1.

3-04 MAINTENANCE:

A. ALL PLANTINGS SHALL BE MAINTAINED BY THE CONTRACTOR FOR A PERIOD OF 90 DAYS AFTER PRELIMINARY ACCEPTANCE BY THE OWNER OR HIS/HER REPRESENTATIVE. MAINTENANCE SHALL INCLUDE BUT IS NOT LIMITED TO: MOWING AND EDGING TURF, PULLING WEEDS, WATERING TURF AREAS AND PLANT MATERIAL PLUS ANNUAL FLOWER MAINTENANCE. THE CONTRACTOR WILL RESET SETTLED PLANTS TO PROPER GRADE AND POSITION. DEAD MATERIAL WILL BE REMOVED. STAKES AND GUY WIRES WILL BE TIGHTENED AND REPAIRED AS REQUIRED.

3-04 ACCEPTANCE:

A. ALL PLANT MATERIAL (EXCLUDING ANNUAL COLOR), SHALL BE WARRANTEED FOR ONE (1) YEAR AFTER THE END OF THE 90 DAY MAINTENANCE PERIOD. THE END OF THE MAINTENANCE PERIOD IS MARKED BY THE FINAL ACCEPTANCE OF THE CONTRACTOR'S WORK BY THE OWNER OR HIS/HER REPRESENTATIVE.

3-06 SITE CLEAN-UP:

A. THE CONTRACTOR SHALL PROTECT THE PROPERTY OF THE OWNER AND THE WORK OF OTHER CONTRACTORS. THE CONTRACTOR SHALL ALSO BE DIRECTLY RESPONSIBLE FOR ALL DAMAGE CAUSED BY THE ACTIVITIES AND FOR THE DAILY REMOVAL OF ALL TRASH AND DEBRIS FROM HIS/HER WORK AREA TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT .

DATE	REVISIONS	DRAWN BY

Manhard™ CONSULTING

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Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS

DES PLAINES, ILLINOIS

LANDSCAPE SPECIFICATIONS

PROJ. MGR.: KRK
PROJ. ASSOC.: MN
DRAWN BY: MUA
DATE: 3/12/2025
SCALE: N.T.S.

01-01

GENERAL NOTES

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH BY THE APPLICABLE IBC EDITIONS AND SHALL CONFORM TO ALL OTHER APPLICABLE MUNICIPAL, STATE, AND FEDERAL REGULATIONS INCLUDING THE ILLINOIS ACCESSIBILITY CODE (2018) AND THE AMERICANS WITH DISABILITIES ACT.

A. GENERAL NOTES

1. ALL CONTRACTORS ARE REQUIRED TO VISIT THE SITE AND BE KNOWLEDGEABLE REGARDING EXISTING CONDITIONS AND THEIR EFFECT ON THE PROPOSED WORK. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR, ANY CONDITIONS REQUIRING MODIFICATION BEFORE PROCEEDING WITH THE PROJECT.
2. NOTIFY THE OWNER'S REPRESENTATIVE A MINIMUM OF 72 HOURS PRIOR TO THE INTERRUPTION OF ANY UTILITY.
3. PROTECT AND KEEP IN SERVICE ACTIVE UNDERGROUND UTILITIES, PIPES, OR CONDUITS, WHETHER INDICATED ON THE DRAWINGS OR NOT, UNLESS SPECIFICALLY CALLED FOR TO BE REMOVED, RELOCATED, OR DISCONNECTED AND ABANDONED.
4. CONTRACTORS AND SUBCONTRACTORS SHALL COORDINATE THEIR WORK WITH THAT OF OTHER TRADES.
5. NO WORK WILL BE PERMITTED TO BE INSTALLED WITHOUT RECEIPT AND SUBSEQUENT REVIEW OF FULL AND COMPLETE SUBMITTALS BY THE ARCHITECT/ENGINEER.
6. DO NOT SCALE DRAWINGS, DIMENSIONS INDICATED TAKE PRECEDENCE OVER SCALE.
7. VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD. WHERE DISCREPANCIES ARE FOUND BETWEEN DIMENSIONS OR ELEVATIONS SHOWN AND ACTUAL FIELD CONDITIONS, NOTIFY ARCHITECT/ENGINEER.
8. WHERE CONFLICTS MAY EXIST BETWEEN THE REQUIREMENTS OF PORTIONS OF THE CONTRACT DOCUMENTS, THE GREATER QUANTITY, HIGHER QUALITY OR MORE STRINGENT REQUIREMENT SHALL GOVERN. THEREFORE, BY EXECUTING A CONTRACT FOR CONSTRUCTION, THE CONTRACTOR AGREES THAT, IF IT RAISED NO QUESTIONS REGARDING SUCH CONFLICTS DURING THE BIDDING PROCESS, AND IN THE ABSENCE OF A CLARIFYING ADDENDUM ISSUED DURING THE BIDDING PROCESS, IT HAS VOLUNTEERED TO COMPLY WITH THE MORE EXPENSIVE REQUIREMENT AS PART OF ITS BASE BID AND IS NOT ENTITLED TO ANY ADDITIONAL COMPENSATION TO RESOLVE THE CONFLICT.
9. THE CONTRACT DOCUMENTS REQUIRE THE CONTRACTOR TO FURNISH AND INSTALL COMPLETE PRODUCTS, SYSTEMS AND SERVICES. BY EXECUTING A CONTRACT FOR CONSTRUCTION, THE CONTRACTOR AGREES THAT THE DRAWINGS SET FORTH THE DESIGN INTENT AND, THEREFORE, MAY NOT EXPRESSLY DEPICT EVERY LENGTH, SEGMENT, PIECE, PART, COMPONENT OR UNIT OF A PRODUCT, SYSTEM OR SERVICE. THE CONTRACTOR FURTHER AGREES THAT, AS PART OF ITS BID, IT MUST FURNISH AND INSTALL EVERY LENGTH, SEGMENT, PIECE, PART, COMPONENT OR UNIT OF A PRODUCT, SYSTEM OR SERVICE AND, CONSEQUENTLY, THE CONTRACTOR IS NOT ENTITLED TO ANY ADDITIONAL COMPENSATION FOR ANY LENGTH, SEGMENT, PIECE, PART COMPONENT OR UNIT OF A PRODUCT, SYSTEM OR SERVICE BECAUSE IT IS NOT EXPRESSLY DEPICTED HEREIN.

B: MISCELLANEOUS AND DEMOLITION NOTES

1. COORDINATE PENETRATIONS AND/OR SLEEVES REQUIRED IN WALLS, FLOORS, CEILINGS OR ROOFS FOR MECHANICAL AND ELECTRICAL WORK REQUIRED BY ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.
2. SEAL WITH UL APPROVED MATERIALS PENETRATIONS OF DUCTWORK, CONDUIT AND PIPES THROUGH FIRE-RATED ASSEMBLIES, TO MAINTAIN THE RATING INTEGRITY OF THOSE ASSEMBLIES. PROVIDE FIRE DAMPERS AS INDICATED ON THE DRAWINGS.
3. APPLY APPROPRIATE & COMPATIBLE SEALANT MATERIALS AS REQUIRED TO SEPARATE DISSIMILAR METALS, FILL GAPS IN EXISTING ASSEMBLIES OR WHERE NEW AND EXISTING ASSEMBLIES MEET OR WHERE OTHERWISE REQUIRED BY THE SPECIFICATIONS.
4. BRING ANY UNFORESEEN OR CONFLICTING CONDITIONS TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
5. REPAIR, PATCH, OR REPLACE FINISH MATERIALS OR VISIBLE ASSEMBLIES THAT ARE SOILED, CUT OR DAMAGED IN ANY FASHION DURING THE COURSE OF THE WORK. PERFORM PATCHING SUCH THAT EDGES BLEND INTO CONTIGUOUS SURFACES SMOOTHLY, MATCHING TEXTURE AND COLOR OF ADJACENT SURFACES.

Oakton College

PROJECT	**OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS**
OWNER	**OAKTON COLLEGE**
CIVIL ENGINEER	**MANHARD CONSULTING** **1 OVERLOOK POINT SUITE 290** **LINCOLNSHIRE, IL 60069**
ARCHITECT/ ENGINEER	**KLUBER ARCHITECTS + ENGINEERS** **41 W BENTON STREET** **AURORA, ILLINOIS 60506** **TEL (630) 406-1213** **FAX (630) 406-9472** **www.kluberinc.com**

SEALS & CERTIFICATIONS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH APPLICABLE IBC EDITIONS, THE ENVIRONMENTAL BARRIERS ACT AND THE ILLINOIS ACCESSIBILITY CODE.

KLUBER, INC. ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-001284

STRUCTURAL ENGINEER'S SEAL

LICENSED STRUCTURAL ENGINEER
JEFFREY M. BRUNS
081-006044
STATE OF ILLINOIS

expires 11-30-26
signature
February 12, 2025
date

"G" SERIES, "S" SERIES

ELECTRICAL ENGINEER'S SEAL

LICENSED PROFESSIONAL ENGINEER
MICHAEL T. KLUBER
062-047325
STATE OF ILLINOIS

expires 11-30-25
signature
February 12, 2025
date

"G" SERIES, "E" SERIES

REQUIRED CODE COMPLIANCE INFORMATION

REQUIRED PLAN COVER SHEET
INFORMATION FOR REVIEW
UNDER APPLICABLE INTERNATIONAL CODES AND
STATE OF ILLINOIS ACCESSIBILITY CODE

REVIEW DATA

GENERAL STATEMENT OF OVERALL PROJECT SCOPE AND INTENT:

PROJECT CONSISTS OF SITE LIGHTING, BLEACHERS, PRESSBOXES, ELECTRICAL FEEDS, AND EMPTY CONDUITS (FOR FUTURE WORK).

A. USE AND OCCUPANCY GROUP(S) CLASSIFICATION: A-5, B.
B. TYPE OF CONSTRUCTION: VB.
C. SQUARE FOOTAGE OF BUILDING: REFER TO PRESSBOX AND BLEACHER DRAWINGS.
   ALLOWABLE SQUARE FOOTAGES: UNLIMITED (BLEACHERS); 9,000 SF (PRESSBOXES).
D. OCCUPANT LOAD BASED ON INTERNATIONAL BUILDING CODE: REFER TO PRESSBOX AND BLEACHER DRAWINGS.
E. OCCUPANT LOAD BASED ON ILLINOIS PLUMBING CODE: REFER TO PRESSBOX AND BLEACHER DRAWINGS.
F. DESIGNED LIVE LOADS: REFER TO DRAWING S1.
G. THE DESIGN PROFESSIONALS IN RESPONSIBLE CHARGE OF STRUCTURAL FOUNDATIONS AND ELECTRICAL WORK SCOPE ARE IDENTIFIED IN THE SEALS AND CERTIFICATES AREA, AT LEFT.

APPLICABLE CODES

ILLINOIS COMMUNITY COLLEGE BOARD

2018 INTERNATIONAL BUILDING CODE
2002 NATIONAL ELECTRICAL CODE
2018 LIFE SAFETY CODE

CITY OF DES PLAINES

2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL FIRE CODE
2014 NATIONAL ELECTRICAL CODE
LOCAL AMENDMENTS TO THE ABOVE CODES

STATE OF ILLINOIS

2021 ILLINOIS ENERGY CONSERVATION CODE
2018 ILLINOIS ACCESSIBILITY CODE

OTHER REQUIREMENTS

2017 ICC 300 – STANDARD ON BLEACHERS, FOLDING AND TELESCOPIC SEATING AND GRANDSTANDS

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

DRAWN BY | REVISIONS | DATE

OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS

PROJ. MGR.: ATR
PROJ. ASSOC.:
DRAWN BY:
DATE: 02/12/25
SCALE: N.T.S.

SHEET
G1
OCCDPIL16

GENERAL NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS, ELEVATIONS, ETC. NECESSARY FOR THE PROPER CONSTRUCTION AND ALIGNMENT OF THE NEW PORTIONS OF THE WORK TO THE EXISTING WORK. THE CONTRACTOR SHALL MAKE ALL MEASUREMENTS NECESSARY FOR FABRICATION AND ERECTION OF STRUCTURAL MEMBERS. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER.

2. CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL SUBGRADES, FOUNDATIONS AND SLABS FROM FROST EFFECTS DURING INCLEMENT WEATHER.

3. CONTRACTOR SHALL COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH VENDOR PREPARED SHOP DRAWINGS AND EXISTING CONDITIONS. SEE CIVIL DRAWINGS FOR BENCHMARKS.

4. CONTRACTOR SHALL PROVIDE ALL TEMPORARY SHORING, SHEETING, BRACING ETC. AS REQUIRED TO PROTECT EXCAVATIONS AND EXISTING FOUNDATIONS DURING THE CONSTRUCTION PROCESS. CONTRACTOR SHALL PROVIDE ALL REQUIRED ENGINEERING REQUIRED FOR SUCH SYSTEMS BY AN ILLINOIS LICENSED STRUCTURAL ENGINEER.

5. BACKFILLING OF FOUNDATIONS AND BELOW GRADE WALLS SHALL BE COMPLETED IN SUCH A MANNER TO AVOID OVERTURNING OF THE WALL. PROVIDE ALL TEMPORARY BRACING AS REQUIRED.

6.THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL CONTRACT DRAWINGS, VENDOR DRAWINGS AND THE SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES FOR LOCATIONS OF INSERTS, ANCHORS, HOLES AND OTHER ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.

7.THE STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN ALIGNMENT UNTIL ALL STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED. THE INVESTIGATION, DESIGN, SAFETY, ADEQUACY AND INSPECTION OF SUCH GUYING/BRACING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

8.DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY TAGGED OR SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO THE APPROVAL OF THE ENGINEER.

9.REFER TO VENDOR PREPARED SHOP DRAWINGS FOR ALL INFORMATION RELATING TO THE CONSTRUCTION OF STAIRS, LANDINGS, RAILINGS, ETC.

10. REFER TO VENDOR PREPARED STAIR SHOP DRAWINGS FOR ALL INFORMATION RELATING TO THE CONSTRUCTION OF STAIRS, LANDINGS, RAILINGS, ETC.

TESTING AND INSPECTION

GENERAL

1. THE APPROVED TESTING AGENCY SHALL BE RETAINED BY THE OWNER.

2. THE APPROVED TESTING AGENCY SHALL BE THE "SPECIAL INSPECTOR" REFERRED TO IN OF THE INTERNATIONAL BUILDING CODE (IBC), CHAPTER 17 "STRUCTURAL TESTS AND SPECIAL INSPECTIONS."

3. REFER TO CHAPTER 17 OF THE 2018 INTERNATIONAL BUILDING CODE FOR DEFINITION OF TERMS.

4. THE TESTING AGENCY SHALL SUBMIT TO THE ENGINEER OF RECORD ONE (1) COPIES OF WEEKLY REPORTS OF THE TEST AND INSPECTIONS CONDUCTED DURING THE WEEK. THE REPORTS SHALL STATE IF THE TESTS AND INSPECTIONS MET THE PROJECT REQUIREMENTS AND, IF NOT, WHAT FOLLOW-UP TESTS OR INSPECTIONS WILL BE MADE.

4. THE TESTING AGENCY SHALL NOTIFY GENERAL CONTRACTOR IMMEDIATELY IF ANY OF THE SCHEDULED TESTS FAIL IN ORDER TO AVOID PROJECT DELAYS.

5. AT THE END OF THE PROJECT, THE TESTING AGENCY SHALL SUBMIT TWO (2) COPIES OF A SUMMARY REPORT OF ALL TESTS AND INSPECTIONS MADE TO THE ENGINEER OF RECORD AND ONE COPY OF ALL TESTS AND INSPECTIONS MADE TO THE BUILDING OFFICIAL AND THE OWNER. THE SUMMARY REPORT SHALL STATE THAT THE TESTS AND INSPECTIONS MET THE PROJECT REQUIREMENTS. ANY TEST OR INSPECTIONS THAT FAILED TO MEET PROJECT REQUIREMENTS SHALL BE NOTED. SUBMIT COPIES OF CORRESPONDENCE SHOWING ACCEPTANCE OR REJECTION OF THE MATERIAL OR WORKMANSHIP THAT FAILED TESTS OR INSPECTIONS.

6. SEE SPECIFICATION SECTION 1400 "QUALITY REQUIREMENTS" FOR ADDITIONAL INFORMATION.

FOUNDATION INSPECTION

1. ALL FOUNDATION EXCAVATIONS SHALL BE OBSERVED AND TESTED BY A REPRESENTATIVE OF A QUALIFIED GEOTECHNICAL ENGINEERING FIRM. DAILY REPORTS OF OBSERVATIONS SHALL BE PREPARED.

2. PROVIDE CONTINUOUS INSPECTION FOR THE FOLLOWING:

   A. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.

   B. BACKFILL MATERIALS USED FOR BASEMENT WALLS AND RETAINING WALLS

3. PROVIDE PERIODIC INSPECTION FOR THE FOLLOWING:

   A. VERIFY MATERIALS BELOW FOOTINGS AS ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.

   B. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.

   C. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.

   D. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.

REINFORCED CONCRETE INSPECTION

1. PROVIDE CONTINUOUS INSPECTION FOR THE FOLLOWING:

   A. BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE PER IBC REFERENCE 1908.5.

   B. SAMPLING OF FRESH CONCRETE FOR SLUMP, AIR CONTENT AND TEMPERATURE AT THE TIME OF MAKING SPECIMENS FOR STRENGTH TESTS PER ACI 318, CHAPTERS 5.6, 5.8.

   C. CONCRETE PLACEMENT PER ACI 318, CHAPTERS 5.9, 5.10.

2. PROVIDE PERIODIC INSPECTIONS FOR THE FOLLOWING FOR CONFORMANCE TO ACI 318:

   A. REINFORCING STEEL PLACEMENT PER ACI 318, CHAPTERS 3.5, 7.1-7.7.

   B. VERIFY USE OF REQUIRED MIX DESIGN PER ACI 318, CHAPTERS 4, 5.2-5.4.

   C. MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES PER ACI 318, CHAPTERS 5.11-5.13.

   D. POST INSTALLED ANCHORS (EPOXY AND EXPANSION ANCHORS).

3. FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS PER ACI 318, CHAPTER 6.1.1.

FOUNDATION & SLAB NOTES

F 1. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE BUILDINGS" AND ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE". HOT WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305. COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.

F 2. CONCRETE CONTRACTOR TO COORDINATE ALL DIMENSIONS, ELEVATIONS, SLOPES, ETC. OF ALL CONCRETE SLABS / FOUNDATIONS WITH ARCHITECTURAL DRAWINGS.

F 3. CONCRETE STRENGTHS AS FOLLOWS (28 DAY):

   A. FOOTINGS, FOUNDATION WALLS (FORMED AND TRENCH) & PIERS= 4,500 PSI

   C. EXTERIOR SLABS= 4,500 PSI

   D. SEE SPECIFICATIONS FOR DETAILED CONCRETE MIX DESIGNS.

F 4. REINFORCEMENT:

   A. BARS, TIES & STIRRUPS: ASTM A615 GRADE 60, DEFORMED

   C. WELDABLE BARS: ASTM A706 GRADE 60, DEFORMED.

   D . PROVIDE LAP SPLICES IN ACCORDANCE WITH ACI 301.

   E. FABRICATE & DETAIL REINFORCING STEEL IN ACCORDANCE WITH CRSI (DA4) MANUAL OF STANDARD PRACTICE .

   F. FACTORY MADE WIRE BAR SUPPORTS AND HOLDING BARS SHALL BE PROVIDED FOR ALL REINFORCING STEEL TO ENSURE MINIMUM CONCRETE COVER AND MAINTAIN POSITION DURING CASTING.

   G. PROVIDE ADEQUATE AND PROPER SUPPORT OF ALL REINFORCING STEEL AS REQUIRED TO PROVIDE THE COVER REQUIREMENTS NOTED ON THE PROJECT DRAWINGS AND ACI 318.

   H. CONCRETE COVER FOR REINFORCEMENT TO BE AS FOLLOWS:

LOCATION / APPLICATION	COVER
SLAB ON GRADE:	3"
FOUNDATION WALL:	2"
FOOTINGS:	3"

F 5. NO SOILS INVESTIGATION HAS BEEN PERFORMED FOR THE PROJECT SITE. FOUNDATION AND SLAB ELEMENTS HAVE BEEN DESIGNED FOR AN ASSUMED MINIMUM ALLOWABLE BEARING PRESSURE OF 1,500 PSF. THIS MINIMUM BEARING CAPACITY SHALL BE CONFIRMED PRIOR TO THE INSTALLATION OF FOUNDATIONS.

F 6. CONTRACTOR SHALL PROVIDE ALL TEMPORARY SHORING, SHEETING, BRACING ETC. AS REQUIRED TO PROTECT EXCAVATIONS AND EXISTING FOUNDATIONS DURING THE CONSTRUCTION PROCESS. CONTRACTOR SHALL PROVIDE ALL REQUIRED ENGINEERING REQUIRED FOR SUCH SYSTEMS BY AN ILLINOIS LICENSED STRUCTURAL ENGINEER.

F 7. BACKFILLING OF FOUNDATIONS AND BELOW GRADE WALLS SHALL BE COMPLETED IN SUCH A MANNER TO AVOID OVERTURNING OF THE WALL. PROVIDE ALL TEMPORARY BRACING AS REQUIRED.

F 8. CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL SUBGRADES, FOUNDATIONS AND SLABS FROM FROST EFFECTS DURING INCLEMENT WEATHER.

F 9. ALL BOTTOM OF EXTERIOR FOOTINGS SHALL HAVE A MINIMUM OF 3'-6" GROUND COVER. COORDINATE ALL FINAL GRADE ELEVATIONS WITH ARCHITECTURAL AND CIVIL DRAWINGS. STEP FOOTINGS PER DETAIL ON SHEET S400 AS REQUIRED TO OBTAIN REQUIRED FROST PROTECTION.

F 10. ALUMINUM MATERIALS OF ANY TYPE ARE PROHIBITED FROM BEING CAST, EMBEDDED OR IN CONTACT WITH THE CONCRETE WORK.

F 11. ACCEPTABLE INJECTION EPOXY ADHESIVE PRODUCTS INCLUDE THE FOLLOWING:

   a. HILTI HIT-RE500-SD INJECTION ADHESIVE SYSTEM.
   b. SIMPSON STRONG-TIE SET-XP HIGH-STRENGTH ANCHORING ADHESIVE SYSTEM.
   c. POWERS FASTENERS PE 1000+ EPOXY INJECTION ADHESIVE ANCHORING SYSTEM.

FOUNDATION & SLAB SYMBOLS & NOMENCLATURE

F a. SLAB S1 DENOTES CONCRETE SLAB. SEE PLANS AND SCHEDULE ON SHEET S800 FOR ALL SLAB TYPES AND LOCATIONS.

CODE AND LOADING

A. DESIGN REQUIREMENTS AND STRUCTURAL LOADS ARE TO BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL BUILDING CODE AND ANY CITY/VILLAGE AMENDMENTS.

