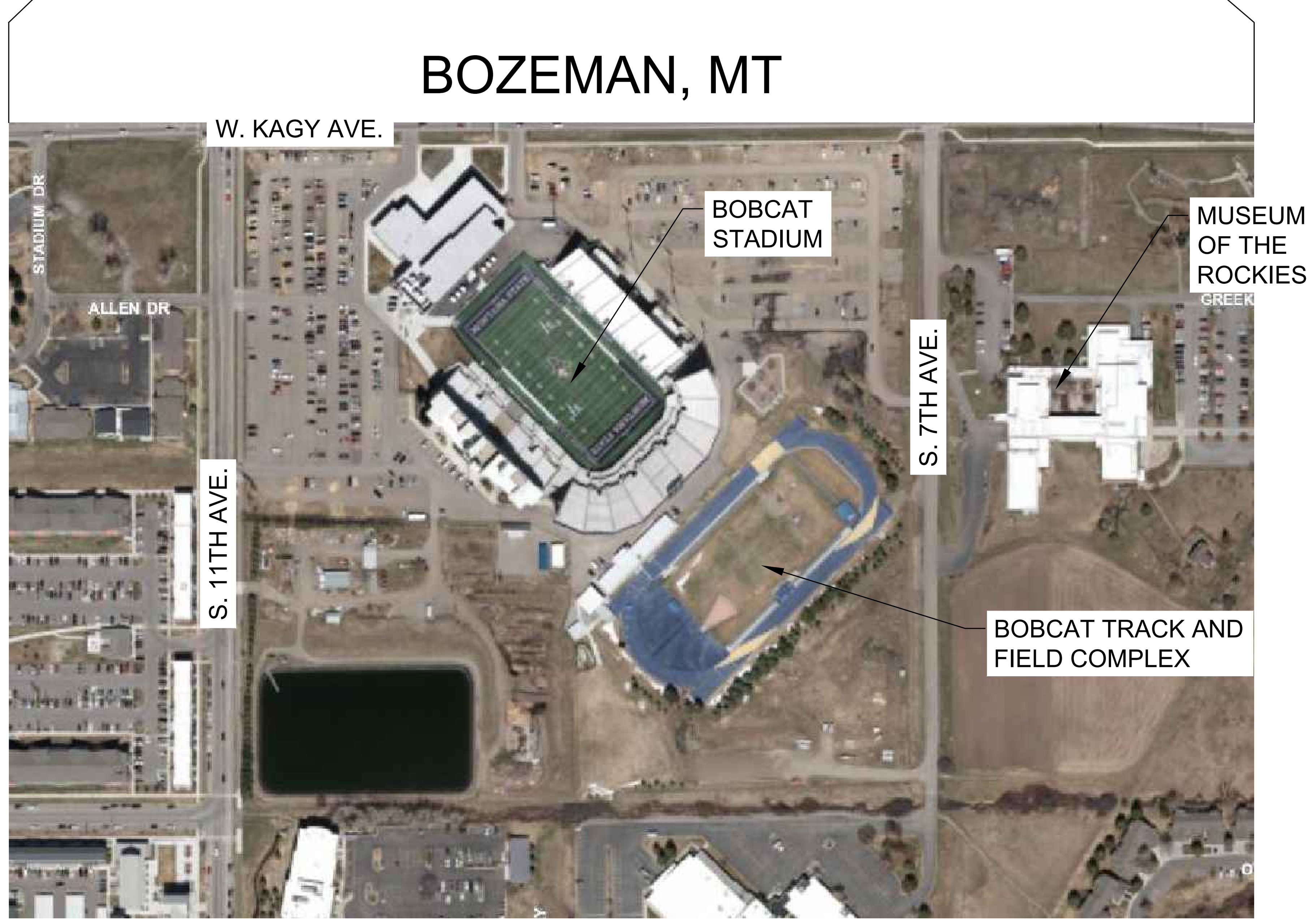
LOCATION MAP
NTS



VICINITY MAP
NTS

PPA# 22-0012

MSU STADIUM PARKING LOTS

MONTANA STATE UNIVERSITY

BOZEMAN, MT

PREPARED FOR:

STATE OF MONTANA - MONTANA STATE UNIVERSITY
UNIVERSITY FACILITIES MANAGEMENT, PLANNING,
DESIGN & CONSTRUCTION
PLEW BUILDING 6TH & GRANT
PO BOX 172760
BOZEMAN, MT 59717-2760
PHONE: 406-994-5413
FAX: 406-994-5665

MONTANA STATE UNIVERSITY

PREPARED BY:

DJ&A
220 WEST LAMME STREET, SUITE 1D
BOZEMAN, MT 59715
406-721-4320

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

MSU Stadium Lots
Construction Documents

FINAL CD - FOR CONSTRUCTION

406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
COVER SHEET

SHEET
GI0.1

DATE
3-27-2024

SHEET INDEX

PARKING COUNT

LOT 20: 653 SPACES (14 ADA ACCESSIBLE)

LOT 25: 650 SPACES (14 ADA ACCESSIBLE)

TRACK/BACK OF HOUSE: 67 SPACES + 4 BUS SPACES

GENERAL NOTES

1. CONDUIT WILL BE INSTALLED IN A JOINT UTILITY TRENCH WHEN FEASIBLE. TRENCH TO BE EXCAVATED BY THE CONTRACTOR AND SHALL CONFORM TO NORTHWESTERN ENERGY (NWE) AND MSU SPECIFICATIONS. THE WORKING CONTRACTOR WILL BE RESPONSIBLE FOR BACKFILLING & COMPACTING THE TRENCH.

2. UTILITIES: UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. NOT ALL UTILITIES ARE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATIONS OF ALL UTILITIES THAT MAY BE IMPACTED BY THIS PROJECT.

3. WHERE CONDITIONS ENCOUNTERED WHICH APPEAR DIFFERENT FROM THOSE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO THE PERFORMANCE OF WORK.

4. SPECIFICATIONS: ALL WORK SHALL CONFORM TO THE SPECIFICATIONS OUTLINE IN THE PROVIDED PROJECT MANUAL. IN THE EVENT OF ANY DISCREPANCIES OR CONFLICTS BETWEEN THE SPECIFICATIONS IN THE PROJECT MANUAL AND THE CITY OF BOZEMAN'S SPECIFICATIONS, THE MORE STRINGENT WILL GOVERN. IF FURTHER CLARIFICATION IS NEEDED, THE CONTRACTOR SHALL REFER TO THE 7TH EDITION OF THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) AND ANY MODIFICATIONS THERETO. IN THE EVENT OF A CONFLICT BETWEEN THE AFOREMENTIONED REGULATORY SPECIFICATIONS OR PROJECT SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS WILL GOVERN.

5. PERMITS & FEES: ALL PERMITS AND FEES REQUIRED FOR THIS PROJECT SHALL BE OBTAINED & PURCHASED BY THE CONTRACTOR. *PERMITS REQUIRED:* MONTANA DEQ SWPPP. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROCUREMENT OF ANY OTHER PERMITS REQUIRED.

6. EROSION CONTROL PLAN & STATE OF MONTANA SWPPP: THE CONTRACTOR WILL BE RESPONSIBLE FOR CREATING AND FILING A STATE OF MONTANA NOTICE OF INTENT (NOI) FORM AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) UNDER THE MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM (MPDES) WITH THE MONTANA WATER QUALITY DIVISION FOR STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES. ALL CONTRACTORS, INCLUDING THOSE SUBCONTRACTED BY THE GENERAL CONTRACTOR, SHALL COMPLY WITH THE APPROVED SWPPP. AN EROSION CONTROL PLAN IS INCLUDED IN THESE PLANS FOR REFERENCE PURPOSES.

7. DISPOSAL: ALL MATERIALS DESIGNATED FOR REMOVAL BECOME THE PROPERTY OF THE CONTRACTOR UPON REMOVAL AND ARE TO BE DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER IN ACCORDANCE WITH ALL LOCAL, STATE & FEDERAL REQUIREMENTS.

8. EXISTING CONDITIONS AT THE SITE ARE THE RESPONSIBILITY OF THE CONTRACTOR & MUST BE FIELD VERIFIED BY THE CONTRACTOR.

9. NO STORAGE OF CONSTRUCTION MATERIALS AND/OR EQUIPMENT HAS BEEN DESIGNATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN MATERIAL & EQUIPMENT STORAGE AREA IN COORDINATION WITH MSU STAFF ASSIGNED TO THIS PROJECT.

10. THE CONTRACTOR SHALL PROTECT ADJACENT SITES AND FACILITIES FROM DAMAGE DURING CONSTRUCTION.

11. LOTS & STREET CLOSURES SHALL BE COORDINATED WITH & APPROVED BY MSU PARKING, MSU PLANNING, DESIGN, & CONSTRUCTION (PDC), CITY OF BOZEMAN, MONTANA DEPARTMENT OF TRANSPORTATION -- WHICHEVER JURISDICTION HAS AUTHORITY OF THE LOT OR STREET.

12. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITION OR BETTER AT THE CONTRACTOR'S EXPENSE.

13. THE CONTRACTOR SHALL MAINTAIN & PROVIDE A CLEAN & CLEARLY REDLINED SET OF AS-BUILT DRAWINGS TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE.

14. CONTRACTOR SHALL REMOVE & DISPOSE OF ALL ABANDONED FACILITIES THAT ARE A RESULT OF THESE IMPROVEMENTS AS DESCRIBED HERE & IN SPECIFICATIONS.

15. REFER TO THE FOLLOWING DEFINITIONS FOR THE PLANS & SPECIFICATIONS:
    - 15.1. REMOVE: DETACH OR EXTRACT ITEMS FROM EXISTING SITE/TOPOGRAPHY & LEGALLY DISPOSE OF THEM OFF-SITE UNLESS INDICATED TO BE REMOVED & SALVAGED OR REMOVED & REINSTALLED.
    - 15.2. REMOVE & SALVAGE: CAREFULLY DETACH FROM EXISTING CONSTRUCTION/SITE/TOPOGRAPHY, IN A MANNER TO PREVENT DAMAGE, & DELIVER TO MSU.
    - 15.3. REMOVE & RELOCATE: DETACH ITEMS FROM EXISTING CONSTRUCTION, PREPARE FOR REUSE, & REINSTALL WHERE INDICATED BY MSU OR BY THESE PLANS.

16. CERTAIN SHEETS WITHIN PLAN SET ARE MEANT TO PLOT IN COLOR FOR BETTER UNDERSTANDING OF DESIGN.

17. CONTRACTOR TO VERIFY ALL ELECTRICAL/LIGHTING NOTES FOUND IN CIVIL PLANS AND COORDINATE WITH ELECTRICAL/LIGHTING PLANS (PRODUCED BY BLACKSHEEP ENGINEERING.) IN THE EVENT OF ANY DISCREPANCY FOR ELECTRICAL/LIGHTING, THE ELECTRICAL/LIGHTING PLANS SHALL GOVERN OVER CIVIL NOTES AND CALLOUTS.

FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

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MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
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MSU Stadium Lots
Construction Documents

DJ&A
406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA
MICHAEL T. RUSSELL
No. 58649PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
SHEET INDEX & GENERAL NOTES

SHEET
GI0.2

DATE
3-27-2024

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION
ADA	AMERICAN DISABILITY ACT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AVE.	AVENUE
cf	CUBIC FEET
CL	CENTERLINE
CP	CONTROL POINT
DESC.	DESCRIPTION
EG	EXISTING GRADE
EL/ELEV	ELEVATION
EOA	EDGE OF ASPHALT
E	EXISTING
FETS	FLARED END TREATMENT SECTIONS
FG	FINISH GRADE
FH	FAMILY HOUSING
FL	FLOW LINE
FT	FEET/FOOT
HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT
LF	LINEAR FOOT
MAX	MAXIMUM
MIN	MINIMUM
MPDES	MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
MPWSS	MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS
MSU	MONTANA STATE UNIVERSITY
MT	MONTANA
NAD	NORTH AMERICAN DATUM
NAVD	NORTH AMERICAN VERTICAL DATUM
NE	NORTHEAST
NTS	NOT TO SCALE
NWE	NORTHWESTERN ENERGY
PED	PEDESTRIAN
PPA	PHYSICAL PLANT ACCOUNT
R	RADIUS
ROW	RIGHT-OF-WAY
RPC	RED PLASTIC CAP
S =	SLOPE
SF	SQUARE FEET (FOOT)
SD	STORM DRAIN
SPC	STATE PLANE COORDINATE
SW	STORM WATER
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
TC	TIME TO CONCENTRATION
TYP.	TYPICAL
TBC	TOP BACK OF CURB

LEGEND

EXISTING - LINE TYPES

- MAIN PROPERTY LOT LINE
- RIGHT OF WAY LINE
- EDGE OF ASPHALT
- EDGE OF GRAVEL ROAD
- ROAD/SITE/PARKING STRIPING
- CURB LINE (FACE OR TOP BACK)
- CURB FLOWLINE
- CONCRETE SIDEWALK
- CULVERT PIPE
- EDGE OF BUILDING
- ROAD CENTER LINE
- MECHANICAL APPURTENANCE
- UTILITIES OVERHEAD CABLE APPURTENANCE
- UTILITIES OVERHEAD POWER APPURTENANCE
- UTILITIES OVERHEAD TELEPHONE APPURTENANCE
- SEWER APPURTENANCE
- WATER APPURTENANCE
- STEPS
- STORM DRAINAGE APPURTENANCE
- TREE
- BRUSH/TREE LINE
- MAJOR CONTOUR LINE WITH CONTOUR LABEL
- MINOR CONTOUR LINE
- DRAINAGE DITCH OR SWALE
- GATE
- FENCE - RIBBON PARKING DIVIDER
- FENCE - CHAIN LINK TYPE
- FENCE - BOARD TYPE FENCE
- UNDERGROUND WATER LINE/MAIN
- UNDERGROUND SEWER LINE/MAIN
- UNDERGROUND STORM LINE/MAIN
- UNDERGROUND IRRIGATION LINE/MAIN
- OVERHEAD POWER LINE
- UNDERGROUND POWER LINE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND FIBER OPTIC LINE
- UNDERGROUND NATURAL GAS LINE/MAIN
- CONCRETE HATCH & CONCRETE EDGE
- ASPHALT HATCH & ASPHALT EDGE
- GRAVEL/DIRT HATCH & GRAVEL/DIRT EDGE

** NOTE: EXISTING LAYERS/SYMBOLS ON THIS SHEET MAY BE SHOWN IN RED IN THE DEMOLITION PLAN SHEETS IN ORDER TO INDICATE DEMOLITION ACTION

PROPOSED - LINE TYPES

- EDGE OF ASPHALT
- SAWCUT LINE (MATERIAL TYPE MAY VARY)
- CONCRETE EDGE
- CONCRETE CURB
- CONCRETE SIDEWALK
- STORM WATER LINE
- MAJOR CONTOUR LINE WITH CONTOUR LABEL
- MINOR CONTOUR LINE
- REPLACED WATER LINE
- CONSTRUCTION LIMITS
- CONCRETE HATCH & CONCRETE EDGE
- LIGHT-DUTY ASPHALT HATCH & ASPHALT EDGE
- HEAVY-DUTY ASPHALT HATCH & ASPHALT EDGE
- LANDSCAPE HATCH & EDGE
- GRAVEL HATCH & EDGE
- CURB AND GUTTER - CATCH TYPE
- CURB AND GUTTER - SPILL TYPE

SYMBOLS

- OVERHEAD UTILITY POLE
- ELECTRIC METER
- ELECTRIC MANHOLE
- ELECTRIC PEDESTAL OR JUNCTION BOX
- ELECTRIC TRANSFORMER
- ELECTRIC MISC
- LIGHT POLE
- FIBER OPTIC BOX
- TELEPHONE/COMMUNICATIONS PEDESTAL
- GAS METER
- GAS VALVE
- ROUND STORM CATCH BASIN
- RECTANGULAR STORM CATCH BASIN
- STORM CATCH BASIN LID
- STORM CURB INLET
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT ACCESS
- WATER VALVE
- WATER HYDRANT
- WATER SERVICE VALVE
- WATER METER
- WATER MANHOLE OR WATER TANK LID
- TRAFFIC SIGNAL LIGHT
- WATER BLOWOFF
- WATER HOSEBIB, FAUCET, OR SPIGOT OUTLET
- IRRIGATION WATER VALVE
- IRRIGATION SPRINKLER HEAD
- GENERAL UNDERGROUND UTILITY BOX
- ADA DESIGNATED PARKING SPOT
- PEDESTRIAN WARNING STRIP AKA DETECTABLE DOMES
- FLAGPOLE
- SIGN (SINGLE POST)
- POST
- BOLLARD
- GUY WIRE
- GUY POLE
- FENCE GATE POST
- PORTABLE RESTROOM
- CONIFEROUS TREE
- MONUMENT SIGN

FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
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MSU Stadium Lots
Construction Documents

DJ&A
406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

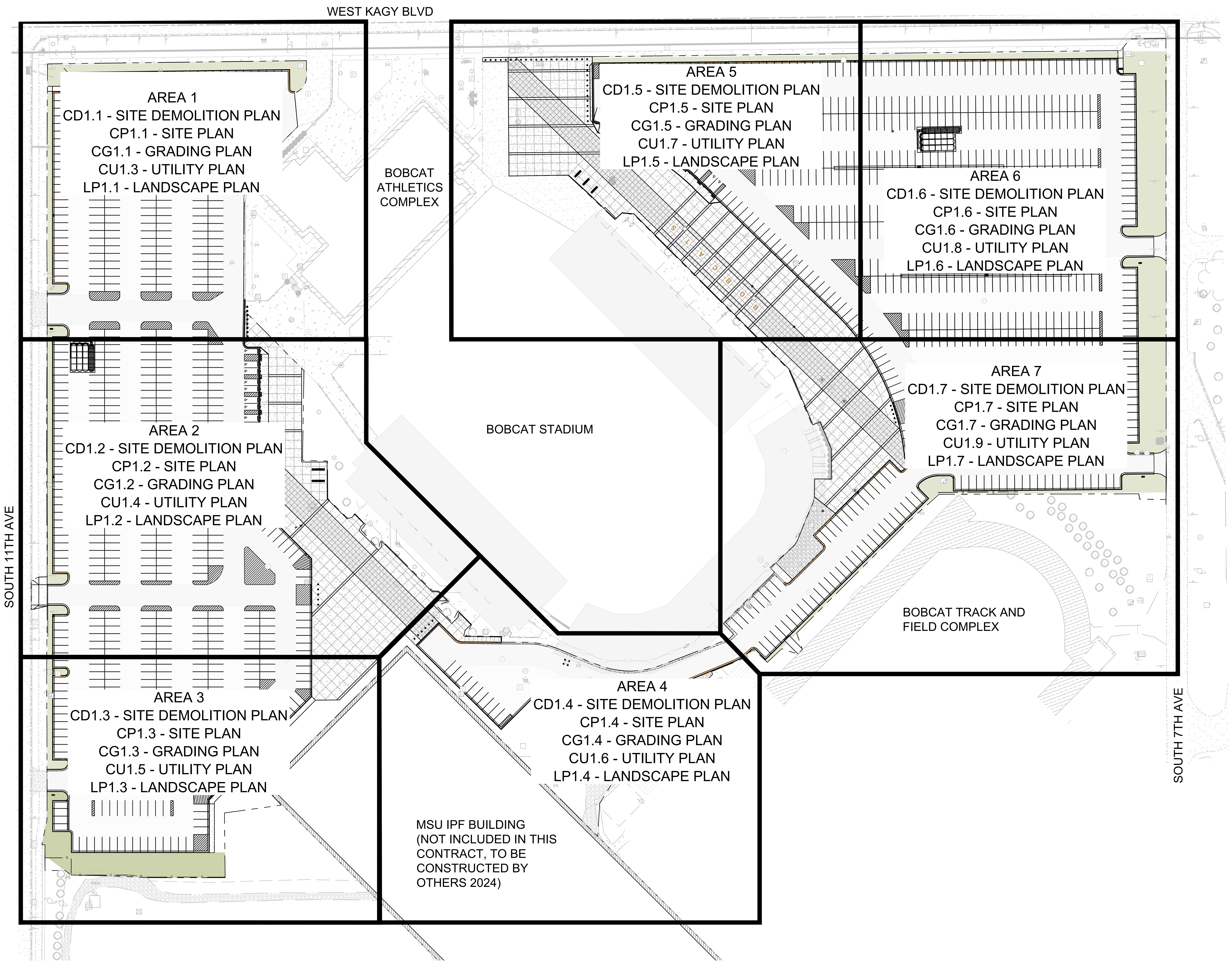
MONTANA MICHAEL T. RUSSELL No. 59647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
LEGEND & ABBREVIATIONS

SHEET
GI0.3

DATE
3-27-2024



N

0 60 120

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

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MONTANA
MICHAEL T.
RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE

SITE OVERVIEW &
KEY MAP PLAN

SHEET

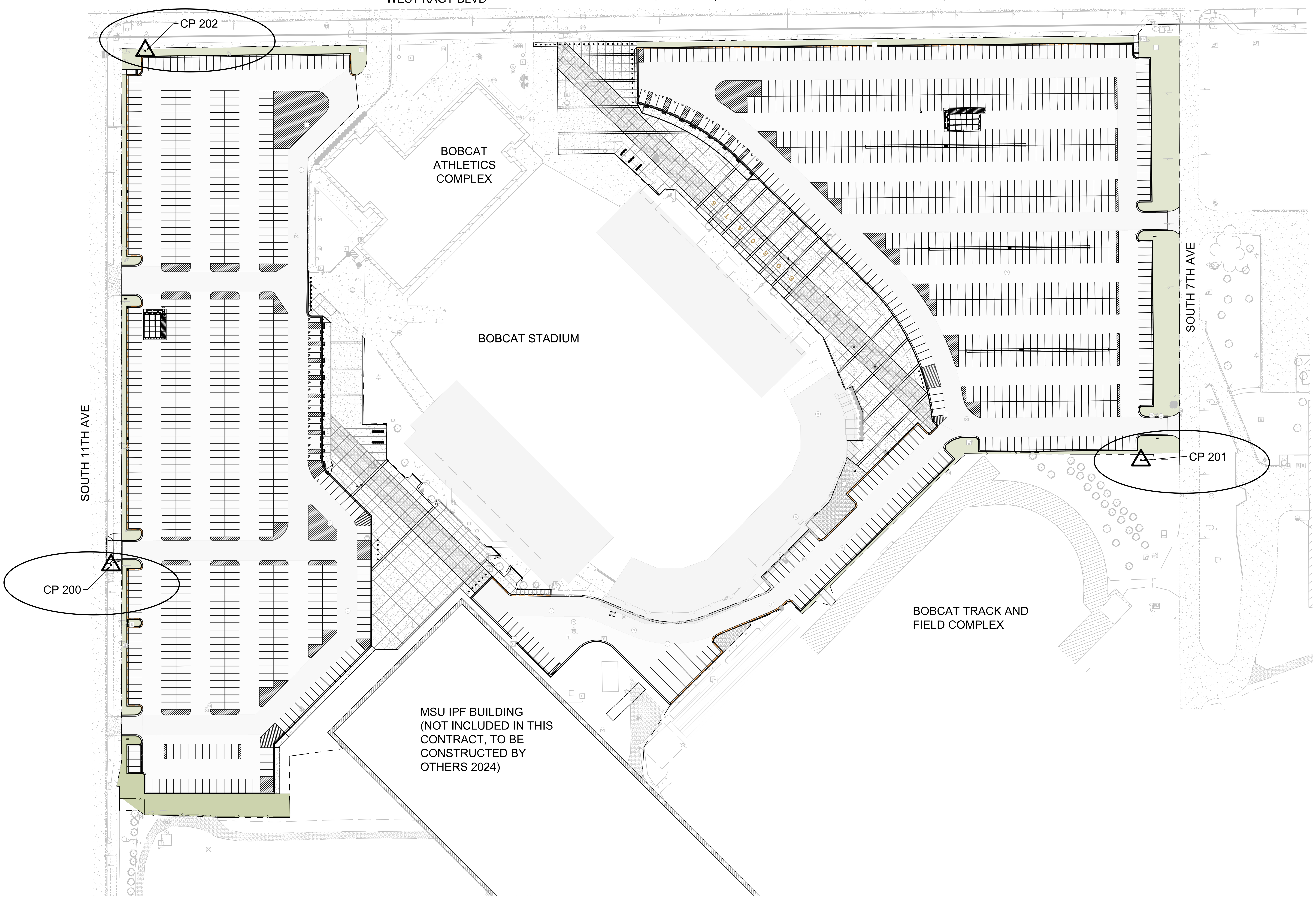
GC1.1

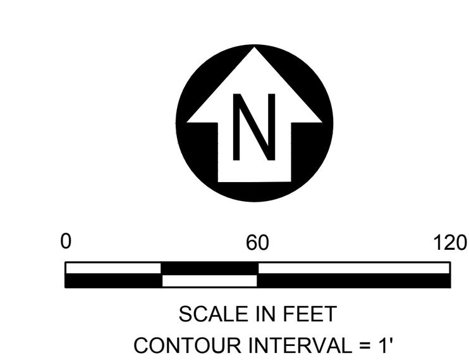
DATE

3-27-2024

CONTROL POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP-200	517446.23	1571823.52	4941.49	SURVEY-SET-MONUMENT-REBAR-DJA, SST1, SSTPLASTIC, SST1, SST0
CP-201	517520.02	1573113.58	4943.61	SURVEY-SET-MONUMENT-REBAR-DJA, SST1, SSTPLASTIC, SST1, SST0
CP-202	518089.57	1571865.98	4935.46	SURVEY-FOUND-MONUMENT-REBAR-OR-ILLEGIBLE, SFD0, SFDALUMINUM, SFD2, SFD0





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MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE

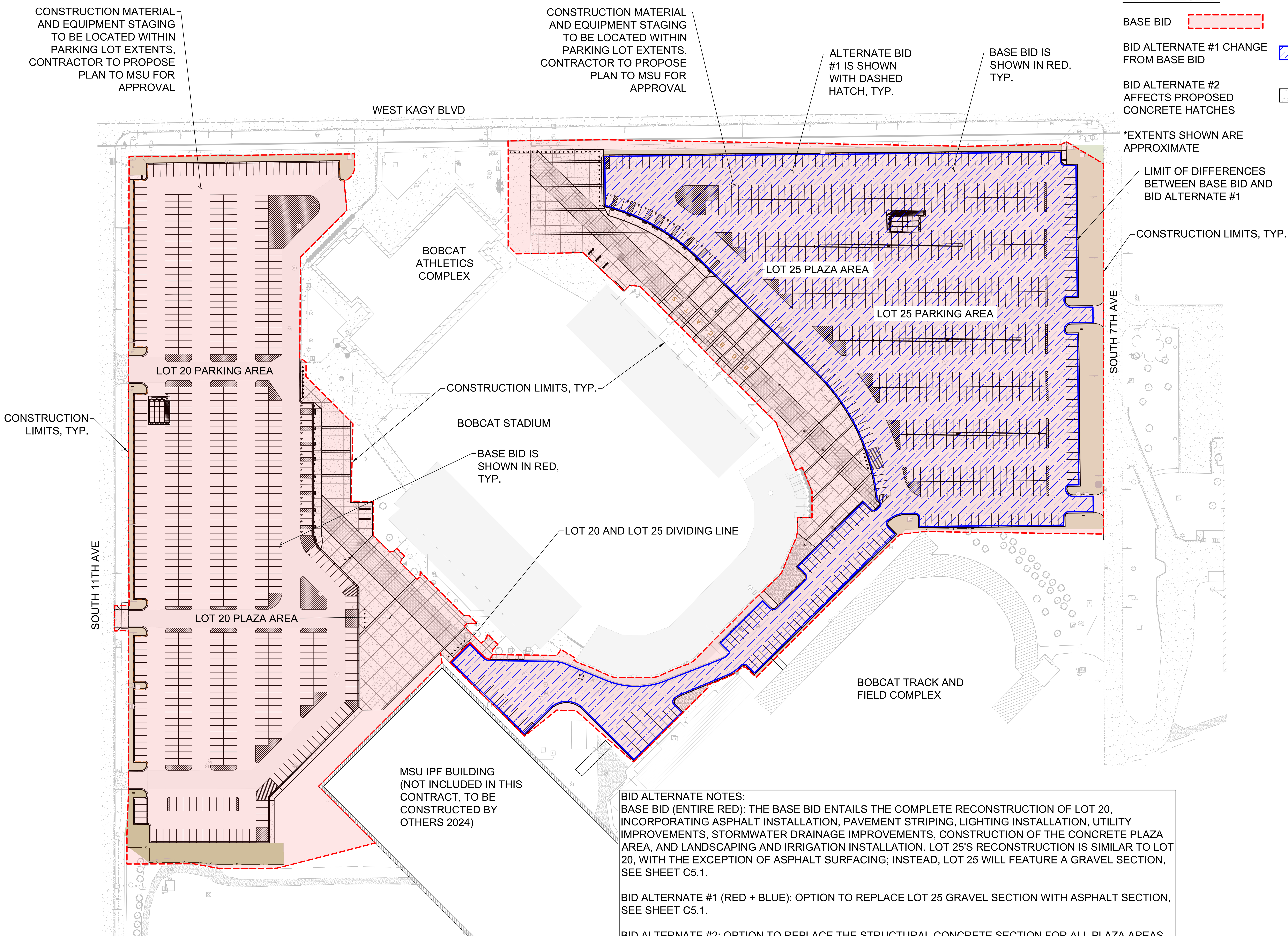
PROJECT CONTROL POINT LAYOUT

SHEET

GC1.2

DATE

3-27-2024



BID TYPE LEGEND:

BASE BID

BID ALTERNATE #1 CHANGE FROM BASE BID

BID ALTERNATE #2 AFFECTS PROPOSED CONCRETE HATCHES

*EXTENTS SHOWN ARE APPROXIMATE

BID ALTERNATE NOTES:

BASE BID (ENTIRE RED): THE BASE BID ENTAILS THE COMPLETE RECONSTRUCTION OF LOT 20, INCORPORATING ASPHALT INSTALLATION, PAVEMENT STRIPING, LIGHTING INSTALLATION, UTILITY IMPROVEMENTS, STORMWATER DRAINAGE IMPROVEMENTS, CONSTRUCTION OF THE CONCRETE PLAZA AREA, AND LANDSCAPING AND IRRIGATION INSTALLATION. LOT 25'S RECONSTRUCTION IS SIMILAR TO LOT 20, WITH THE EXCEPTION OF ASPHALT SURFACING; INSTEAD, LOT 25 WILL FEATURE A GRAVEL SECTION, SEE SHEET C5.1.

BID ALTERNATE #1 (RED + BLUE): OPTION TO REPLACE LOT 25 GRAVEL SECTION WITH ASPHALT SECTION, SEE SHEET C5.1.

BID ALTERNATE #2: OPTION TO REPLACE THE STRUCTURAL CONCRETE SECTION FOR ALL PLAZA AREAS, SEE SHEET .5,1.

N

0 60 120

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

FINAL CD - FOR CONSTRUCTION

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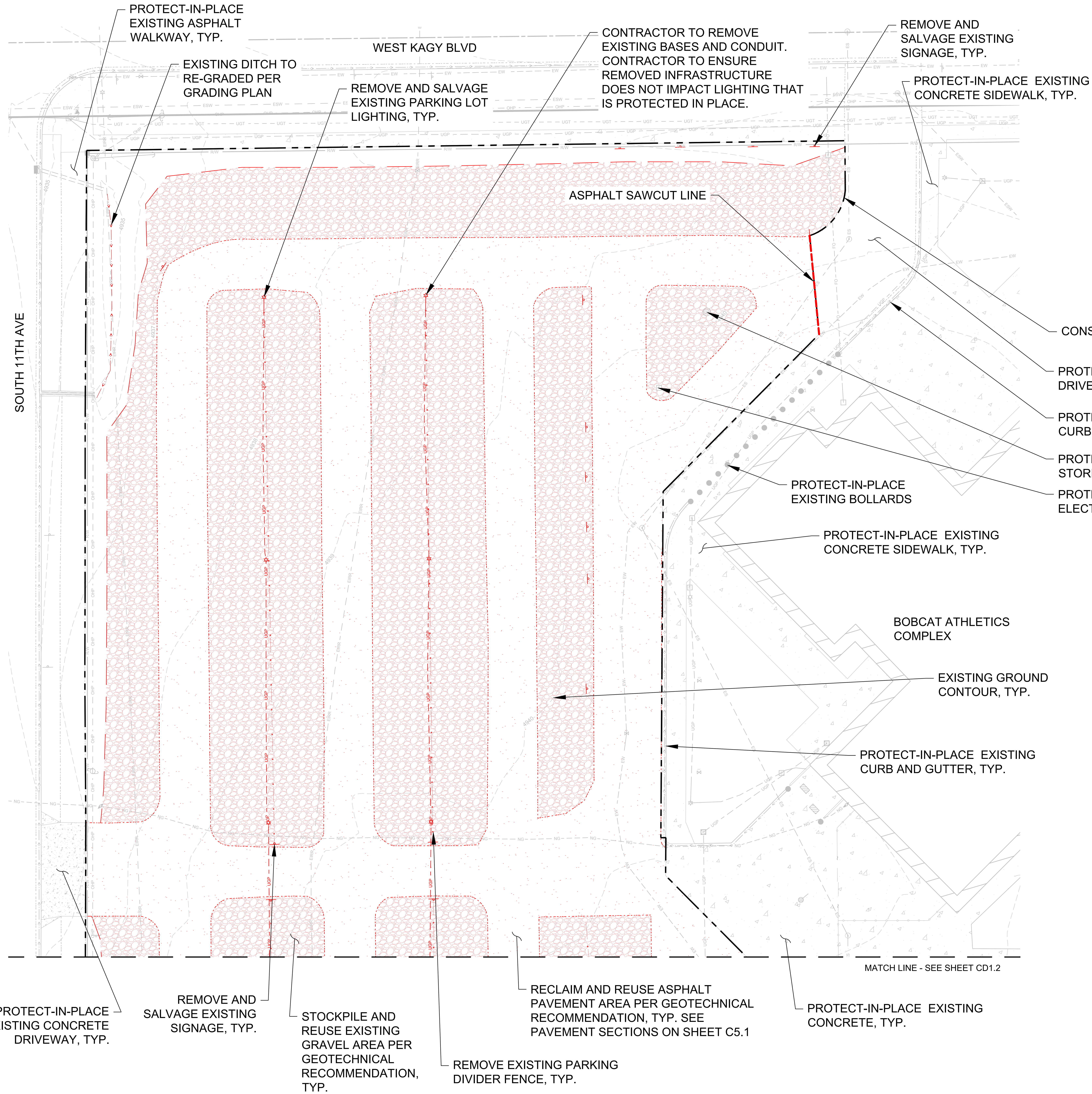
MONTANA
MICHAEL T. RUSSELL
No. 58647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
CONSTRUCTION STAGING & BID ALTERNATE PLAN

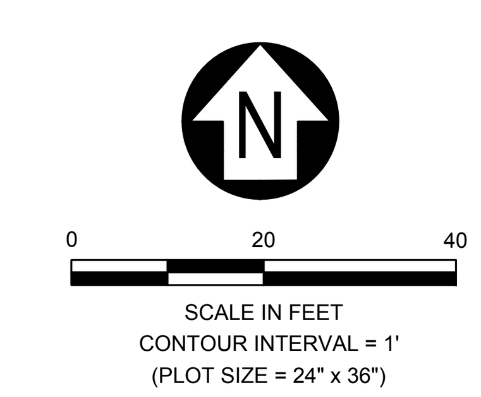
SHEET
GC1.3

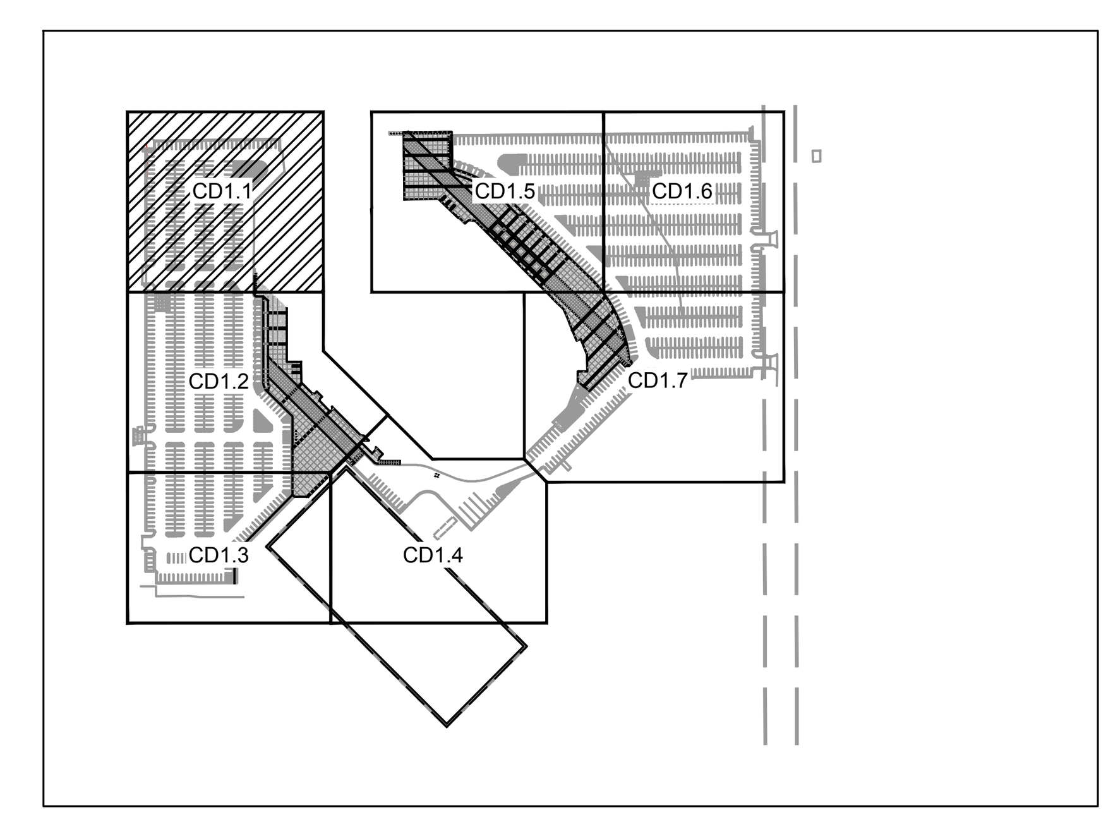
DATE
3-27-2024



DEMOLITION PLAN NOTES:

1. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE ADJUSTMENT TO FINISH GRADE ELEVATIONS, SEE GRADING SHEETS.
2. CONTRACTOR TO COORDINATE WITH LIGHTING/ELECTRICAL PLANS FOR DEMOLITION INFORMATION.
3. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE CHANGE TO TRAFFIC-RATED UTILITY LIDS, BOXES, ETC. SEE SITE PLAN SHEETS TO DETERMINE IF EXISTING UTILITIES ARE LOCATED WITHIN TRAFFIC AREAS.
4. REFERENCE SHEET L1.1 FOR IRRIGATION DEMOLITION INFORMATION.
5. OBJECTS/AREAS SHOWN IN RED CONVEY A NECESSARY DEMOLITION ACTIVITY (REMOVE, REMOVE&REPLACE, SALVAGE, ETC.) OBJECTS/AREAS SHOWN IN GRAY ARE TO BE PROTECTED IN PLACE. ANY ITEMS IN QUESTIONS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO TAKING ACTION.





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REV.	DESCRIPTION	DATE

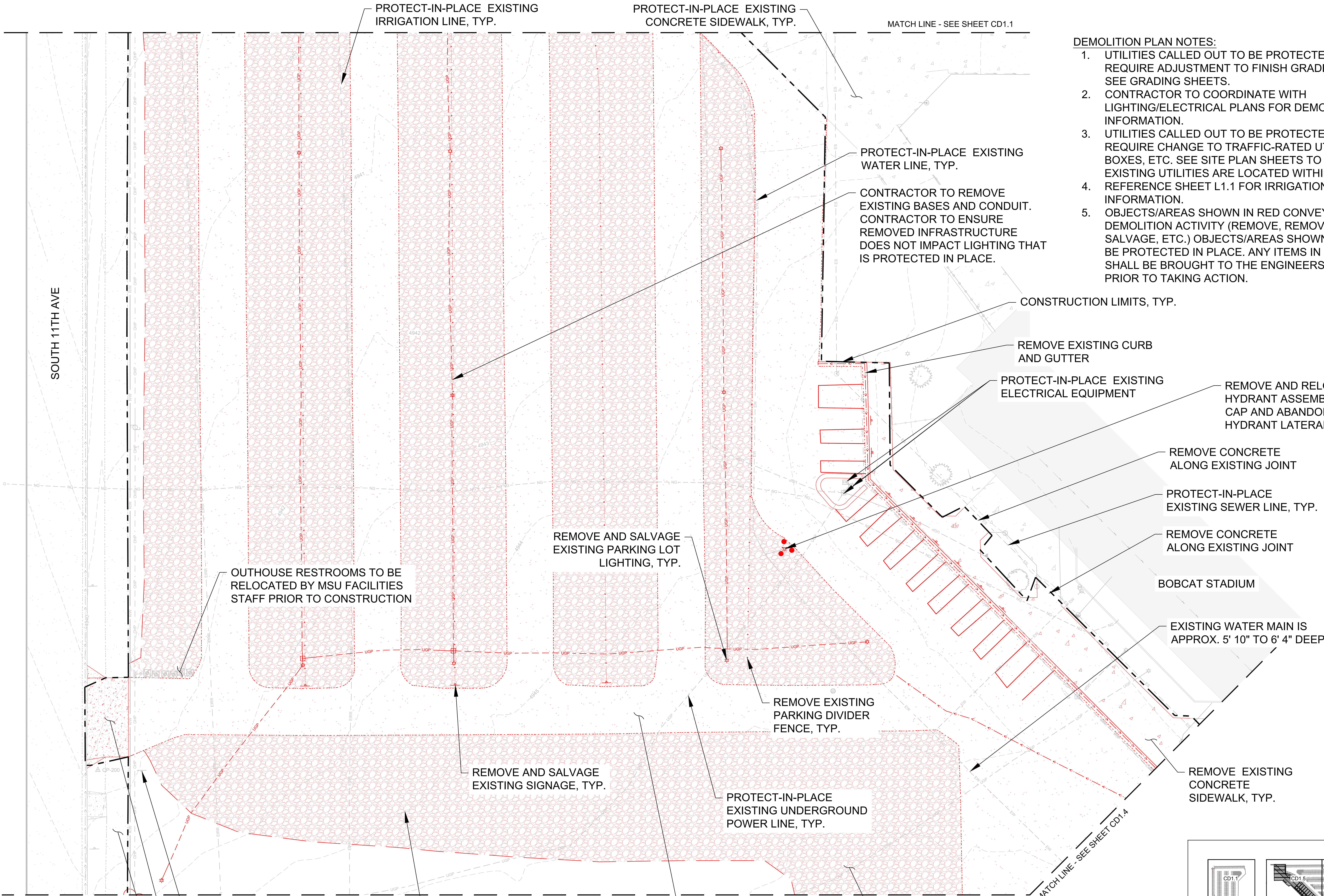
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
SITE DEMOLITION PLAN 1

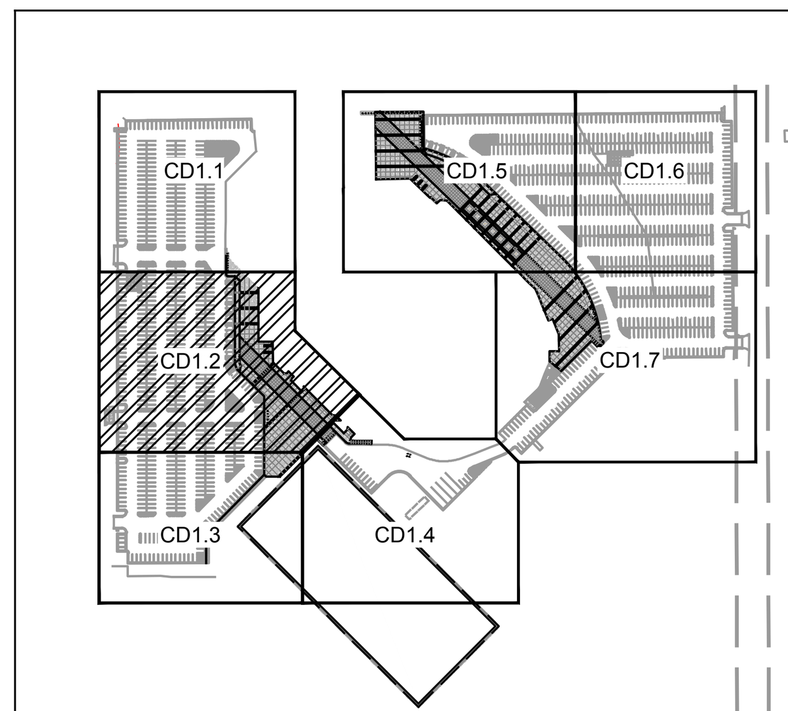
SHEET
CD1.1

DATE
3-27-2024


PROTECT-IN-PLACE EXISTING IRRIGATION LINE, TYP.
PROTECT-IN-PLACE EXISTING CONCRETE SIDEWALK, TYP.
MATCH LINE - SEE SHEET CD1.1
PROTECT-IN-PLACE EXISTING WATER LINE, TYP.
CONTRACTOR TO REMOVE EXISTING BASES AND CONDUIT. CONTRACTOR TO ENSURE REMOVED INFRASTRUCTURE DOES NOT IMPACT LIGHTING THAT IS PROTECTED IN PLACE.
CONSTRUCTION LIMITS, TYP.
REMOVE EXISTING CURB AND GUTTER
PROTECT-IN-PLACE EXISTING ELECTRICAL EQUIPMENT
REMOVE AND RELOCATE EXISTING HYDRANT ASSEMBLY & BOLLARDS. CAP AND ABANDON EXISTING FIRE HYDRANT LATERAL AT THE MAIN.
REMOVE CONCRETE ALONG EXISTING JOINT
PROTECT-IN-PLACE EXISTING SEWER LINE, TYP.
REMOVE CONCRETE ALONG EXISTING JOINT
BOBCAT STADIUM
EXISTING WATER MAIN IS APPROX. 5' 10" TO 6' 4" DEEP
SOUTH 11TH AVE
REMOVE AND SALVAGE EXISTING PARKING LOT LIGHTING, TYP.
OUTHOUSE RESTROOMS TO BE RELOCATED BY MSU FACILITIES STAFF PRIOR TO CONSTRUCTION
REMOVE EXISTING PARKING DIVIDER FENCE, TYP.
REMOVE AND SALVAGE EXISTING SIGNAGE, TYP.
PROTECT-IN-PLACE EXISTING UNDERGROUND POWER LINE, TYP.
REMOVE EXISTING CONCRETE SIDEWALK, TYP.
MATCH LINE - SEE SHEET CD1.4
MATCH LINE - SEE SHEET CD1.3
PROTECT-IN-PLACE EXISTING MONUMENT SIGNAGE , TYP.
REMOVE EXISTING CONCRETE DRIVEWAYS, TYP.
PROTECT-IN-PLACE EXISTING ASPHALT WALKWAY, TYP.
EXISTING GROUND CONTOUR, TYP.
RECLAIM AND REUSE ASPHALT PAVEMENT AREA PER GEOTECHNICAL RECOMMENDATION, TYP. SEE PAVEMENT SECTIONS ON SHEET C5.1
STOCKPILE AND REUSE EXISTING GRAVEL AREA PER GEOTECHNICAL RECOMMENDATION, TYP.
N
0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

DEMOLITION PLAN NOTES:

1. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE ADJUSTMENT TO FINISH GRADE ELEVATIONS, SEE GRADING SHEETS.
2. CONTRACTOR TO COORDINATE WITH LIGHTING/ELECTRICAL PLANS FOR DEMOLITION INFORMATION.
3. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE CHANGE TO TRAFFIC-RATED UTILITY LIDS, BOXES, ETC. SEE SITE PLAN SHEETS TO DETERMINE IF EXISTING UTILITIES ARE LOCATED WITHIN TRAFFIC AREAS.
4. REFERENCE SHEET L1.1 FOR IRRIGATION DEMOLITION INFORMATION.
5. OBJECTS/AREAS SHOWN IN RED CONVEY A NECESSARY DEMOLITION ACTIVITY (REMOVE, REMOVE&REPLACE, SALVAGE, ETC.) OBJECTS/AREAS SHOWN IN GRAY ARE TO BE PROTECTED IN PLACE. ANY ITEMS IN QUESTIONS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO TAKING ACTION.



MONTANA STATE UNIVERSITY

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

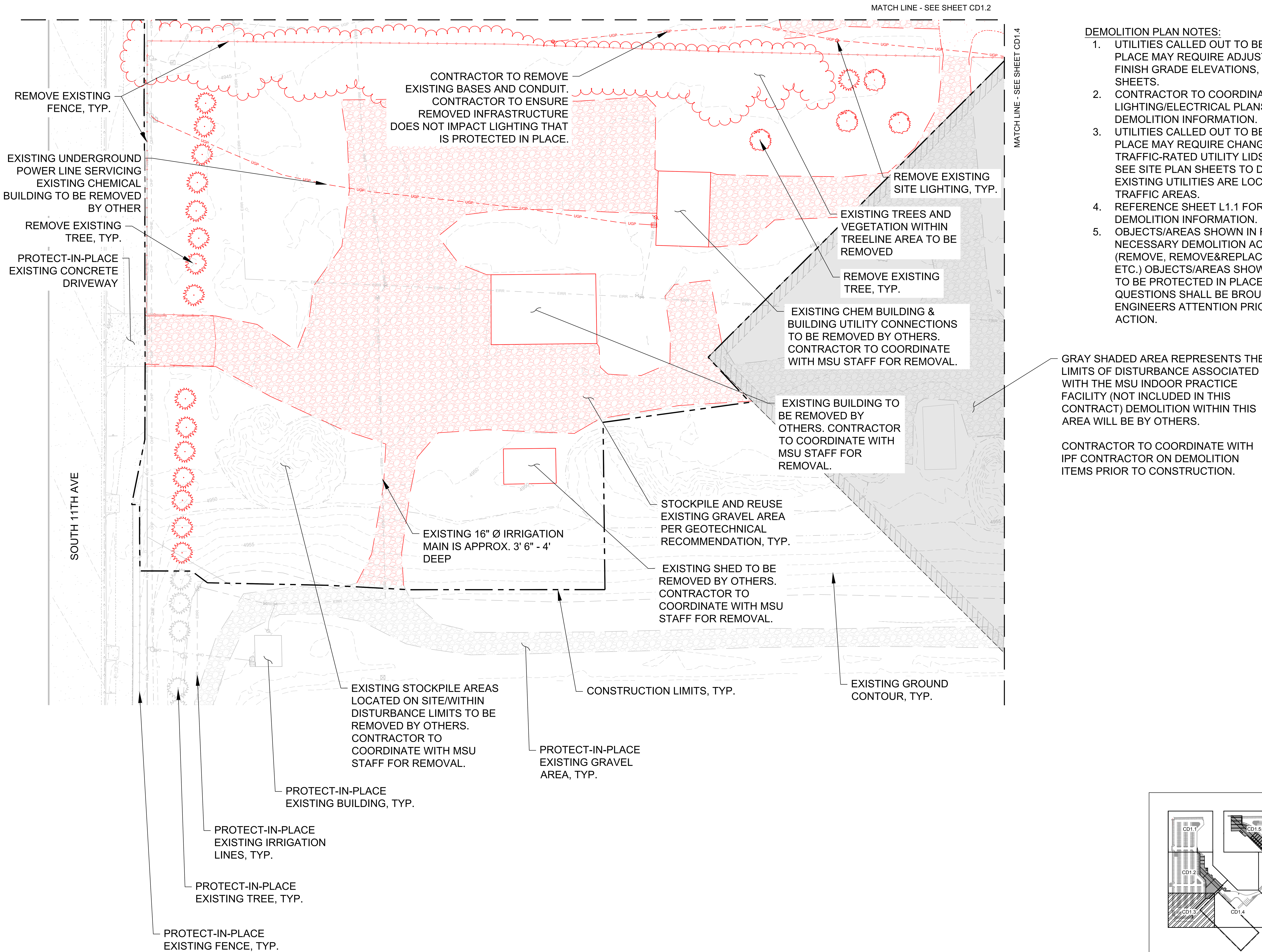
MONTANA MICHAEL T. RUSSELL No. 56447PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
SITE DEMOLITION PLAN 2

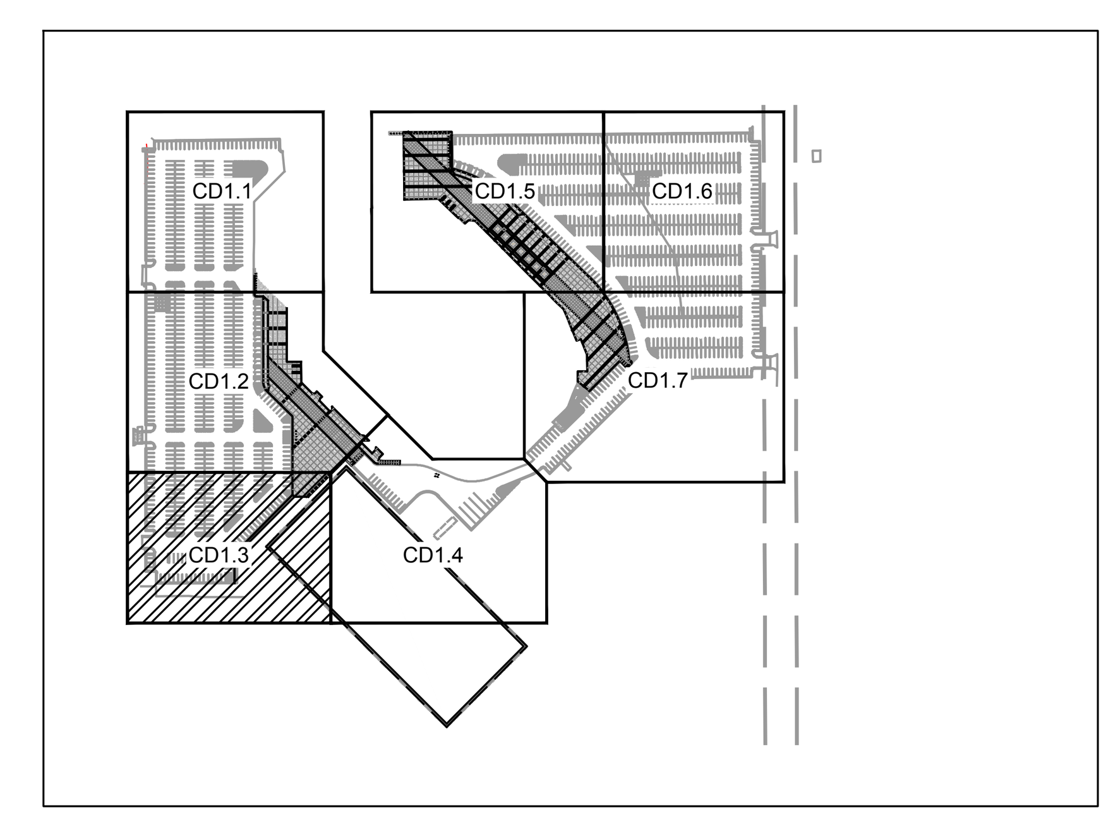
SHEET
CD1.2

DATE
3-27-2024


MATCH LINE - SEE SHEET CD1.2
MATCH LINE - SEE SHEET CD1.4
REMOVE EXISTING FENCE, TYP.
CONTRACTOR TO REMOVE EXISTING BASES AND CONDUIT. CONTRACTOR TO ENSURE REMOVED INFRASTRUCTURE DOES NOT IMPACT LIGHTING THAT IS PROTECTED IN PLACE.
EXISTING UNDERGROUND POWER LINE SERVICING EXISTING CHEMICAL BUILDING TO BE REMOVED BY OTHER
REMOVE EXISTING TREE, TYP.
PROTECT-IN-PLACE EXISTING CONCRETE DRIVEWAY
REMOVE EXISTING SITE LIGHTING, TYP.
EXISTING TREES AND VEGETATION WITHIN TREELINE AREA TO BE REMOVED
REMOVE EXISTING TREE, TYP.
EXISTING CHEM BUILDING & BUILDING UTILITY CONNECTIONS TO BE REMOVED BY OTHERS. CONTRACTOR TO COORDINATE WITH MSU STAFF FOR REMOVAL.
EXISTING BUILDING TO BE REMOVED BY OTHERS. CONTRACTOR TO COORDINATE WITH MSU STAFF FOR REMOVAL.
SOUTH 11TH AVE
STOCKPILE AND REUSE EXISTING GRAVEL AREA PER GEOTECHNICAL RECOMMENDATION, TYP.
EXISTING 16" Ø IRRIGATION MAIN IS APPROX. 3' 6" - 4' DEEP
EXISTING SHED TO BE REMOVED BY OTHERS. CONTRACTOR TO COORDINATE WITH MSU STAFF FOR REMOVAL.
EXISTING STOCKPILE AREAS LOCATED ON SITE/WITHIN DISTURBANCE LIMITS TO BE REMOVED BY OTHERS. CONTRACTOR TO COORDINATE WITH MSU STAFF FOR REMOVAL.
CONSTRUCTION LIMITS, TYP.
EXISTING GROUND CONTOUR, TYP.
PROTECT-IN-PLACE EXISTING GRAVEL AREA, TYP.
PROTECT-IN-PLACE EXISTING BUILDING, TYP.
PROTECT-IN-PLACE EXISTING IRRIGATION LINES, TYP.
PROTECT-IN-PLACE EXISTING TREE, TYP.
PROTECT-IN-PLACE EXISTING FENCE, TYP.
GRAY SHADED AREA REPRESENTS THE LIMITS OF DISTURBANCE ASSOCIATED WITH THE MSU INDOOR PRACTICE FACILITY (NOT INCLUDED IN THIS CONTRACT) DEMOLITION WITHIN THIS AREA WILL BE BY OTHERS.
CONTRACTOR TO COORDINATE WITH IPF CONTRACTOR ON DEMOLITION ITEMS PRIOR TO CONSTRUCTION.
N
0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

DEMOLITION PLAN NOTES:

1. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE ADJUSTMENT TO FINISH GRADE ELEVATIONS, SEE GRADING SHEETS.
2. CONTRACTOR TO COORDINATE WITH LIGHTING/ELECTRICAL PLANS FOR DEMOLITION INFORMATION.
3. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE CHANGE TO TRAFFIC-RATED UTILITY LIDS, BOXES, ETC. SEE SITE PLAN SHEETS TO DETERMINE IF EXISTING UTILITIES ARE LOCATED WITHIN TRAFFIC AREAS.
4. REFERENCE SHEET L1.1 FOR IRRIGATION DEMOLITION INFORMATION.
5. OBJECTS/AREAS SHOWN IN RED CONVEY A NECESSARY DEMOLITION ACTIVITY (REMOVE, REMOVE&REPLACE, SALVAGE, ETC.) OBJECTS/AREAS SHOWN IN GRAY ARE TO BE PROTECTED IN PLACE. ANY ITEMS IN QUESTIONS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO TAKING ACTION.



FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

MSU Stadium Lots
Construction Documents

DJ&A
406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

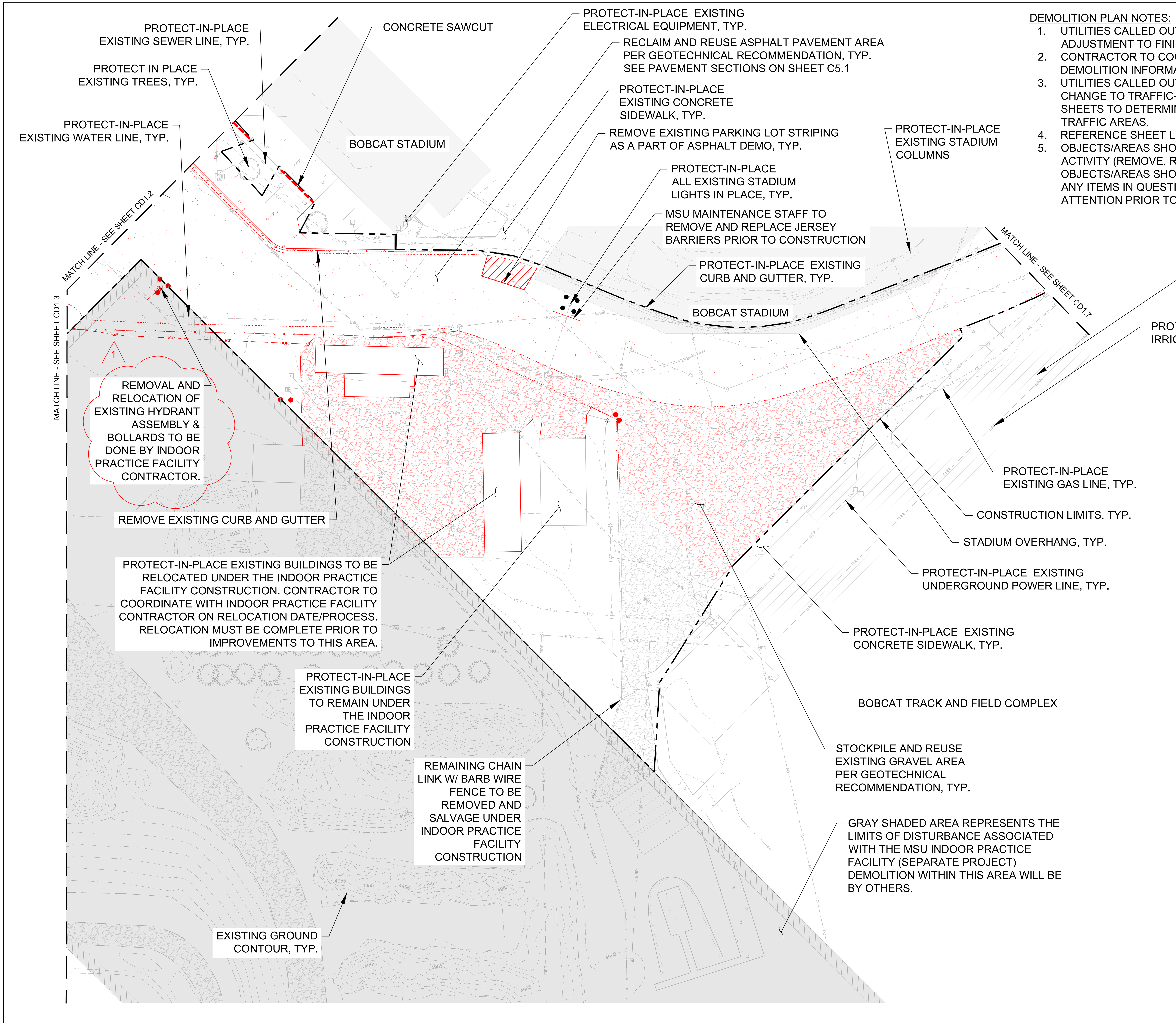
MONTANA MICHAEL T. RUSSELL No. 59647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
SITE DEMOLITION PLAN 3

SHEET
CD1.3

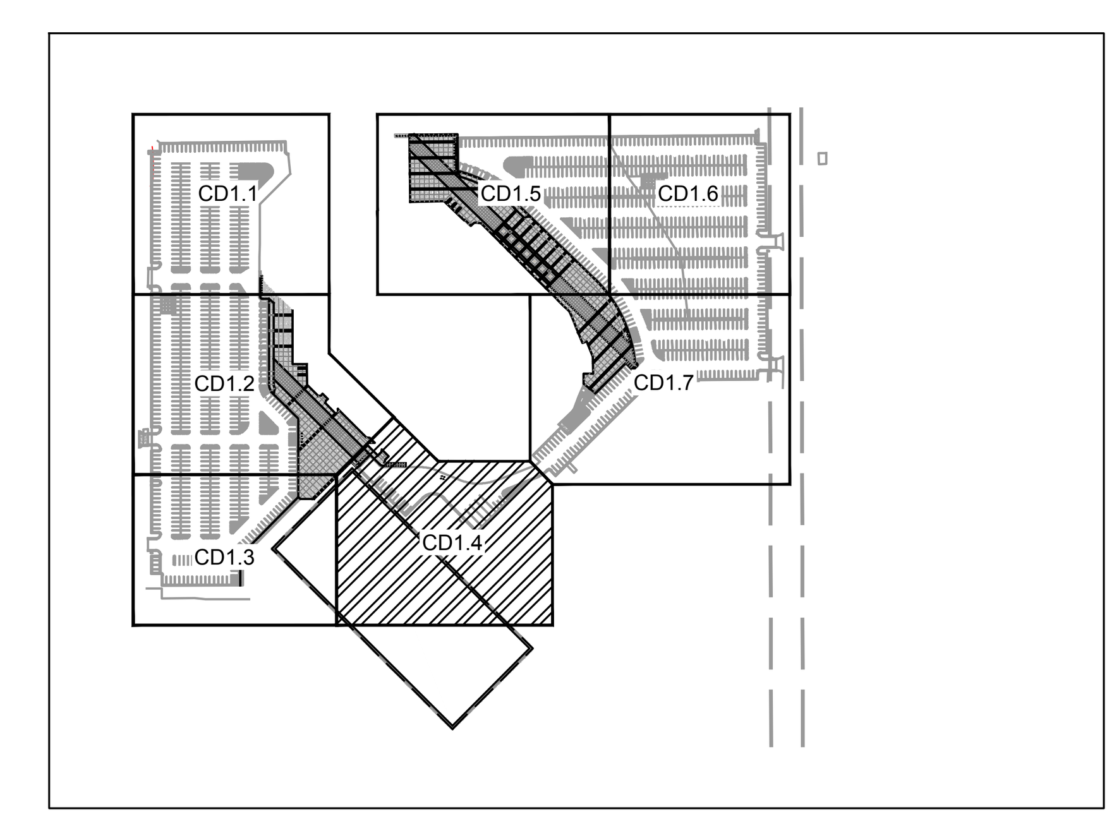
DATE
3-27-2024



PROTECT-IN-PLACE EXISTING SEWER LINE, TYP.
PROTECT IN PLACE EXISTING TREES, TYP.
PROTECT-IN-PLACE EXISTING WATER LINE, TYP.
CONCRETE SAWCUT
PROTECT-IN-PLACE EXISTING ELECTRICAL EQUIPMENT, TYP.
RECLAIM AND REUSE ASPHALT PAVEMENT AREA PER GEOTECHNICAL RECOMMENDATION, TYP. SEE PAVEMENT SECTIONS ON SHEET C5.1
PROTECT-IN-PLACE EXISTING CONCRETE SIDEWALK, TYP.
REMOVE EXISTING PARKING LOT STRIPING AS A PART OF ASPHALT DEMO, TYP.
BOBCAT STADIUM
PROTECT-IN-PLACE EXISTING STADIUM COLUMNS
PROTECT-IN-PLACE ALL EXISTING STADIUM LIGHTS IN PLACE, TYP.
MSU MAINTENANCE STAFF TO REMOVE AND REPLACE JERSEY BARRIERS PRIOR TO CONSTRUCTION
PROTECT-IN-PLACE EXISTING CURB AND GUTTER, TYP.
BOBCAT STADIUM
MATCH LINE - SEE SHEET CD1.2
MATCH LINE - SEE SHEET CD1.3
MATCH LINE - SEE SHEET CD1.7
PROTECT-IN-PLACE EXISTING BLEACHERS
PROTECT-IN-PLACE EXISTING IRRIGATION LINE, TYP.
1
REMOVAL AND RELOCATION OF EXISTING HYDRANT ASSEMBLY & BOLLARDS TO BE DONE BY INDOOR PRACTICE FACILITY CONTRACTOR.
REMOVE EXISTING CURB AND GUTTER
PROTECT-IN-PLACE EXISTING GAS LINE, TYP.
CONSTRUCTION LIMITS, TYP.
STADIUM OVERHANG, TYP.
PROTECT-IN-PLACE EXISTING UNDERGROUND POWER LINE, TYP.
PROTECT-IN-PLACE EXISTING BUILDINGS TO BE RELOCATED UNDER THE INDOOR PRACTICE FACILITY CONSTRUCTION. CONTRACTOR TO COORDINATE WITH INDOOR PRACTICE FACILITY CONTRACTOR ON RELOCATION DATE/PROCESS. RELOCATION MUST BE COMPLETE PRIOR TO IMPROVEMENTS TO THIS AREA.
PROTECT-IN-PLACE EXISTING CONCRETE SIDEWALK, TYP.
PROTECT-IN-PLACE EXISTING BUILDINGS TO REMAIN UNDER THE INDOOR PRACTICE FACILITY CONSTRUCTION
BOBCAT TRACK AND FIELD COMPLEX
REMAINING CHAIN LINK W/ BARB WIRE FENCE TO BE REMOVED AND SALVAGE UNDER INDOOR PRACTICE FACILITY CONSTRUCTION
STOCKPILE AND REUSE EXISTING GRAVEL AREA PER GEOTECHNICAL RECOMMENDATION, TYP.
GRAY SHADED AREA REPRESENTS THE LIMITS OF DISTURBANCE ASSOCIATED WITH THE MSU INDOOR PRACTICE FACILITY (SEPARATE PROJECT) DEMOLITION WITHIN THIS AREA WILL BE BY OTHERS.
EXISTING GROUND CONTOUR, TYP.
N
0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

DEMOLITION PLAN NOTES:

1. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE ADJUSTMENT TO FINISH GRADE ELEVATIONS, SEE GRADING SHEETS.
2. CONTRACTOR TO COORDINATE WITH LIGHTING/ELECTRICAL PLANS FOR DEMOLITION INFORMATION.
3. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE CHANGE TO TRAFFIC-RATED UTILITY LIDS, BOXES, ETC. SEE SITE PLAN SHEETS TO DETERMINE IF EXISTING UTILITIES ARE LOCATED WITHIN TRAFFIC AREAS.
4. REFERENCE SHEET L1.1 FOR IRRIGATION DEMOLITION INFORMATION.
5. OBJECTS/AREAS SHOWN IN RED CONVEY A NECESSARY DEMOLITION ACTIVITY (REMOVE, REMOVE&REPLACE, SALVAGE, ETC.) OBJECTS/AREAS SHOWN IN GRAY ARE TO BE PROTECTED IN PLACE. ANY ITEMS IN QUESTIONS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO TAKING ACTION.



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BOZEMAN, MONTANA
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djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-2024

MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE

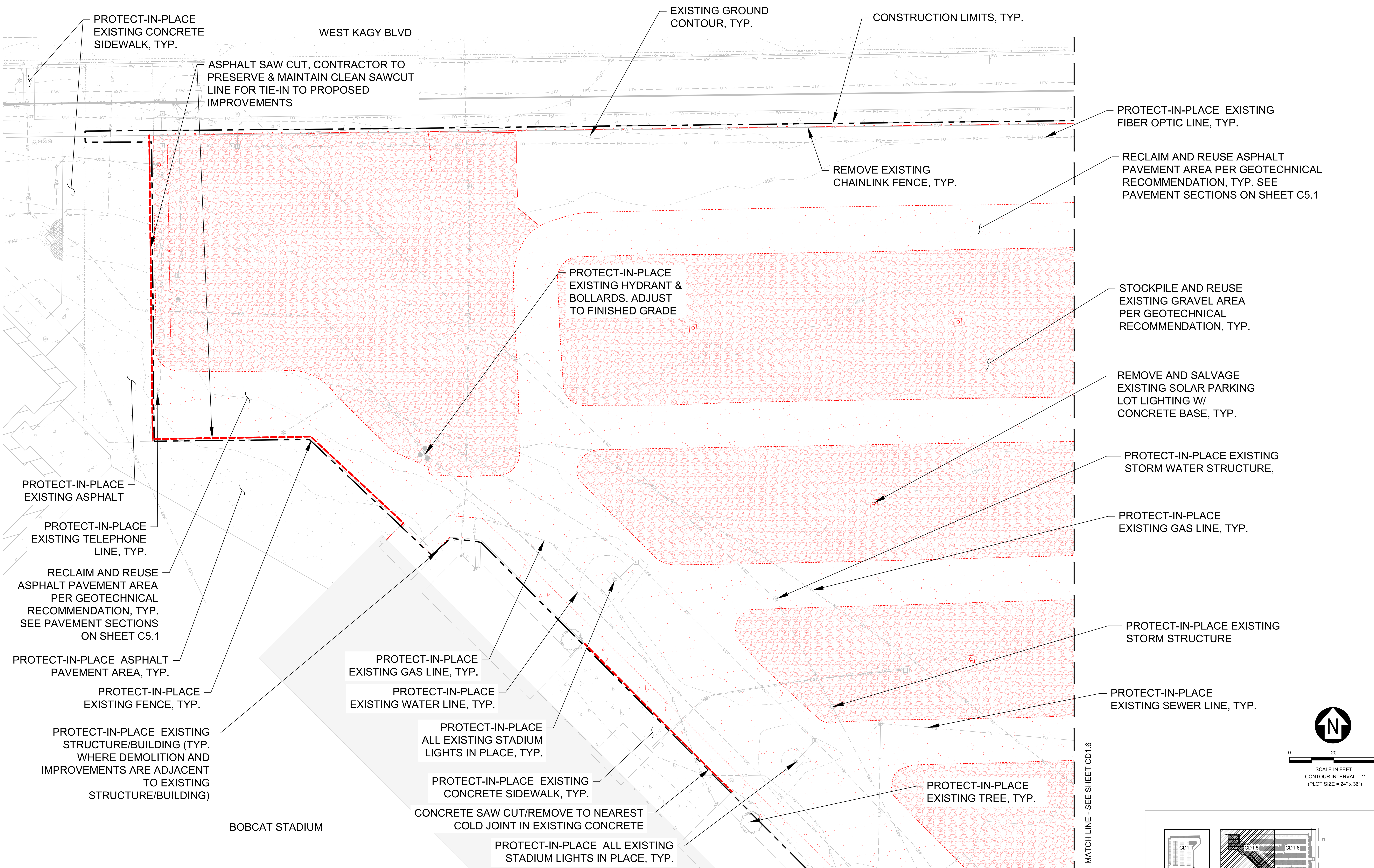
SITE DEMOLITION PLAN 4

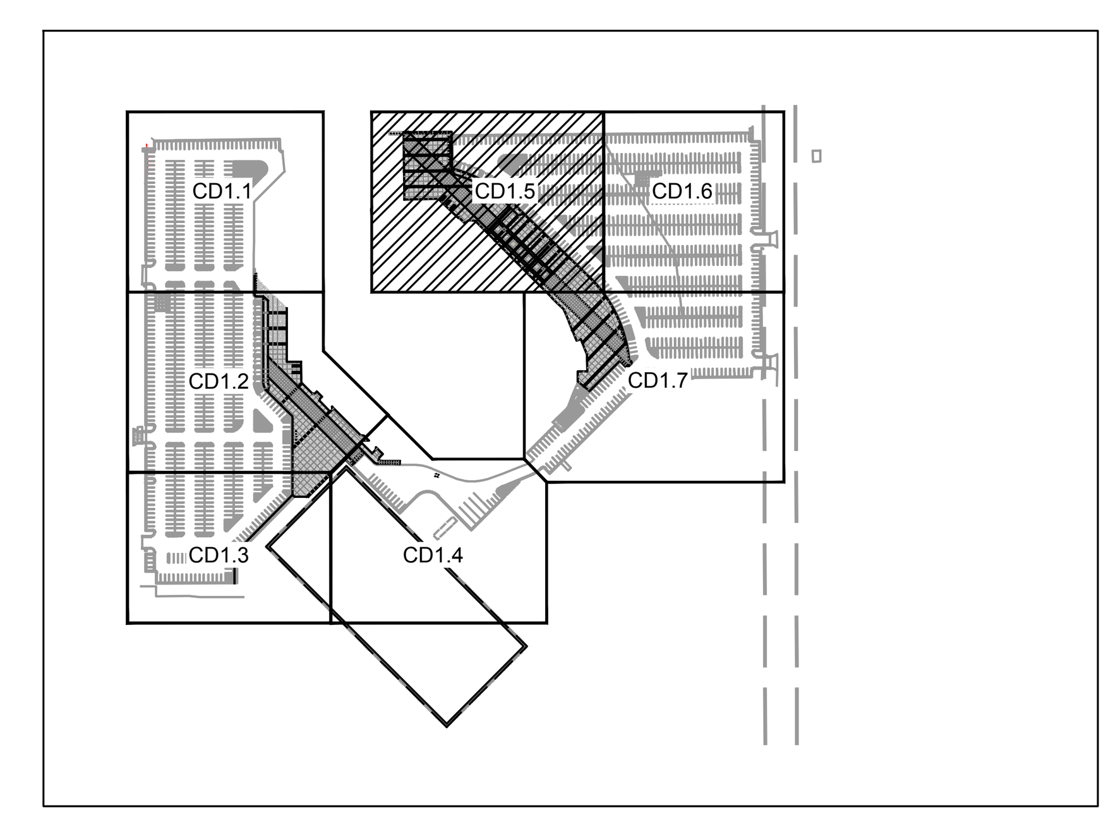
SHEET

CD1.4

DATE

3-27-2024





DEMOLITION PLAN NOTES:

1. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE ADJUSTMENT TO FINISH GRADE ELEVATIONS, SEE GRADING SHEETS.
2. CONTRACTOR TO COORDINATE WITH LIGHTING/ELECTRICAL PLANS FOR DEMOLITION INFORMATION.
3. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE CHANGE TO TRAFFIC-RATED UTILITY LIDS, BOXES, ETC. SEE SITE PLAN SHEETS TO DETERMINE IF EXISTING UTILITIES ARE LOCATED WITHIN TRAFFIC AREAS.
4. REFERENCE SHEET L1.1 FOR IRRIGATION DEMOLITION INFORMATION.
5. OBJECTS/AREAS SHOWN IN RED CONVEY A NECESSARY DEMOLITION ACTIVITY (REMOVE, REMOVE&REPLACE, SALVAGE, ETC.) OBJECTS/AREAS SHOWN IN GRAY ARE TO BE PROTECTED IN PLACE. ANY ITEMS IN QUESTIONS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO TAKING ACTION.