B. LOADING CRITERIA:

1. OCCUPANCY GROUP: A-3

2. RISK CATEGORY: II

4. BLEACHER STAND LIVE LOADS: 100 PSF

DRAFTING LEGEND

PIER DETAIL LETTER / SHEET NUMBER	A / S402		STEEL
ELEVATION NUMBER / SHEET NUMBER	2 / S710		EARTH
SECTION NUMBER / SHEET NUMBER	1 / S510		CONCRETE
LOCATION ELEVATION	1ST FLR. 100'-0"		ASPHALT PAVEMENT
KEYNOTE IDENTIFICATION	0.000		SLAB ELEVATION CHANGE

STANDARD ABBREVIATIONS

@ – AT
A B – ANCHOR BOLT
ADD'L – ADDITIONAL
ADJ – ADJACENT
ADJT – ADJUSTABLE
ALT – ALTERNATE
ANCH – ANCHOR
APPROX – APPROXIMATE
ASPH – ASPHALT
BLDG – BUILDING
BM – BEAM
BRG – BEARING
BTM – BOTTOM
BTW'N – BETWEEN
CJ – CONSTRUCTION JOINT
CJ – CONTRACTION JOINT
CMU – CONCRETE MASONRY UNIT
COL – COLUMN
COMPT'D – COMPACTED
CONC – CONCRETE
CONT – CONTINUOUS
CONTR – CONTRACT (OR)
DIA – DIAMETER
DIM – DIMENSION
DN – DOWN
DWG'S – DRAWINGS
DTL – DETAIL
EA – EACH
EL – ELEVATION
EMBED – EMBEDMENT
EQ – EQUAL
EW – EACH WAY
EXIST OR (E) – EXISTING
EXP – EXPANSION
FD – FLOOR DRAIN
FDN – FOUNDATION
FLR – FLOOR
FTG – FOOTING
GA – GAUGE
GALV – GALVANIZED
GC – GENERAL CONTRACTOR
HP – HIGH POINT
HORIZ – HORIZONTAL
IN – INCH
ID – INSIDE DIAMETER
JT – JOINT
LP – LOW POINT
LW – LIGHTWEIGHT
LL – LIVE LOAD
LLH – LONG LEG HORIZONTAL
LLV – LONG LEG VERTICAL
MO – MASONRY OPENING
MAS'Y – MASONRY
MAX – MAXIMUM
MECH – MECHANICAL
MFR – MANUFACTURER
MIN – MINIMUM
MISC – MISCELLANEOUS
MTL – METAL
NOM – NOMINAL
NTS – NOT TO SCALE
NO – NUMBER
OA – OVERALL
OC – ON CENTER
OD – OUTSIDE DIAMETER
OF – OUTSIDE FACE
OPN'G – OPENING
O.H. – OPPOSITE HAND
PSF – POUNDS PER SQUARE FOOT
PSI – POUNDS PER SQUARE INCH
PL – PLATE
PLYWD – PLYWOOD
R OR RAD – RADIUS
RD – ROOF DRAIN
RH – RIGHT HAND
REF – REFERANCE
REINF – REINFORCING
REQ'D – REQUIRED
SF – SQUARE FOOT
SS – STAINLESS STEEL
SCHED – SCHEDULE
SEC – SECTION
SHT – SHEET
SIM – SIMILAR
SOG – SLAB ON GRADE
SPEC – SPECIFICATION(S)
SPC'G – SPACING
STD – STANDARD
STL – STEEL
SYM – SYMMETRICAL
T&G – TONGUE AND GROOVE
T/B – TOP OF BEAM
T/C – TOP OF CURB
T/F – TOP OF FOUNDATION
T/S – TOP OF SLAB
T/STL – TOP OF STEEL
T/W – TOP OF WALL
TYP – TYPICAL
UNO – UNLESS NOTED OTHERWISE
VERT – VERTICAL
W/ – WITH
W/O – WITHOUT
WD – WOOD
WGT – WEIGHT
WWF – WELDED WIRE FABRIC

THE MATERIALS, ABBREVIATIONS, AND DRAFTING SYMBOLS LEGEND ARE EACH AN ALL INCLUSIVE MASTER LIST USED BY THIS FIRM. THE INCLUSION OF THESE LEGENDS INTO THESE DOCUMENTS DOES NOT IMPLY THAT ALL THE SYMBOLS OR MATERIALS INCLUDED IN THESE LEGENDS ARE INCORPORATED INTO THIS PROJECT.

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OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS

CITY OF DES PLAINES, ILLINOIS

PROJ. MGR.:	
PROJ. ASSOC.:	
DRAWN BY:	KSG
DATE:	02/12/25
SCALE:	N.T.S.

SHEET

S1

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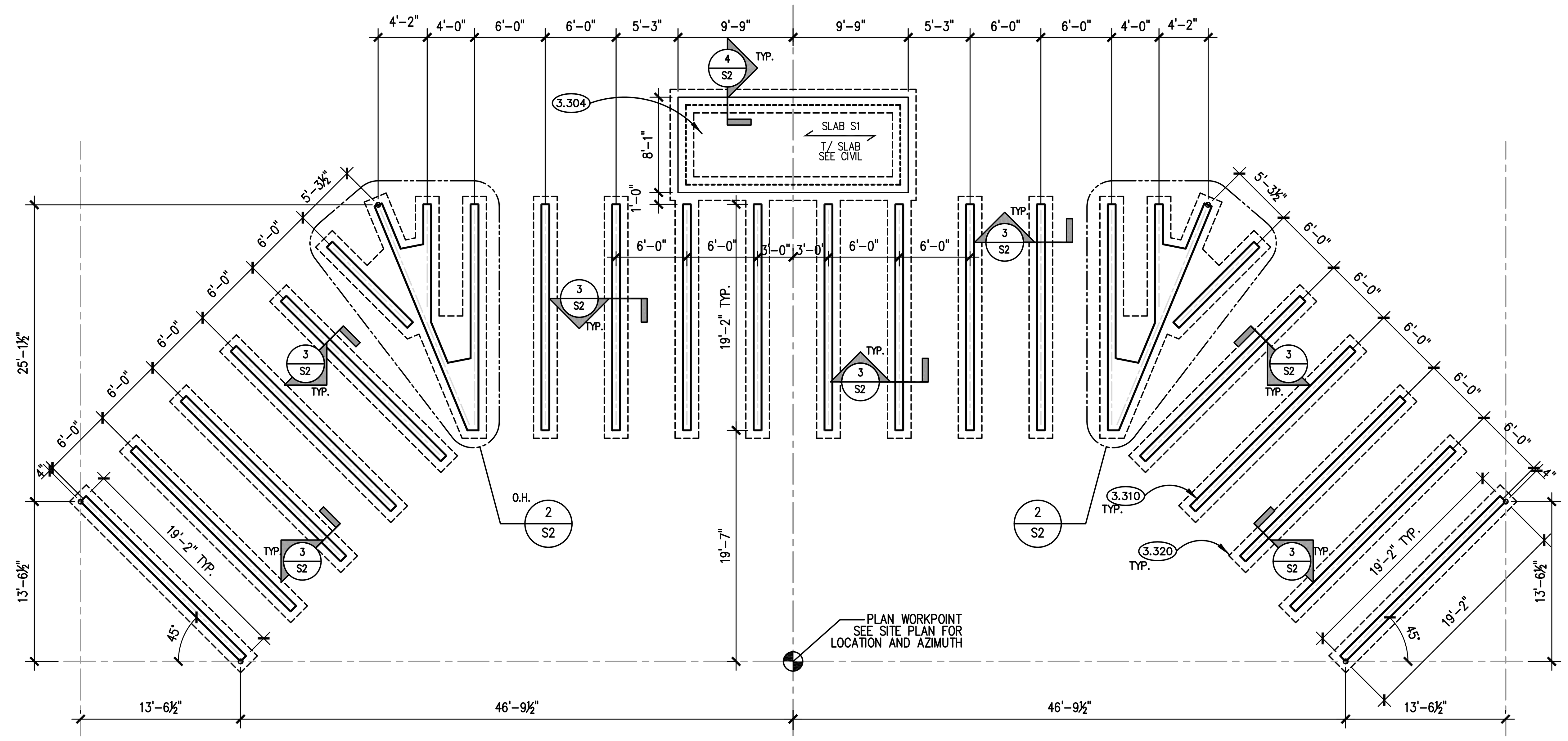
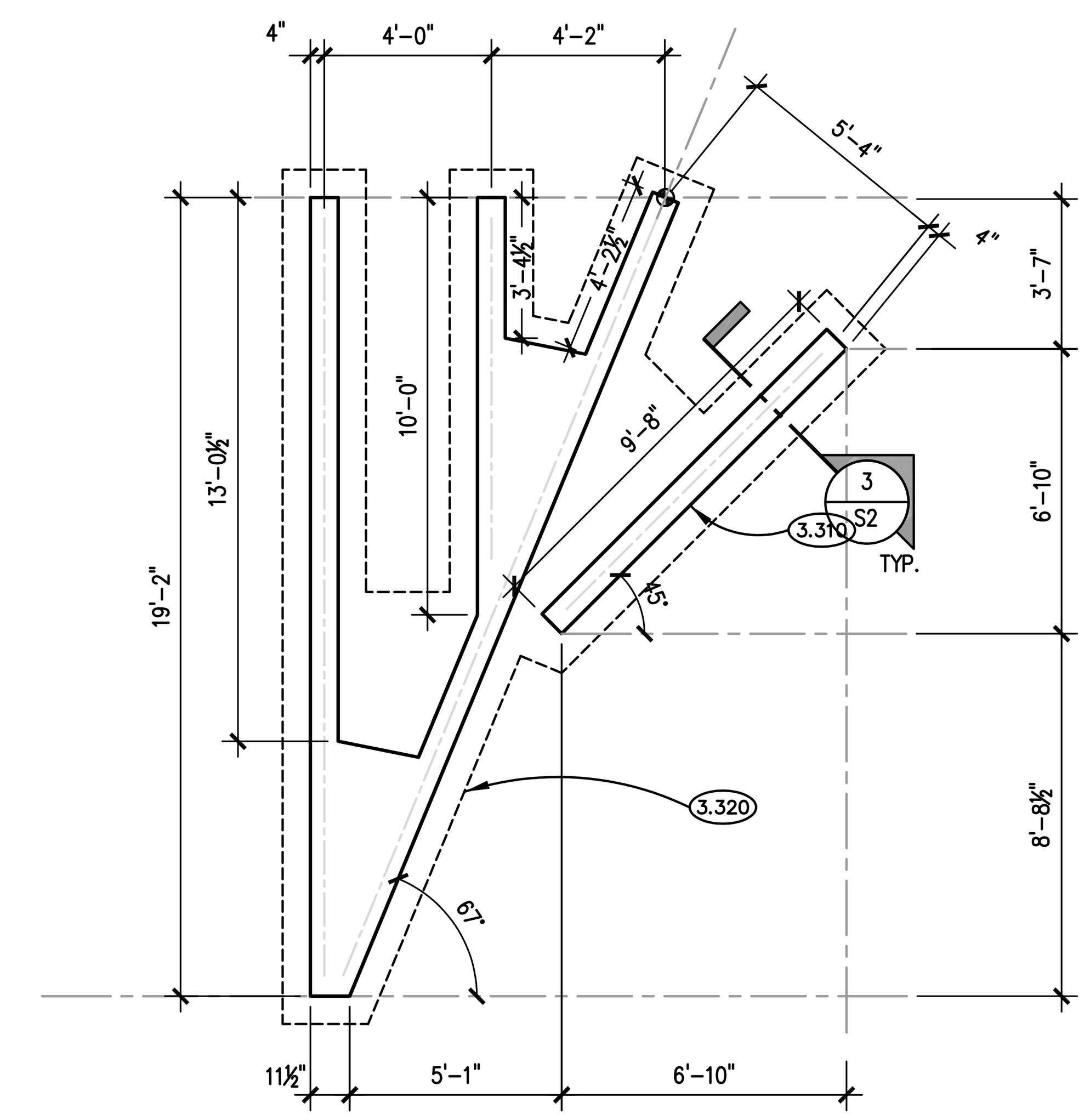
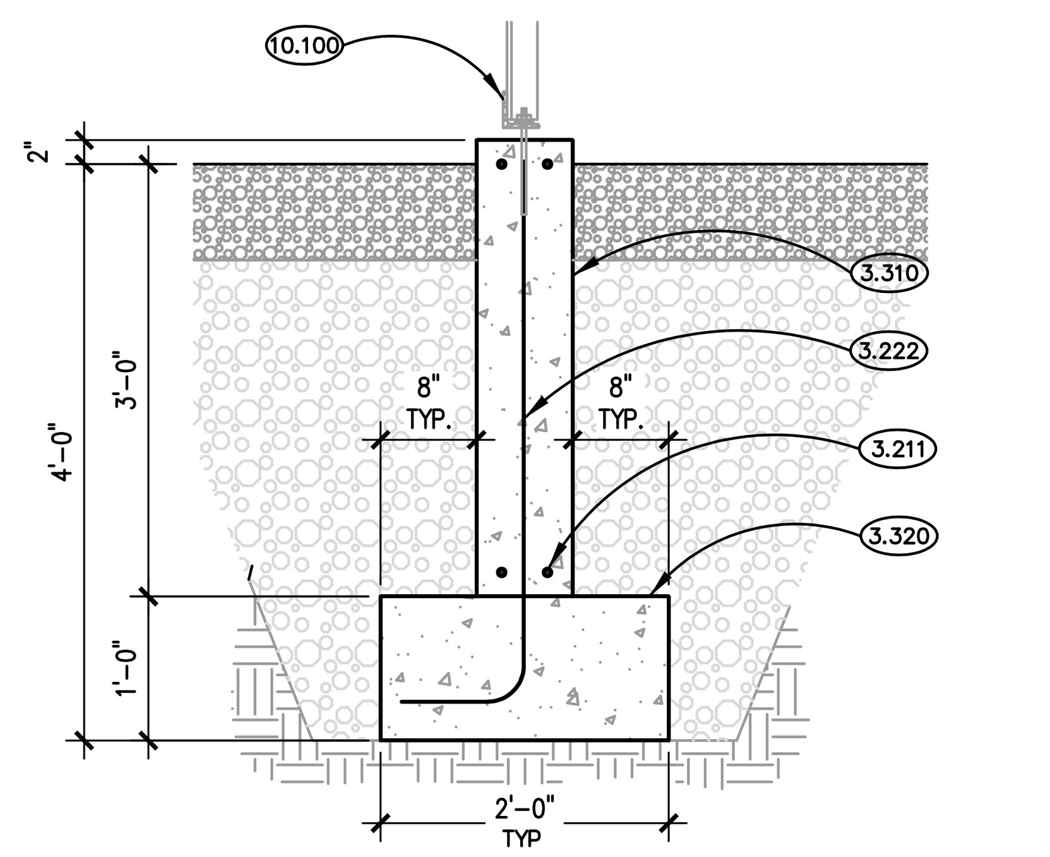


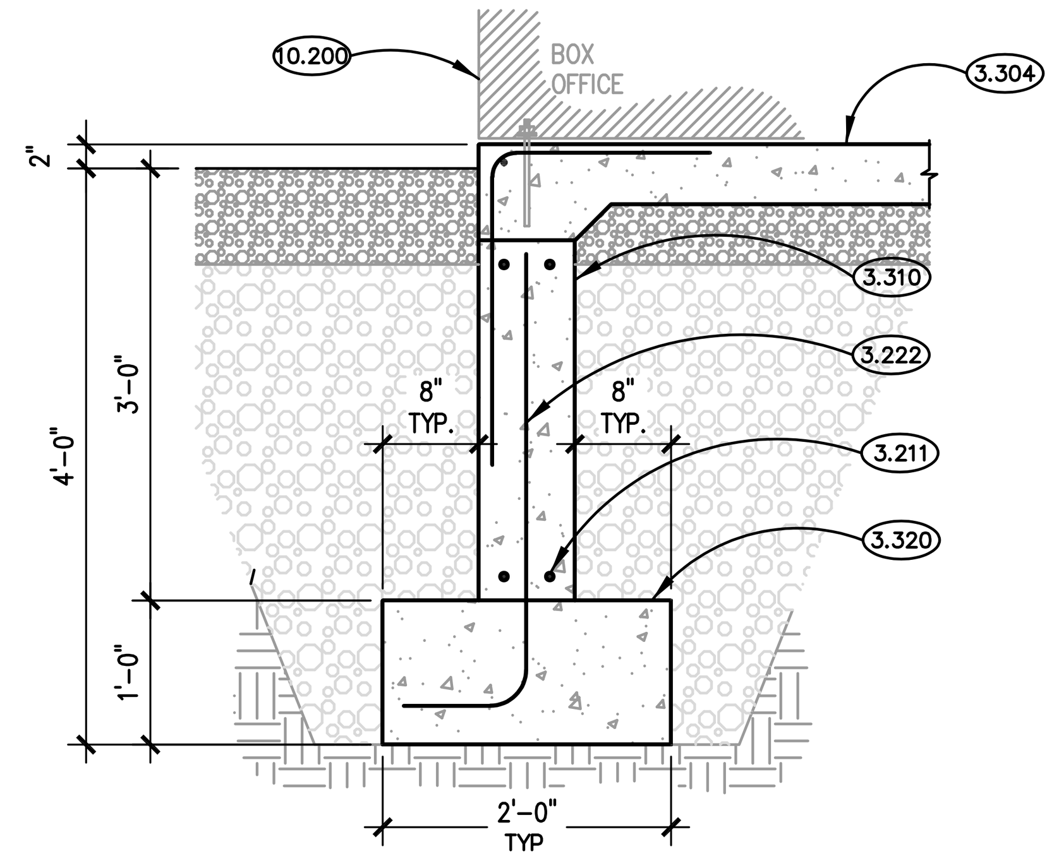
BLEACHER FOUNDATION PLAN (1)
SCALE: N.T.S.



ENLARGED FOUNDATION DETAIL (2)
SCALE: N.T.S.



TYP. FOUNDATION WALL SECTION (3)
SCALE: N.T.S.

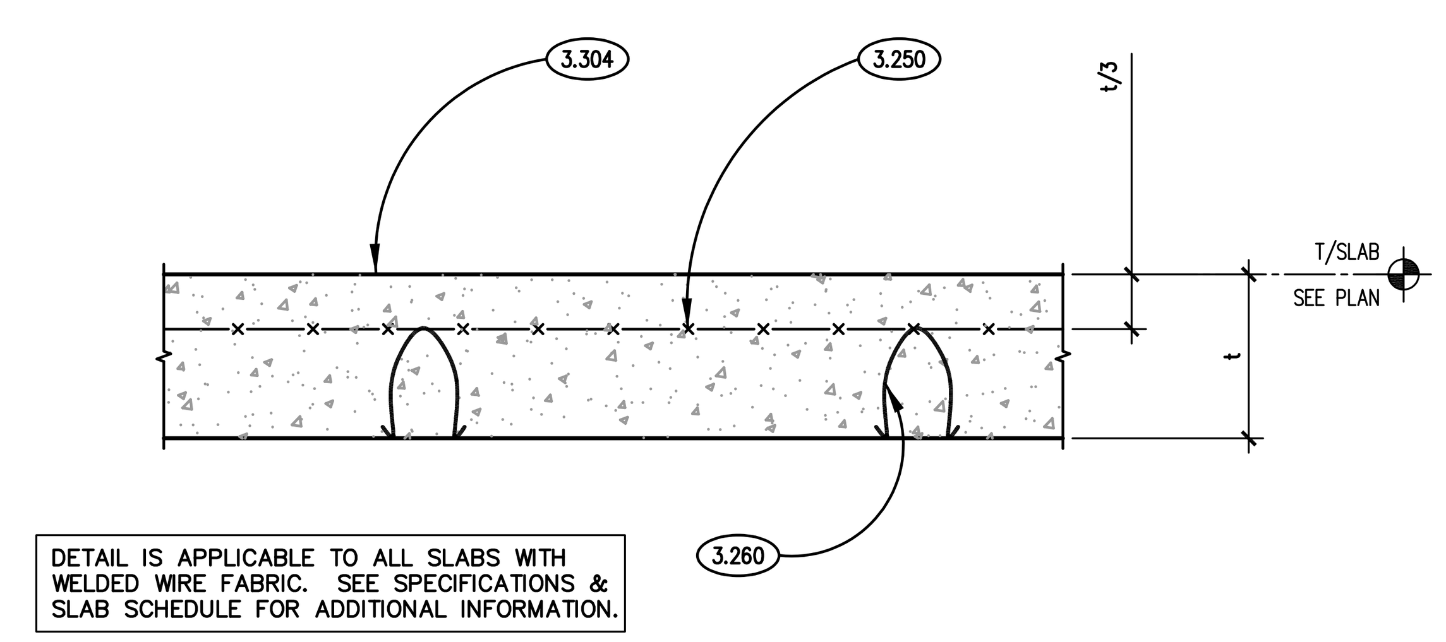


TYP. FOUNDATION WALL SECTION (4)
SCALE: N.T.S.

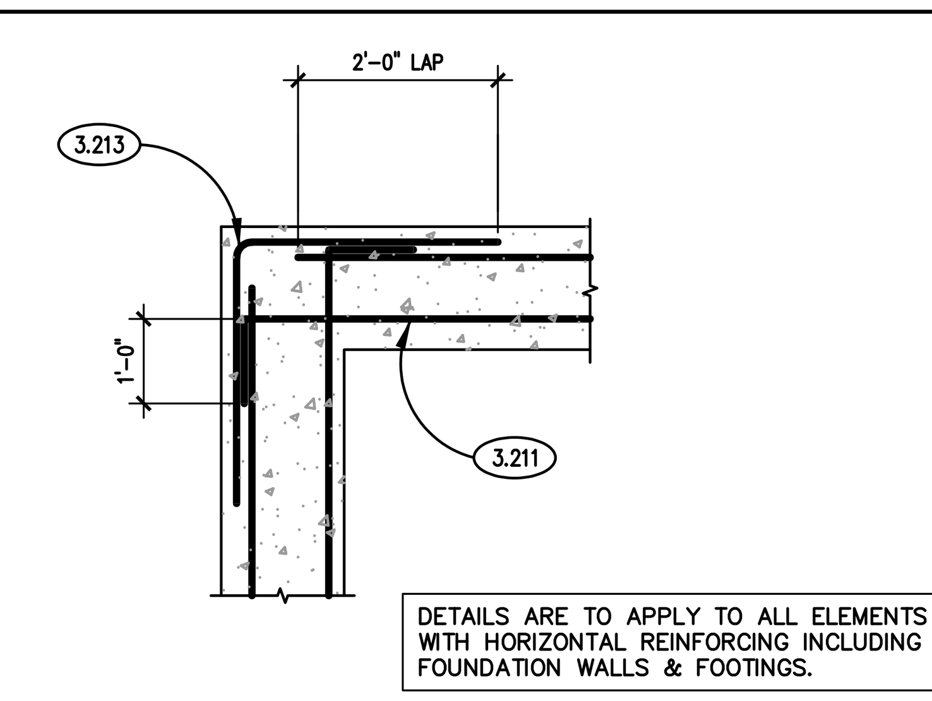
SLAB SCHEDULE AND NOTES

MARK	THICK (t)	CONCRETE STRENGTH (f'c)	TYPE (NW or LW)	MVRA	REINFORCING STEEL	GENERAL LOCATIONS	SPECIAL COMMENTS OR ADDITIONAL LOCATIONS
SLAB S1	5"	4,500 PSI	NW	NO	WWF–6x6 W2.1xW2.1	BOX OFFICE SLAB	

NOTES:
1. SEE PROJECT SPECIFICATIONS FOR DETAILED MIX DESIGNS.
2. PREPARE ALL SLAB ON GRADE SUB-GRADES AS OUTLINED ON SHEET S1.
3. ALL SLABS ON GRADE TO BE PLACED OVER 6" OF CLEAN, WELL GRADED GRANULAR MATERIALS.
4. SEE PLANS AND DETAILS FOR ALL LOCATIONS OF REINFORCING STEEL, CONTRACTION JOINTS, CONSTRUCTION JOINTS AND ISOLATION JOINTS.
5. ALL INTERIOR SLAB ON GRADE AREAS REQUIRE A 15 MIL. VAPOR RETARDER PLACED DIRECTLY OVER THE GRANULAR SUB-BASE U.N.O. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. ALL WWF REINFORCING TO BE IN FLAT SHEETS ONLY. PLACEMENT (I.E. SUPPORT SPACING, LAP SPLICE LENGTHS, ETC.) TO BE IN ACCORDANCE WITH THE STRUCTURAL WELDED WIRE REINFORCEMENT MANUAL OF STANDARD PRACTICE; (WWR-500); WIRE REINFORCEMENT INSTITUTE; LATEST EDITION.
7. ALL REINFORCING STEEL TO BE SUPPORTED AS REQUIRED TO MAINTAIN THE DETAILED POSITIONS NOTED ON THE CONTRACT DOCUMENTS DURING PLACEMENT OF THE CONCRETE.
8. REINFORCING BARS SHALL BE ASTM A615 GRADE 60, DEFORMED. ALL WWF SHALL BE ASTM A185, SMOOTH.
9. NORMAL WEIGHT CONCRETE (NW) SHALL HAVE A MAXIMUM DENSITY OF 145 PCF.
10. EXTERIOR CONCRETE TO HAVE 6% AIR ENTRAINMENT.
11. MVRA DENOTES MOISTURE VAPOR REDUCTION ADMIXTURE, REFER TO SPECIFICATIONS.