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

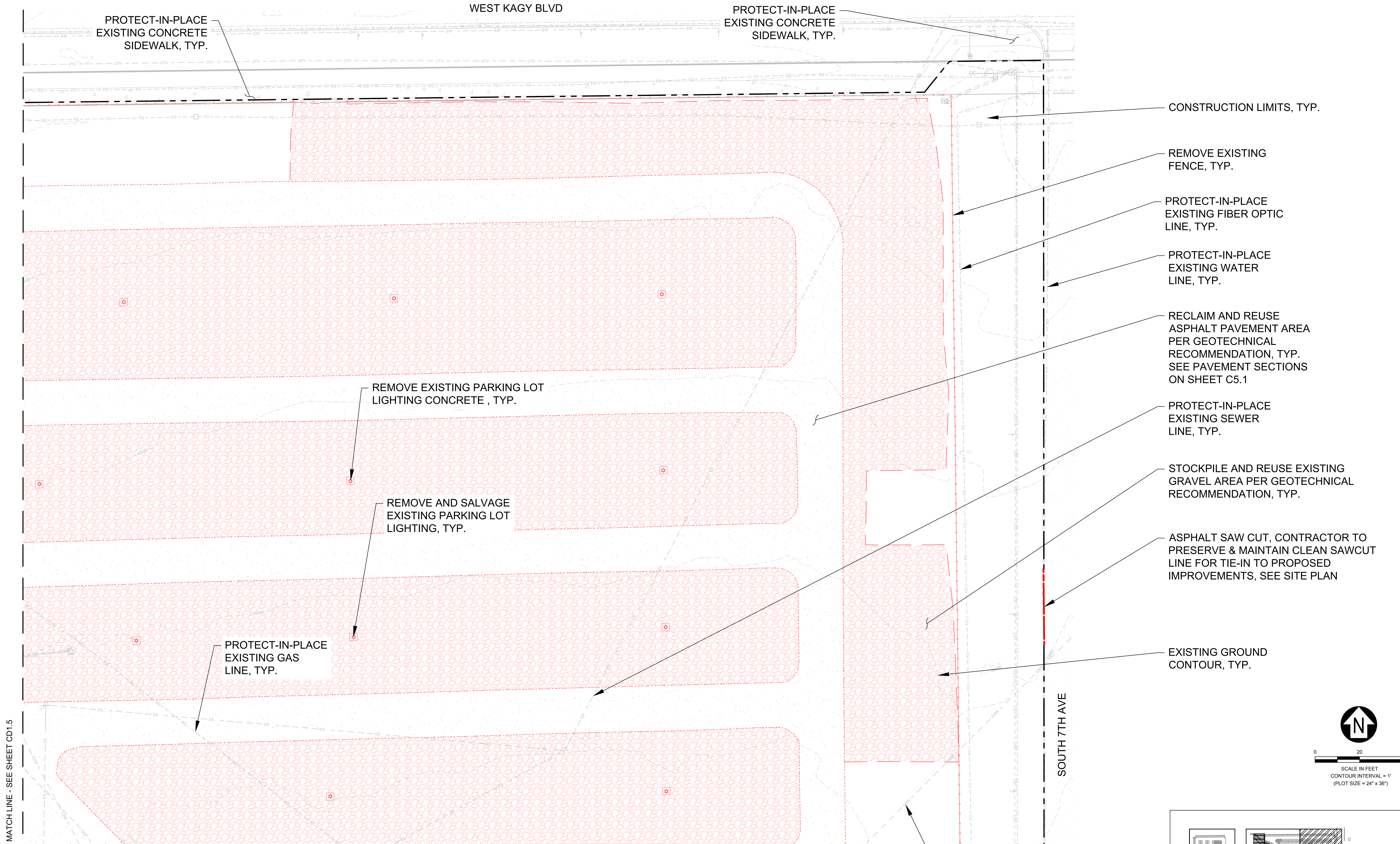
MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

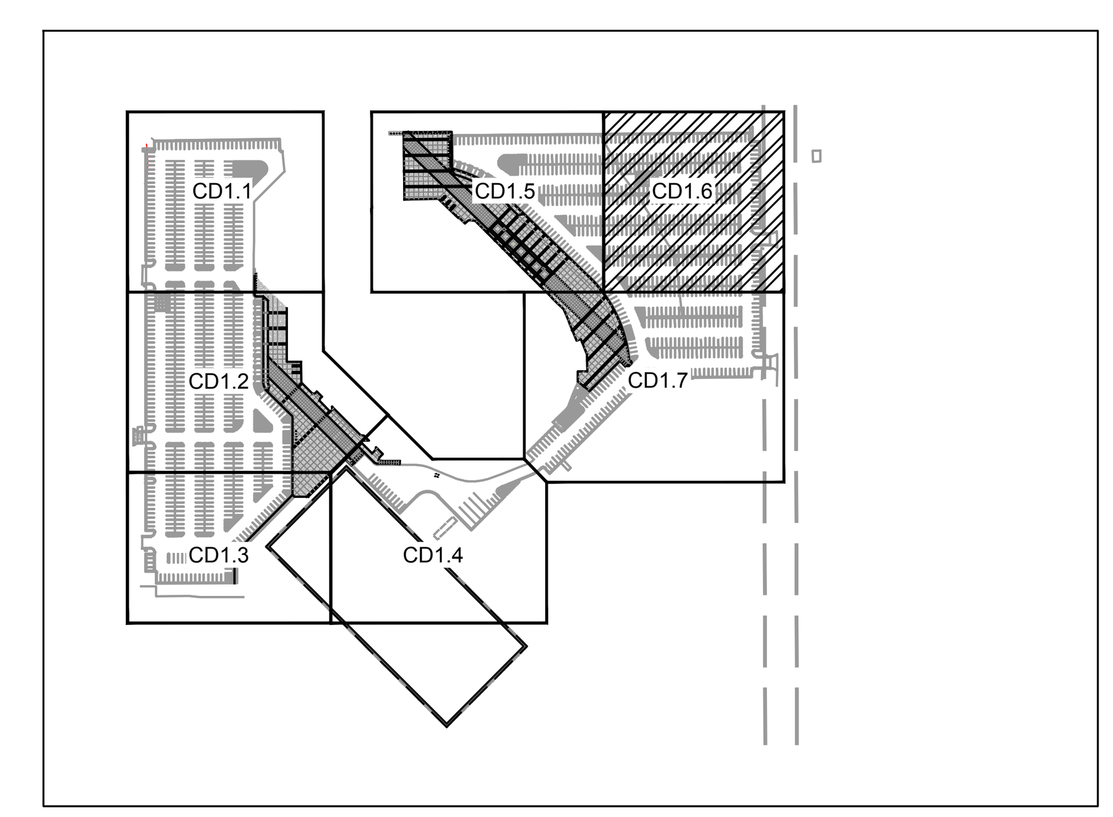
PPA#22-0012

SHEET TITLE
SITE DEMOLITION PLAN 5

SHEET
CD1.5

DATE
3-27-2024





DEMOLITION PLAN NOTES:

1. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE ADJUSTMENT TO FINISH GRADE ELEVATIONS, SEE GRADING SHEETS.
2. CONTRACTOR TO COORDINATE WITH LIGHTING/ELECTRICAL PLANS FOR DEMOLITION INFORMATION.
3. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE CHANGE TO TRAFFIC-RATED UTILITY LIDS, BOXES, ETC. SEE SITE PLAN SHEETS TO DETERMINE IF EXISTING UTILITIES ARE LOCATED WITHIN TRAFFIC AREAS.
4. REFERENCE SHEET L1.1 FOR IRRIGATION DEMOLITION INFORMATION.
5. OBJECTS/AREAS SHOWN IN RED CONVEY A NECESSARY DEMOLITION ACTIVITY (REMOVE, REMOVE&REPLACE, SALVAGE, ETC.) OBJECTS/AREAS SHOWN IN GRAY ARE TO BE PROTECTED IN PLACE. ANY ITEMS IN QUESTIONS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO TAKING ACTION.

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

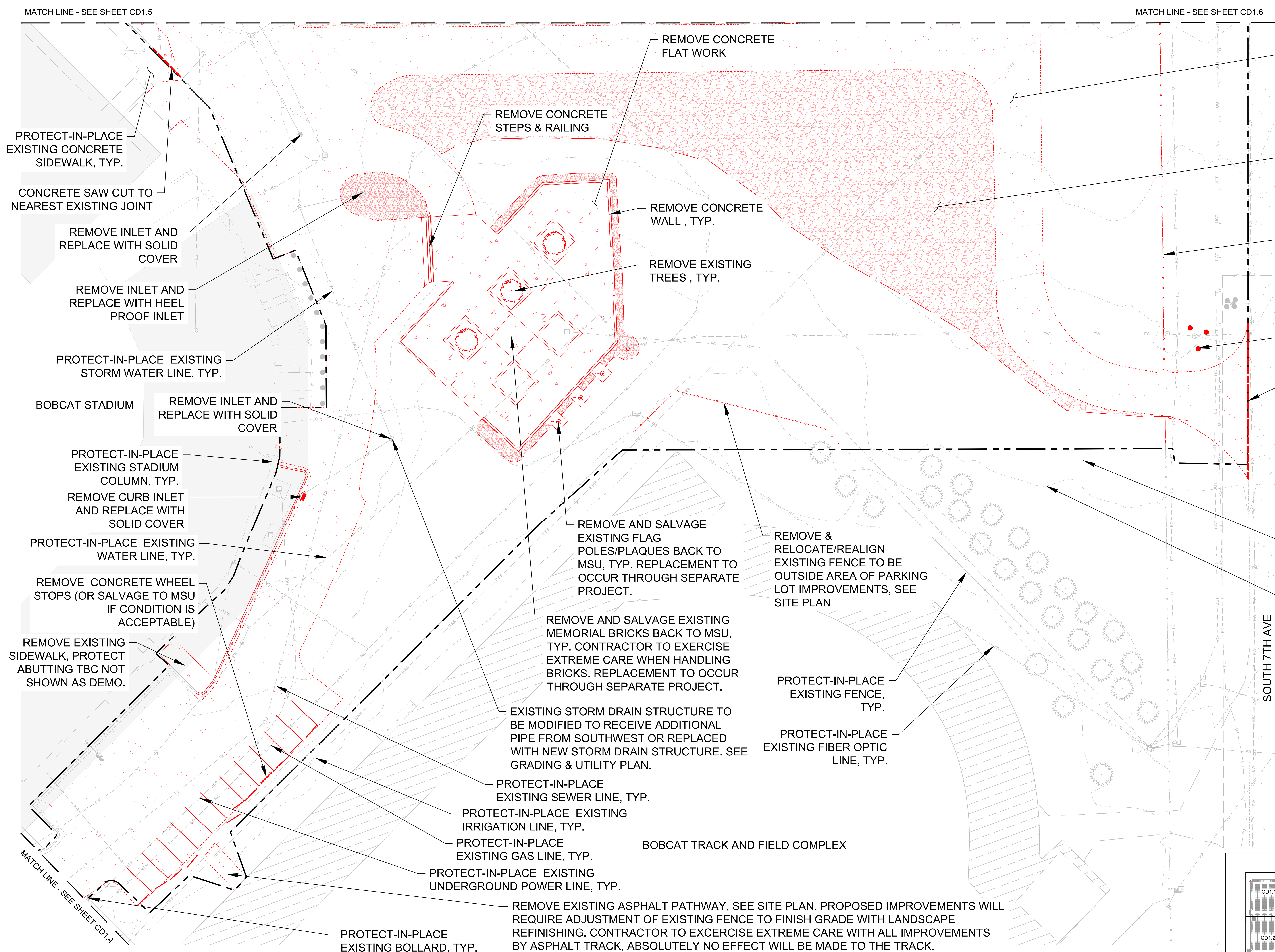
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

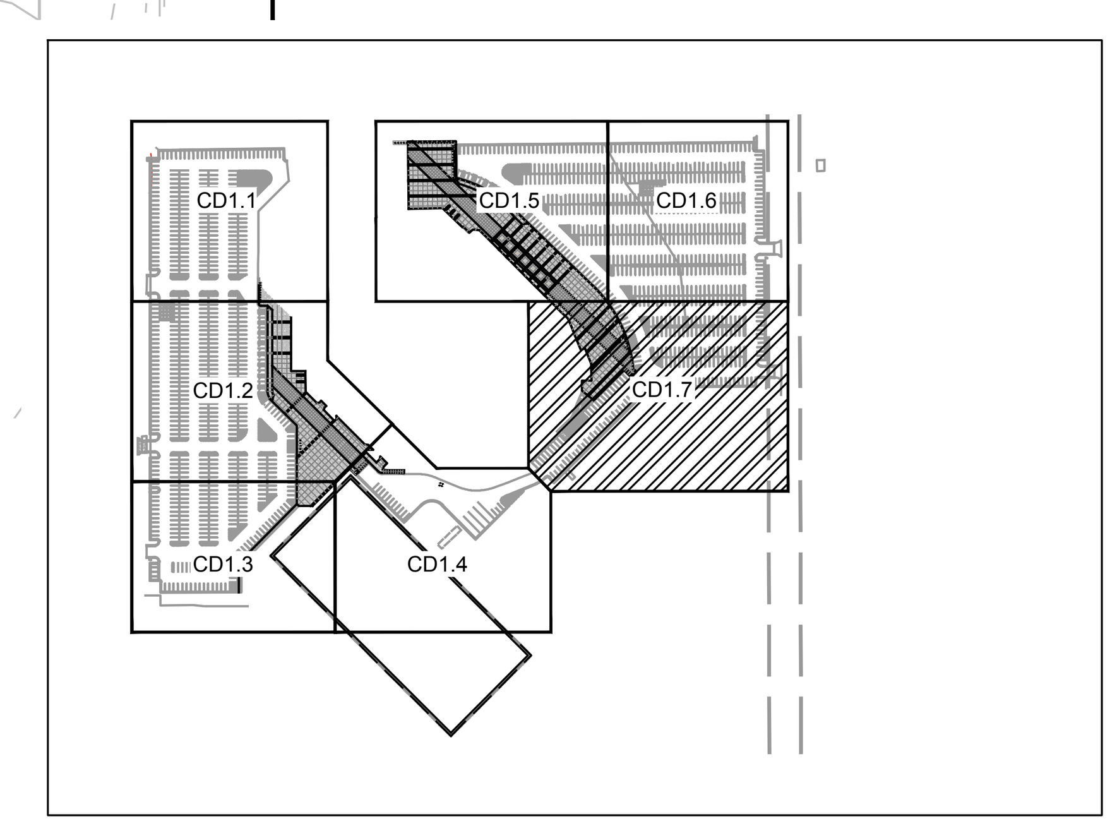
SHEET TITLE
SITE DEMOLITION PLAN 6

SHEET
CD1.6

DATE
3-27-2024



MATCH LINE - SEE SHEET CD1.5
MATCH LINE - SEE SHEET CD1.6
REMOVE CONCRETE FLAT WORK
REMOVE CONCRETE STEPS & RAILING
RECLAIM AND REUSE ASPHALT PAVEMENT AREA PER GEOTECHNICAL RECOMMENDATION, TYP. SEE PAVEMENT SECTIONS ON SHEET C5.1
STOCKPILE AND REUSE EXISTING GRAVEL AREA PER GEOTECHNICAL RECOMMENDATION, TYP.
PROTECT-IN-PLACE EXISTING CONCRETE SIDEWALK, TYP.
CONCRETE SAW CUT TO NEAREST EXISTING JOINT
REMOVE CONCRETE WALL , TYP.
REMOVE INLET AND REPLACE WITH SOLID COVER
REMOVE EXISTING FENCE, TYP.
REMOVE EXISTING TREES , TYP.
REMOVE INLET AND REPLACE WITH HEEL PROOF INLET
REMOVE EXISTING BOLLARD, TYP.
PROTECT-IN-PLACE EXISTING STORM WATER LINE, TYP.
ASPHALT SAW CUT, CONTRACTOR TO PRESERVE & MAINTAIN CLEAN SAWCUT LINE FOR TIE-IN TO PROPOSED IMPROVEMENTS, SEE SITE PLAN
BOBCAT STADIUM
REMOVE INLET AND REPLACE WITH SOLID COVER
PROTECT-IN-PLACE EXISTING STADIUM COLUMN, TYP.
REMOVE CURB INLET AND REPLACE WITH SOLID COVER
REMOVE AND SALVAGE EXISTING FLAG POLES/PLAQUES BACK TO MSU, TYP. REPLACEMENT TO OCCUR THROUGH SEPARATE PROJECT.
REMOVE & RELOCATE/REALIGN EXISTING FENCE TO BE OUTSIDE AREA OF PARKING LOT IMPROVEMENTS, SEE SITE PLAN
CONSTRUCTION LIMITS, TYP.
PROTECT-IN-PLACE EXISTING WATER LINE, TYP.
REMOVE CONCRETE WHEEL STOPS (OR SALVAGE TO MSU IF CONDITION IS ACCEPTABLE)
REMOVE AND SALVAGE EXISTING MEMORIAL BRICKS BACK TO MSU, TYP. CONTRACTOR TO EXERCISE EXTREME CARE WHEN HANDLING BRICKS. REPLACEMENT TO OCCUR THROUGH SEPARATE PROJECT.
EXISTING GROUND CONTOUR, TYP.
REMOVE EXISTING SIDEWALK, PROTECT ABUTTING TBC NOT SHOWN AS DEMO.
PROTECT-IN-PLACE EXISTING FENCE, TYP.
SOUTH 7TH AVE
EXISTING STORM DRAIN STRUCTURE TO BE MODIFIED TO RECEIVE ADDITIONAL PIPE FROM SOUTHWEST OR REPLACED WITH NEW STORM DRAIN STRUCTURE. SEE GRADING & UTILITY PLAN.
PROTECT-IN-PLACE EXISTING FIBER OPTIC LINE, TYP.
MATCH LINE - SEE SHEET ####
PROTECT-IN-PLACE EXISTING SEWER LINE, TYP.
PROTECT-IN-PLACE EXISTING IRRIGATION LINE, TYP.
N
0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")
PROTECT-IN-PLACE EXISTING GAS LINE, TYP.
BOBCAT TRACK AND FIELD COMPLEX
PROTECT-IN-PLACE EXISTING UNDERGROUND POWER LINE, TYP.
MATCH LINE - SEE SHEET CD1.4
REMOVE EXISTING ASPHALT PATHWAY, SEE SITE PLAN. PROPOSED IMPROVEMENTS WILL REQUIRE ADJUSTMENT OF EXISTING FENCE TO FINISH GRADE WITH LANDSCAPE REFINISHING. CONTRACTOR TO EXCERCISE EXTREME CARE WITH ALL IMPROVEMENTS BY ASPHALT TRACK, ABSOLUTELY NO EFFECT WILL BE MADE TO THE TRACK.
PROTECT-IN-PLACE EXISTING BOLLARD, TYP.



DEMOLITION PLAN NOTES:

1. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE ADJUSTMENT TO FINISH GRADE ELEVATIONS, SEE GRADING SHEETS.
2. CONTRACTOR TO COORDINATE WITH LIGHTING/ELECTRICAL PLANS FOR DEMOLITION INFORMATION.
3. UTILITIES CALLED OUT TO BE PROTECTED IN PLACE MAY REQUIRE CHANGE TO TRAFFIC-RATED UTILITY LIDS, BOXES, ETC. SEE SITE PLAN SHEETS TO DETERMINE IF EXISTING UTILITIES ARE LOCATED WITHIN TRAFFIC AREAS.
4. REFERENCE SHEET L1.1 FOR IRRIGATION DEMOLITION INFO.
5. OBJECTS/AREAS SHOWN IN RED CONVEY A NECESSARY DEMOLITION ACTIVITY (REMOVE, REMOVE&REPLACE, SALVAGE, ETC.) OBJECTS/AREAS SHOWN IN GRAY ARE TO BE PROTECTED IN PLACE. ANY ITEMS IN QUESTIONS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO TAKING ACTION.

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA MICHAEL T. RUSSELL No. 59647PE PROFESSIONAL ENGINEER

PPA#22-0012

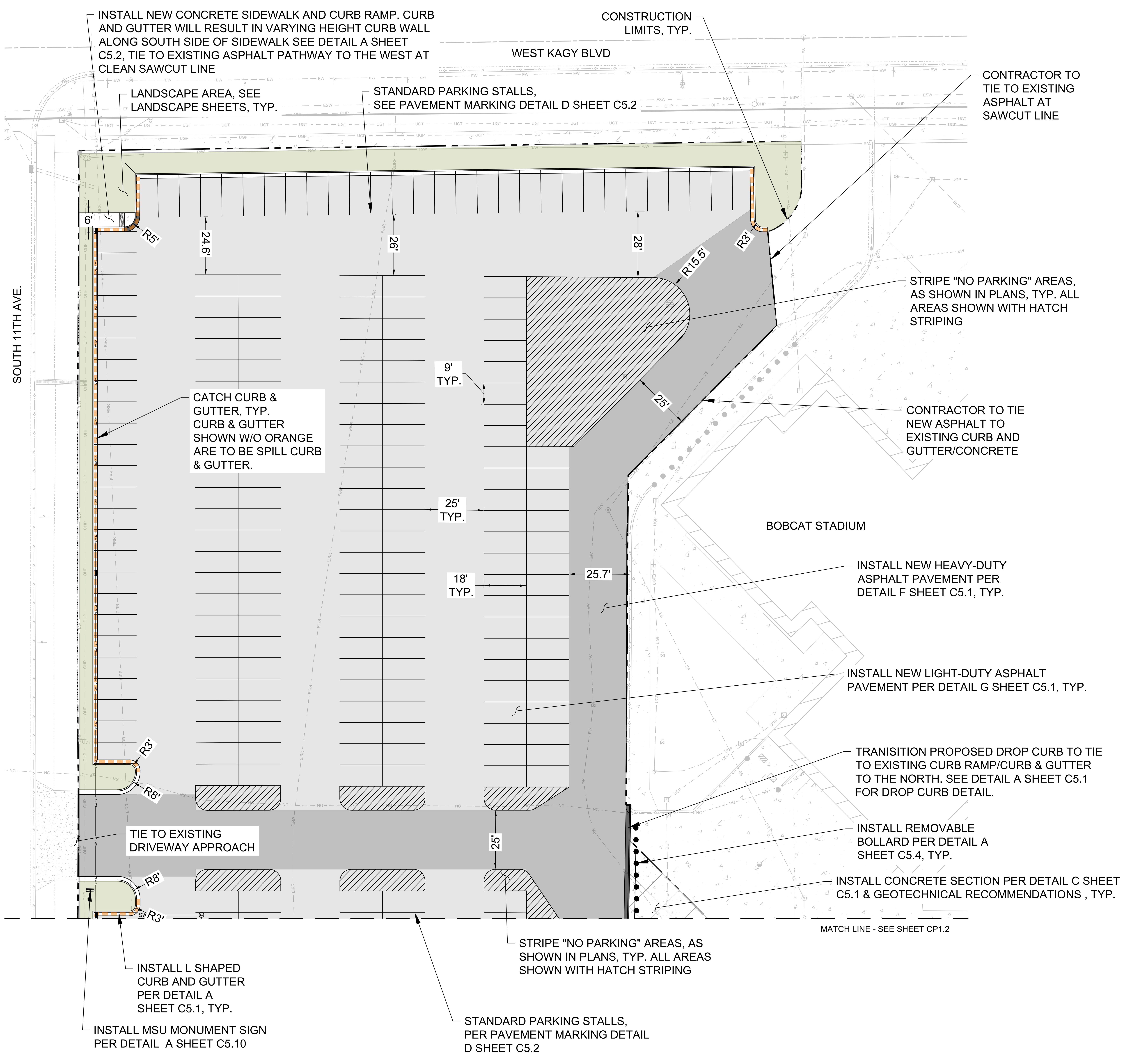
SHEET TITLE
SITE DEMOLITION PLAN 7

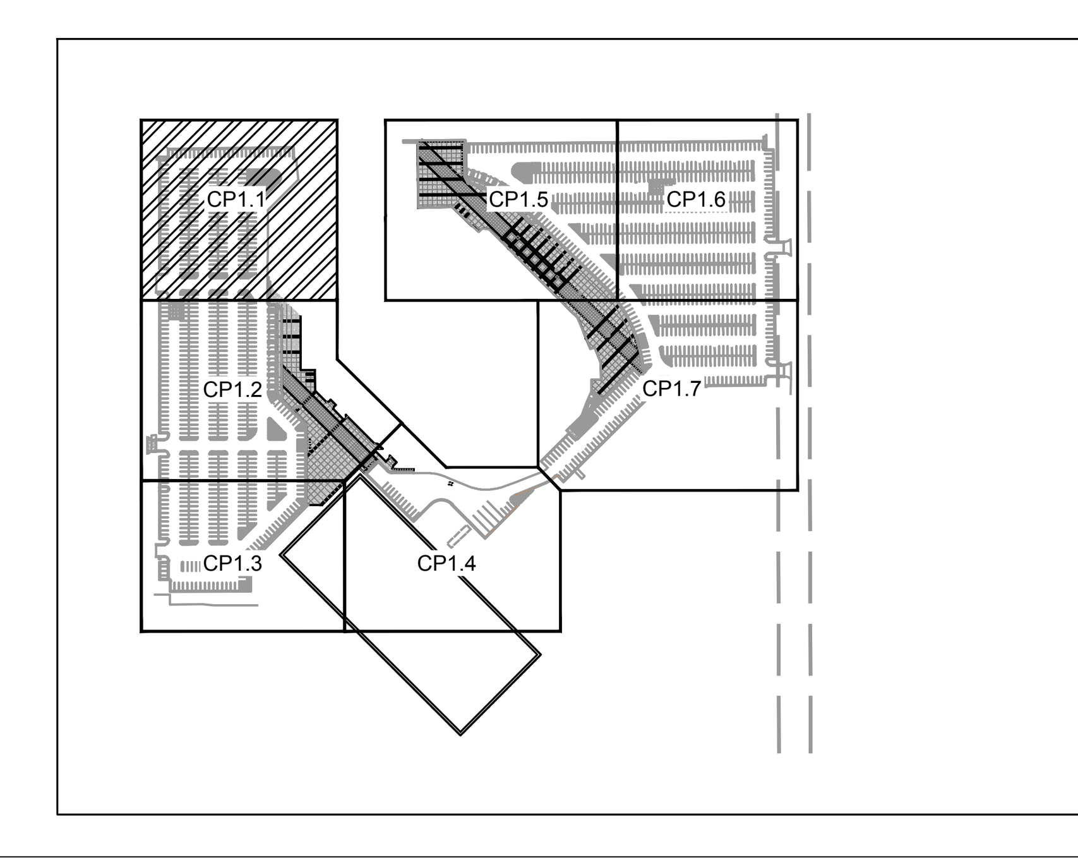
SHEET
CD1.7

DATE
3-27-2024

SITE PLAN NOTES:

1. WIDTH OF PARKING STALLS MEASURED AT NARROWEST POINT (ALONG FACE OF CURB FOR EXTERIOR PARKING STALLS AND ALONG EDGE OF DRIVE AISLE FOR INTERIOR PARKING STALLS).
2. CONTRACTOR TO EXERCISE CARE IN MINIMIZING DISTURBANCE TO LANDSCAPING BEYOND EDGE OF PROPOSED IMPROVEMENTS/PROJECT EXTENTS. CONTRACTOR TO PROVIDE PATCHING AND REPAIR OF LANDSCAPING, GRASS AREA(S), AND IRRIGATION. CONTRACTOR TO COORDINATE WITH MSU PRIOR TO DISTURBING ANY LANDSCAPED AREAS.
3. SEE SHEET GC1.3 FOR BID OVERVIEW INFORMATION.
4. CONTRACTOR TO FOLLOW GEOTECHNICAL RECOMMENDATIONS FOR PAVEMENT AND CONCRETE DESIGN. CONTRACTOR TO USE BASE ONE TREATED DESIGN. IF CONTRACTOR DOES NOT HAVE ENOUGH REUSED BASE MATERIAL FOR ENTIRE PROJECT, CONTRACTOR SHALL RECEIVE APPROVAL BEFORE USING THE ALTERNATIVE DESIGN WITH NEW CAC (CRUSHED AGGREGATE COURSE) BASE MATERIAL.





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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA MICHAEL T. RUSSELL No. 56042PE PROFESSIONAL ENGINEER

PPA#22-0012

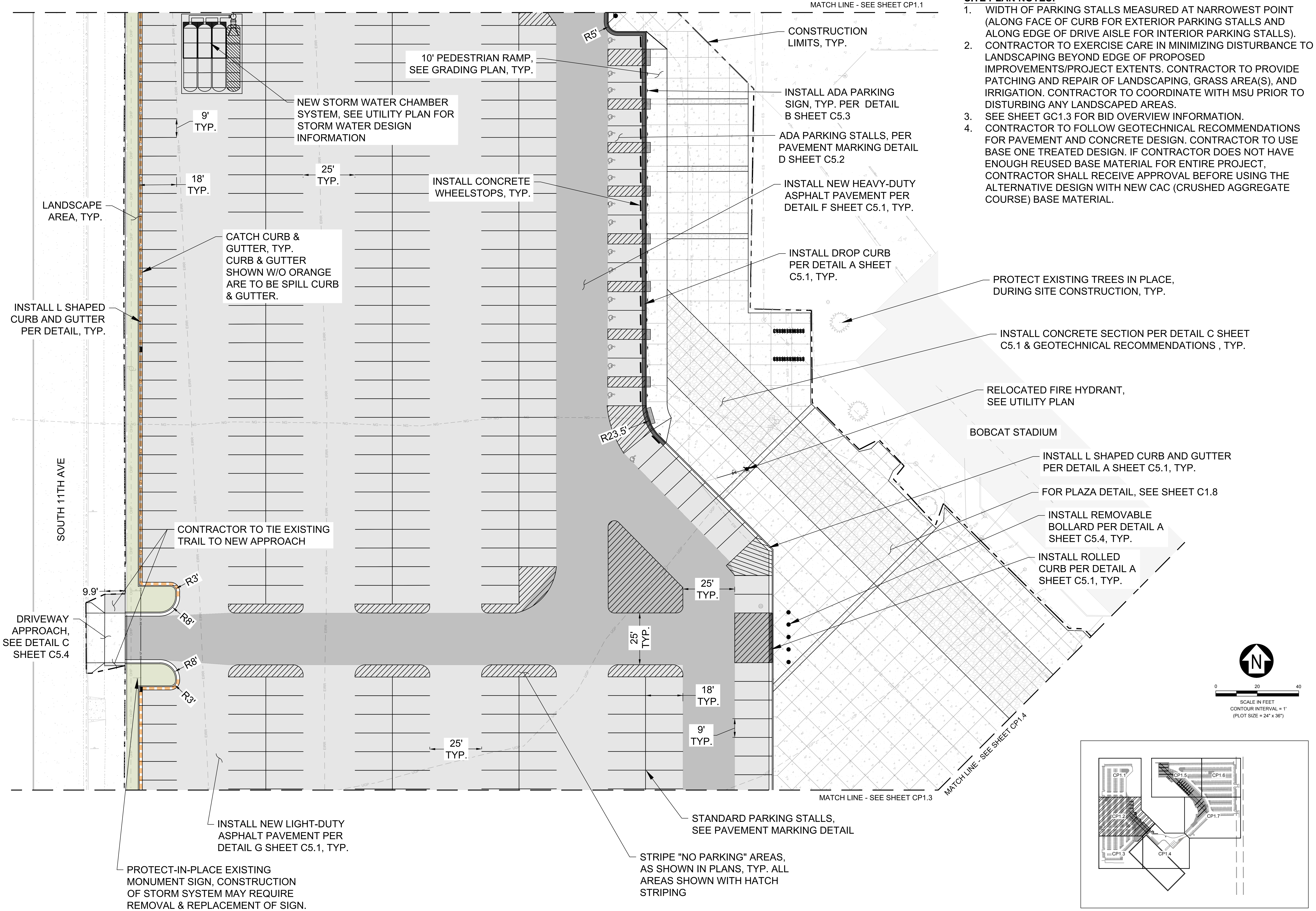
SHEET TITLE
SITE PLAN 1

SHEET
CP1.1

DATE
3-27-2024

SITE PLAN NOTES:

1. WIDTH OF PARKING STALLS MEASURED AT NARROWEST POINT (ALONG FACE OF CURB FOR EXTERIOR PARKING STALLS AND ALONG EDGE OF DRIVE AISLE FOR INTERIOR PARKING STALLS).
2. CONTRACTOR TO EXERCISE CARE IN MINIMIZING DISTURBANCE TO LANDSCAPING BEYOND EDGE OF PROPOSED IMPROVEMENTS/PROJECT EXTENTS. CONTRACTOR TO PROVIDE PATCHING AND REPAIR OF LANDSCAPING, GRASS AREA(S), AND IRRIGATION. CONTRACTOR TO COORDINATE WITH MSU PRIOR TO DISTURBING ANY LANDSCAPED AREAS.
3. SEE SHEET GC1.3 FOR BID OVERVIEW INFORMATION.
4. CONTRACTOR TO FOLLOW GEOTECHNICAL RECOMMENDATIONS FOR PAVEMENT AND CONCRETE DESIGN. CONTRACTOR TO USE BASE ONE TREATED DESIGN. IF CONTRACTOR DOES NOT HAVE ENOUGH REUSED BASE MATERIAL FOR ENTIRE PROJECT, CONTRACTOR SHALL RECEIVE APPROVAL BEFORE USING THE ALTERNATIVE DESIGN WITH NEW CAC (CRUSHED AGGREGATE COURSE) BASE MATERIAL.



MATCH LINE - SEE SHEET CP1.1
CONSTRUCTION LIMITS, TYP.
10' PEDESTRIAN RAMP, SEE GRADING PLAN, TYP.
R5'
INSTALL ADA PARKING SIGN, TYP. PER DETAIL B SHEET C5.3
NEW STORM WATER CHAMBER SYSTEM, SEE UTILITY PLAN FOR STORM WATER DESIGN INFORMATION
9' TYP.
ADA PARKING STALLS, PER PAVEMENT MARKING DETAIL D SHEET C5.2
18' TYP.
25' TYP.
INSTALL CONCRETE WHEELSTOPS, TYP.
INSTALL NEW HEAVY-DUTY ASPHALT PAVEMENT PER DETAIL F SHEET C5.1, TYP.
LANDSCAPE AREA, TYP.
CATCH CURB & GUTTER, TYP. CURB & GUTTER SHOWN W/O ORANGE ARE TO BE SPILL CURB & GUTTER.
INSTALL DROP CURB PER DETAIL A SHEET C5.1, TYP.
PROTECT EXISTING TREES IN PLACE, DURING SITE CONSTRUCTION, TYP.
INSTALL L SHAPED CURB AND GUTTER PER DETAIL, TYP.
INSTALL CONCRETE SECTION PER DETAIL C SHEET C5.1 & GEOTECHNICAL RECOMMENDATIONS , TYP.
RELOCATED FIRE HYDRANT, SEE UTILITY PLAN
R23.5'
BOBCAT STADIUM
INSTALL L SHAPED CURB AND GUTTER PER DETAIL A SHEET C5.1, TYP.
SOUTH 11TH AVE
FOR PLAZA DETAIL, SEE SHEET C1.8
INSTALL REMOVABLE BOLLARD PER DETAIL A SHEET C5.4, TYP.
CONTRACTOR TO TIE EXISTING TRAIL TO NEW APPROACH
INSTALL ROLLED CURB PER DETAIL A SHEET C5.1, TYP.
9.9'
R3'
25' TYP.
DRIVEWAY APPROACH, SEE DETAIL C SHEET C5.4
R8'
25' TYP.
R8'
R3'
18' TYP.
9' TYP.
25' TYP.
MATCH LINE - SEE SHEET CP1.4
MATCH LINE - SEE SHEET CP1.3
INSTALL NEW LIGHT-DUTY ASPHALT PAVEMENT PER DETAIL G SHEET C5.1, TYP.
STANDARD PARKING STALLS, SEE PAVEMENT MARKING DETAIL
STRIPE "NO PARKING" AREAS, AS SHOWN IN PLANS, TYP. ALL AREAS SHOWN WITH HATCH STRIPING
PROTECT-IN-PLACE EXISTING MONUMENT SIGN, CONSTRUCTION OF STORM SYSTEM MAY REQUIRE REMOVAL & REPLACEMENT OF SIGN.
N
0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")
CP1.1
CP1.2
CP1.3
CP1.4
CP1.5
CP1.6
CP1.7

FINAL CD - FOR CONSTRUCTION

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Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

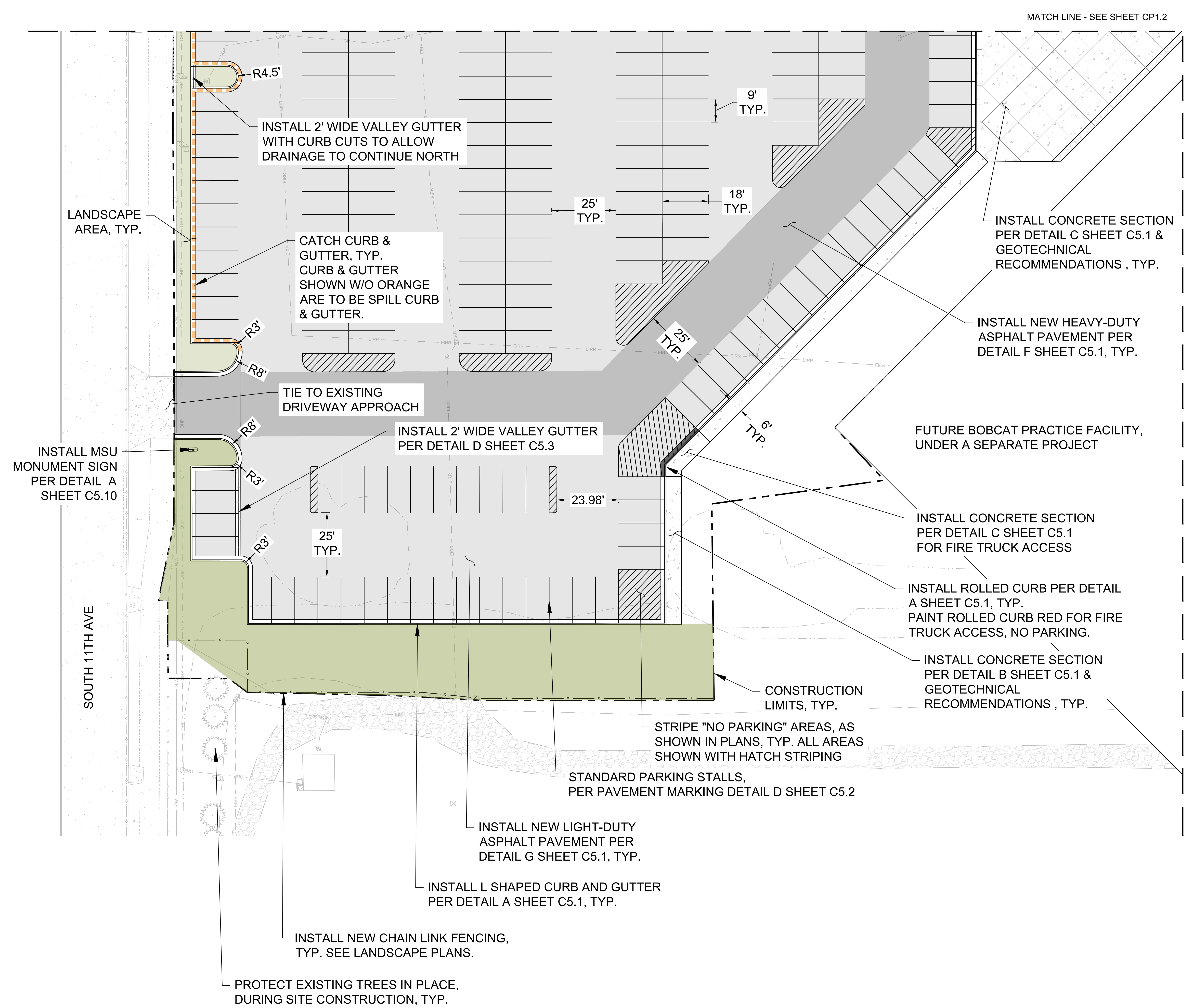
MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
SITE PLAN 2

SHEET
CP1.2

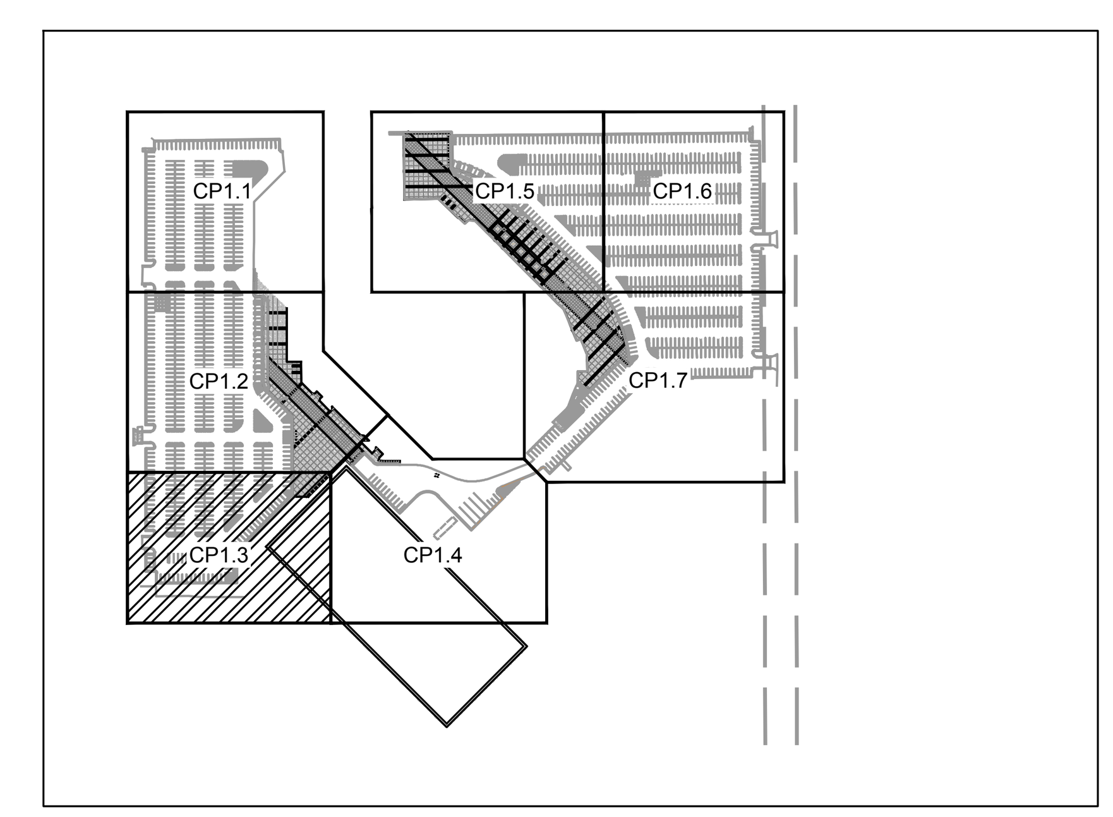
DATE
3-27-2024



SITE PLAN NOTES:

1. WIDTH OF PARKING STALLS MEASURED AT NARROWEST POINT (ALONG FACE OF CURB FOR EXTERIOR PARKING STALLS AND ALONG EDGE OF DRIVE AISLE FOR INTERIOR PARKING STALLS).
2. CONTRACTOR TO EXERCISE CARE IN MINIMIZING DISTURBANCE TO LANDSCAPING BEYOND EDGE OF PROPOSED IMPROVEMENTS/PROJECT EXTENTS. CONTRACTOR TO PROVIDE PATCHING AND REPAIR OF LANDSCAPING, GRASS AREA(S), AND IRRIGATION. CONTRACTOR TO COORDINATE WITH MSU PRIOR TO DISTURBING ANY LANDSCAPED AREAS.
3. SEE SHEET GC1.3 FOR BID OVERVIEW INFORMATION.
4. CONTRACTOR TO FOLLOW GEOTECHNICAL RECOMMENDATIONS FOR PAVEMENT AND CONCRETE DESIGN. CONTRACTOR TO USE BASE ONE TREATED DESIGN. IF CONTRACTOR DOES NOT HAVE ENOUGH REUSED BASE MATERIAL FOR ENTIRE PROJECT, CONTRACTOR SHALL RECEIVE APPROVAL BEFORE USING THE ALTERNATIVE DESIGN WITH NEW CAC (CRUSHED AGGREGATE COURSE) BASE MATERIAL.

0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

MSU Stadium Lots
Construction Documents

406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

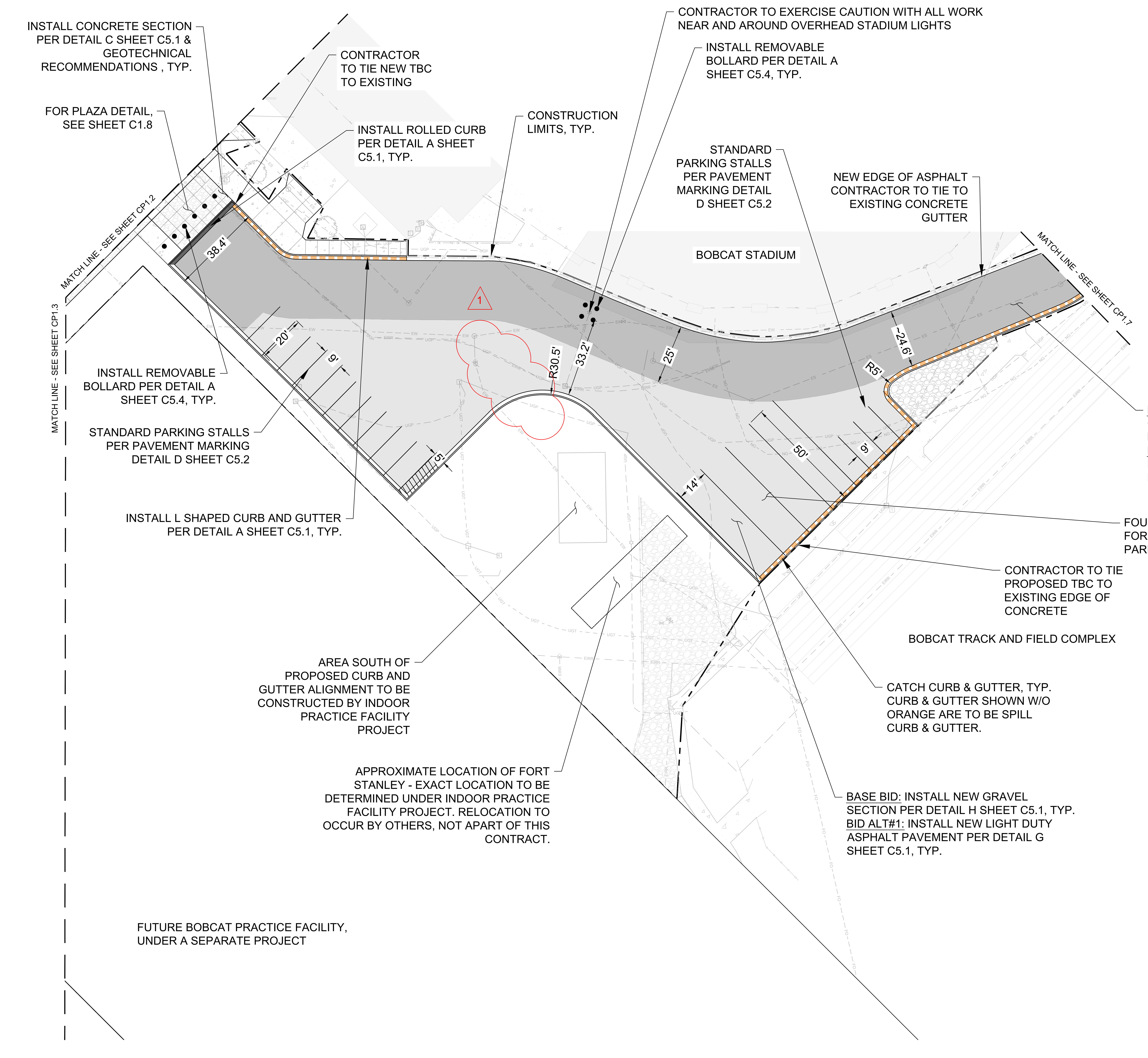
REV.	DESCRIPTION	DATE

PPA#22-0012

SHEET TITLE
SITE PLAN 3

SHEET
CP1.3

DATE
3-27-2024



INSTALL CONCRETE SECTION PER DETAIL C SHEET C5.1 & GEOTECHNICAL RECOMMENDATIONS , TYP.
CONTRACTOR TO TIE NEW TBC TO EXISTING
FOR PLAZA DETAIL, SEE SHEET C1.8
INSTALL ROLLED CURB PER DETAIL A SHEET C5.1, TYP.
CONSTRUCTION LIMITS, TYP.
CONTRACTOR TO EXERCISE CAUTION WITH ALL WORK NEAR AND AROUND OVERHEAD STADIUM LIGHTS
INSTALL REMOVABLE BOLLARD PER DETAIL A SHEET C5.4, TYP.
STANDARD PARKING STALLS PER PAVEMENT MARKING DETAIL D SHEET C5.2
NEW EDGE OF ASPHALT CONTRACTOR TO TIE TO EXISTING CONCRETE GUTTER
BOBCAT STADIUM
MATCH LINE - SEE SHEET CP1.2
MATCH LINE - SEE SHEET CP1.3
MATCH LINE - SEE SHEET CP1.7
38.4'
20'
9'
R30.5'
33.2'
25'
24.6'
R5'
50'
9'
14'
5'
1
INSTALL REMOVABLE BOLLARD PER DETAIL A SHEET C5.4, TYP.
STANDARD PARKING STALLS PER PAVEMENT MARKING DETAIL D SHEET C5.2
INSTALL L SHAPED CURB AND GUTTER PER DETAIL A SHEET C5.1, TYP.
BASE BID: INSTALL NEW GRAVEL SECTION PER DETAIL H SHEET C5.1, TYP.
BID ALT#1: INSTALL HEAVY DUTY ASPHALT PAVEMENT PER DETAIL F SHEET C5.1, TYP.
FOUR BUS PARKING STALLS FOR HEAD-IN OR BACK-IN PARKING, 14' X 50'
CONTRACTOR TO TIE PROPOSED TBC TO EXISTING EDGE OF CONCRETE
BOBCAT TRACK AND FIELD COMPLEX
AREA SOUTH OF PROPOSED CURB AND GUTTER ALIGNMENT TO BE CONSTRUCTED BY INDOOR PRACTICE FACILITY PROJECT
CATCH CURB & GUTTER, TYP. CURB & GUTTER SHOWN W/O ORANGE ARE TO BE SPILL CURB & GUTTER.
APPROXIMATE LOCATION OF FORT STANLEY - EXACT LOCATION TO BE DETERMINED UNDER INDOOR PRACTICE FACILITY PROJECT. RELOCATION TO OCCUR BY OTHERS, NOT APART OF THIS CONTRACT.
BASE BID: INSTALL NEW GRAVEL SECTION PER DETAIL H SHEET C5.1, TYP.
BID ALT#1: INSTALL NEW LIGHT DUTY ASPHALT PAVEMENT PER DETAIL G SHEET C5.1, TYP.
FUTURE BOBCAT PRACTICE FACILITY, UNDER A SEPARATE PROJECT

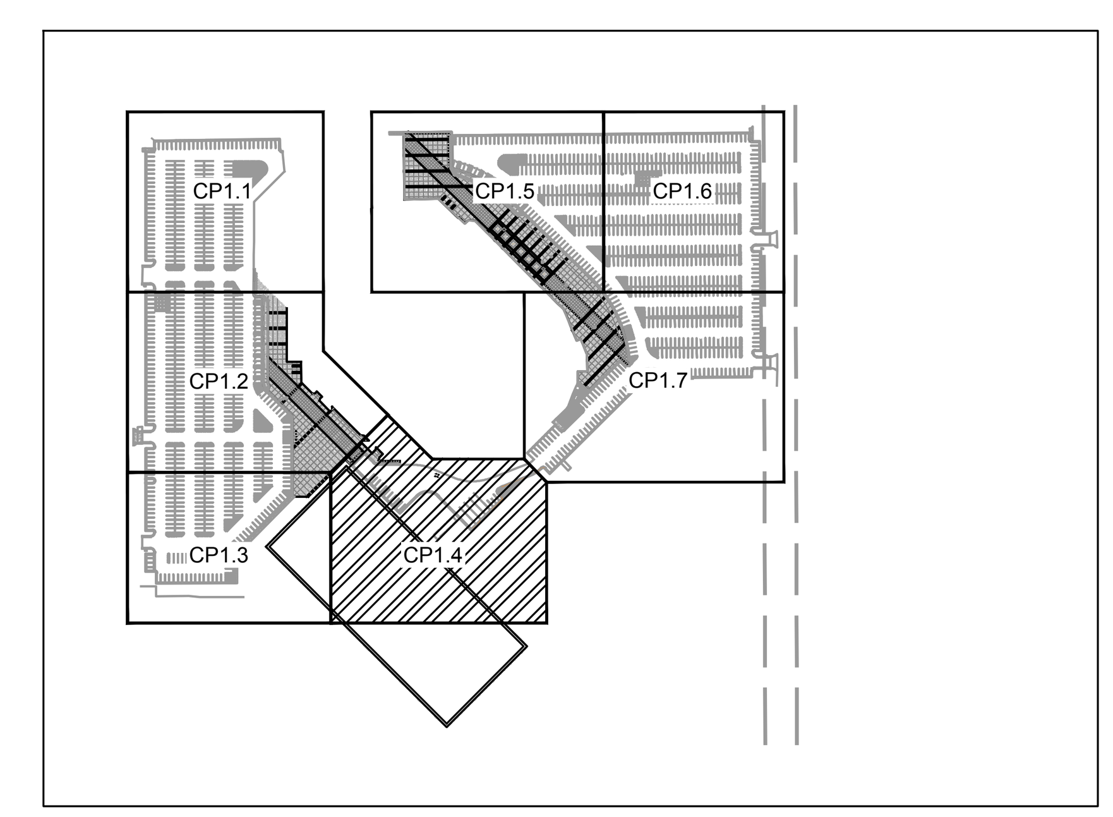
SITE PLAN NOTES:

1. WIDTH OF PARKING STALLS MEASURED AT NARROWEST POINT (ALONG FACE OF CURB FOR EXTERIOR PARKING STALLS AND ALONG EDGE OF DRIVE AISLE FOR INTERIOR PARKING STALLS).
2. CONTRACTOR TO EXERCISE CARE IN MINIMIZING DISTURBANCE TO LANDSCAPING BEYOND EDGE OF PROPOSED IMPROVEMENTS/PROJECT EXTENTS. CONTRACTOR TO PROVIDE PATCHING AND REPAIR OF LANDSCAPING, GRASS AREA(S), AND IRRIGATION. CONTRACTOR TO COORDINATE WITH MSU PRIOR TO DISTURBING ANY LANDSCAPED AREAS.
3. SEE SHEET GC1.3 FOR BID OVERVIEW INFORMATION.
4. CONTRACTOR TO FOLLOW GEOTECHNICAL RECOMMENDATIONS FOR PAVEMENT AND CONCRETE DESIGN. CONTRACTOR TO USE BASE ONE TREATED DESIGN. IF CONTRACTOR DOES NOT HAVE ENOUGH REUSED BASE MATERIAL FOR ENTIRE PROJECT, CONTRACTOR SHALL RECEIVE APPROVAL BEFORE USING THE ALTERNATIVE DESIGN WITH NEW CAC (CRUSHED AGGREGATE COURSE) BASE MATERIAL.

N

0 20 40

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

MSU Stadium Lots
Construction Documents

406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

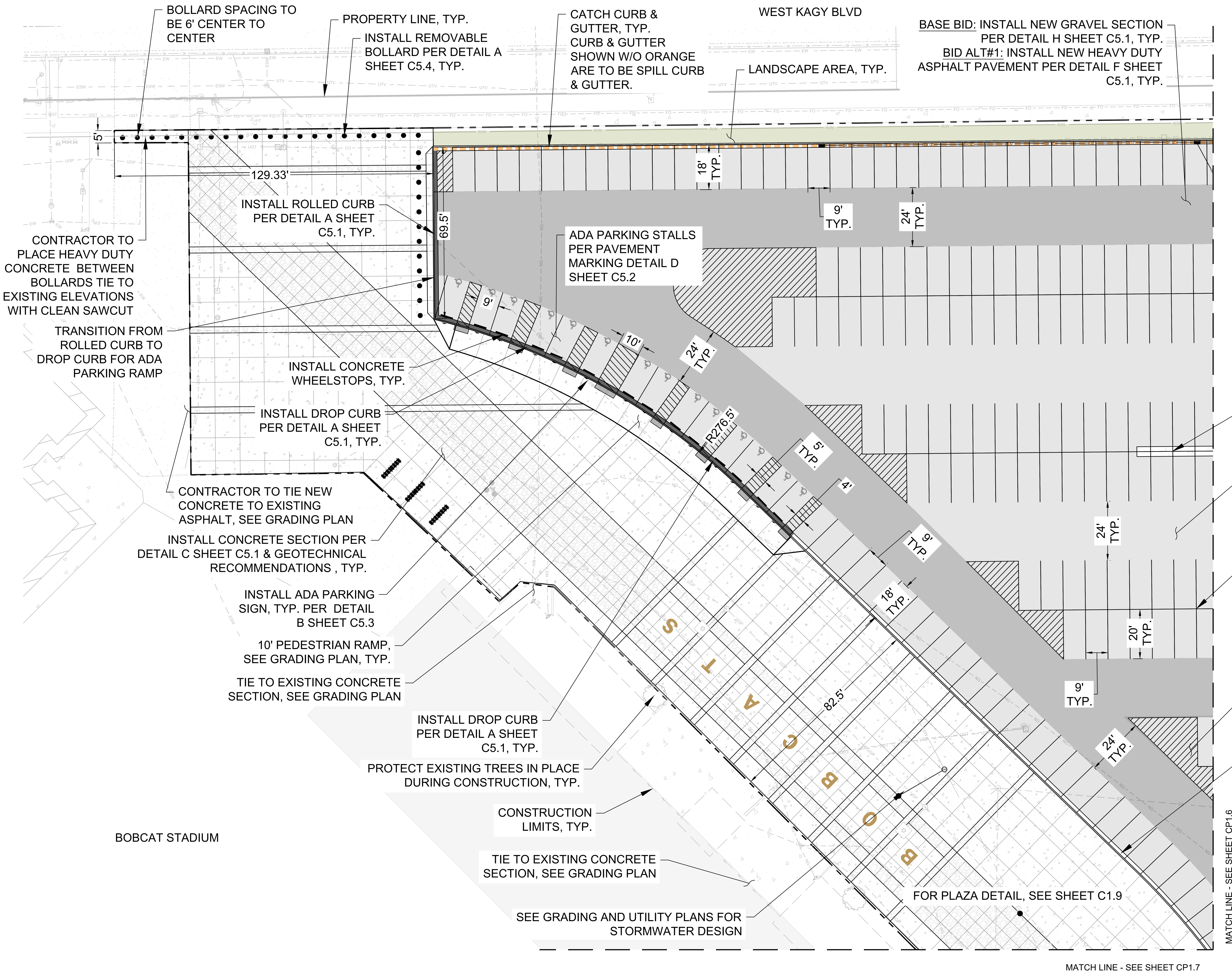
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012
A/E#00-00-00

SHEET TITLE
SITE PLAN 4

SHEET
CP1.4

DATE
3-27-2024



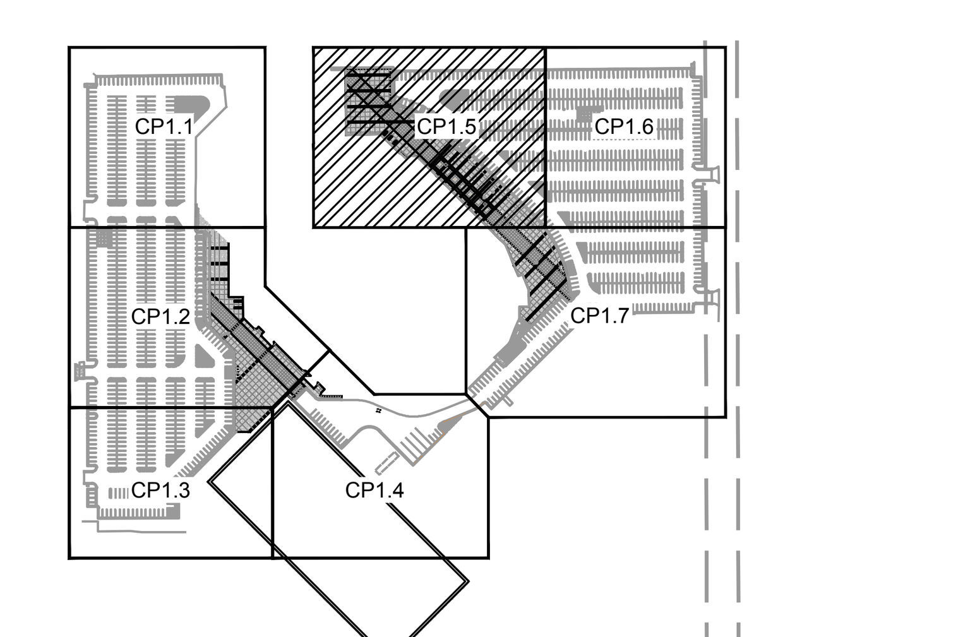
SITE PLAN NOTES:

1. WIDTH OF PARKING STALLS MEASURED AT NARROWEST POINT (ALONG FACE OF CURB FOR EXTERIOR PARKING STALLS AND ALONG EDGE OF DRIVE AISLE FOR INTERIOR PARKING STALLS).
2. CONTRACTOR TO EXERCISE CARE IN MINIMIZING DISTURBANCE TO LANDSCAPING BEYOND EDGE OF PROPOSED IMPROVEMENTS/PROJECT EXTENTS. CONTRACTOR TO PROVIDE PATCHING AND REPAIR OF LANDSCAPING, GRASS AREA(S), AND IRRIGATION. CONTRACTOR TO COORDINATE WITH MSU PRIOR TO DISTURBING ANY LANDSCAPED AREAS.
3. SEE SHEET GC1.3 FOR BID OVERVIEW INFORMATION.
4. CONTRACTOR TO FOLLOW GEOTECHNICAL RECOMMENDATIONS FOR PAVEMENT AND CONCRETE DESIGN. CONTRACTOR TO USE BASE ONE TREATED DESIGN. IF CONTRACTOR DOES NOT HAVE ENOUGH REUSED BASE MATERIAL FOR ENTIRE PROJECT, CONTRACTOR SHALL RECEIVE APPROVAL BEFORE USING THE ALTERNATIVE DESIGN WITH NEW CAC (CRUSHED AGGREGATE COURSE) BASE MATERIAL.

N

0 20 40

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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MONTANA STATE UNIVERSITY
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MSU Stadium Lots
Construction Documents

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djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

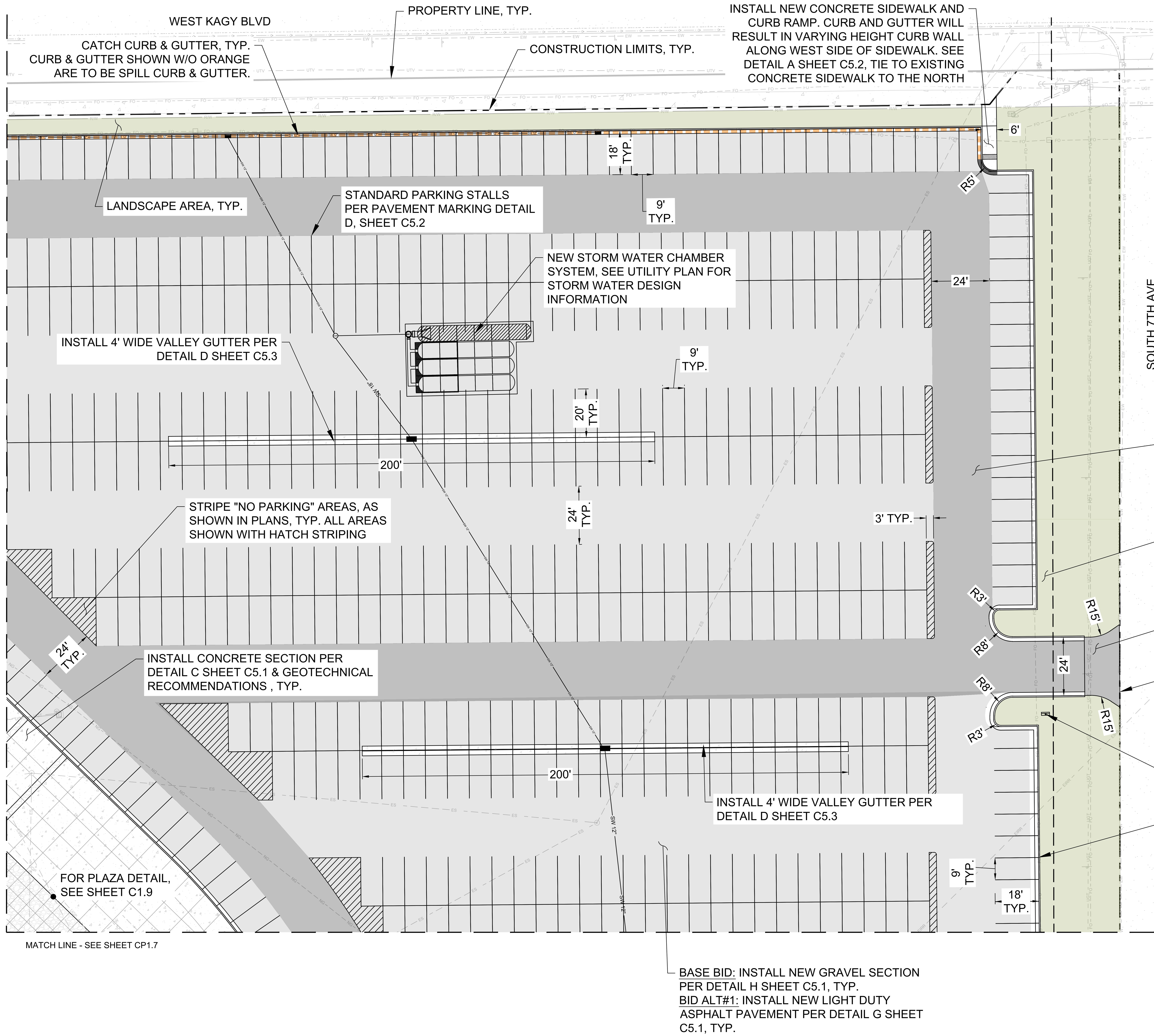
PPA#22-0012

SHEET TITLE
SITE PLAN 5

SHEET
CP1.5

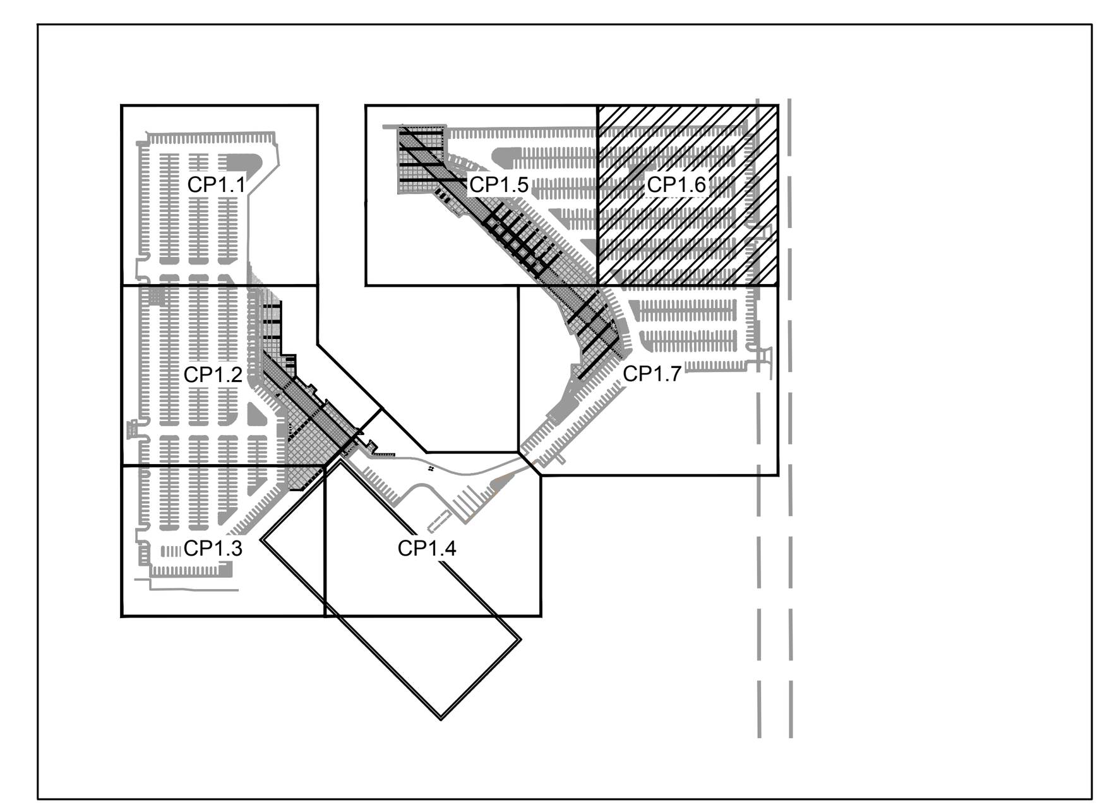
DATE
3-27-2024

Mar 27, 2024 - 8:19am - 7358.05 CD-Civil Site.dwg
F:\7358.05 MSU Stadium Lots Survey & Concept Design\Drawings\DWG\Civil\5 Sheet Production\


WEST KAGY BLVD
PROPERTY LINE, TYP.
CATCH CURB & GUTTER, TYP.
CURB & GUTTER SHOWN W/O ORANGE
ARE TO BE SPILL CURB & GUTTER.
CONSTRUCTION LIMITS, TYP.
INSTALL NEW CONCRETE SIDEWALK AND
CURB RAMP. CURB AND GUTTER WILL
RESULT IN VARYING HEIGHT CURB WALL
ALONG WEST SIDE OF SIDEWALK. SEE
DETAIL A SHEET C5.2, TIE TO EXISTING
CONCRETE SIDEWALK TO THE NORTH
6'
18' TYP.
R5'
9' TYP.
LANDSCAPE AREA, TYP.
STANDARD PARKING STALLS
PER PAVEMENT MARKING DETAIL
D, SHEET C5.2
NEW STORM WATER CHAMBER
SYSTEM, SEE UTILITY PLAN FOR
STORM WATER DESIGN
INFORMATION
24'
SOUTH 7TH AVE
INSTALL 4' WIDE VALLEY GUTTER PER
DETAIL D SHEET C5.3
9' TYP.
20' TYP.
200'
24' TYP.
STRIPE "NO PARKING" AREAS, AS
SHOWN IN PLANS, TYP. ALL AREAS
SHOWN WITH HATCH STRIPING
3' TYP.
BASE BID: INSTALL NEW GRAVEL SECTION
PER DETAIL H SHEET C5.1, TYP.
BID ALT#1: INSTALL NEW HEAVY DUTY
ASPHALT PAVEMENT PER DETAIL F SHEET
C5.1, TYP.
LANDSCAPE AREA, TYP.
R3'
R15'
ASPHALT DRIVEWAY
APPROACH
R8'
24'
24' TYP.
INSTALL CONCRETE SECTION PER
DETAIL C SHEET C5.1 & GEOTECHNICAL
RECOMMENDATIONS , TYP.
TIE TO EXISTING ASPHALT
ROADWAY AT CLEAN
SAWCUT LINE
R8'
R15'
R3'
200'
INSTALL MSU MONUMENT SIGN
PER DETAIL A SHEET C5.10
INSTALL 4' WIDE VALLEY GUTTER PER
DETAIL D SHEET C5.3
INSTALL L SHAPED
CURB AND GUTTER
PER DETAIL A
SHEET C5.1, TYP.
MATCH LINE - SEE SHEET CP1.5
FOR PLAZA DETAIL,
SEE SHEET C1.9
9' TYP.
18' TYP.
MATCH LINE - SEE SHEET CP1.7
BASE BID: INSTALL NEW GRAVEL SECTION
PER DETAIL H SHEET C5.1, TYP.
BID ALT#1: INSTALL NEW LIGHT DUTY
ASPHALT PAVEMENT PER DETAIL G SHEET
C5.1, TYP.
N
0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

SITE PLAN NOTES:

1. WIDTH OF PARKING STALLS MEASURED AT NARROWEST POINT (ALONG FACE OF CURB FOR EXTERIOR PARKING STALLS AND ALONG EDGE OF DRIVE AISLE FOR INTERIOR PARKING STALLS).
2. CONTRACTOR TO EXERCISE CARE IN MINIMIZING DISTURBANCE TO LANDSCAPING BEYOND EDGE OF PROPOSED IMPROVEMENTS/PROJECT EXTENTS. CONTRACTOR TO PROVIDE PATCHING AND REPAIR OF LANDSCAPING, GRASS AREA(S), AND IRRIGATION. CONTRACTOR TO COORDINATE WITH MSU PRIOR TO DISTURBING ANY LANDSCAPED AREAS.
3. SEE SHEET GC1.3 FOR BID OVERVIEW INFORMATION.
4. CONTRACTOR TO FOLLOW GEOTECHNICAL RECOMMENDATIONS FOR PAVEMENT AND CONCRETE DESIGN. CONTRACTOR TO USE BASE ONE TREATED DESIGN. IF CONTRACTOR DOES NOT HAVE ENOUGH REUSED BASE MATERIAL FOR ENTIRE PROJECT, CONTRACTOR SHALL RECEIVE APPROVAL BEFORE USING THE ALTERNATIVE DESIGN WITH NEW CAC (CRUSHED AGGREGATE COURSE) BASE MATERIAL.



FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
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MSU Stadium Lots
Construction Documents

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djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

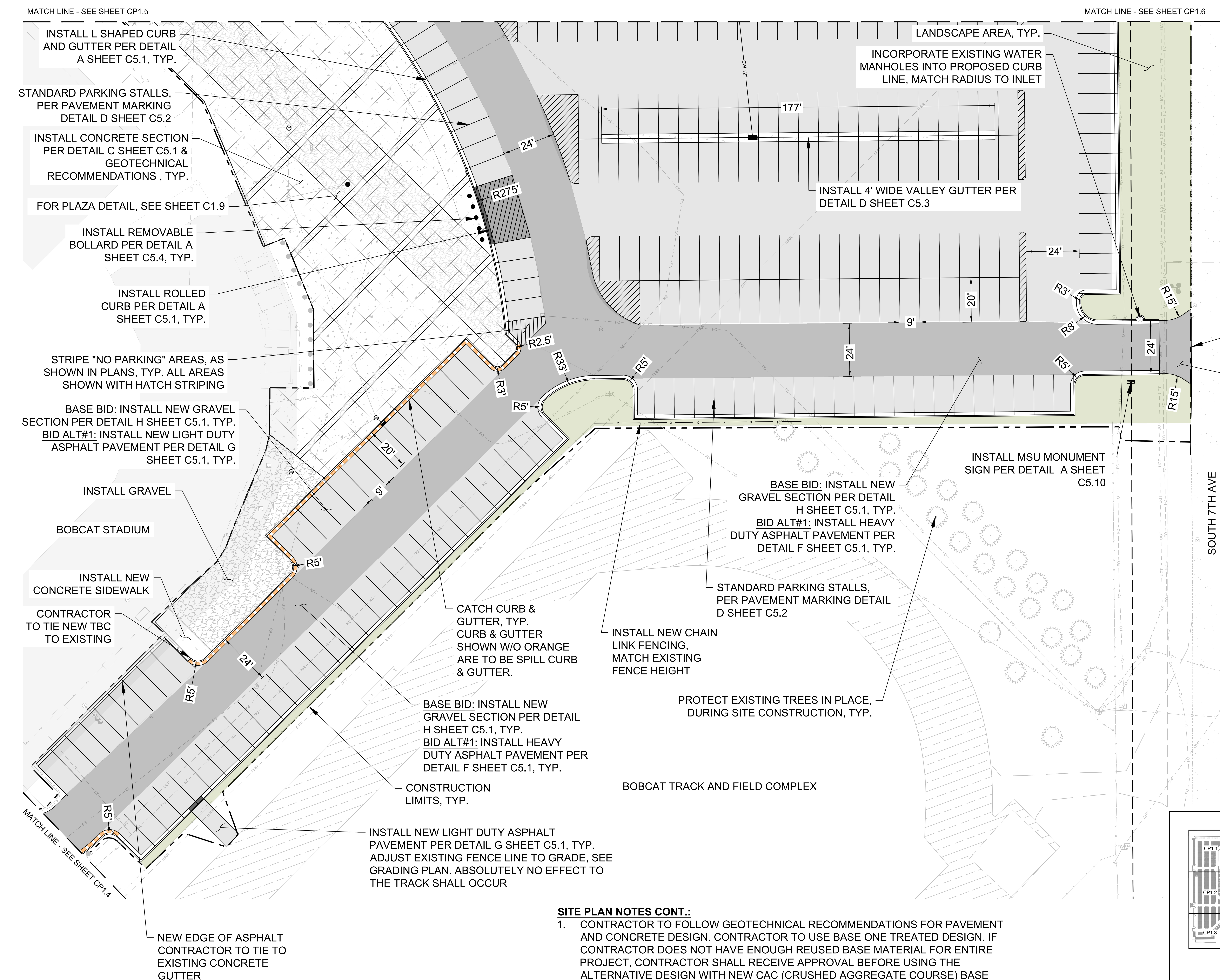
MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
SITE PLAN 6

SHEET
CP1.6

DATE
3-27-2024

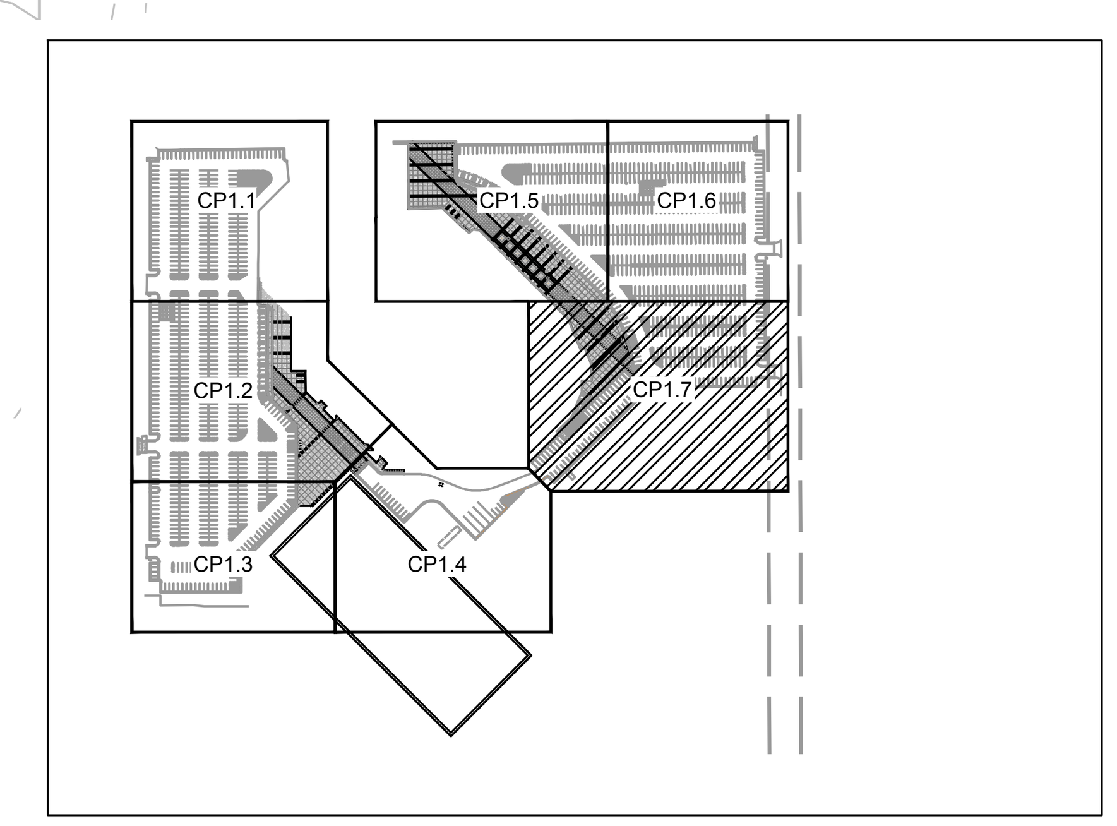

MATCH LINE - SEE SHEET CP1.5
MATCH LINE - SEE SHEET CP1.6
INSTALL L SHAPED CURB AND GUTTER PER DETAIL A SHEET C5.1, TYP.
STANDARD PARKING STALLS, PER PAVEMENT MARKING DETAIL D SHEET C5.2
INSTALL CONCRETE SECTION PER DETAIL C SHEET C5.1 & GEOTECHNICAL RECOMMENDATIONS , TYP.
FOR PLAZA DETAIL, SEE SHEET C1.9
INSTALL REMOVABLE BOLLARD PER DETAIL A SHEET C5.4, TYP.
INSTALL ROLLED CURB PER DETAIL A SHEET C5.1, TYP.
STRIPE "NO PARKING" AREAS, AS SHOWN IN PLANS, TYP. ALL AREAS SHOWN WITH HATCH STRIPING
BASE BID: INSTALL NEW GRAVEL SECTION PER DETAIL H SHEET C5.1, TYP. BID ALT#1: INSTALL NEW LIGHT DUTY ASPHALT PAVEMENT PER DETAIL G SHEET C5.1, TYP.
INSTALL GRAVEL
BOBCAT STADIUM
INSTALL NEW CONCRETE SIDEWALK
CONTRACTOR TO TIE NEW TBC TO EXISTING
LANDSCAPE AREA, TYP.
INCORPORATE EXISTING WATER MANHOLES INTO PROPOSED CURB LINE, MATCH RADIUS TO INLET
177'
24'
R275'
INSTALL 4' WIDE VALLEY GUTTER PER DETAIL D SHEET C5.3
24'
20'
9'
R3'
R15'
R8'
24'
R5'
R15'
R2.5'
R33'
R5'
R3'
R5'
20'
9'
R5'
24'
R5'
R5'
TIE TO EXISTING ASPHALT ROADWAY AT CLEAN SAWCUT
ASPHALT DRIVEWAY APPROACH
INSTALL MSU MONUMENT SIGN PER DETAIL A SHEET C5.10
SOUTH 7TH AVE
BASE BID: INSTALL NEW GRAVEL SECTION PER DETAIL H SHEET C5.1, TYP. BID ALT#1: INSTALL HEAVY DUTY ASPHALT PAVEMENT PER DETAIL F SHEET C5.1, TYP.
STANDARD PARKING STALLS, PER PAVEMENT MARKING DETAIL D SHEET C5.2
CATCH CURB & GUTTER, TYP. CURB & GUTTER SHOWN W/O ORANGE ARE TO BE SPILL CURB & GUTTER.
INSTALL NEW CHAIN LINK FENCING, MATCH EXISTING FENCE HEIGHT
PROTECT EXISTING TREES IN PLACE, DURING SITE CONSTRUCTION, TYP.
BASE BID: INSTALL NEW GRAVEL SECTION PER DETAIL H SHEET C5.1, TYP. BID ALT#1: INSTALL HEAVY DUTY ASPHALT PAVEMENT PER DETAIL F SHEET C5.1, TYP.
CONSTRUCTION LIMITS, TYP.
BOBCAT TRACK AND FIELD COMPLEX
MATCH LINE - SEE SHEET CP1.4
INSTALL NEW LIGHT DUTY ASPHALT PAVEMENT PER DETAIL G SHEET C5.1, TYP. ADJUST EXISTING FENCE LINE TO GRADE, SEE GRADING PLAN. ABSOLUTELY NO EFFECT TO THE TRACK SHALL OCCUR
NEW EDGE OF ASPHALT CONTRACTOR TO TIE TO EXISTING CONCRETE GUTTER
N
0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

SITE PLAN NOTES:

1. WIDTH OF PARKING STALLS MEASURED AT NARROWEST POINT (ALONG FACE OF CURB FOR EXTERIOR PARKING STALLS AND ALONG EDGE OF DRIVE AISLE FOR INTERIOR PARKING STALLS).
2. CONTRACTOR TO EXERCISE CARE IN MINIMIZING DISTURBANCE TO LANDSCAPING BEYOND EDGE OF PROPOSED IMPROVEMENTS/PROJECT EXTENTS. CONTRACTOR TO PROVIDE PATCHING AND REPAIR OF LANDSCAPING, GRASS AREA(S), AND IRRIGATION. CONTRACTOR TO COORDINATE WITH MSU PRIOR TO DISTURBING ANY LANDSCAPED AREAS.
3. SEE SHEET GC1.3 FOR BID OVERVIEW INFORMATION.

SITE PLAN NOTES CONT.:

1. CONTRACTOR TO FOLLOW GEOTECHNICAL RECOMMENDATIONS FOR PAVEMENT AND CONCRETE DESIGN. CONTRACTOR TO USE BASE ONE TREATED DESIGN. IF CONTRACTOR DOES NOT HAVE ENOUGH REUSED BASE MATERIAL FOR ENTIRE PROJECT, CONTRACTOR SHALL RECEIVE APPROVAL BEFORE USING THE ALTERNATIVE DESIGN WITH NEW CAC (CRUSHED AGGREGATE COURSE) BASE MATERIAL.



FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

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MSU Stadium Lots

Construction Documents

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Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE

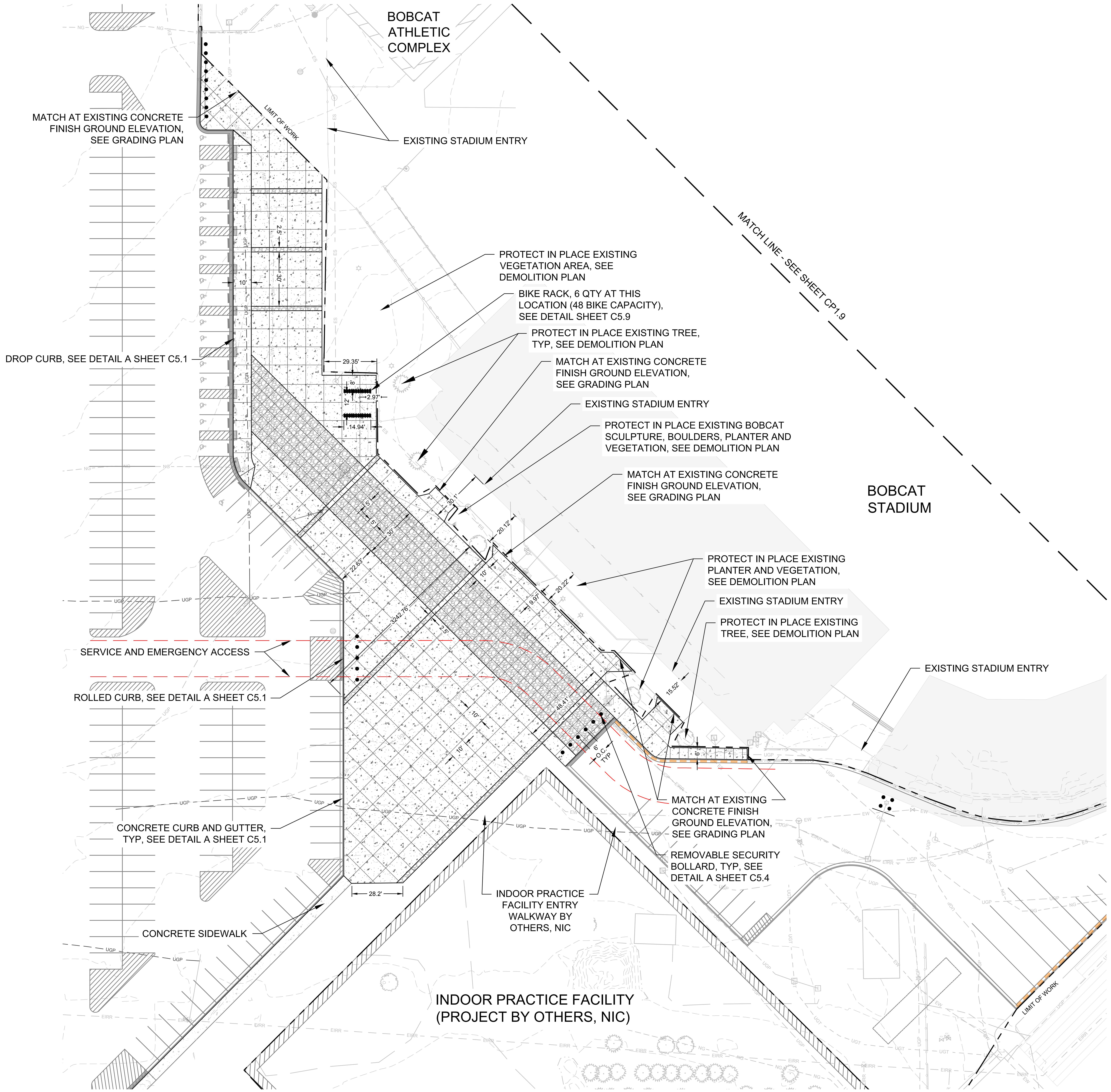
SITE PLAN 7

SHEET

CP1.7

DATE

3-27-2024

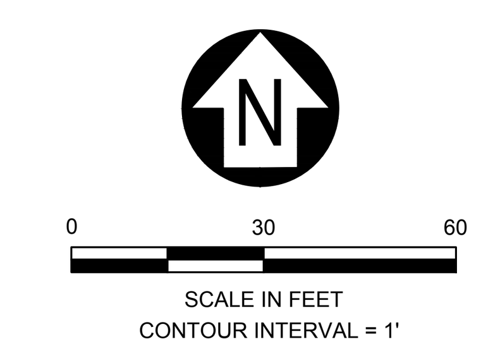


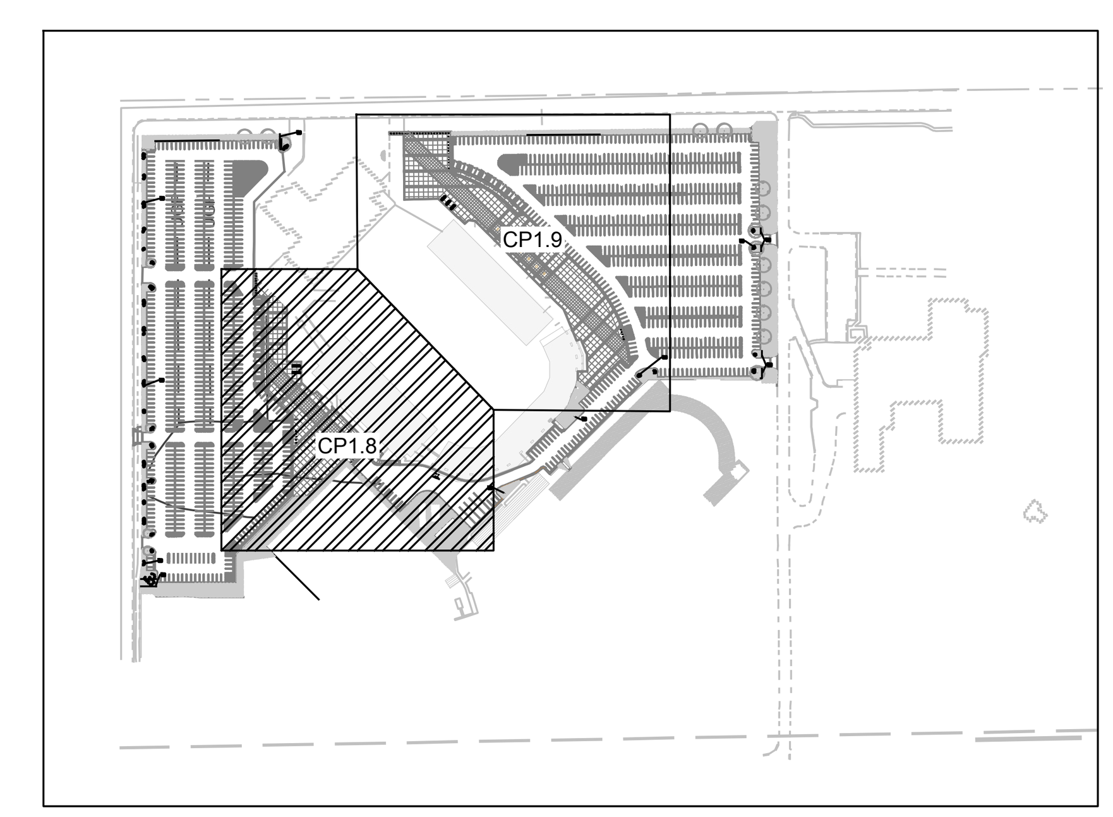
LEGEND

- BROOM FINISH CONCRETE PAVING, SEE DETAIL ON SHEET C5.1 AND SPECIFICATIONS
- EXPOSED AGGREGATE FINISH CONCRETE, SEE DETAIL ON SHEET C5.1 AND SPECIFICATIONS
- BIKE RACK, SEE DETAIL ON SHEET C5.9
- REMOVABLE SECURITY BOLLARD, SEE DETAIL ON SHEET C5.4

GENERAL NOTES

1. SEE CIVIL SITE PLAN 1 - 7 SHEETS FOR ADDITIONAL SITE LAYOUT AND DIMENSIONING, INCLUDING INFORMATION ON PARKING LOT IMPROVEMENTS, CURB ALIGNMENT, PAVEMENT STRIPING, AND SIGNAGE.
2. CONCRETE JOINTING AND SCORE LINES SHOWN TO COMMUNICATE DESIGN INTENT; CONTRACTOR TO NOTIFY OWNER'S REPRESENTATIVE OF AREAS WHERE DESIGN IS NOT FEASIBLE AND PROVIDE DRAWINGS FOR REVIEW AND APPROVAL.
3. PROVIDE SPECIFIED EXPANSION JOINTS AT CHANGES IN DIRECTION, CHANGES IN CONCRETE FINISH TYPE, WHERE SIDEWALK ABUTS RIGID PAVEMENT, OR OTHER SIMILAR STRUCTURES, AND AS OTHERWISE INDICATED ON THE DRAWINGS, DETAILS, AND SPECIFICATIONS.
4. GRADE CHANGE AT ENTRY THRESHOLDS AND BETWEEN SURFACE MATERIALS SHALL NOT EXCEED 1/4" (0.02') PER ADA REQUIREMENTS.
5. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING
6. SEE SHEETS LP1.1 - LP1.7 FOR PLANTING PLAN
7. INDOOR PRACTICE FACILITY (IPF) PROJECT INFORMATION SHOWN FOR REFERENCE PURPOSES ONLY, AND IS NOT INCLUDED IN THE CONTRACT (NIC) AS PART OF THIS PROJECT.





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REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

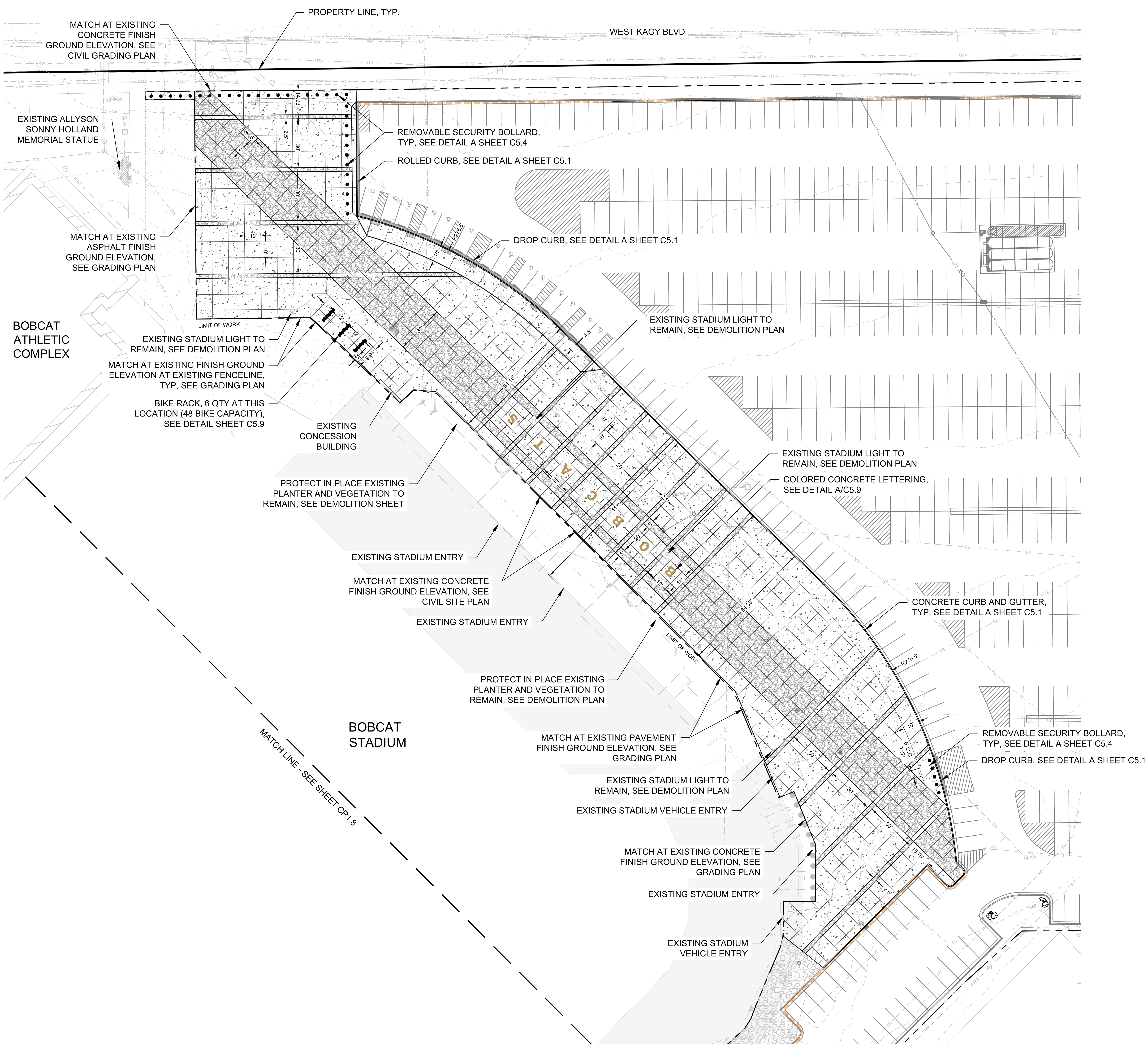
MONTANA MICHAEL T. RUSSELL No. 59647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
WEST PLAZA SITE PLAN

SHEET
CP1.8

DATE
3-27-2024



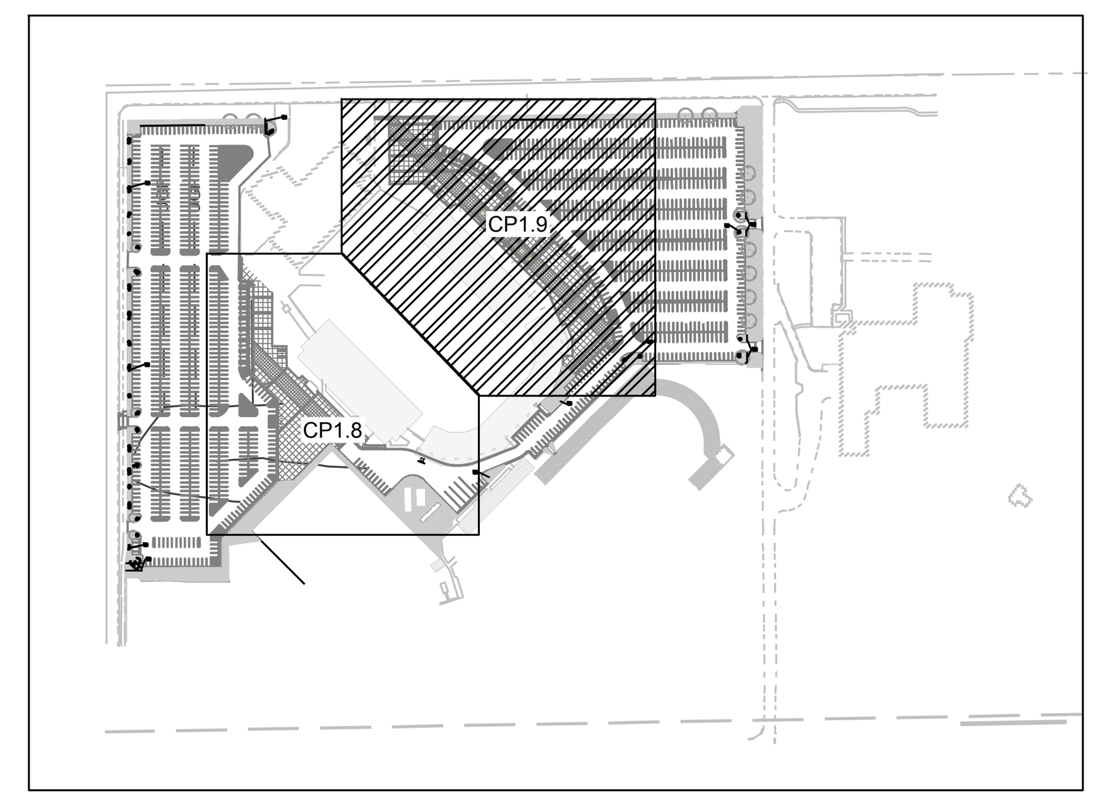
LEGEND

- BROOM FINISH CONCRETE PAVING, SEE DETAIL ON SHEET C5.1 AND SPECIFICATIONS
- EXPOSED AGGREGATE FINISH CONCRETE, SEE DETAIL ON SHEET C5.1 AND SPECIFICATIONS
- BIKE RACK, SEE DETAIL ON SHEET C5.9
- REMOVABLE SECURITY BOLLARD, SEE DETAIL ON SHEET C5.4

GENERAL NOTES

1. SEE CIVIL SITE PLAN 1-7 SHEETS FOR ADDITIONAL SITE LAYOUT AND DIMENSIONING, INCLUDING INFORMATION ON PARKING LOT IMPROVEMENTS, CURB ALIGNMENT, PAVEMENT STRIPING, AND SIGNAGE.
2. CONCRETE JOINTING AND SCORE LINES SHOWN TO COMMUNICATE DESIGN INTENT; CONTRACTOR TO NOTIFY OWNER'S REPRESENTATIVE OF AREAS WHERE DESIGN IS NOT FEASIBLE AND PROVIDE DRAWINGS FOR REVIEW AND APPROVAL.
3. PROVIDE SPECIFIED EXPANSION JOINTS AT CHANGES IN DIRECTION, CHANGES IN CONCRETE FINISH TYPE, WHERE SIDEWALK ABUTS RIGID PAVEMENT, OR OTHER SIMILAR STRUCTURES, AND AS OTHERWISE INDICATED ON THE DRAWINGS, DETAILS, AND SPECIFICATIONS.
4. GRADE CHANGE AT ENTRY THRESHOLDS AND BETWEEN SURFACE MATERIALS SHALL NOT EXCEED 1/4" (0.02') PER ADA REQUIREMENTS.
5. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING
6. SEE SHEETS LP1.1 - LP1.7 FOR PLANTING PLAN
7. INDOOR PRACTICE FACILITY (IPF) PROJECT INFORMATION SHOWN FOR REFERENCE PURPOSES ONLY, AND IS NOT INCLUDED IN THE CONTRACT (NIC) AS PART OF THIS PROJECT.

0 30 60
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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DRAWN BY: R.BAKKER
REVIEWED BY: C. BRANDRIET

REV.	DESCRIPTION	DATE

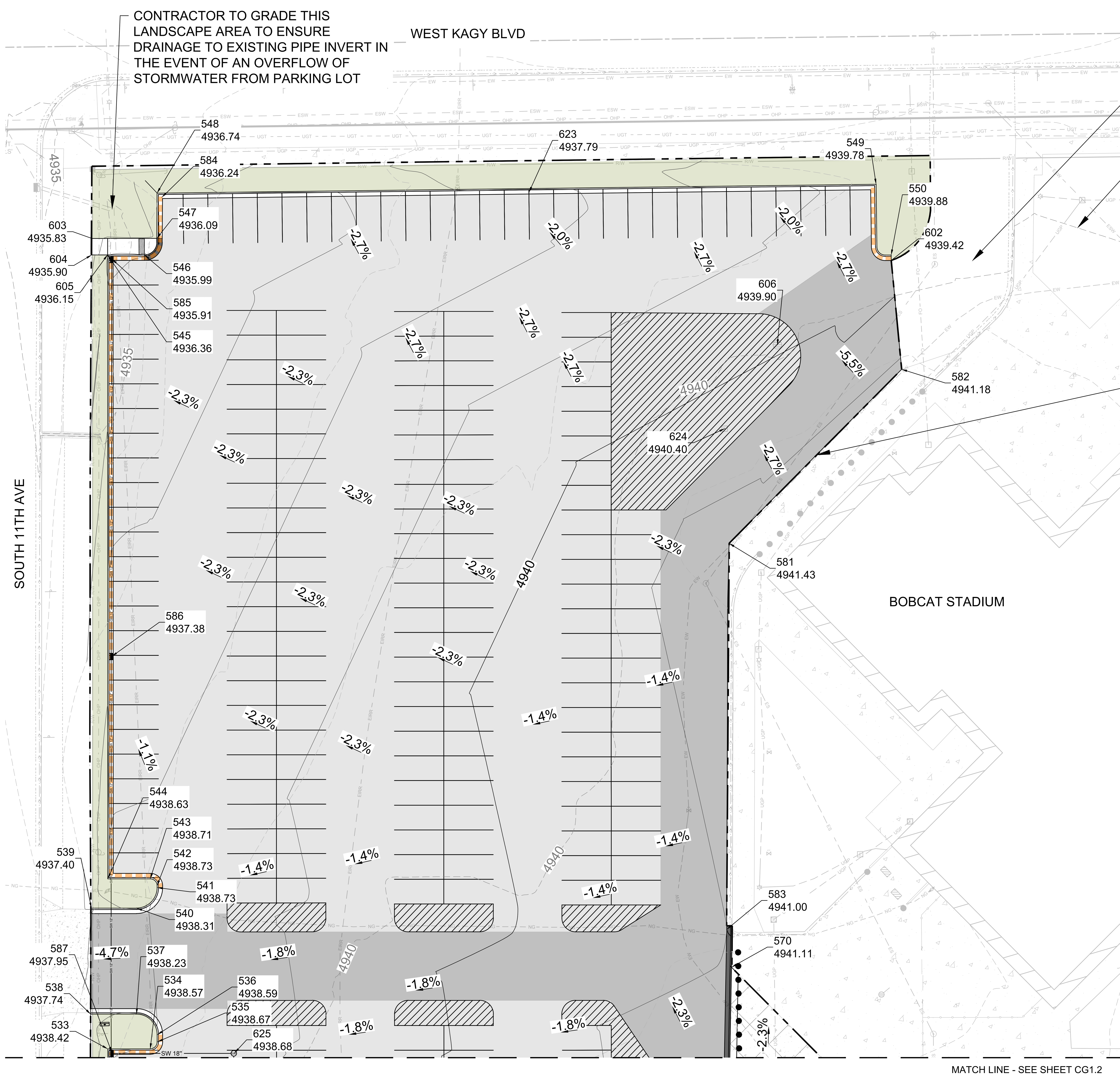
MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
EAST PLAZA SITE PLAN

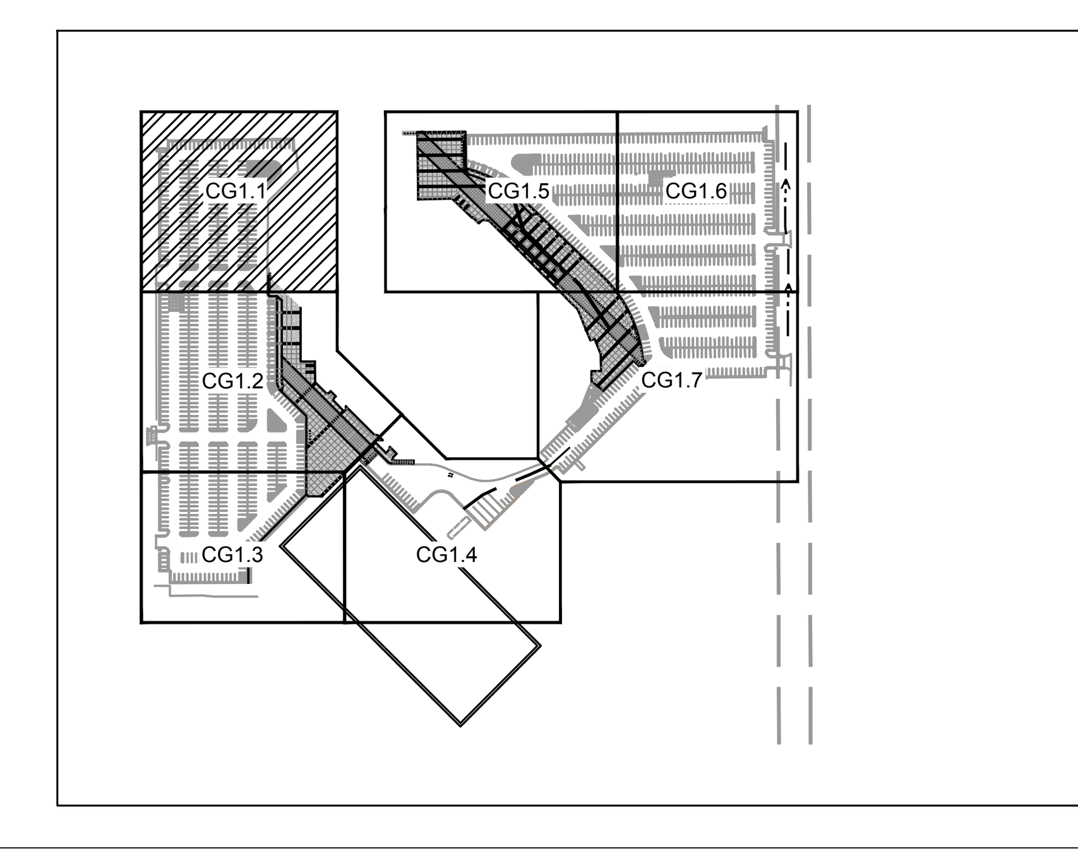
SHEET
CP1.9

DATE
3-27-2024



GRADING PLAN NOTES:

1. CONTRACTOR TO ENSURE ADA COMPLIANCE FOR ALL SIDEWALK: MAX 2% CROSS SLOPE, MAX 5% RUNNING SLOPE.
2. CONTRACTOR TO VERIFY EXISTING ELEVATIONS THAT ARE TO BE JOINED BY NEW CONSTRUCTION.



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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA MICHAEL T. RUSSELL No. 56447PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE

GRADING PLAN 1

SHEET

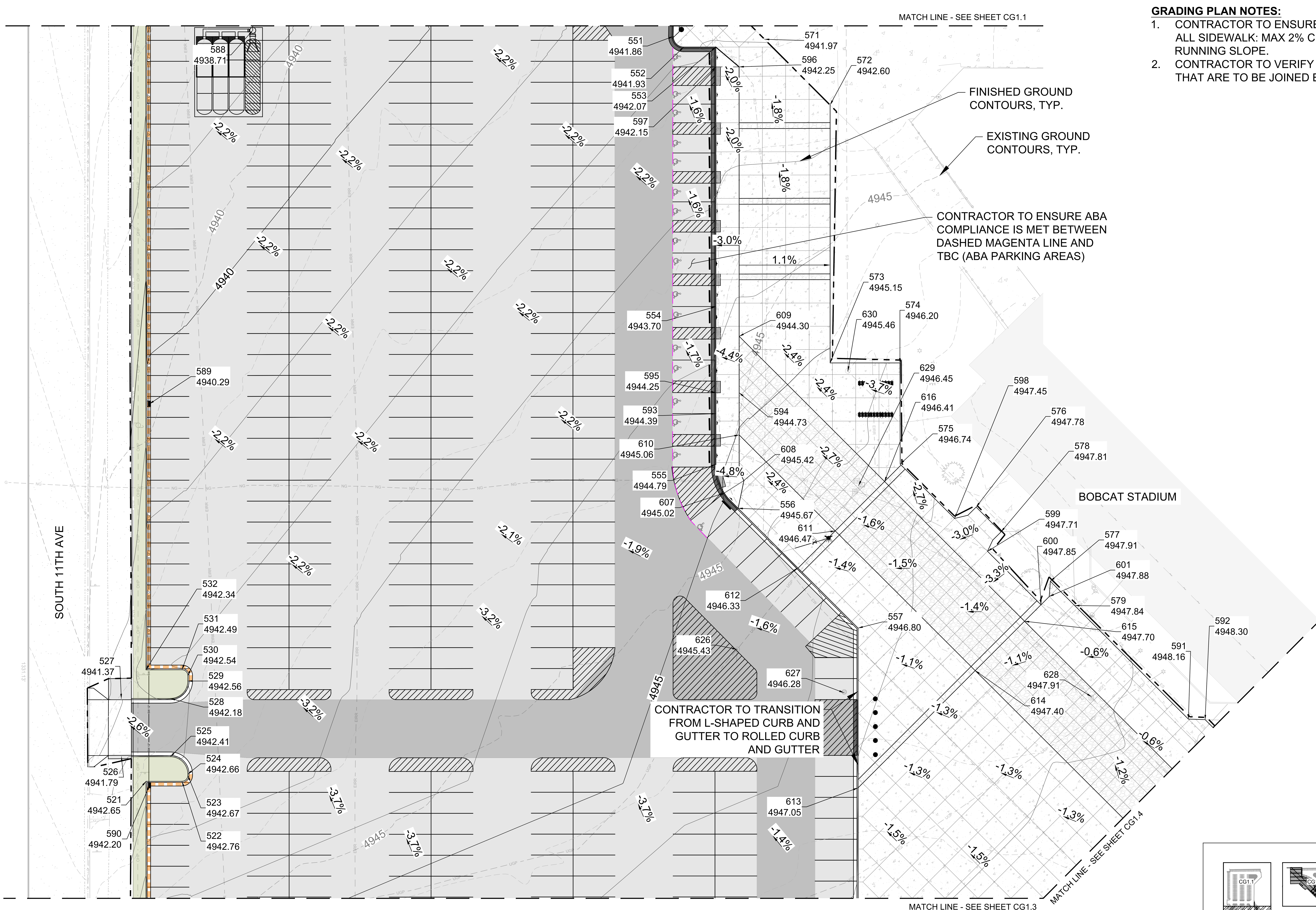
CG1.1

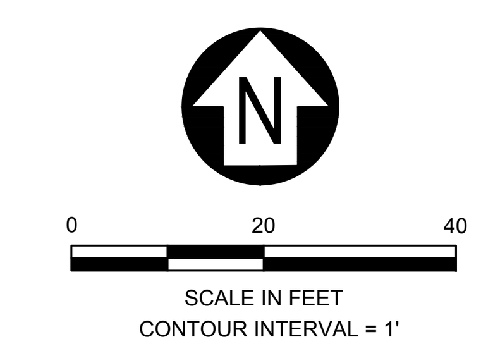
DATE

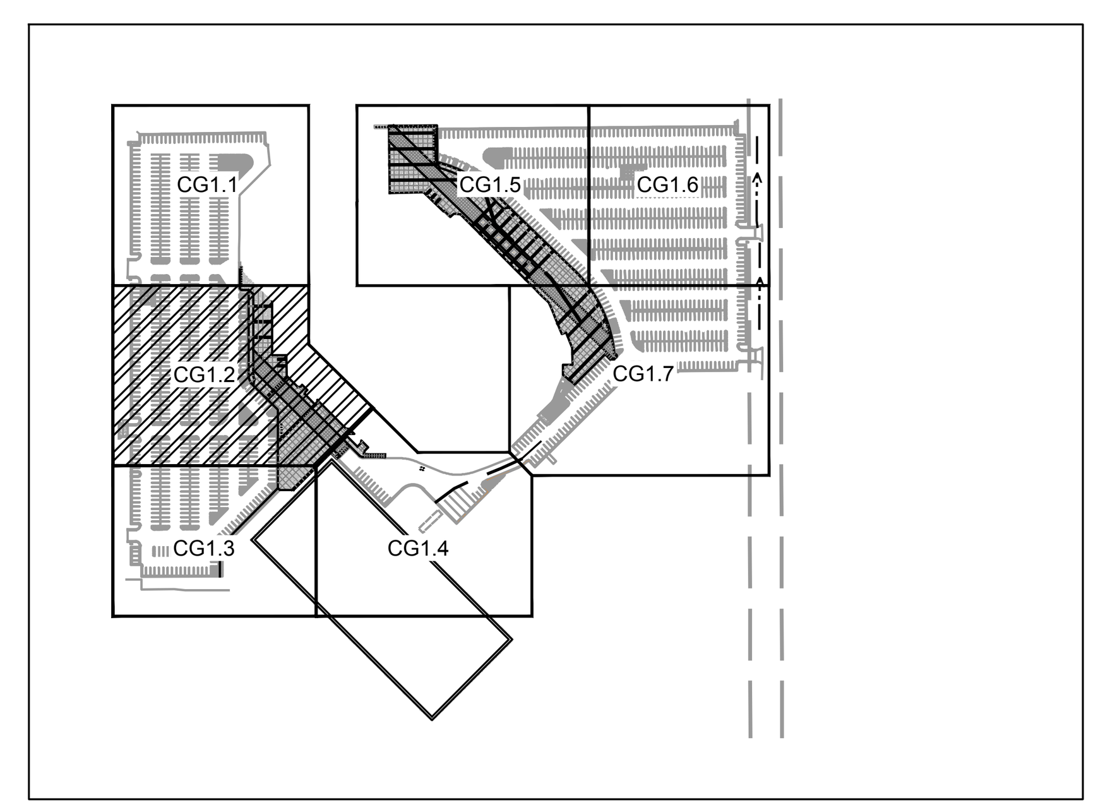
3-27-2024

GRADING PLAN NOTES:

1. CONTRACTOR TO ENSURE ADA COMPLIANCE FOR ALL SIDEWALK: MAX 2% CROSS SLOPE, MAX 5% RUNNING SLOPE.
2. CONTRACTOR TO VERIFY EXISTING ELEVATIONS THAT ARE TO BE JOINED BY NEW CONSTRUCTION.







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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

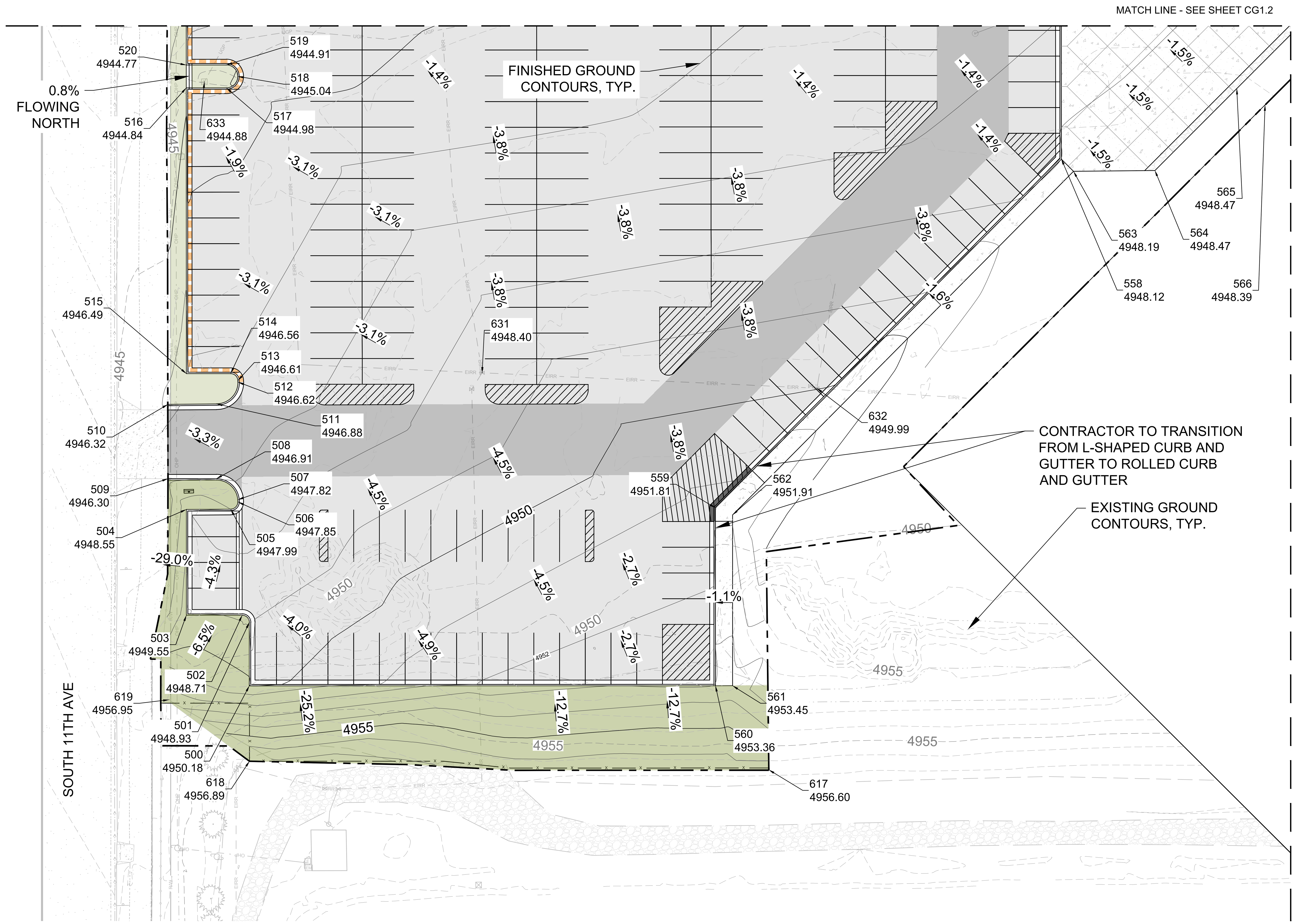
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
GRADING PLAN 2

SHEET
CG1.2

DATE
3-27-2024



GRADING PLAN NOTES:

1. CONTRACTOR TO ENSURE ADA COMPLIANCE FOR ALL SIDEWALK: MAX 2% CROSS SLOPE, MAX 5% RUNNING SLOPE.
2. CONTRACTOR TO VERIFY EXISTING ELEVATIONS THAT ARE TO BE JOINED BY NEW CONSTRUCTION.

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

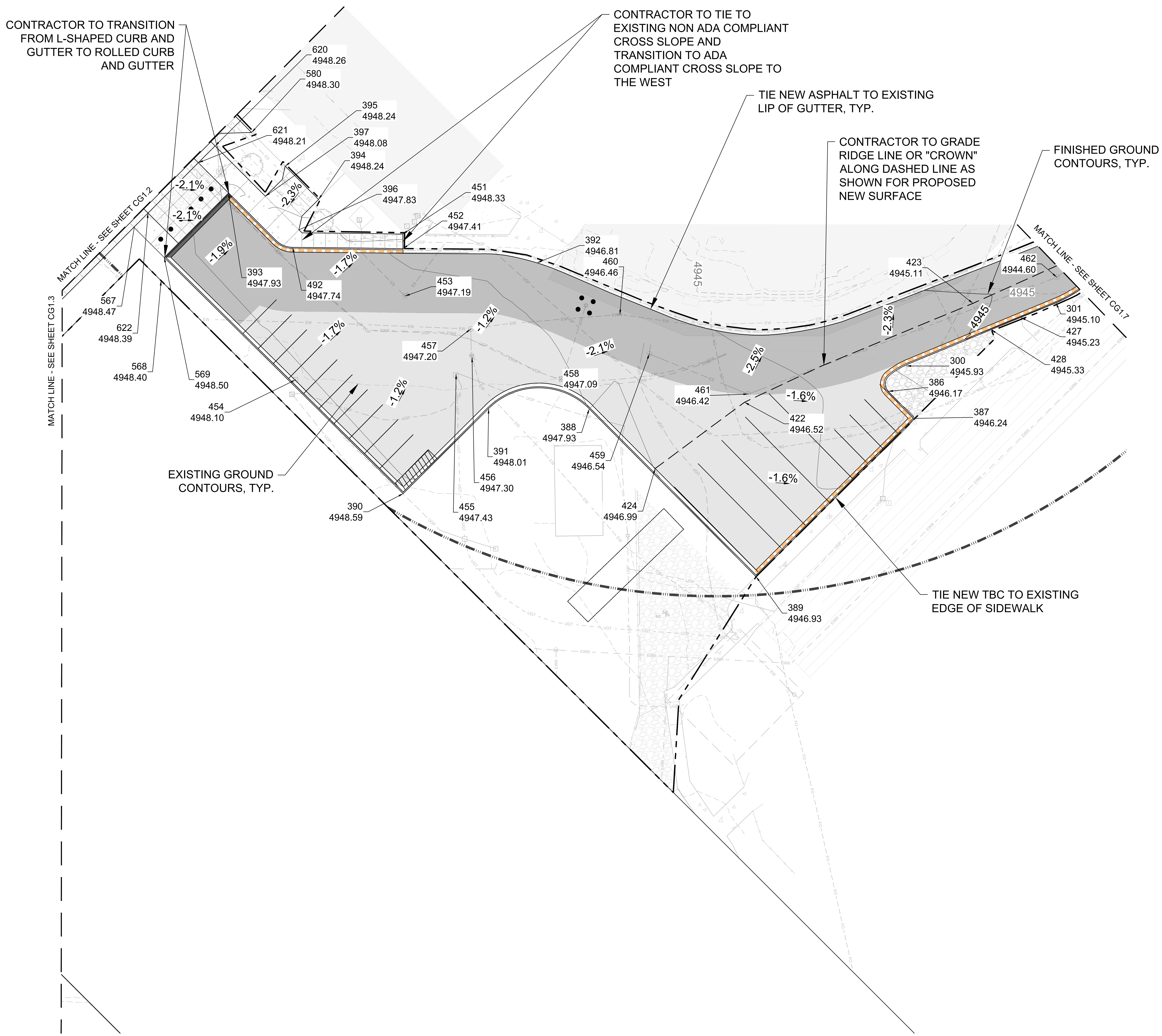
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
GRADING PLAN 3

SHEET
CG1.3

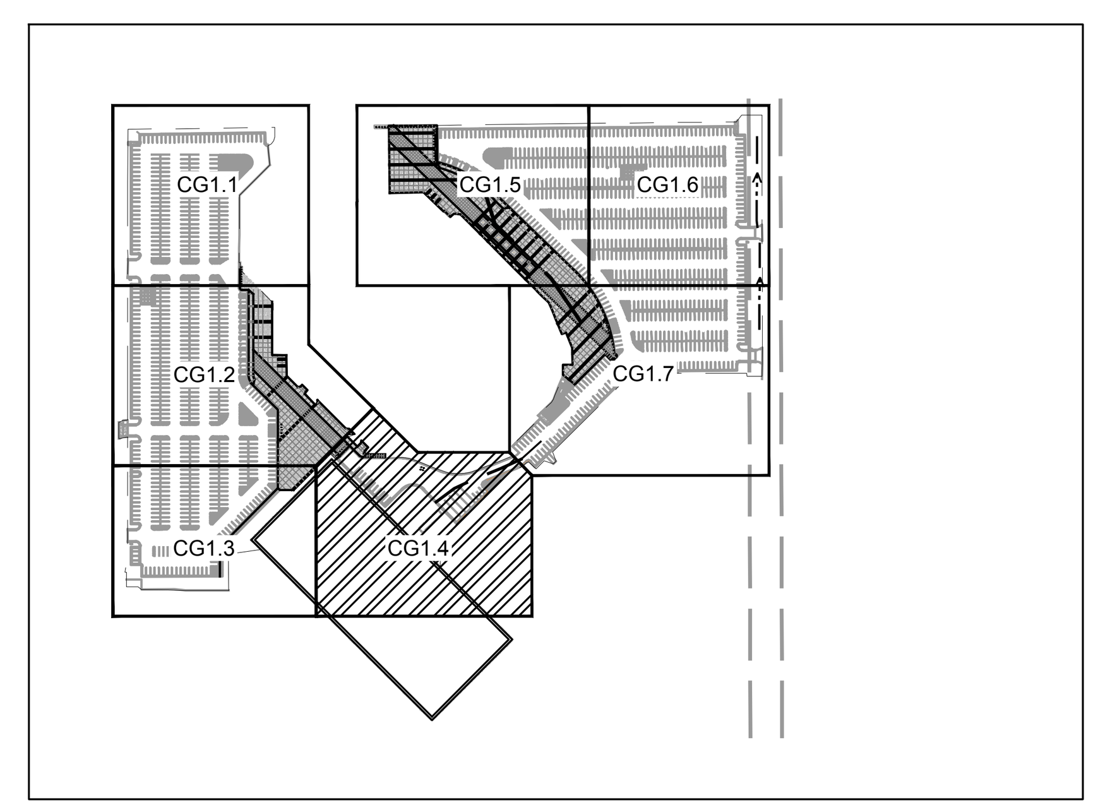
DATE
3-27-2024



GRADING PLAN NOTES:

1. CONTRACTOR TO ENSURE ADA COMPLIANCE FOR ALL SIDEWALK: MAX 2% CROSS SLOPE, MAX 5% RUNNING SLOPE.
2. CONTRACTOR TO VERIFY EXISTING ELEVATIONS THAT ARE TO BE JOINED BY NEW CONSTRUCTION.

0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

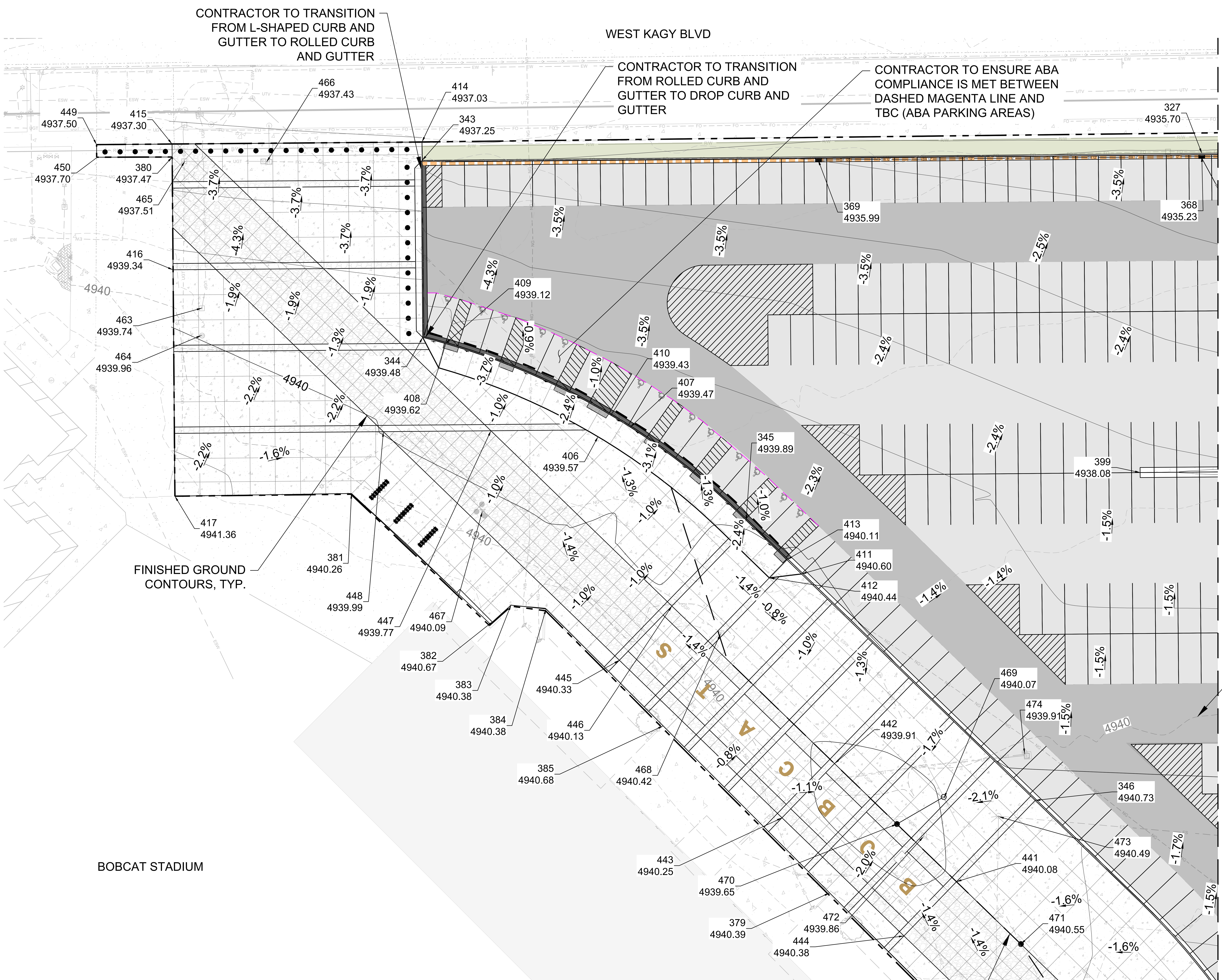
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
GRADING PLAN 4

SHEET
CG1.4

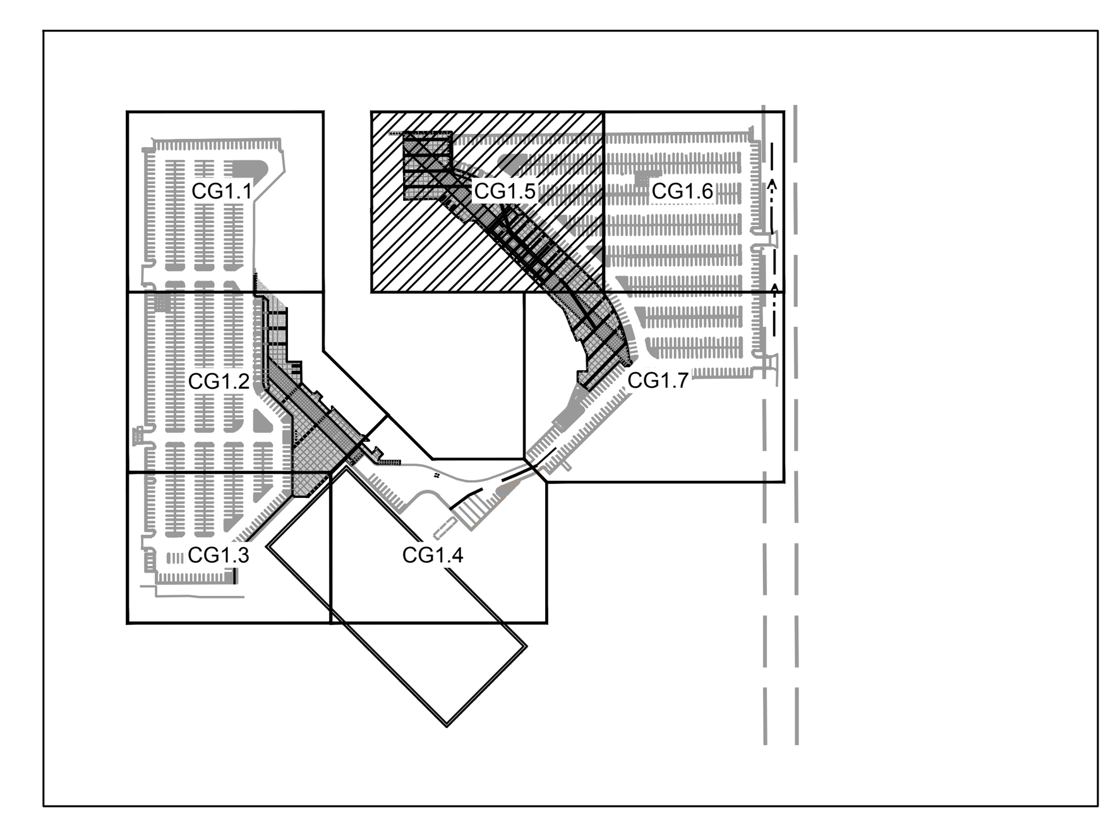
DATE
3-27-2024



GRADING PLAN NOTES:

1. CONTRACTOR TO ENSURE ADA COMPLIANCE FOR ALL SIDEWALK: MAX 2% CROSS SLOPE, MAX 5% RUNNING SLOPE.
2. CONTRACTOR TO VERIFY EXISTING ELEVATIONS THAT ARE TO BE JOINED BY NEW CONSTRUCTION.

SCALE IN FEET 0 20 40
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

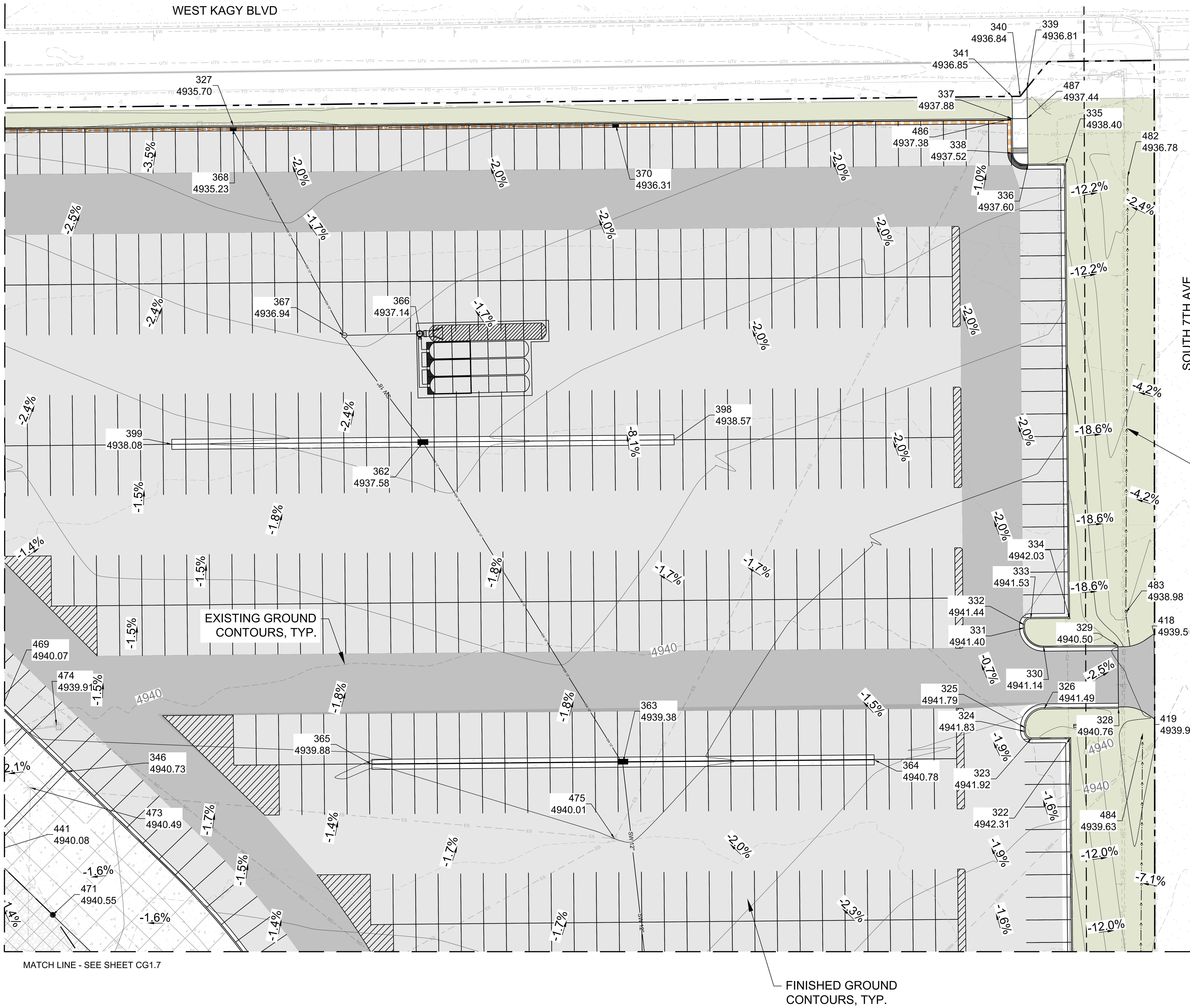
MONTANA MICHAEL T. RUSSELL No. 59647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
GRADING PLAN 5

SHEET
CG1.5

DATE
3-27-2024



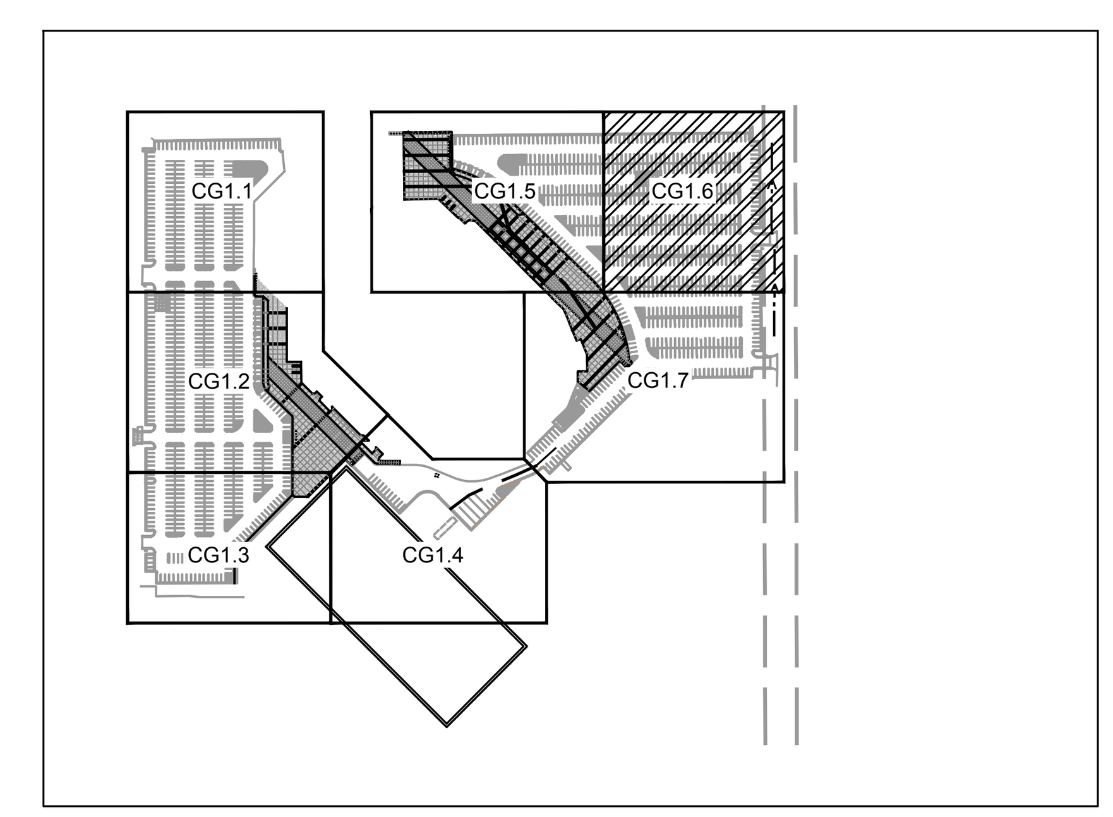
GRADING PLAN NOTES:

1. CONTRACTOR TO ENSURE ADA COMPLIANCE FOR ALL SIDEWALK: MAX 2% CROSS SLOPE, MAX 5% RUNNING SLOPE.
2. CONTRACTOR TO VERIFY EXISTING ELEVATIONS THAT ARE TO BE JOINED BY NEW CONSTRUCTION.

N

0 20 40

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA
MICHAEL T. RUSSELL
No. 56047PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE

GRADING PLAN 6

SHEET

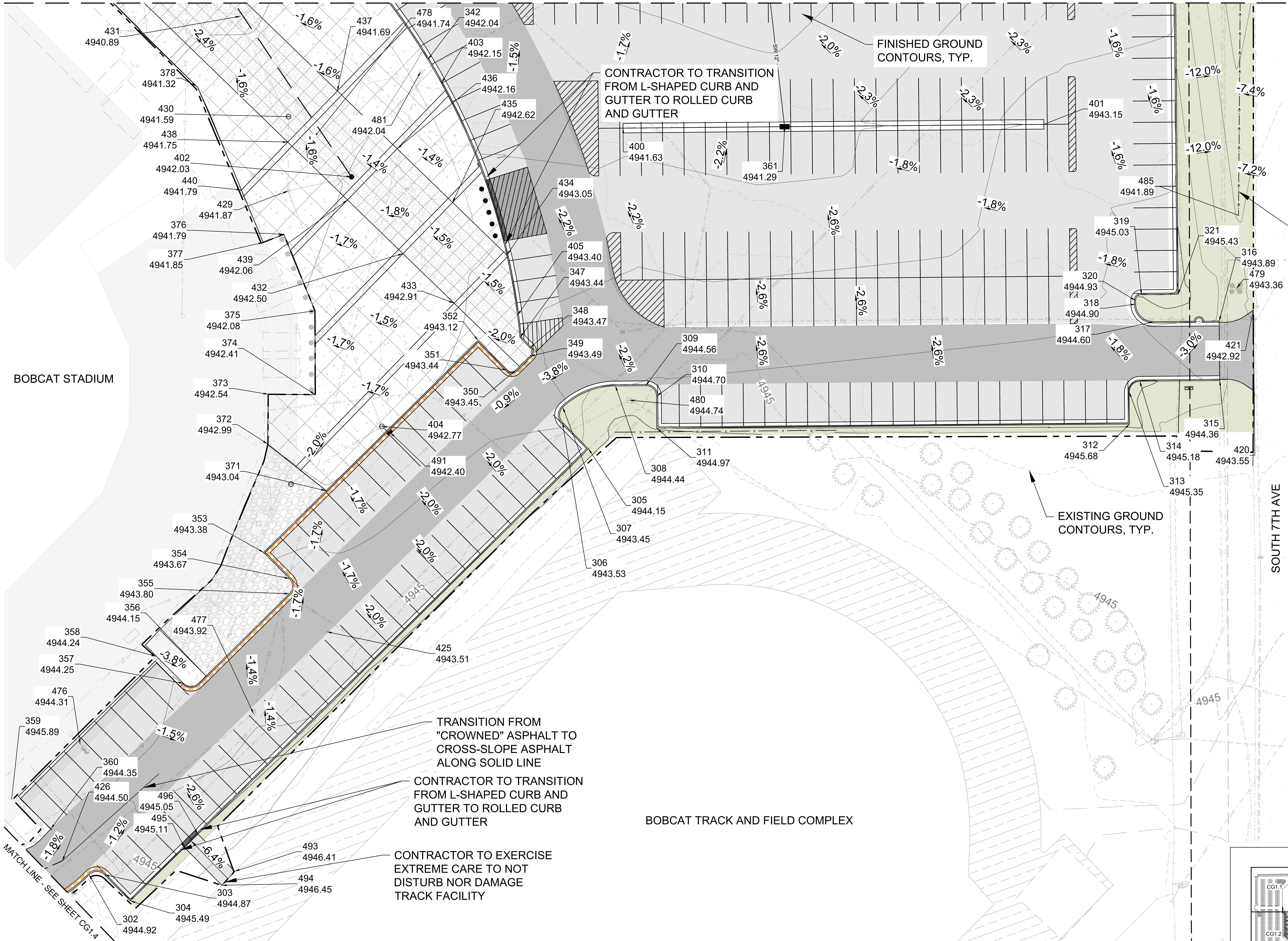
CG1.6

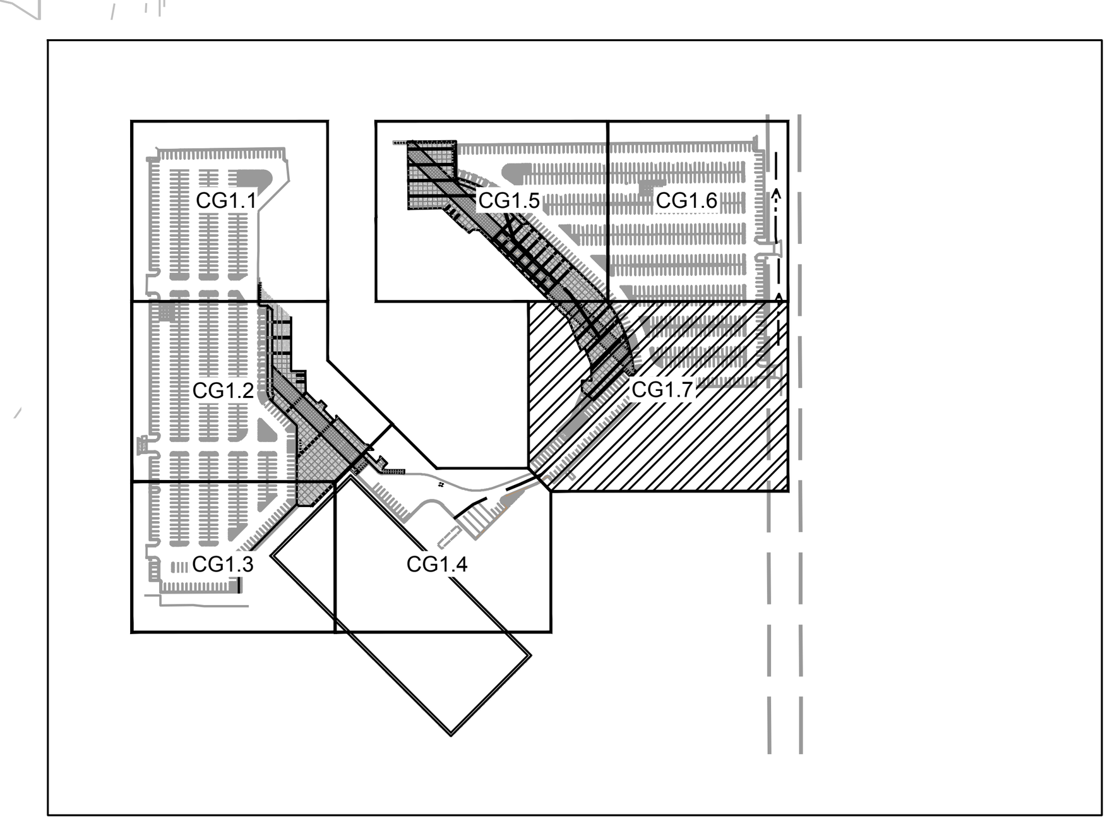
DATE

3-27-2024

GRADING PLAN NOTES:

1. CONTRACTOR TO ENSURE ADA COMPLIANCE FOR ALL SIDEWALK: MAX 2% CROSS SLOPE, MAX 5% RUNNING SLOPE.
2. CONTRACTOR TO VERIFY EXISTING ELEVATIONS THAT ARE TO BE JOINED BY NEW CONSTRUCTION.