TYPICAL SLAB ON GRADE DETAIL (A)
SCALE: N.T.S.



TYPICAL CORNER/INTERSECTION BAR DETAILS (B)
SCALE: N.T.S.

KEYNOTES

KEYNOTES ARE TYPICALLY NOT DUPLICATED WITHIN A GIVEN DETAIL. AN UN-KEYNOTED ITEM IN A DETAIL IS THE SAME AS A KEYNOTED ITEM HAVING THE SAME APPEARANCE WITHIN THE SAME DETAIL.

3.211 CONCRETE REINFORCING: CONTINUOUS WALL/FOOTING REINFORCING. REFER TO SECTIONS AND SCHEDULES. PROVIDE (2)–#5 BARS U.N.O. OR DEPICTED.
3.213 CONCRETE REINFORCING: CORNER/INTERSECTION BARS TO MATCH SIZE, SPACING AND QUANTITY OF WALL/FOOTING REINFORCING. PROVIDE IN ALL ELEMENTS WITH LONGITUDINAL REINFORCING. REFER TO TYPICAL DETAIL ON CONTRACT DOCUMENTS.
3.222 CONCRETE REINFORCING: #5 DOWELS @ 2'–0" O.C. HORIZONTAL LEG= AS DEPICTED, VERTICAL LEG= AS DEPICTED.
3.250 CONCRETE REINFORCING: WWF REFER TO SLAB CALLOUT ON PLAN. PROVIDE WWF–6X6 W2.1 X W2.1 IN FLAT SHEETS U.N.O. PROVIDE PROPER SUPPORT AS REQUIRED TO MAINTAIN PLACEMENT AT NOTED ELEVATION. "PULL UP" METHOD DURING SLAB PLACEMENT NOT ACCEPTABLE. DISCONTINUE AT CONTRACTION AND CONSTRUCTION JOINTS.
3.260 CONCRETE REINFORCING: REINFORCING STEEL SUPPORT ELEMENT.
3.304 CAST–IN–PLACE CONCRETE: EXTERIOR SLAB–ON–GRADE. REFER TO SPECIFICATIONS FOR MIX TYPE AND FINISH. REFER TO PLAN FOR REINFORCING. REFER TO PLAN AND ARCHITECTURAL DRAWINGS FOR ELEVATIONS AND SLOPES.
3.310 CAST–IN–PLACE CONCRETE: FOUNDATION WALL. REFER TO PLAN, DETAILS AND SPECIFICATIONS FOR THICKNESS, REINFORCING, MIX TYPE AND FINISH.
3.320 CAST–IN–PLACE CONCRETE: CONTINUOUS WALL FOOTING. REFER TO PLAN, DETAILS AND SPECIFICATIONS FOR THICKNESS, REINFORCING AND MIX TYPE.

10.100 BLEACHER SYSTEM SUPPLIED AND INSTALLED BY VENDOR.
10.200 PRESS BOX SYSTEM SUPPLIED AND INSTALLED BY VENDOR.

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CITY OF DES PLAINES, ILLINOIS

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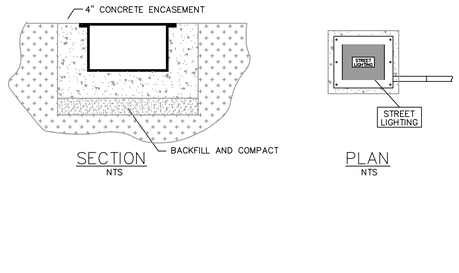
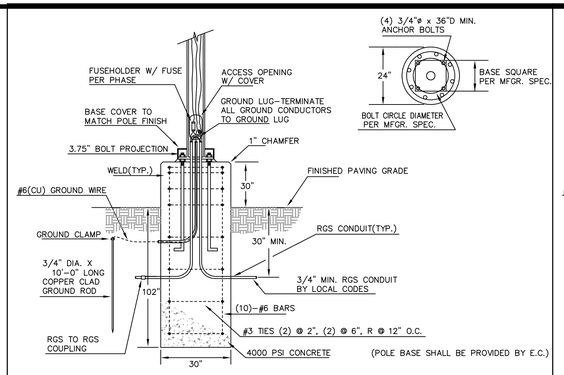
February 12, 2025 – 13:09 Dwg Name: P:\1579 – Manhard – Oakton Baseball Parking Lot Lighting\30_Design\Dwgs\DD–CD\20_Struc\1579S2.dwg Updated By: ATR

ELECTRICAL SYMBOLS LIST

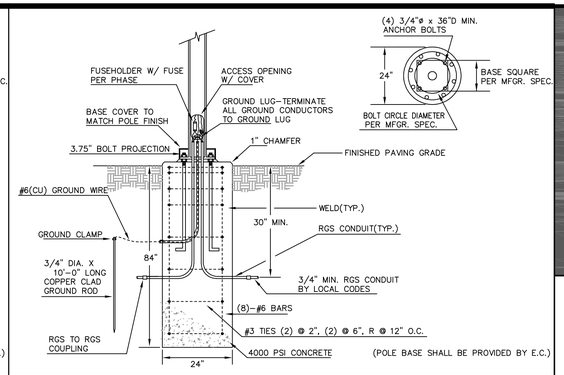
SYMBOL CEILING	SYMBOL WALL	SYMBOL FLOOR	DESCRIPTION
			POLE MOUNTED LUMINAIRE SCHEDULE. SHADING=NIGHT LIGHT
			DOWN LIGHT FIXTURE TYPE. SEE LIGHTING FIXTURE SCHEDULE.
			EMERGENCY LIGHT FIXTURE TYPE. SEE LIGHTING FIXTURE SCHEDULE.
	^{a}		SINGLE POLE TOGGLE SWITCH, 15A OR 20A AS REQUIRED. 120/277V a=SWITCHING CONTROL, P=PILOT LIGHT, K=KEYED SW., LV=LOW VOLTAGE
	$_{3}$		3-WAY TOGGLE SWITCH. 15A OR 20A AS REQUIRED. 120/277V 3D=3 WAY DIMMER
			DUPLEX RECEPTACLE. 20A 125V 2P 3W GRD. NEMA5-20R. @18"AFF. TR =TAMPER RESISTANT. D=DEDICATED CIRCUIT. C=CONTROLLED '|' = @48"AFF OR @6" ABOVE COUNTER.
			DOUBLE DUPLEX RECEPTACLE. @18"AFF 20A 125V 2P 3W GRD. NEMA5-20R. PO=POP UP RECEPTACLE
			GFCI(GROUND FAULT CIRCUIT INTERRUPTER) PROTECTED RECEPTACLE. WP=WEATHER PROOF. 20A 125V 2P 3W GRD. NEMA5-20R. @18"AFF
			GFCI(GROUND FAULT CIRCUIT INTERRUPTER) PROTECTED RECEPTACLE MTD. @48"AFF, OR @6" ABOVE COUNTER.
OS	$_{OS}$		MOTION SENSOR SWITCH. "OS"=AUTOMATIC ON/AUTOMATIC OFF. "VS"=MANUAL ON/AUTO OFF.
	▽ OR ▼		COMMUNICATIONS OUTLET ROUGH-IN @18"AFF. PROVIDE EMPTY J-BOX AND CONDUIT STUBBED TO ACCESSIBLE CEILING. PROVIDE WITH PULL STRING. ▽ = 6" ABOVE COUNTER
	OR	TS	JUNCTION BOX TS = TOMBSTONE TYPE. IN WALL, OR SURFACE TYPE.
			WIRING IN CONDUIT CONCEALED ABOVE CEILING, IN WALL AND UNDER FLOOR OR UNDERGROUND.
			WIRING IN CONDUIT EXPOSED ON CEILING OR WALL.
			BRANCH CIRCUIT WIRING IN CONDUIT HOMERUN TO PANEL. ONE ARROW PER HOMERUN. SLASHES INDICATE NUMBER OF CONDUCTORS.
			INDICATES GROUND CONDUCTOR.
			INDICATES ISOLATED GROUND CONDUCTOR.
HP	HP	HP	MOTOR. HP= HORSE-POWER RATING.
			PANEL 240V & BELOW.
			PANEL ABOVE 240V.
	MISCELLANEOUS		
	RTU 1		HVAC EQUIPMENT IDENTIFICATION
	(6.XXX)		KEYNOTE IDENTIFICATION
	1 / E7.1 — DETAIL NUMBER / DRAWING NUMBER		DETAIL IDENTIFICATION



SITE LIGHTING PULL BOX DETAIL -
SCALE: N.T.S.



PARKING LOT POLE BASE DETAIL - OA1,OA2 -
SCALE: N.T.S.



WALKWAY POLE BASE DETAIL - TYPES OB1 -
SCALE: N.T.S.

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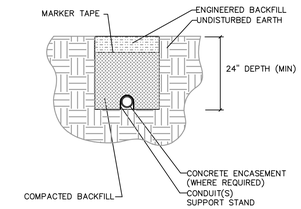
EXTERIOR LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MFGR.	CATALOG NUMBER	VOLTAGE	WATTAGE	FINISH	MOUNTING	NOTE
OA1	LED SITE/AREA LUMINAIRE: 20,000 LUMENS NOMINAL, TYPE 4 FORWARD THROW, 80CRI, 4000K, W/ 7-PIN RECEPTACLE	GARDCO	OPF-M-A10-840-T4W-AR1-120-FS1-TLP-BK	120	112	BLACK	POLE (ARM) 35' MH	
		BEACON	VIPER SERIES					
			APPROVED EQUAL					
OA2	LED SITE/AREA LUMINAIRE: 13500 LUMENS NOMINAL, TYPE 3, 80CRI, 4000K, W/ PHOTOCELL & MOTION SENSOR	GARDCO	OPF-M-A08-840-T3M-AR1-120-FS1-TLP-BK	120	74	BLACK	POLE (ARM) 35' MH	
		BEACON	VIPER SERIES					
			APPROVED EQUAL					
OB1	LED WALKWAY LUMINAIRE: 7000 LUMENS NOMINAL, TYPE 2 DIST., 4000K	GARDCO	CXF6-32-G3-T-A-2-740-A-5	UNV (120-277)	51	BLACK	POLE (ARM) 14' MH	
			NO SUBSTITUTIONS					
OC	LED WALL MOUNT LUMINAIRE: 6,000 LUMENS NOMINAL, TYPE 4 FORWARD THROW, 80CRI, 4000K, W/ PHOTOCELL & MOTION SENSOR	GARDCO	PWS-48L-300-NW-G2-4-120-BL-IMRI3-PCB-F1-BK	UNV (120-277)	47	BLACK	WALL	
		BEACON	VIPER WALL SERIES					
			APPROVED EQUAL					

Notes:
1



SITE LIGHTING TRENCHING DETAIL -
SCALE: NTS

EXISTING PANELBOARD

PANEL : LTG — 400 AMPERE MAIN BREAKER

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	100/3	LIGHT TOWER	5333			LIGHT TOWER	100/3	2
3	/		5333	5333			/	4
5	/			5333	5333		/	6
7	100/3	LIGHT TOWER	5333		5333	LIGHT TOWER	100/3	8
9	/			5333	5333		/	10
11	/		5333		5333		/	12
13	100/3	LIGHT TOWER	5333			LIGHT TOWER	100/3	14
15	/			5333	5333		/	16
17	/		5333				/	18
19	100/2	SPARE	3607.8			PB1	3P60	20
21	/			2797.8			/	22
23	20/1		842				/	24
25						EXISTING	100/3	26
27	70/2	PANEL SC		930			/	28
29	/		360				/	30

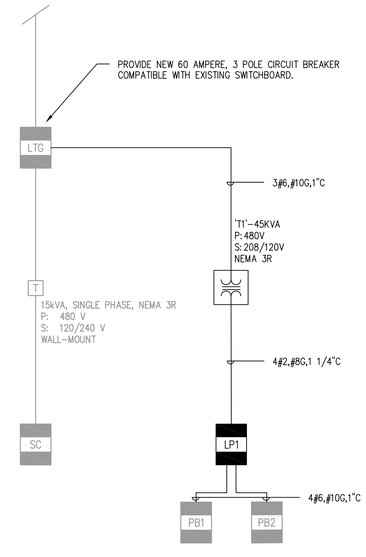
		NOTES:			
TOTAL PHASE A:	35605.8	NEW	MOUNTING:	FREESTANDING	VOLTAGE (LN): 277
TOTAL PHASE B:	35725.8		RATING:	*EXISTING*	VOLTAGE (LL): 480
TOTAL PHASE C:	27867		ENCLOSURE:	NEMA 3R	PHASE: 3
DEMAND VA:	99198.6		FED FROM:	UTILITY	WIRE: 4
DEMAND AMPS:	119.3173717		FEEDER SIZE:	*EXISTING TO REMAIN*	
			LOCATION:	SITE PEDESTAL BOX	

NEW PANELBOARD

PANEL : LP1 — 100 AMPERE MAIN BREAKER

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	2P60	PANEL PB1	1720 1077.8			PANEL PB2	2P60	2
3	/			1077.8 1720			/	4
5	1P20	SITE LIGHTING			180 662	NEMA BOX RECEPTACLE	1P20	6
7	1P20	SITE LIGHTING	810			SPARE	1P20	8
9	1P20	SPARE				SPARE	1P20	10
11	1P20	SPARE				SPARE	1P20	12
13	-	-PREPARED SPACE-				-PREPARED SPACE-	-	14
15	-	-PREPARED SPACE-				-PREPARED SPACE-	-	16
17	-	-PREPARED SPACE-				-PREPARED SPACE-	-	18
19	-	-PREPARED SPACE-				-PREPARED SPACE-	-	20

		NOTES:			
TOTAL PHASE A:	3607.8		MOUNTING:	FREESTANDING	VOLTAGE (LN): 120
TOTAL PHASE B:	2797.8		RATING:	22000 AIC	VOLTAGE (LL): 208
TOTAL PHASE C:	842		ENCLOSURE:	NEMA 3R	PHASE: 3
DEMAND VA:	7247.6		FED FROM:	LTG	WIRE: 4
DEMAND AMPS:	20.12		FEEDER SIZE:	SEE ONE LINE DIAGRAM	
			LOCATION:	UNDER BLEACHERS/PRESS BOX	



ONE LINE RISER DIAGRAM -
SCALE: NTS

ELECTRICAL SYMBOLS LIST, SCHEDULES & DETAILS
SCALE: N.T.S. (1)

OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS

PROJ. MGR.:
PROJ. ASSOC.:
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DATE: 02/12/25
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KEYNOTES

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26.300 PRESS BOX LOAD CENTER: PROVIDED BY PRESSBOX MANUFACTURER. ELECTRICAL CONTRACTOR TO PROVIDE FEEDER TO PANELBOARD.
26.301 PROVIDE NEMA 3R EQUIPMENT ENCLOSURE FOR DATA RACK ("NEMA BOX"): MINIMUM SIZE 16"X20"X12", 6RU, VENTED CABINET. BASIS OF DESIGN: ALTELIX NF162012VP-R6U. PROVIDE DUPLEX RECEPTACLE FOR WIRELESS ROUTER (BY OWNER).
26.302 PROVIDE EMPTY CONDUIT FROM EQUIPMENT ENCLOSURE STUBBED AND CAPPED AT EACH PRESS BOX FOR FUTURE DATA CONNECTIVITY. MINIMUM SIZE 1 1/4". COORDINATE EXACT ROUGH-IN LOCATION WITH PRESS BOX MANUFACTURER.
26.303 PROVIDE 1 1/2" EMPTY CONDUIT FROM NEMA BOX LOCATION TO SITE PULL BOX. PROVIDE PULL STRING.

27.100 PROVIDE 2-CAT6 CABLE FROM NETWORK SWITCH (BY OWNER) FROM NEMA BOX TO POLE LOCATION. TERMINATE AT EMERGENCY PHONE AND EMERGENCY PHONE BLUE LIGHT.
27.101 PROVIDE 1-CAT6 CABLE FROM NETWORK SWITCH (BY OWNER) FROM NEMA BOX TO POLE LOCATION. TERMINATE AT CAMERA LOCATION (30' ON POLE).

28.100 OWNER FURNISHED ITEM: CAMERA WITH MOUNT (INSTALLED BY THIS CONTRACTOR). NOMINAL HEIGHT ON POLE 30'.
28.101 OWNER FURNISHED ITEM: EMERGENCY LIGHT WITH BLUE LIGHT STROBE (INSTALLED BY THIS CONTRACTOR). FIELD PAINT POLE BASE AND POLE TO 10' NOMINAL HEIGHT ABOVE GRADE.

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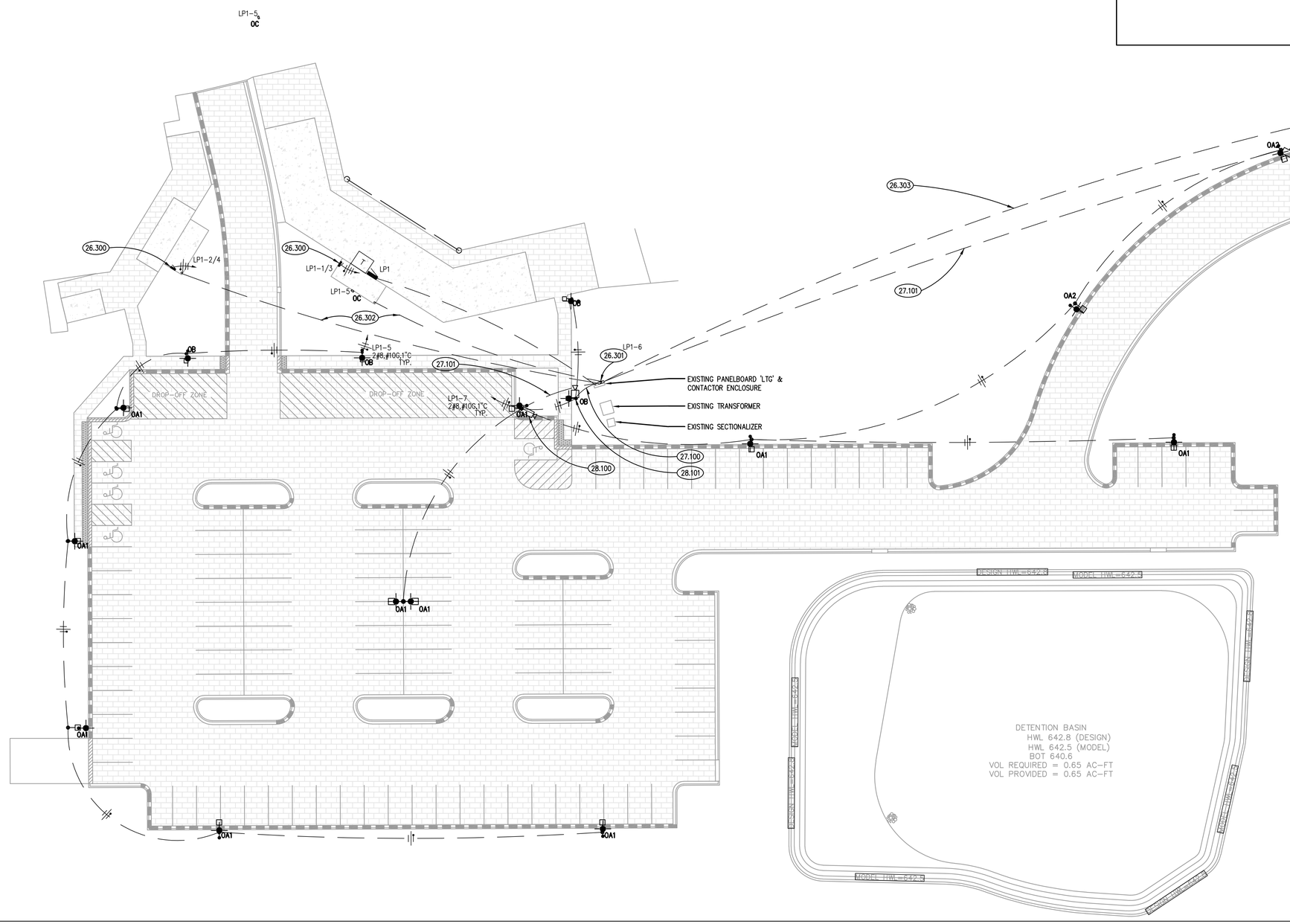

NORTH

ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

1

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OAKTON COLLEGE BASEBALL FIELD PARKING LOT IMPROVEMENTS
CITY OF DES PLAINES, ILLINOIS

PROJ. MGR.:
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DATE: 02/12/25
SCALE: N.T.S.

SHEET
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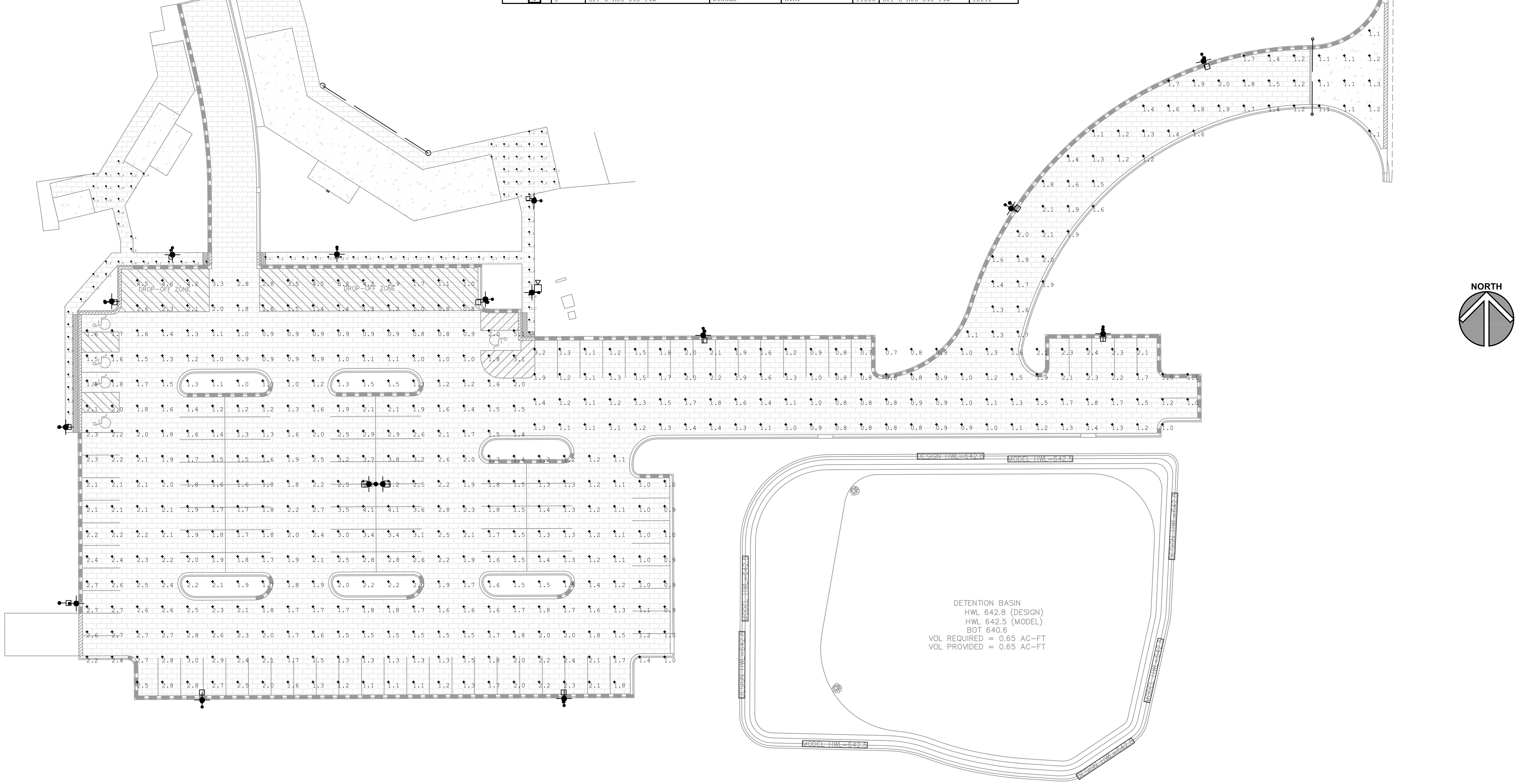
February 12, 2025 - 11:35 Dwg Name: P:\1579 - Manhard - Oakton Baseball Parking Lot Lighting\30_Design\Dwgs\DD-CD\60_Elec\1579E0001.dwg, 3/13/2025 1:45:28 PM, ATR Updated By: ATR
P:\1579 - Manhard - Oakton Baseball Parking Lot Lighting\30_Design\Dwgs\DD-CD\60_Elec\1579E0001.dwg, 3/13/2025 1:45:28 PM, ATR

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
East Drive	Illuminance	Fc	1.49	2.1	1.1	1.35	1.91
East Lot	Illuminance	Fc	1.34	3.2	0.7	1.91	4.57
East Walkway	Illuminance	Fc	4.48	12.4	0.6	7.47	20.67
Main Lot	Illuminance	Fc	1.88	5.2	0.8	2.35	6.50
West Walkway	Illuminance	Fc	3.68	6.2	1.3	2.83	4.77

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	Lum. Watts
	5	CXF32-G3-2-740-5	SINGLE	N.A.	1.000	CXF32-G3-2-740-5	51.2
	5	OPF-M-A08-840-T3M	SINGLE	N.A.	1.000	OPF-M-A08-840-T3M	74.41
	8	OPF-S-A06-840-T4W	SINGLE	N.A.	1.000	OPF-S-A06-840-T4W	122.2



ELECTRICAL PHOTOMETRIC SITE PLAN (1)

SCALE: 1" = 20'-0"

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SHEET E2 OF

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SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork.

B. Floors and slabs on grade.

C. Concrete footings and foundation walls.
   1. Concrete reinforcement.

D. Miscellaneous concrete elements, including light pole bases.

E. Concrete curing.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).

B. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.

C. ACI PRC-302.1 - Guide to Concrete Floor and Slab Construction; 2015.

D. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

E. ACI PRC-305 - Guide to Hot Weather Concreting; 2020.

F. ACI PRC-306 - Guide to Cold Weather Concreting; 2016.

G. ACI PRC-308 - Guide to External Curing of Concrete; 2016.

H. ACI PRC-347 - Guide to Formwork for Concrete; 2014 (Reapproved 2021).

I. ACI SPEC-117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

J. ACI SPEC-301 - Specifications for Concrete Construction; 2020.

K. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.

L. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.

M. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

N. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).

O. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2023, with Editorial Revision.

P. NSF 61 - Drinking Water System Components - Health Effects; 2024.

Q. NSF 372 - Drinking Water System Components - Lead Content; 2024.

1.04 SUBMITTALS

A. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
   1. For curing compounds, provide data on method of removal in the event of incompatibility with floor covering adhesives.
   2. Anchoring epoxy and expansion anchors.

B. Mix Designs: Submit 15 days prior to start of work.
   1. Submit for each type of concrete specified.
   2. Include back-up test data.
   3. Indicate proposed mix design complies with requirements of ACI SPEC-301, Section 4 - Concrete Mixtures.
   4. Indicate proposed mix design complies with requirements of ACI CODE-318, Chapter 5 - Concrete Quality, Mixing and Placing.

C. Test Reports: Submit report for each test or series of tests specified.

1.05 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.

B. Follow recommendations of ACI PRC-305 when concreting during hot weather.

C. Follow recommendations of ACI PRC-306 when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI PRC-347 to provide formwork that will produce concrete complying with tolerances of ACI SPEC-117.

B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
   2. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
   1. Type: Deformed billet-steel bars.
   2. Finish: Unfinished, unless otherwise indicated.

B. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type. Provide _____ manufactured by _____ .
   1. Acquire cement for entire project from same source.

B. Fine and Coarse Aggregates: ASTM C33/C33M.
   1. Acquire aggregates for entire project from same source.

C. Fly Ash: ASTM C618, Class C.

D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.

C. High Range Water Reducing Admixture: ASTM C494/C494M Type F.

D. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.

E. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.

F. Accelerating Admixture: ASTM C494/C494M Type C.

G. Retarding Admixture: ASTM C494/C494M Type B.

H. Water Reducing Admixture: ASTM C494/C494M Type A.

2.05 ACCESSORY MATERIALS

A. Anchoring Epoxy: Refer to drawings. Acceptable manufacturer's include...
   1. Hilti: HIT-RE500-SD injection anchoring system.
   2. Simpson Strong-Tie: SET-XP injection anchoring adhesive system.
   3. Powers Fasteners: PE 1000+ injection adhesive anchoring system.

B. Expansion Anchors: Refer to drawings. Acceptable manufacturer's include...
   1. Hilti: Kwik Bolt 3 expansion anchor.
   2. Simpson Strong-Tie: Strong-Bolt 2 wedge anchor.

2.06 CURING MATERIALS

A. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.

B. Water: Potable, not detrimental to concrete.

2.07 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.

B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301.

1. For trial mixtures method, employ independent testing agency acceptable to Architect/Engineer for preparing and reporting proposed mix designs.

C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer. Submit to Architect for review and approval.

D. Normal Weight Concrete: Type "D".
   1. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: 4,500 psi.
   2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
   3. Water-Cement Ratio: Maximum 44 percent by weight.
   4. Total Air Content: 6 percent, determined in accordance with ASTM C 173/C 173M.
   5. Maximum Slump: 4 inches.
   6. Maximum Aggregate Size: 3/4 inch.

2.08 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.

B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI SPEC-301. Design and fabricate forms to support all applied loads until concrete is cured and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent.

C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI SPEC-301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

3.04 PLACING CONCRETE

A. Place concrete in accordance with ACI PRC-304.

B. Notify Architect/Engineer not less than 24 hours prior to commencement of placement operations.

C. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

D. Ensure reinforcement will not be disturbed during concrete placement.

E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

3.05 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.

C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
   1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.

D. Concrete Slabs: Finish to requirements of ACI PRC-302.1 and as follows:
   1. Provide light broom finish on exterior flat work.
   2. Provide 3/4" radiused edge on exposed slab edges, unless otherwise noted.

3.06 CURING AND PROTECTION

A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.07 FIELD QUALITY CONTROL

A. Provide free access to concrete operations at project site and cooperate with appointed firm.

3.08 DEFECTIVE CONCRETE

A. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by the Architect/Engineer. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect/Engineer for each individual area.

3.09 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

3.10 SCHEDULE - CONCRETE TYPES AND FINISHES

LOCATION	MIX TYPE	CONCRETE FINISH
Footings	D	Smooth Form
Foundation walls	D	Smooth Form
Exterior slabs-on-grade	D	Broom
Light pole bases	A	Smooth Form, Troweled

END OF SECTION

SECTION 26 05 00
BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Basic Electrical Requirements and materials specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements. Section includes:
   1. Electrical Identification.
   2. Minor Demolition.
   3. Conductors and Devices.
   4. Raceways and Boxes.
   5. Supporting Devices.

1.03 REGULATORY REQUIREMENTS

A. Conform to NFPA 70 - National Electrical Code, latest edition with amendments as adopted by the City of Des Plaines, IL.

B. Install electrical Work in accordance with the NECA Standard of Installation.

1.04 DELIVERY, STORAGE AND HANDLING

A. Store and protect all materials as specified under the provisions of Section 01 60 00 and as specified herein.

B. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.

C. Ship products to the job site in their original packaging. Receive and store products in a suitable manner to prevent damage or deterioration. Keep equipment upright at all times.

D. Investigate the spaces through which equipment must pass to reach its final destination. Coordinate with the manufacturer to arrange delivery at the proper stage of construction and to provide shipping splits where necessary.

1.05 PROJECT/SITE CONDITIONS

A. Install work in locations shown on Drawings, unless prevented by Project conditions. Drawings have omitted certain branch circuitry in areas for ease of reading. All branch circuitry is to be provided by Contractor.

B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission from Architect/Engineer before proceeding as specified under modification procedures.

1.06 QUALITY ASSURANCE

A. Provide Work as required for a complete and operational electrical installation.

B. All products shall be designed, manufactured, and tested in accordance with industry standards. Standards, organizations, and their abbreviations as used hereafter, include the following:
   1. American National Standards Institute, Inc (ANSI).
   2. American Society for Testing and Materials (ASTM).
   3. National Electrical Manufacturers Association (NEMA).
   4. Underwriters Laboratories, Inc. (UL).

C. Install all Work in accordance with the NECA Standard of Installation.

1.07 TRENCHING, FILL AND COMPACTION

A. Provide trenching, fill and compaction for all work indicated on Drawings and specified in Division 26 sections.

1.08 PROJECT MANAGEMENT AND COORDINATION

A. Proper project management and coordination is critical for a successful project. Manage and coordinate the Work with all other trades. Reliance on the Drawings and Specifications only for exact project requirements is insufficient for proper coordination.

PART 2 PRODUCTS

2.01 WIRING METHODS

A. All locations: Building wire in raceway.

B. Use no wire smaller than 12 AWG for power and lighting circuits, and no smaller than 14 AWG for control wiring.
   1. Use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 100 feet.

2.02 WIRE AND CABLE

A. Manufacturers:
   1. Okonite.
   2. Southwire.
   3. Collyer.

B. Building Wire:
   1. Feeders and Branch Circuits Larger Than 6 AWG: Copper, stranded conductor, 600 volt insulation.
   2. Feeders and Branch Circuits 6 AWG and Smaller: Copper conductor, 600 volt insulation. 6 and 8 AWG, stranded conductor; smaller than 8 AWG, stranded conductor (solid for device terminations).
   3. Control Circuits: Copper, stranded conductor, 600 volt insulation.
   4. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
   5. Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet.
   6. Use conductor not smaller than 12 AWG for power and lighting circuits.

C. Locations:
   1. Concealed Dry Interior Locations: Use only building wire with Type THHN insulation in raceway.
   2. Exposed Dry Interior Locations: Use only building wire with Type THHN insulation in raceway.

3. Wet or Damp Interior Locations: Use only building wire with Type THWN insulation in raceway.
4. Exterior Locations: Use only building wire with Type XHHW insulation in raceway.
5. Underground Installations: Use only building wire with Type XHHW insulation in raceway.

2.03 WIRING DEVICES AND WALL PLATES

A. Single Pole Switch: Specification grade.
   1. Hubbell Model 1121.
   2. P & S Model 521.
   3. Leviton Model 1121.
   4. Color: Ivory.

B. Duplex Convenience Receptacle: Nema 5-20R, duplex, specification grade.
   1. Hubbell.
   2. Bryant.
   3. Leviton.
   4. Color: Ivory.

C. GFCI Receptacle: Nema 5-20R, duplex, GFCI, specification grade.
   1. Hubbell Model GF-5362.
   2. Slater Model SIR-20-F.
   3. Eagle Model 647.
   4. Color: Ivory.

D. Decorative Cover Plate:
   1. Hubbell.
   2. Bryant.
   3. Leviton.
   4. Description: Ivory, metal.

E. Weatherproof die cast cover.
   1. Intermatic Model WP1030MC (Two-Gang).
   2. Approved Equal.

2.04 RACEWAY REQUIREMENTS

A. Use only specified raceway in the following locations:
   1. Branch Circuits and Feeders:
      a. Concealed Dry Interior Locations: Electrical metallic tubing.
      b. Exposed Dry Interior Finished Locations: Electrical metallic tubing.
      c. Exposed Dry Interior Unfinished Locations: Electrical metallic tubing.
      d. Utility Primary and Site Lighting: Sch 40 PVC, concrete encased under road ways and parking lots.
      e. All other locations: Galvanized Rigid Metallic Conduit.

B. Size raceways for conductor type installed.
   1. Minimum Size Conduit Homerun to Panelboard: 3/4-inch.

2.05 METALLIC CONDUIT AND FITTINGS

A. Conduit:
   1. Rigid Steel Conduit: ANSI C80.1.

2. Electrical metallic tubing: ANSI C80.3.
3. Flexible Conduit: UL 1, zinc-coated steel.
   a. Liquidtight Flexible Conduit: UL360. Fittings shall be specifically approved for use with this raceway.

B. Conduit Fittings:
1. Metal Fittings and Conduit Bodies: NEMA FB 1.
   a. EMT fittings: Use set-screw indentor-type fittings.

2.06 NONMETALLIC TUBING

A. Manufacturers:
1. Carlon Co.
2. LCP National Plastics, Inc.
3. Pacific Western Extruded Plastics Co.

B. Description: UL651A "Type EB and A PVC Conduit and HDPE Conduit."
1. Conduit: Schedule 40. Suitable for exposure to sunlight and direct burial.

2.07 CONDUIT HANGERS

A. Manufacturers:
1. Minerrallac Electric Company.
2. Substitutions: Or Approved Equal.

B. Description:
1. Standard conduit hanger, zinc-plated steel with bolts.
2. Threaded rod and hardware: Plated finish, size and length as required for loading and conditions.

2.08 BEAM CLAMPS

A. Manufacturers:
1. Appleton.
2. Midwest.
3. Raco.

B. Description: Malleable beam clamp, zinc plated steel.

2.09 ELECTRICAL BOXES

A. Manufacturers:
1. Raco.
2. Steel City.
3. Appleton.
4. Substitutions: Or Approved Equal.

B. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1, galvanized steel, suitable for installation in masonry:

C. Equipment Support Boxes: Rated for weight of equipment supported; include 2 inch male fixture studs where required.

D. Wet Location Outlet Boxes: Cast aluminum: Cast alloy, deep type, gasket cover, threaded hubs.

2.10 HAND HOLES

A. Manufacturers:
   1. Quazite.
   2. Approved Equal

B. Description: Precast polymer concrete or precast concrete, Non-conductive, non-flammable with open bottom. Flanged, non-conductive, gasketed cover enclosure with stainless-steel cover screws.
   1. Load Rating: UL listed Tier 22 as suitable for driveway, parking lot and off-roadway applications subject to occasional non-deliberate heavy vehicular traffic.
   2. Cover inscribed with "FIELD LIGHTING" or "ELECTRIC" or other suitable description.

2.11 NAMEPLATES AND LABELS

A. Nameplates: Engraved three-layer laminated plastic, black letters on white background.

B. Locations:
   1. Each electrical distribution and control equipment enclosure.

C. Letter Size:
   1. Use 1/8 inch letters for identifying individual equipment and loads.
   2. Use 1/4 inch letters for identifying grouped equipment and loads.

D. Labels: Embossed adhesive tape, with 3/16 inch white letters on a black background. Use only for identification of individual wall switches and receptacles and control device stations.

2.12 WIRE AND CABLE MARKERS

A. Manufacturers:
   1. Brady Model PCPS.
   2. Panduit Model PCM.
   3. T & B Model WM.

B. Description: Cloth type wire markers.

C. Locations: Each conductor at panelboard gutters, pull boxes, and each load connection.

D. Legend:
   1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.

2.13 CONDUIT MARKERS

A. Location: Furnish markers for each conduit longer than 6 feet.

B. Spacing: 20 feet on center.

C. Color:
   1. 480 Volt System: Orange
   2. 208 Volt System: Black
   3. Fire Alarm System: Red.

2.14 UNDERGROUND WARNING TAPE

A. Description: 4 inch wide plastic tape, detectable type, colored red with suitable warning legend describing buried electrical lines.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

A. Demolition Drawings are based on casual field observation and are intended to identify the limits of the construction site. Remove all electrical systems in their entirety in proper sequence with the Work.

B. Disconnect electrical systems in walls, floors, and ceilings for removal.

C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

D. Beginning of demolition means installer accepts existing conditions.

E. Verify that supporting surfaces are ready to receive work.

F. Electrical boxes are shown on Drawings, in approximate locations, unless dimensioned.
   1. Obtain verification from Architect/Engineer for locations of outlets throughout prior to rough-in.

G. Degrease and clean surfaces to receive wire markers.

H. Verify that interior of building is physically protected from weather.

I. Verify that mechanical work which is likely to injure conductors has been completed.

J. Completely and thoroughly swab raceway system before installing conductors.

3.02 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove all existing electrical installations to accommodate new construction.

B. Remove abandoned wiring to source of supply.

C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

D. Repair adjacent construction and finishes damaged during demolition and extension work.

3.03 APPLICATION

A. Install nameplate and label parallel to equipment lines.

B. Secure nameplate to equipment front using screws.

C. Secure nameplates to inside surface of door on panelboard that is recessed in finished locations.

D. Identify underground conduits using underground warning tape. Install one tape per trench at 3 inches below finished grade.

E. Neatly train and secure wiring inside boxes, equipment, and panelboards.

F. Use wire pulling lubricant for pulling 4 AWG and larger wires.

G. Route wire and cable as required to meet project conditions.
   1. Wire and cable routing indicated is approximate unless dimensioned.
   2. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.

H. Pull all conductors into raceway at same time.

I. Protect exposed cable from damage.

J. Neatly train and lace wiring inside boxes, equipment and panelboards.

K. Support cables above accessible ceilings to keep them from resting on ceiling tiles.

L. Make splices, taps, and terminations to carry full ampacity of conductors without perceptible temperature rise.

M. Use split bolt connectors for copper conductor splices and taps, 6 AWG and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.

N. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".

O. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.

P. Do not use powder-actuated anchors.

Q. Do not drill or cut structural members.

R. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.

S. Install surface-mounted cabinets and panelboards with minimum of four anchors.

T. In wet and damp locations use steel channel supports to stand cabinets and panelboards one inch off wall.

U. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

V. Terminate spare conductors with electrical tape.

END OF SECTION

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Grounding and bonding requirements.

B. Conductors for grounding and bonding.

C. Connectors for grounding and bonding.

D. Ground bars.

E. Ground rod electrodes.

1.02 RELATED REQUIREMENTS

A. Section 26 56 00 - Exterior Lighting: Additional grounding and bonding requirements for pole-mounted luminaires.

1.03 REFERENCE STANDARDS

A. IEEE 81 - IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System; 2012.

B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

C. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings; 2022.

D. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems; 2021.

E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

F. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
   1. Do not install ground rod electrodes until final backfill and compaction is complete.

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.

B. Do not use products for applications other than as permitted by NFPA 70 and product listing.

C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.

D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

E. Grounding System Resistance:
   1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Architect/Engineer. Precipitation within the previous 48 hours does not constitute normally dry conditions.
   2. Grounding Electrode System: Not greater than 5 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.

F. Separately Derived System Grounding:
   1. Separately derived systems include, but are not limited to:
      a. Transformers (except autotransformers such as buck-boost transformers).
   2. Provide grounding electrode conductor to connect derived system grounded conductor to nearest effectively grounded metal building frame. Unless otherwise indicated, make connection at neutral (grounded) bus in source enclosure.
   3. Outdoor Source: Where the source of the separately derived system is located outside the building or structure supplied, provide connection to grounding electrode at source in accordance with NFPA 70.
   4. Provide system bonding jumper to connect system grounded conductor to equipment ground bus. Make connection at same location as grounding electrode conductor connection. Do not make any other connections between neutral (grounded) conductors and ground on load side of separately derived system disconnect.
   5. Where the source and first disconnecting means are in separate enclosures, provide supply-side bonding jumper between source and first disconnecting means.

G. Bonding and Equipment Grounding:
   1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
   2. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
   3. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

4. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
5. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

2.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:
   1. Provide products listed, classified, and labeled as suitable for the purpose intended.
   2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 05 26:
   1. Use insulated copper conductors unless otherwise indicated.
      a. Exceptions:
         1) Use bare copper conductors where installed underground in direct contact with earth.
         2) Use bare copper conductors where directly encased in concrete (not in raceway).

C. Connectors for Grounding and Bonding:
   1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
      a. Clamps: Bronze.
   2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
   3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.
   4. Manufacturers - Mechanical and Compression Connectors:
      a. Harger Lightning & Grounding: www.harger.com/#sle.
      b. Thomas & Betts Corporation: www.tnb.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.
   5. Manufacturers - Exothermic Welded Connections:
      a. Cadweld, a brand of Erico International Corporation: www.erico.com/#sle.
      b. thermOweld, subsidiary of Continental Industries; division of Burndy LLC; _____: www.thermoweld.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

D. Ground Bars:
   1. Description: Copper rectangular ground bars with mounting brackets and insulators.
   2. Size: As required for connections to be made.
   3. Holes for Connections: As indicated or as required for connections to be made.
   4. Manufacturers:
      a. Erico International Corporation: www.erico.com/#sle.
      b. Harger Lightning & Grounding: www.harger.com/#sle.
      c. thermOweld, subsidiary of Continental Industries; division of Burndy LLC: www.thermoweld.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

E. Ground Rod Electrodes:
   1. Comply with NEMA GR 1.
   2. Material: Copper-bonded (copper-clad) steel.

3. Size: 3/4 inch diameter by 10 feet length, unless otherwise indicated.
4. Manufacturers:
   a. Erico International Corporation: www.erico.com/#sle.
   b. Galvan Industries, Inc: www.galvanelectrical.com/#sle.
   c. Harger Lightning & Grounding: www.harger.com/#sle.
   d. Substitutions: See Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that work likely to damage grounding and bonding system components has been completed.