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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE

GRADING PLAN 7

SHEET

CG1.7

DATE

3-27-2024

LOT 20 POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
500	517161.19	1571844.29	4950.18	TBC
501	517183.40	1571844.77	4948.93	TBC
502	517185.95	1571842.33	4948.71	TBC
503	517186.38	1571822.83	4949.55	TBC
504	517223.40	1571823.65	4948.55	TBC
505	517223.16	1571839.16	4947.99	TBC
506	517225.65	1571841.70	4947.85	TBC
507	517226.40	1571841.71	4947.82	TBC
508	517233.92	1571834.38	4946.91	TBC
509	517234.31	1571817.47	4946.30	TBC
510	517260.30	1571817.97	4946.32	TBC
511	517260.11	1571835.03	4946.88	TBC
512	517267.59	1571842.64	4946.62	TBC
513	517268.07	1571842.64	4946.61	TBC

LOT 20 POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
514	517270.58	1571840.19	4946.56	TBC
515	517270.92	1571824.69	4946.49	TBC
516	517370.89	1571826.89	4944.84	TBC
517	517370.59	1571840.89	4944.98	TBC
518	517374.50	1571844.98	4945.04	TBC
519	517378.59	1571841.07	4944.91	TBC
520	517378.89	1571827.07	4944.77	TBC
521	517442.88	1571828.48	4942.65	TBC
522	517442.54	1571843.97	4942.76	TBC
523	517444.98	1571846.53	4942.67	TBC
524	517445.56	1571846.54	4942.66	TBC
525	517453.22	1571839.21	4942.41	TBC
526	517453.69	1571818.15	4941.79	TBC
527	517478.68	1571818.69	4941.37	TBC
528	517478.23	1571839.75	4942.18	TBC
529	517485.57	1571847.41	4942.56	TBC
530	517487.90	1571847.47	4942.54	TBC
531	517490.46	1571845.03	4942.49	TBC
532	517490.79	1571829.53	4942.34	TBC
533	517770.72	1571835.69	4938.42	TBC

LOT 20 POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
534	517770.38	1571851.19	4938.57	TBC
535	517772.83	1571853.74	4938.67	TBC
536	517775.48	1571853.80	4938.59	TBC
537	517783.15	1571846.47	4938.23	TBC
538	517783.51	1571829.75	4937.74	TBC
539	517822.14	1571830.89	4937.40	TBC
540	517821.78	1571847.31	4938.31	TBC
541	517829.11	1571854.97	4938.73	TBC
542	517829.77	1571854.99	4938.73	TBC
543	517832.33	1571852.54	4938.71	TBC
544	517832.67	1571837.05	4938.63	TBC
545	518060.11	1571842.06	4936.36	TBC
546	518059.82	1571855.46	4935.99	TBC
547	518065.72	1571860.10	4936.09	TBC
548	518082.20	1571860.55	4936.74	TBC
549	518079.66	1572122.62	4939.78	TBC
550	518053.75	1572127.53	4939.88	TBC
551	517757.91	1572062.08	4941.86	TBC
552	517753.23	1572066.47	4941.93	TBC
553	517752.93	1572080.28	4942.07	TBC

LOT 20 POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
554	517641.44	1572077.82	4943.70	TBC
555	517573.67	1572076.33	4944.79	TBC
556	517554.53	1572085.48	4945.67	TBC
557	517501.93	1572135.85	4946.80	TBC
558	517339.24	1572132.27	4948.12	TBC
559	517219.87	1572008.62	4951.81	TBC
560	517157.65	1572007.25	4953.36	TBC
561	517157.52	1572013.25	4953.45	EOC
562	517217.27	1572014.56	4951.91	EOC
563	517334.81	1572136.42	4948.19	EOC
564	517334.47	1572164.90	4948.47	EOC
565	517362.50	1572194.16	4948.47	EOC
566	517356.53	1572203.90	4948.39	FG
567	517410.10	1572243.86	4948.47	EOC
568	517387.14	1572254.65	4948.40	EOC
569	517396.88	1572256.18	4948.50	TBC
570	517795.44	1572063.59	4941.11	JOIN EXISTING
571	517755.82	1572101.31	4941.97	JOIN EXISTING
572	517726.99	1572128.81	4942.60	JOIN EXISTING
573	517616.14	1572126.37	4945.15	EOC\

LOT 20 POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
574	517615.48	1572156.36	4946.20	EOC\
575	517571.98	1572155.52	4946.74	EOC
576	517552.80	1572187.72	4947.78	JOIN EXISTING
577	517520.24	1572218.91	4947.91	JOIN EXISTING
578	517541.90	1572198.16	4947.81	JOIN EXISTING
579	517509.56	1572229.14	4947.84	JOIN EXISTING
580	517448.75	1572294.18	4948.30	JOIN EXISTING
581	517949.97	1572066.15	4941.43	JOIN EXISTING
582	518012.03	1572130.38	4941.18	JOIN EXISTING
583	517809.25	1572062.16	4941.00	JOIN EXISTING
584	518080.67	1571862.29	4936.24	RIM
585	518058.61	1571843.54	4935.91	RIM
586	517913.76	1571840.35	4937.38	RIM
587	517769.43	1571837.18	4937.95	RIM
588	517764.48	1571881.49	4938.71	RIM
589	517605.00	1571833.55	4940.29	RIM
590	517441.10	1571829.95	4942.20	RIM
591	517459.71	1572276.89	4948.16	JOIN EXISTING
592	517459.30	1572284.07	4948.30	JOIN EXISTING
593	517595.41	1572076.81	4944.39	TBC

LOT 20 POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
594	517604.22	1572087.01	4944.73	FG
595	517604.44	1572077.01	4944.25	TBC
596	517744.21	1572090.09	4942.25	FG
597	517744.43	1572080.09	4942.15	TBC
598	517548.14	1572178.37	4947.45	EOC
599	517533.70	1572192.20	4947.71	EOC
600	517510.22	1572214.67	4947.85	EOC
601	517513.68	1572218.29	4947.88	EOC
602	518051.75	1572127.51	4939.42	TIE TO EXISTING
603	518066.24	1571836.41	4935.83	TIE TO EXISTING
604	518060.24	1571836.27	4935.90	TIE TO EXISTING
605	518060.21	1571842.10	4936.15	EOC
606	518021.95	1572085.32	4939.90	RIM
607	517561.24	1572079.66	4945.02	TBC
608	517566.43	1572088.21	4945.42	FG
609	517628.45	1572087.54	4944.30	FG
610	517586.06	1572086.61	4945.06	FG
611	517543.92	1572126.97	4946.47	FG
612	517528.27	1572110.63	4946.33	TBC
613	517433.29	1572134.34	4947.05	TBC

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MSU Stadium Lots

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA
MICHAEL T. RUSSELL
No. 56647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
GRADING PNT TABLE 1

SHEET
CG1.8

DATE
3-27-2024

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
300	517344.26	1572568.03	4945.93	TBC
301	517369.45	1572631.70	4945.10	TBC
302	517382.19	1572651.13	4944.92	TBC
303	517382.09	1572657.58	4944.87	TBC
304	517370.81	1572668.24	4945.49	TBC
305	517556.90	1572865.24	4944.15	TBC
306	517568.17	1572854.60	4943.53	TBC
307	517574.58	1572854.83	4943.45	TBC
308	517583.10	1572877.21	4944.44	TBC
309	517582.93	1572889.97	4944.56	TBC
310	517578.37	1572894.41	4944.70	TBC
311	517564.88	1572894.23	4944.97	TBC
312	517562.25	1573093.22	4945.68	TBC
313	517575.75	1573093.40	4945.35	TBC
314	517580.19	1573097.95	4945.18	TBC
315	517579.74	1573131.59	4944.36	TBC
316	517604.73	1573131.92	4943.89	TBC

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
317	517605.09	1573104.28	4944.60	TBC
318	517612.69	1573096.88	4944.90	TBC
319	517616.66	1573099.44	4945.03	TBC
320	517614.19	1573096.90	4944.93	TBC
321	517616.47	1573114.94	4945.43	TBC
322	517824.45	1573117.68	4942.31	TBC
323	517824.65	1573102.18	4941.92	TBC
324	517827.18	1573099.72	4941.83	TBC
325	517828.68	1573099.74	4941.79	TBC
326	517836.08	1573107.34	4941.49	TBC
327	518075.48	1572789.57	4935.70	TBC
328	517835.69	1573136.97	4940.76	TBC
329	517860.69	1573137.31	4940.50	TBC
330	517861.08	1573107.67	4941.14	TBC
331	517868.61	1573100.25	4941.40	TBC
332	517869.68	1573100.28	4941.44	TBC
333	517872.15	1573102.81	4941.53	TBC
334	517871.96	1573118.31	4942.03	TBC
335	518052.93	1573120.70	4938.40	TBC
336	518053.13	1573105.70	4937.60	TBC

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
337	518071.41	1573099.90	4937.88	TBC
338	518057.69	1573099.75	4937.52	TBC
339	518083.59	1573106.03	4936.81	JOIN EXISTING
340	518080.23	1573103.23	4936.84	JOIN EXISTING
341	518080.29	1573100.00	4936.85	JOIN EXISTING
342	517722.24	1572801.31	4942.04	TBC
343	518079.54	1572479.64	4937.25	TBC
344	518009.18	1572478.31	4939.48	TBC
345	517933.62	1572605.24	4939.89	TBC
346	517819.78	1572717.66	4940.73	TBC
347	517604.38	1572837.52	4943.44	TBC
348	517599.98	1572841.67	4943.47	TBC
349	517596.45	1572841.57	4943.49	TBC
350	517590.64	1572835.43	4943.45	TBC
351	517590.75	1572831.90	4943.44	TBC
352	517603.47	1572819.88	4943.12	TBC
353	517516.26	1572727.56	4943.38	TBC
354	517504.99	1572738.20	4943.67	TBC
355	517498.63	1572738.02	4943.80	TBC
356	517464.79	1572702.20	4944.15	TBC

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
357	517461.90	1572692.62	4944.25	TBC
358	517473.49	1572681.45	4944.24	TBC
359	517414.82	1572619.22	4945.89	TBC
360	517401.92	1572635.44	4944.35	JOIN EXISTING
361	517690.61	1572950.83	4941.29	RIM
362	517947.83	1572862.29	4937.58	RIM
363	517818.63	1572939.19	4939.38	RIM
364	517817.31	1573039.22	4940.78	EOC
365	517819.95	1572839.15	4939.88	EOC
366	517991.14	1572862.08	4937.14	RIM
367	517991.01	1572831.94	4936.94	RIM
368	518074.15	1572789.54	4935.23	RIM
369	518076.11	1572637.06	4935.99	RIM
370	518072.14	1572941.98	4936.31	RIM
371	517541.65	1572754.43	4943.04	TBC
372	517561.89	1572730.27	4942.99	JOIN EXISTING
373	517582.82	1572731.00	4942.54	JOIN EXISTING
374	517582.23	1572750.80	4942.41	JOIN EXISTING
375	517617.52	1572751.44	4942.08	JOIN EXISTING
376	517650.02	1572739.05	4941.79	JOIN EXISTING

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
377	517646.77	1572730.34	4941.85	JOIN EXISTING
378	517713.22	1572703.69	4941.32	JOIN EXISTING
379	517784.82	1572635.11	4940.39	JOIN EXISTING
381	517947.80	1572448.64	4940.26	JOIN EXISTING
382	517895.50	1572503.42	4940.67	JOIN EXISTING
383	517902.03	1572511.04	4940.38	JOIN EXISTING
384	517900.20	1572524.93	4940.38	JOIN EXISTING
385	517852.68	1572570.43	4940.68	JOIN EXISTING
387	517322.08	1572571.10	4946.24	JOIN EXISTING
388	517329.12	1572433.93	4947.93	TBC
389	517256.88	1572502.68	4946.93	JOIN EXISTING
390	517295.18	1572354.74	4948.59	TBC
391	517330.17	1572391.52	4948.01	TBC
392	517391.15	1572413.28	4946.81	JOIN EXISTING
393	517423.39	1572283.85	4947.93	TBC
394	517419.90	1572321.77	4948.24	JOIN EXISTING
395	517434.24	1572308.04	4948.24	JOIN EXISTING
396	517407.30	1572313.23	4947.83	EOC
397	517421.75	1572299.40	4948.08	EOC
398	517946.51	1572962.35	4938.57	EOC

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
399	517949.15	1572762.25	4938.08	EOC
400	517691.53	1572882.85	4941.63	EOC
401	517689.20	1573059.95	4943.15	EOC
402	517673.55	1572768.08	4942.03	RIM
403	517712.25	1572806.80	4942.15	FG
404	517568.20	1572778.53	4942.77	RIM
405	517613.80	1572836.67	4943.40	FG
406	517968.17	1572547.11	4939.57	FG
407	517971.71	1572560.00	4939.47	FG
408	517996.99	1572484.39	4939.62	FG
409	518006.56	1572487.30	4939.12	FG
410	517976.64	1572552.43	4939.43	FG
411	517911.83	1572626.70	4940.60	TBC
412	517910.59	1572613.93	4940.44	FG
413	517917.61	1572621.05	4940.11	TBC
414	518086.87	1572479.73	4937.03	TIE TO EXISTING
415	518088.27	1572380.40	4937.30	TIE TO EXISTING
416	518038.25	1572379.70	4939.34	TIE TO EXISTING
417	517948.27	1572378.43	4941.36	TIE TO EXISTING
418	517865.00	1573151.81	4939.50	TIE TO EXISTING

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BOZEMAN, MONTANA
PHONE: 406.994.5413
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MSU Stadium Lots
Draft Design

DJ&A
406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

PPA#22-0012

SHEET TITLE
GRADING PNT TABLE 3

SHEET
CG1.10

DATE
3-27-2024

LOT 20 POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
614	517482.54	1572185.77	4947.40	FG
615	517503.29	1572207.44	4947.70	FG
616	517564.67	1572148.64	4946.41	FG
617	517127.83	1572025.27	4956.60	TIE TO EXISTING
618	517134.84	1571843.76	4956.89	TIE TO EXISTING
619	517156.96	1571816.10	4956.95	TIE TO EXISTING
620	517443.44	1572278.67	4948.26	FG
622	517415.74	1572249.76	4948.39	FG
623	518079.51	1571996.07	4937.79	RIM
624	517991.82	1572065.51	4940.40	EXISTING UTILITY
625	517768.17	1571881.82	4938.68	RIM
626	517493.96	1572083.64	4945.43	EXISTING UTILITY
627	517474.31	1572129.16	4946.28	EXISTING UTILITY
628	517470.20	1572235.50	4947.91	EXISTING UTILITY
629	517563.20	1572137.41	4946.45	EXISTING UTILITY
630	517612.48	1572133.94	4945.46	EXISTING UTILITY
631	517268.91	1571928.12	4948.40	EXISTING UTILITY
632	517260.94	1572045.02	4949.99	EXISTING UTILITY

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
GRADING PNT TABLE 2

SHEET
CG1.9

DATE
3-27-2024

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
419	517831.00	1573151.36	4939.91	TIE TO EXISTING
420	517575.05	1573145.97	4943.55	TIE TO EXISTING
421	517609.06	1573146.38	4942.92	TIE TO EXISTING
422	517330.48	1572499.45	4946.52	FG
423	517370.01	1572596.69	4945.11	FG
424	517303.39	1572461.19	4946.99	FG
425	517482.27	1572753.47	4943.51	FG
426	517388.31	1572640.00	4944.50	FG
427	517363.64	1572616.71	4945.23	TIE TO EXISTING
428	517358.74	1572604.10	4945.33	TIE TO EXISTING
429	517668.25	1572741.26	4941.87	RIM
430	517699.52	1572742.13	4941.59	RIM
431	517742.25	1572722.79	4940.89	RIM
432	517640.78	1572789.02	4942.50	FG
433	517619.44	1572810.10	4942.91	FG
434	517639.22	1572832.72	4943.05	TBC
435	517661.86	1572810.36	4942.62	FG
436	517684.99	1572787.53	4942.16	FG
437	517709.89	1572762.93	4941.69	FG
438	517688.81	1572741.59	4941.75	FG

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
439	517663.91	1572766.18	4942.06	FG
440	517669.09	1572721.61	4941.79	TIE TO EXISTING
441	517788.16	1572685.64	4940.08	FG
442	517836.19	1572638.21	4939.91	FG
443	517815.11	1572616.87	4940.25	FG
444	517767.08	1572664.30	4940.38	FG
445	517879.15	1572553.63	4940.33	
446	517900.23	1572574.97	4940.13	FG
447	517971.48	1572504.61	4939.77	FG
448	517972.08	1572461.85	4939.99	FG
449	518088.69	1572350.41	4937.50	JOIN EXISTING
450	518083.74	1572350.70	4937.70	JOIN EXISTING
451	517404.51	1572356.97	4948.33	JOIN EXISTING
452	517398.35	1572356.92	4947.41	JOIN EXISTING
454	517344.10	1572310.37	4948.10	EXISTING UTILITY
455	517344.92	1572378.14	4947.43	EXISTING UTILITY
456	517351.96	1572385.00	4947.30	EXISTING UTILITY
457	517363.88	1572384.70	4947.20	EXISTING UTILITY
458	517341.88	1572422.03	4947.09	EXISTING UTILITY
459	517351.73	1572459.78	4946.54	EXISTING UTILITY

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
460	517368.62	1572447.76	4946.46	EXISTING UTILITY
461	517333.87	1572501.08	4946.42	EXISTING UTILITY
462	517380.23	1572632.29	4944.60	EXISTING UTILITY
463	518022.78	1572390.82	4939.74	EXISTING UTILITY
464	518011.94	1572390.38	4939.96	EXISTING UTILITY
465	518081.31	1572385.34	4937.51	EXISTING UTILITY
466	518080.33	1572417.86	4937.43	EXISTING UTILITY
467	517939.46	1572500.48	4940.09	EXISTING UTILITY
468	517888.70	1572594.04	4940.42	EXISTING UTILITY
469	517821.63	1572681.47	4940.07	RIM
470	517811.60	1572662.49	4939.65	RIM
471	517762.80	1572710.69	4940.55	RIM
472	517806.34	1572672.88	4939.86	EXISTING UTILITY
473	517813.64	1572703.04	4940.49	EXISTING UTILITY
474	517838.47	1572713.84	4939.91	EXISTING UTILITY
475	517788.30	1572935.11	4940.01	EXISTING UTILITY
476	517437.26	1572648.58	4944.31	EXISTING UTILITY
477	517448.54	1572721.83	4943.92	EXISTING UTILITY
478	517690.53	1572752.62	4941.74	EXISTING UTILITY
479	517618.36	1573139.50	4943.36	EXISTING UTILITY

LOT 25/BACK OF HOUSE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
480	517576.99	1572882.87	4944.74	EXISTING UTILITY
481	517717.22	1572798.17	4942.04	EXISTING UTILITY
482	518047.25	1573145.34	4936.78	TEMP. DEPRESSION
483	517873.68	1573140.74	4938.98	TEMP. DEPRESSION
484	517825.24	1573146.35	4939.63	TEMP. DEPRESSION
485	517649.09	1573141.04	4941.89	TEMP. DEPRESSION
486	518071.41	1573100.00	4937.38	EOC
487	518071.34	1573105.90	4937.44	EOC

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djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

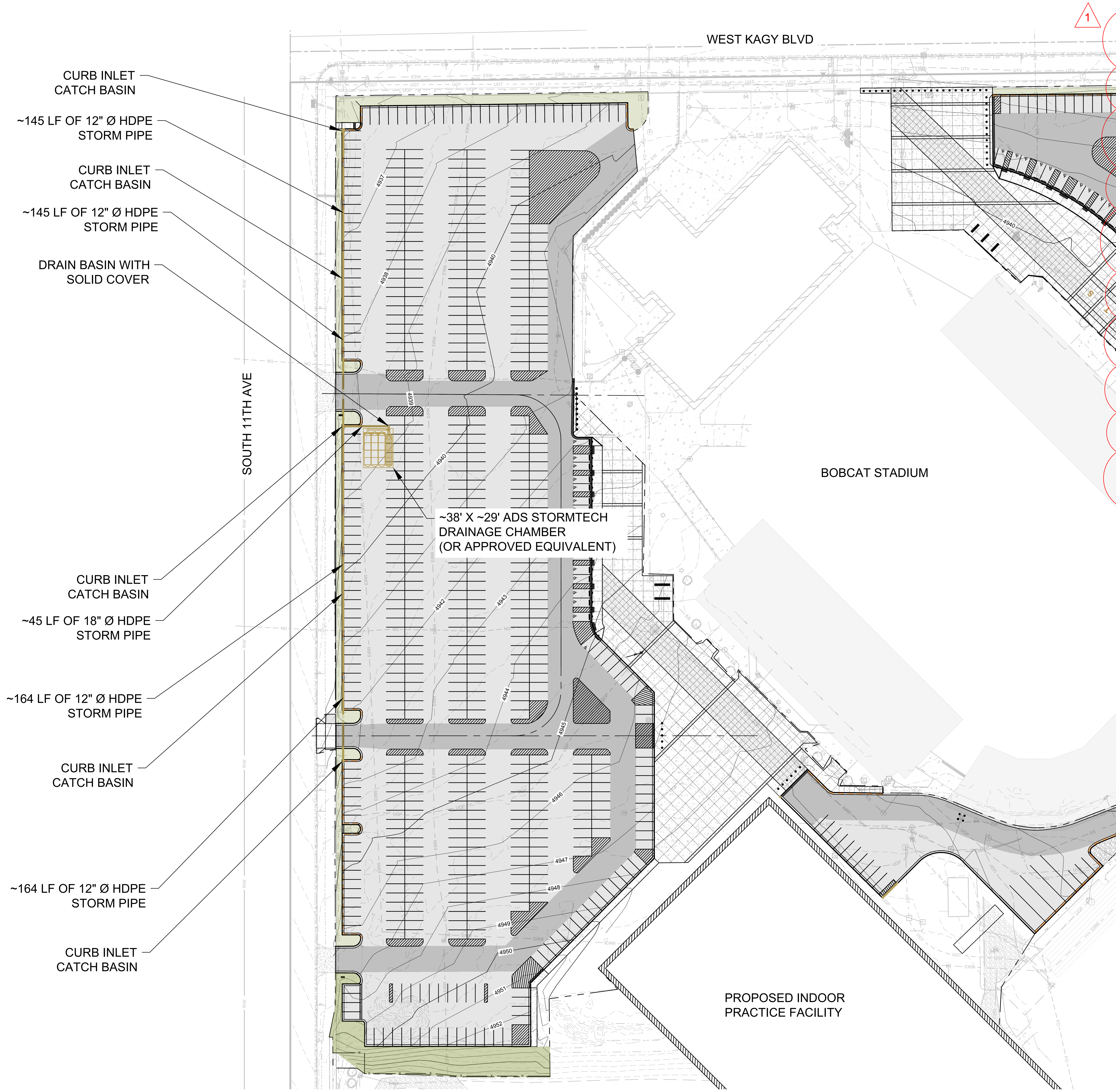
MONTANA
MICHAEL T. RUSSELL
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
GRADING PNT TABLE 4

SHEET
CG1.11

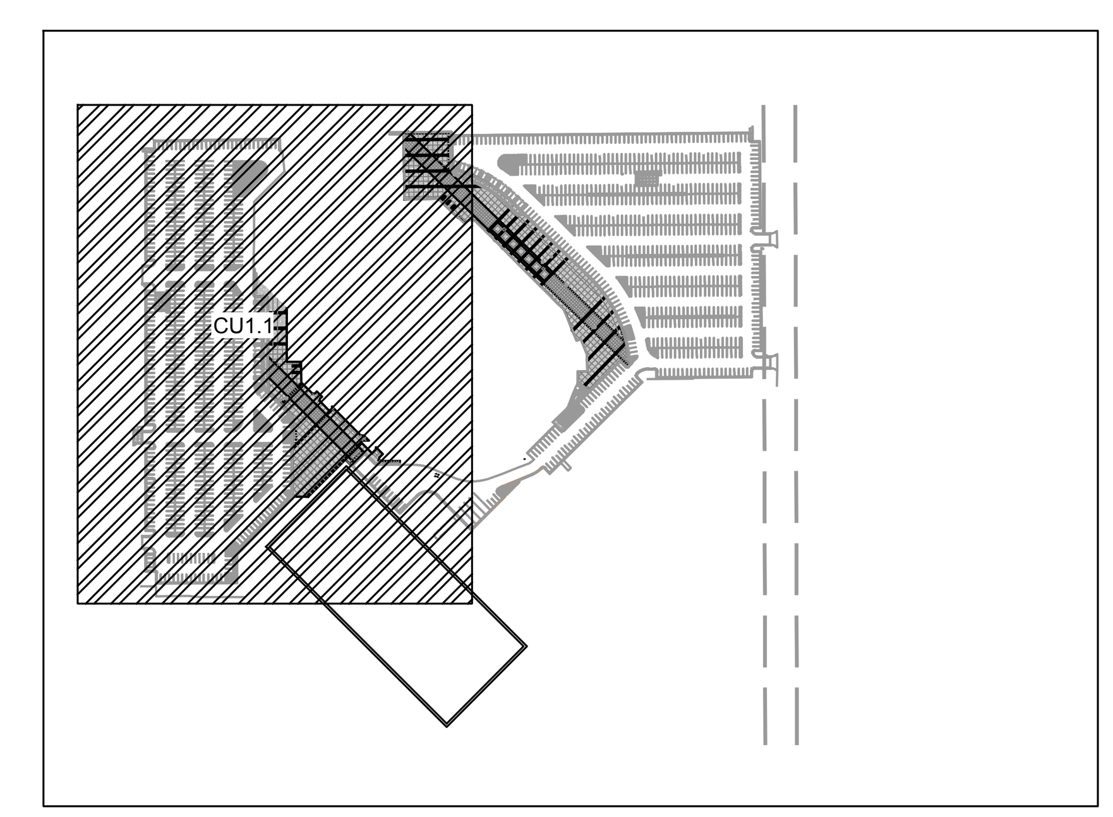
DATE
3-27-2024



UTILITY PLAN NOTES:

1. EXISTING MANHOLES AND VALVES LOCATED WITHIN NEW CONCRETE OR ASPHALT AREAS WILL NEED TO BE ADJUSTED TO PROPOSED GRADE. SEE GRADING PLAN AND DETAIL A SHEET C5.3.
2. PROVIDE A MINIMUM OF 1' SUMP DEPTH IN ALL INLETS.
3. INSTALL NYOPLAST ENVIROHOOD STRUCTURE OR APPROVED EQUIVALENT IN ALL INLETS. SEE SHEET C5.6.
4. ENSURE ALL UTILITY STRUCTURES (STORM INLETS, JUNCTION BOXES, ETC.) WITHIN THE PROPOSED TRAVEL WAY (I.E. PARKING LOT) ARE TRAFFIC RATED.
5. GRAVITY UTILITIES SHALL TAKE PRECEDENCE OVER DRY UTILITIES. CONTRACTOR MAY NEED TO RELOCATE (RAISE, LOWER, REALIGN) SOME DRY UTILITIES TO AVOID CONFLICTS WITH GRAVITY UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ANY UTILITY CONFLICT IS DISCOVERED AND DEEMED TO BE UNABLE TO FIELD FIT PER SPECIFICATIONS.
6. CONTRACTOR TO VERIFY EXISTING CONDITIONS OF ALL STORM INFRASTRUCTURE (PIPES, STRUCTURES, ETC.) PRIOR TO TIE IN.
7. **IMPORTANT:** CONTRACTOR TO ENSURE THAT THE BOTTOM OF CHAMBER SYSTEM STONE INTERFACES WITH EXISTING FREE FLOWING STRATA. THIS WILL REQUIRE THE EXCAVATION OF AN EXISTING CLAY LENSE WITH BACKFILL OF SUITABLE FREE-FLOWING, OPEN-GRADED GRANULAR MATERIALS. SEE GEOTECHNICAL RECOMMENDATIONS.

SCALE IN FEET: 0 50 100
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

MONTANA MICHAEL T. RUSSELL No. 58647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
UTILITY OVERVIEW 1

SHEET
CU1.1

DATE
3-27-2024

UTILITY PLAN NOTES:

1. EXISTING MANHOLES AND VALVES LOCATED WITHIN NEW CONCRETE OR ASPHALT AREAS WILL NEED TO BE ADJUSTED TO PROPOSED GRADE. SEE GRADING PLAN AND DETAIL A SHEET C5.3.
2. PROVIDE A MINIMUM OF 1' SUMP DEPTH IN ALL INLETS.
3. INSTALL NYOPLAST ENVIROHOOD STRUCTURE OR APPROVED EQUIVALENT IN ALL INLETS. SEE SHEET C5.6.
4. ENSURE ALL UTILITY STRUCTURES (STORM INLETS, JUNCTION BOXES, ETC.) WITHIN THE PROPOSED TRAVEL WAY (I.E. PARKING LOT) ARE TRAFFIC RATED.
5. GRAVITY UTILITIES SHALL TAKE PRECEDENCE OVER DRY UTILITIES. CONTRACTOR MAY NEED TO RELOCATE (RAISE, LOWER, REALIGN) SOME DRY UTILITIES TO AVOID CONFLICTS WITH GRAVITY UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ANY UTILITY CONFLICT IS DISCOVERED AND DEEMED TO BE UNABLE TO FIELD FIT PER SPECIFICATIONS.
6. CONTRACTOR TO VERIFY EXISTING CONDITIONS OF ALL STORM INFRASTRUCTURE (PIPES, STRUCTURES, ETC.) PRIOR TO TIE IN.
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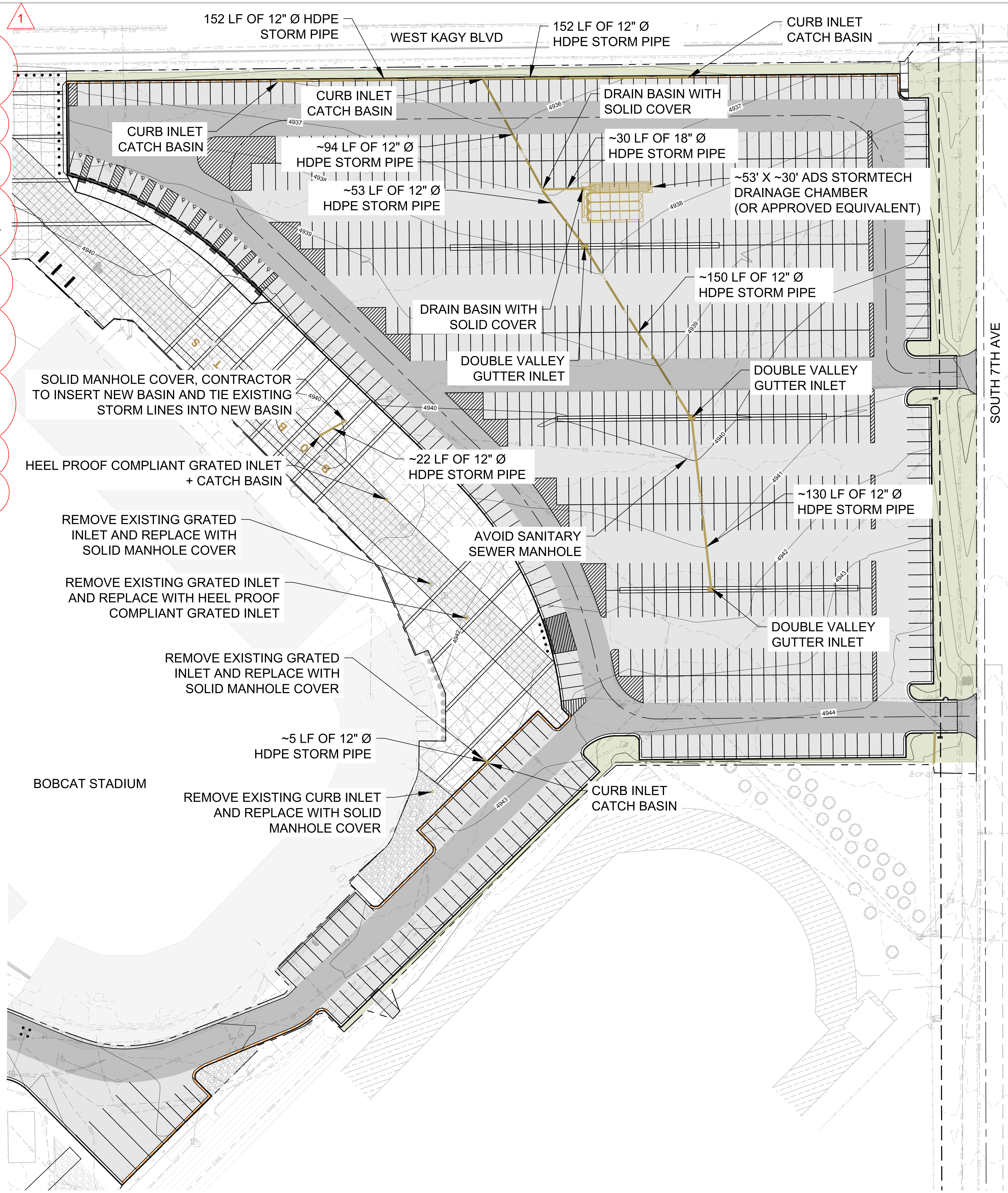
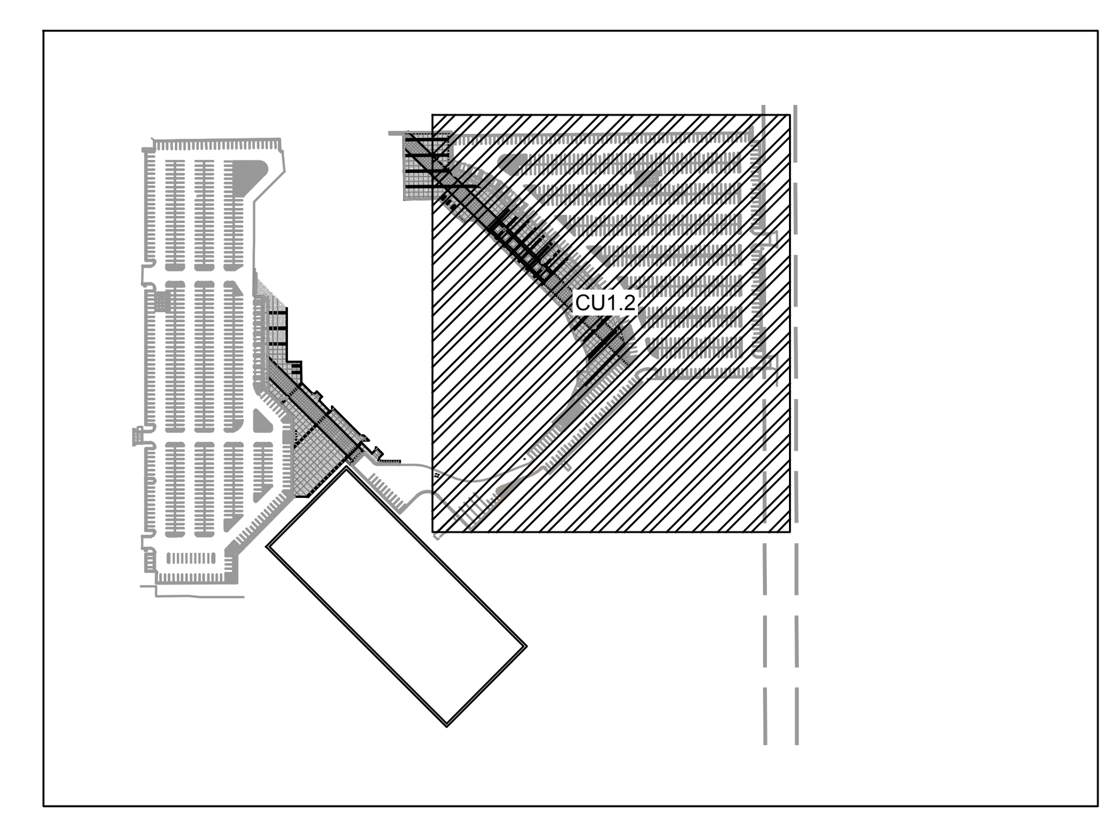


1
152 LF OF 12" Ø HDPE STORM PIPE
WEST KAGY BLVD
152 LF OF 12" Ø HDPE STORM PIPE
CURB INLET CATCH BASIN
CURB INLET CATCH BASIN
DRAIN BASIN WITH SOLID COVER
CURB INLET CATCH BASIN
~94 LF OF 12" Ø HDPE STORM PIPE
~30 LF OF 18" Ø HDPE STORM PIPE
~53 LF OF 12" Ø HDPE STORM PIPE
~53' X ~30' ADS STORMTECH DRAINAGE CHAMBER (OR APPROVED EQUIVALENT)
~150 LF OF 12" Ø HDPE STORM PIPE
DRAIN BASIN WITH SOLID COVER
DOUBLE VALLEY GUTTER INLET
DOUBLE VALLEY GUTTER INLET
SOUTH 7TH AVE
SOLID MANHOLE COVER, CONTRACTOR TO INSERT NEW BASIN AND TIE EXISTING STORM LINES INTO NEW BASIN
HEEL PROOF COMPLIANT GRATED INLET + CATCH BASIN
~22 LF OF 12" Ø HDPE STORM PIPE
~130 LF OF 12" Ø HDPE STORM PIPE
REMOVE EXISTING GRATED INLET AND REPLACE WITH SOLID MANHOLE COVER
AVOID SANITARY SEWER MANHOLE
REMOVE EXISTING GRATED INLET AND REPLACE WITH HEEL PROOF COMPLIANT GRATED INLET
DOUBLE VALLEY GUTTER INLET
REMOVE EXISTING GRATED INLET AND REPLACE WITH SOLID MANHOLE COVER
~5 LF OF 12" Ø HDPE STORM PIPE
BOBCAT STADIUM
CURB INLET CATCH BASIN
REMOVE EXISTING CURB INLET AND REPLACE WITH SOLID MANHOLE COVER
4937
4938
4939
4940
4941
4942
4943
4944
N
0 40 80
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
UTILITY OVERVIEW 2

SHEET
CU1.2

DATE
3-27-2024

WEST KAGY BLVD

SOUTH 11TH AVE

NYLOPLAST CURB INLET CATCH BASIN
(OR APPROVED EQUIVALENT)
RIM ELEV. = 4935.91
INV. OUT (S) = 4931.72

~145 LF OF
12"Ø HDPE
STORM PIPE
AT 1% SLOPE

NYLOPLAST CURB INLET CATCH
BASIN
(OR APPROVED EQUIVALENT)
RIM ELEV. = 4937.38
INV. IN (N) = 4930.29
INV. OUT (S) = 4930.19

~145 LF OF
12"Ø HDPE
STORM PIPE
AT 1% SLOPE

NYLOPLAST CURB INLET CATCH
BASIN
(OR APPROVED EQUIVALENT)
RIM ELEV. = 4937.95
INV. IN (N) = 4928.78
INV. IN (S) = 4928.78
INV. OUT (E) = 4928.68

BOBCAT STADIUM

MATCH LINE - SEE SHEET CU1.4

EXISTING IRRIGATION
CROSSING

~45 LF OF 18" Ø HDPE
STORM PIPE AT 2%
SLOPE

NYLOPLAST DRAIN BASIN WITH
TRAFFIC RATED SOLID COVER
(OR APPROVED EQUIVALENT)
RIM ELEV. = 4938.68
INV. IN (W) = 4927.81
INV. OUT (S) = 4927.71

1

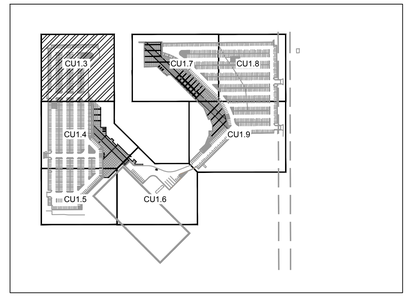
UTILITY PLAN NOTES:

1. EXISTING MANHOLES AND VALVES LOCATED WITHIN NEW CONCRETE OR ASPHALT AREAS WILL NEED TO BE ADJUSTED TO PROPOSED GRADE. SEE GRADING PLAN AND DETAIL A SHEET C5.3.
2. PROVIDE A MINIMUM OF 1' SUMP DEPTH IN ALL INLETS.
3. INSTALL NYOPLAST ENVIROHOOD STRUCTURE OR APPROVED EQUIVALENT IN ALL INLETS. SEE SHEET C5.6.
4. SEE ELECTRICAL PLANS FOR SITE LIGHTING DESIGN & INFORMATION.
5. SEE SHEET C5.5 FOR NYOPLAST DRAIN STRUCTURES.
6. SEE SHEET C5.6 FOR PRECAST DRAIN STRUCTURES.
7. ENSURE ALL UTILITY STRUCTURES (STORM INLETS, JUNCTION BOXES, ETC.) WITHIN THE PROPOSED TRAVEL WAY (I.E. PARKING LOT) ARE TRAFFIC RATED.
8. GRAVITY UTILITIES SHALL TAKE PRECEDENCE OVER DRY UTILITIES. CONTRACTOR MAY NEED TO RELOCATE (RAISE, LOWER, REALIGN) SOME DRY UTILITIES TO AVOID CONFLICTS WITH GRAVITY UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ANY UTILITY CONFLICT IS DISCOVERED AND DEEMED TO BE UNABLE TO FIELD FIT PER SPECIFICATIONS.
9. CONTRACTOR TO VERIFY EXISTING CONDITIONS OF ALL STORM INFRASTRUCTURE (PIPES, STRUCTURES, ETC.) PRIOR TO TIE IN.

N

0 20 40

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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DRAWN BY: R.BAKKER		
REVIEWED BY: M. RUSSELL		
REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

MONTANA
MICHAEL T. RUSSELL
No. 59547PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE

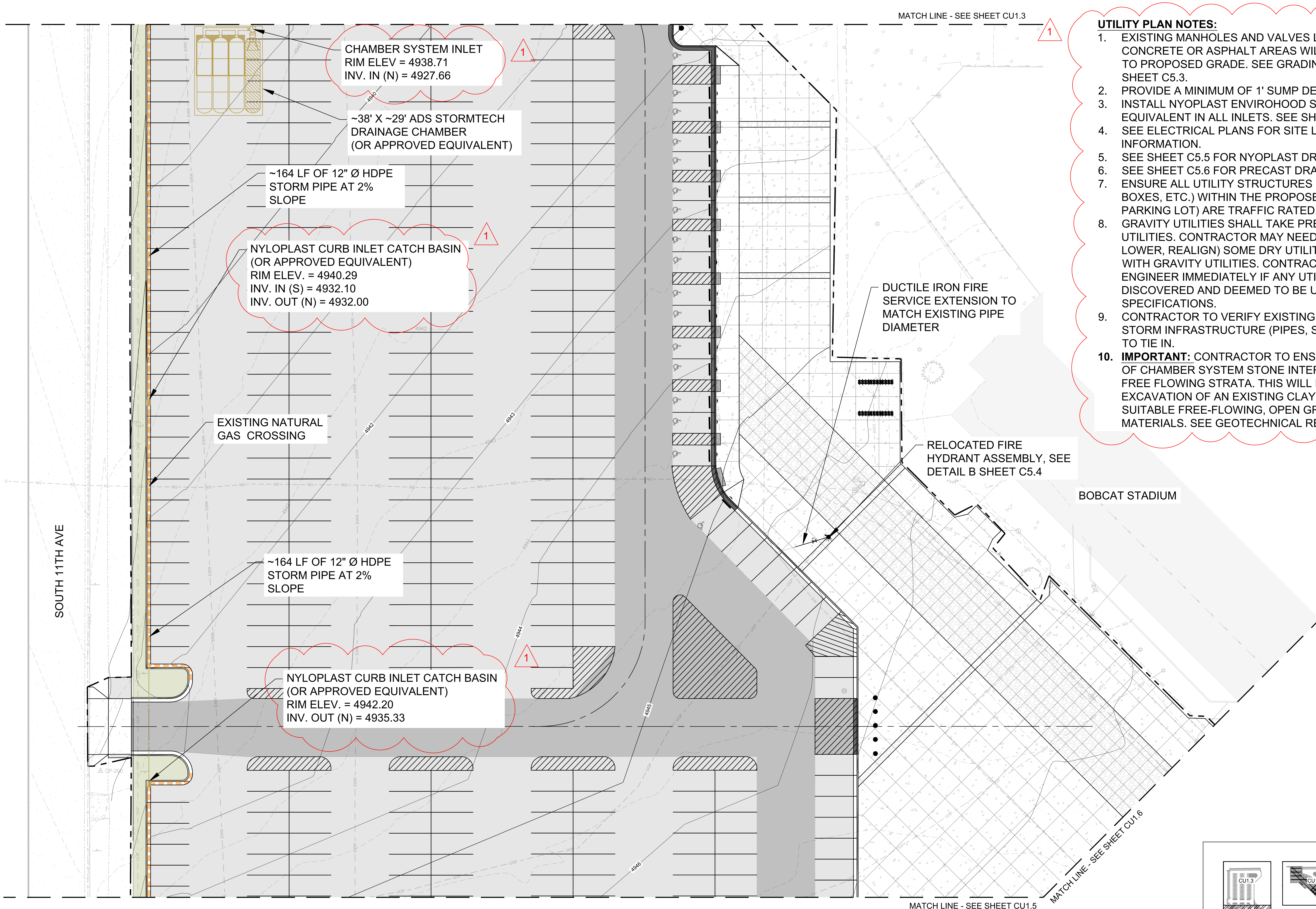
UTILITY PLAN 1

SHEET

CU1.3

DATE

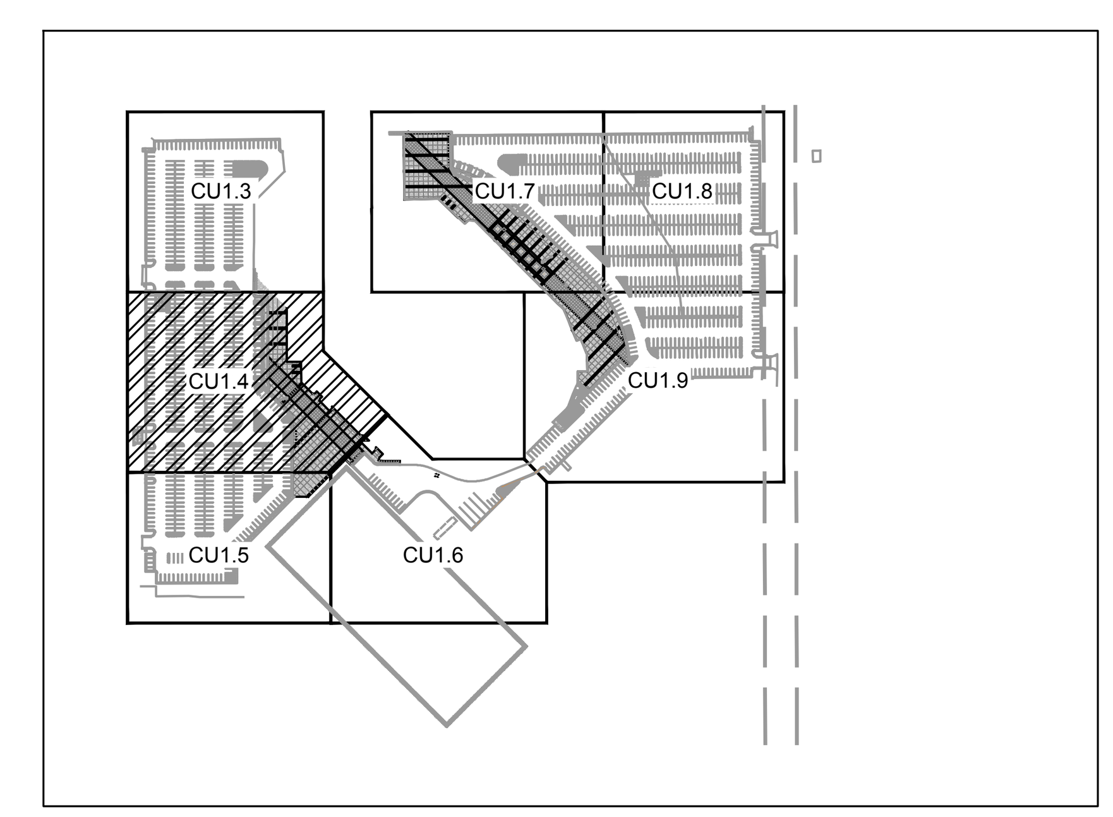
3-27-2024



UTILITY PLAN NOTES:

1. EXISTING MANHOLES AND VALVES LOCATED WITHIN NEW CONCRETE OR ASPHALT AREAS WILL NEED TO BE ADJUSTED TO PROPOSED GRADE. SEE GRADING PLAN AND DETAIL A SHEET C5.3.
2. PROVIDE A MINIMUM OF 1' SUMP DEPTH IN ALL INLETS.
3. INSTALL NYOPLAST ENVIROHOOD STRUCTURE OR APPROVED EQUIVALENT IN ALL INLETS. SEE SHEET C5.6.
4. SEE ELECTRICAL PLANS FOR SITE LIGHTING DESIGN & INFORMATION.
5. SEE SHEET C5.5 FOR NYOPLAST DRAIN STRUCTURES.
6. SEE SHEET C5.6 FOR PRECAST DRAIN STRUCTURES.
7. ENSURE ALL UTILITY STRUCTURES (STORM INLETS, JUNCTION BOXES, ETC.) WITHIN THE PROPOSED TRAVEL WAY (I.E. PARKING LOT) ARE TRAFFIC RATED.
8. GRAVITY UTILITIES SHALL TAKE PRECEDENCE OVER DRY UTILITIES. CONTRACTOR MAY NEED TO RELOCATE (RAISE, LOWER, REALIGN) SOME DRY UTILITIES TO AVOID CONFLICTS WITH GRAVITY UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ANY UTILITY CONFLICT IS DISCOVERED AND DEEMED TO BE UNABLE TO FIELD FIT PER SPECIFICATIONS.
9. CONTRACTOR TO VERIFY EXISTING CONDITIONS OF ALL STORM INFRASTRUCTURE (PIPES, STRUCTURES, ETC.) PRIOR TO TIE IN.
10. **IMPORTANT:** CONTRACTOR TO ENSURE THAT THE BOTTOM OF CHAMBER SYSTEM STONE INTERFACES WITH EXISTING FREE FLOWING STRATA. THIS WILL REQUIRE THE EXCAVATION OF AN EXISTING CLAY LENSE WITH BACKFILL OF SUITABLE FREE-FLOWING, OPEN GRADED GRANULAR MATERIALS. SEE GEOTECHNICAL RECOMMENDATIONS.

0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

MSU Stadium Lots
Construction Documents

406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

MONTANA
MICHAEL T. RUSSELL
No. 56647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
UTILITY PLAN 2

SHEET
CU1.4

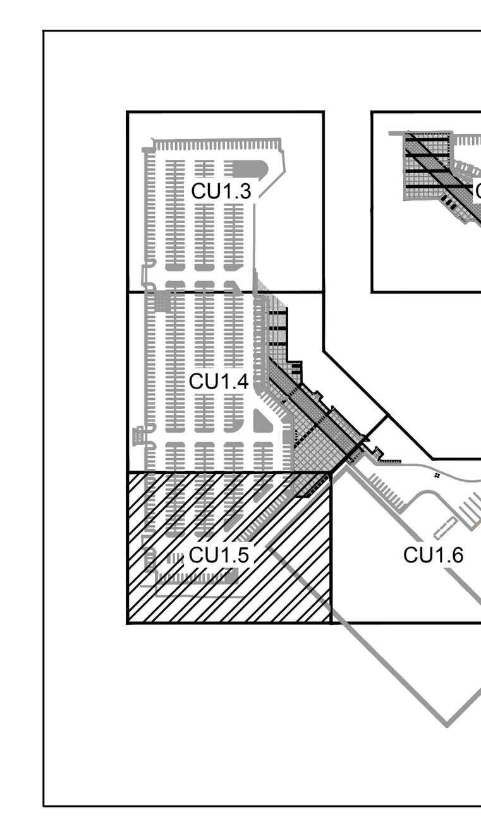
DATE
3-27-2024

UTILITY PLAN NOTES:

1. 1. EXISTING MANHOLES AND VALVES LOCATED WITHIN NEW CONCRETE OR ASPHALT AREAS WILL NEED TO BE ADJUSTED TO PROPOSED GRADE. SEE GRADING PLAN AND DETAIL A SHEET C5.3.
2. PROVIDE A MINIMUM OF 1' SUMP DEPTH IN ALL INLETS.
3. INSTALL NYOPLAST ENVIROHOOD STRUCTURE OR APPROVED EQUIVALENT IN ALL INLETS. SEE SHEET C5.6.
4. SEE ELECTRICAL PLANS FOR SITE LIGHTING DESIGN & INFORMATION.
5. SEE SHEET C5.5 FOR NYOPLAST DRAIN STRUCTURES.
6. SEE SHEET C5.6 FOR PRECAST DRAIN STRUCTURES.
7. ENSURE ALL UTILITY STRUCTURES (STORM INLETS, JUNCTION BOXES, ETC.) WITHIN THE PROPOSED TRAVEL WAY (I.E. PARKING LOT) ARE TRAFFIC RATED.
8. GRAVITY UTILITIES SHALL TAKE PRECEDENCE OVER DRY UTILITIES. CONTRACTOR MAY NEED TO RELOCATE (RAISE, LOWER, REALIGN) SOME DRY UTILITIES TO AVOID CONFLICTS WITH GRAVITY UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ANY UTILITY CONFLICT IS DISCOVERED AND DEEMED TO BE UNABLE TO FIELD FIT PER SPECIFICATIONS.
9. CONTRACTOR TO VERIFY EXISTING CONDITIONS OF ALL STORM INFRASTRUCTURE (PIPES, STRUCTURES, ETC.) PRIOR TO TIE IN.

0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

NO UTILITY INFRASTRUCTURE IS PROPOSED ON THIS SHEET.



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REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

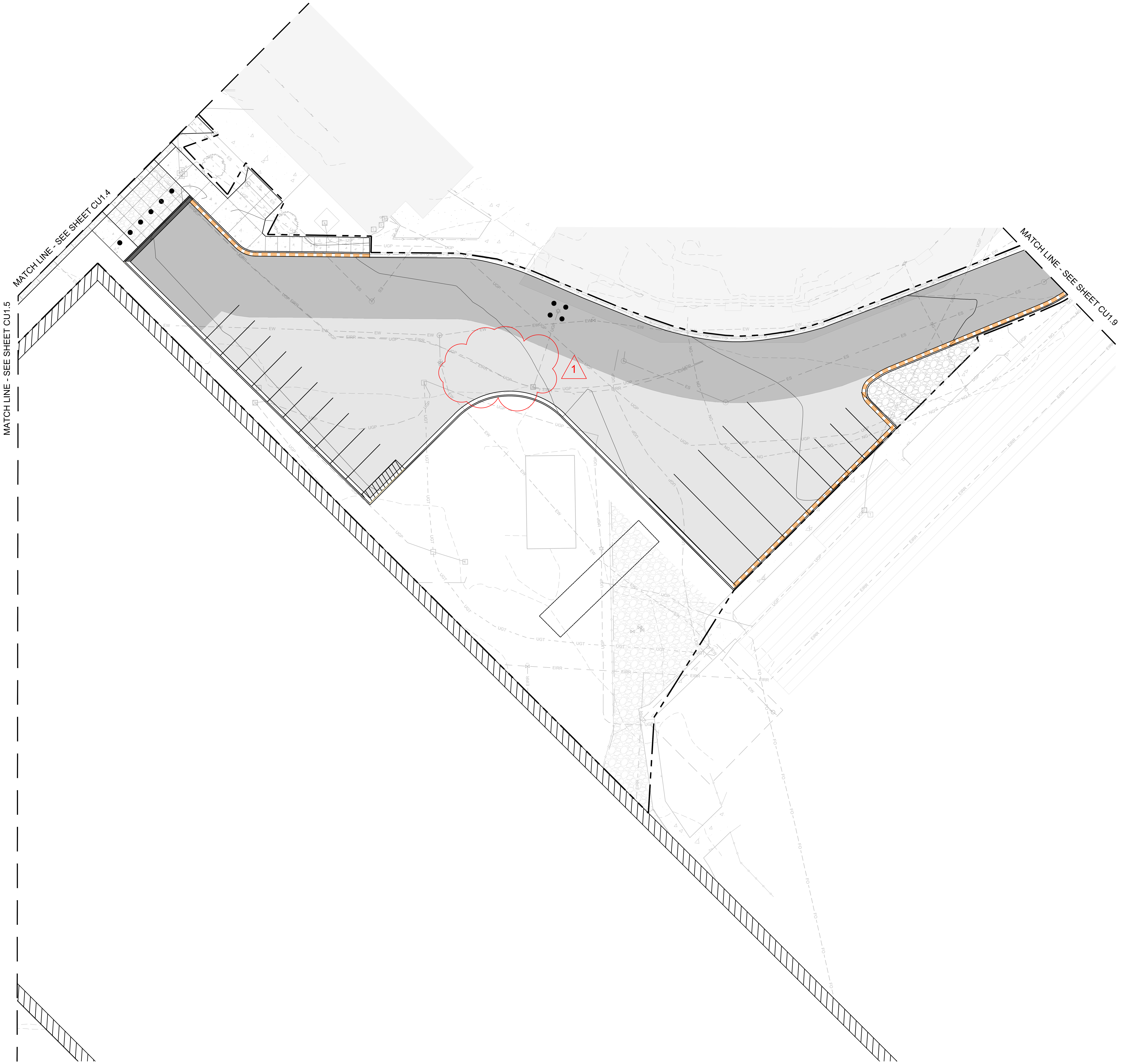
MONTANA
MICHAEL T. RUSSELL
No. 56647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
UTILITY PLAN 3

SHEET
CU1.5

DATE
3-27-2024



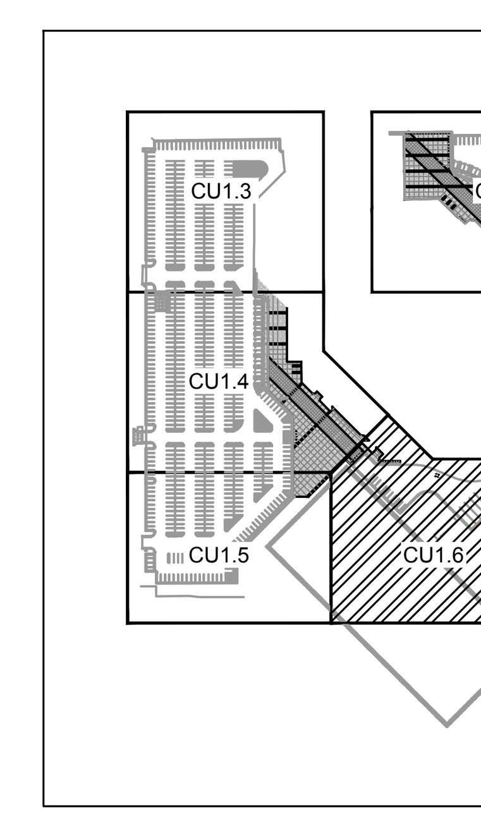
UTILITY PLAN NOTES:

1. EXISTING MANHOLES AND VALVES LOCATED WITHIN NEW CONCRETE OR ASPHALT AREAS WILL NEED TO BE ADJUSTED TO PROPOSED GRADE. SEE GRADING PLAN AND DETAIL A SHEET C5.3.
2. PROVIDE A MINIMUM OF 1' SUMP DEPTH IN ALL INLETS.
3. INSTALL NYOPLAST ENVIROHOOD STRUCTURE OR APPROVED EQUIVALENT IN ALL INLETS. SEE SHEET C5.6.
4. SEE ELECTRICAL PLANS FOR SITE LIGHTING DESIGN & INFORMATION.
5. SEE SHEET C5.5 FOR NYOPLAST DRAIN STRUCTURES.
6. SEE SHEET C5.6 FOR PRECAST DRAIN STRUCTURES.
7. ENSURE ALL UTILITY STRUCTURES (STORM INLETS, JUNCTION BOXES, ETC.) WITHIN THE PROPOSED TRAVEL WAY (I.E. PARKING LOT) ARE TRAFFIC RATED.
8. GRAVITY UTILITIES SHALL TAKE PRECEDENCE OVER DRY UTILITIES. CONTRACTOR MAY NEED TO RELOCATE (RAISE, LOWER, REALIGN) SOME DRY UTILITIES TO AVOID CONFLICTS WITH GRAVITY UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ANY UTILITY CONFLICT IS DISCOVERED AND DEEMED TO BE UNABLE TO FIELD FIT PER SPECIFICATIONS.
9. CONTRACTOR TO VERIFY EXISTING CONDITIONS OF ALL STORM INFRASTRUCTURE (PIPES, STRUCTURES, ETC.) PRIOR TO TIE IN.

N

0 20 40

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

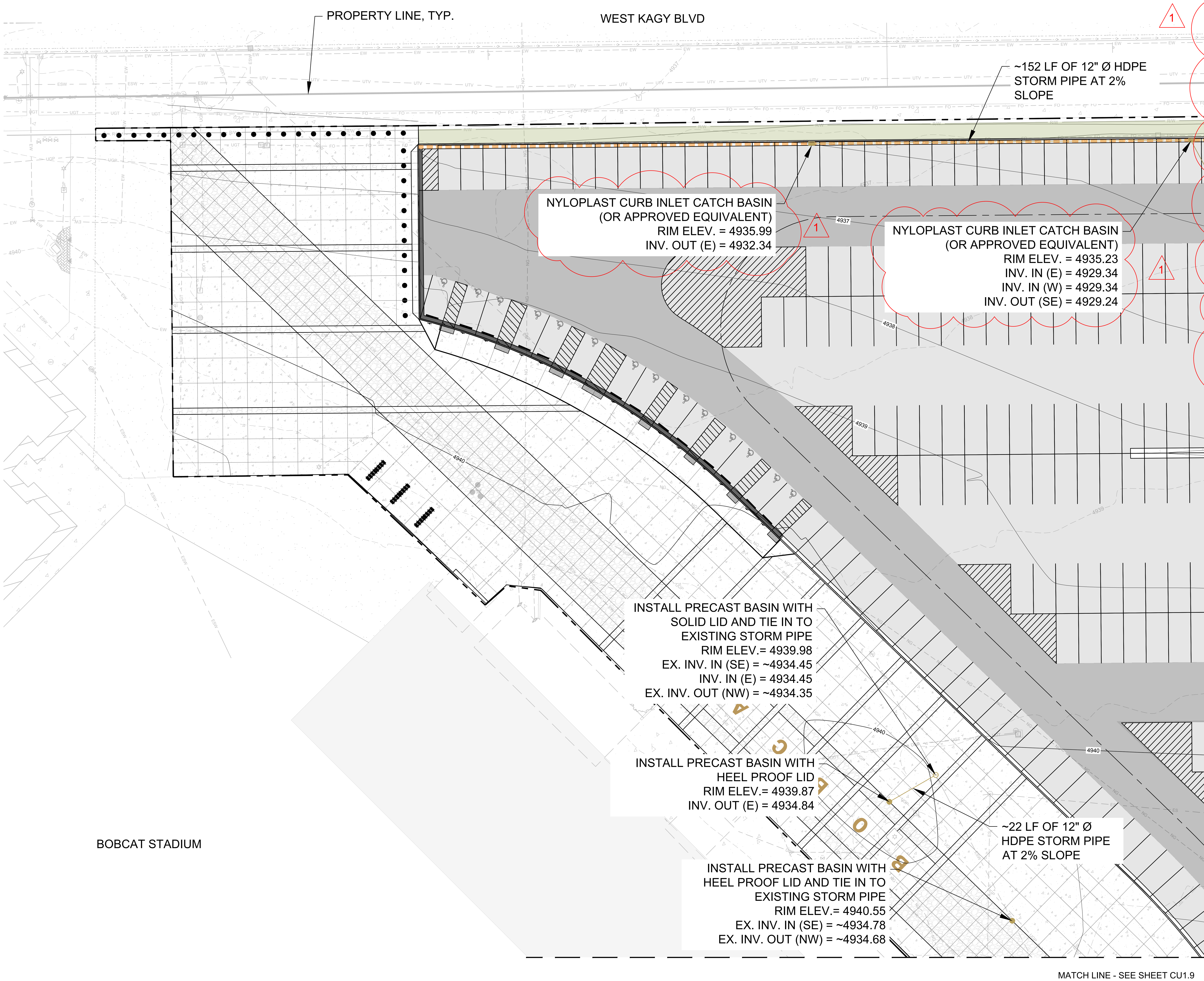
MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
UTILITY PLAN 4

SHEET
CU1.6

DATE
3-27-2024



UTILITY PLAN NOTES:

1. EXISTING MANHOLES AND VALVES LOCATED WITHIN NEW CONCRETE OR ASPHALT AREAS WILL NEED TO BE ADJUSTED TO PROPOSED GRADE. SEE GRADING PLAN AND DETAIL A SHEET C5.3.
2. PROVIDE A MINIMUM OF 1' SUMP DEPTH IN ALL INLETS.
3. INSTALL NYOPLAST ENVIROHOOD STRUCTURE OR APPROVED EQUIVALENT IN ALL INLETS. SEE SHEET C5.6.
4. SEE ELECTRICAL PLANS FOR SITE LIGHTING DESIGN & INFORMATION.
5. SEE SHEET C5.5 FOR NYOPLAST DRAIN STRUCTURES.
6. SEE SHEET C5.6 FOR PRECAST DRAIN STRUCTURES.
7. ENSURE ALL UTILITY STRUCTURES (STORM INLETS, JUNCTION BOXES, ETC.) WITHIN THE PROPOSED TRAVEL WAY (I.E. PARKING LOT) ARE TRAFFIC RATED.
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0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
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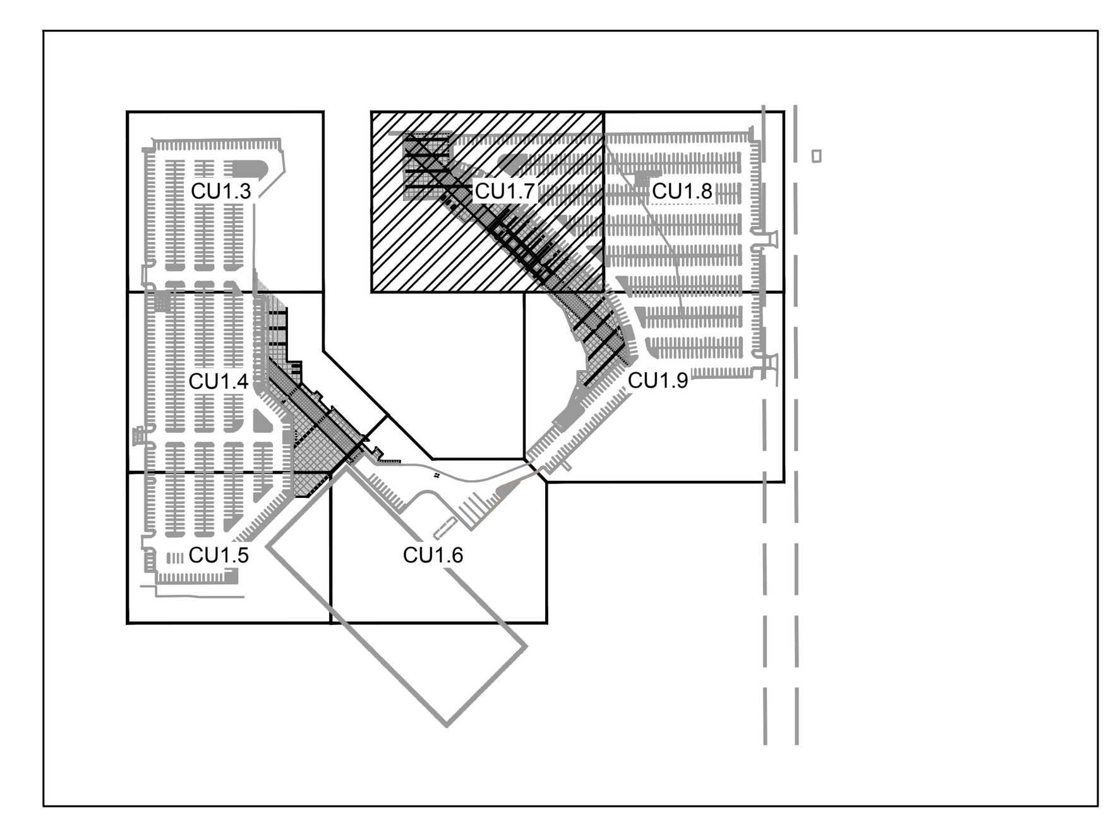

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

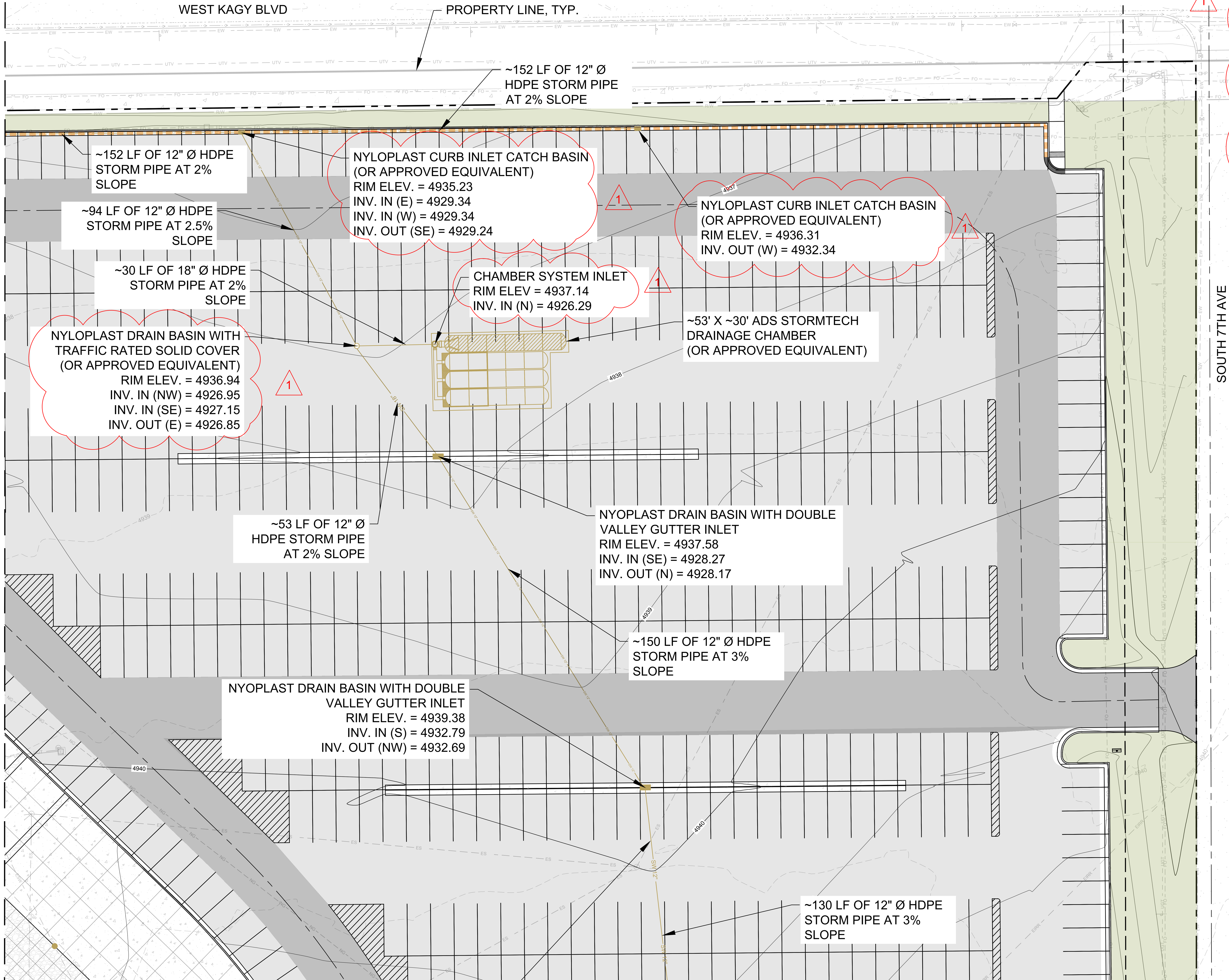
MONTANA MICHAEL T. RUSSELL No. 59647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
UTILITY PLAN 5

SHEET
CU1.7

DATE
3-27-2024



EXISTING SANITARY SEWER CROSSING. TOPOGRAPHIC SURVEY INDICATES THAT THE CLEARANCE BETWEEN TOP OF SANITARY SEWER AND BOTTOM OF PROPOSED STORM DRAIN IS ~11". IF CONTRACTOR FINDS LESS SEPARATION, CONTRACTOR IS TO NOTIFY ENGINEER IMMEDIATELY. LESS THAN 10" OF CLEARANCE WILL WARRANT BACKFILLING WITH FLOWABLE FILL.