B. Verify that field measurements are as indicated.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70 or install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70.

D. Make grounding and bonding connections using specified connectors.
   1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
   2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
   3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
   4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
   5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Inspect and test in accordance with NETA ATS except Section 4.

C. Perform inspections and tests listed in NETA ATS, Section 7.13.

D. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.

E. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

F. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

G. Measure ground resistance from system neutral connection at service entrance to convenient ground reference point by passing minimum current of 10 amperes DC and measuring voltage drop. Maximum resistance: 5 ohms.

H. Measure primary and secondary transformer voltages and make appropriate tap adjustments.

END OF SECTION

SECTION 26 22 00
LOW-VOLTAGE TRANSFORMERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. K-factor transformers rated for nonlinear loads.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Concrete equipment pads.

B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

C. Section 26 24 16 - Panelboards.

1.03 REFERENCE STANDARDS

A. 10 CFR 431, Subpart K - Energy Efficiency Program for Certain Commercial and Industrial Equipment - Distribution Transformers; Current Edition.

B. IEEE C57.94 - IEEE Recommended Practice for Installation, Application, Operation, and Maintenance of Dry-Type Distribution and Power Transformers; 2015.

C. IEEE C57.96 - IEEE Standard Guide for Loading Dry-Type Distribution and Power Transformers; 2013.

D. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

E. NECA 409 - Standard for Installing and Maintaining Dry-Type Transformers; 2015.

F. NEMA ST 20 - Dry Type Transformers for General Applications; 2021.

G. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.

H. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems; 2021.

I. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

J. UL 1561 - Standard for Dry-Type General Purpose and Power Transformers; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the work with other trades to avoid placement of piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances required by NFPA 70.
   2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
   3. Coordinate the work with placement of supports, anchors, etc. required for mounting.
   4. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.

5. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Include voltage, kVA, impedance, tap configurations, insulation system class and rated temperature rise, efficiency, sound level, enclosure ratings, outline and support point dimensions, weight, required clearances, service condition requirements, and installed features.
   1. K-factor Rated Transformers: Include K-factor ratings.

C. Shop Drawings: Provide dimensioned plan and elevation views of transformers and adjacent equipment with all required clearances indicated.
   1. For circuit breakers feeding transformers, provide circuit breaker time-current curves overlayed with transformer inrush, FLA and primary/secondary thermal limit curves.

D. Field Quality Control Test Reports.

E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

F. Maintenance Data: Include recommended maintenance procedures and intervals.

G. Project Record Documents: Record actual locations of transformers.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.

B. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to transformer internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Eaton Corporation: www.eaton.com/#sle.

B. Schneider Electric; Square D Products: www.schneider-electric.us/#sle.

C. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 TRANSFORMERS - GENERAL REQUIREMENTS

A. Description: Factory-assembled, dry type transformers for 60 Hz operation designed and manufactured in accordance with NEMA ST 20 and listed, classified, and labeled as suitable for the purpose intended.

B. Unless noted otherwise, transformer ratings indicated are for continuous loading according to IEEE C57.96 under the following service conditions:
   1. Altitude: Less than 3,300 feet.
   2. Ambient Temperature:
      a. Greater than 10 kVA: Not exceeding 104 degrees F.
      b. Less than 10 kVA: Not exceeding 77 degrees F.
   3. Ambient Temperature: Not exceeding 86 degrees F average or 104 degrees F maximum measured during any 24 hour period.

C. Core: High grade, non-aging silicon steel with high magnetic permeability and low hysteresis and eddy current losses. Keep magnetic flux densities substantially below saturation point, even at 10 percent primary overvoltage. Tightly clamp core laminations to prevent plate movement and maintain consistent pressure throughout core length.

D. Impregnate core and coil assembly with non-hydroscopic thermo-setting varnish to effectively seal out moisture and other contaminants.

E. Basic Impulse Level: 10 kV.

F. Ground core and coil assembly to enclosure by means of a visible flexible copper grounding strap.

G. Isolate core and coil from enclosure using vibration-absorbing mounts.

H. Nameplate: Include transformer connection data, ratings, wiring diagrams, and overload capacity based on rated winding temperature rise.

I. Case Temperature: Do not exceed 35 degrees C rise above ambient at hottest spot.

2.03 K-FACTOR TRANSFORMERS RATED FOR NONLINEAR LOADS

A. Description: Self-cooled, two winding transformers listed and labeled as complying with UL 1561, and designed to supply nonlinear loads to the degree designated by the UL defined K-factor; ratings as indicated on the drawings.

B. K-factor Rating: K-4, or higher.

C. Insulation System and Allowable Average Winding Temperature Rise: Class 220 degrees C insulation system with 150 degrees C average winding temperature rise.

D. Coil Conductors: Continuous copper windings with terminations brazed or welded. Individually insulate secondary conductors and arrange to minimize hysteresis and eddy current losses at harmonic frequencies. Size secondary neutral conductor at twice the secondary phase conductor ampacity.

E. Winding Taps: Two 2.5 percent full capacity primary taps above and four 2.5 percent full capacity primary taps below rated voltage.

F. Neutral Bus: Sized to accommodate twice the rated secondary current.

G. Energy Efficiency: Comply with 10 CFR 431, Subpart K.

H. Sound Levels: Standard sound levels complying with NEMA ST 20

I. Mounting Provisions:
   1. Up to 75 kVA: Suitable for wall, floor, or trapeze mounting.
   2. Larger than 75 kVA: Suitable for floor mounting.

J. Transformer Enclosure: Comply with NEMA ST 20.
   1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
      a. Outdoor locations: Type 3R.
   2. Construction: Steel, ventilated.
   3. Finish: Manufacturer's standard grey, suitable for outdoor installations.
   4. Provide lifting eyes or brackets.

K. Electrostatic Sheild: Copper, between primary and secondary windings.

L. EPACT 2005: The efficiency shall meet the Class I Efficiency levels for distribution transformers as specified in Table 4-2 of the Guide for Determining Energy Efficiency for Distribution Transformers (NEMA TP-1 - 2002)

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that suitable support frames and anchors are installed where required and that mounting surfaces are ready to receive transformers.

C. Perform pre-installation tests and inspections on transformers per manufacturer's instructions and as specified in NECA 409. Correct deficiencies prior to installation.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship).

B. Install products in accordance with manufacturer's instructions.

C. Install transformers in accordance with NECA 409 and IEEE C57.94.

D. Use flexible conduit, under the provisions of Section 26 05 33.13, 2 feet minimum length, for connections to transformer case. Make conduit connections to side panel of enclosure.

E. Arrange equipment to provide minimum clearances as specified on transformer nameplate and in accordance with manufacturer's instructions and NFPA 70.

F. Install transformers plumb and level.

G. Transformer Support:
   1. Use integral transformer flanges, accessory brackets furnished by manufacturer, or field-fabricated supports to support wall-mounted transformers.

2. Unless otherwise indicated, mount floor-mounted transformers on properly sized 3 inch high concrete pad constructed in accordance with Section 03 30 00.
3. Use trapeze hangers assembled from threaded rods and metal channel (strut) to support suspended transformers. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

H. Provide grounding and bonding in accordance with Section 26 05 26.

I. Remove shipping braces and adjust bolts that attach the core and coil mounting bracket to the enclosure according to manufacturer's recommendations in order to reduce audible noise transmission.

J. Where not factory-installed, install lugs sized as required for termination of conductors as indicated.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

3.04 ADJUSTING

A. Measure primary and secondary voltages and make appropriate tap adjustments.

B. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

3.05 CLEANING

A. Clean dirt and debris from transformer components according to manufacturer's instructions.

B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

SECTION 26 24 16
PANELBOARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Power distribution panelboards.

B. Lighting and appliance panelboards.

C. Overcurrent protective devices for panelboards.

1.02 RELATED REQUIREMENTS

A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

1.03 REFERENCE STANDARDS

A. FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service; 2013e, with Amendments (2022).

B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

C. NECA 407 - Standard for Installing and Maintaining Panelboards; 2015.

D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.

E. NEMA KS 1 - Heavy Duty Enclosed and Dead-Front Switches (600 Volts Maximum); 2013.

F. NEMA PB 1 - Panelboards; 2011.

G. NEMA PB 1.1 - General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 1000 Volts or Less; 2023.

H. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems; 2021.

I. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

J. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.

K. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.

L. UL 67 - Panelboards; Current Edition, Including All Revisions.

M. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.

N. UL 869A - Reference Standard for Service Equipment; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
3. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted panelboards where indicated.
4. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
5. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for panelboards, enclosures, overcurrent protective devices, and other installed components and accessories.
   1. Include characteristic trip curves for each type and rating of overcurrent protective device upon request.

B. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, overcurrent protective device arrangement and sizes, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.
   1. Clearly indicate whether proposed short circuit current ratings are fully rated or, where acceptable, series rated systems.

C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

D. Project Record Documents: Record actual installed locations of panelboards and actual installed circuiting arrangements.

E. Maintenance Data: Include information on replacement parts and recommended maintenance procedures and intervals.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store panelboards in accordance with manufacturer's instructions and NECA 407.

B. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.

C. Handle carefully in accordance with manufacturer's written instructions to avoid damage to panelboard internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Eaton Corporation: www.eaton.com/#sle.

B. Schneider Electric; Square D Products: www.schneider-electric.us/#sle.

C. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 PANELBOARDS - GENERAL REQUIREMENTS

A. Provide products listed, classified, and labeled as suitable for the purpose intended.

B. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
   1. Ambient Temperature:
      a. Panelboards Containing Circuit Breakers: Between 23 degrees F and 104 degrees F.

C. Short Circuit Current Rating:
   1. Provide panelboards with listed short circuit current rating as indicated on the drawings.
   2. Listed series ratings are acceptable, except where not permitted by motor contribution according to NFPA 70.

D. Panelboards Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.

E. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.

F. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.

G. Bussing: Sized in accordance with UL 67 temperature rise requirements.
   1. Provide fully rated neutral bus unless otherwise indicated, with a suitable lug for each feeder or branch circuit requiring a neutral connection.
   2. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.

H. Conductor Terminations: Suitable for use with the conductors to be installed.

I. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
   1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
      a. Outdoor Locations: Type 3R.
   2. Boxes: Galvanized steel unless otherwise indicated.
      a. Provide wiring gutters sized to accommodate the conductors to be installed.
   3. Fronts:
      a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
      b. Fronts for Flush-Mounted Enclosures: Overlap boxes on all sides to conceal rough opening.
      c. Finish for Painted Steel Fronts: Manufacturer's standard grey unless otherwise indicated.
   4. Lockable Doors: All locks keyed alike unless otherwise indicated.

J. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.

K. Provide terminals rated and U.L. listed for use with 75 degrees C temperature rated conductors.

2.03 LIGHTING AND APPLIANCE PANELBOARDS

A. Description: Panelboards complying with NEMA PB 1, lighting and appliance branch circuit type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.

B. Conductor Terminations:
   1. Main and Neutral Lug Material: Copper suitable for terminating copper conductors only.
   2. Main and Neutral Lug Type: Mechanical.

C. Bussing:
   1. Phase Bus Connections: Arranged for sequential phasing of overcurrent protective devices.
   2. Phase and Neutral Bus Material: Copper.
   3. Ground Bus Material: Copper.

D. Circuit Breakers: Thermal magnetic bolt-on type unless otherwise indicated.
   1. UL listed for intended branch circuts:
      a. Lighting SWD.
      b. Heating, Ventilating and Air Conditioning: HACR rated.
      c. Shunt Trip Device: 120 volts, AC.
      d. Undervoltage Trip Device: 120 volts, AC.
      e. Auxiliary Switch: 120 volts, AC.
      f. Alarm Switch: 120 volts, AC.
      g. Electrical Operator: 120 volts, AC.
      h. Handle Lock: Include provisions for sealing.
      i. Provide mechanical trip device.
      j. Provide insulated ground lug in each enclosure.
      k. Provide products suitable for use as service entrance equipment where so applied.

E. Enclosures:
   1. Provide surface-mounted or flush-mounted enclosures as indicated.
   2. Provide clear plastic circuit directory holder mounted on inside of door.

2.04 OVERCURRENT PROTECTIVE DEVICES

A. Molded Case Circuit Breakers:
   1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
   2. Interrupting Capacity:
      a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than:
      b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
      c. Series Rated Systems: Provide circuit breakers listed in combination with upstream devices to provide interrupting rating not less than the short circuit current rating indicated.
   3. Conductor Terminations:
      a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.

4. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
5. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that the ratings and configurations of the panelboards and associated components are consistent with the indicated requirements.

C. Verify that mounting surfaces are ready to receive panelboards.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship).

B. Install products in accordance with manufacturer's instructions.

C. Install panelboards in accordance with NECA 407 and NEMA PB 1.1.

D. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

E. Install panelboards plumb.

F. Install flush-mounted panelboards so that trims fit completely flush to wall with no gaps and rough opening completely covered.

G. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches above the floor or working platform.

H. Provide grounding and bonding in accordance with Section 26 05 26.

I. Install all field-installed branch devices, components, and accessories.

J. Provide filler plates to cover unused spaces in panelboards.

K. Provide typed or neatly handwritten circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads.

L. Provide engraved plastic nameplates.

M. Measure steady state load currents at each panelboard feeder; rearrange circuits in the panelboard to balance the phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Inspect and test in accordance with NETA ATS, except Section 4.

C. Molded Case Circuit Breakers: Perform inspections and tests listed in NETA ATS, Section 7.6.1.1. Tests listed as optional are not required.

D. Correct deficiencies and replace damaged or defective panelboards or associated components.

3.04 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

B. Adjust alignment of panelboard fronts.

C. Load Balancing: For each panelboard, rearrange circuits such that the difference between each measured steady state phase load does not exceed 20 percent and adjust circuit directories accordingly. Maintain proper phasing for multi-wire branch circuits.

3.05 CLEANING

A. Clean dirt and debris from panelboard enclosures and components according to manufacturer's instructions.

B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

SECTION 26 56 00
EXTERIOR LIGHTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Exterior luminaires.

B. Poles and accessories.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Materials and installation requirements for concrete bases for poles.

B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

1.03 REFERENCE STANDARDS

A. ANSI C82.4 - American National Standard for Lamp Ballasts - Ballasts for High-Intensity-Discharge and Low-Pressure Sodium Lamps; 2017, with Editorial Revision (2022).

B. IEEE C2 - National Electrical Safety Code(R) (NESC(R)); 2023.

C. IESNA LM-5 - Photometric Measurements of Area and Sports Lighting Installations; 2004 (Reaffirmed 2007).

D. IES LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products; 2019.

E. IESNA LM-64 - Photometric Measurements of Parking Areas; 2001 (Reaffirmed 2007).

F. IES LM-80 - Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources; 2021.

G. IES RP-8 - Recommended Practice: Lighting Roadway and Parking Facilities; 2022.

H. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

I. NECA/IESNA 501 - Standard for Installing Exterior Lighting Systems; 2000 (Reaffirmed 2006).

J. NEMA LE 4 - Recessed Luminaires, Ceiling Compatibility; 2023.

K. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

L. UL 1598 - Luminaires; Current Edition, Including All Revisions.

M. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate placement of poles and associated foundations with utilities, curbs, sidewalks, trees, walls, fences, striping, etc. installed under other sections or by others. Coordinate elevation to obtain specified foundation height.

2. Notify Architect/Engineer of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Shop Drawings:
   1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
   2. Provide photometric calculations where luminaires are proposed for substitution upon request.

C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.
   1. LED Luminaires:
      a. Include estimated useful life, calculated based on IES LM-80 test data.
   2. Poles: Include information on maximum supported effective projected area (EPA) and weight for the design wind speed.

D. Certificates for Poles and Accessories: Manufacturer's documentation that products are suitable for the luminaires to be installed and comply with designated structural design criteria.

E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

F. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.

B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

C. Receive, handle, and store wood poles in accordance with ANSI O5.1.

PART 2 PRODUCTS

2.01 LUMINAIRE TYPES

A. Furnish products as indicated in luminaire schedule included on the drawings.

2.02 LUMINAIRES

A. Provide products that comply with requirements of NFPA 70.

B. Provide products that are listed and labeled as complying with UL 1598, where applicable.

C. Provide products listed, classified, and labeled as suitable for the purpose intended.

D. Provide products complying with Federal Energy Management Program (FEMP) requirements.

E. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.

F. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.

G. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

H. LED Luminaires:
   1. Components: UL 8750 recognized or listed as applicable.
   2. Tested in accordance with IES LM-79 and IES LM-80.
   3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

2.03 POLES

A. Manufacturers:

B. All Poles:
   1. Provide poles and associated support components suitable for the luminaire(s) and associated supports and accessories to be installed.
   2. Structural Design Criteria:
      a. Comply with AASHTO LTS.
      b. Wind Load: Include effective projected area (EPA) of luminaire(s) and associated supports and accessories to be installed.
   3. Material: Steel, unless otherwise indicated.
   4. Shape: Square straight, unless otherwise indicated.
   5. Finish: Match luminaire finish, unless otherwise indicated.
   6. Mounting: Install on concrete foundation, height as indicated on the drawings, unless otherwise indicated.
   7. Unless otherwise indicated, provide with the following features/accessories:
      a. Handhole.

C. Metal Poles: Provide ground lug, accessible from handhole.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.

C. Verify that suitable support frames are installed where required.

D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of luminaires provided under this section.

B. Install products in accordance with manufacturer's instructions.

C. Install luminaires in accordance with NECA/IESNA 501.

D. Provide required support and attachment in accordance with Section 26 05 29.

E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

F. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.

G. Pole-Mounted Luminaires:
   1. Foundation-Mounted Poles:
      a. Provide cast-in-place concrete foundations for poles as indicated, in accordance with Section 03 30 00.
         1) Install anchor bolts plumb per template furnished by pole manufacturer.
         2) Position conduits to enter pole shaft.
      b. Install foundations plumb.
      c. Install poles plumb, using leveling nuts or shims as required to adjust to plumb.
      d. Tighten anchor bolt nuts to manufacturer's recommended torque.
   2. Grounding:
      a. Bond luminaires, metal accessories, metal poles, and foundation reinforcement to branch circuit equipment grounding conductor.
   3. Install separate service conductors, 12 AWG copper, from each luminaire down to handhole for connection to branch circuit conductors.
   4. Electrical Contractor shall provide conduits, fuse holder and fuses for each phase.

H. Install accessories furnished with each luminaire.

I. Bond products and metal accessories to branch circuit equipment grounding conductor.

J. Install lamps in each luminaire.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Inspect each product for damage and defects.

C. Operate each luminaire after installation and connection to verify proper operation.

D. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect/Engineer.

3.05 ADJUSTING

A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect/Engineer. Secure locking fittings in place.

3.06 CLEANING

A. Clean surfaces according to NECA/IESNA 501 and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.07 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.

B. Just prior to Substantial Completion, replace all lamps that have failed.

3.08 PROTECTION

A. Protect installed luminaires from subsequent construction operations.

END OF SECTION

SECTION 27 10 00
STRUCTURED CABLING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Communications system design requirements.

B. Copper cable and terminations.

C. Communications identification.

1.02 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

B. TIA-568.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards; 2018d, with Addenda (2020).

C. TIA-568-C.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards; 2009, with Addendum (2016).

D. TIA-606 - Administration Standard for Telecommunications Infrastructure; 2021d.

E. TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises; 2019d, with Addendum (2021).

F. TIA-607-C - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises; 2015c, with Addendum (2017).

G. UL 444 - Communications Cables; Current Edition, Including All Revisions.

H. UL 1863 - Communications-Circuit Accessories; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.

C. Evidence of qualifications for installer.

D. Field Test Reports.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: At least 3 years experience manufacturing products of the type specified.

B. Installer Qualifications: A company having at least 3 years experience in the installation and testing of the type of system specified.

C. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Keep stored products clean and dry.

PART 2 PRODUCTS

2.01 SYSTEM DESIGN

A. Cabling to Outlets: Specified horizontal cabling.

2.02 COPPER CABLE AND TERMINATIONS

A. Manufacturers:
   1. CommScope: www.commscope.com/#sle.
   2. General Cable Technologies Corporation: www.generalcable.com/#sle.
   3. Siemon Company: www.siemon.com/#sle.
   4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Copper Horizontal Cable:
   1. Description: 100 ohm, balanced twisted pair cable complying with TIA-568.2 and listed and labeled as complying with UL 444.
   2. Cable Type - Data: TIA-568.2 Category 6 UTP (unshielded twisted pair); 23 AWG TIA-568.2 Category 6 UTP (unshielded twisted pair); 23 AWG.
   3. Cable Capacity: 4-pair.
   4. Cable Applications: Use listed NFPA 70 Type CMP outdoor rated cable unless otherwise indicated.

C. Copper Cable Terminations: Insulation displacement connection (IDC) type using appropriate tool; use screw connections only where specifically indicated.

D. Jacks and Connectors: Modular RJ-45, non-keyed, terminated with 110-style insulation displacement connectors (IDC); high impact thermoplastic housing; suitable for and complying with same standard as specified horizontal cable; UL 1863 listed.
   1. Performance: 500 mating cycles.
   2. Voice and Data Jacks: 8-position modular jack, color-coded for both T568A and T568B wiring configurations.

2.03 IDENTIFICATION PRODUCTS

A. Comply with TIA-606.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Comply with Communication Service Provider requirements.

B. Grounding and Bonding: Perform in accordance with TIA-607 and NFPA 70.

3.02 INSTALLATION OF PATHWAYS

A. Minimum Cover - Underground Service Entrance: NFPA 70.

3.03 INSTALLATION OF EQUIPMENT AND CABLING

A. Cabling:
   1. Do not bend cable at radius less than manufacturer's recommended bend radius; for unshielded twisted pair use bend radius of not less than 4 times cable diameter.
   2. Do not over-cinch or crush cables.
   3. Do not exceed manufacturer's recommended cable pull tension.
   4. When installing in conduit, use only lubricants approved by cable manufacturer and do not chafe or damage outer jacket.

B. Service Loops (Slack or Excess Length): Provide the following minimum extra length of cable, looped neatly:
   1. At Outlets - Copper: 12 inches.

C. Copper Cabling:
   1. Category 5e and Above: Maintain cable geometry; do not untwist more than 1/2 inch from point of termination.
   2. For 4-pair cables in conduit, do not exceed 25 pounds pull tension.
   3. Use T568B wiring configuration.

D. Wall-Mounted Racks and Enclosures:
   1. Mount so height of topmost panel does not exceed 78 inches above floor.

E. Identification:
   1. Use wire and cable markers to identify cables at each end.

3.04 FIELD QUALITY CONTROL

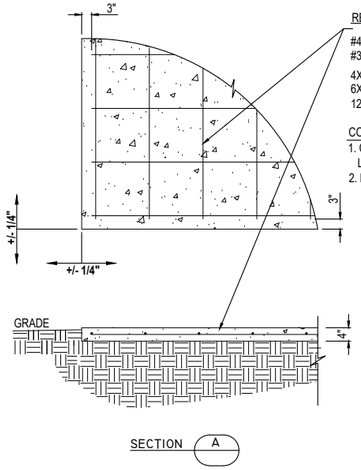
A. See Section 01 40 00 - Quality Requirements, for additional requirements.

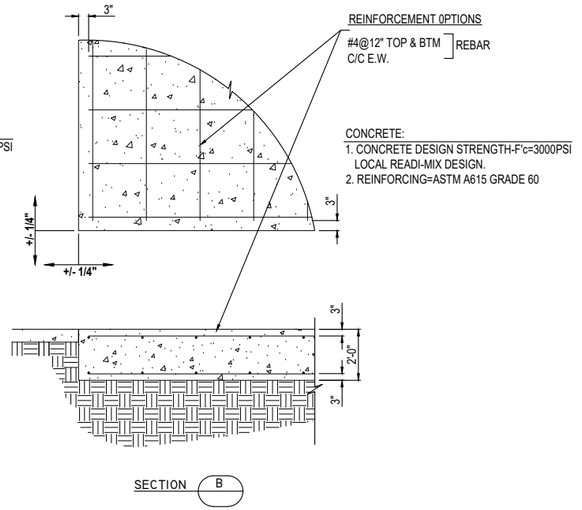
B. Comply with inspection and testing requirements of specified installation standards.

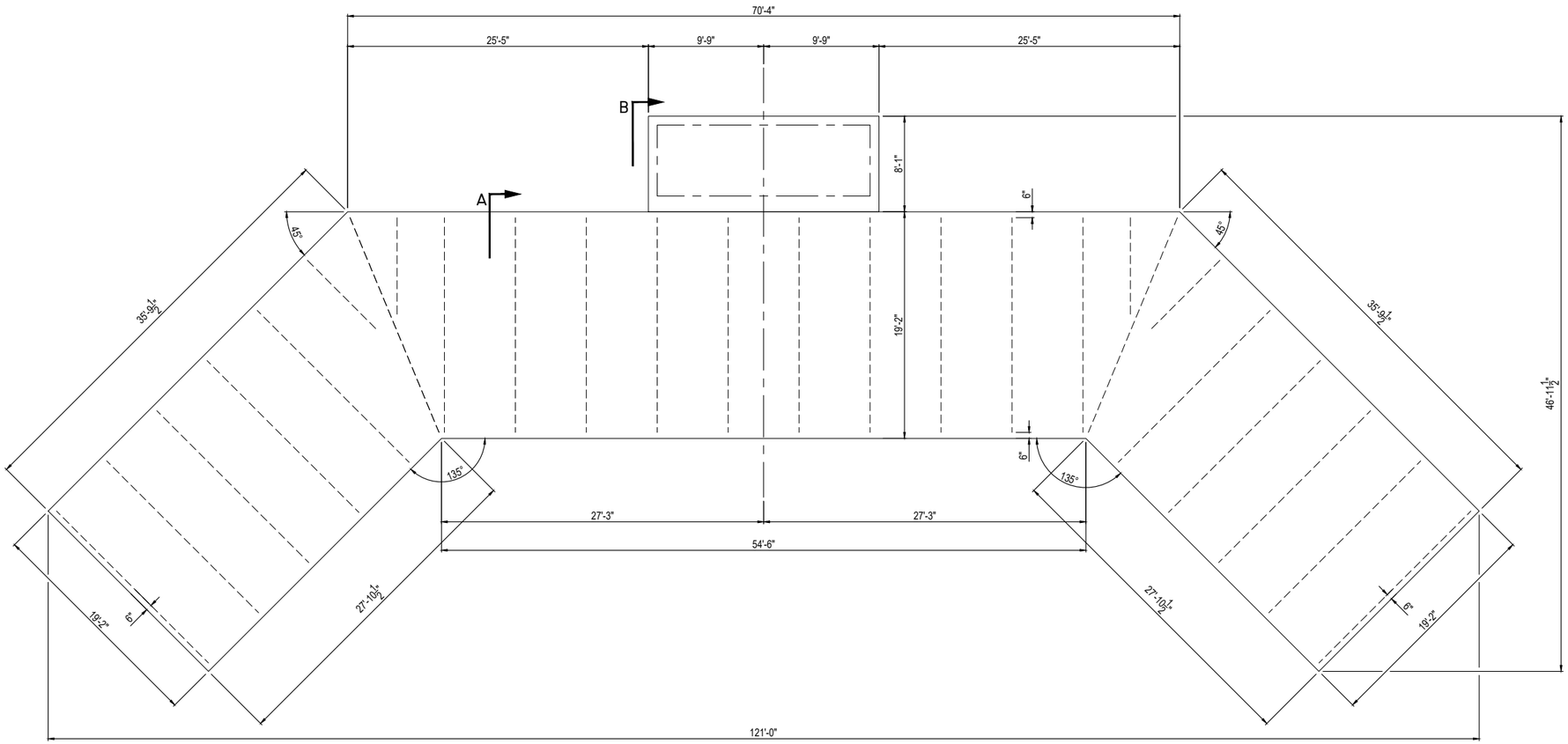
C. Visual Inspection:
   1. Inspect cable jackets for certification markings.
   2. Inspect cable terminations for color coded labels of proper type.
   3. Inspect outlet plates and patch panels for complete labels.

D. Testing - Copper Cabling and Associated Equipment:
   1. Category 5e and Above Links: Perform tests for wire map, length, attenuation, NEXT, and propagation delay.

END OF SECTION







FOUNDATION PLAN

FIELD SIDE

NOTES:

1.) STAND AREA OF SLAB MUST BE FLAT & EVEN SURFACE w/OPTION OF $\frac{1}{8}$" MAX PER FOOT SLOPE FROM FIELD SIDE TO REAR

2.) SLAB SHOWN IS MINIMUM REQUIRED NEEDED FOR BLEACHER SYSTEM & EGRESS

3.) DASH LINES DENOTE STRUCTURAL STEEL STINGERS OF FUTURE BLEACHERS

MANUFACTURER'S ENGINEER OF RECORD SEAL

REVISIONS

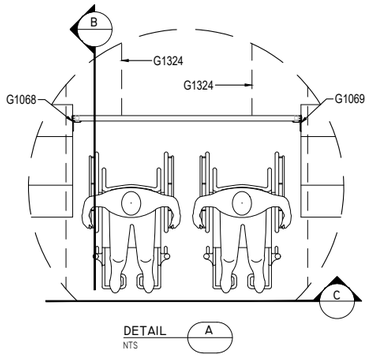
Rev.	DRAFTER	Date	CHECKER	Date	Description
S	FD	2/7/24	WAC	2/7/24	SALES DRAWING

STURDISTEEL
A Division of Schultz Industries, Inc.
P.O. Box 2655 • Waco, Texas 76702
800.433.3116 Tel • 254.666.4472 Fax

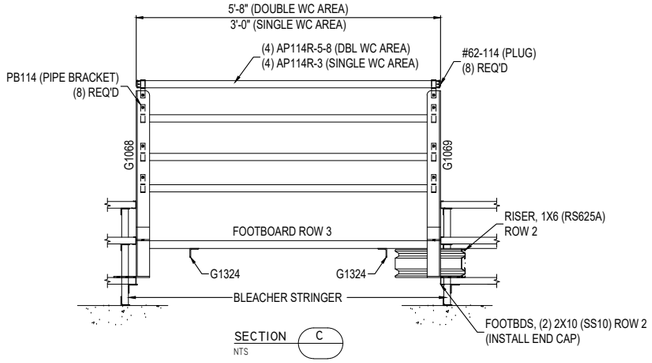
10 ROW NON ELEVATED MITER
OAKTON COLLEGE
DES PLAINES, IL

JOB NUMBER:
SALES

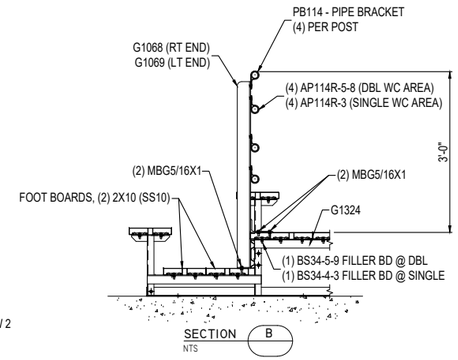
SHEET NUMBER:
AF1



DETAIL A
NTS

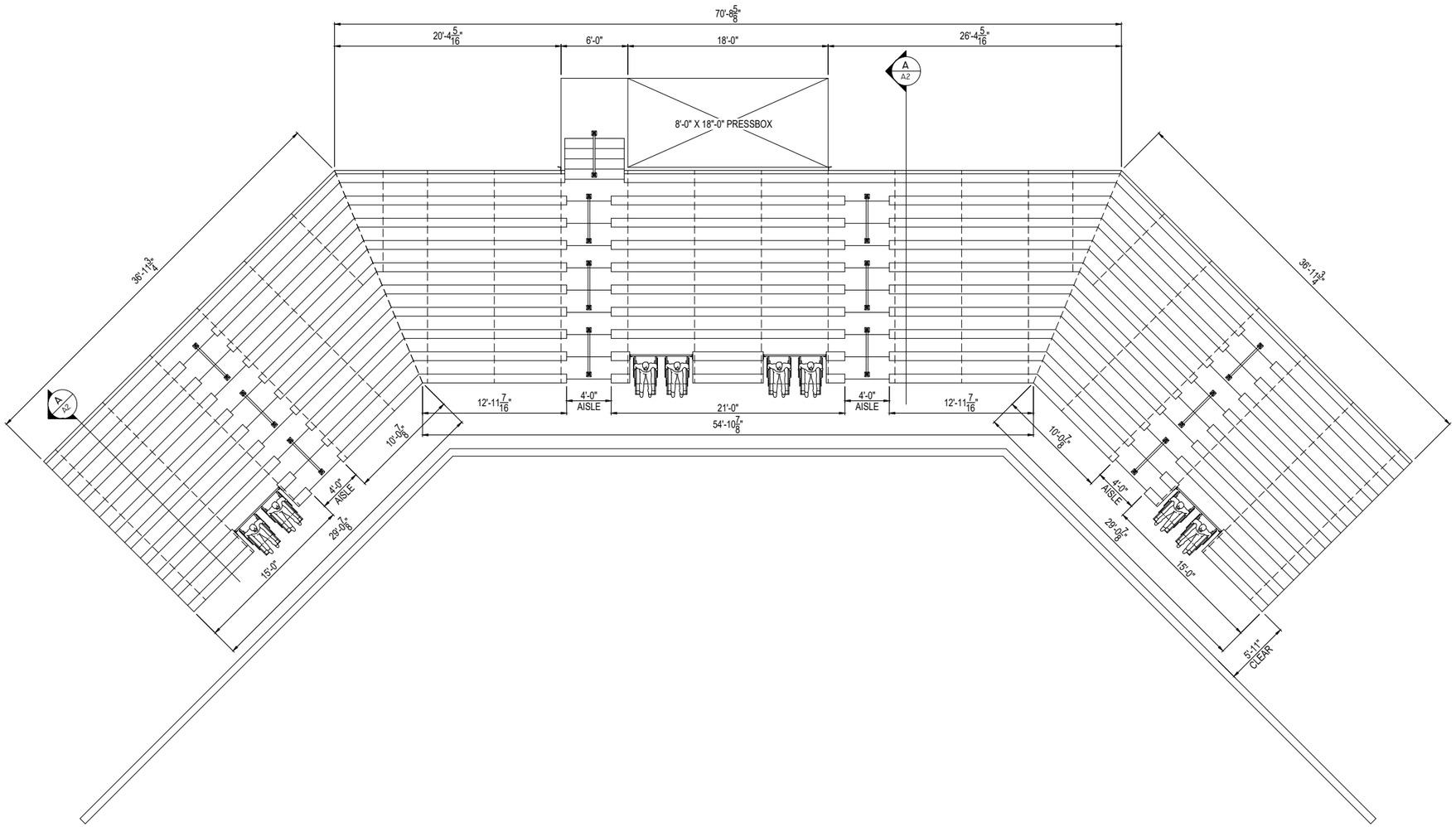


SECTION C
NTS



SECTION B
NTS

UNLESS SPECIFIED OTHERWISE ECONOMICAL MILL FINISH FOOTBOARDS WILL BE USED FOR ALL ALUMINUM WALKING SURFACES IN THIS CONTRACT. THESE MILL FINISH FOOTBOARDS WILL LIKELY HAVE WATER STAINS PRESENT RESULTING FROM UNAVOIDABLE CONDENSATION THAT OCCURS DURING PACKAGING, TRANSPORTING AND STORAGE PRECEDING INSTALLATION. REMOVAL OF THESE STAINS OR BOARD REPLACEMENT UPON COMPLETION OF INSTALLATION IS NOT PART OF THIS CONTRACT BECAUSE STAINED MILL FINISH BOARDS MEET ALL SPECIFIED REQUIREMENTS. CLEAR ANODIZED ALUMINUM MAY BE PURCHASED TO AVOID ANY WATER STAINS IF SELECTED AS AN UPGRADE FINISH AT ADDITIONAL COST BY SIGNED CONTRACT CHANGE ORDER PRIOR TO THE START OF FABRICATION.



SEATING CAPACITY

696 =	STANDARD 18" SEATS
8 =	W/C SPACES
8 =	18" COMPANION SEATS
712 =	TOTAL SEATING

MANUFACTURER'S ENGINEER OF RECORD SEAL

REVISIONS

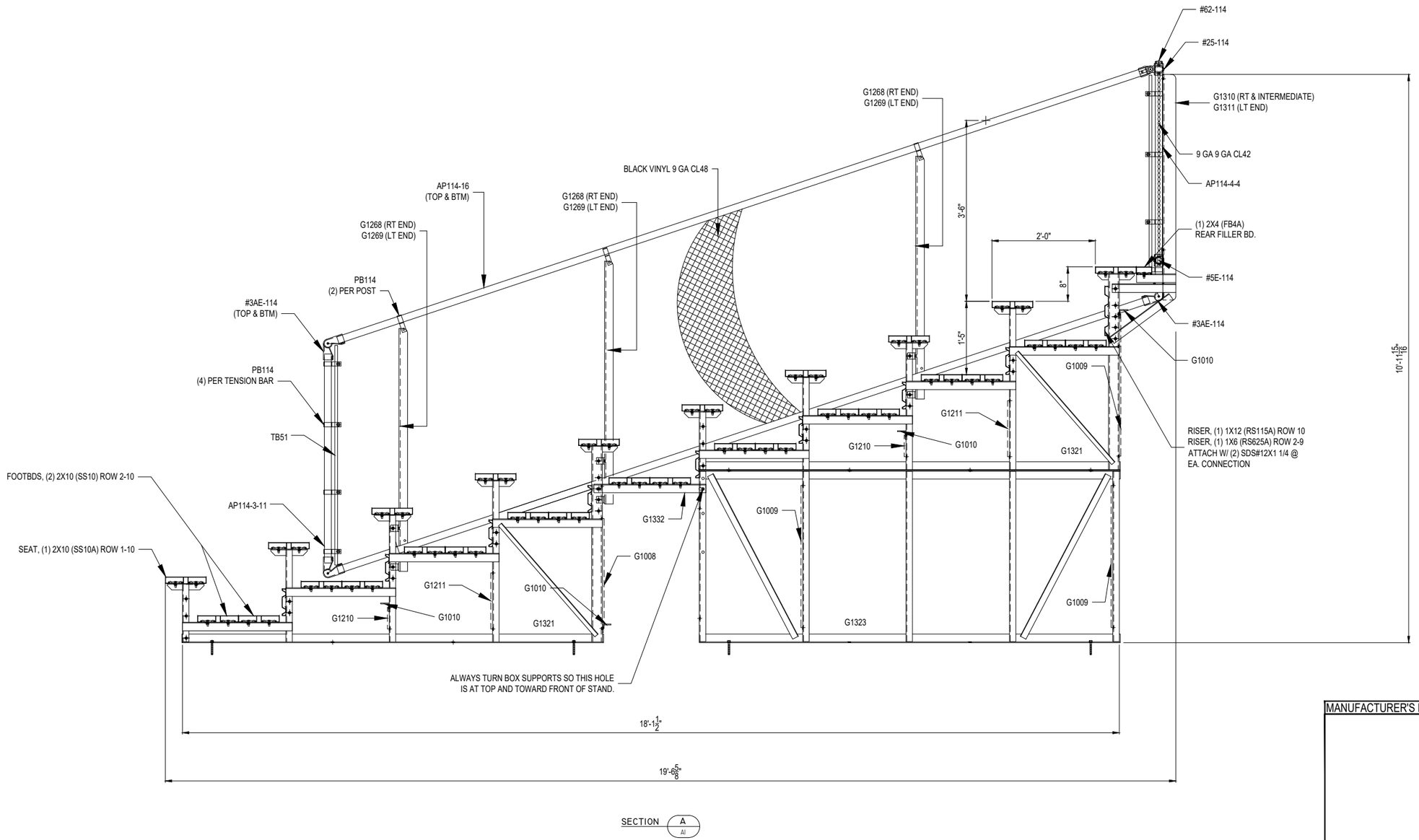
Rev.	DRAFTER	Date	CHECKER	Date	Description
S	FD	2/7/24	WAC	2/7/24	SALES DRAWING

STURDISTEEL
A Division of Schultz Industries, Inc.
P.O. Box 2655 • Waco, Texas 76702
800.433.3116 Tel • 254.666.4472 Fax

10 ROW NON ELEVATED MITER
OAKTON COLLEGE
DES PLAINES, IL

JOB NUMBER:
SALES

SHEET NUMBER:
A1



SECTION A / A1

MANUFACTURER'S ENGINEER OF RECORD SEAL

REVISIONS

Rev.	DRAFTER	Date	CHECKER	Date	Description
S	FD	2/7/24	WAC	2/7/24	SALES DRAWING

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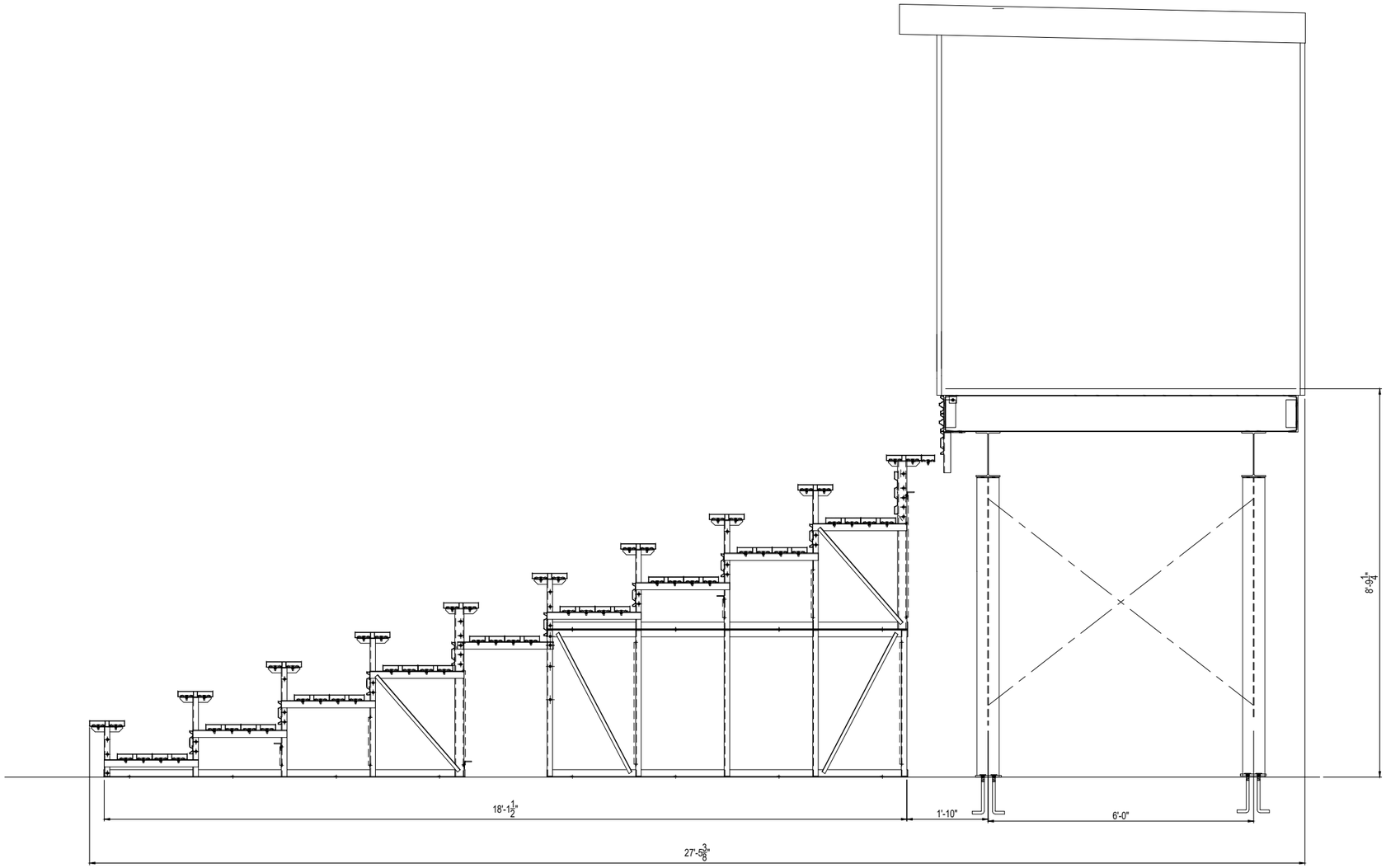
A Division of Schultz Industries, Inc.
P.O. Box 2655 • Waco, Texas 76702
800.433.3116 Tel • 254.666.4472 Fax

10 ROW NON ELEVATED MITER
OAKTON COLLEGE
DES PLAINES, IL

JOB NUMBER:
SALES

SHEET NUMBER:
A2



SECTION B / A1

MANUFACTURER'S ENGINEER OF RECORD SEAL

REVISIONS

Rev.	DRAFTER	Date	CHECKER	Date	Description
S	FD	2/7/24	WAC	2/7/24	SALES DRAWING

STURDISTEEL
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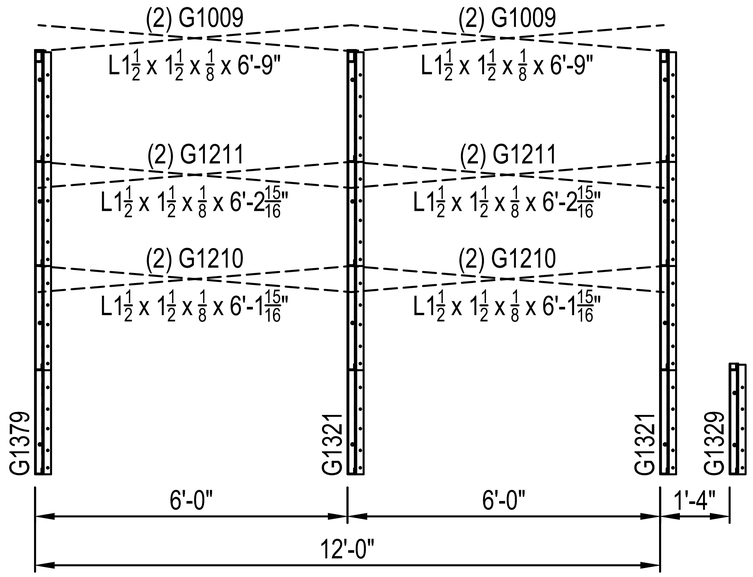
P.O. Box 2655 • Waco, Texas 76702
800.433.3116 Tel • 254.666.4472 Fax