UTILITY PLAN NOTES:

1. EXISTING MANHOLES AND VALVES LOCATED WITHIN NEW CONCRETE OR ASPHALT AREAS WILL NEED TO BE ADJUSTED TO PROPOSED GRADE. SEE GRADING PLAN AND DETAIL A SHEET C5.3.
2. PROVIDE A MINIMUM OF 1' SUMP DEPTH IN ALL INLETS.
3. INSTALL NYOPLAST ENVIROHOOD STRUCTURE OR APPROVED EQUIVALENT IN ALL INLETS. SEE SHEET C5.6.
4. SEE ELECTRICAL PLANS FOR SITE LIGHTING DESIGN & INFORMATION.
5. SEE SHEET C5.5 FOR NYOPLAST DRAIN STRUCTURES.
6. SEE SHEET C5.6 FOR PRECAST DRAIN STRUCTURES.
7. ENSURE ALL UTILITY STRUCTURES (STORM INLETS, JUNCTION BOXES, ETC.) WITHIN THE PROPOSED TRAVEL WAY (I.E. PARKING LOT) ARE TRAFFIC RATED.
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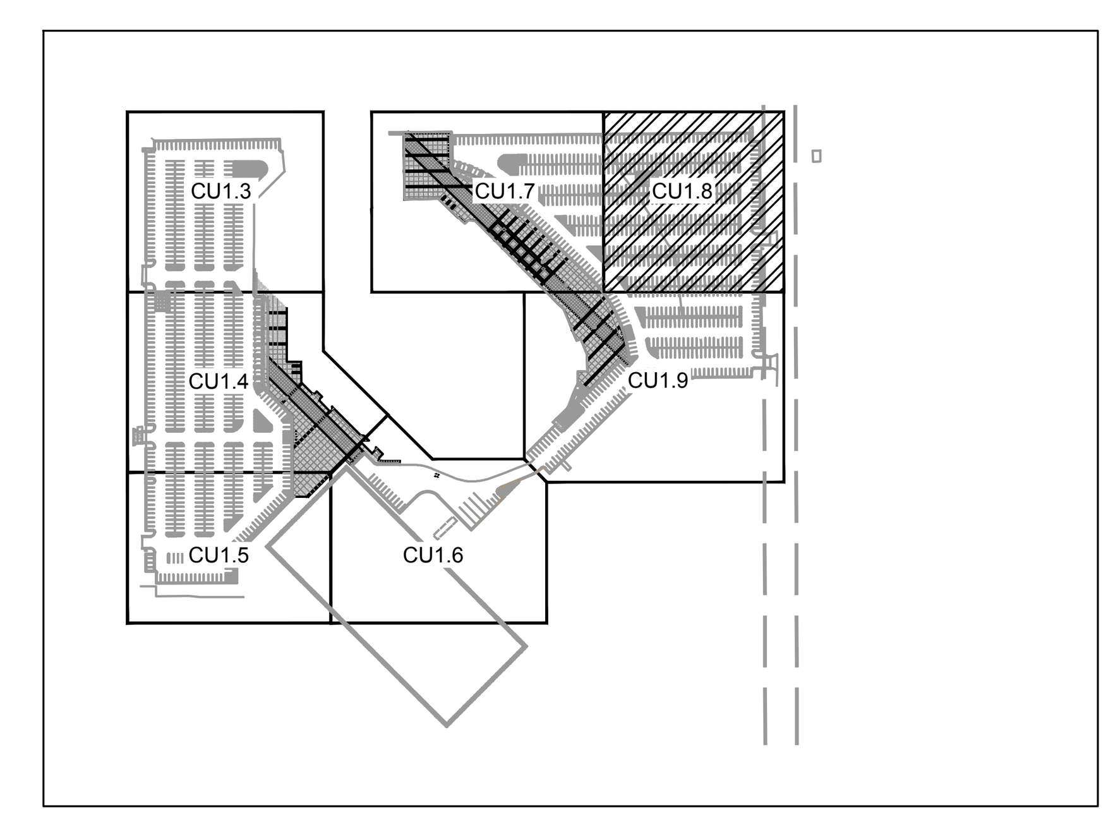
SCALE IN FEET 0 20 40
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

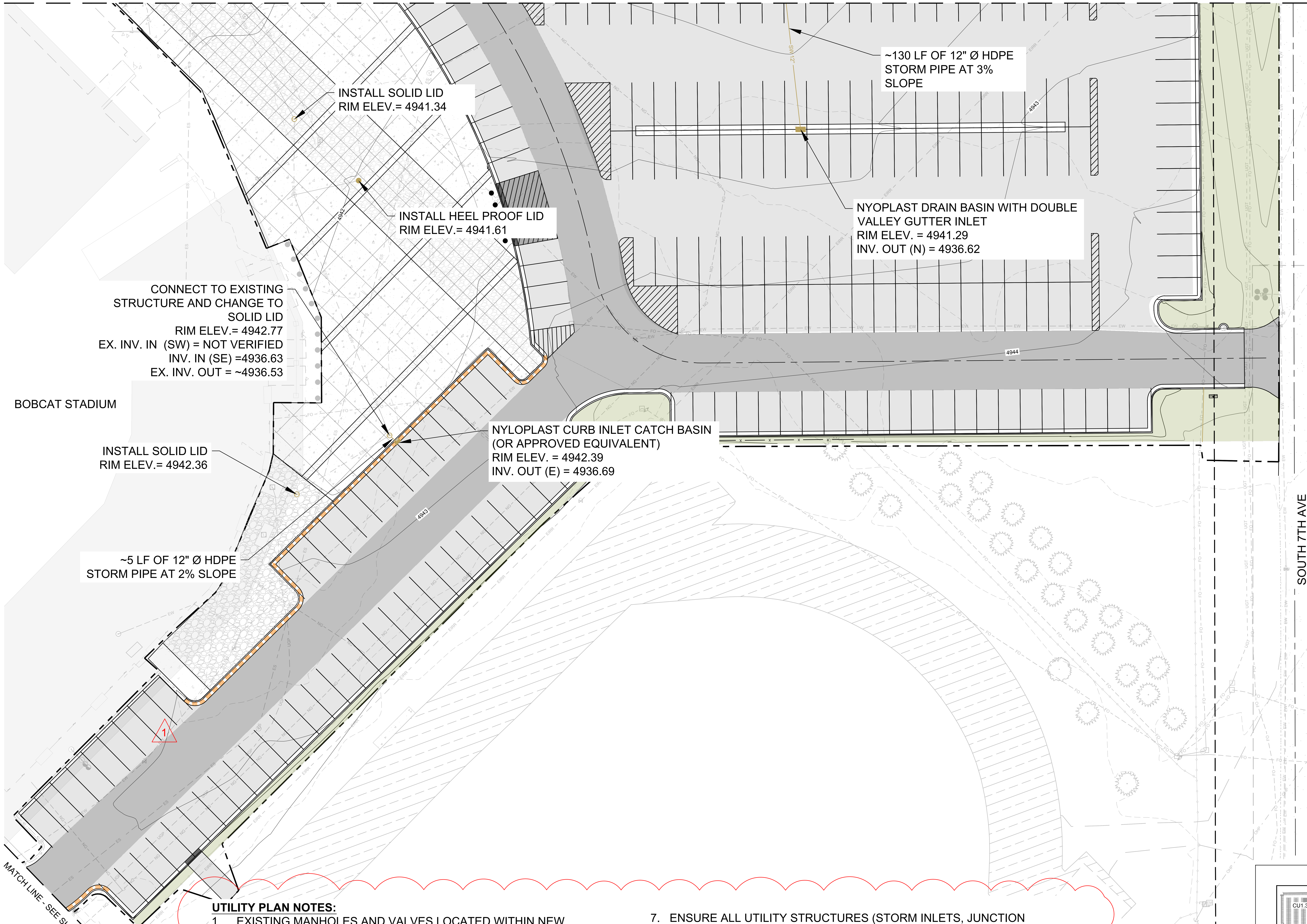
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
UTILITY PLAN 6

SHEET
CU1.8

DATE
3-27-2024



UTILITY PLAN NOTES:

1. EXISTING MANHOLES AND VALVES LOCATED WITHIN NEW CONCRETE OR ASPHALT AREAS WILL NEED TO BE ADJUSTED TO PROPOSED GRADE. SEE GRADING PLAN AND DETAIL A SHEET C5.3.
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3. INSTALL NYOPLAST ENVIROHOOD STRUCTURE OR APPROVED EQUIVALENT IN ALL INLETS. SEE SHEET C5.6.
4. SEE ELECTRICAL PLANS FOR SITE LIGHTING DESIGN & INFORMATION.
5. SEE SHEET C5.5 FOR NYOPLAST DRAIN STRUCTURES.
6. SEE SHEET C5.6 FOR PRECAST DRAIN STRUCTURES
7. ENSURE ALL UTILITY STRUCTURES (STORM INLETS, JUNCTION BOXES, ETC.) WITHIN THE PROPOSED TRAVEL WAY (I.E. PARKING LOT) ARE TRAFFIC RATED.
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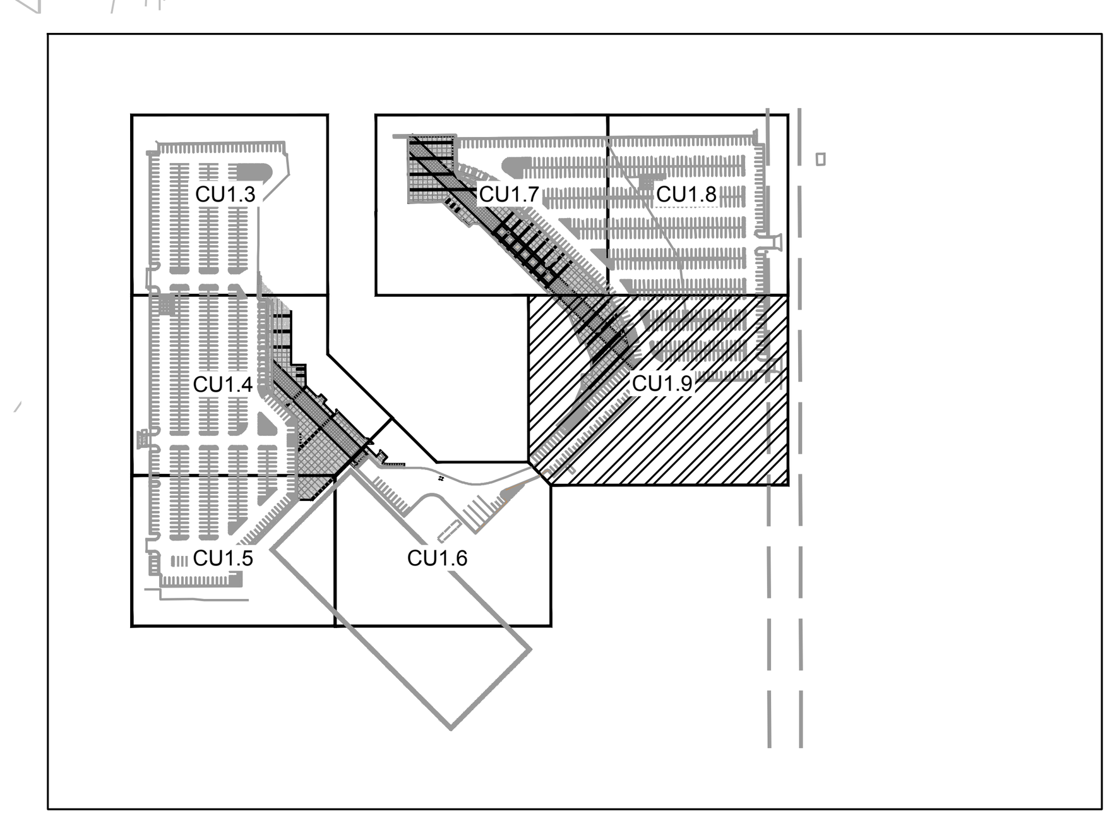
9. CONTRACTOR TO VERIFY EXISTING CONDITIONS OF ALL STORM INFRASTRUCTURE (PIPES, STRUCTURES, ETC.) PRIOR TO TIE IN.



FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
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MSU Stadium Lots
Construction Documents

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

MONTANA MICHAEL T. RUSSELL No. 59647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
UTILITY PLAN 7

SHEET
CU1.9

DATE
3-27-2024

EROSION CONTROL NOTES

1. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING ONSITE EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED. STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM SITE TRAFFIC.

3. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION (70% MIN.). EROSION CONTROL STRUCTURES IN PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVING IS COMPLETE, & LANDSCAPE DRAINING ON TO PAVEMENT IS COMPLETE.

4. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A REPRESENTATIVE OF THE CITY OR COUNTY PUBLIC WORKS DEPARTMENT MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.

5. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLES WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY, AND REMOVED WHEN THE SITE WORK IS COMPLETED.

6. THE CONTRACTOR MUST OBTAIN A MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM (MPDES) OR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR THE OVERALL DEVELOPMENT SITE. CONTRACTOR MUST OBTAIN A COPY OF THE PERMIT AND COMPLY WITH ALL REQUIREMENTS SPECIFIC TO THE SUBJECT PROPERTY CONSTRUCTION AREA, INCLUDING ALL NECESSARY INSPECTIONS AND MAINTENANCE ACTIVITIES.

7. CONTRACTOR MUST OBTAIN PERMITS FOR UTILITY TRENCH DEWATERING.

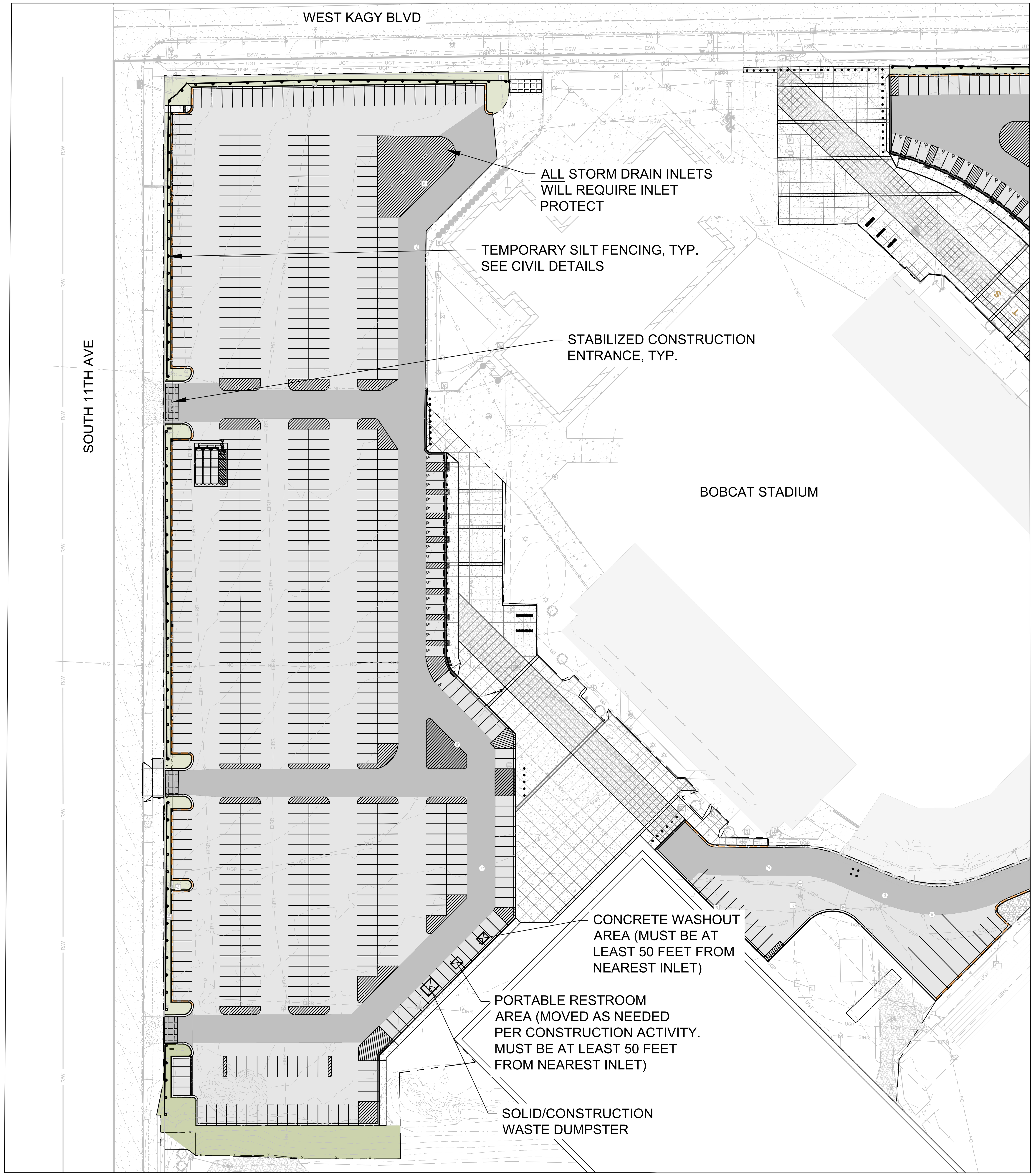
8. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL SWPPP SYSTEMS. CITY INSPECTOR MUST APPROVE THE REMOVAL OF ALL SWPPP DEVICES.

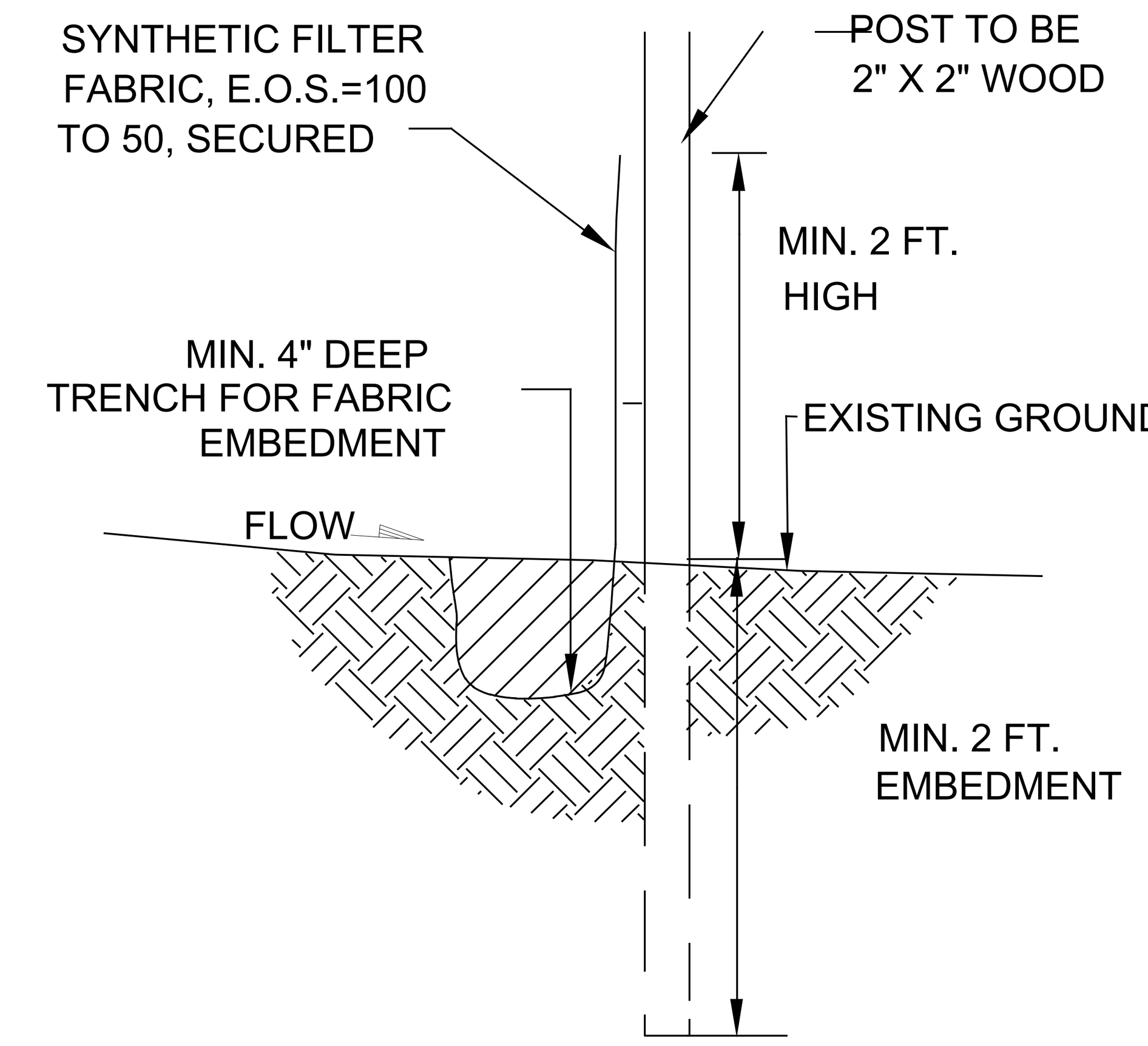
9. ALL SWPPP DRAINAGE SYSTEMS USING A GEOTECHNICAL FABRIC FOR INLET GRATE PROTECTION MUST HAVE FABRIC REGULARLY CLEANED (14 DAY INTERVAL MAX, MORE FREQUENTLY IF NEEDED) TO INSURE THAT SILT DOES NOT FORM IMPERMEABLE BARRIER OVER INLET.

10. THE CONTRACTOR IS TO PROVIDE NOI, AS WELL AS COMPLETED SWPPP APPLICATION PER STATE OF MONTANA DEQ TEMPLATE, AS WELL AS ALL OTHER NECESSARY PERMITS PRIOR TO CONSTRUCTION.

11. CONTRACTOR TO COORDINATE WITH INDOOR PRACTICE FACILITY CONTRACTING TEAM, AS NECESSARY, ESPECIALLY WHEN PROJECT IMPROVEMENTS ENCROACH TOWARD INDOOR PRACTICE FACILITY IMPROVEMENTS.

12. ALL EROSION CONTROL & STABILIZATION (TEMPORARY STABILIZATION MEASURES, SEDIMENT CONTROL/SILT FENCING, INLET PROTECTION, ETC. MUST BE MAINTAINED UNTIL FINAL SEEDING AND STABILIZATION MEASURES ARE IN PLACE AND APPROVED BY MONTANA STATE UNIVERSITY PROJECT STAFF.



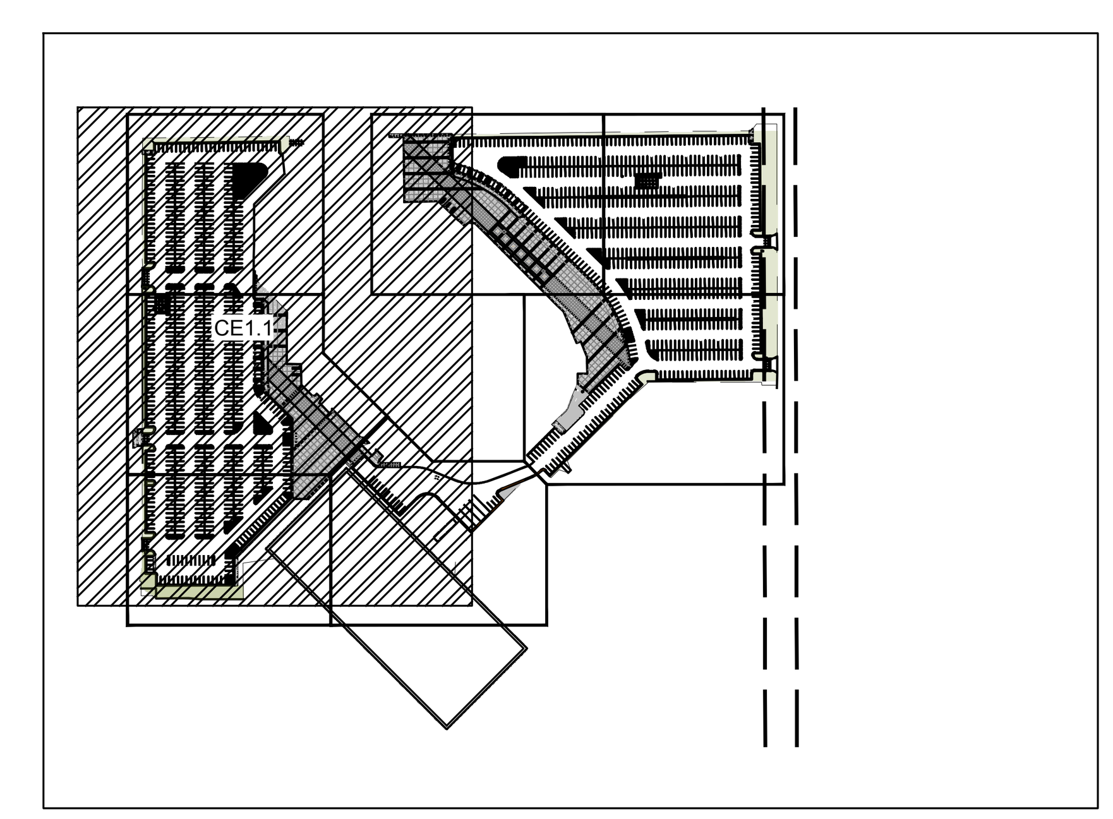


SILT FENCE

N

0 50 100

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



MONTANA STATE UNIVERSITY

MSU-CPDC

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MSU Stadium Lots

Construction Documents

FINAL CD - FOR CONSTRUCTION

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
EROSION CONTROL
1

SHEET
CE1.1

DATE
3-27-2024

EROSION CONTROL NOTES

1. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING ONSITE EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED. STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM SITE TRAFFIC.

3. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION (70% MIN.). EROSION CONTROL STRUCTURES IN PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVING IS COMPLETE, & LANDSCAPE DRAINING ON TO PAVEMENT IS COMPLETE.

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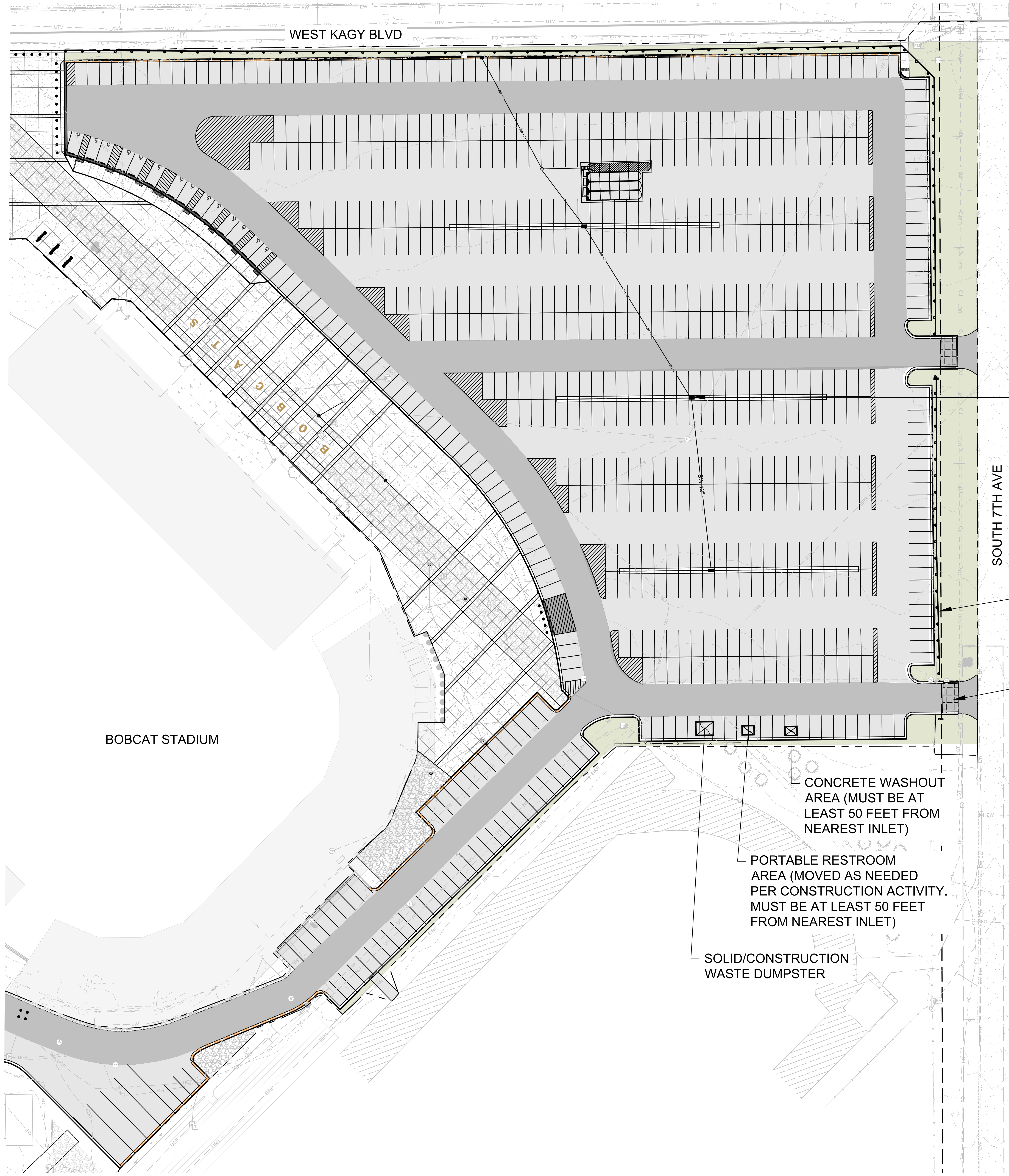
8. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL SWPPP SYSTEMS. CITY INSPECTOR MUST APPROVE THE REMOVAL OF ALL SWPPP DEVICES.

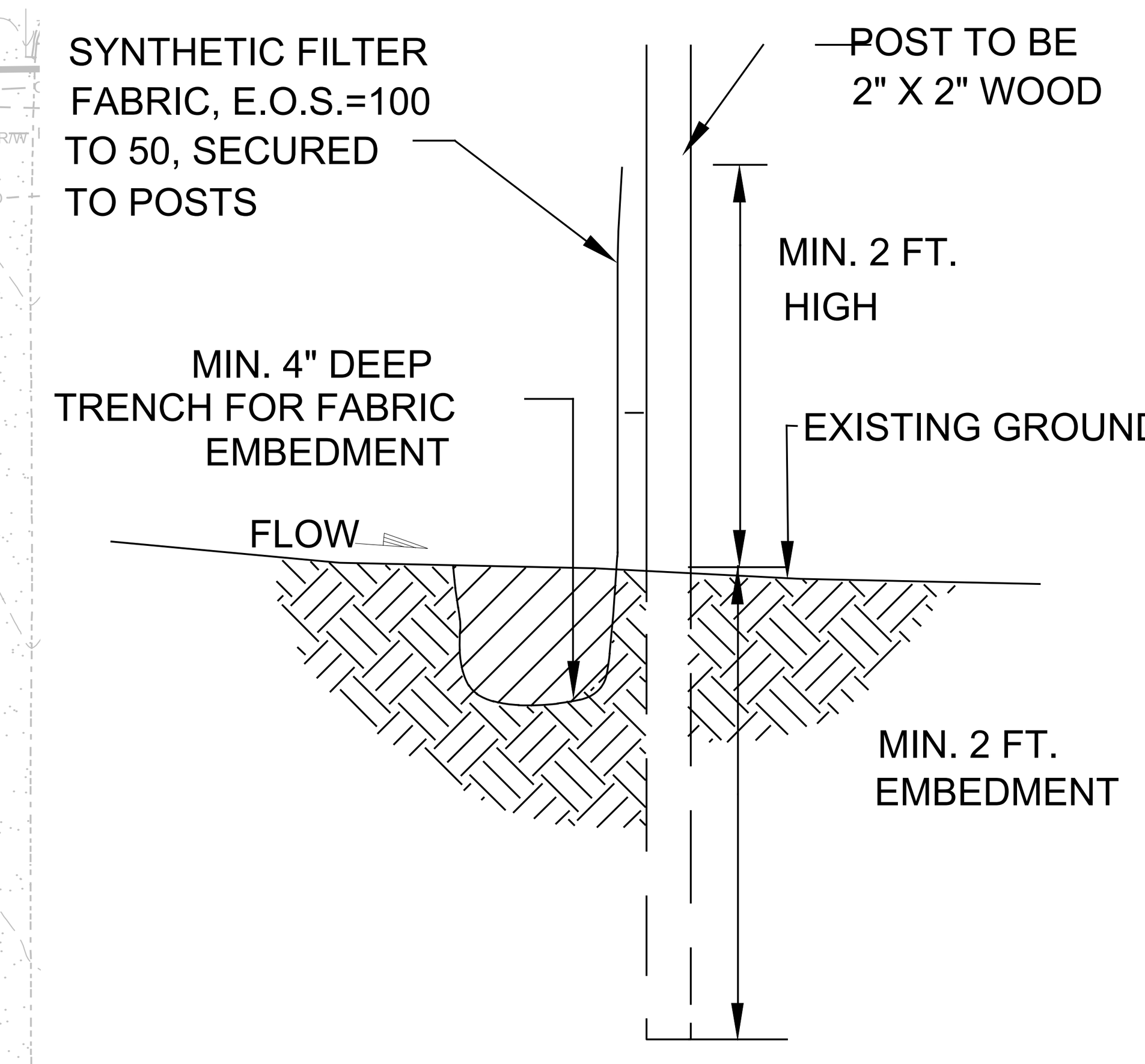
9. ALL SWPPP DRAINAGE SYSTEMS USING A GEOTECHNICAL FABRIC FOR INLET GRATE PROTECTION MUST HAVE FABRIC REGULARLY CLEANED (14 DAY INTERVAL MAX, MORE FREQUENTLY IF NEEDED) TO INSURE THAT SILT DOES NOT FORM IMPERMEABLE BARRIER OVER INLET.

10. THE CONTRACTOR IS TO PROVIDE NOI, AS WELL AS COMPLETED SWPPP APPLICATION PER STATE OF MONTANA DEQ TEMPLATE, AS WELL AS ALL OTHER NECESSARY PERMITS PRIOR TO CONSTRUCTION.

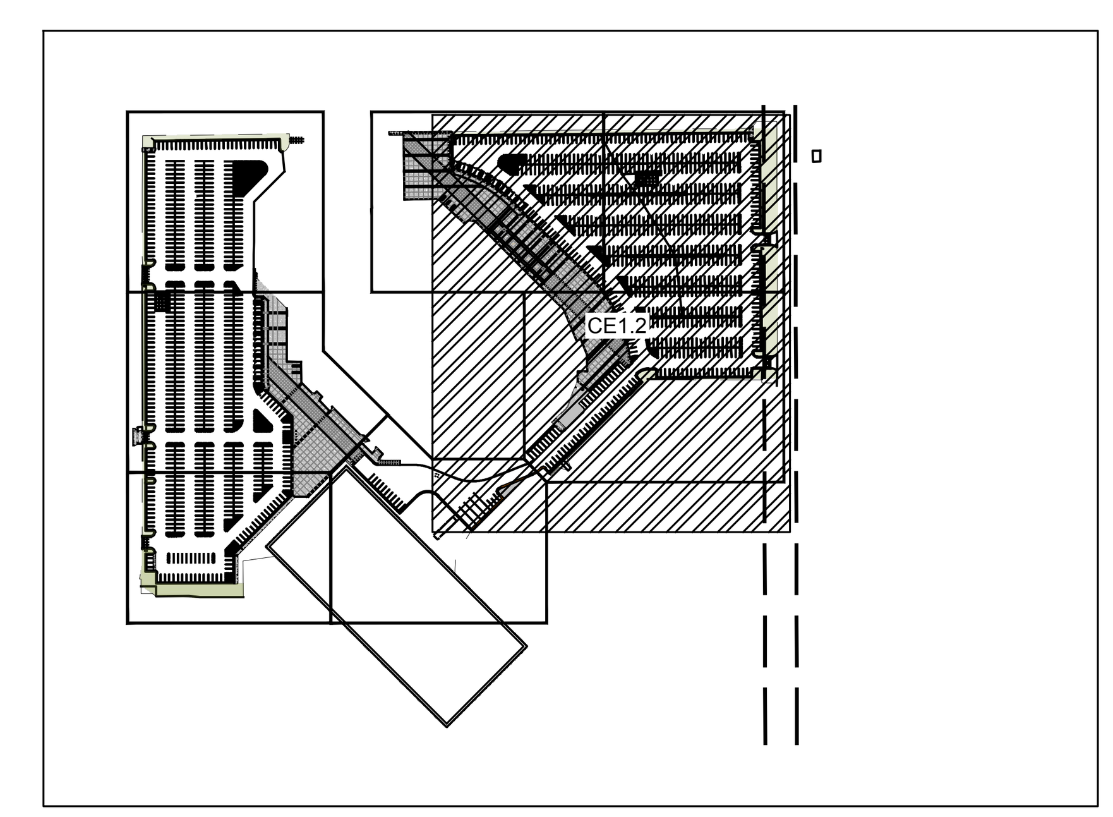
11. CONTRACTOR TO COORDINATE WITH INDOOR PRACTICE FACILITY CONTRACTING TEAM, AS NECESSARY, ESPECIALLY WHEN PROJECT IMPROVEMENTS ENCROACH TOWARD INDOOR PRACTICE FACILITY IMPROVEMENTS.

12. ALL EROSION CONTROL & STABILIZATION (TEMPORARY STABILIZATION MEASURES, SEDIMENT CONTROL/SILT FENCING, INLET PROTECTION, ETC. MUST BE MAINTAINED UNTIL FINAL SEEDING AND STABILIZATION MEASURES ARE IN PLACE AND APPROVED BY MONTANA STATE UNIVERSITY PROJECT STAFF.





SILT FENCE



FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

MSU Stadium Lots
Construction Documents

DJ&A
406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MICHAEL T. RUSSELL
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
EROSION CONTROL 2

SHEET
CE1.2

DATE
3-27-2024

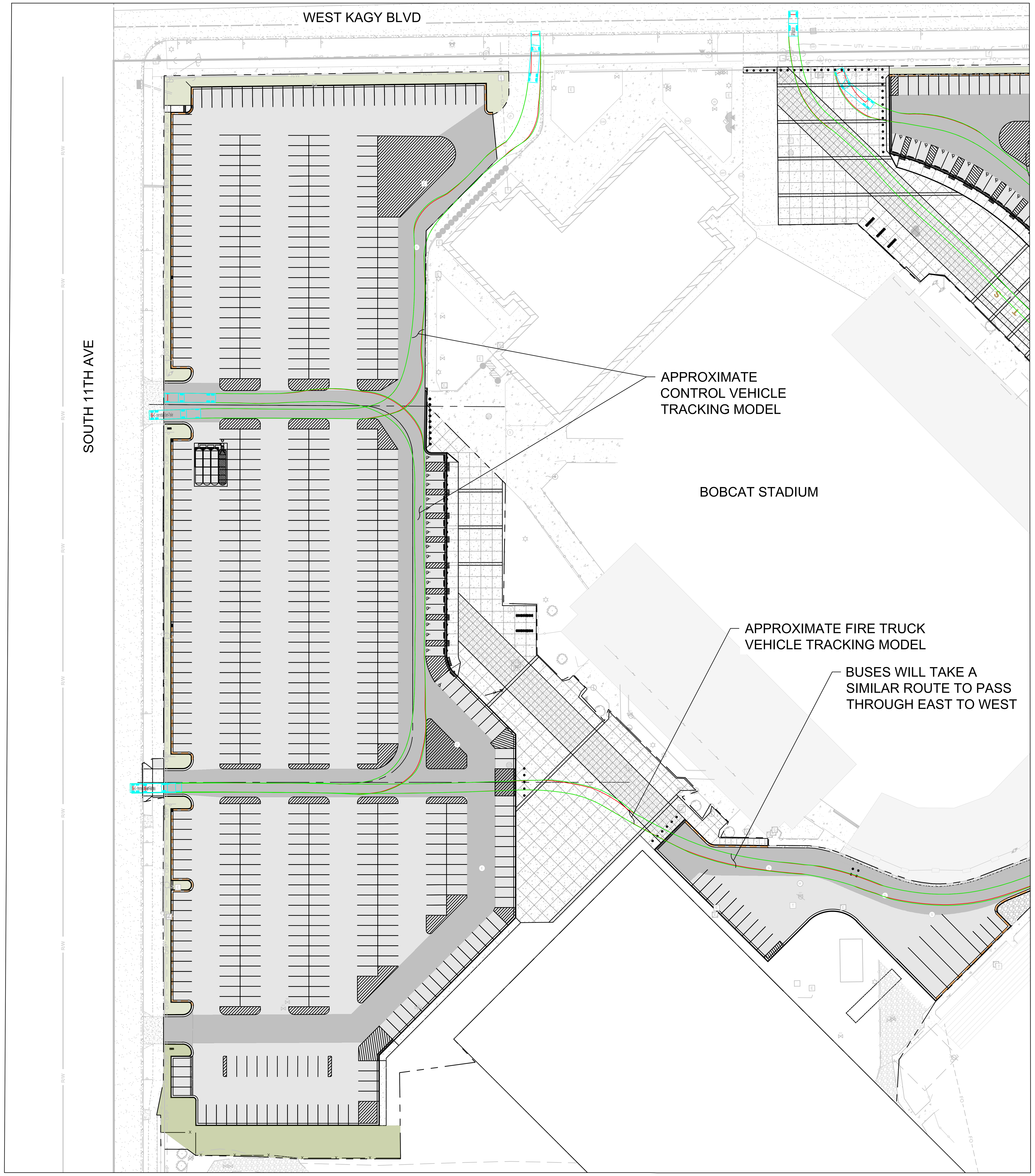
VEHICLE TURNING MOVEMENT NOTES:

1. CONTROL VEHICLE SHOWN IS A WB-40 INTERMEDIATE SEMI TRUCK
   VEHICLE DIMENSIONS:
   LENGTH = 45.5'
   WIDTH = 8'

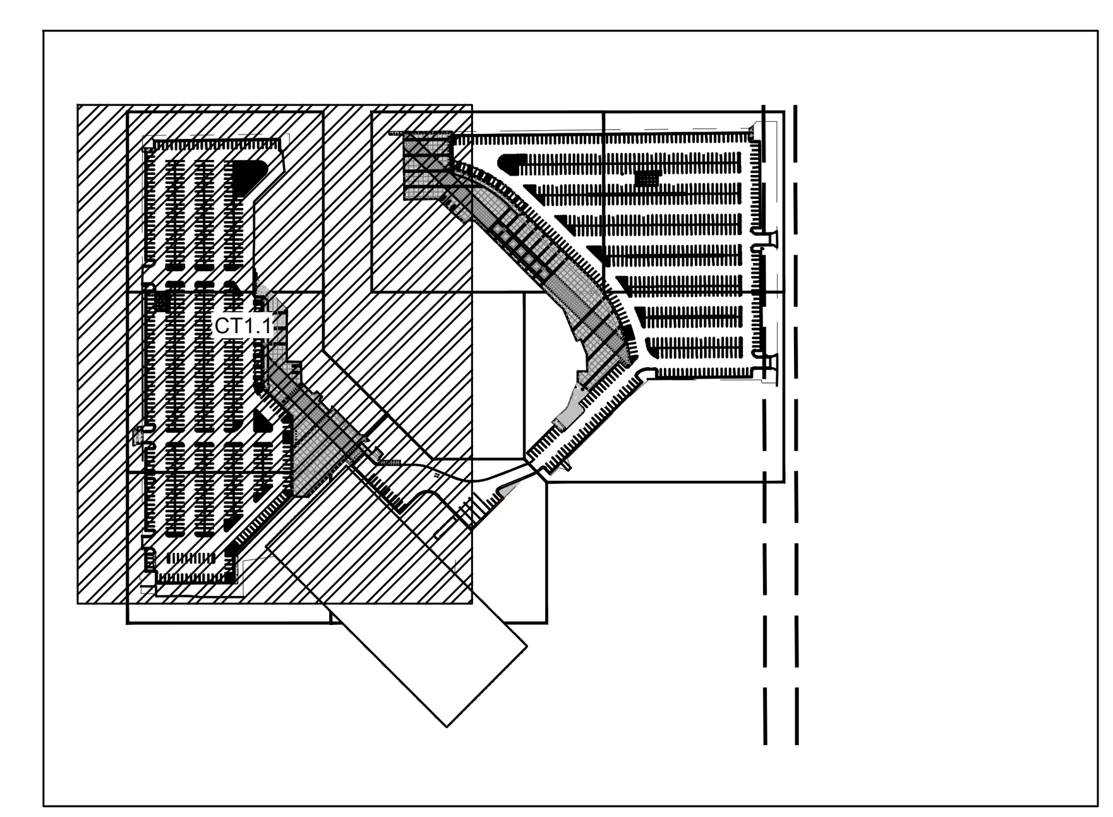
2. DUMP TRUCK SHOWN IS A JCB ADT 714
   VEHICLE DIMENSIONS:
   LENGTH = 22.257'
   WIDTH = 8.202'

3. FIRE TRUCK SHOWN IS AN AERIAL PUMPER TRUCK
   VEHICLE DIMENSIONS:
   LENGTH = 39'
   WIDTH = 8.167'

4. VEHICLE TRACKING IS SHOWN IN COLOR TO CONVEY THE PATH OF TRAVEL:
   GREEN = FRONT BUMPER PATH
   RED = WHEEL PATH



N
0 50 100
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
TURNING MOVEMENT 1

SHEET
CT1.1

DATE
3-27-2024

VEHICLE TURNING MOVEMENT NOTES:

1. CONTROL VEHICLE SHOWN IS A WB-40 INTERMEDIATE SEMI TRUCK
   VEHICLE DIMENSIONS:
   LENGTH = 45.5'
   WIDTH = 8'
2. DUMP TRUCK SHOWN IS A JCB ADT 714
   VEHICLE DIMENSIONS:
   LENGTH = 22.257'
   WIDTH = 8.202'
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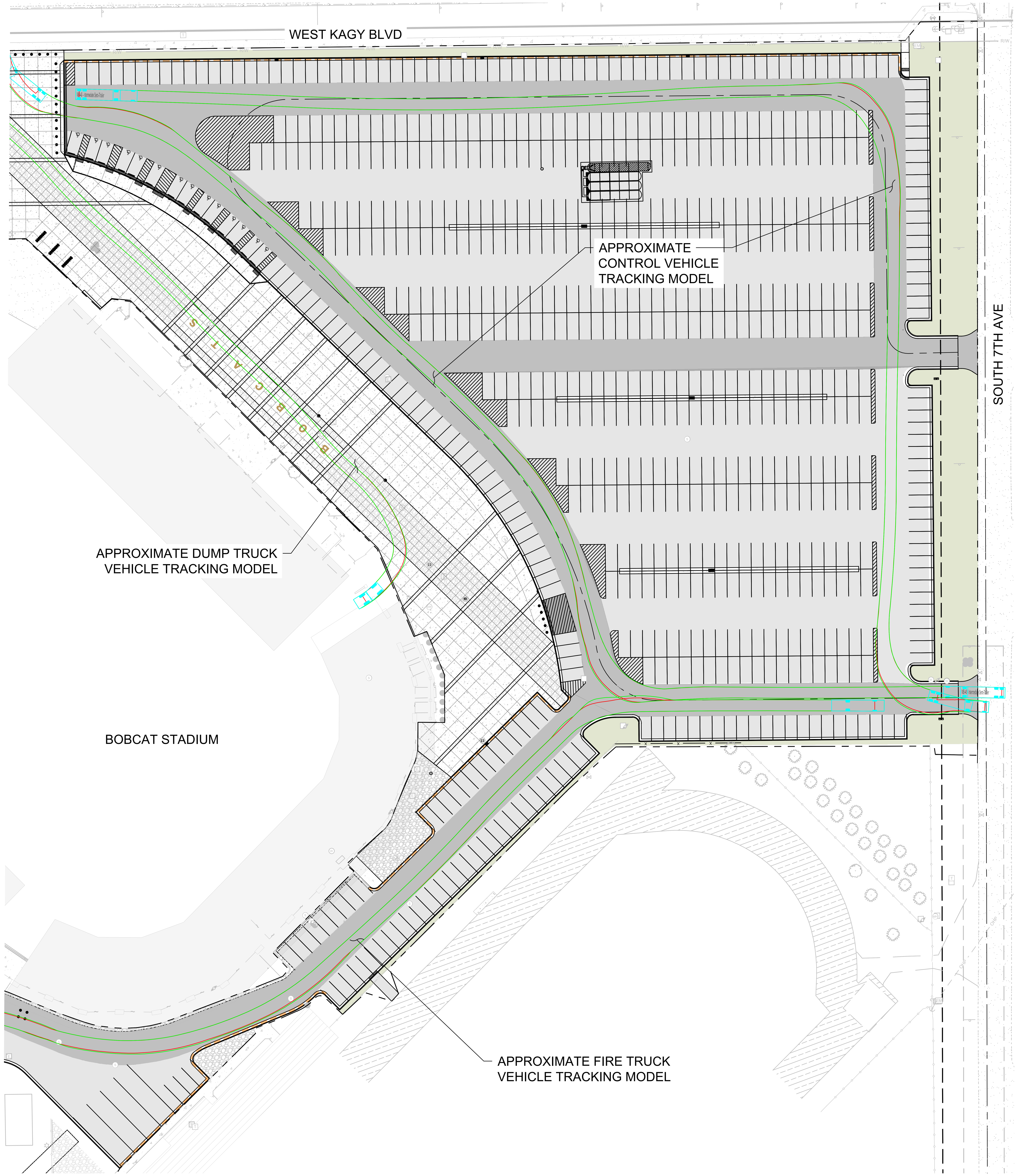
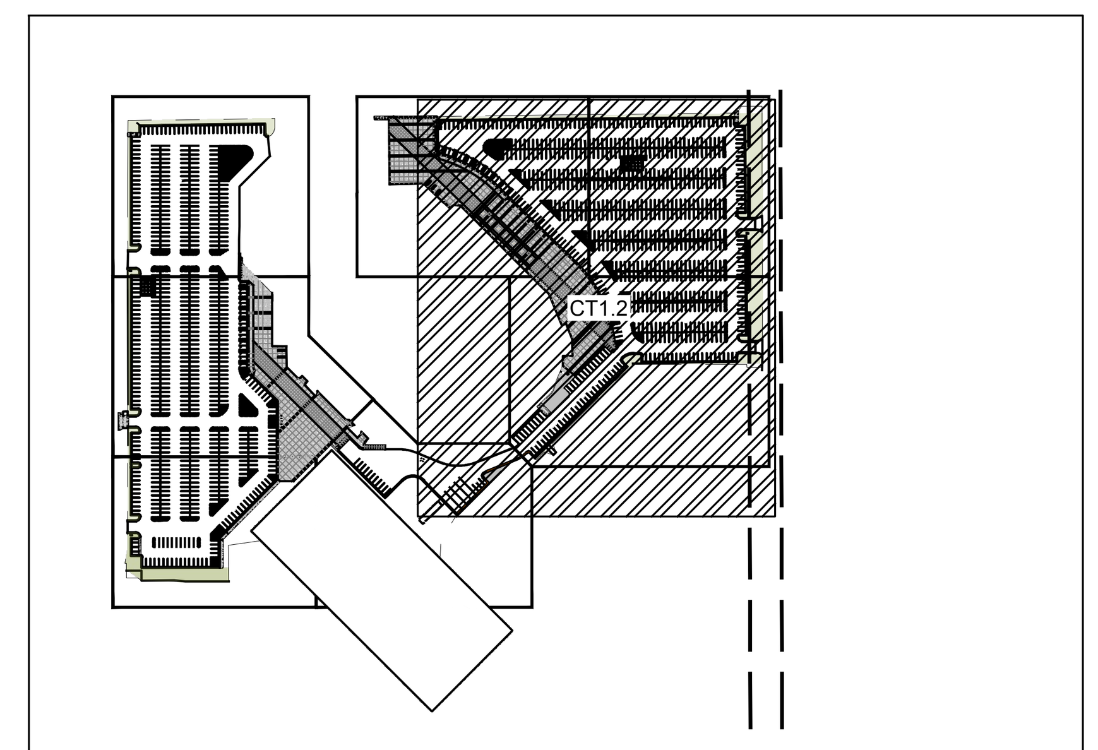
   VEHICLE DIMENSIONS:
   LENGTH = 39'
   WIDTH = 8.167'
4. VEHICLE TRACKING IS SHOWN IN COLOR TO CONVEY THE PATH OF TRAVEL:
   GREEN = FRONT BUMPER PATH
   RED = WHEEL PATH



N

0 50 100
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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Construction Documents

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djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

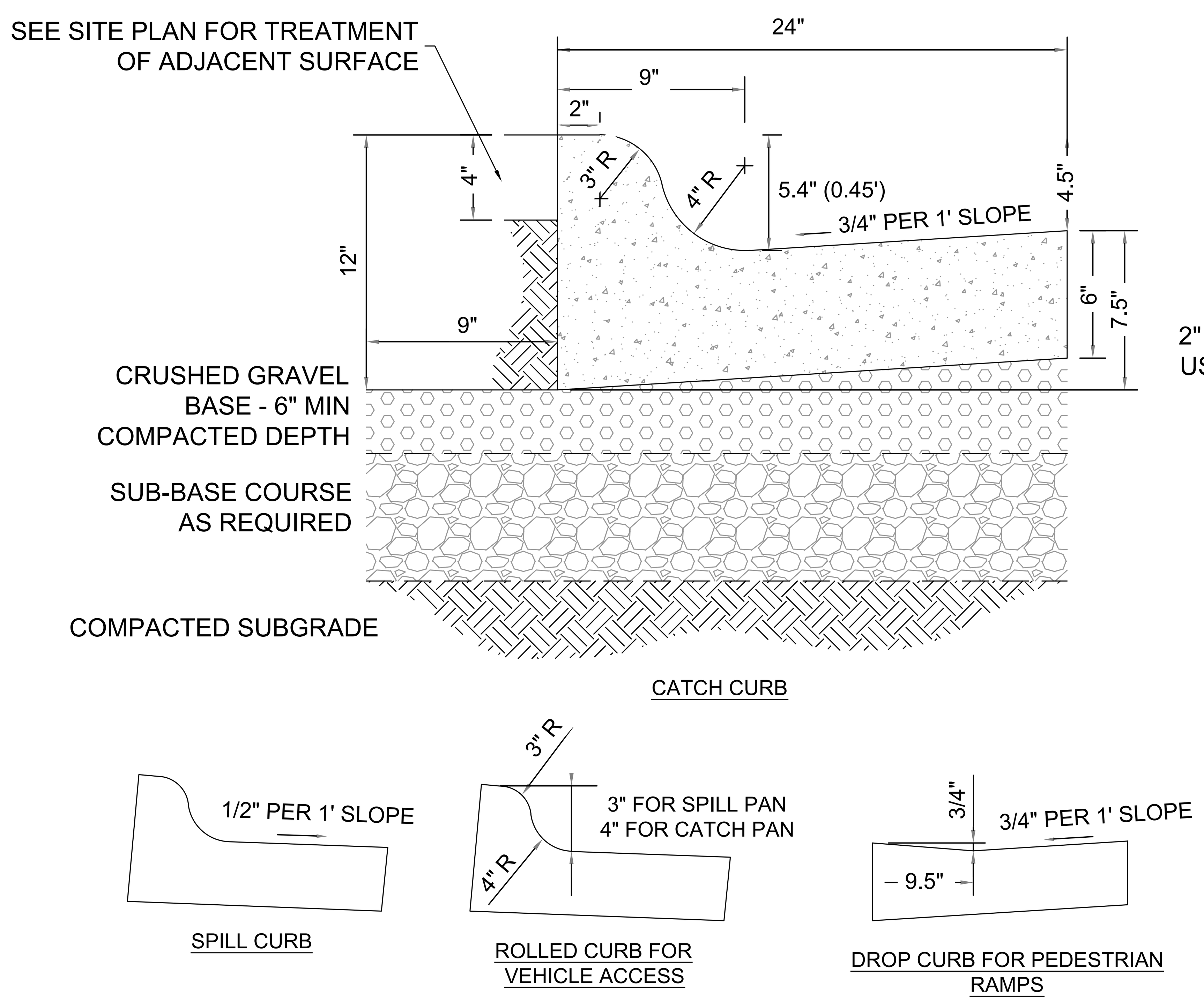
MONTANA
MICHAEL T. RUSSELL
No. 59547PE
PROFESSIONAL ENGINEER

PPA#22-0012

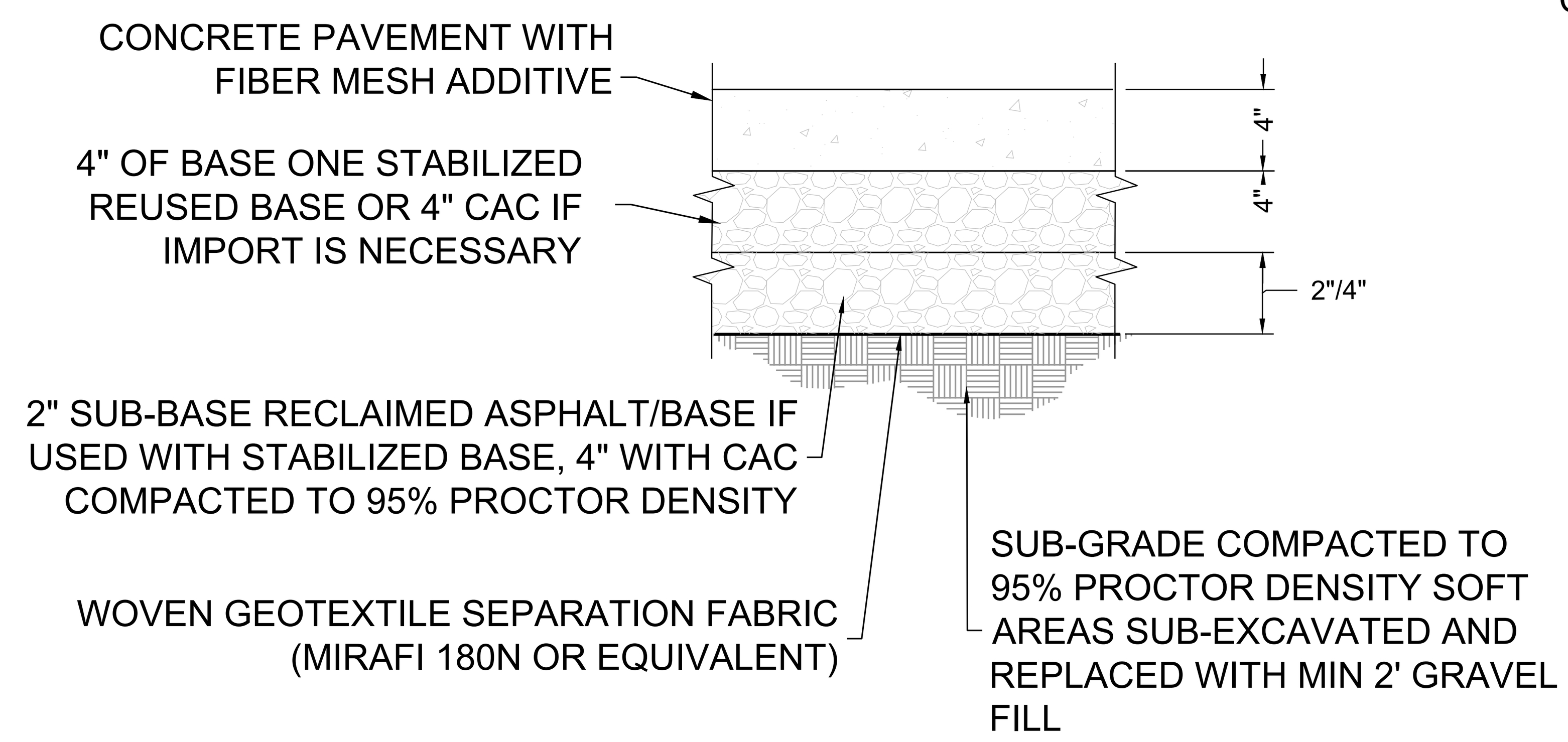
SHEET TITLE
TURNING MOVEMENT 2

SHEET
CT1.2

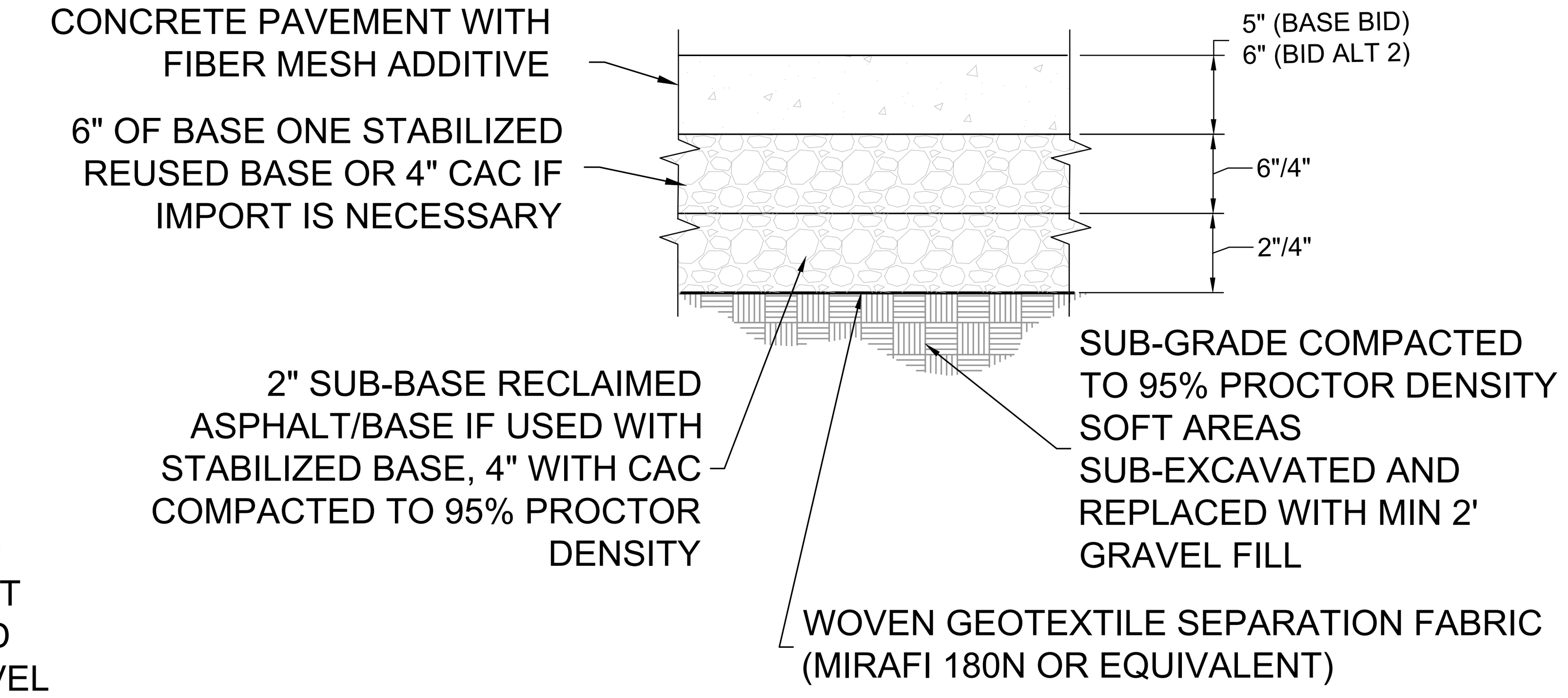
DATE
3-27-2024



A INTEGRAL CURB & GUTTER
C5.1 NTS

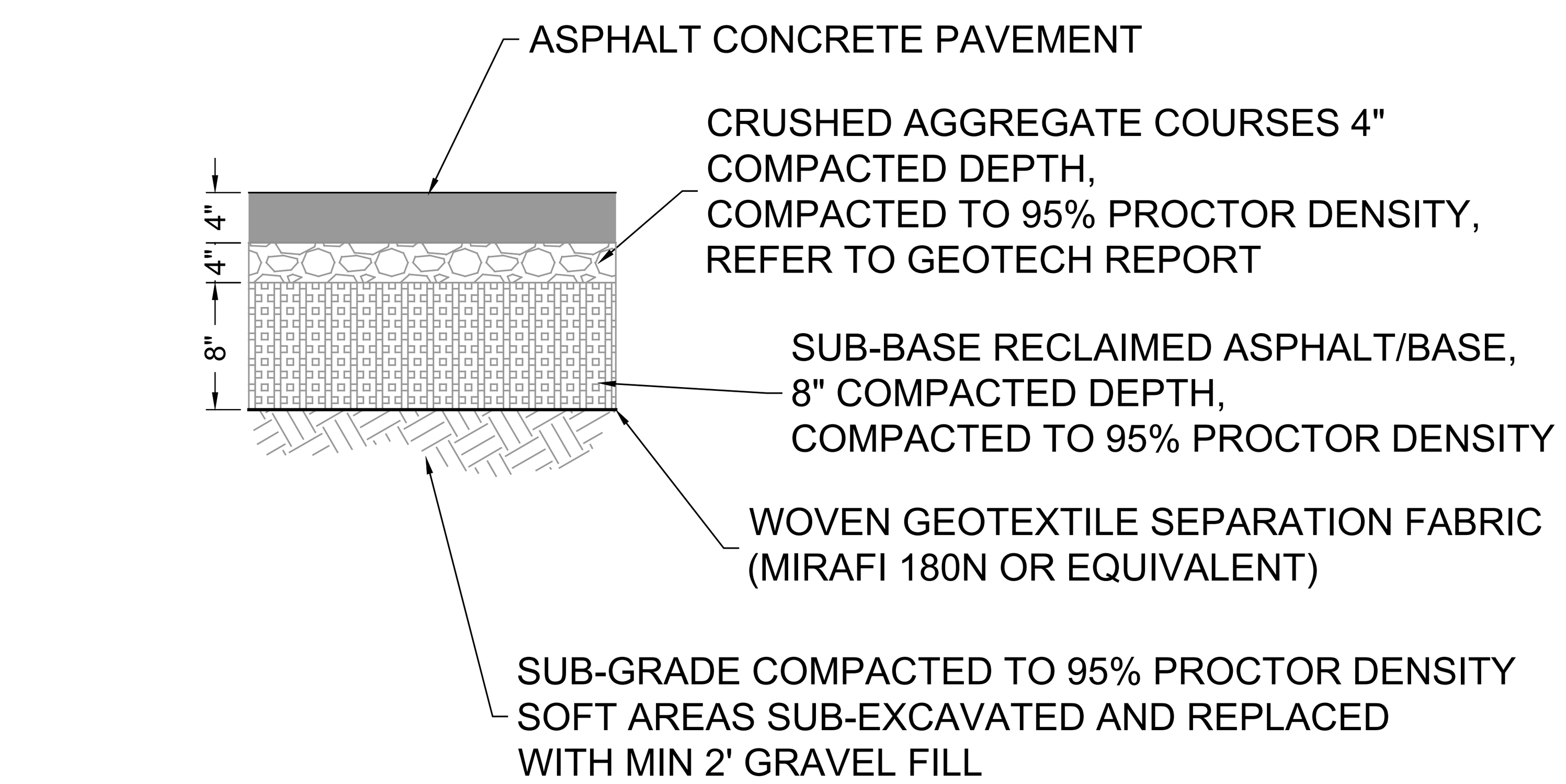


B TYPICAL CONCRETE SIDEWALK SECTION
C5.1 NTS



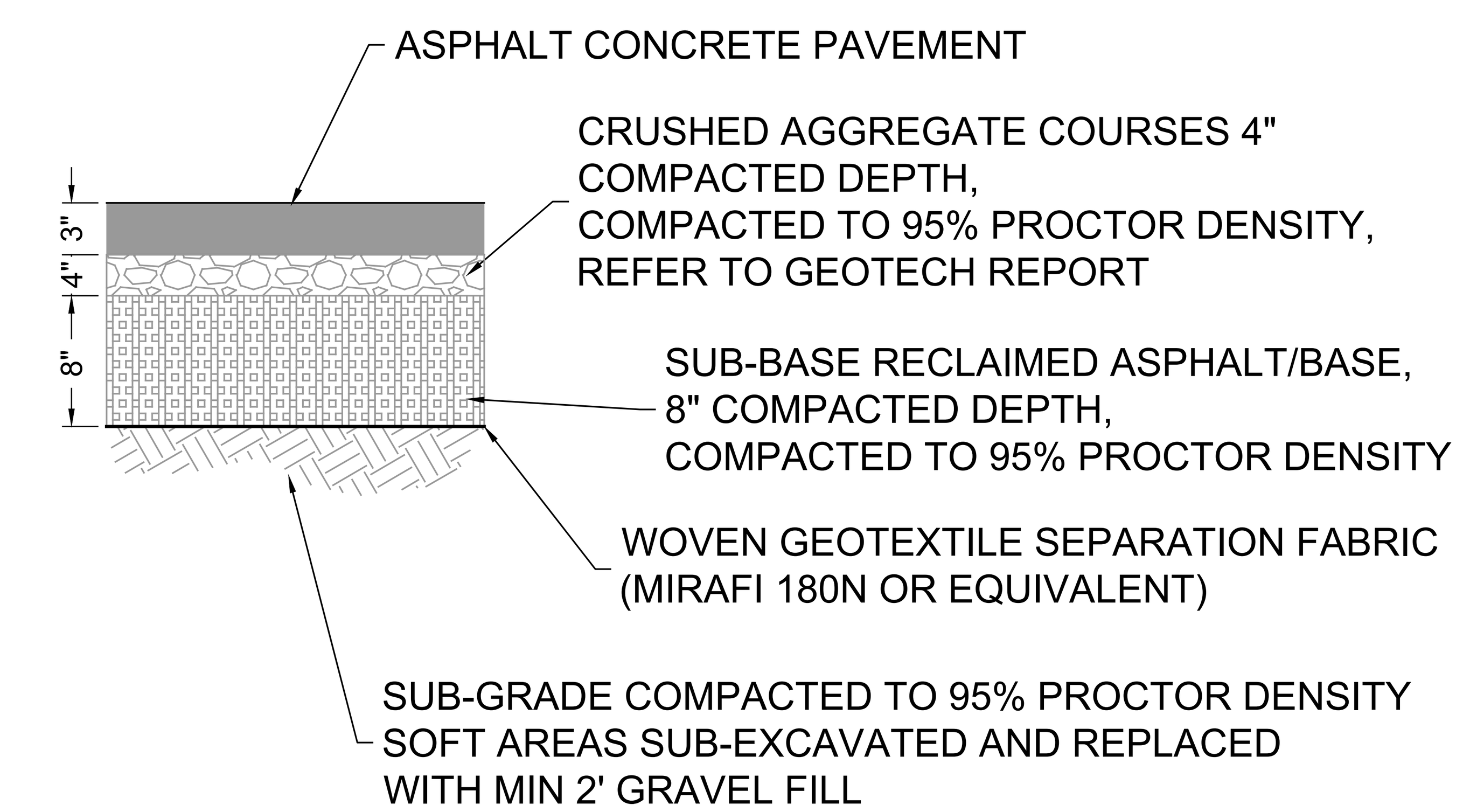
NOTE: REINFORCE AND PLACE JOINTS PER SPECIFICATION & JOINT DETAIL. PLACE CROSS JOINTS ON DRIVE-THRU CONCRETE APPROX. EVERY 10' AS TO MAKE THE CONCRETE PANELS AS SQUARE AS POSSIBLE. SEE GEOTECH REPORT FOR SECTION DETAILS.