10 ROW NON ELEVATED MITER
OAKTON COLLEGE
DES PLAINES, IL

JOB NUMBER:
SALES

SHEET NUMBER:
A3

REV	CR#, DATE
/	-- --/--/--

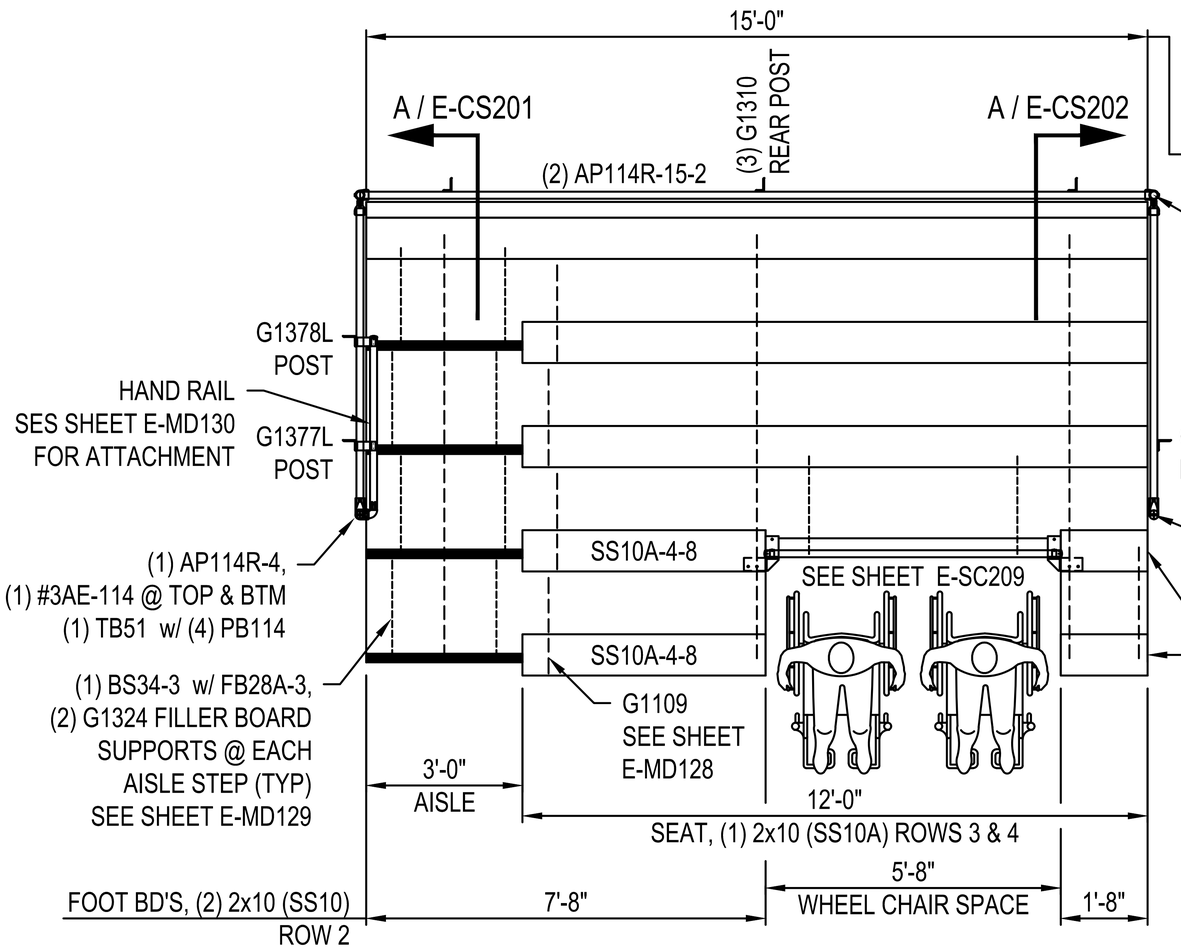


ORDER NO: _____

PROJECT: _____

LOCATION: _____

ECONOMICAL MILL FINISH FOOTBOARDS HAVE BEEN SPECIFIED FOR ALL ALUMINUM WALKING SURFACES IN THIS CONTRACT. THESE MILL FINISH FOOTBOARDS WILL LIKELY HAVE WATER STAINS (DARK BLACK, BROWN, OR WHITE) PRESENT RESULTING FROM UNAVOIDABLE CONDENSATION THAT OCCURS DURING PACKAGING, TRANSPORTING AND STORAGE PRECEDING INSTALLATION. REMOVAL OF THESE STAINS OR BOARD REPLACEMENT UPON COMPLETION OF INSTALLATION IS NOT PART OF THIS CONTRACT BECAUSE STAINED MILL FINISH BOARDS MEET ALL SPECIFIED REQUIREMENTS. CLEAR ANODIZED ALUMINUM MAY BE PURCHASED TO AVOID ANY WATER STAINS IF SELECTED AS AN UPGRADE FINISH AT ADDITIONAL COST BY SIGNED CONTRACT CHANGE ORDER PRIOR TO THE START OF FABRICATION.



SEAT, (1) 2x10 (SS10A) ROW 5
FOOT BD'S, (2) 2x10 (SS10) ROWS 3-5
RISER, (1) 1x6 (RS625A) ROWS 2-4
RISER, (1) 1x12 (RS115A) ROW 5
FILLER BD, (1) 2x4 (FB4A) LAST ROW

REAR CORNERS OF STAND TYP.
(1) AP114R-4-4 (ALUM. PIPE)
(1) #62-114 (PLUG) @ TOP
(1) #3AE-114 (ADJ. ELBOW) @ BTM
(1) #25-114 (ADJ. ELBOW w/ SIDE OUTLET) @ TOP
(1) #5E-114 (TEE)
(1) TB51 (SIDE) w/ (4) PB114
(1) TB42 (REAR) w/ (3) PB114

(1) AP114R-4,
(1) #3AE-114 @ TOP & BTM
(1) TB51 (TENSION BAR) w/ (4) PB114

SEAT, (1) SS10A-1-8 ROW 1 & 2

SEATING CAPACITY

32	= STANDARD 18" SEATS
2	= WHEEL CHAIR SPACES
2	= 18" COMPANION SEATS
36	= TOTAL SEATING

STURDISTEEL

DRAWING NO: A205-00-15SLAW

DRAWN BY: DM
DATE: 12-5-19
SCALE: 1/4" = 1'-0"

SEATING PLAN - 5 ROW NON-ELEVATED
LH END AISLE w/ WC, CANT' ON SLAB

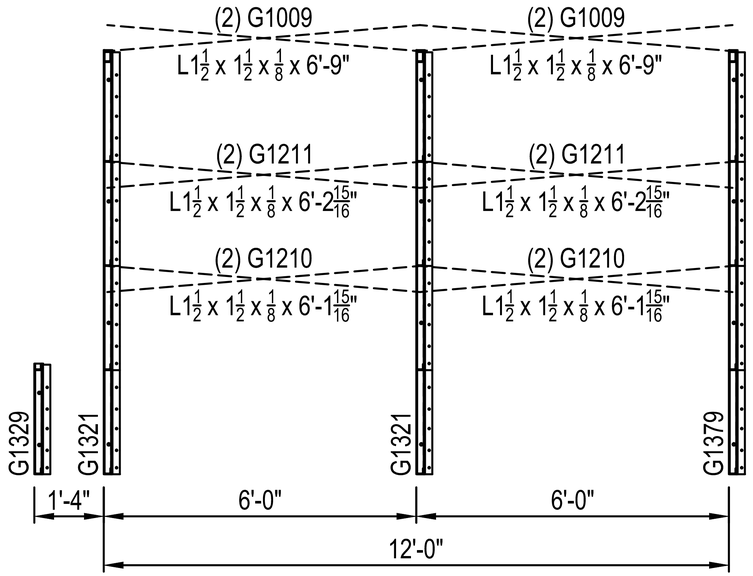
REV	CR#, DATE
/	-- --/--/--

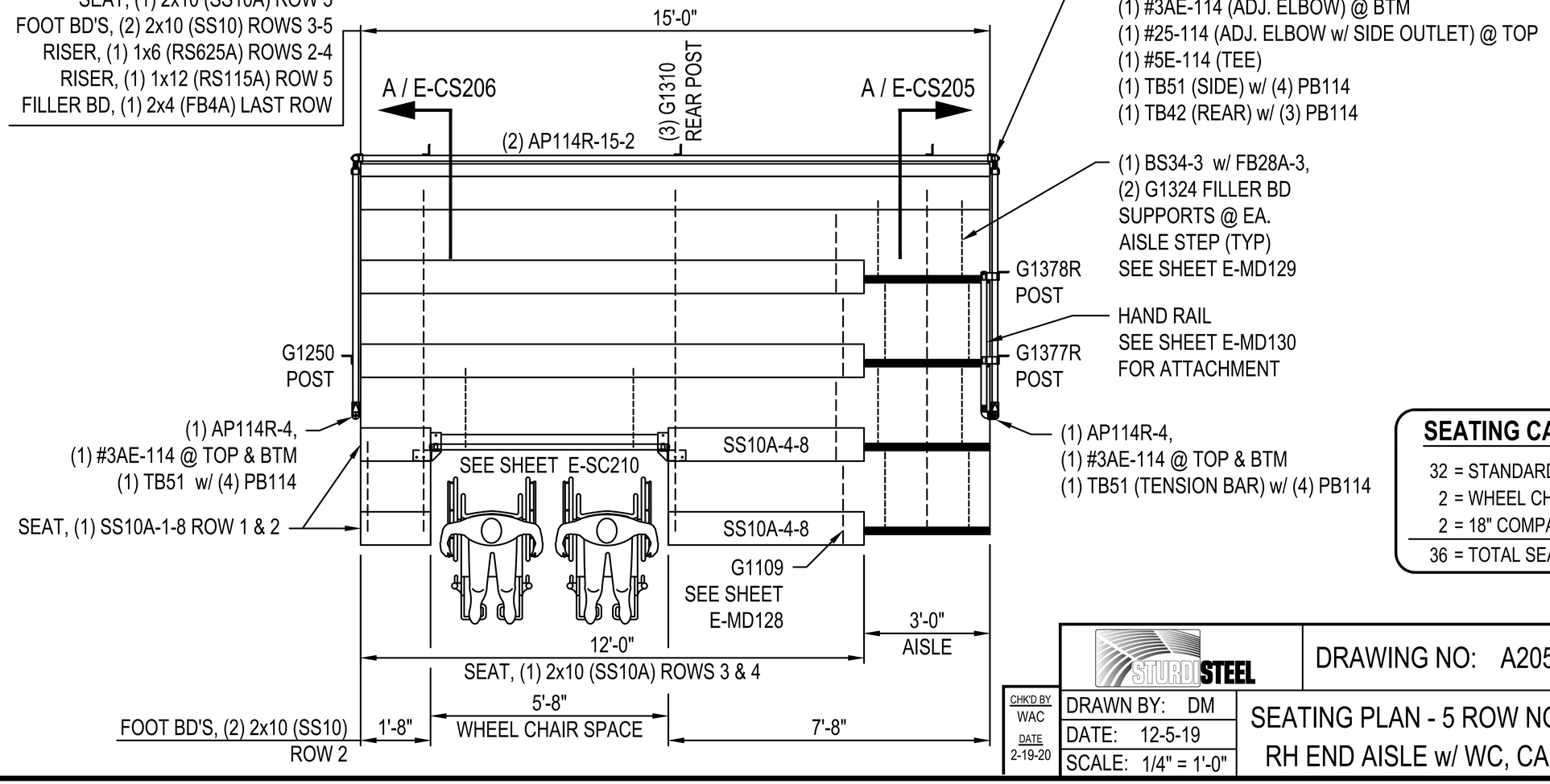
ORDER NO: _____

PROJECT: _____

LOCATION: _____

ECONOMICAL MILL FINISH FOOTBOARDS HAVE BEEN SPECIFIED FOR ALL ALUMINUM WALKING SURFACES IN THIS CONTRACT. THESE MILL FINISH FOOTBOARDS WILL LIKELY HAVE WATER STAINS (DARK BLACK, BROWN, OR WHITE) PRESENT RESULTING FROM UNAVOIDABLE CONDENSATION THAT OCCURS DURING PACKAGING, TRANSPORTING AND STORAGE PRECEDING INSTALLATION. REMOVAL OF THESE STAINS OR BOARD REPLACEMENT UPON COMPLETION OF INSTALLATION IS NOT PART OF THIS CONTRACT BECAUSE STAINED MILL FINISH BOARDS MEET ALL SPECIFIED REQUIREMENTS. CLEAR ANODIZED ALUMINUM MAY BE PURCHASED TO AVOID ANY WATER STAINS IF SELECTED AS AN UPGRADE FINISH AT ADDITIONAL COST BY SIGNED CONTRACT CHANGE ORDER PRIOR TO THE START OF FABRICATION.





SEATING CAPACITY

32	= STANDARD 18" SEATS
2	= WHEEL CHAIR SPACES
2	= 18" COMPANION SEATS
36	= TOTAL SEATING

STURDISTEEL

DRAWING NO: A205-00-15SRAW

CHK'D BY	DRAWN BY: DM	SEATING PLAN - 5 ROW NON-ELEVATED
WAC	DATE: 12-5-19	RH END AISLE w/ WC, CANT' ON SLAB
DATE 2-19-20	SCALE: 1/4" = 1'-0"	

REV	CR#, DATE
A	#1157 12/3/04

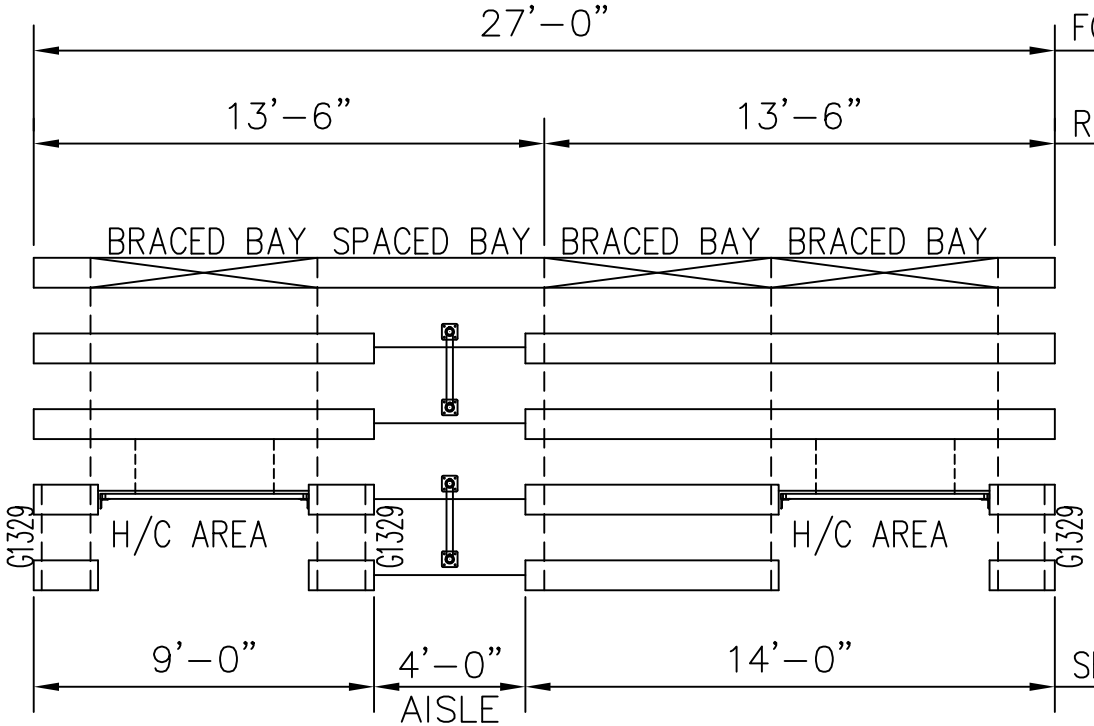
57 NET 18" SEATS
4 NET WC SPACES
4 NET COMPANION SEATS
65 NET TOTAL SEATS

ORDER NO: _____

PROJECT: STANDARD BLEACHER LAYOUTS

LOCATION: _____

SEAT ROW 5: (1) SS10 2x10 (AN)
RISER ROW 5: (1) RS115 1x12 (AN)
RISER ROW 2-4: (1) RS625 1x7 (AN)
FOOTBDS ROW 2-5: (2) SS10 2x10 (MF)



REAR FILLER BD:(1) 2X4(FB4)(AN)

SEATS ROW 1-4: (1) SS10 2x10 (AN)

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DRAWING NO:A205-00-027SAWC

DRAWN BY: NR
DATE: 1/21/08
NTS

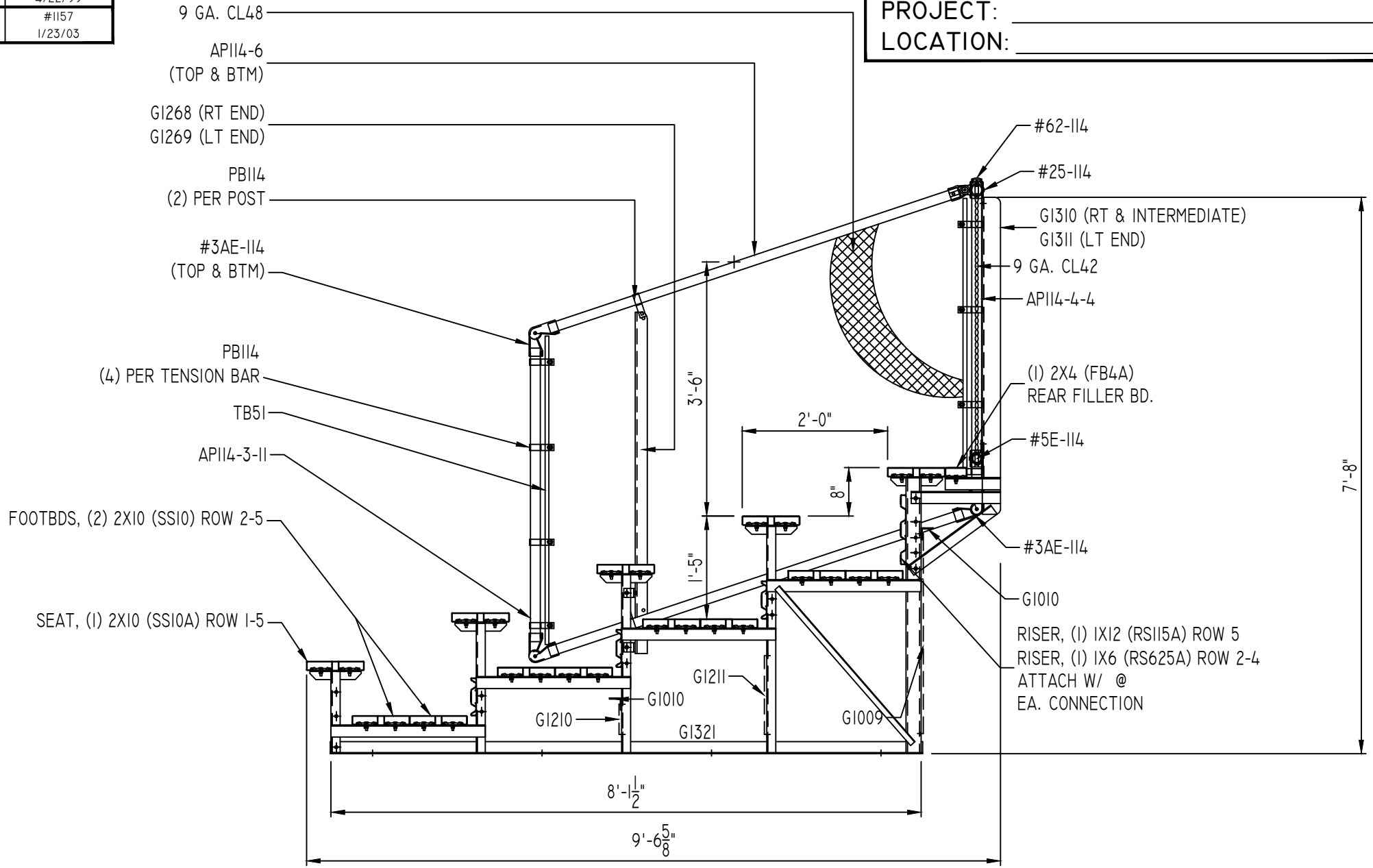
NON ELEVATED 5 ROW X 27'-0"
MATERIAL: GALV. STEEL

REV	CR#, DATE
/	#1069 4/22/99
A	#1157 1/23/03

WGT: ORDER NO: _____

PROJECT: _____

LOCATION: _____



NOTES:
ANCHOR G1321 FRAME TO SLAB WITH (2) SA3/8X3 SCREW ANCHORS ALL OTHER HOLES ARE TO REMAIN EMPTY.

Sturdisteel
A Division Of Schultz Industries Inc.

DRAWING NO: E-CS108

DRAWN BY: DG

DATE: 1/23/03

SCALE: 1/2"=1'-0"

CROSS SECTION-5 ROW NON ELEV FLUSH ON SLAB

Sturdisteel
PO Box 2655
Waco, Texas 76702
Toll Free 800-433-3116
Phone 254-666-5155
Fax 254-666-4472
Website www.sturdisteel.com
E-mail info@sturdisteel.com

Product Guide Specification (BASEBALL BLEACHERS)

SECTION13 34 16.53

CONTINUOUS NON-ELEVATED ANGLE-FRAME BLEACHERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Continuous, non-elevated, angle-frame bleachers.

1.2 RELATED REQUIREMENTS

A. Section 03 30 00 – Cast-in-Place Concrete: Concrete foundations.

B. Section 13 34 16.63 – Metal Press Boxes.

1.3 REFERENCE STANDARDS

A. AAMA 2603 – Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.

B. AISC Steel Construction Manual.

C. Aluminum Association (AA) Aluminum Design Manual.

D. ASTM A 36 / A 36M – Standard Specification for Carbon Structural Steel.

E. ASTM A 123 / A 123M – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

F. ASTM A 307 – Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.

G. ASTM A 572 / A 572M – Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.

H. ASTM A 992 / A 992M – Standard Specification for Structural Steel Shapes.

I. AWS D1.1 / D1.1M – Structural Welding Code – Steel.

J. Research Council on Structural Connections (RCSC) Specification for Structural Joints Using High-Strength Bolts.

1.4 SUBMITTALS

A. Comply with Section 01 33 00 – Submittal Procedures.

B. Product Data: Submit manufacturer's product data

C. Shop Drawings:
   1. Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating location, size, details, and quantity of steel and aluminum components and accessories.
   2. Indicate decking configurations, and overall general materials to be supplied.
   3. Shop drawings shall be signed and sealed by a qualified, registered professional engineer, registered in state of the Illinois.

D. Samples: Submit manufacturer's color samples for selection (If applicable)

E. Design Data:
   1. Submit manufacturer's design data, including an analysis to indicate that the structural members shall have sufficient strength to support required loads and ability to resist loads subjected, without exceeding allowable stresses of the materials.
   2. Design data shall be signed and sealed by a qualified, registered professional engineer, registered in state of the Illinois.

F. Manufacturer's Project References: Submit manufacturer's list of successfully completed continuous, non-elevated, angle-frame bleacher projects, including project name and location, name of architect, and type and quantity of bleachers furnished.

G. Installer's Project References: Submit installer's list of successfully completed continuous, non-elevated, angle-frame bleacher projects, including project name and location, name of architect, and type and quantity of bleachers installed.