C HEAVY DUTY CONCRETE SECTION
C5.1 NTS



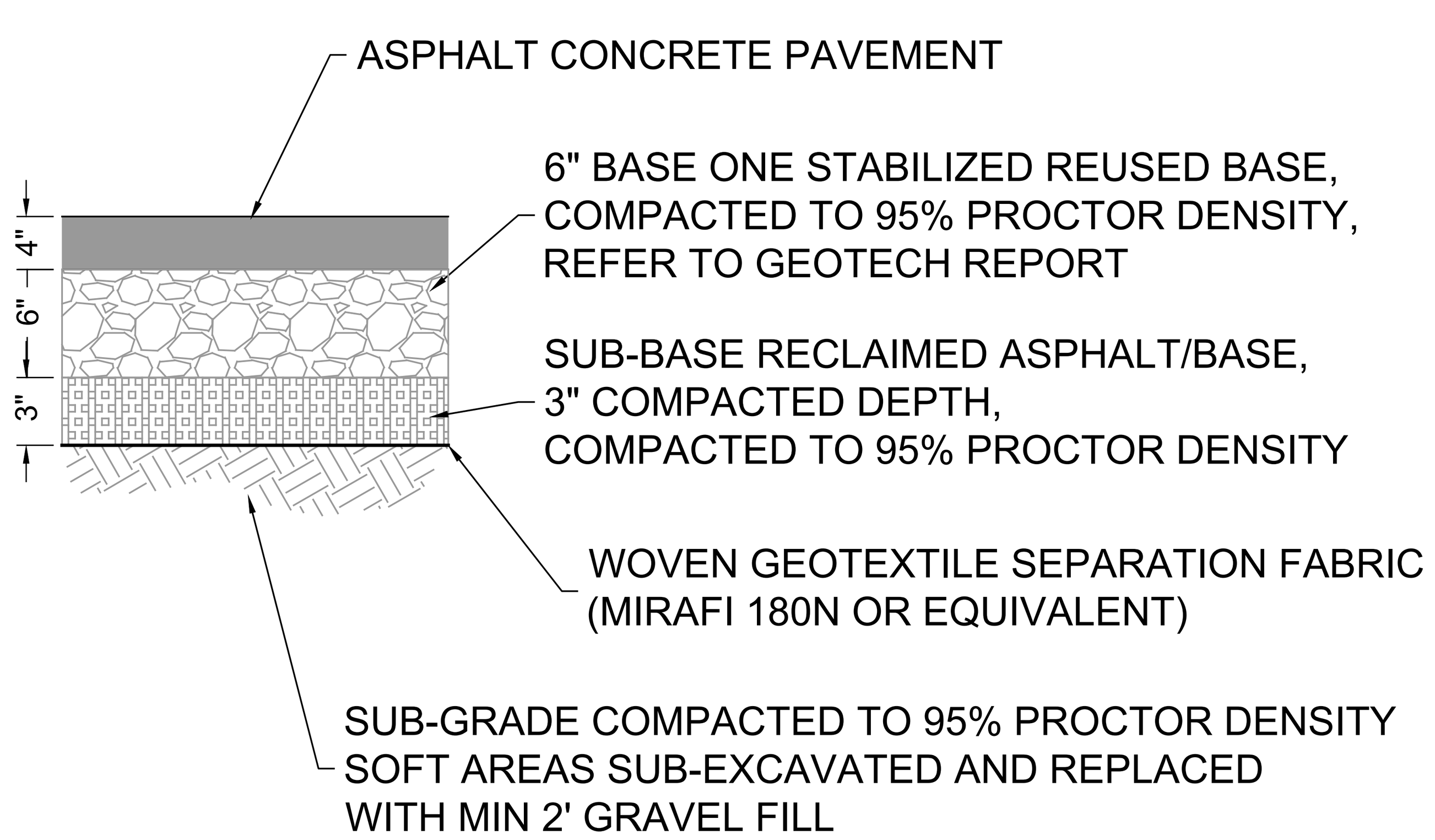
D HEAVY DUTY ASPHALT SECTION (UNTREATED)
C5.1 NTS

*BID ALTERNATE #1 FOR LOT 25
BASE BID FOR LOT 20



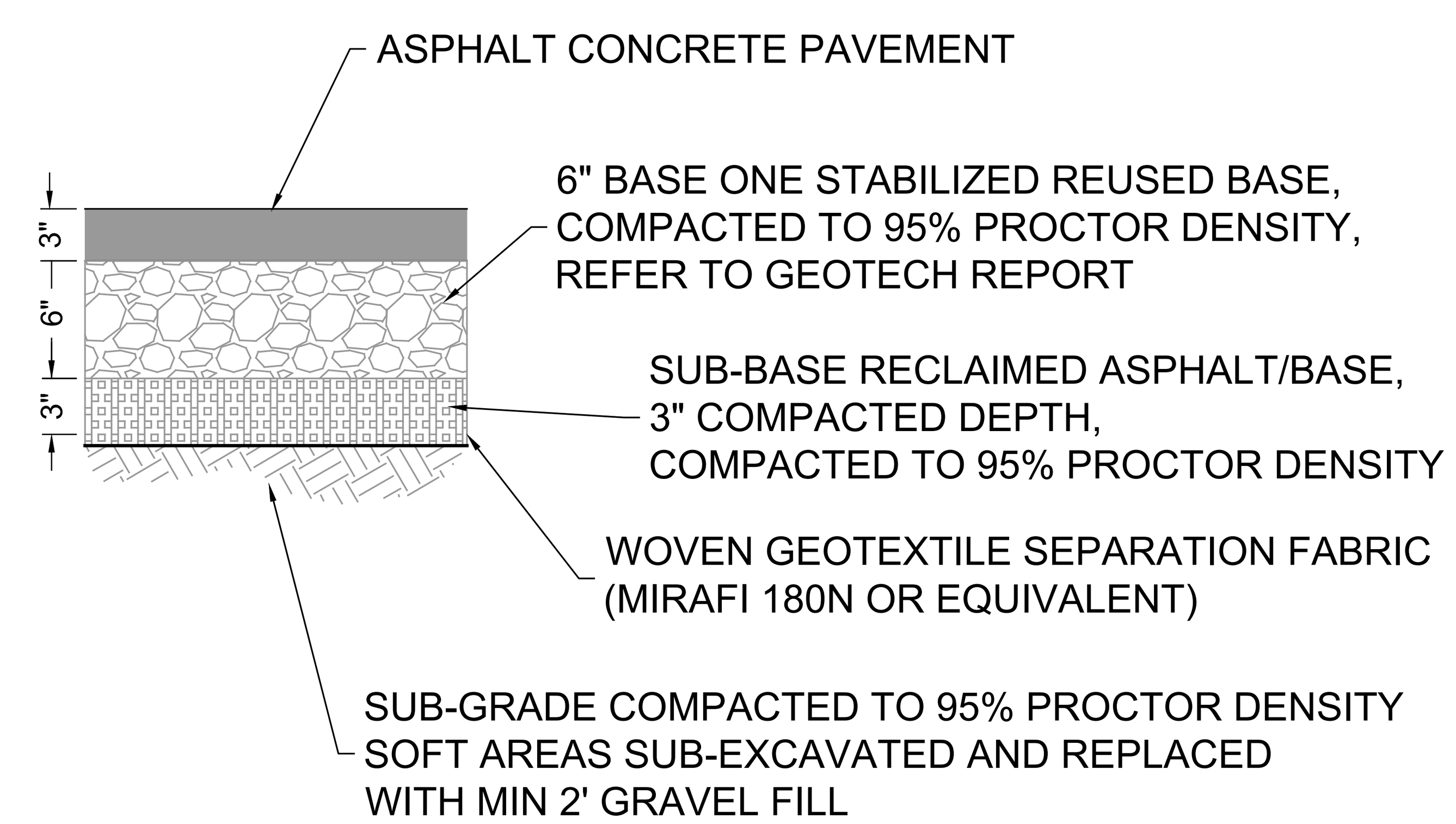
E LIGHT DUTY ASPHALT SECTION (UNTREATED)
C5.1 NTS

*BID ALTERNATE #1 FOR LOT 25
BASE BID FOR LOT 20



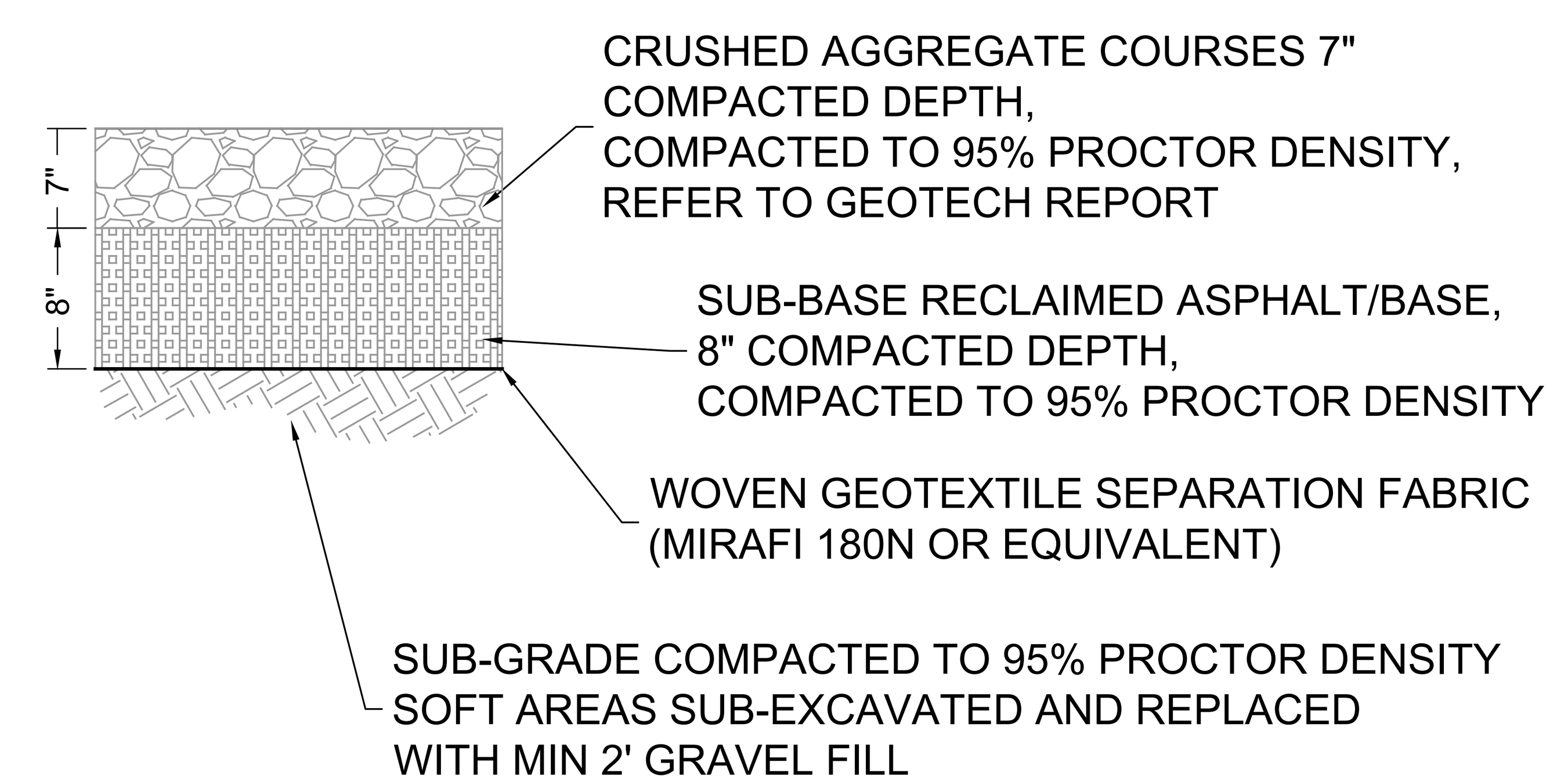
F HEAVY DUTY ASPHALT SECTION (TREATED)
C5.1 NTS

*BID ALTERNATE #1 FOR LOT 25
BASE BID FOR LOT 20



G LIGHT DUTY ASPHALT SECTION (TREATED)
C5.1 NTS

*BID ALTERNATE #1 FOR LOT 25
BASE BID FOR LOT 20



H GRAVEL PARKING SECTION (BASE BID)
C5.1 NTS

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BOZEMAN, MONTANA
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MSU Stadium Lots
Construction Documents

406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

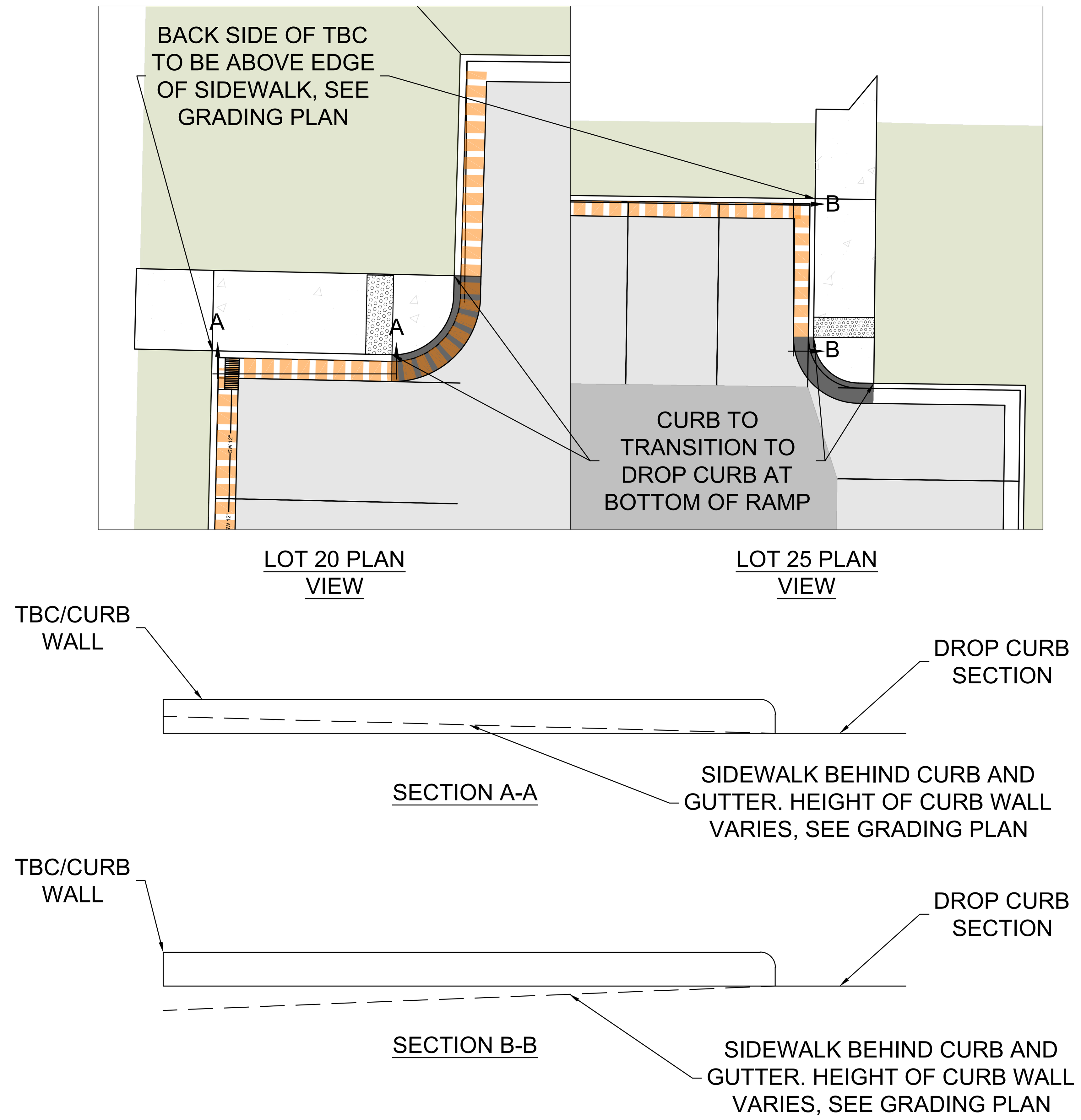
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
DETAIL 1

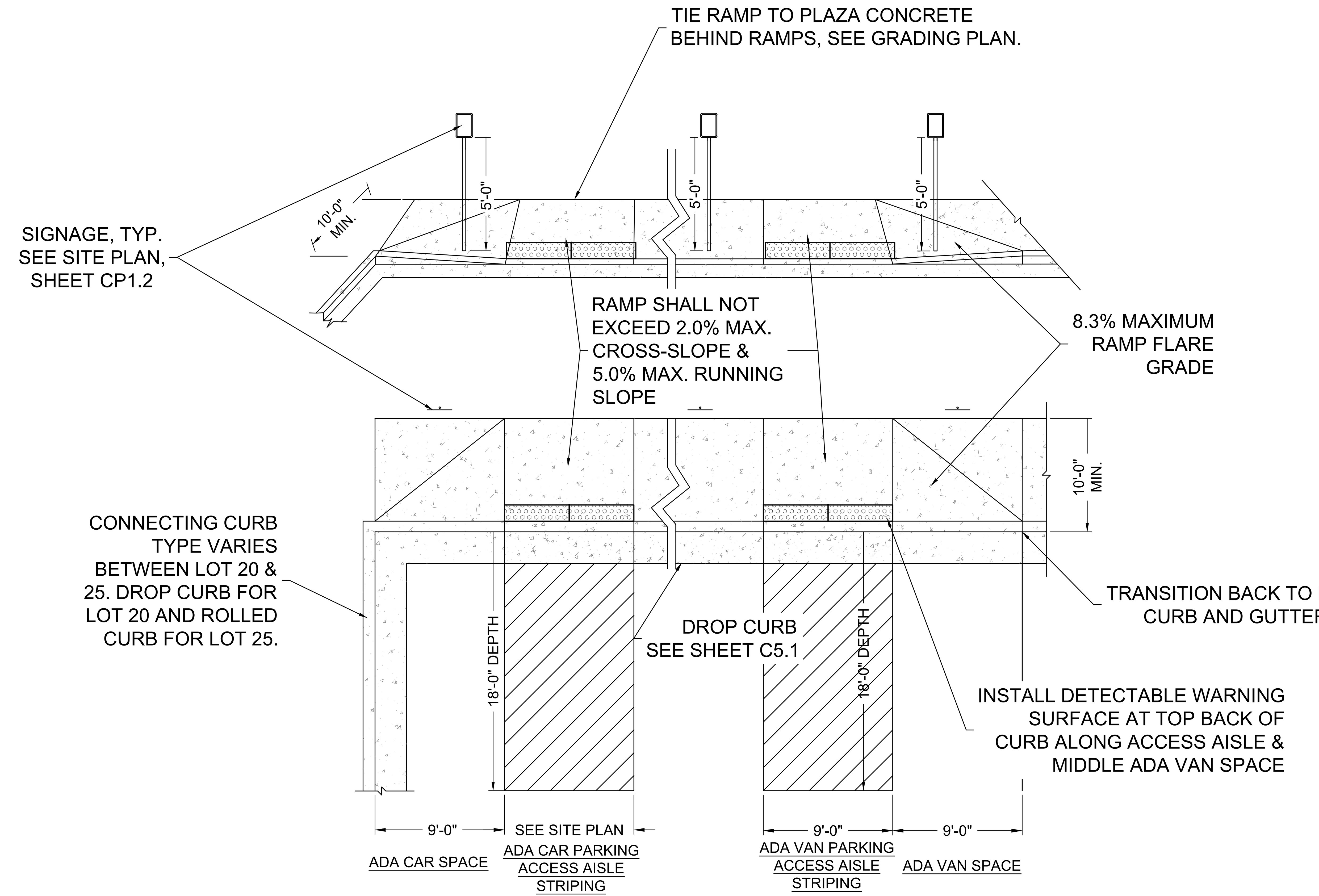
SHEET
C5.1

DATE
3-27-2024

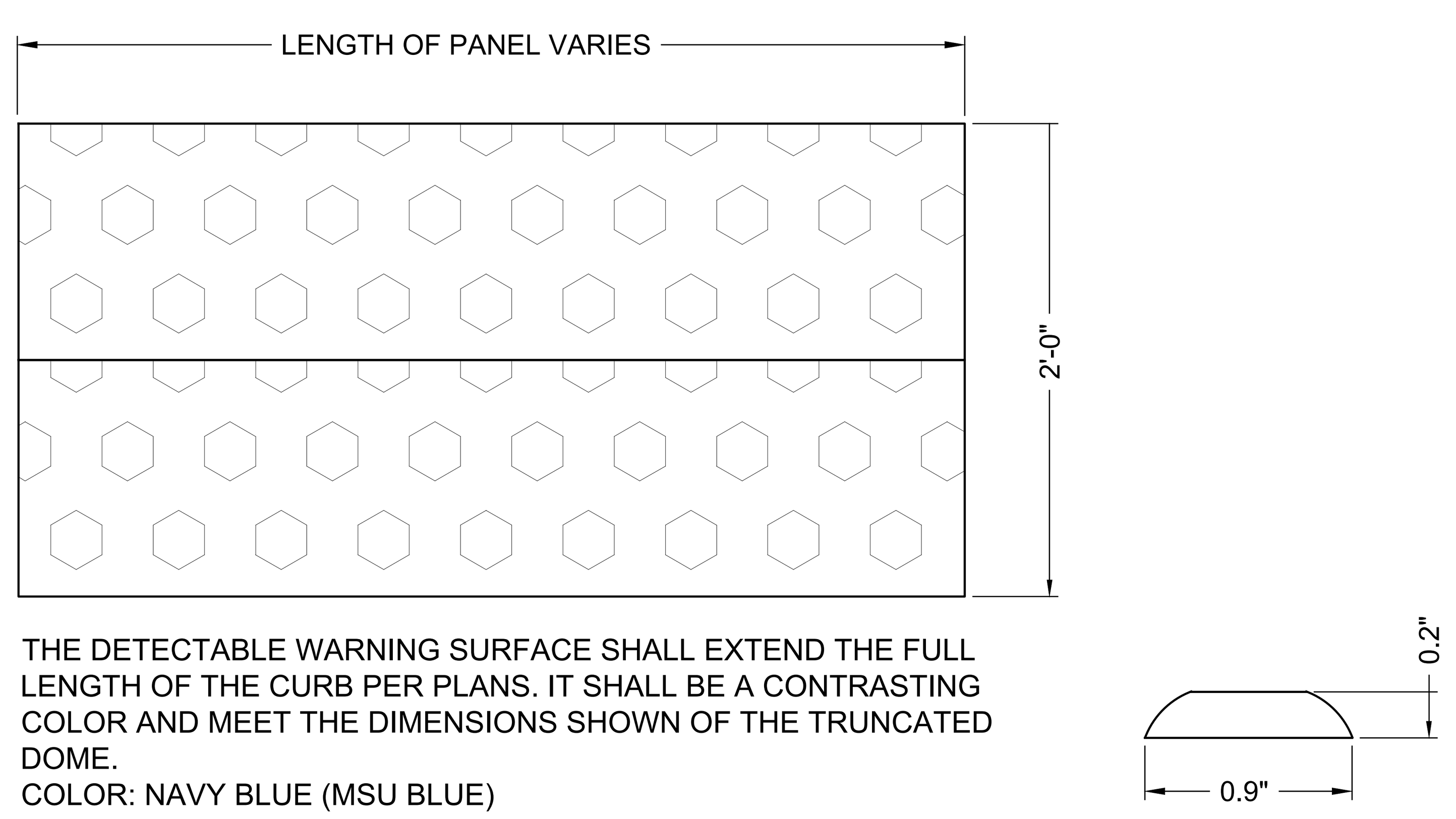


A / C5.2 SIDEWALK CURB RAMP DETAIL
NTS

*SEE GRADING PLAN FOR ADDITIONAL INFORMATION



B / C5.2 ADA STALL DETAIL
NTS

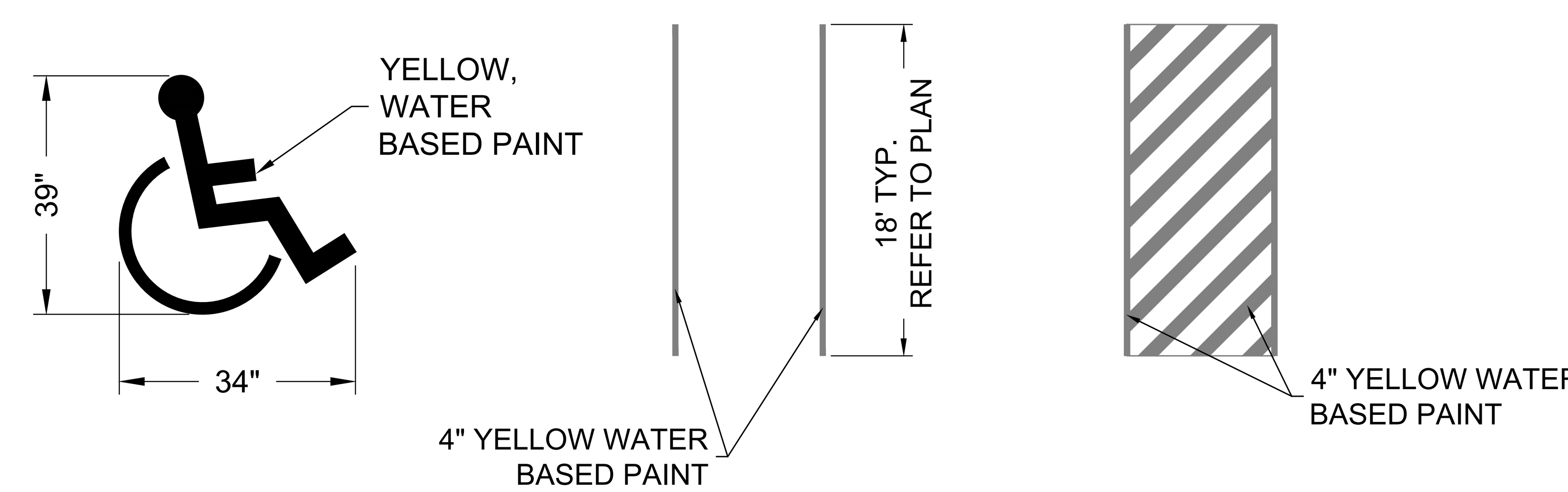


THE DETECTABLE WARNING SURFACE SHALL EXTEND THE FULL LENGTH OF THE CURB PER PLANS. IT SHALL BE A CONTRASTING COLOR AND MEET THE DIMENSIONS SHOWN OF THE TRUNCATED DOME.
COLOR: NAVY BLUE (MSU BLUE)

DETECTABLE WARNING SURFACE

TRUNCATED DOME

C / C5.2 DETECTABLE WARNING DETAIL
NTS



D / C5.2 TYPICAL PAVEMENT MARKINGS
NTS

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REV.	DESCRIPTION	DATE

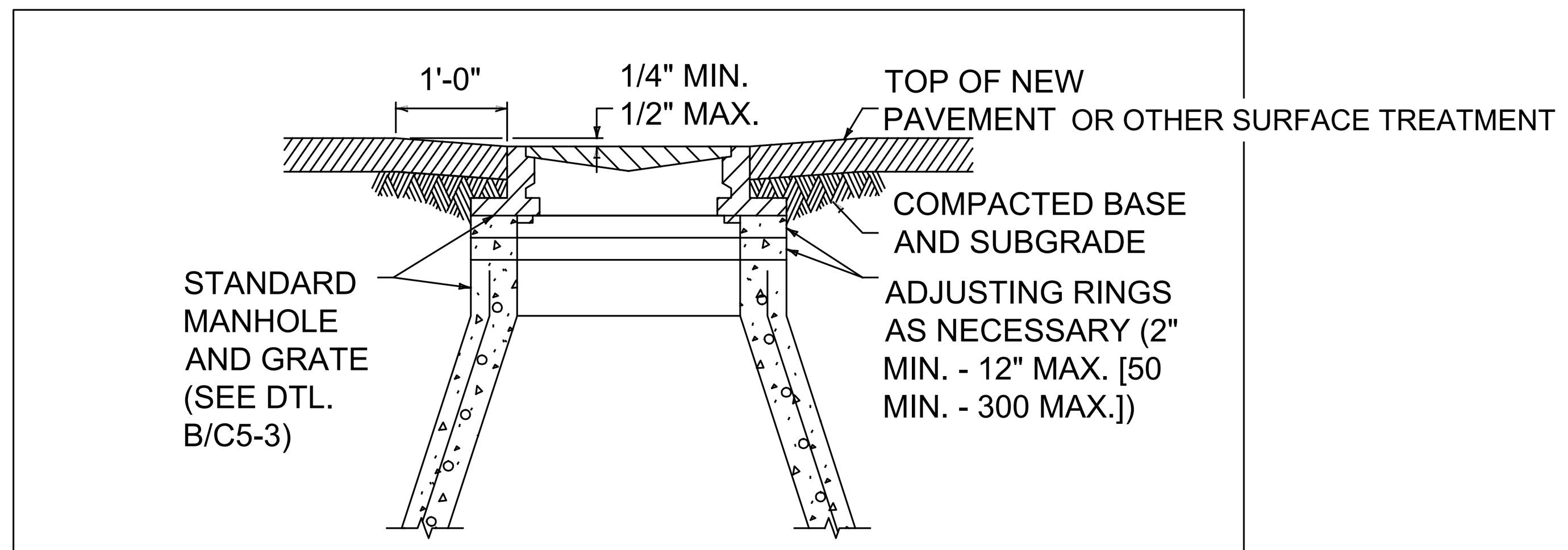
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
DETAIL 2

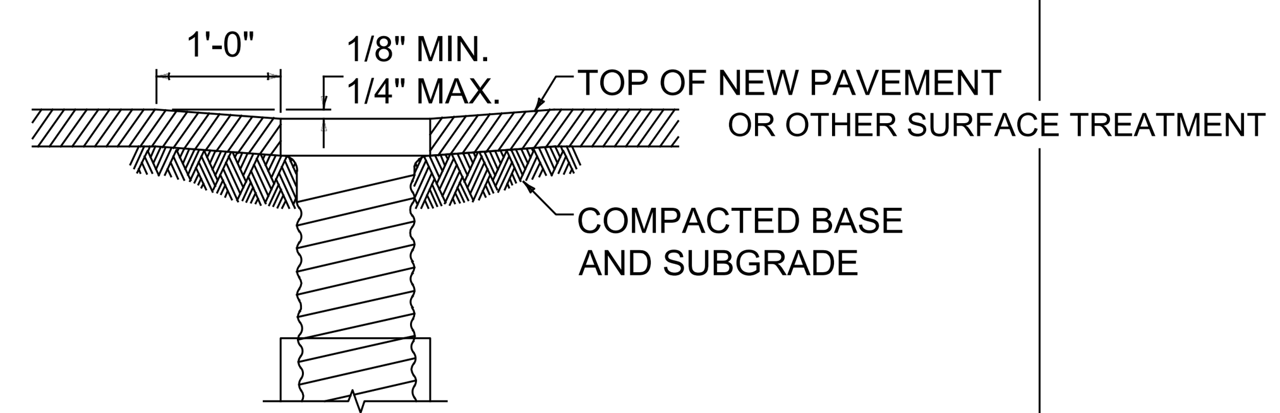
SHEET
C5.2

DATE
3-27-2024



NOTES:
1. ADJUST MANHOLES UPWARD WITH ADJUSTING RINGS UNDER FRAME.
2. ADJUST MANHOLES DOWNWARD BY REMOVING CONE AND BARREL SECTIONS AS NECESSARY AND REPLACING WITH SECTIONS OF LENGTH REQUIRED TO MATCH GRADE.
3. SLOPE MANHOLE FRAME AS REQUIRED TO MATCH SLOPE OF STREET.
4. MAKE FINAL MANHOLE ADJUSTMENTS BEFORE PAVING.

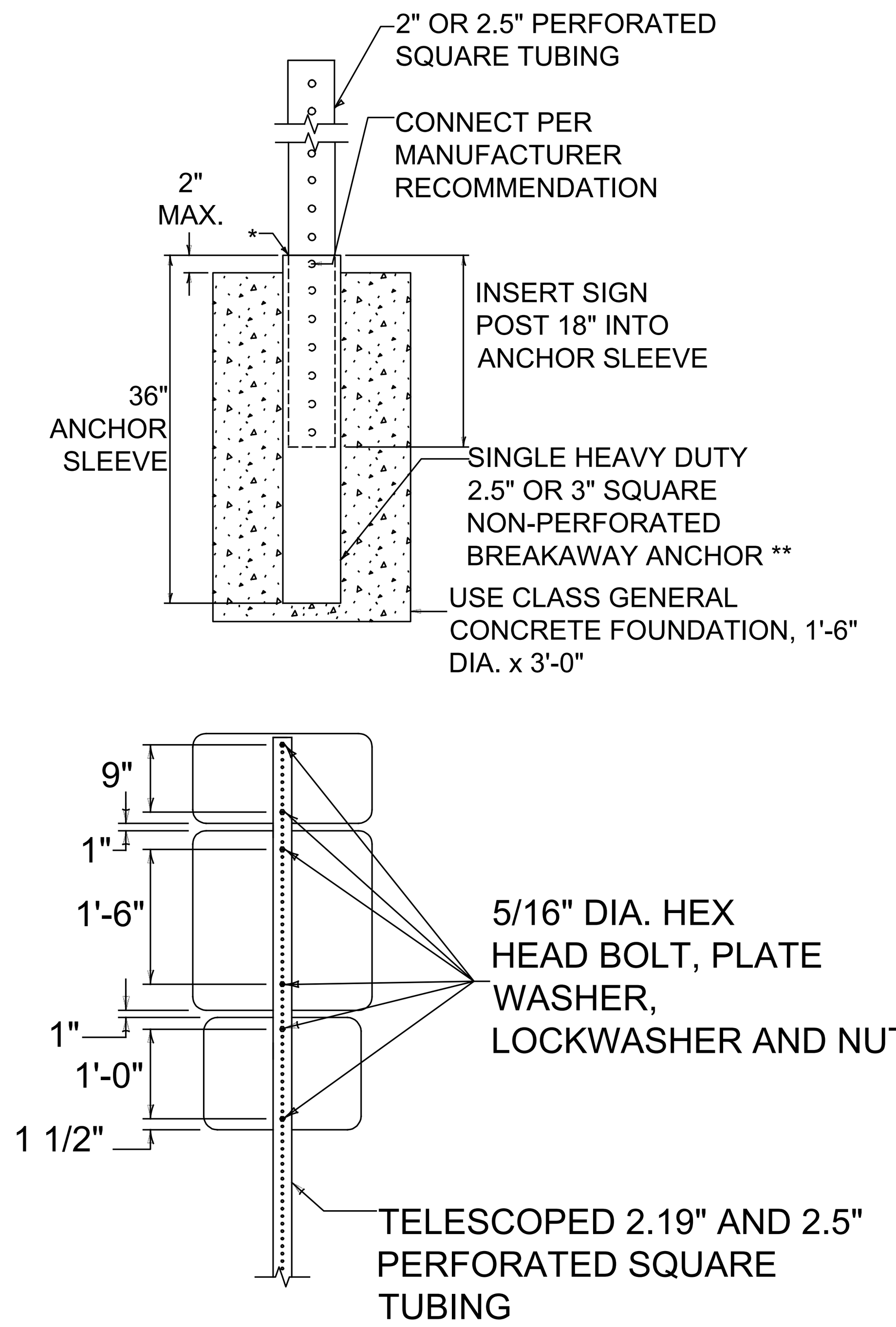
MANHOLE ADJUSTMENT DETAIL

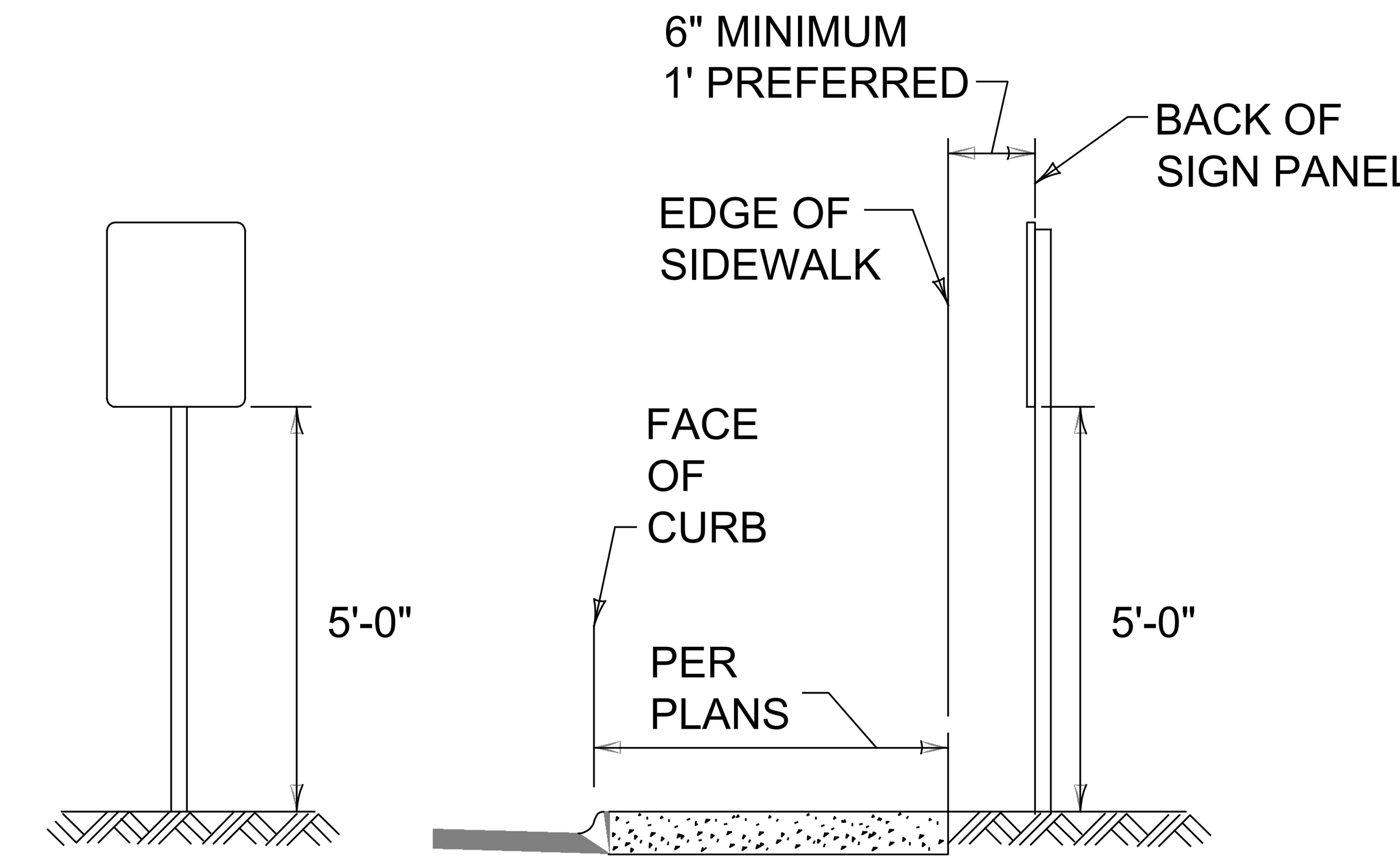


NOTES:
1. ADJUST WATER VALVES UPWARD OR DOWNWARD AS REQUIRED.
2. MAKE FINAL ADJUSTMENTS BEFORE PAVING.

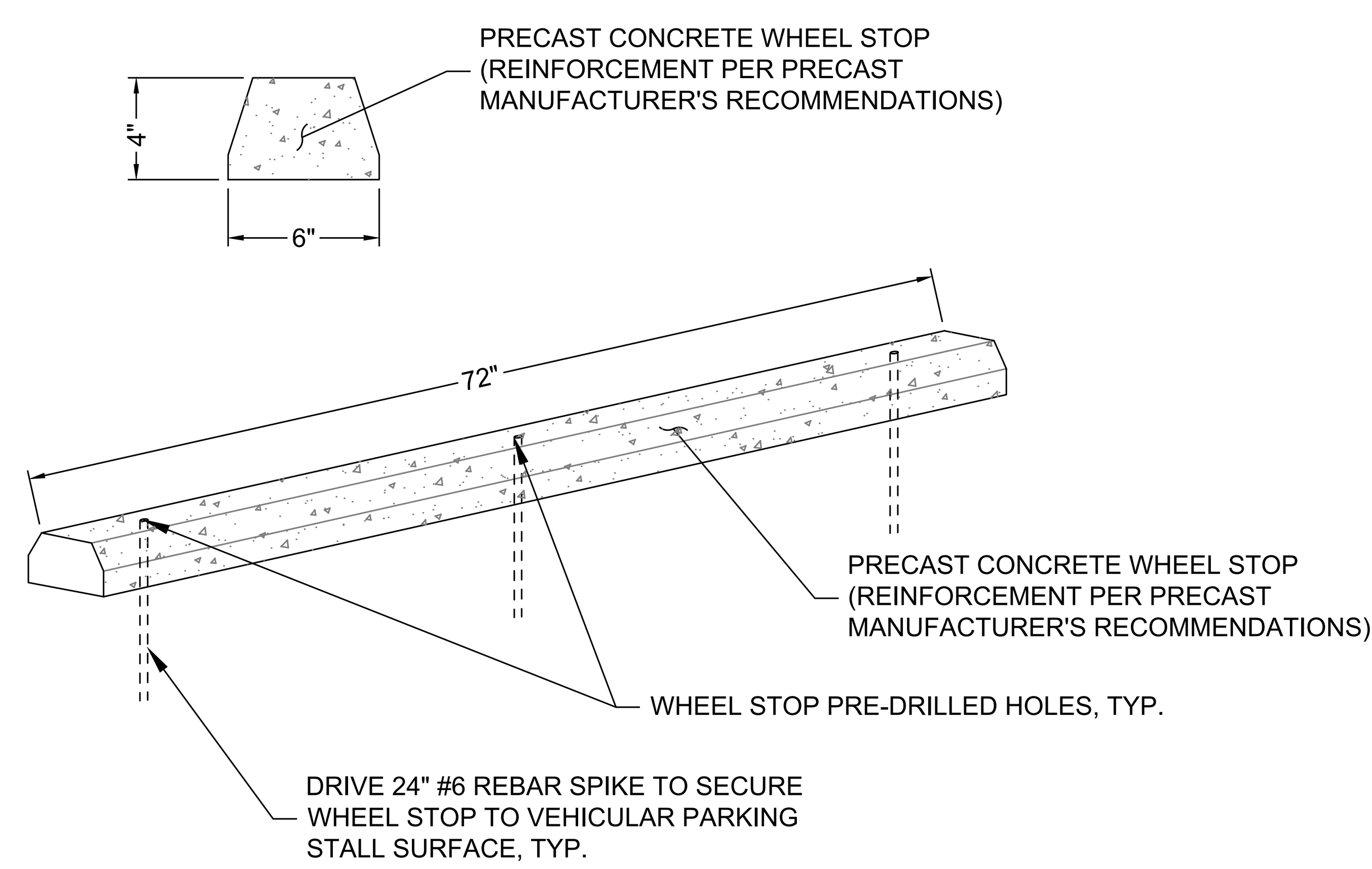
VALVE BOX ADJUSTMENT DETAIL

A C5.3 MANHOLE AND VALVE BOX ADJUSTMENT DETAILS
NTS

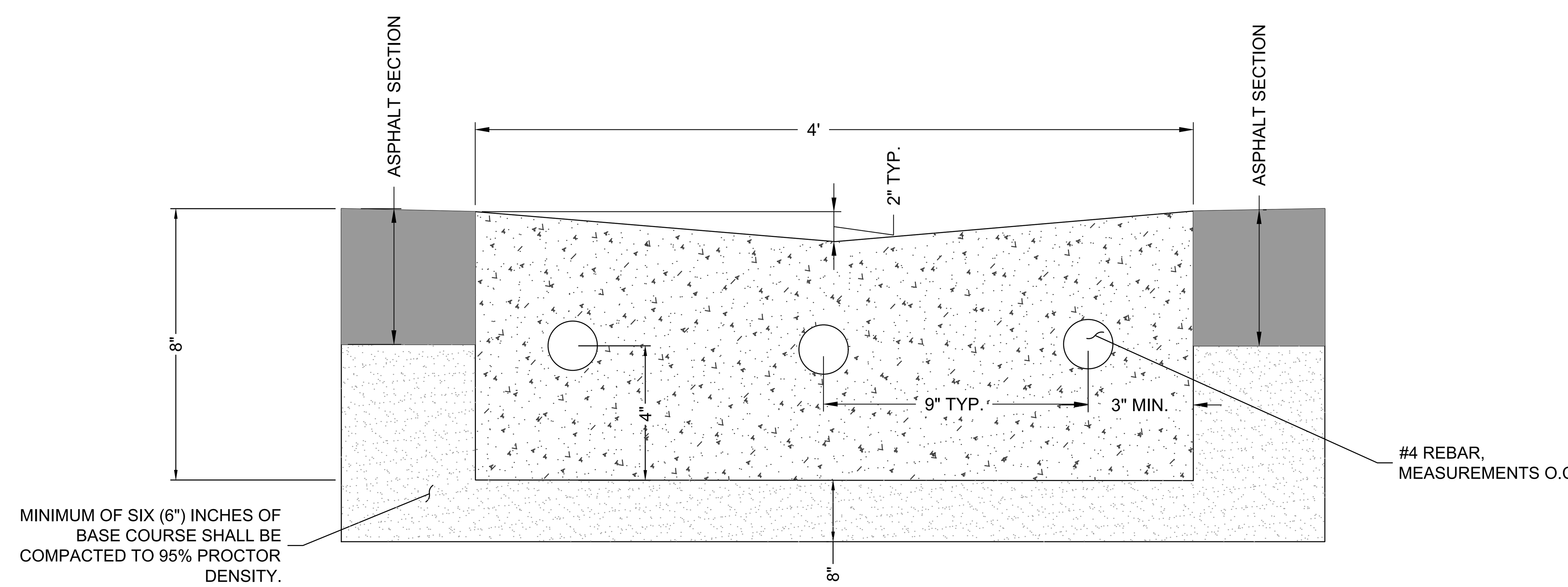




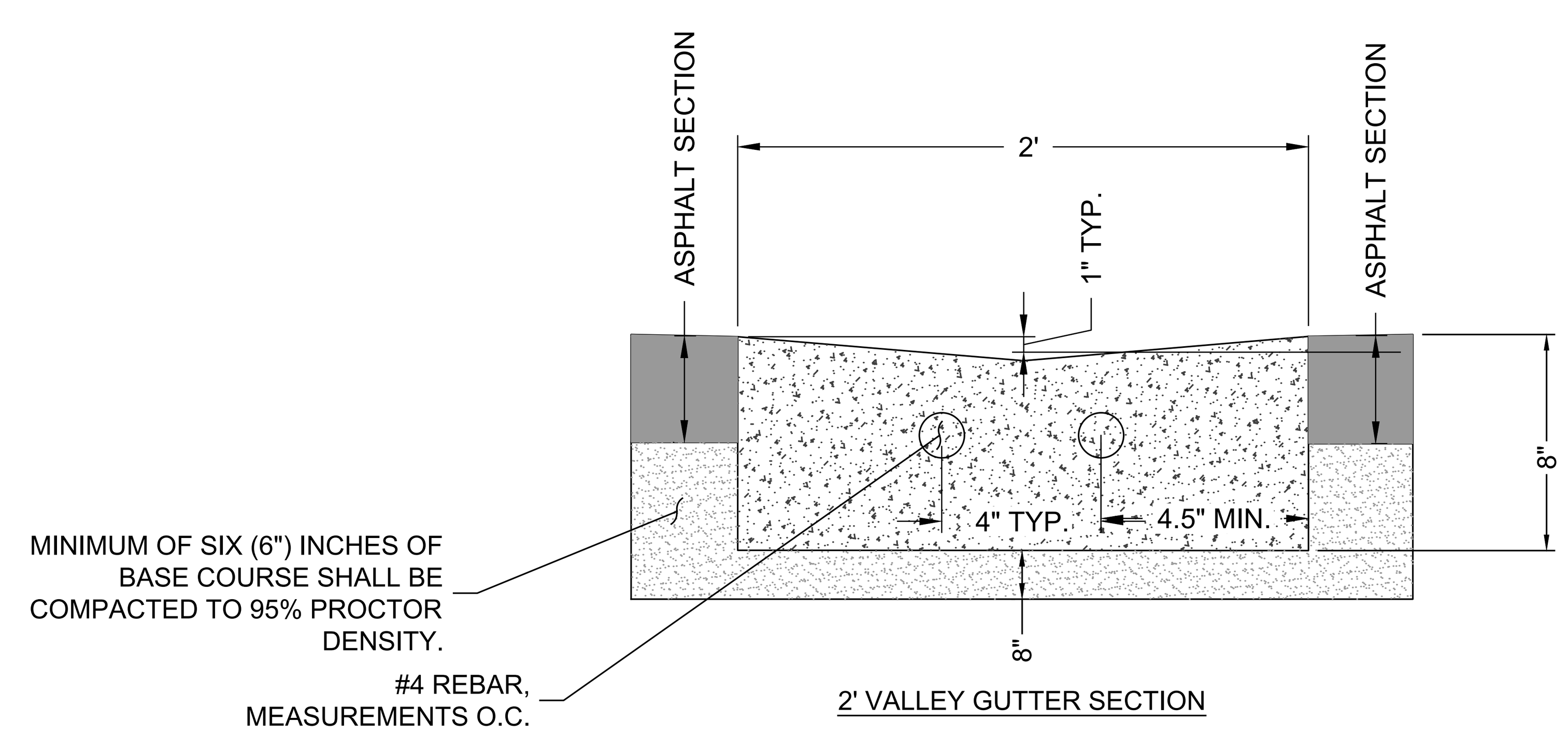
B C5.3 SIGN INSTALATION DETAIL
NTS



C C5.3 CONCRETE WHEEL STOP DETAIL
NTS



4' VALLEY GUTTER SECTION



2' VALLEY GUTTER SECTION

D C5.3 CONCRETE VALLEY GUTTER SECTIONS
NTS

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MSU Stadium Lots
Construction Documents

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

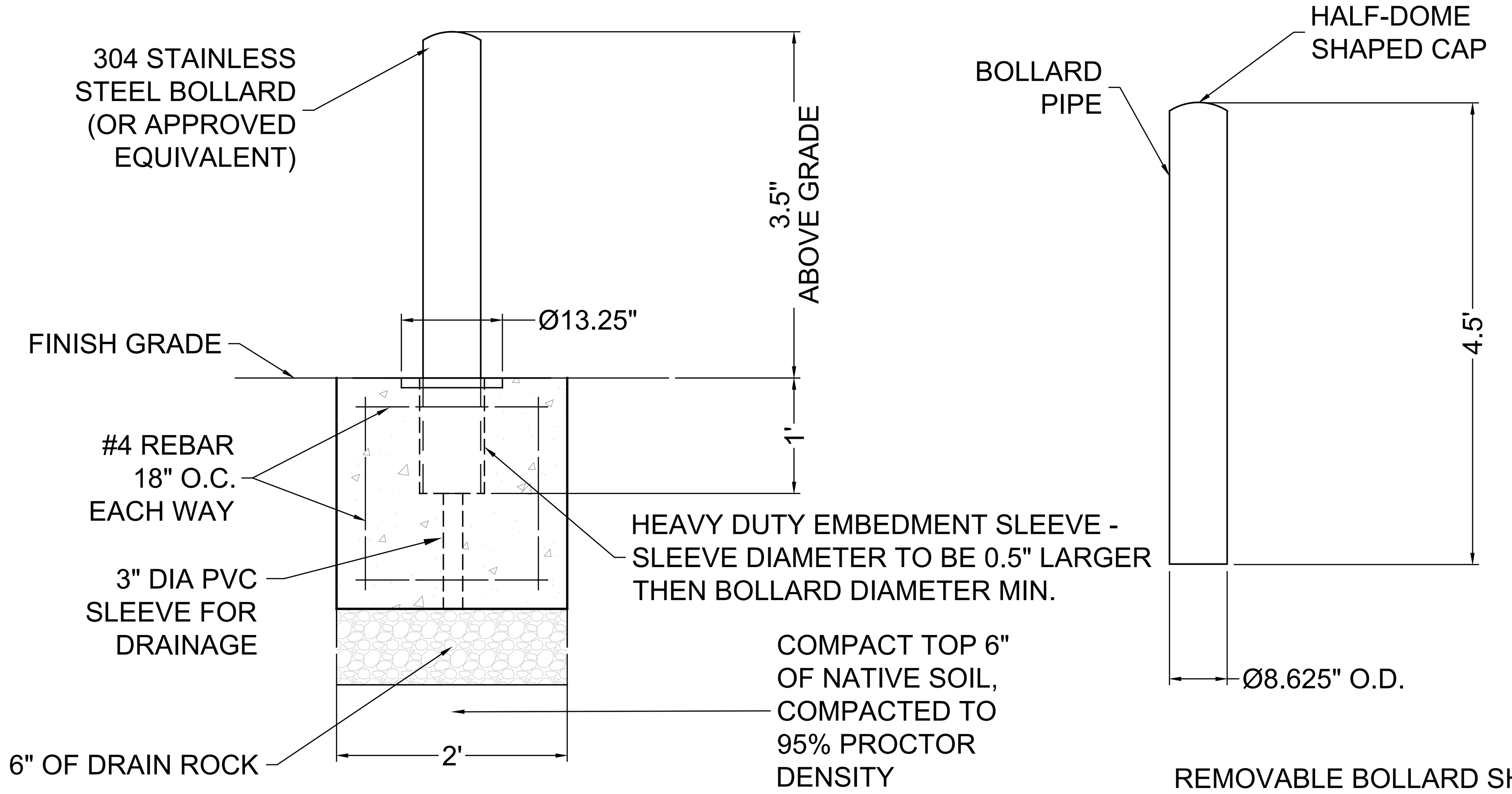
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
DETAIL 3

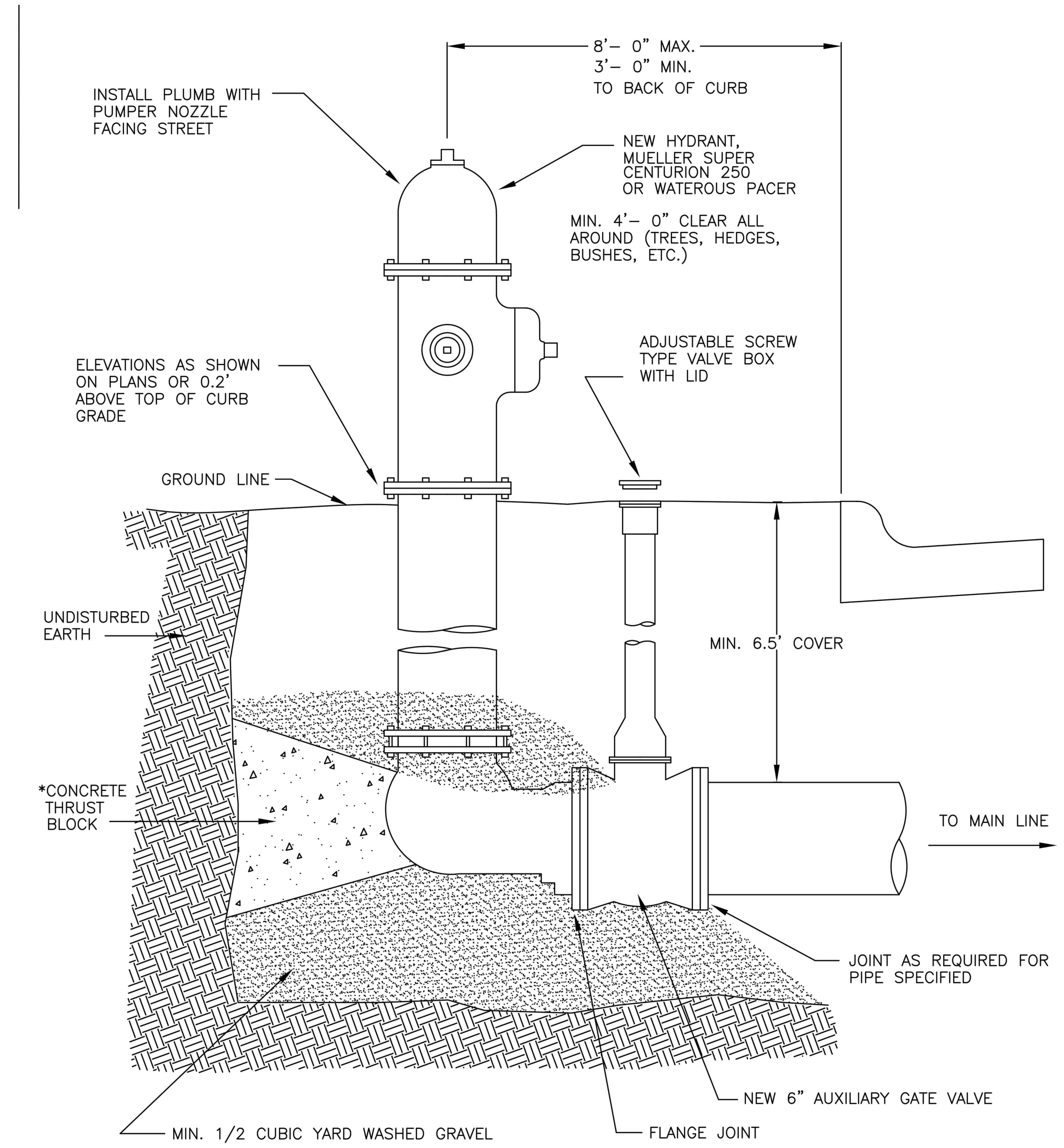
SHEET
C5.3

DATE
3-27-2024



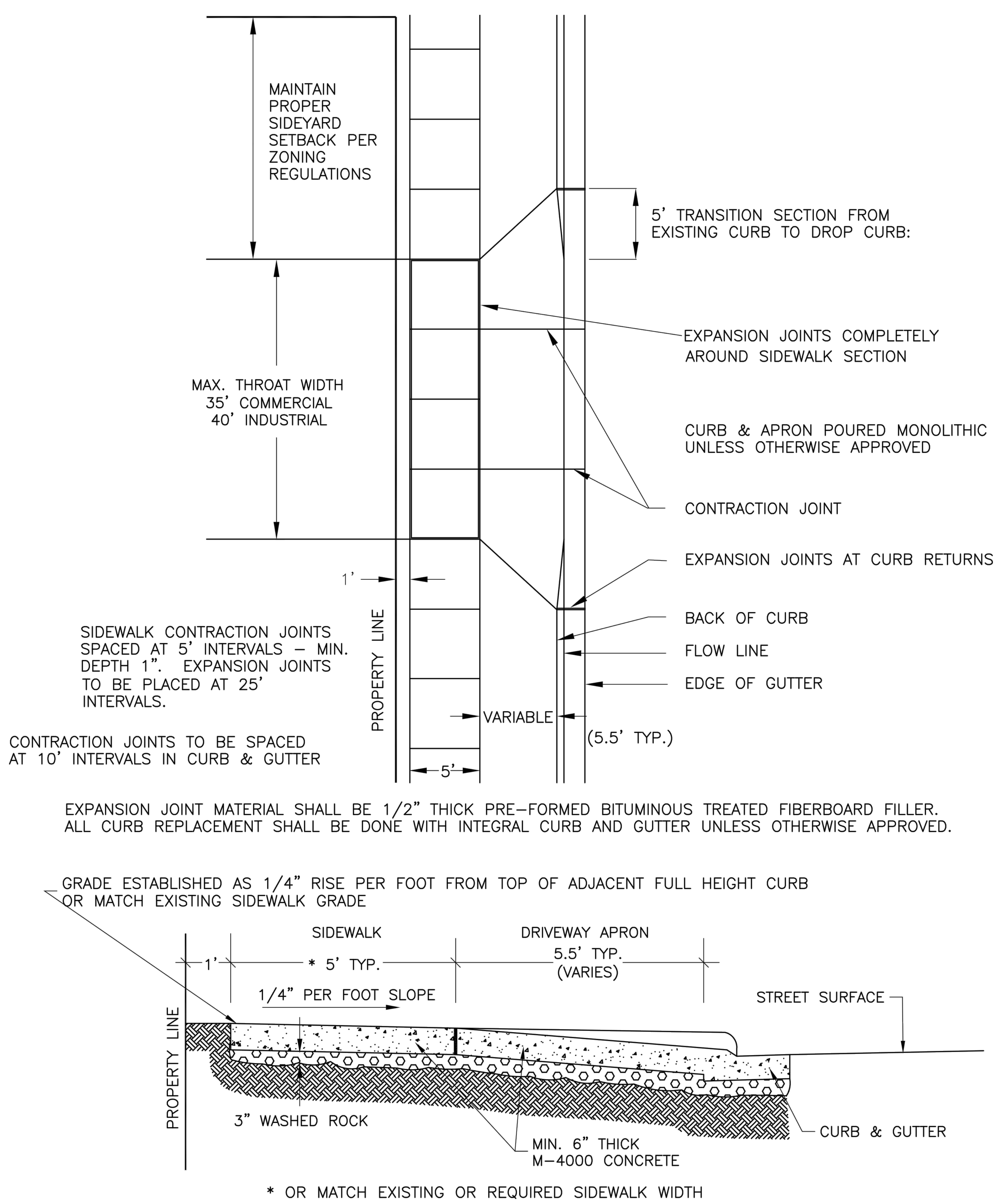
REMOVABLE BOLLARD SHALL LOCK INTERNALLY, CONTRACTOR TO ENSURE PLUGS ARE PROVIDED FOR MSU USE WHEN BOLLARDS ARE NOT WITHIN SLEEVE.

A C5.4 REMOVABLE BOLLARD
NTS

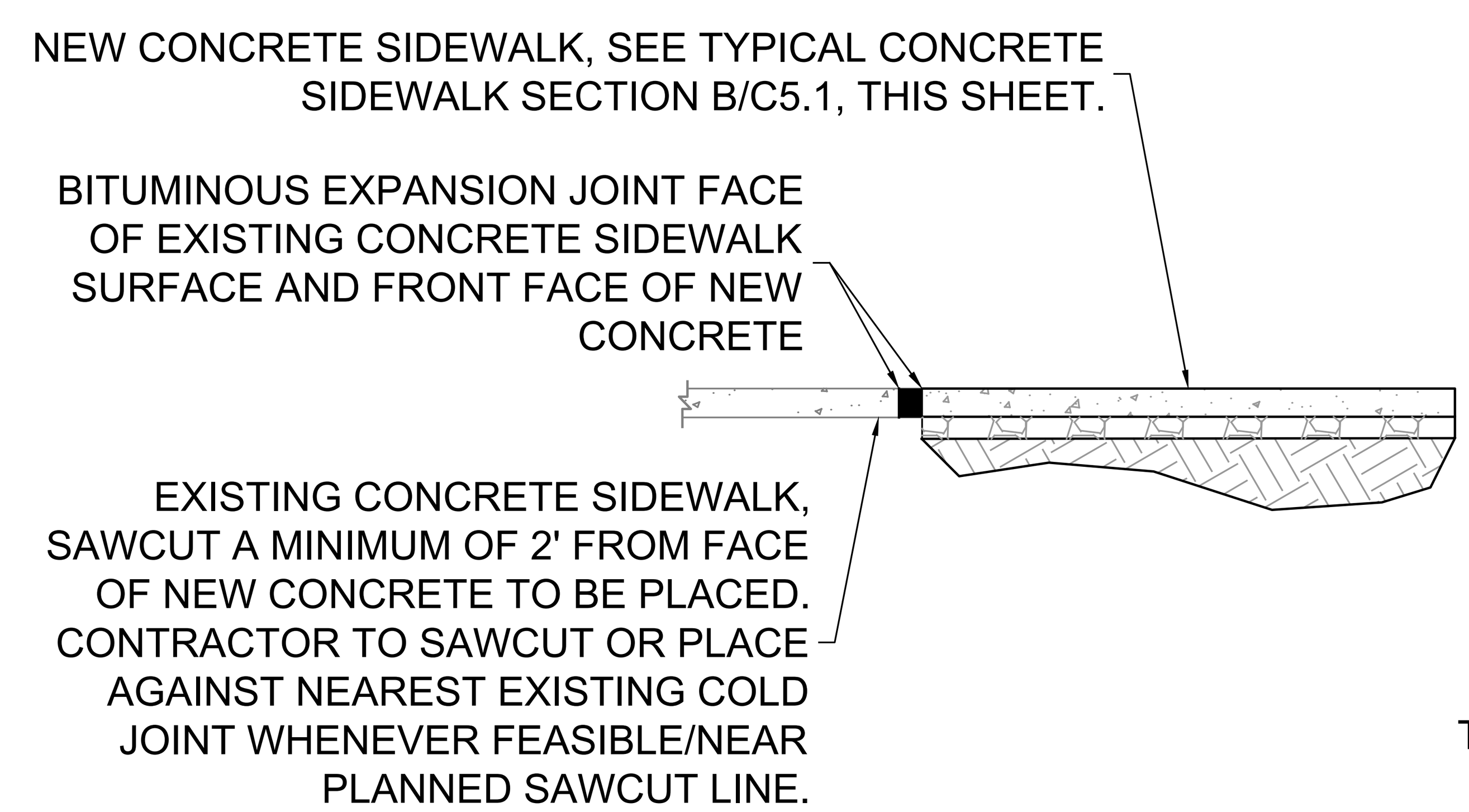


*MEGA-LUG OR APPROVED EQUAL JOINT RESTRAINTS MAY BE USED IN LIEU OF CONCRETE THRUST BLOCK

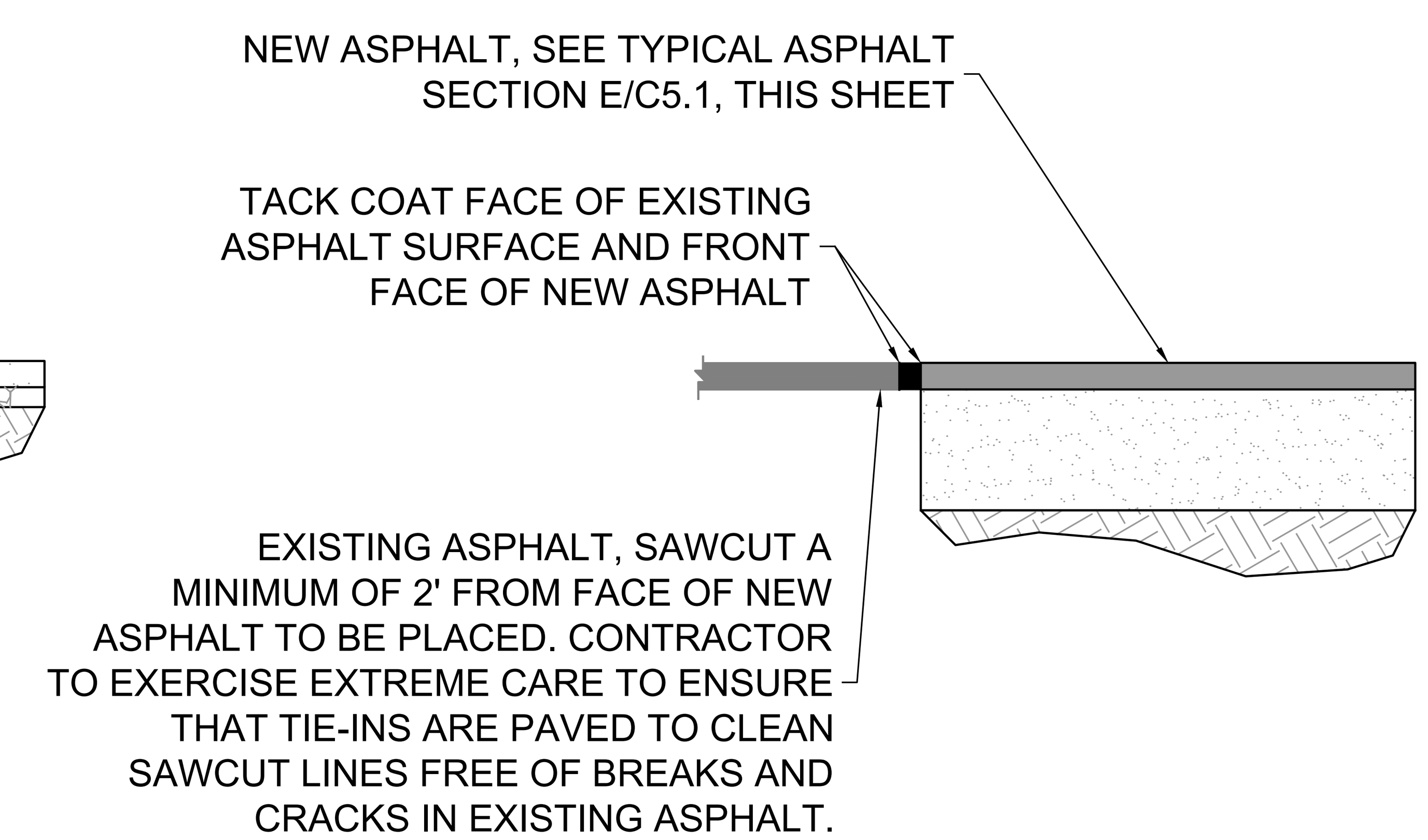
B C5.4 FIRE HYDRANT REPLACEMENT DETAIL
NTS



C C5.4 DRIVEWAY APPROACH
NTS



D C5.4 TYPICAL CONCRETE CUT
NTS



E C5.4 TYPICAL ASPHALT CUT
NTS

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Construction Documents

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DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

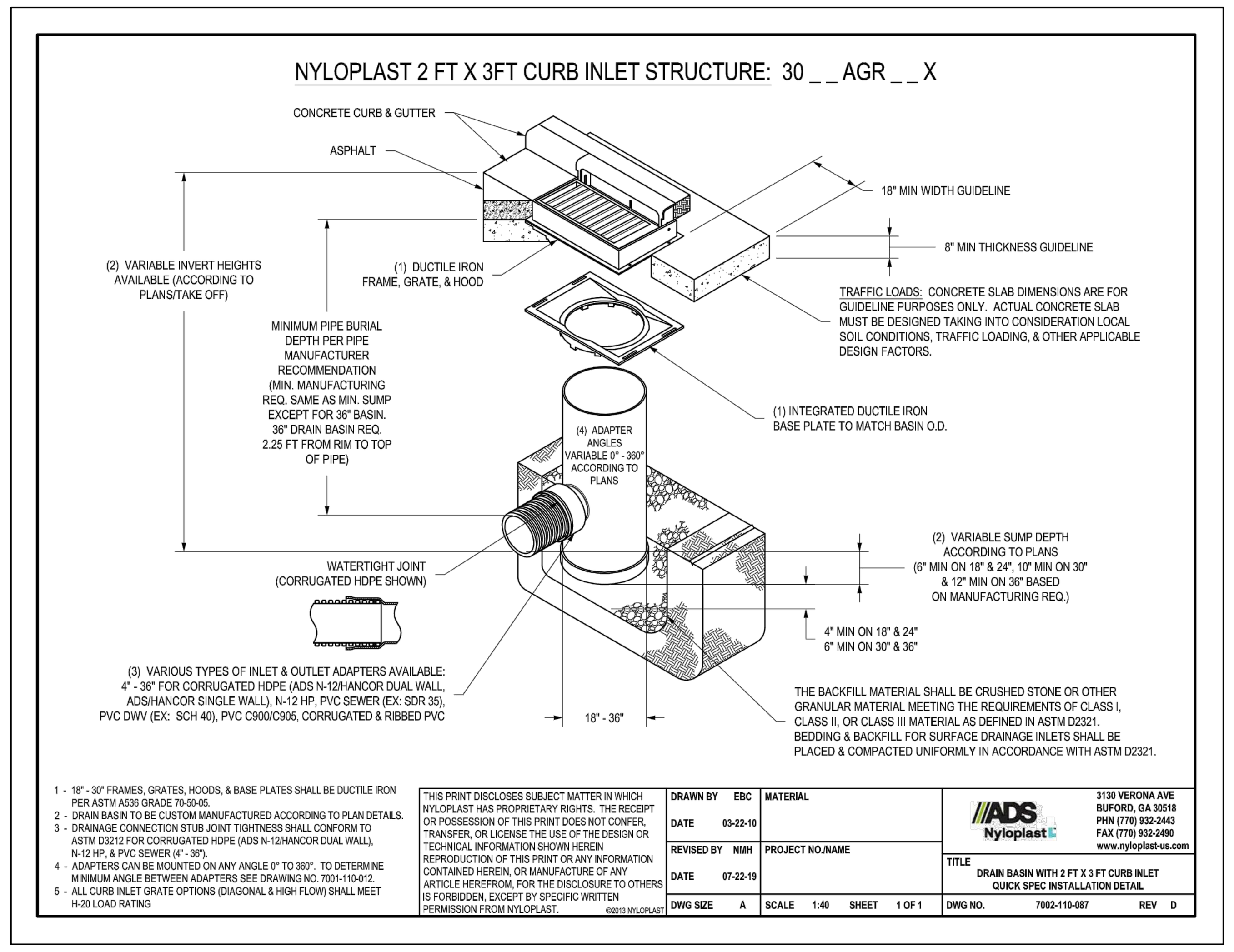
MONTANA MICHAEL T. RUSSELL No. 56647PE PROFESSIONAL ENGINEER

PPA#22-0012

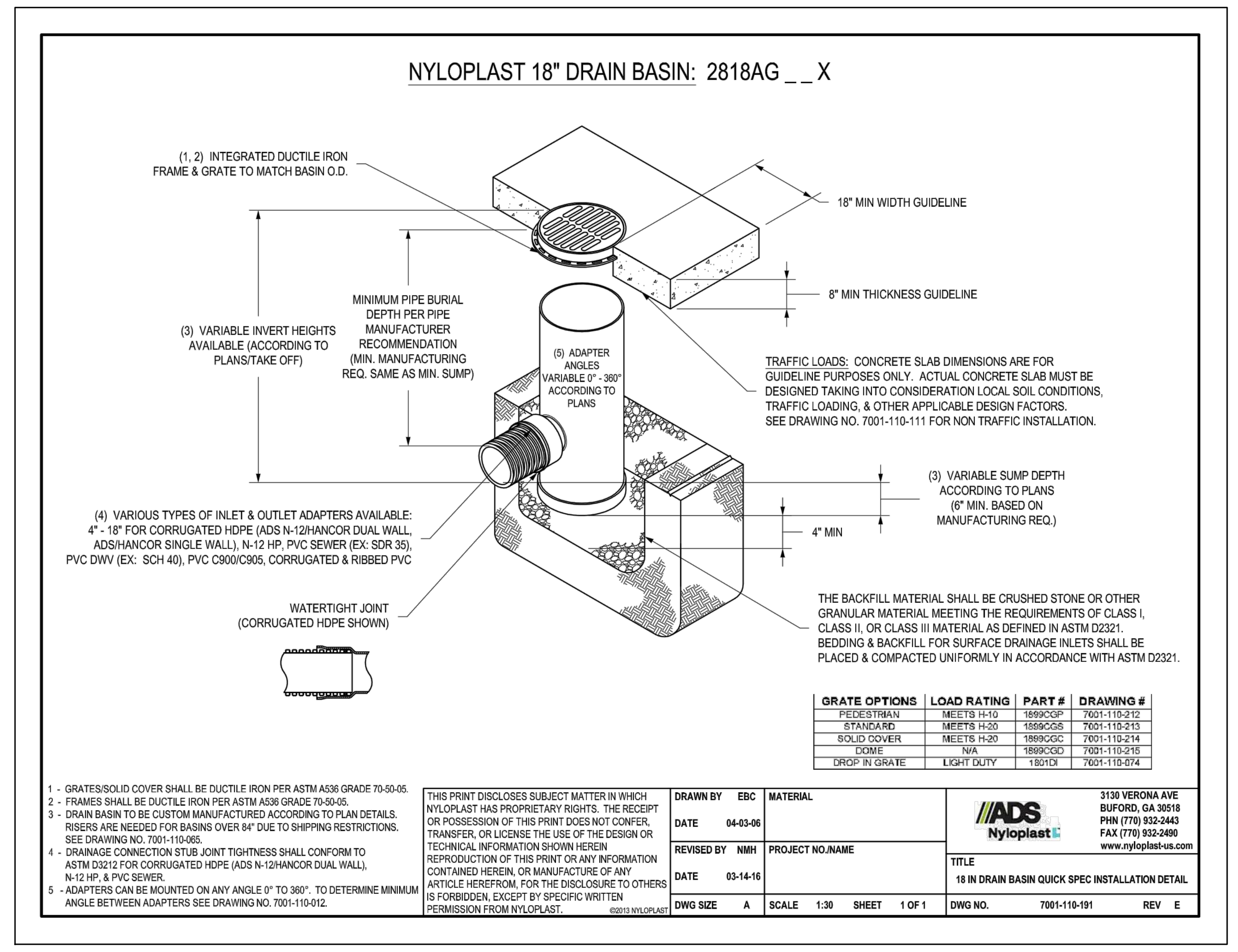
SHEET TITLE
DETAIL 4

SHEET
C5.4

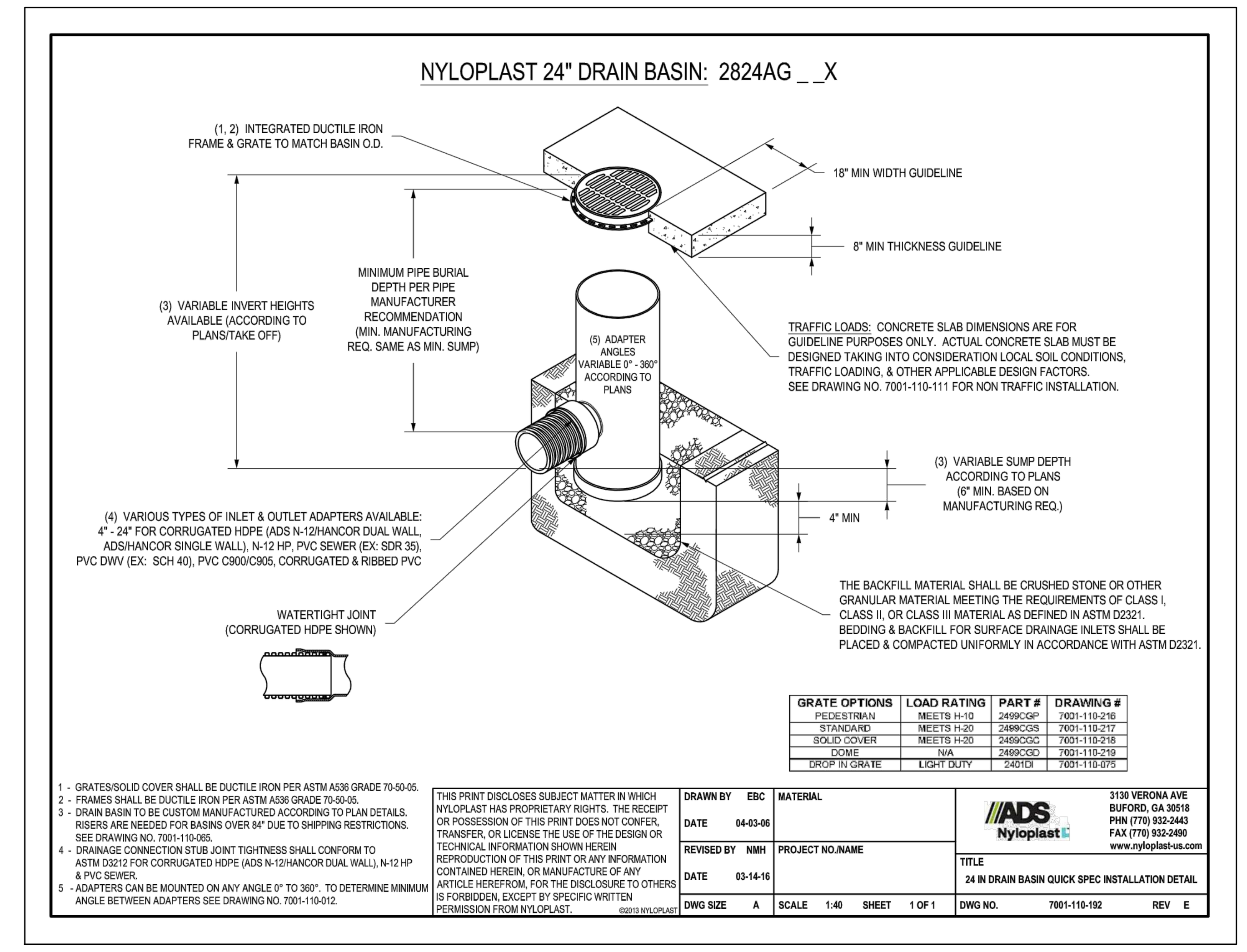
DATE
3-27-2024



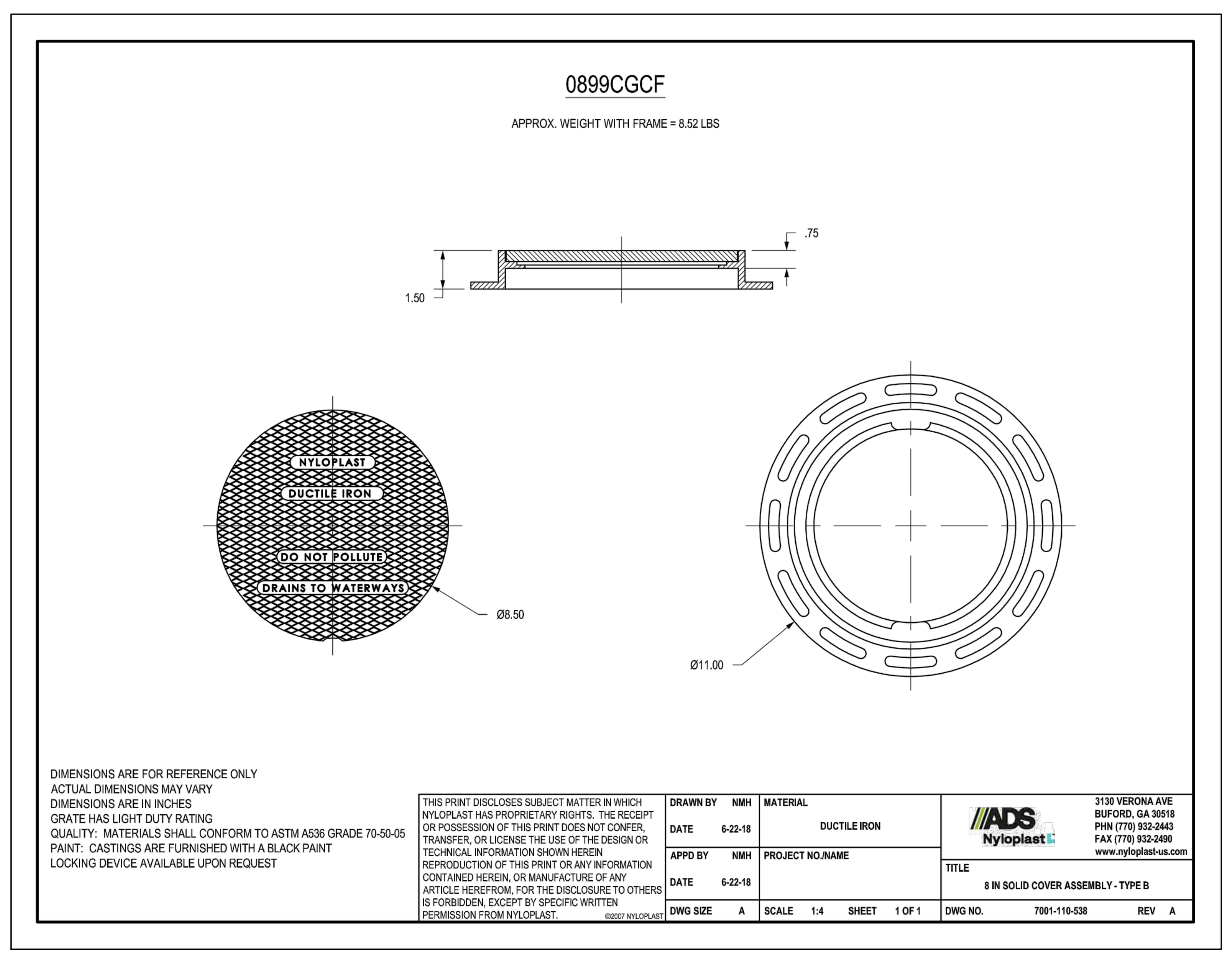
A ADS CURB INLET (OR APPROVED EQUIV.)
C5.5 NTS