H. Warranty Documentation: Submit manufacturer's standard warranty (One year on material and workmanship from "date of substantial completion" – provided with closeout documents)

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications:
   1. Manufacturer regularly engaged, for past 10 years, in design and manufacture of continuous, non-elevated, angle-frame bleachers of similar type to that specified.
   2. Fabricate structural steel in an AISC-certified plant; certified "STD" at time of the bid.
   3. Manufacturer listed by AISC as a certified fabricator.
   4. Certification and inspections in accordance with IBC Chapter 17.

B. Installer's Qualifications:
   1. Installer regularly engaged, for past 5 years, in installation of continuous, non-elevated, angle-frame bleachers of similar type to that specified.
   2. Employ persons trained and experienced for installation of continuous, non-elevated, angle-frame bleachers.

C. Welder's Qualifications: AWS certified within past 12 months for each type of weld required.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage and Handling Requirements:
   1. Store and handle materials in accordance with manufacturer's instructions.
   2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
   3. Do not store materials directly on ground.
   4. Protect materials and finish during storage, handling, and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Manufacturer: Sturdisteel, PO Box 2655, Waco, Texas 76702. Toll Free 800-433-3116. Phone 254-666-5155. Fax 254-666-4472. Website www.sturdisteel.com. E-mail info@sturdisteel.com.

B. Substitutions: Substitution requests must be received 14 business days prior to bid date

2.2 DESIGN REQUIREMENTS

A. Design: Conform to AISC Steel Construction Manual and AA Aluminum Design Manual.

B. Applicable Codes: Design and workmanship shall be in accordance with IBC 2012 and ICC 300 Bleachers, Folding and Telescopic Seating, and Grandstands.

C. Design Loads:
   1. Live Loads:
      a. Uniform Loading, Structure: 100 psf.
      b. Uniform Loading, Seats: 120 plf.
   2. Sway Loads:
      a. Perpendicular to Seats: 10 plf.
      b. Parallel to Seats: 24 plf.
   3. Wind Loads: Local building code.
   4. Snow Loads: Local building code.
   5. Seismic Loads: Local building code.
   6. Handrail and Guardrail: 200 lbs. concentrated in any direction.

D. Shop Connections: Welded and capable of carrying stress put upon them.

E. Welding: AWS D1.1

F. Concrete Foundations: Manufacturer shall design concrete foundations as specified in Section 03 30 00.

2.3 CONTINUOUS NON-ELEVATED ANGLE-FRAME BLEACHERS

A. Size: 10 row 144'-0" (Non-Elevated) – Mitered Angle Frame

B. Framework: Space prefabricated angle bleacher frames at 6-foot intervals and connect by crossbraces.

C. Rise and Depth Dimensions:
   1. Vertical Rise per Row: 8 inches.
   2. Horizontal Depth per Row: 24 inches.
   3. Seat Above its Respective Tread: 17 inches.

D. Risers:
   1. 1/2-inch by 6-1/4-inch anodized aluminum board.
   2. At Top Row: 1/2-inch by 11-1/2-inch anodized aluminum board.

E. Seats: 1-1/2-inch by 9-1/2-inch anodized aluminum board with end caps.

F. Treads: Two 1-1/2-inch by 9-1/2-inch mill finish aluminum boards with end caps. ("Semi-Closed" bleacher deck design)

G. Guardrail:
   1. Sides and back of bleachers 30 inches or more above adjacent area or grade.
   2. Material: Anodized aluminum pipe with end plugs at ends of straight runs or elbows at corners.
   3. Secure to angle posts with galvanized fasteners.
   4. Top Rail: 42 inches minimum above walkways, entrances, and any adjacent seat.
   5. Chain Link Fencing: 9-gauge galvanized steel, fastened in place with galvanized fittings and aluminum ties.

H. Aisle Width:
   1. Aisle Width: 48 inches minimum

I. Accessibility: Incorporate wheelchair spaces within bleachers to conform to applicable code and ADA.

2.4 MATERIALS

A. Framework:
   1. Galvanized Steel:
      a. ASTM A 36, ASTM A 572 Grade 50, and ASTM A 992.
      b. Hot-dipped galvanized after fabrication in accordance with ASTM A 123.

B. Seat Boards: Extruded aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II.

Specifier Notes: Specify clear anodized or powder coat finish for riser boards.

C. Riser Boards: Extruded aluminum alloy 6063-T6; [clear anodized 204R1, AA-M10C22A31, Class II] [powder coat, AAMA 2603, color selected by Architect from manufacturer's standard colors].

D. Tread Boards: Extruded aluminum alloy 6063-T6, mill finish.

Bleacher manufacturer will not be responsible for the discoloration, staining and fading of exposed mill finish aluminum surfaces due to oxidation; prior to, during or after installation. Oxidation of mill finish aluminum surfaces is a natural phenomenon and is caused by condensation or moisture during packaging, transportation and/or storage.

E. Guardrail: Aluminum anodized pipe, 1-5/8-inch OD.

F. Accessories:
   1. Steel Bolts and Nuts: ASTM A 307, galvanized.
   2. Structural Connections: Snug tight to conform to RCSC Specification for Structural Joints Using High-Strength Bolts.
   3. Hold-Down Clip Assembly: Aluminum alloy 6063-T6.
   4. Form-Fitted End Caps: Aluminum alloy 2024, clear anodized 204R1, AA-M10C22A31, Class II.
   5. Channel End Caps: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II.

G. Concrete Foundations: Specified in Section 03 30 00.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive continuous, non-elevated, angle-frame bleachers.

B. Notify Architect of conditions that would adversely affect installation or subsequent use.

C. Do not begin surface preparation or installation until unacceptable conditions are corrected.

3.2 PREPARATION

A. Install concrete foundations for continuous, non-elevated, angle-frame bleachers as specified in Section 03 30 00 and indicated on the Drawings.

3.3 INSTALLATION

A. Install continuous, non-elevated, angle-frame bleachers in accordance with manufacturer's instructions at locations indicated on the Drawings.

B. Install bleachers plumb, level, square, straight, and secure. (Bleacher slabs to have a MAX 1% slope from the front to the back of the bleacher)

C. Anchor bleachers securely in place to concrete foundations.

3.4 ADJUSTING

A. Inspect completed continuous, non-elevated, angle-frame bleachers and make necessary adjustments to ensure proper installation.

B. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

C. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.5 PROTECTION

A. Protect completed continuous, non-elevated, angle-frame bleachers to ensure that, except for normal weathering, bleachers will be without damage or deterioration at time of Substantial Completion.

END OF SECTION

Sturdisteel
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Product Guide Specification (BASEBALL PRESS BOX)

SECTION13 34 16.63

METAL PRESS BOXES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Metal press boxes.

1.2 RELATED REQUIREMENTS

A. Section [13 34 16.53] – Angle-Frame Non-Elevated Bleachers

B. Division 26 – Electrical: Electrical service line to metal press boxes.

1.3 REFERENCE STANDARDS

A. NFPA 70 – National Electrical Code (NEC).

1.4 SUBMITTALS

A. Comply with Section 01 33 00 – Submittal Procedures.

B. Product Data: Submit manufacturer's product data

C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating dimensions, tolerances, materials, components, fabrication, fasteners, hardware, finish, options, and accessories.

D. Samples: Submit manufacturer's color charts of exterior and interior finishes.

E. Design Data: Submit manufacturer's design data, including structural calculations, signed and sealed by qualified professional engineer registered in state of the Illinois.

F. Manufacturer's Project References: Submit manufacturer's list of successfully completed metal press box projects, including project name and location, name of architect, and type and quantity of metal press boxes furnished.

G. Installer's Project References: Submit installer's list of successfully completed metal press box projects, including project name and location, name of architect, and type and quantity of metal press boxes installed.

H. Warranty Documentation: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Manufacturer regularly engaged, for past 10 years, in design and manufacture of metal press boxes of similar type to that specified.

B. Installer's Qualifications:
   1. Installer regularly engaged, for past 5 years, in installation of metal press boxes of similar type to that specified.
   2. Employ persons trained and experienced for installation of metal press boxes.

C. Welder's Qualifications: AWS certified within past 12 months for each type of weld required.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage and Handling Requirements:
   1. Store and handle materials in accordance with manufacturer's instructions.
   2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
   3. Do not store materials directly on ground.
   4. Protect materials and finish during storage, handling, and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Manufacturer: Sturdisteel, PO Box 2655, Waco, Texas 76702. Toll Free 800-433-3116. Phone 254-666-5155. Fax 254-666-4472. www.sturdisteel.com. info@sturdisteel.com.

B. Substitutions: Substitution requests must be received 14 business days prior to bid date

2.2 METAL PRESS BOXES

A. Metal Press Boxes: Independently supported and connected to rear of bleachers with aisle access.

B. Dimensions:
   1. Width: 8’-0”
   2. Length 18’-0”

C. Support Structure: Length of landing at each end of metal press box with aluminum decking and guard rails.
   1. Left End: 6’-0”

D. Floor:
   1. Subfloor: Galvanized steel frame, C10 x 15.3 channels at front and rear running entire length of metal press box with W10 x 12 beam cross members bolted at 6’-0” on center and 26-gauge belly pan.
   2. Floor Covering: Mill-finished aluminum interlocking plank.
   3. Insulation: Kraft-faced fiberglass building insulation, R-19, 6 inches thick in floor, batt or roll, Owens-Corning Fiberglass Corp. or equal.

E. Walls:
   1. Framing: 4-inch by 4-inch by 11-gauge steel square tubing and 4-inch by 1-5/8-inch by 14-gauge steel cees at 24 inches on center.
   2. Exterior Siding: Mueller or MBCI 26-gauge prefinished steel rib R-panels over 5/8-inch exterior-grade plywood.
      a. Color: _____.
   3. Insulation: Kraft-faced fiberglass building insulation, R-15, 4 inches thick in walls, batt or roll, Owens-Corning Fiberglass Corp. or equal.
   4. Interior Paneling: National Gypsum “Gold Bond Brand Durasan” prefinished gypsum board, 5/8 inch.
      a. Color: Harvest Cotton.
   5. Wall Base: Flexco “Base 2000” 4-inch thermoplastic rubber wall base.
      a. Color: Chocolate.

F. Roof:
   1. Roof Joists: 4-inch by 4-inch by 11-gauge square tubing at 6’-0” centers maximum and 4-inch by1-1/2-inch by 14-gauge steel cees at 18-inch centers maximum.
   2. Roof Deck: 1/8-inch smooth steel plate roof, continuous welded seams, and coated with acrylic metal primer.
   3. Roofing: Minimum 36 mils Gardner-Gibson “Black Jack Ultra-Roof 1000” 10-year siliconized elastomeric roof coating.
      a. Color: White.
   4. Roof Trim: 26-gauge prefinished steel trim to match siding.
      a. Color: _____.
   5. Ceiling: Exposed metal T-grid system with high-humidity and sag-resistant 24-inch by 24-inch by 5/8-inch acoustical tile, CertainTeed “HHF-157 Performance Series” fine-fissured mineral-fiber ceilings.
      a. Color: White.
   6. Insulation: Kraft-faced fiberglass building insulation, R-19, 6 inches thick in ceiling, batt or roll, Owens-Corning Fiberglass Corp. or equal.
   7. Roof Hatch:
      a. Galvanized steel, Williams Brothers Corporation, 3’-0” by 2’-6”.
      b. Aluminum ladder for access to roof hatch.
   8. Roof Railing: Two-line 1-5/8-inch-OD clear anodized aluminum pipe rail with 9-gauge galvanized chain link fence attached around perimeter of metal press box roof.

G. Doors:
   1. Exterior Doors:
      a. 3'-0" by 6’-8" steel-insulated hollow metal door, 1-3/4 inches thick and steel frame with aluminum threshold and weather stripping, Ceco Ultrador.
      b. Open to swing out.
      c. Color: Match press box siding.
   2. Exterior Door Hardware: Equal to Yale 4600 Series (4607LN) heavy-duty grade 2 cylindrical lock, satin chrome plated, lever handle, keyed alike.

H. Work Bench:
   1. 20-inch-wide preformed work bench with Wilsonart plastic laminate and double 3/4-inch A-C grade plywood.
   2. Laminate Color: Natural Almond.
   3. Countertop Height: 32 inches above floor.
   4. Support: 2-inch by 2-inch by 3/16-inch angle brackets spaced maximum of 32 inches on center.

I. Windows:
   1. Framed aluminum windows double glazed with tempered glass.
      a. Color: White.
      b. Legacy Series 450 vinyl, single-hung, vertical-sliding type with tilt-in sash, maximum size 48 inches high by 48 inches wide.
      c. Frame Color: White.

J. Finish:
   1. Exterior Siding and Trim: Factory-applied primer and topcoat, baked-on enamel.
   2. Doors: Sherwin Williams “KEM 400” enamel or equal.
      a. Color: Match exterior siding.
   3. Touch-up damaged finish in field as needed.

K. Electrical:
   1. Conform to NFPA 70.
   2. Components: UL listed.
   3. Main Breaker:
      a. 240/120V, 1-phase, 100-amp main breaker with minimum of 12 spaces, Square D Homeline or equal.
      b. Flush mount inside metal press box with 1-1/2-inch conduit stub-out through floor for service line as specified in Division 26 section.
   4. Outlets:
      a. 120V, 15A single duplex electrical outlets every 8’-0”.
      b. 18 inches above floor on front and back walls.
   5. Wiring:
      a. Pre-wire with Armorlite type MC isolated ground cable.
      b. Conduit: Stubbed out of metal press box walls, EMT thin-wall conduit.
   6. Light Fixtures: 2’-0” By 4’-0” Lithonia CPX Flat Panel LED Recessed Light Fixture, 4543 Lumens, CCT 4000k, 20V, 38.9 Watts.
   7. Emergency Light Fixtures: Lithonia Emergency Combination Exit/Flood Led Light W/ Min 90 Minute Battery Back-Up

   8. HVAC Units: Minimum of (1) Thru-Wall Unit or PTAC Unit Per Room.
      a. Thermostat(s) mounted on unit(s) provided.

b. Unit Capacity: Press Box Manufacturer shall design to meet Building Code.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive metal press boxes.

B. Verify supports for metal press boxes are level, plumb, square, stable, rigid, and capable of supporting the weight.

C. Notify Architect of conditions that would adversely affect installation or subsequent use.

D. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

A. Install metal press boxes in accordance with manufacturer's instructions at locations indicated on the Drawings.

B. Install metal press boxes plumb, level, square, and straight.

C. Attach metal press boxes securely in place to supports.

D. Install metal press boxes weathertight.

3.3 ADJUSTING

A. Inspect completed metal press boxes and make necessary adjustments to ensure proper installation.

B. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

C. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.4 PROTECTION

A. Protect completed metal press boxes to ensure that, except for normal weathering, press boxes will be without damage or deterioration at time of Substantial Completion.

END OF SECTION

Sturdisteel
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Product Guide Specification (SOFTBALL BLEACHERS)

SECTION13 34 16.53

CONTINUOUS NON-ELEVATED ANGLE-FRAME BLEACHERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Continuous, non-elevated, angle-frame bleachers.

1.2 RELATED REQUIREMENTS

A. Section 03 30 00 – Cast-in-Place Concrete: Concrete foundations.

B. Section 13 34 16.63 – Metal Press Boxes.

1.3 REFERENCE STANDARDS

A. AAMA 2603 – Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.

B. AISC Steel Construction Manual.

C. Aluminum Association (AA) Aluminum Design Manual.

D. ASTM A 36 / A 36M – Standard Specification for Carbon Structural Steel.

E. ASTM A 123 / A 123M – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

F. ASTM A 307 – Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.

G. ASTM A 572 / A 572M – Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.

H. ASTM A 992 / A 992M – Standard Specification for Structural Steel Shapes.

I. AWS D1.1 / D1.1M – Structural Welding Code – Steel.

J. Research Council on Structural Connections (RCSC) Specification for Structural Joints Using High-Strength Bolts.

1.4 SUBMITTALS

A. Comply with Section 01 33 00 – Submittal Procedures.

B. Product Data: Submit manufacturer's product data

C. Shop Drawings:
   1. Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating location, size, details, and quantity of steel and aluminum components and accessories.
   2. Indicate decking configurations, and overall general materials to be supplied.
   3. Shop drawings shall be signed and sealed by a qualified, registered professional engineer, registered in state of the Illinois.

D. Samples: Submit manufacturer's color samples for selection (If applicable)

E. Design Data:
   1. Submit manufacturer's design data, including an analysis to indicate that the structural members shall have sufficient strength to support required loads and ability to resist loads subjected, without exceeding allowable stresses of the materials.
   2. Design data shall be signed and sealed by a qualified, registered professional engineer, registered in state of the Illinois.

F. Manufacturer's Project References: Submit manufacturer's list of successfully completed continuous, non-elevated, angle-frame bleacher projects, including project name and location, name of architect, and type and quantity of bleachers furnished.

G. Installer's Project References: Submit installer's list of successfully completed continuous, non-elevated, angle-frame bleacher projects, including project name and location, name of architect, and type and quantity of bleachers installed.

H. Warranty Documentation: Submit manufacturer's standard warranty (One year on material and workmanship from "date of substantial completion" – provided with closeout documents)

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications:
   1. Manufacturer regularly engaged, for past 10 years, in design and manufacture of continuous, non-elevated, angle-frame bleachers of similar type to that specified.
   2. Fabricate structural steel in an AISC-certified plant; certified "STD" at time of the bid.
   3. Manufacturer listed by AISC as a certified fabricator.
   4. Certification and inspections in accordance with IBC Chapter 17.

B. Installer's Qualifications:
   1. Installer regularly engaged, for past 5 years, in installation of continuous, non-elevated, angle-frame bleachers of similar type to that specified.
   2. Employ persons trained and experienced for installation of continuous, non-elevated, angle-frame bleachers.

C. Welder's Qualifications: AWS certified within past 12 months for each type of weld required.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage and Handling Requirements:
   1. Store and handle materials in accordance with manufacturer's instructions.
   2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
   3. Do not store materials directly on ground.
   4. Protect materials and finish during storage, handling, and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Manufacturer: Sturdisteel, PO Box 2655, Waco, Texas 76702. Toll Free 800-433-3116. Phone 254-666-5155. Fax 254-666-4472. Website www.sturdisteel.com. E-mail info@sturdisteel.com.

B. Substitutions: Substitution requests must be received 14 business days prior to bid date

2.2 DESIGN REQUIREMENTS

A. Design: Conform to AISC Steel Construction Manual and AA Aluminum Design Manual.

B. Applicable Codes: Design and workmanship shall be in accordance with IBC 2012 and ICC 300 Bleachers, Folding and Telescopic Seating, and Grandstands.

C. Design Loads:
   1. Live Loads:
      a. Uniform Loading, Structure: 100 psf.
      b. Uniform Loading, Seats: 120 plf.
   2. Sway Loads:
      a. Perpendicular to Seats: 10 plf.
      b. Parallel to Seats: 24 plf.
   3. Wind Loads: Local building code.
   4. Snow Loads: Local building code.
   5. Seismic Loads: Local building code.
   6. Handrail and Guardrail: 200 lbs. concentrated in any direction.

D. Shop Connections: Welded and capable of carrying stress put upon them.

E. Welding: AWS D1.1

F. Concrete Foundations: Manufacturer shall design concrete foundations as specified in Section 03 30 00.

2.3 CONTINUOUS NON-ELEVATED ANGLE-FRAME BLEACHERS

A. Size: (2) 5 row x 15’-0” Non-Elevated + (1) 5 row x 27’-0” Non-Elevated

B. Framework: Space prefabricated angle bleacher frames at 6-foot intervals and connect by crossbraces.

C. Rise and Depth Dimensions:
   1. Vertical Rise per Row: 8 inches.
   2. Horizontal Depth per Row: 24 inches.
   3. Seat Above its Respective Tread: 17 inches.

D. Risers:
   1. 1/2-inch by 6-1/4-inch anodized aluminum board.
   2. At Top Row: 1/2-inch by 11-1/2-inch anodized aluminum board.

E. Seats: 1-1/2-inch by 9-1/2-inch anodized aluminum board with end caps.

F. Treads: Two 1-1/2-inch by 9-1/2-inch mill finish aluminum boards with end caps. (“Semi-Closed” bleacher deck design)

G. Guardrail:
   1. Sides and back of bleachers 30 inches or more above adjacent area or grade.
   2. Material: Anodized aluminum pipe with end plugs at ends of straight runs or elbows at corners.
   3. Secure to angle posts with galvanized fasteners.
   4. Top Rail: 42 inches minimum above walkways, entrances, and any adjacent seat.
   5. Chain Link Fencing: 9-gauge galvanized steel, fastened in place with galvanized fittings and aluminum ties.

H. Aisle Width:
   1. Middle Aisle Width: 48 inches minimum (Provided for 27’-0” bleacher)
   2. End Aisle Width: 36 inches minimum. (Provided for 15’-0” bleachers)

I. Accessibility: Incorporate wheelchair spaces within bleachers to conform to applicable code and ADA.

2.4 MATERIALS

A. Framework:
   1. Galvanized Steel:
      a. ASTM A 36, ASTM A 572 Grade 50, and ASTM A 992.
      b. Hot-dipped galvanized after fabrication in accordance with ASTM A 123.

B. Seat Boards: Extruded aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II.

Specifier Notes: Specify clear anodized or powder coat finish for riser boards.

C. Riser Boards: Extruded aluminum alloy 6063-T6; [clear anodized 204R1, AA-M10C22A31, Class II] [powder coat, AAMA 2603, color selected by Architect from manufacturer's standard colors].

D. Tread Boards: Extruded aluminum alloy 6063-T6, mill finish.

Bleacher manufacturer will not be responsible for the discoloration, staining and fading of exposed mill finish aluminum surfaces due to oxidation; prior to, during or after installation. Oxidation of mill finish aluminum surfaces is a natural phenomenon and is caused by condensation or moisture during packaging, transportation and/or storage.

E. Guardrail: Aluminum anodized pipe, 1-5/8-inch OD.

F. Accessories:
   1. Steel Bolts and Nuts: ASTM A 307, galvanized.
   2. Structural Connections: Snug tight to conform to RCSC Specification for Structural Joints Using High-Strength Bolts.
   3. Hold-Down Clip Assembly: Aluminum alloy 6063-T6.
   4. Form-Fitted End Caps: Aluminum alloy 2024, clear anodized 204R1, AA-M10C22A31, Class II.
   5. Channel End Caps: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II.

G. Concrete Foundations: Specified in Section 03 30 00.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive continuous, non-elevated, angle-frame bleachers.

B. Notify Architect of conditions that would adversely affect installation or subsequent use.

C. Do not begin surface preparation or installation until unacceptable conditions are corrected.

3.2 PREPARATION

A. Install concrete foundations for continuous, non-elevated, angle-frame bleachers as specified in Section 03 30 00 and indicated on the Drawings.

3.3 INSTALLATION

A. Install continuous, non-elevated, angle-frame bleachers in accordance with manufacturer's instructions at locations indicated on the Drawings.

B. Install bleachers plumb, level, square, straight, and secure. (Bleacher slabs to have a MAX 1% slope from the front to the back of the bleacher)

C. Anchor bleachers securely in place to concrete foundations.

3.4 ADJUSTING

A. Inspect completed continuous, non-elevated, angle-frame bleachers and make necessary adjustments to ensure proper installation.

B. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

C. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.5 PROTECTION

A. Protect completed continuous, non-elevated, angle-frame bleachers to ensure that, except for normal weathering, bleachers will be without damage or deterioration at time of Substantial Completion.

END OF SECTION