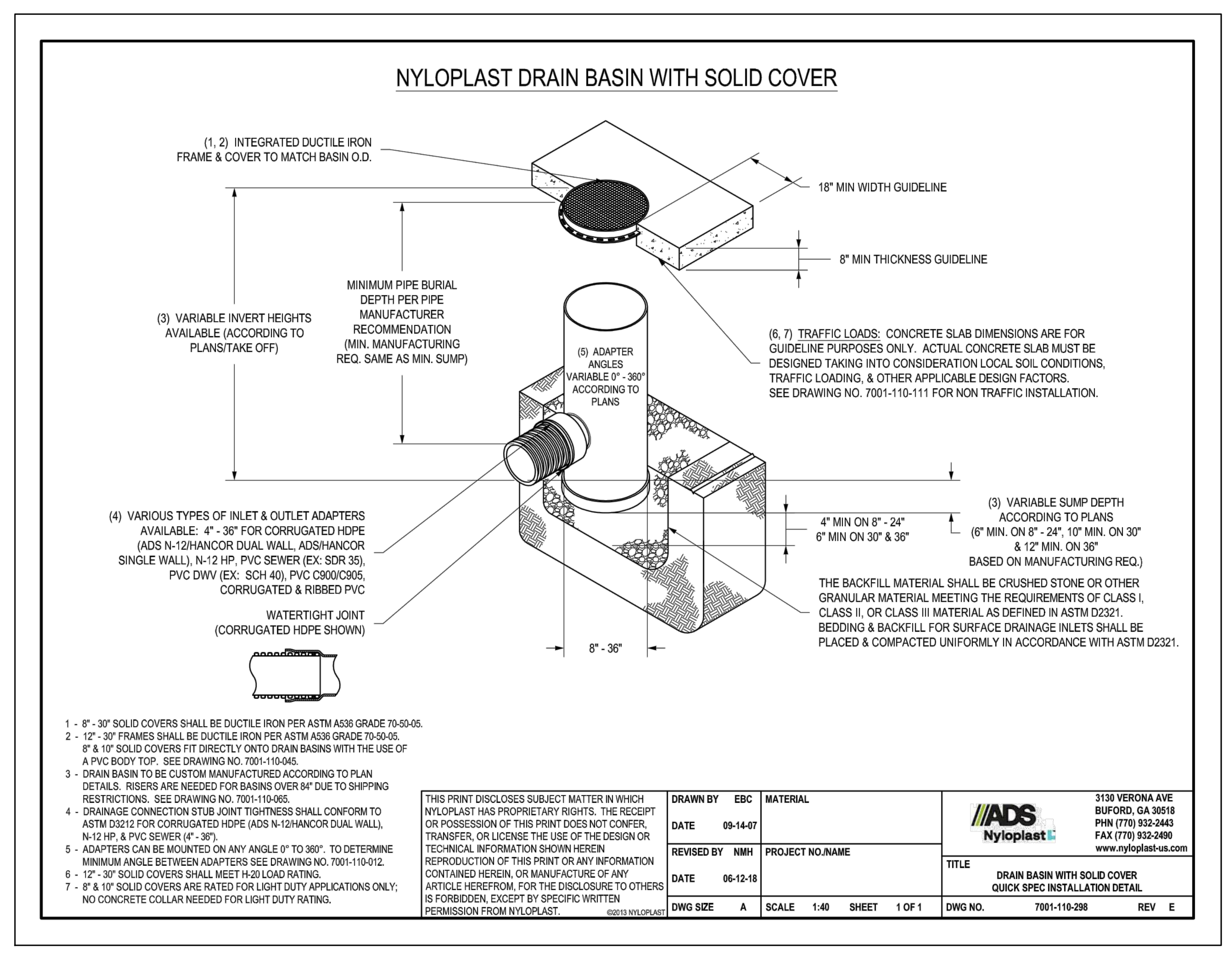
B 18" ADS BASIN (OR APPROVED EQUIV.)
C5.5 NTS



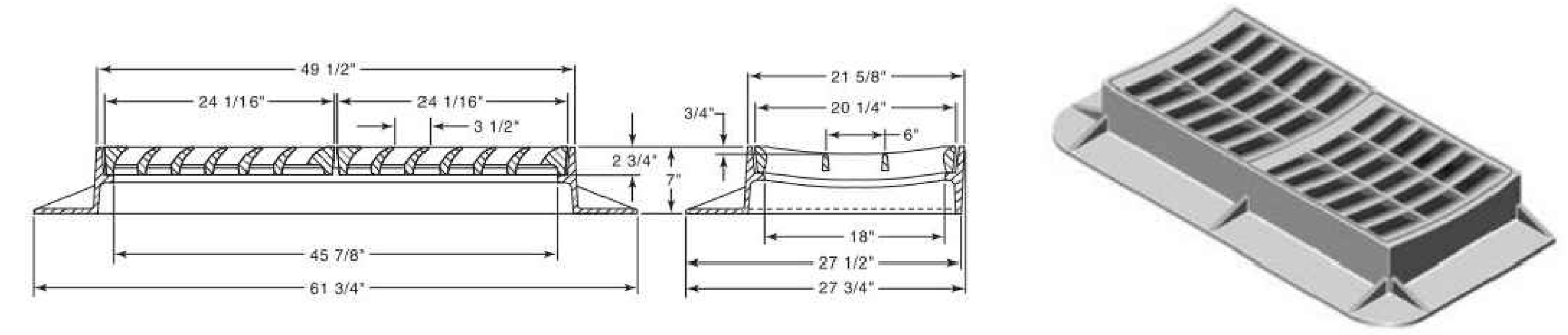
C 24" ADS BASIN (OR APPROVED EQUIV.)
C5.5 NTS



D ADS SOLID COVER (OR APPROVED EQUIV.)
C5.5 NTS



E ADS SOLID COVER INSTALL (OR APPROVED EQUIV.)
C5.5 NTS



F DOUBLE VALLEY GUTTER INLET
C5.5 NTS

FINAL CD - FOR CONSTRUCTION

MSU Stadium Lots
Construction Documents

MONTANA STATE UNIVERSITY

MSU-CPDC
MONTANA STATE UNIVERSITY
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djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

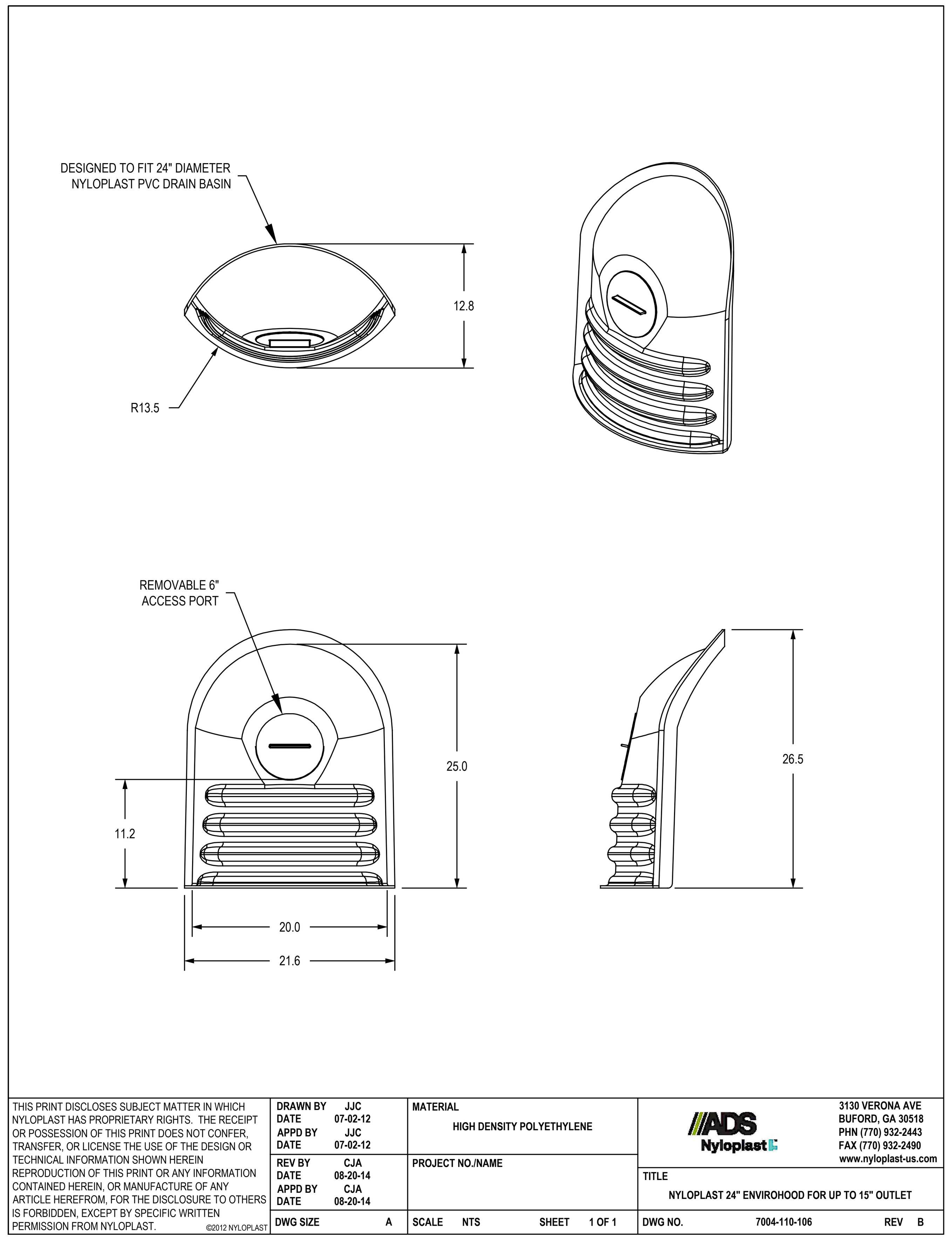
MONTANA MICHAEL T. RUSSELL No. 59647PE PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
DETAIL 4

SHEET
C5.5

DATE
3-27-2024


DESIGNED TO FIT 24" DIAMETER
NYLOPLAST PVC DRAIN BASIN
12.8
R13.5
REMOVABLE 6"
ACCESS PORT
25.0
11.2
26.5
20.0
21.6
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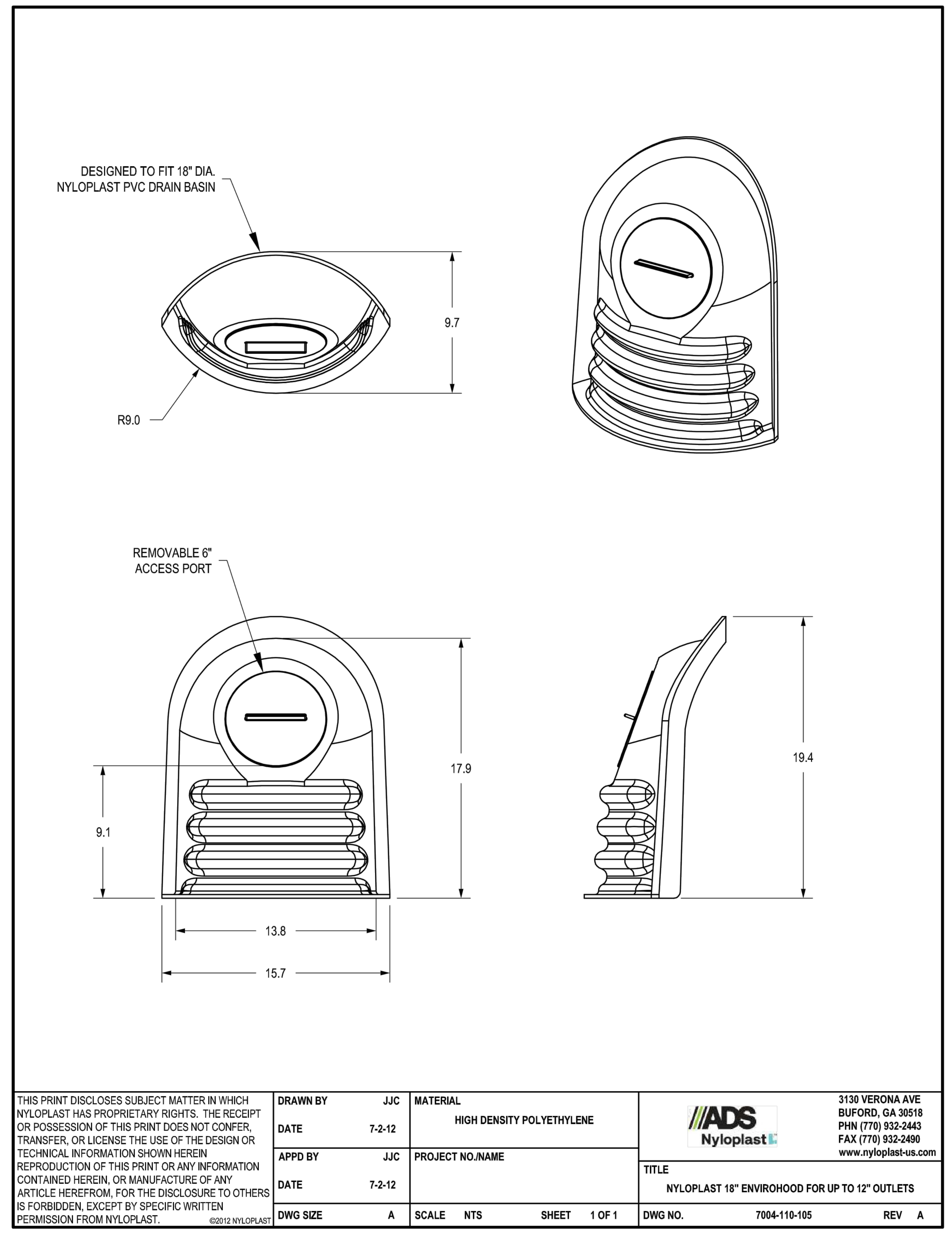
DATE 07-02-12
APPD BY JJC
DATE 07-02-12
REV BY CJA
DATE 08-20-14
APPD BY CJA
DATE 08-20-14
DWG SIZE A
MATERIAL
HIGH DENSITY POLYETHYLENE
PROJECT NO./NAME
SCALE NTS
SHEET 1 OF 1
ADS Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com
TITLE
NYLOPLAST 24" ENVIROHOOD FOR UP TO 15" OUTLET
DWG NO. 7004-110-106
REV B

A
C5.6
24" ENVIROHOOD (OR APPROVED EQUIV.)
NTS


DESIGNED TO FIT 18" DIA.
NYLOPLAST PVC DRAIN BASIN
9.7
R9.0
REMOVABLE 6"
ACCESS PORT
17.9
9.1
19.4
13.8
15.7
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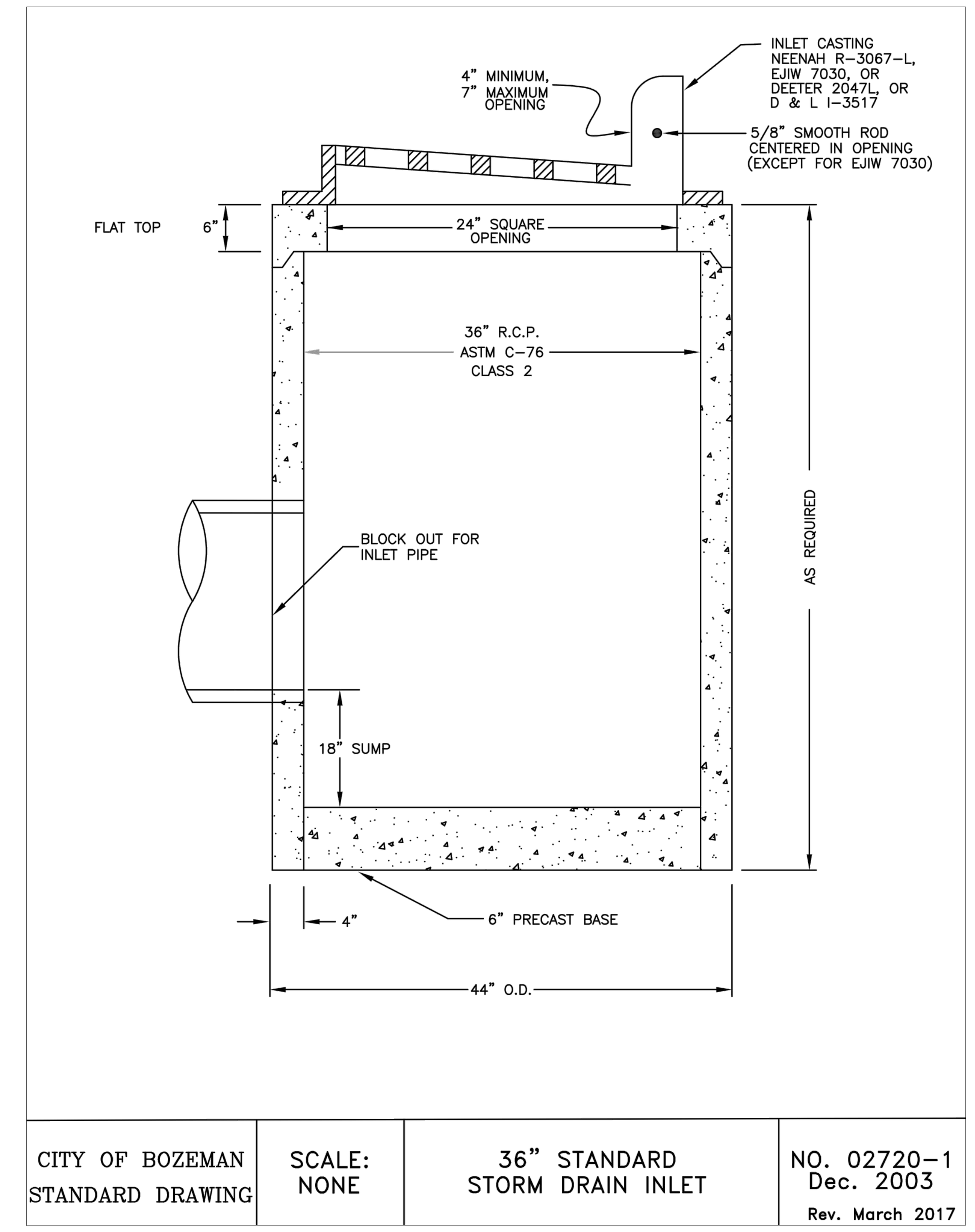
DRAWN BY JJC
DATE 7-2-12
APPD BY JJC
DATE 7-2-12
DWG SIZE A
MATERIAL
HIGH DENSITY POLYETHYLENE
PROJECT NO./NAME
SCALE NTS
SHEET 1 OF 1
ADS Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com
TITLE
NYLOPLAST 18" ENVIROHOOD FOR UP TO 12" OUTLETS
DWG NO. 7004-110-105
REV A

B
C5.6
18" ENVIROHOOD (OR APPROVED EQUIV.)
NTS

IMPORTANT: INLET TYPE VARIES, SEE UTILITY PLAN


INLET CASTING
NEENAH R-3067-L,
EJIW 7030, OR
DEETER 2047L, OR
D & L I-3517
4" MINIMUM,
7" MAXIMUM
OPENING
5/8" SMOOTH ROD
CENTERED IN OPENING
(EXCEPT FOR EJIW 7030)
FLAT TOP
6"
24" SQUARE
OPENING
36" R.C.P.
ASTM C-76
CLASS 2
BLOCK OUT FOR
INLET PIPE
AS REQUIRED
18" SUMP
4"
6" PRECAST BASE
44" O.D.
CITY OF BOZEMAN
STANDARD DRAWING
SCALE:
NONE
36" STANDARD
STORM DRAIN INLET
NO. 02720-1
Dec. 2003
Rev. March 2017

C
C5.6
PRECAST DRAIN BASIN PER BOZEMAN STD
NTS

FINAL CD - FOR CONSTRUCTION

MONTANA STATE UNIVERSITY

MSU-CPDC

MONTANA STATE
UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

MSU Stadium Lots
Construction Documents

DJ&A
406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA
MICHAEL T.
RUSSELL
No. 69047PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
DETAIL 6

SHEET
C5.6

DATE
3-27-2024

MONTANA STATE UNIVERSITY

MSU-CPDC

MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

MSU Stadium Lots

Construction Documents

FINAL CD - FOR CONSTRUCTION

DJ&A
406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA
MICHAEL T. RUSSELL
No. 59647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
DETAIL 7

SHEET
C5.7

DATE
3-27-2024

PROJECT INFORMATION (ADS SHEET 1 OF 6)

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

ADS Advanced Drainage Systems, Inc.

ADS SiteAssist FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

MSU LOT 20

BOZEMAN, MT, USA

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

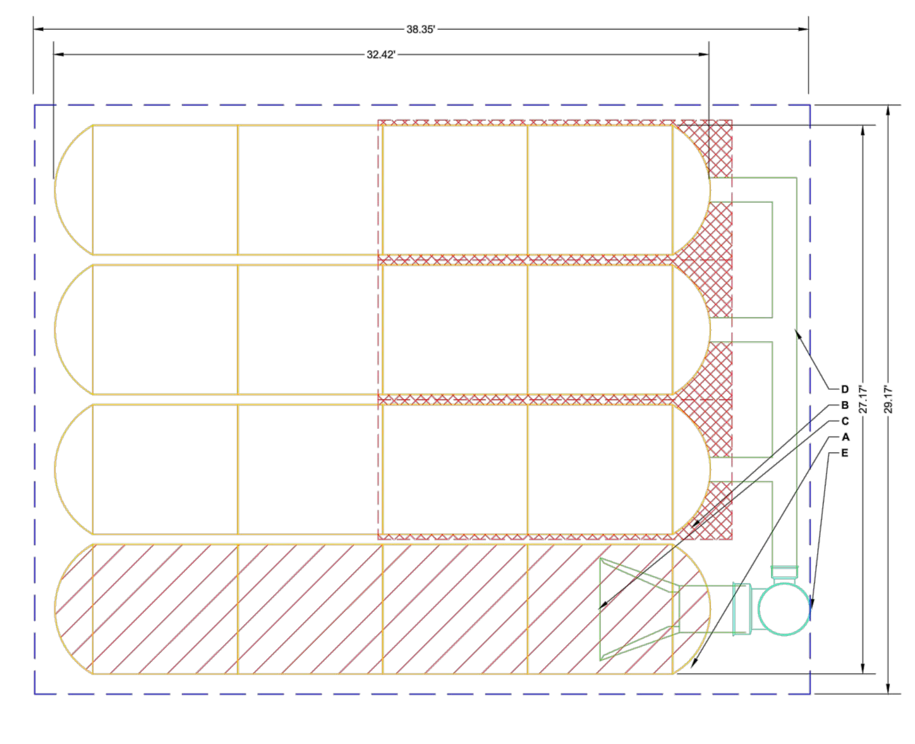
ADS SHEET 2 OF 6

PROPOSED LAYOUT	
16	STORMTECH MC-3500 CHAMBERS
8	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
3588	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
1118	SYSTEM AREA (SF)
135.0	SYSTEM PERIMETER (ft)

CONCEPTUAL ELEVATIONS:	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	12.50
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	6.50
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	6.00
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	6.00
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	6.00
TOP OF STONE:	5.50
TOP OF MC-3500 CHAMBER:	4.50
12" x 12" TOP MANIFOLD INVERT:	2.95
24" ISOLATOR ROW PLUS INVERT:	0.92
BOTTOM OF MC-3500 CHAMBER:	0.75
BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
PREFABRICATED END CAP	B	12" TOP CORED END CAP, PART#: MC3500IEPP12T / TYP OF ALL 12" TOP CONNECTIONS	26.36"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP		
MANIFOLD	D	12" x 12" TOP MANIFOLD, ADS N-12	26.36"	
NYLOPLAST (INLET W/ ISO PLUS ROW)	E	30" DIAMETER (24.00" SUMP MIN)		6.7 CFS IN



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

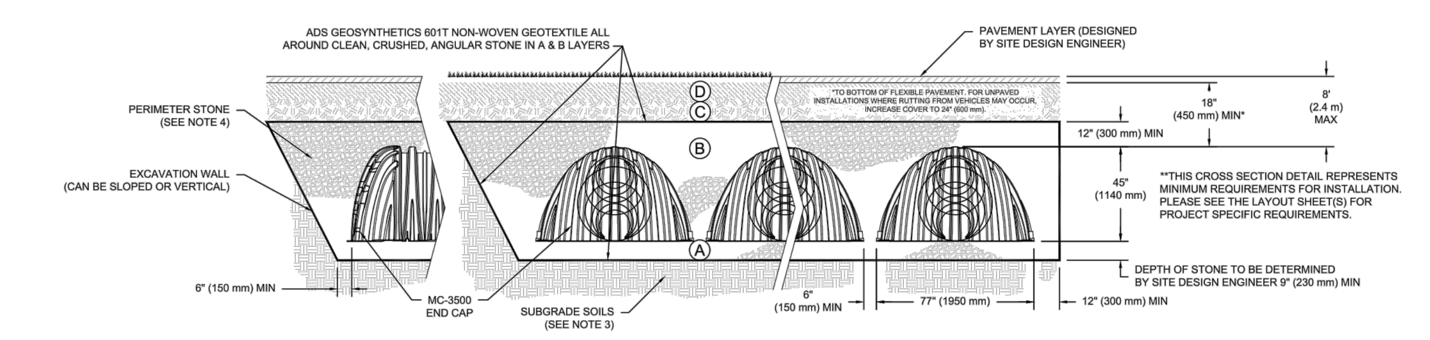
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

MSU LOT 20, BOZEMAN, MT, USA | DATE: | PROJECT #: | DRAWN: UU | CHECKED: N/A
StormTech® Chamber System | 888-892-2694 | WWW.STORMTECH.COM
ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473
SHEET 2 OF 6

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS (ADS SHEET 3 OF 6)

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

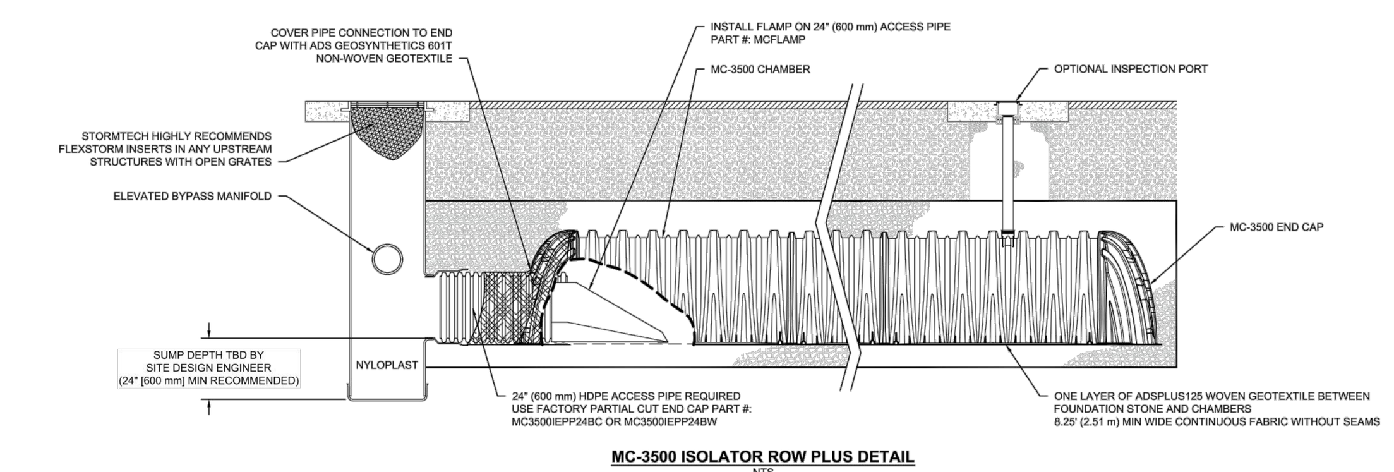
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

MSU LOT 20, BOZEMAN, MT, USA | StormTech® Chamber System | SHEET 3 OF 6

ADS SHEET 4 OF 6



MC-3500 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

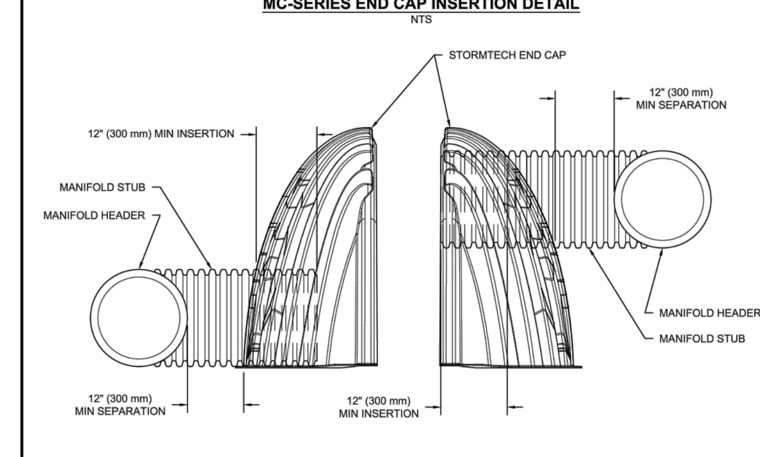
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

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

MSU LOT 20, BOZEMAN, MT, USA | StormTech® Chamber System | SHEET 4 OF 6

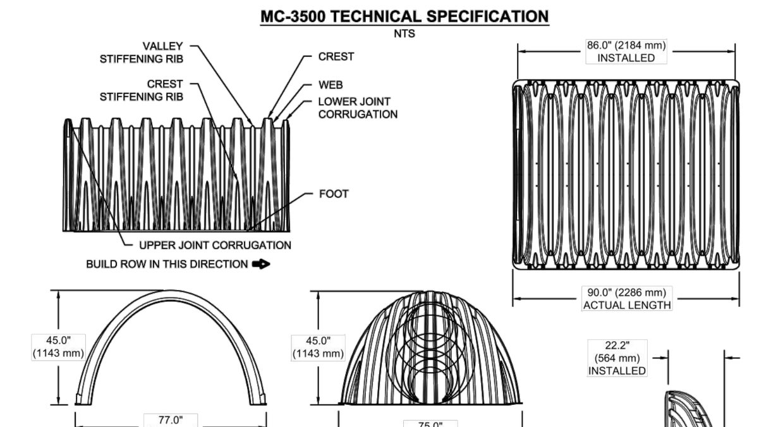
ADS SHEET 5 OF 6

MC-SERIES END CAP INSERTION DETAIL
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-3500 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

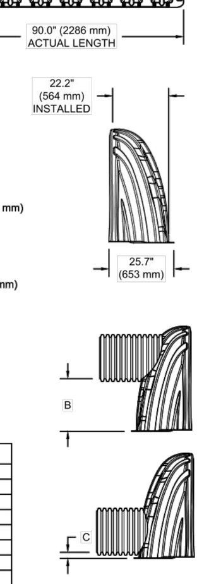
SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

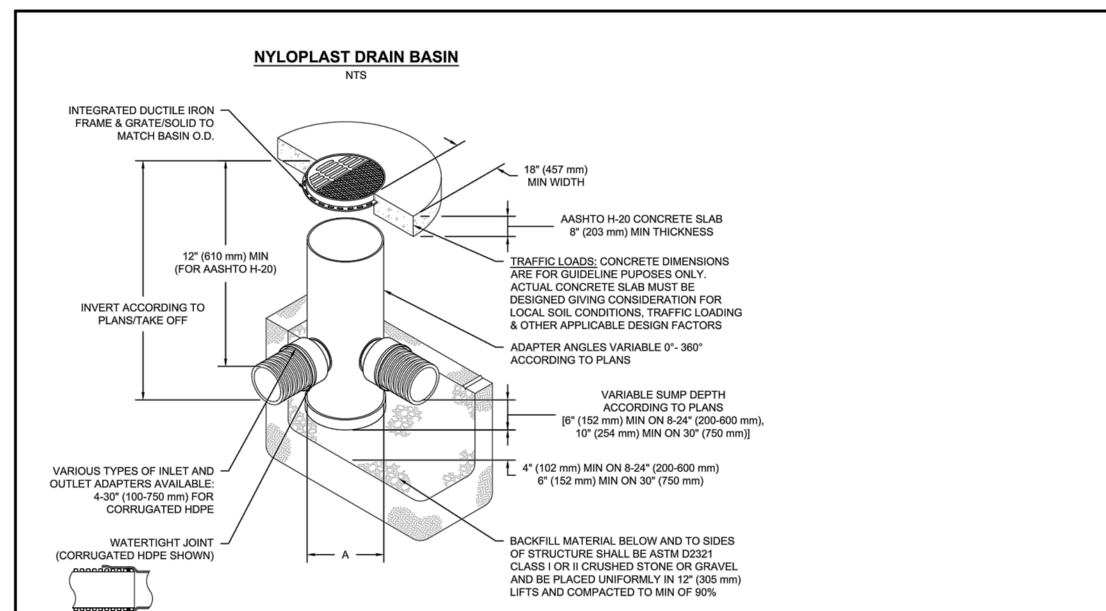


CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

MSU LOT 20, BOZEMAN, MT, USA | StormTech® Chamber System | SHEET 5 OF 6

ADS SHEET 6 OF 6

NYLOPLAST DRAIN BASIN
NTS



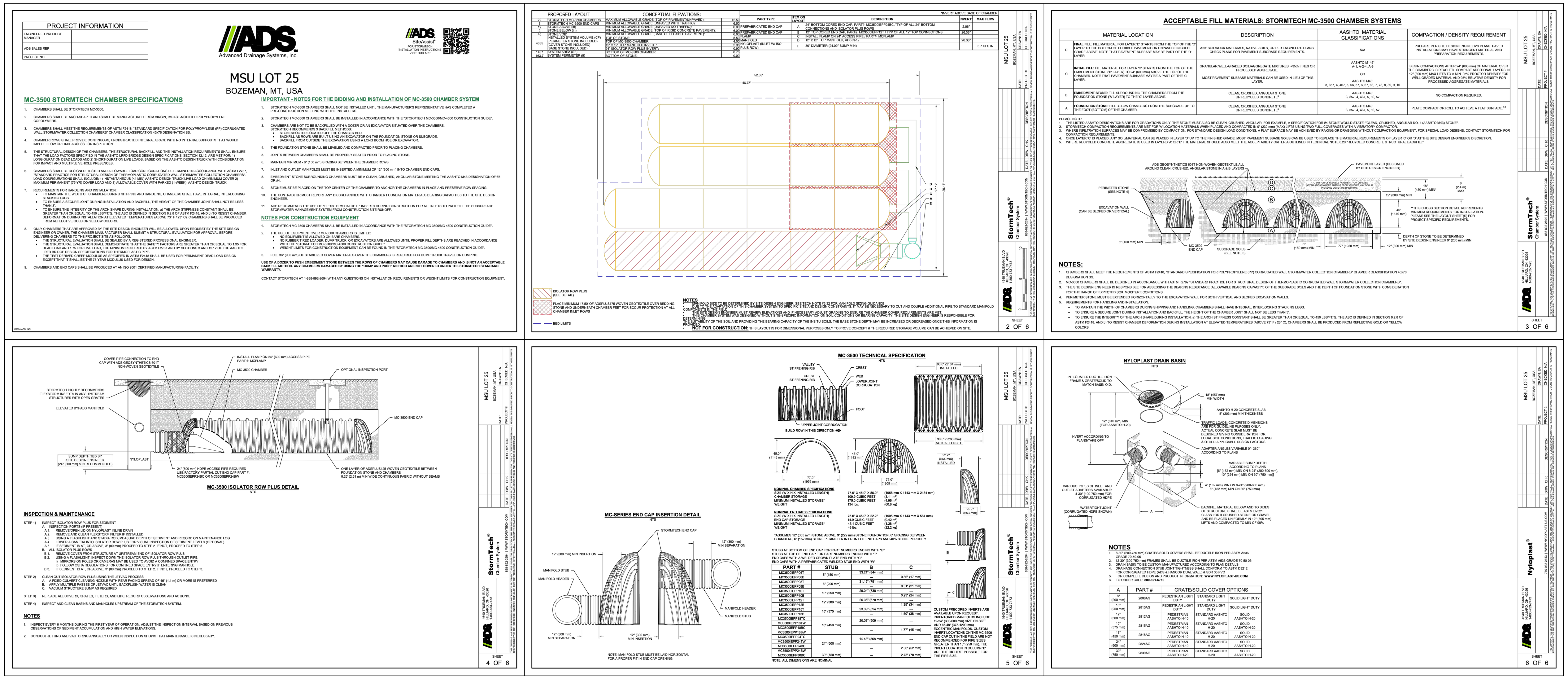
NOTES
1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

MSU LOT 20, BOZEMAN, MT, USA | Nyloplast® | 770-932-2443 | WWW.NYLOPLAST-US.COM | SHEET 6 OF 6

IMPORTANT: CONTRACTOR TO ENSURE THAT THE BOTTOM OF CHAMBER SYSTEM STONE INTERFACES WITH EXISTING FREE FLOWING STRATA. THIS WILL REQUIRE THE EXCAVATION OF AN EXISTING CLAY LENSE WITH BACKFILL OF SUITABLE MATERIALS (FREE-FLOWING, OPEN-GRADED GRANULAR. SEE GEOTECHNICAL RECOMMENDATIONS.

A / C5.7 — LOT 20 ADS CHAMBER SYSTEM DETAIL (OR APPROVED EQUIV.)
NTS



IMPORTANT: CONTRACTOR TO ENSURE THAT THE BOTTOM OF CHAMBER SYSTEM STONE INTERFACES WITH EXISTING FREE FLOWING STRATA. THIS WILL REQUIRE THE EXCAVATION OF AN EXISTING CLAY LENSE WITH BACKFILL OF SUITABLE MATERIALS (FREE-FLOWING, OPEN-GRADED GRANULAR. SEE GEOTECHNICAL RECOMMENDATIONS.

A / C5.8 — LOT 25 ADS CHAMBER SYSTEM DETAIL (OR APPROVED EQUIV.)
NTS

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MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

MSU Stadium Lots
Construction Documents

FINAL CD - FOR CONSTRUCTION

DJ&A
406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

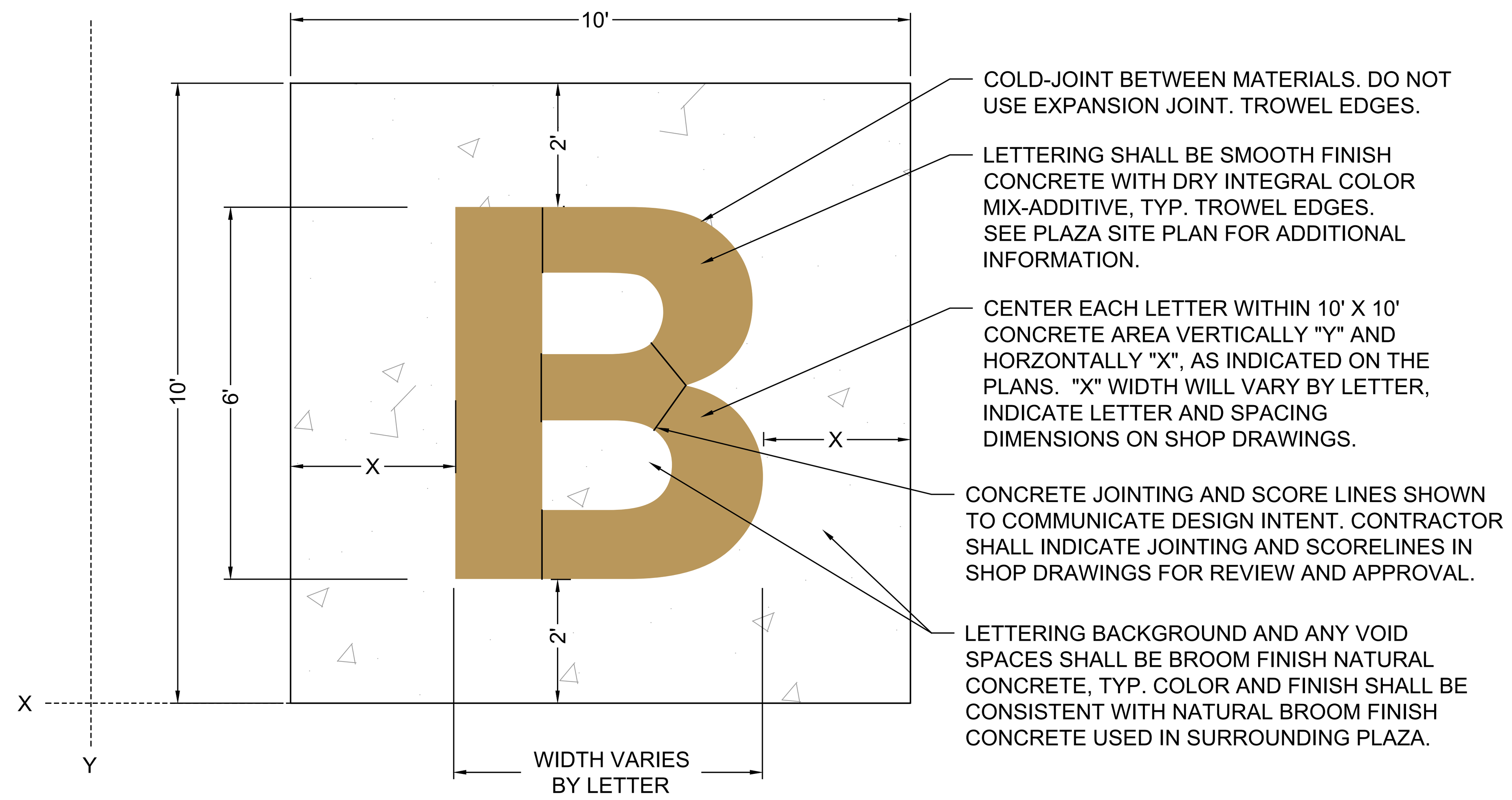
MONTANA — MICHAEL T. RUSSELL No. 59647PE — PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
DETAIL 8

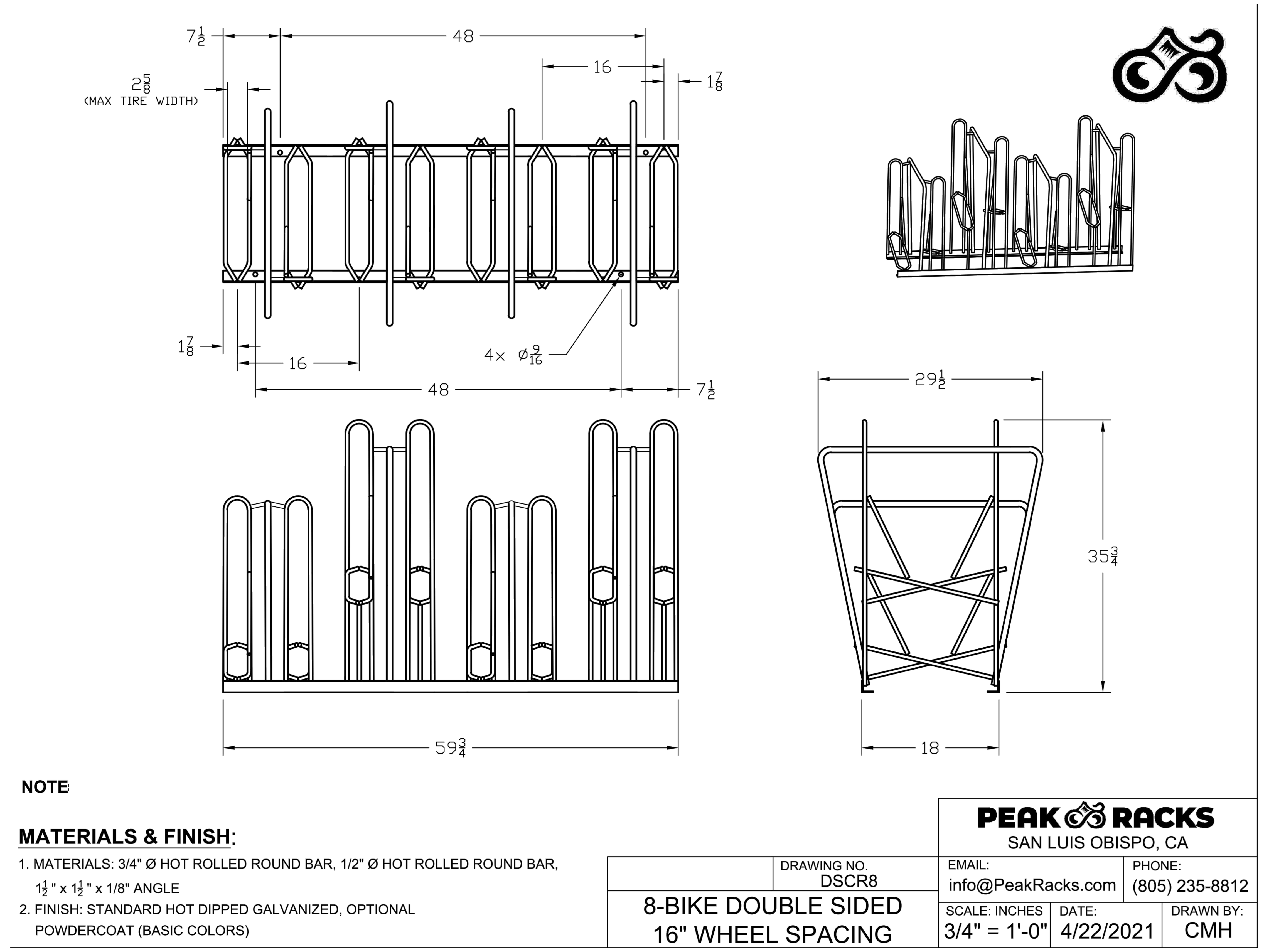
SHEET
C5.8

DATE
3-27-2024



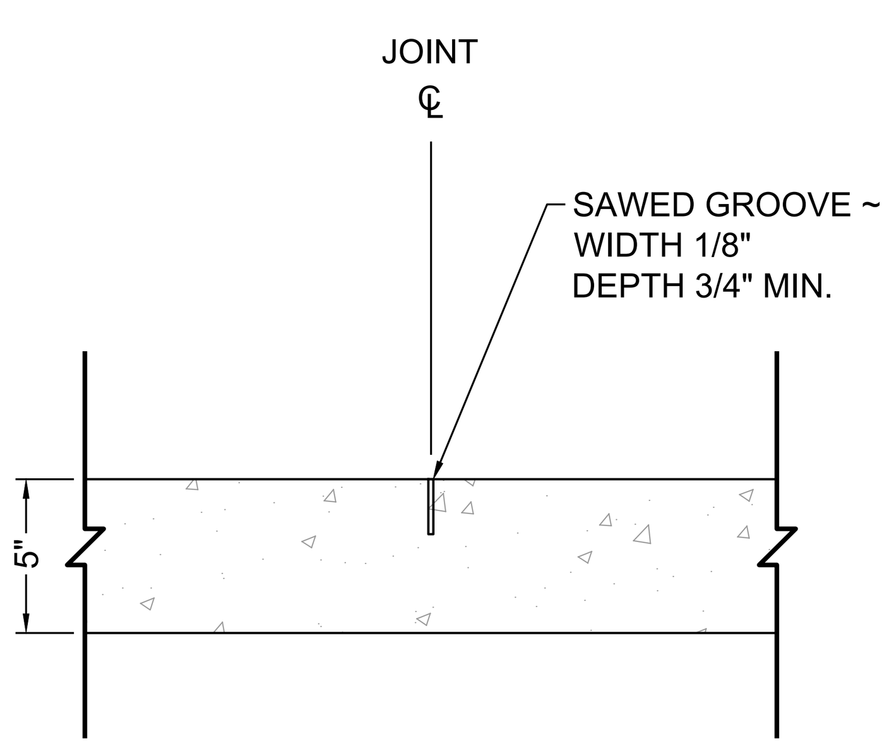
NOTES
1. FINAL DESIGN TO BE APPROVED IN SHOP DRAWINGS, SUBMIT TO OWNER FOR APPROVAL.
2. FONT SHALL BE "FRANKLIN GOTHIC STANDARD DEMI" OR OTHER SANS-SERIF FONT ONLY AS APPROVED BY OWNER.
3. INTEGRAL COLOR FOR CAST-IN-PLACE CONCRETE LETTERING SHALL BE DAVIS COLORS DRY INTEGRAL PIGMENT COLOR, COLOR WESTERN GOLD, OR APPROVED EQUAL. CONTRACTOR SHALL SUBMIT PRODUCT DATA, MIX DESIGNS, AND SAMPLES FOR COLOR SELECTION TO OWNER FOR REVIEW AND APPROVAL.
4. ALL CONCRETE WORK SHALL MEET REQUIREMENTS FOR HEAVY DUTY CONCRETE WALKWAY DETAIL ON SHEET C5.1 AND SPECIFICATIONS.
5. GRADE CHANGE BETWEEN ALL CONCRETE SURFACE MATERIALS SHALL NOT EXCEED 1/4" (0.02') PER ADA REQUIREMENTS. CONCRETE SHALL BE SUFFICIENTLY SLOPED TO PREVENT PONDING OF WATER BETWEEN DIFFERING SURFACES.
6. CONTRACTOR SHALL INDICATE CONCRETE JOINTING AND SCORELINES IN SHOP DRAWINGS FOR REVIEW AND APPROVAL.
7. REFER TO DETAILS C/C5.9 AND D/C5.9 FOR TYPICAL EXPANSION AND CONTROL JOINT DETAILS.

A / C5.9 TYPICAL COLORED CONCRETE LETTERING DETAIL
NTS

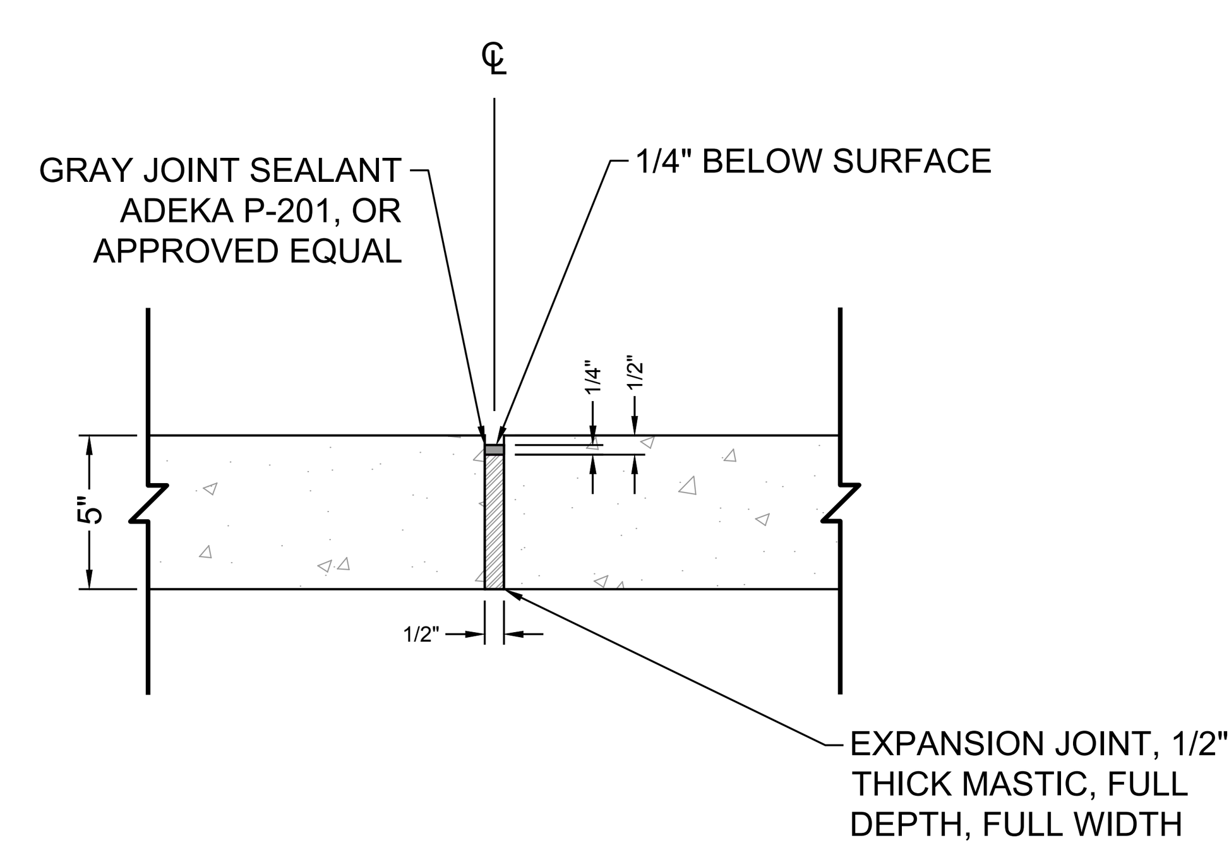


NOTES:
1. BIKE RACK FROM PEAK RACKS, OR APPROVED EQUAL. WWW.PEAKRACKS.COM
 1.1. MODEL: 8 BIKE DOUBLE SIDED RACK, COLOR: POWDERCOATED BLUE, OR AS APPROVED BY OWNER.
2. DO NOT SURFACE MOUNT INSTALL, BIKE RACKS SHALL BE FREESTANDING IN LOCATIONS DESIGNATED ON THE PLANS AND PER MANUFACTURER'S RECOMMENDATIONS.
3. SETBACK BIKE RACKS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE A MIN 3' CLEARANCE FROM WALLS/FENCING AND 4' CLEAR WALK AISLE BETWEEN ROWS AFTER ACCOUNTING FOR BIKE DEPTH.
4. PROVIDE PRODUCT DATA, SHOP DRAWINGS SHOWING INSTALLATION FOR EACH BIKE RACK, SAMPLES OF FINISHES FOR REVIEW AND APPROVAL, AND MAINTENANCE INFORMATION, INCLUDING RECOMMENDATIONS FOR REPAIRING DAMAGE TO THE FINISH.

B / C5.9 BIKE RACK DETAIL
NTS



C / C5.9 CONCRETE CONTROL JOINT
NTS



D / C5.9 CONCRETE EXPANSION JOINT
NTS

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Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE

MONTANA — MICHAEL T. RUSSELL No. 59647PE — PROFESSIONAL ENGINEER

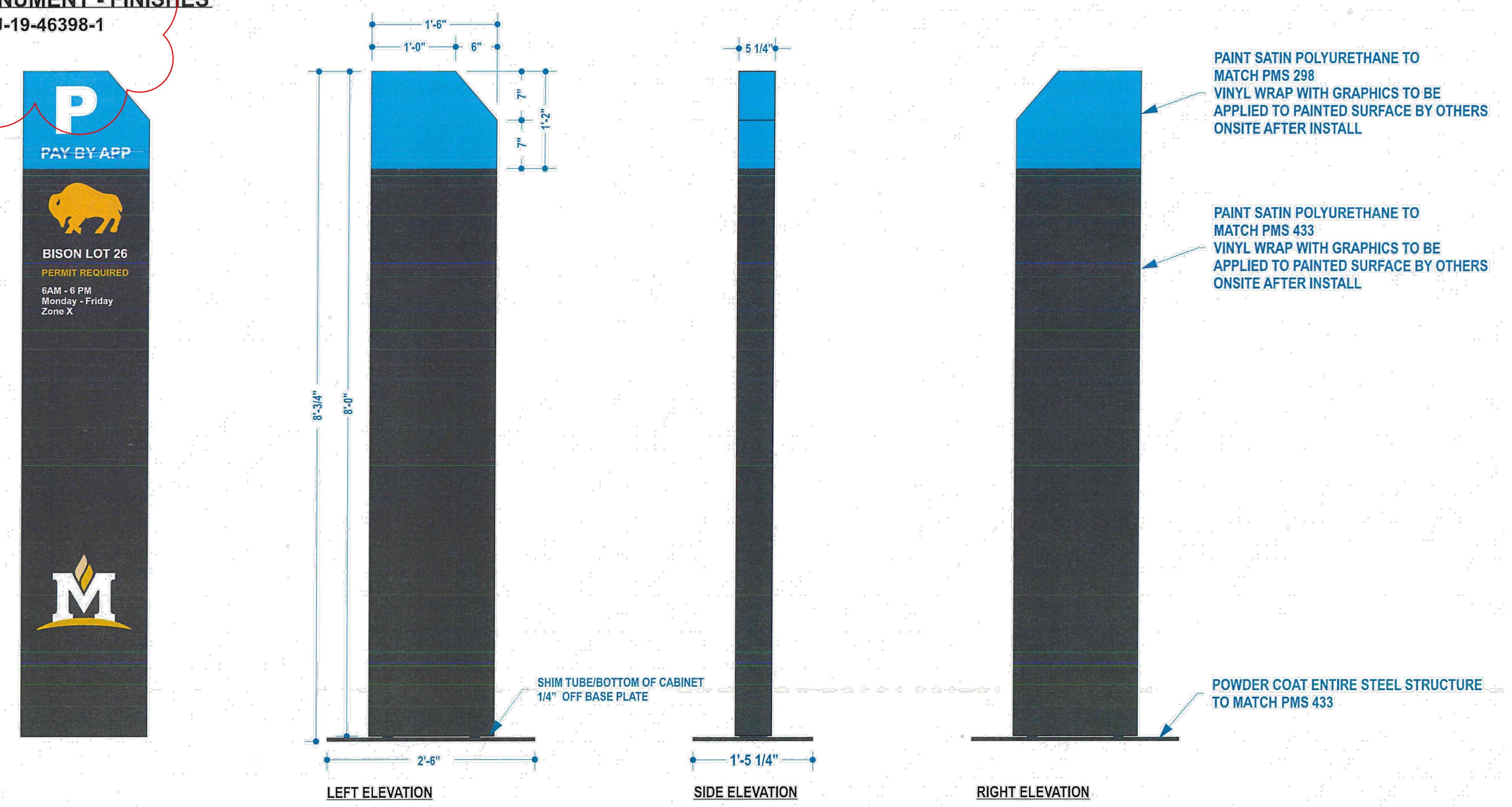
PPA#22-0012

SHEET TITLE
DETAIL 9

SHEET
C5.9

DATE
3-27-2024

MONUMENT - FINISHES
MSU-19-46398-1

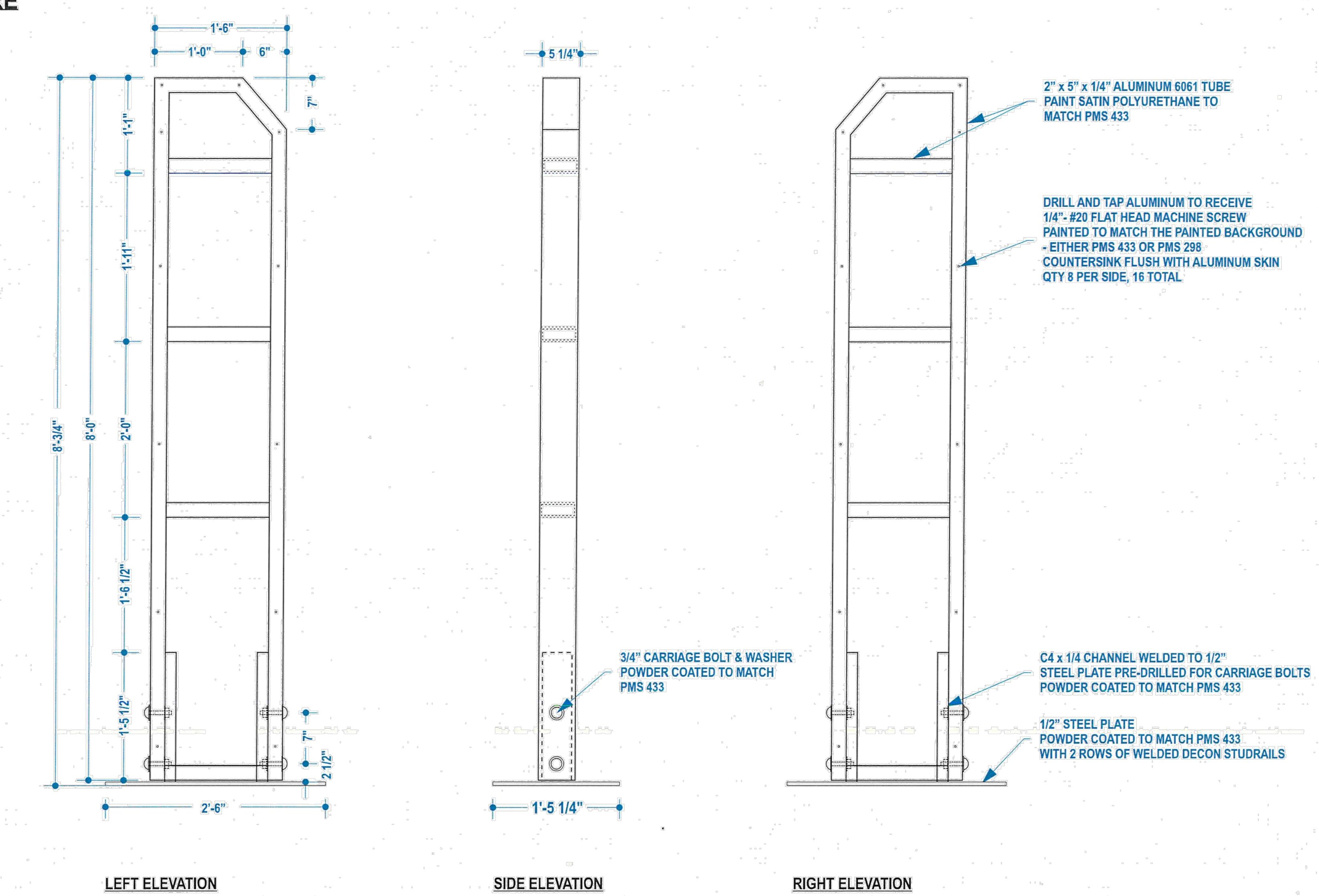


NOTE:
1) GRAPHIC LAYOUT SHOWN IS REPRESENTATIVE AND WILL BE SUPPLIED BY VINYL WRAP SUPPLIER AND APPLIED IN FIELD

RFI:
1) PLEASE PROVIDE GRAPHIC SUPPLIER FOR COORDINATION
2) PLEASE CONFIRM PMS NUMBER FOR BLUE
3) PLEASE CONFIRM PMS NUMBER FOR BROWN
4) PLEASE CONFIRM QUANTITY OF SIGNS AND LOCATIONS

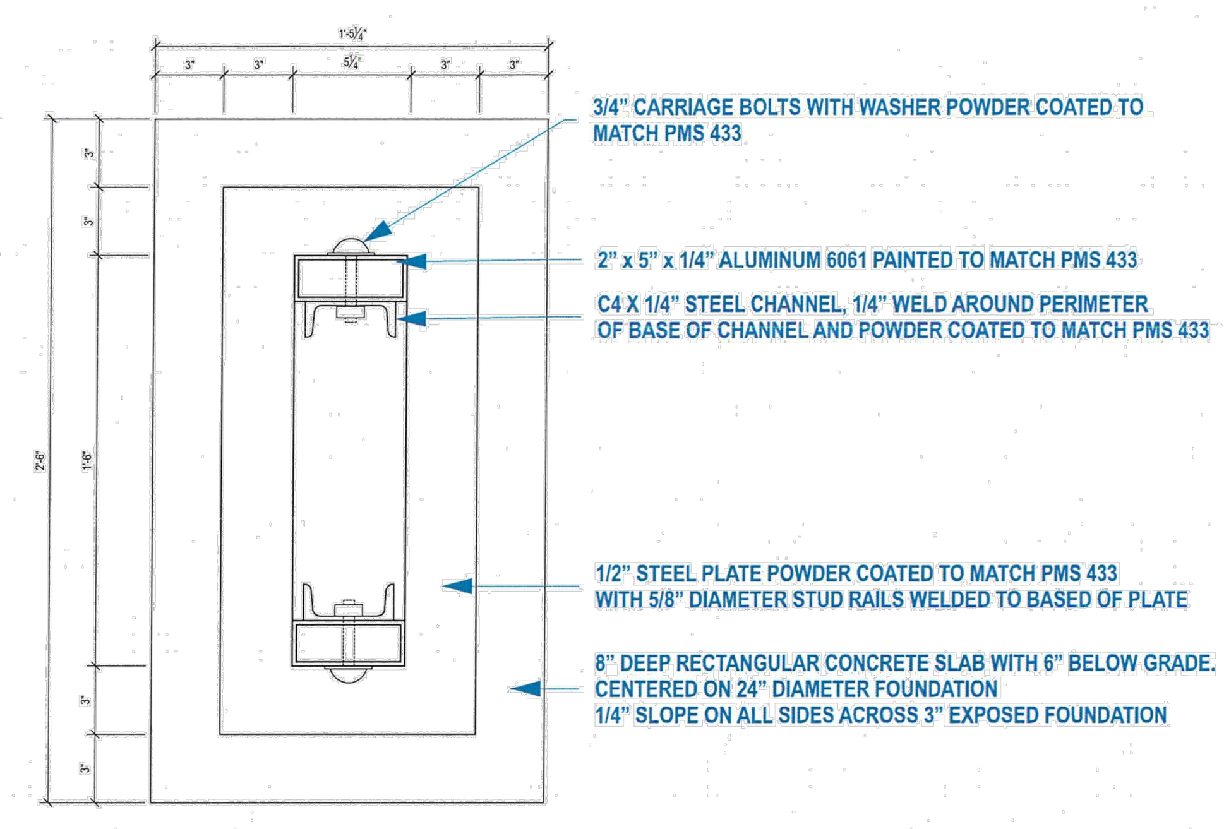
COLOR LEGEND		
	PMS/PAINT	VINYL
	PMS 298	
	PMS 124	
	PMS 433	
	PMS 281	
	WHITE	OPAQUE 3M 7725-10 TRANS. 3M 3630-20

MONUMENT - STRUCTURE
MSU-19-46398-1



COLOR LEGEND		
	PMS/PAINT	VINYL
	PMS 298	
	PMS 124	
	PMS 433	
	PMS 281	
	WHITE	OPAQUE 3M 7725-10 TRANS. 3M 3630-20

MONUMENT - FOUNDATIONS
MSU-19-46398-1



FOUNDATION - TOP VIEW - NTS

NOTE:
3) POWDER COAT THE FOLLOWING ELEMENTS TO MATCH PMS 433:
   A) 1/2" STEEL BASE
   B) QTY 2 - VERTICAL STEEL CHANNEL
   C) STUD RAILS WELDED TO BOTTOM OF 1/2" PLATE
   D) CARRIAGE BOLTS & WASHERS
4) SHIM ALUMINUM TUBE / CABINET 1/4" OFF BASE PLATE
5) 24" DIAMETER SONOTUB WITH 36" DEPTH
6) 2" MINIMUM DISTANCE BETWEEN REBAR AND EDGE OF CONCRETE

NOTES
1. CONTRACTOR SHALL WORK WITH OWNER PREFERRED SIGN VENDOR FOR DESIGN AND MANUFACTORING OF SIGNS, OR APPROVED EQUAL.
2. OWNER TO PROVIDE TEXT AND GRAPHIC INFORMATION FOR EACH SIGN.
3. FINAL DESIGN SHALL BE APPROVED IN SHOP DRAWINGS, SUBMIT TO OWNER FOR APPROVAL.
4. SEE CIVIL SITE PLAN FOR SIGNAGE LOCATIONS.

A
C5.10
MSU MONUMENT SIGN
NTS

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Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: M. RUSSELL

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

MONTANA
MICHAEL T. RUSSELL
No. 56647PE
PROFESSIONAL ENGINEER

PPA#22-0012

SHEET TITLE
DETAIL 10

SHEET
C5.10

DATE
3-27-2024

GENERAL PLANTING NOTES

1. LANDSCAPE CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL LANDSCAPE MATERIALS WITH GENERAL CONTRACTOR.
2. CONTRACTOR TO EVALUATE EXISTING SITE CONDITIONS AND REMEDY AS REQUIRED TO PROVIDE FOR HEALTHY PLANT GROWTH AND MITIGATE UNSIGHTLY CONDITIONS. REMOVE ALL CONSTRUCTION DEBRIS AND MATERIALS INJURIOUS TO PLANT GROWTH FROM PLANTING PITS AND BEDS PRIOR TO BACKFILLING WITH PLANTING MEDIUM.
3. BE FAMILIAR WITH UNDERGROUND UTILITIES BEFORE DIGGING. COORDINATE LOCATION OF ALL UTILITIES (LINES, DUCTS, CONDUITS, SLEEVES,FOOTINGS, ETC.) WITH LOCATIONS OF PROPOSED LANDSCAPE ELEMENTS (FENCE, FOOTINGS, TREE ROOTBALLS, ETC.). CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO OWNER'S REPRESENTATIVE PRIOR TO CONTINUING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGE OF UTILITY LINES.
4. CONTRACTOR SHALL CONDITION OR SUPPLY AND INSTALL PLANTING SOIL TO DEPTH REQUIRED PER PLANTING DETAILS AND SPECIFICATIONS IN PLANTING BEDS AND SURROUNDING TREES.
   4.1. ALL SEEDED AND SODDED AREAS SHALL HAVE 6 INCH MINIMUM DEPTH OF PLANTING SOIL, ALL PLANTING BEDS TO HAVE 12 INCH MINIMUM DEPTH OF PLANTING SOIL. DECOMPACT AND SCARIFY 6 INCHES OF SUBSOIL PER SPECIFICATIONS PRIOR TO PLANTING SOIL APPLICATION.
5. ADDITIONAL OR SUPPLEMENTAL TOPSOIL MAY BE REQUIRED TO MEET PLANTING REQUIREMENTS AS SPECIFIED FOR AMENDED SOIL. SOIL AMENDMENTS SHALL BE DETERMINED BY A SOIL TESTING AGENCIES RECOMMENDATION. THE PLANTING AREA SHALL NOT BE UNSUITABLE COMPACTED BACKFILL, BUT FERTILE WELL DRAINED LOAMY TOPSOIL WITH APPROPRIATE SOIL AMENDMENTS CORRESPONDING TO THE NEEDS OF THE PERFORMED SOIL TEST.
6. FINE GRADE PLANTING SOIL TO ACHIEVE SMOOTH CONTOURS, ELIMINATE LOCAL PONDING, AND PROVIDE POSITIVE DRAINAGE. THE FINISH SURFACE SHALL BE SMOOTH AND COMPACTED, AS SPECIFIED. BEFORE PLACING SEED OR PLANT MATERIAL, BREAK-DOWN OR REMOVE ALL SURFACE MATERIAL LARGER THAN 2" IN DIAMETER.
7. ALL PLANT MATERIALS SHALL BE TRUE TO THEIR SCIENTIFIC NAME AND SIZE AS INDICATED IN THE PLANT SCHEDULE.
8. ALL PLANT MATERIAL SHALL BE INSTALLED AS DETAILED. IF NOT SHOWN, INSTALL ACCORDING TO MONTANA ASSOCIATION OF NURSERYMEN STANDARDS.
9. DURING INSTALLATION OF PLANT MATERIAL, CONTRACTOR SHALL KEEP ALL WORK AREAS AND WALKING AND DRIVEWAY SURFACES CLEAN OF DEBRIS. PROTECT ALL PLANT MATERIALS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS OR ACTIVITIES BY OTHER CONTRACTORS AND TRADES. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR, OR REPLACE ANY DAMAGED PLANTINGS OR MATERIALS IMMEDIATELY.
10. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE DUE TO CONSTRUCTION OPERATIONS. ANY AREAS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION, OR BETTER, AT NO ADDITIONAL COST TO THE OWNER.
11. IN THE EVENT OF ANY DISCREPANCIES, NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY.
12. CONTRACTOR'S PRICES SHALL INCLUDE ALL LABOR AND MATERIAL NECESSARY TO COMPLETE THE WORK. IE: MULCH, PLANTINGS, TOPSOIL AND SOIL AMENDMENTS, STAKING MATERIAL, ETC.
13. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE. NO PLANT SUBSTITUTIONS WILL BE ALLOWED WITHOUT WRITTEN CONSENT FROM THE OWNER'S REPRESENTATIVE.
14. THE OWNER'S REPRESENTATIVE SHALL FIELD LOCATE PLANT MATERIALS ON-SITE WITH THE LANDSCAPE CONTRACTOR.
15. PLANTING PLANS INDICATE DIAGRAMMATIC LOCATIONS ONLY. SITE ADJUSTMENTS OF PLANTING DESIGN AND RELOCATION OF PLANT MATERIAL INSTALLED PRIOR TO PROJECT OWNER'S REPRESENTATIVE'S APPROVAL SHALL BE DONE WITHOUT PENALTY OR ADDITIONAL COST TO OWNER. STAKE PLANT LOCATIONS AT SITE AND OBTAIN OWNER'S REPRESENTATIVE'S APPROVAL PRIOR TO PLANT INSTALLATION.
16. THE OWNER RESERVES THE RIGHT TO REVISE QUANTITIES TO SUIT BUDGET LIMITATIONS. CONTRACTOR'S UNIT BID PRICES SHALL PREVAIL FOR ANY CHANGES IN QUANTITIES.
17. INDICATED QUANTITIES ARE ESTIMATES AND SHOULD BE CONFIRMED BY THE CONTRACTOR. IF DISCREPANCIES EXIST BETWEEN THE NUMBER OF PLANTS DRAWN ON THE PLANTING PLAN AND THE NUMBER OF PLANTS IN THE SCHEDULE, THE PLANTING PLAN SHALL GOVERN.
18. GRASS AREAS, INCLUDING THOSE THAT WILL BE NEW AND/OR RE-ESTABLISHED, SHALL BE MAINTAINED OR RENOVATED BY CONTRACTOR UNTIL FINAL ACCEPTANCE, AS SPECIFIED.
19. PROVIDE 3" DEPTH MINERAL ROCK MULCH, AS SPECIFIED, SHALL BE PLACED OVER TYPE 'A' LANDSCAPE FABRIC, IN ALL PLANT BED AREAS AS INDICATED ON PLAN AND PLANTING DETAILS. DO NOT USE PLASTIC SHEETING. PROVIDE SAMPLES OF OF MULCH AND LANDSCAPE FABRIC TYPES FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO DELIVERY TO THE SITE.
20. PROVIDE SHREDDED HARDWOOD MULCH CIRCLE, NATURAL COLOR, AS SPECIFIED, TO A 3-FOOT MINIMUM DIAMETER AND 3-INCH MINIMUM DEPTH SURROUNDING ALL TREES OUTSIDE PLANTING BEDS AS SHOWN IN TREE PLANTING DETAILS. WHERE TREES ARE LOCATED WITHIN PLANTING BEDS THAT USE ROCK MULCH, DO NOT PROVIDE WOOD MULCH. DO NOT USE AN UNDERLAYMENT SUCH AS PLASTIC SHEET OR LANDSCAPE FABRIC. APPLY PRE-EMERGENT PRIOR TO MULCHING. PROVIDE SAMPLES OF MULCH TYPES FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO DELIVERY TO THE SITE.
21. BOULDERS TO BE NATIVE TO THE GALLATIN VALLEY REGION SURROUNDING BOZEMAN, IN A COLOR RANGE OF NATURAL DARK GRAYS, BROWNS AND TANS, APPROXIMATELY 24" - 48" IN SIZE. REFER TO PLAN FOR BOULDER LOCATIONS. BOULDERS SHALL BE SIMILAR IN SHAPE AS DEPICTED ON THE PLAN, ROUGH FACE, FIRMLY ANCHORED IN PLANTING BED, AND LEVEL. CONTRACTOR TO PROVIDE SAMPLES OR IMAGES FOR APPROVAL BY OWNERS REPRESENTATIVE PRIOR TO DELIVERY. SEE LANDSCAPE BOULDER DETAIL.
22. WARRANTY: ALL TREES, SHRUBS, PERRENIALS, AND LAWNS SHALL BE WARRANTED TO REMAIN ALIVE AND IN THRIVING CONDITION ONE YEAR FROM FINAL ACCEPTANCE OR SHALL BE REPLACED FREE OF CHARGE WITH THE SAME GRADE AND SPECIES AS NOTED IN THE SPECIFICATIONS.

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION	QTY
1	ALUMINUM EDGING. PERMALOC BLACK, OR AS APPROVED BY OWNER.	74 LF
2	BOULDER NATIVE TO GALLATIN VALLEY, TYP.	72

SYMBOL	DESCRIPTION	QTY
3	TALL FESCUE TURF TYPE/KENTUCKY BLUEGRASS SEED MIX, SEE SPECIFICATIONS.	30,533 SF
4	THIS AREA IS WITHIN THE LIMITS OF WORK, IT SHALL ONLY INCLUDE DEMOLITION. PLANTING AND IRRIGATION OF THIS AREA SHALL BE PART OF INDOOR PRACTICE FACILTY (IPF) PROJECT WORK, AND NOT PART OF THIS PROJECT.	
5	MINERAL MULCH, AS SPECIFIED, OR AS APPROVED BY OWNER.	13,004 SF

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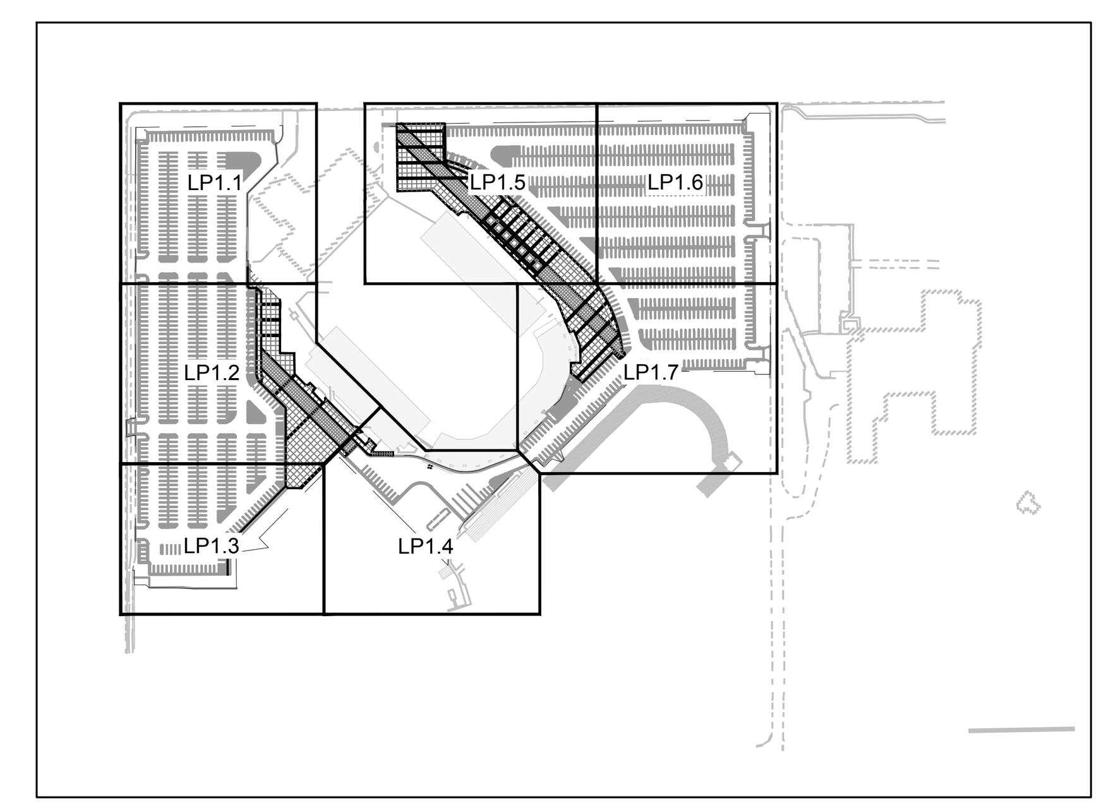
PLANT SCHEDULE

SYMBOL	COMMON / BOTANICAL NAME	SIZE	CONTAINER	QTY
EVERGREEN TREES				
	FAT ALBERT COLORADO SPRUCE PICEA PUNGENS 'FAT ALBERT'	6` HT.	B&B	3
LARGE DECIDUOUS TREES				
	NORWAY MAPLE ACER PLATANOIDES	2" CAL.	B&B	4
	THORNLESS HONEY LOCUST GLEDITSIA TRIACANTHOS INERMIS	2" CAL.	B&B	6
	DISCOVERY ELM ULMUS DAVIDIANA JAPONICA 'DISCOVERY'	2" CAL.	B&B	4
SMALL DECIDUOUS TREES				
	JAPANESE TREE LILAC SYRINGA RETICULATA	1.5" CAL.	B&B	4
SHRUBS				
	SERVICEBERRY AMELANCHIER ALNIFOLIA	5 GAL.	POT	3
	KINNIKINNICK ARCTOSTAPHYLOS UVA-URSI	1 GAL.	POT	33
	ARCTIC FIRE DOGWOOD CORNUS STOLONIFERA 'FARROW'	5 GAL.	POT	28
	BIRCHLEAF SPIREA SPIRAEA BETULIFOLIA	5 GAL.	POT	59
CONIFEROUS SHRUBS				
	SAVIN JUNIPER JUNIPERUS SABINA	5 GAL.	POT	41
GRASSES				
	FEATHER REED GRASS CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	1 GAL.	POT	41



KEY MAP

NTS

REFER TO SHEET

LP0.1	PLANTING NOTES & SCHEDULE
LP1.1 - LP1.7	PLANTING PLANS
LP5.1	PLANTING DETAILS

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BOZEMAN, MONTANA
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FAX: 406.994.5665

MSU Stadium Lots

Construction Documents

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220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: C. BRANDRIET

REV.	DESCRIPTION	DATE

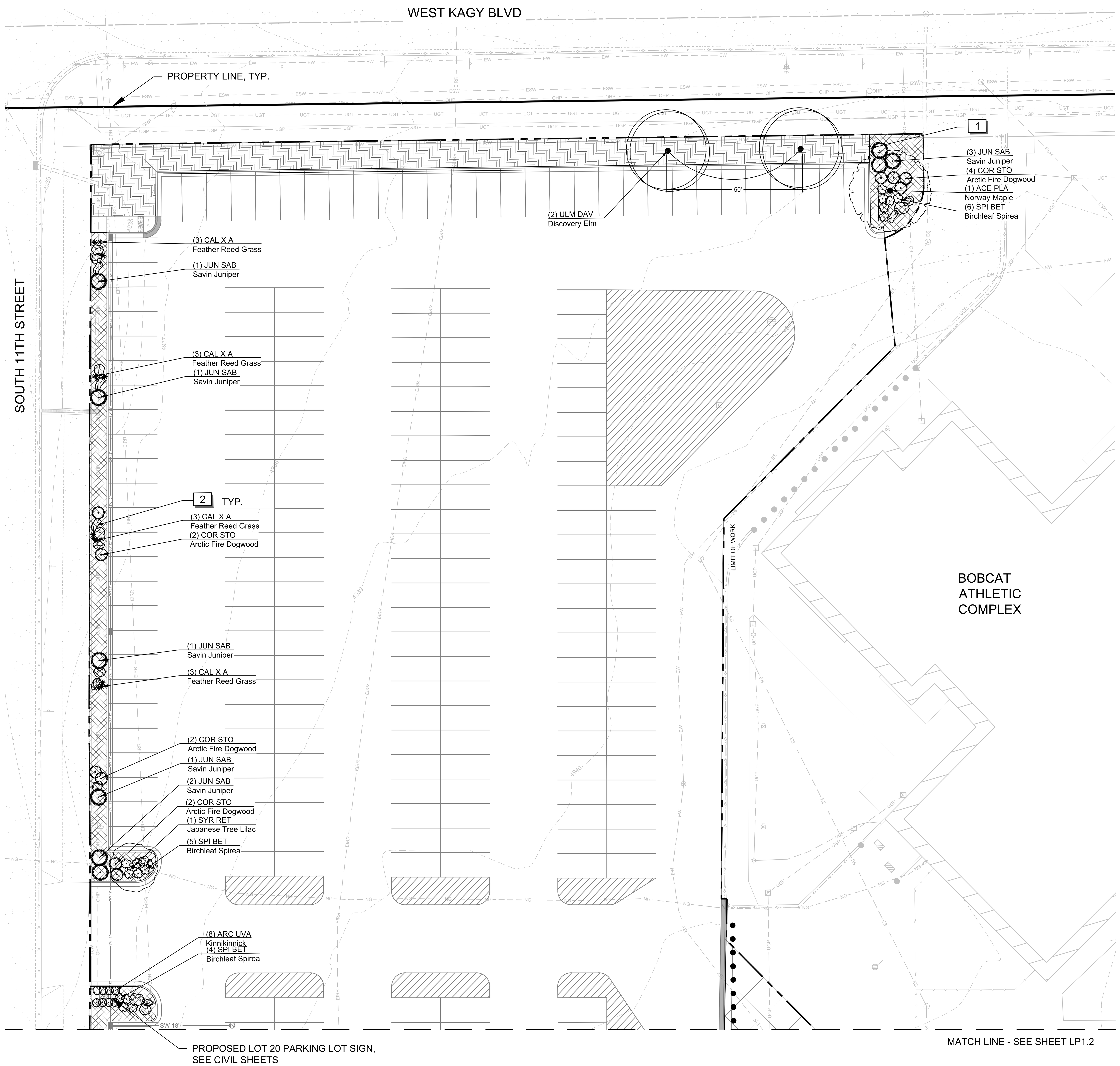
STATE OF MONTANA
CHRIS BRANDRIET
ARC-LAR-LIC-18449
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
PLANTING NOTES & SCHEDULE

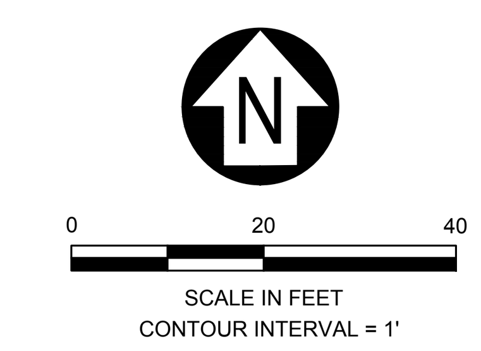
SHEET
LP0.1

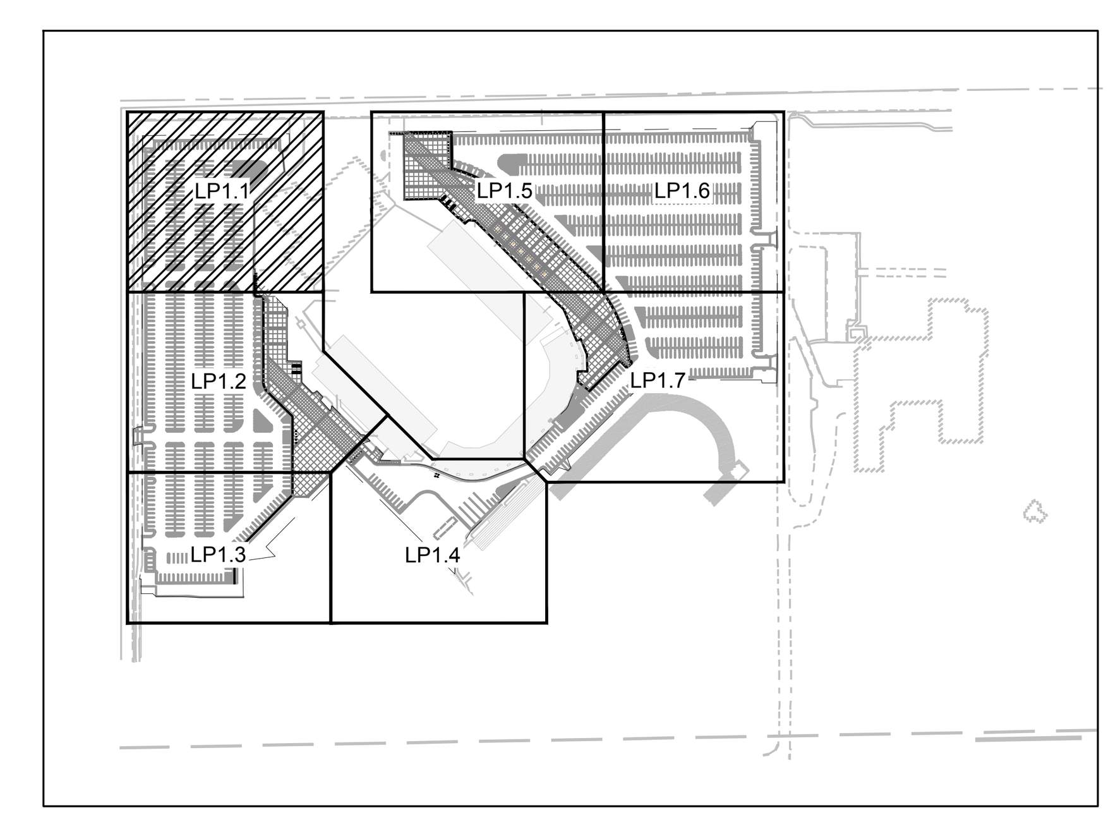
DATE
3-27-2024



GENERAL NOTES

1. SEE SHEET LP0.1 FOR PLANTING NOTES & SCHEDULE
2. SEE SHEET LP5.1 FOR PLANTING DETAILS
3. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING
4. RESTORATION: ALL PLANTED AREAS DISTURBED BY UTILITY INSTALLATION AND CONSTRUCTION SHALL BE RESTORED TO PRE-DISTURBANCE CONDITION OR BETTER, PER PLANS AND SPECIFICATIONS, AT NO ADDITIONAL COST TO THE OWNER.
5. EROSION CONTROL & STABILIZATION: SEE EROSION CONTROL PLAN.





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PHONE: 406.994.5413
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MSU Stadium Lots
Construction Documents

DJ&A
406.721.4320
220 W Lamme, Ste 1D
Bozeman, MT 59715
djanda.com

DRAWN BY: R.BAKKER
REVIEWED BY: C. BRANDRIET

REV.	DESCRIPTION	DATE

STATE OF MONTANA
CHRIS BRANDRIET
ARC-LAR-LIC-18449
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

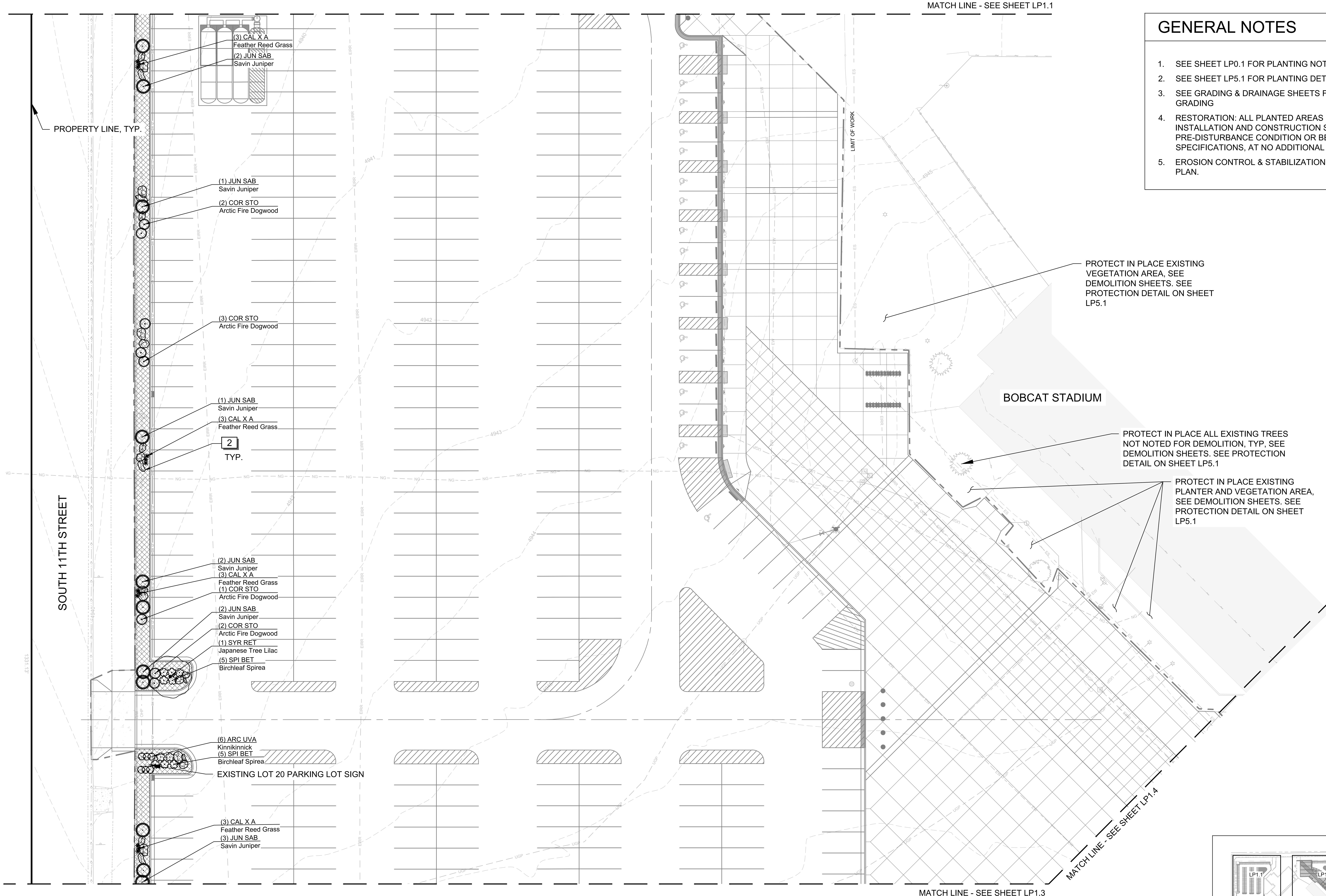
SHEET TITLE
PLANTING PLAN 1

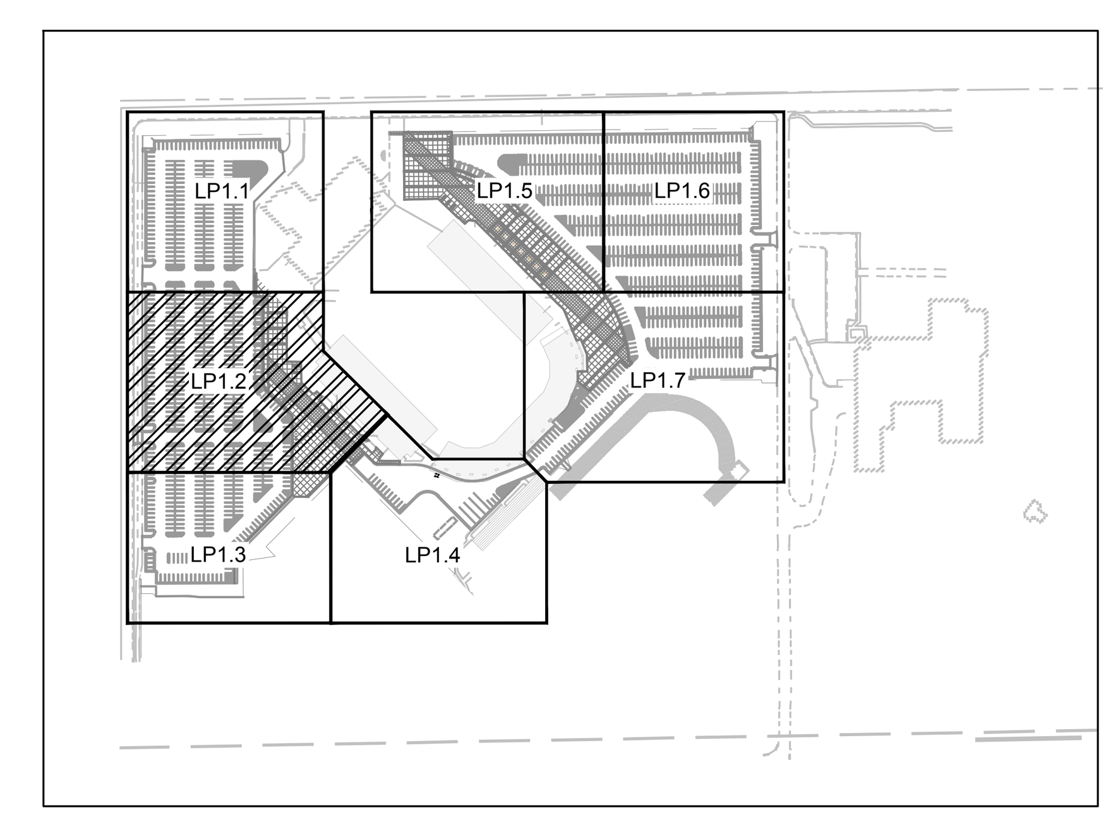
SHEET
LP1.1

DATE
3-27-2024

GENERAL NOTES

1. SEE SHEET LP0.1 FOR PLANTING NOTES & SCHEDULE
2. SEE SHEET LP5.1 FOR PLANTING DETAILS
3. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING
4. RESTORATION: ALL PLANTED AREAS DISTURBED BY UTILITY INSTALLATION AND CONSTRUCTION SHALL BE RESTORED TO PRE-DISTURBANCE CONDITION OR BETTER, PER PLANS AND SPECIFICATIONS, AT NO ADDITIONAL COST TO THE OWNER.
5. EROSION CONTROL & STABILIZATION: SEE EROSION CONTROL PLAN.





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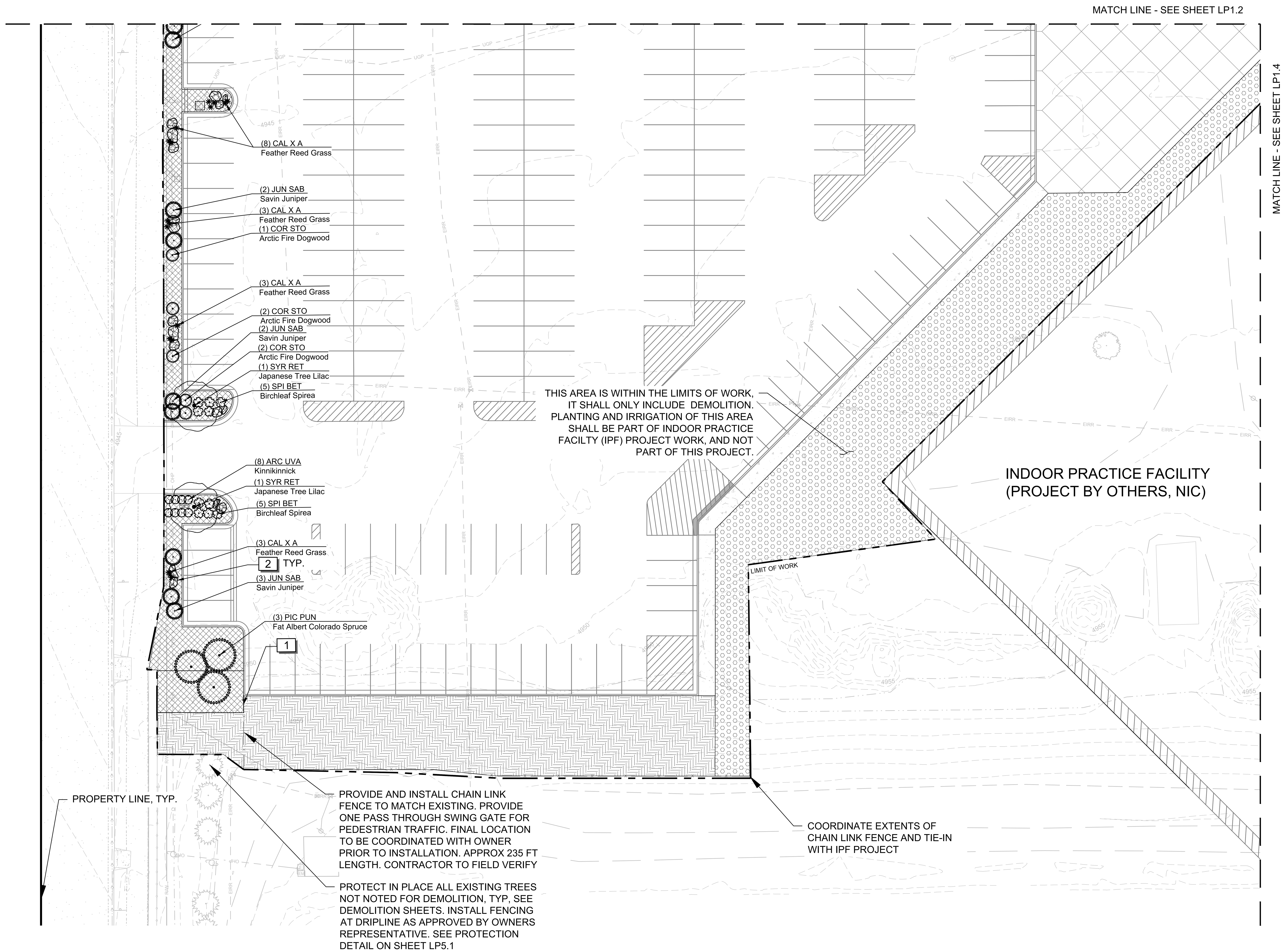
SHEET TITLE
PLANTING PLAN 2

SHEET
LP1.2

DATE
3-27-2024



GENERAL NOTES

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5. EROSION CONTROL & STABILIZATION: SEE EROSION CONTROL PLAN.
6. INDOOR PRACTICE FACILITY (IPF) PROJECT INFORMATION SHOWN FOR REFERENCE PURSPOSES ONLY, AND IS NOT INCLUDED IN THE CONTRACT (NIC) AS PART OF THIS PROJECT.

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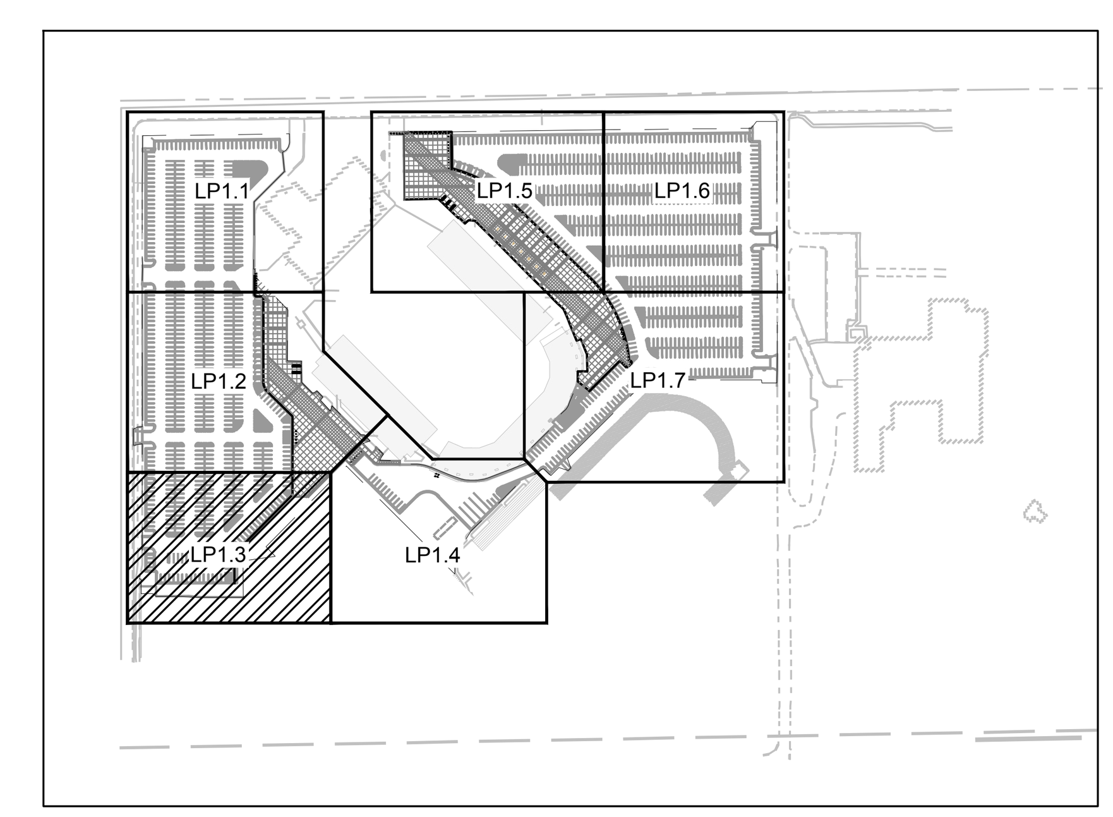
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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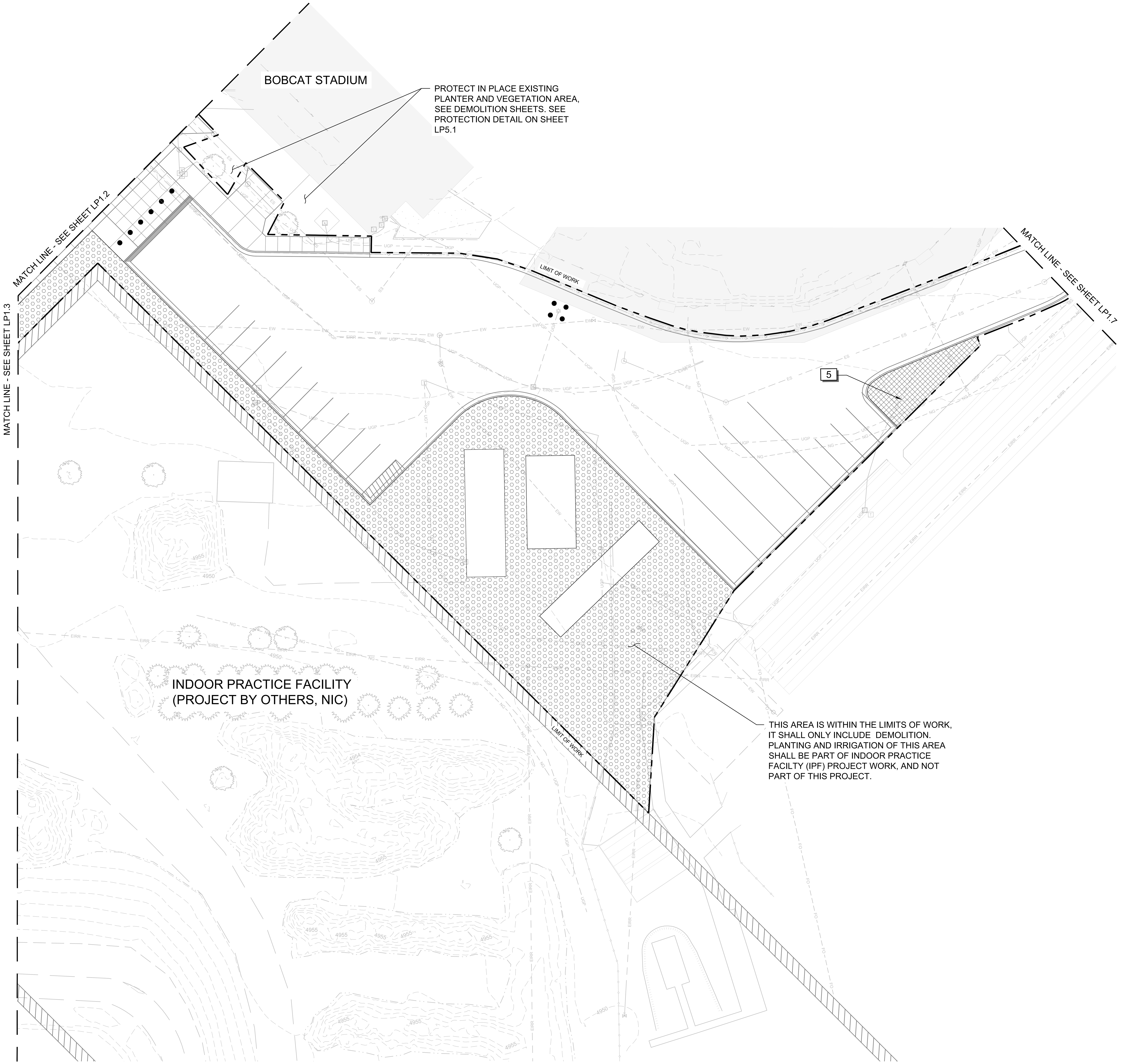
SHEET TITLE
PLANTING PLAN 3

SHEET
LP1.3

DATE
3-27-2024



GENERAL NOTES

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2. SEE SHEET LP5.1 FOR PLANTING DETAILS
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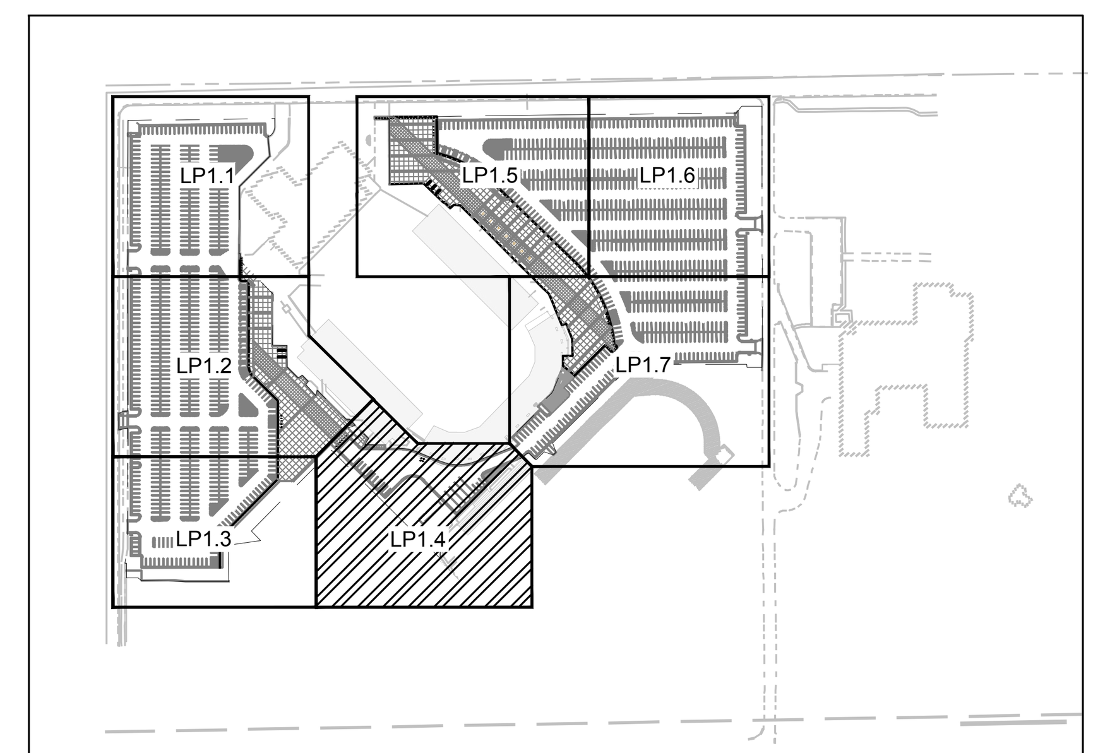

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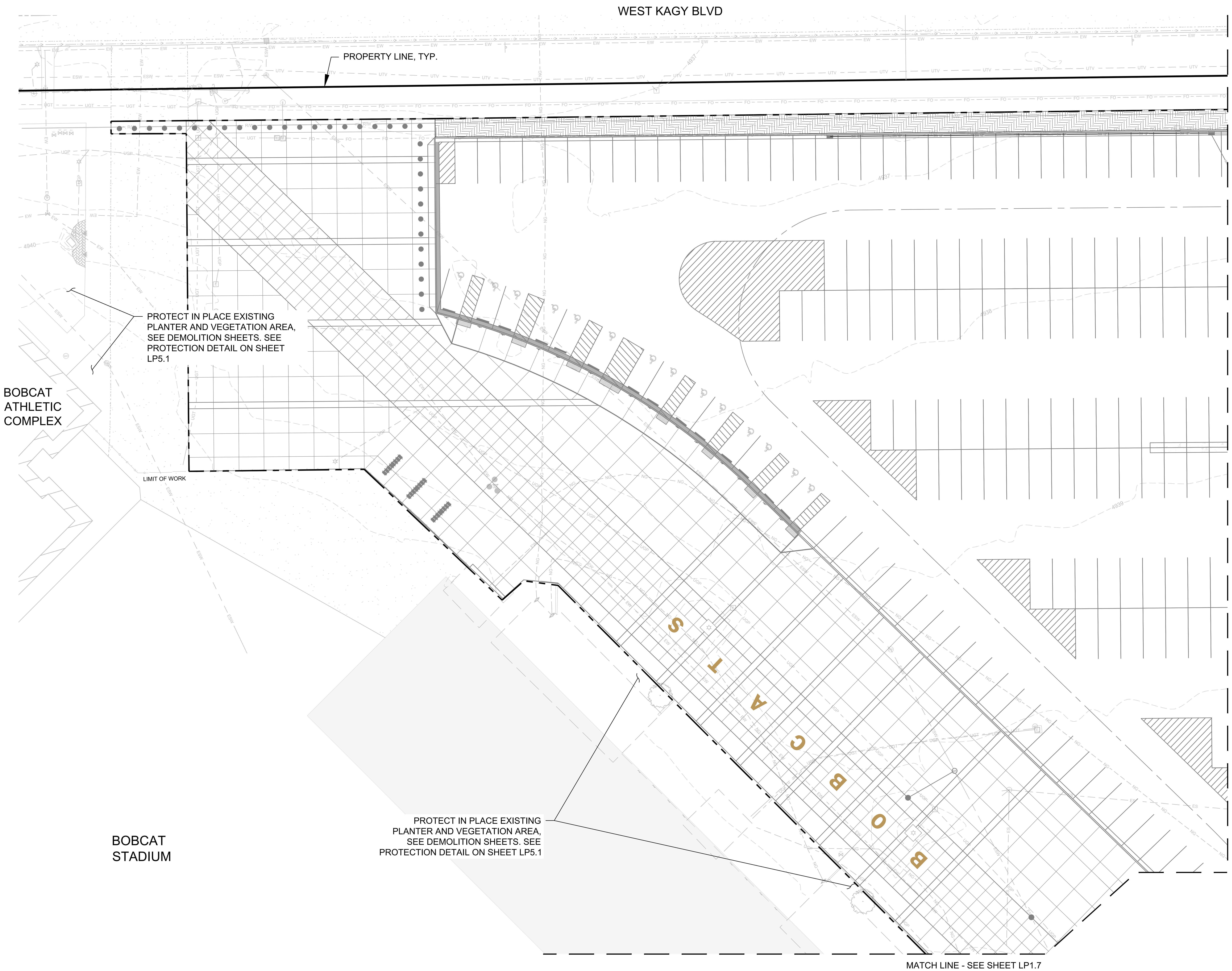
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
PLANTING PLAN 4

SHEET
LP1.4

DATE
3-27-2024



GENERAL NOTES

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5. EROSION CONTROL & STABILIZATION: SEE EROSION CONTROL PLAN.

N

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SCALE IN FEET
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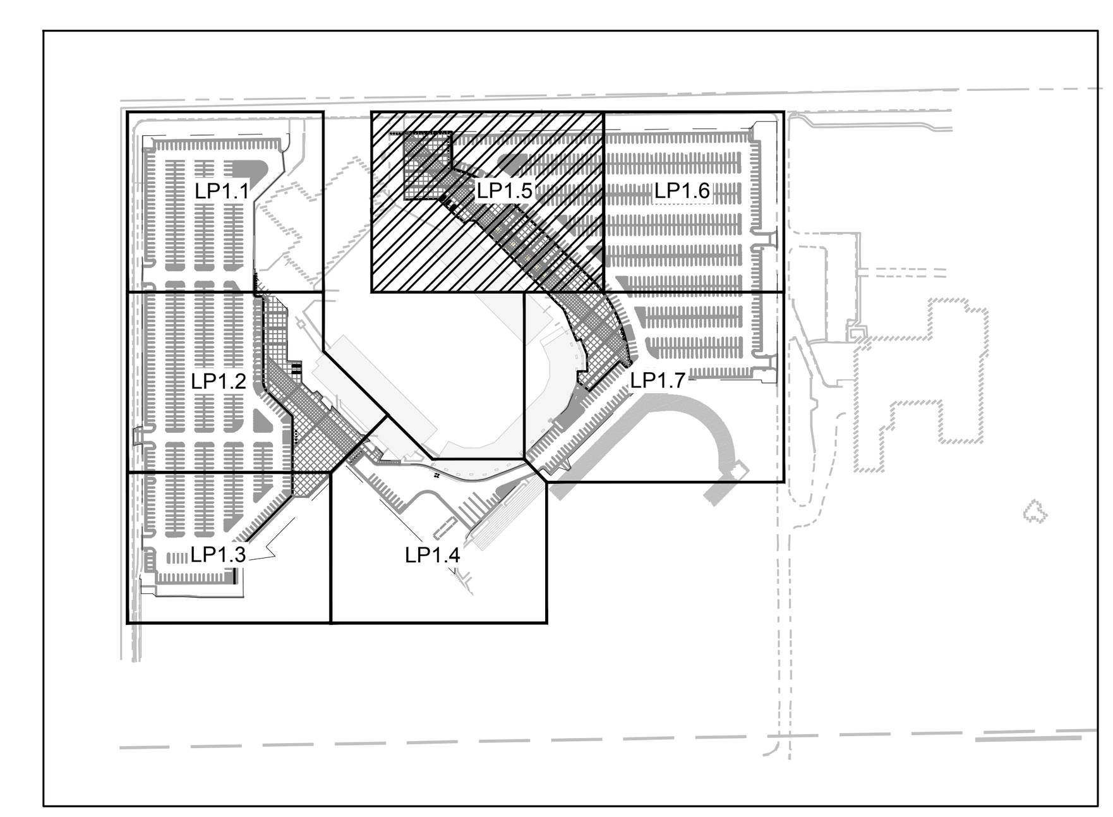

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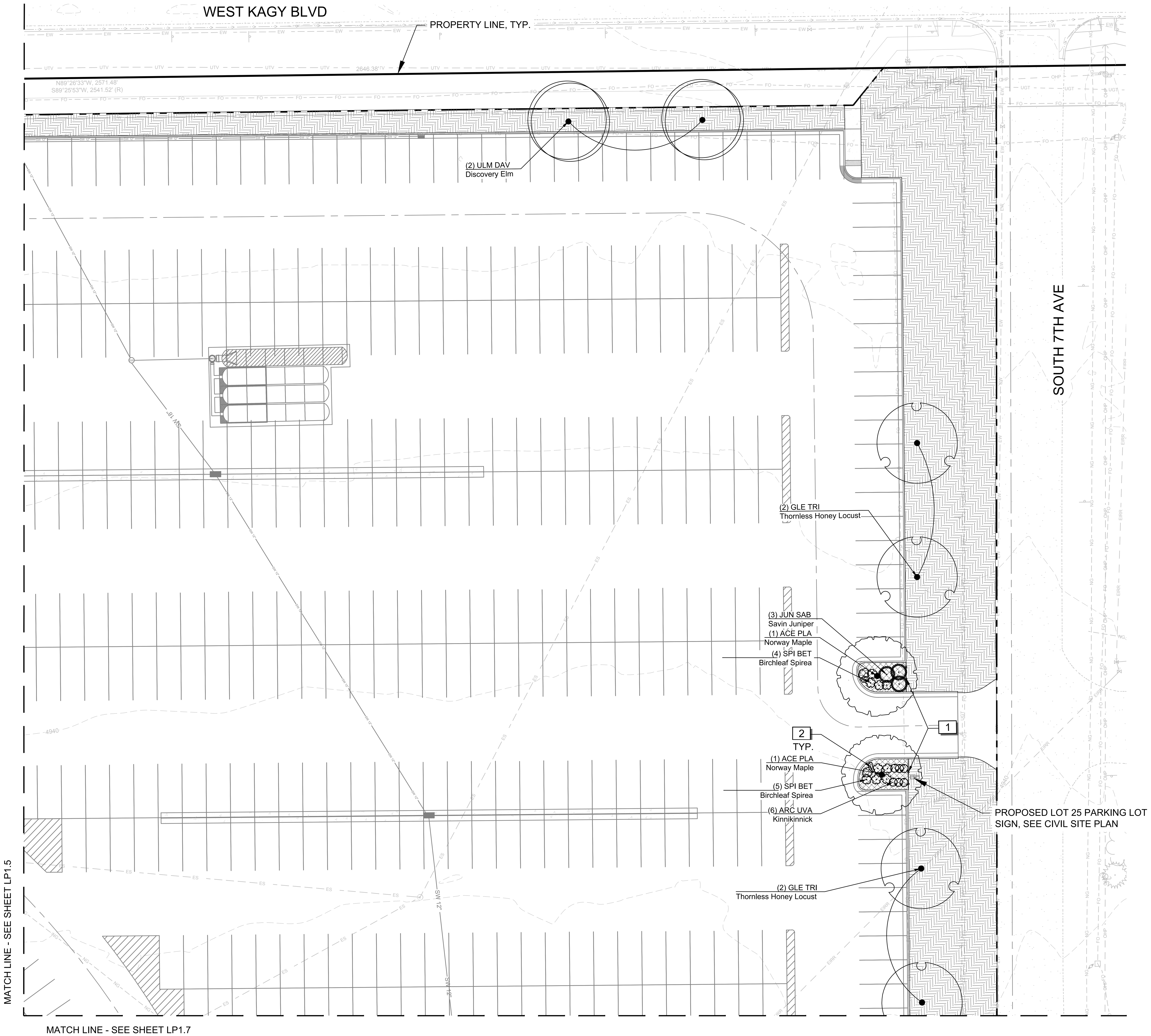
PPA#22-0012

SHEET TITLE
PLANTING PLAN 5

SHEET
LP1.5

DATE
3-27-2024



GENERAL NOTES

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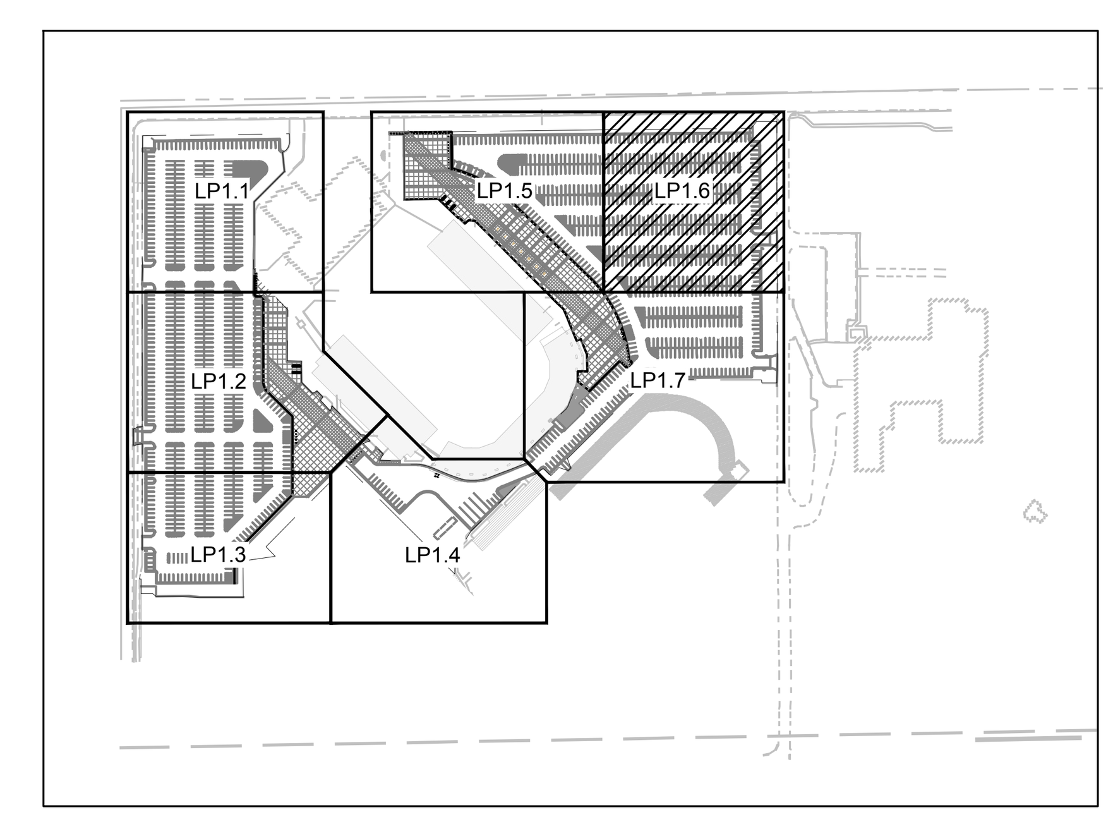

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LICENSED LANDSCAPE ARCHITECT

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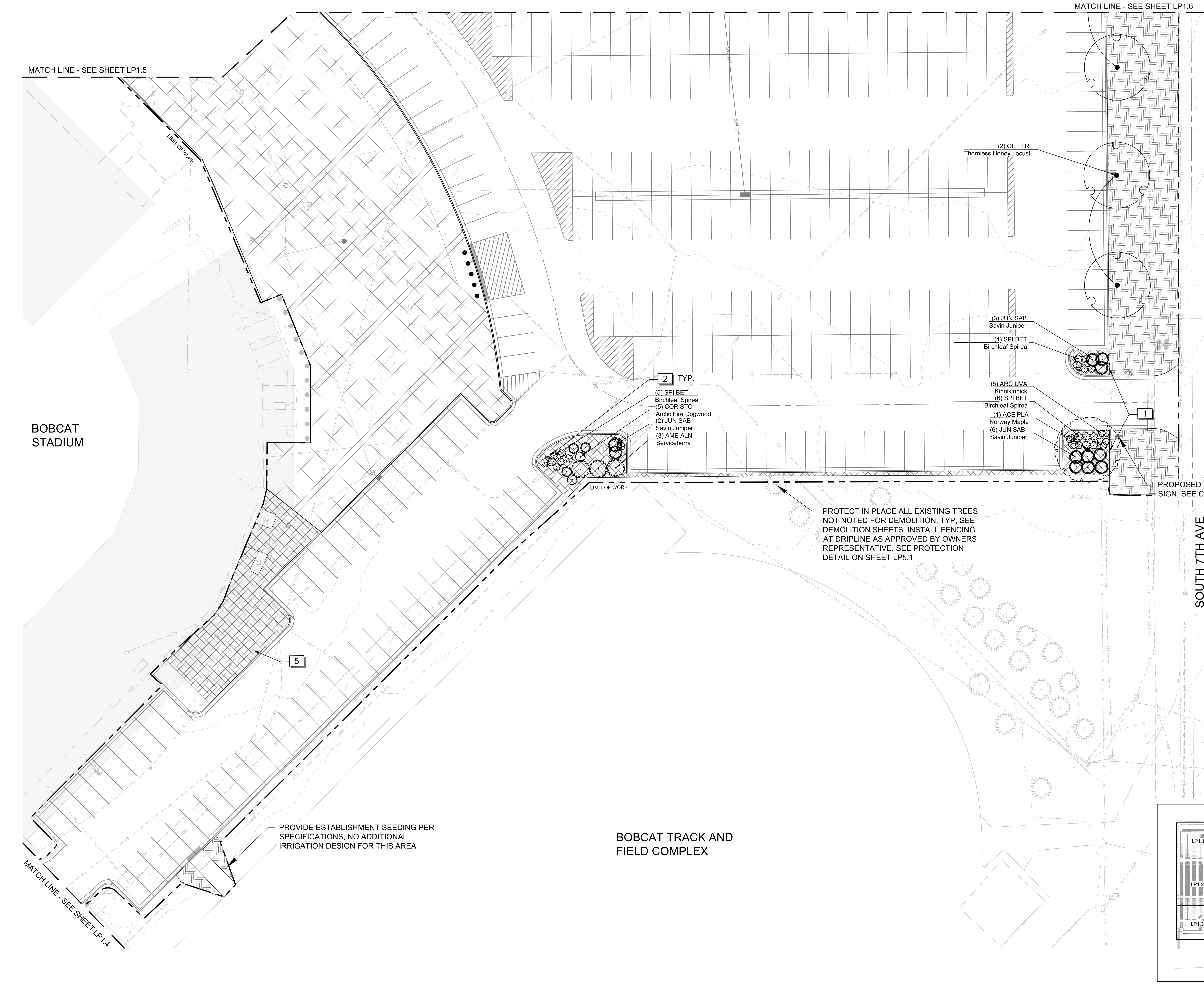
SHEET TITLE
PLANTING PLAN 6

SHEET
LP1.6

DATE
3-27-2024



GENERAL NOTES

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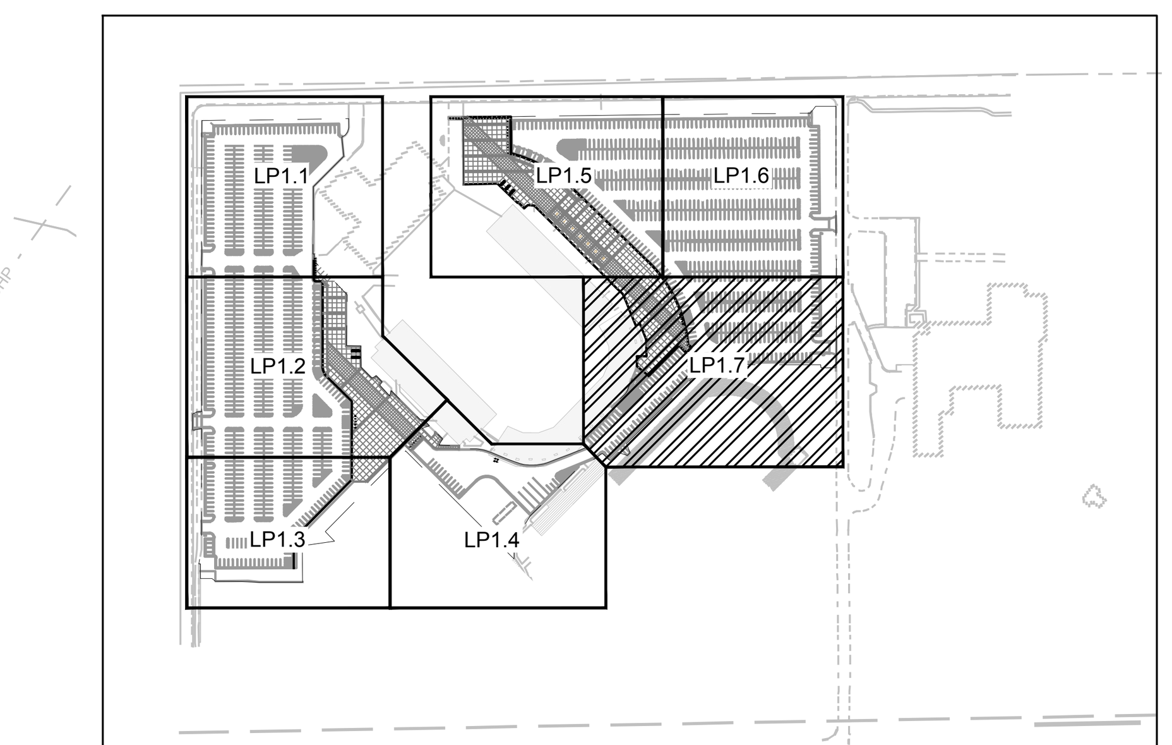

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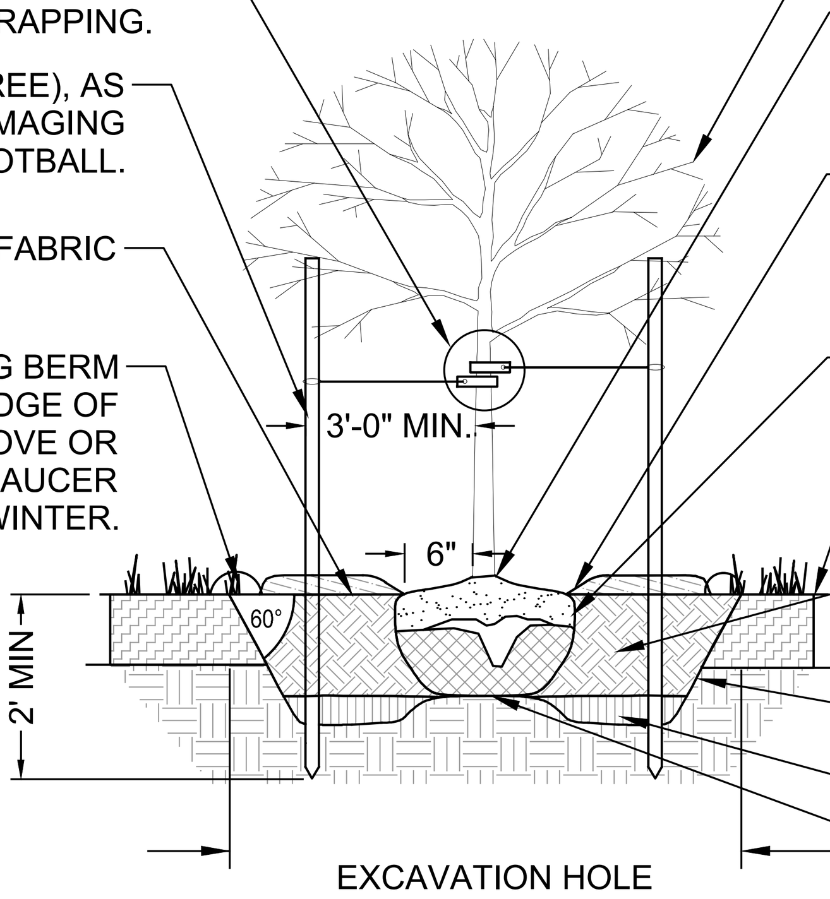
SHEET TITLE
PLANTING PLAN 7

SHEET
LP1.7

DATE
3-27-2024



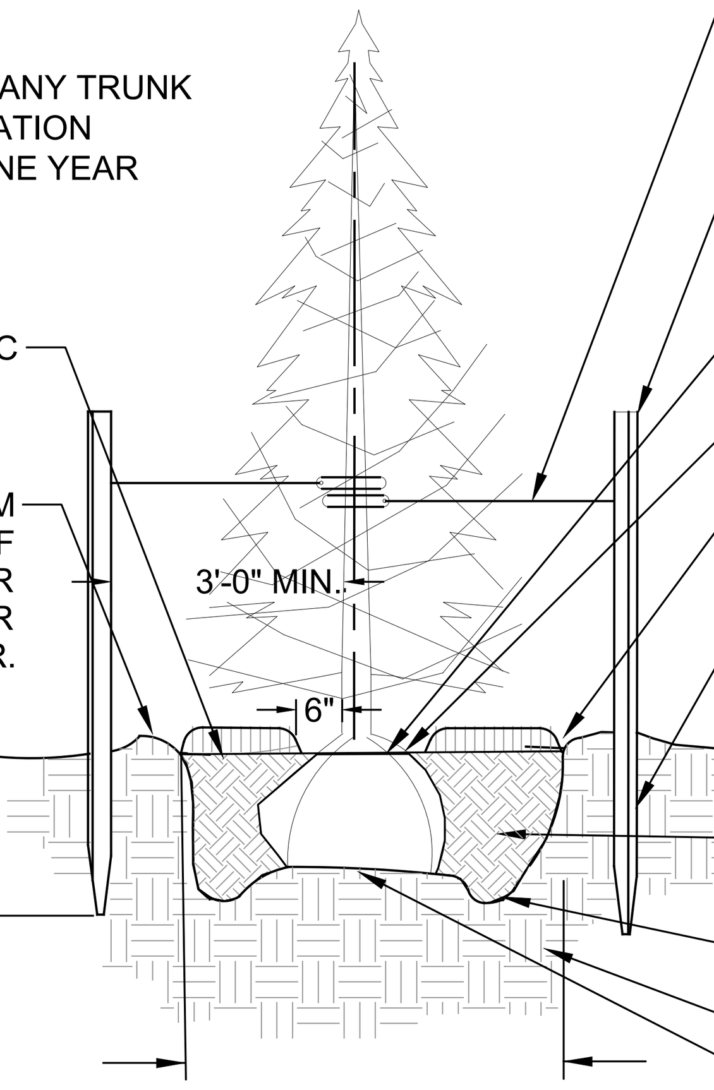
NOTE:

1. REMOVE ANY TRUNK STABILIZATION AFTER ONE YEAR

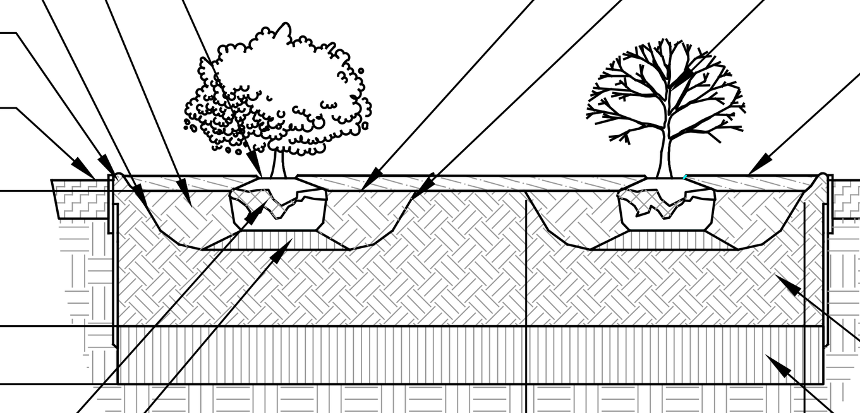
A LP5.1 DECIDUOUS TREE PLANTING DETAIL
SCALE NTS

NOTE:

1. REMOVE ANY TRUNK STABILIZATION AFTER ONE YEAR



B LP5.1 CONIFEROUS TREE PLANTING DETAIL
SCALE NTS



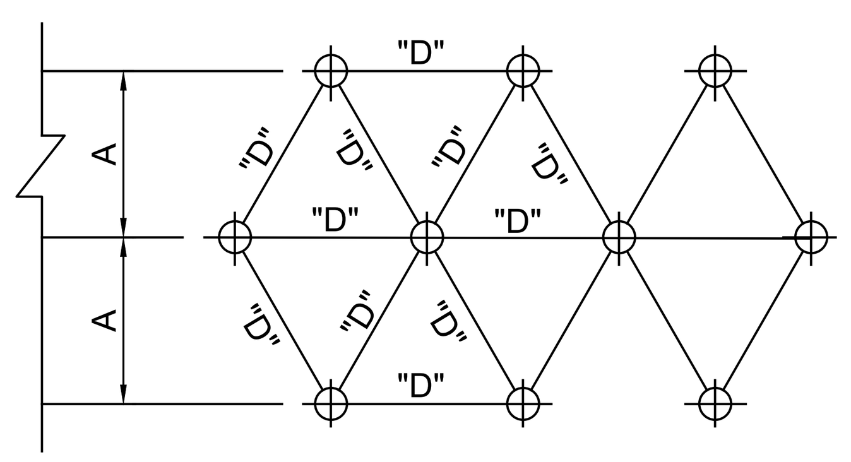
NOTES:

1. REMOVE ALL BURLAP, TWINE, ROPE AND BASKET FROM ROOT BALL OR CAREFULLY REMOVE CONTAINER.
2. IMPORTANT : ROOT FLARE ZONE MAY BE BELOW TOP OF BURLAPPED ROOT BALL. REMOVE ROOT BALL SOIL DOWN TO ROOT FLARE ZONE.

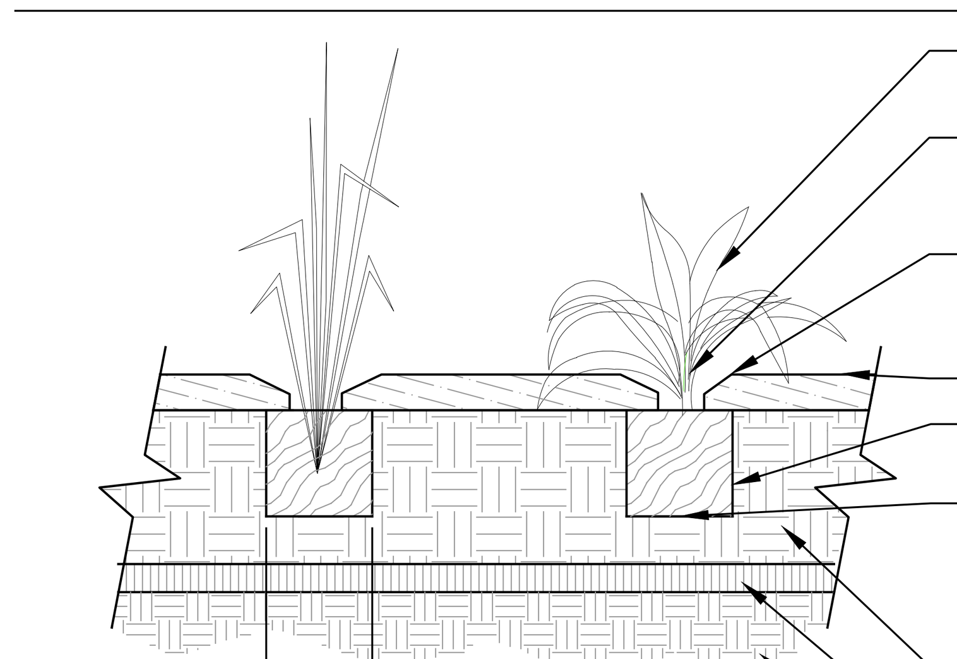
C LP5.1 SHRUB PLANTING DETAIL
SCALE NTS

FOR USE WITH ALL PLANT TYPES SPACED EQUIDISTANTLY

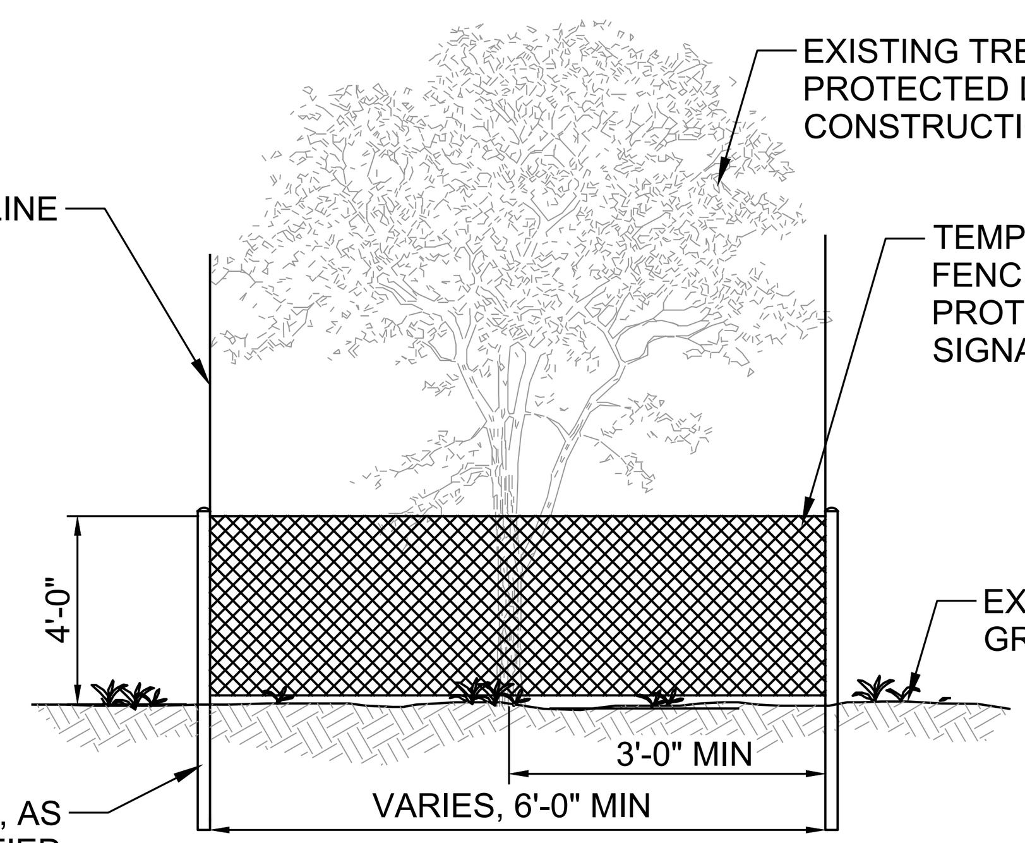
SPACING "D"	ROW "A"	NO. OF PLANTS	AREA UNIT
10" O.C.	8.66"	1.66	1 SQ. FT.
12" O.C.	10.4"	1.15	
15" O.C.	13.0"	7.38	10 SQ. FT.
18" O.C.	15.6"	5.12	
24" O.C.	20.8"	2.90	
30" O.C.	26.0"	1.85	
36" O.C.	30.0"	1.28	
4' O.C.	4.33"	4.61	100 SQ. FT.
6' O.C.	5.2"	3.20	
8' O.C.	6.93"	1.80	
10' O.C.	8.66"	1.16	



= PLANT
"A" = ROW SPACING
"D" = PLANT SPACING



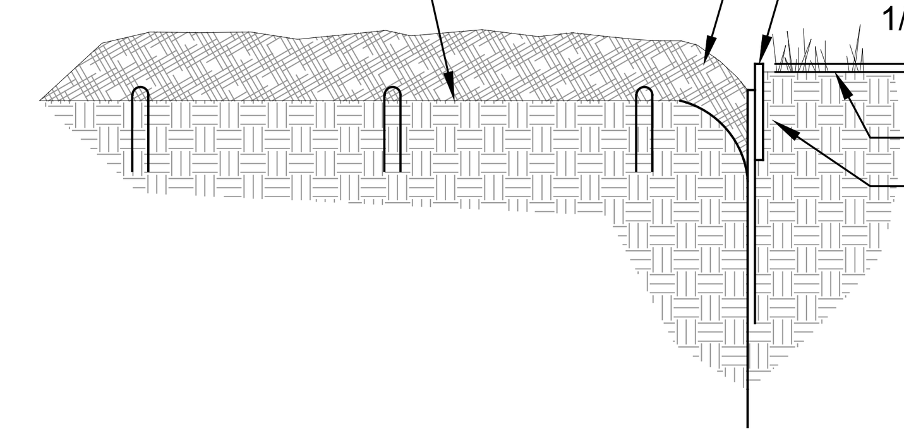
D LP5.1 PERENNIAL PLANTING DETAIL
SCALE NTS



TREE PROTECTION NOTES

1. REFER TO PLANTING PLAN SHEETS FOR APPROXIMATE TREE PROTECTION LOCATIONS. TREE PROTECTION LOCATION MAY BE ADJUSTED IN THE FIELD BY THE OWNER.
2. OUTSIDE EDGE OF TEMPORARY BARRIER SHALL BE PLACED AT DRIP-LINE OF TREE. TREE GUARDS MAY BE PLACED AROUND SINGLE TREES OR GROUPS OF TREES.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT PERIMETER OF FENCING REMAINS AT THE DRIP-LINE OF THE TREE AND THAT TREES ARE PROTECTED AND MAINTAINED IN HEALTHY CONDITION. AS SPECIFIED.
4. COORDINATE WITH OWNER'S ARBORIST FOR WORK WITHIN TREE PROTECTION AREAS.

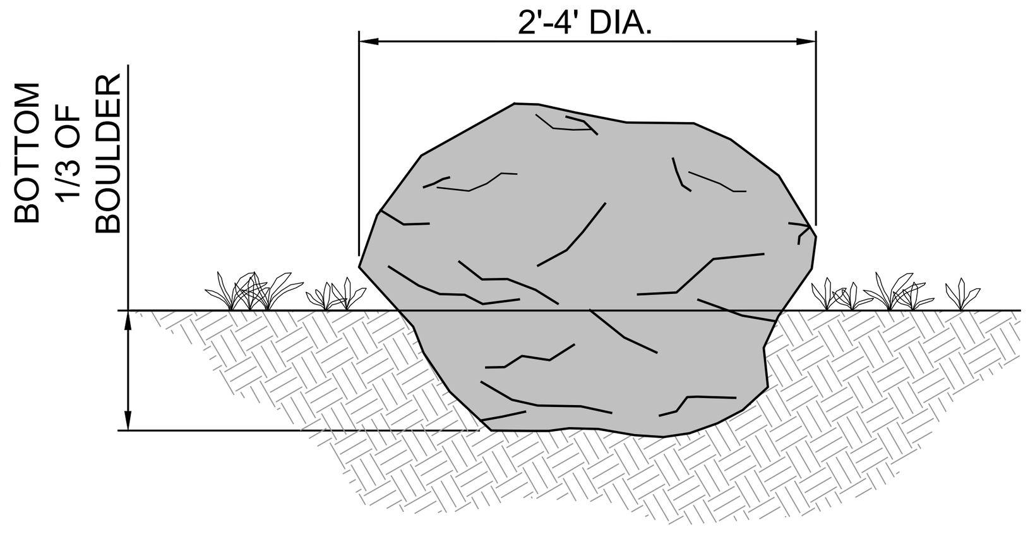
E LP5.1 TREE PROTECTION DETAIL
SCALE NTS



NOTES:

1. EDGER TO BE PERMALOC CLEANLINE, OR APPROVED EQUAL. COLOR BLACK. SIZE 5.5" HEIGHT
2. INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES
3. PERMALOC CLEANLINE AS MANUFACTURERED BY PERMALOCK CORPORATION, HOLLAND, MI. VISIT WWW.PERMALOC.COM
4. INSTALL WEED BARRIER FABRIC ONLY IN LOCATIONS AS SPECIFIED

F LP5.1 ALUMINUM EDGING DETAIL
SCALE NTS



NOTES:

1. CARE SHOULD BE TAKEN NOT TO DAMAGE EXPOSED SURFACES OF BOULDERS.
3. BOULDERS SHALL BE FIRMLY ANCHORED IN PLANTING BED, LEVEL, AND FREE OF SHARP EDGES.
4. REFER TO PLANS FOR BOULDER LOCATIONS.
5. FINAL BOULDER PLACEMENT LOCATIONS MAY BE ADJUSTED IN THE FIELD BY THE OWNER'S REPRESENTATIVE.

G LP5.1 LANDSCAPE BOULDER TYPICAL DETAIL
SCALE NTS

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REVIEWED BY: C.BRANDRIET

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CHRIS BRANDRIET ARC-LAR-LIC-18449 3.14.24 STATE OF MONTANA LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

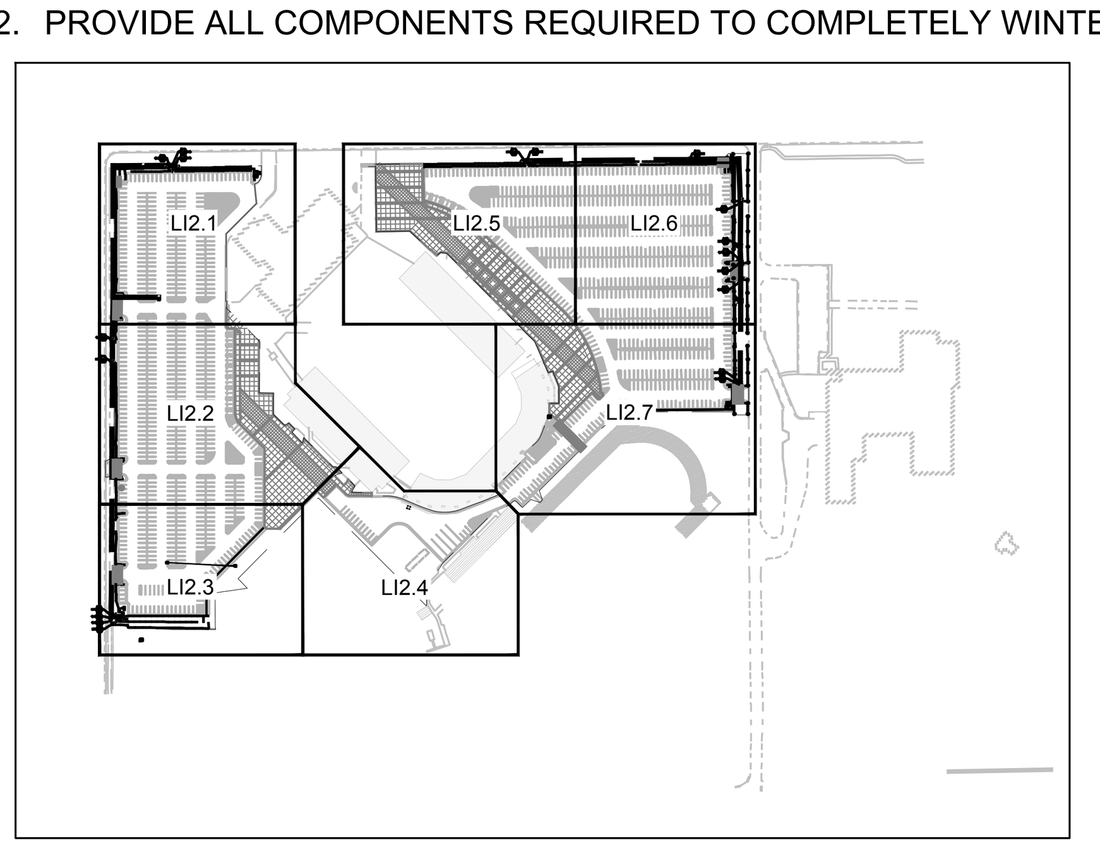
SHEET TITLE
PLANTING DETAILS

SHEET
LP5.1

DATE
3-27-2024

GENERAL IRRIGATION NOTES

1. ALL PLANTED BEDS AND TURF AREAS ON THE SITE SHALL BE SERVICED BY THE IRRIGATION SYSTEM. IRRIGATION SHALL UTILIZE BUBBLER SPRAY NOZZLES IN ALL PLANTING BEDS AND AT EACH TREE LOCATION AND SPRAY OR ROTAR HEADS FOR TURF LAWN AREAS.
2. INSTALL ALL EQUIPMENT PER MANUFACTURER SPECIFICATIONS.
3. IRRIGATION TO BE INSTALLED AS SHOWN, UNLESS OTHERWISE APPROVED BY THE OWNER. CONTRACTOR MAY SUBMIT ALTERNATIVE IRRIGATION DESIGN TO THE OWNER FOR CONSIDERATION AND APPROVAL. DESIGN SHALL BE REQUIRED TO MEET PROJECT SPECIFICATIONS AND RECEIVE WRITTEN APPROVAL PRIOR TO COMMENCING THE WORK.
4. COMPLETE ALL WORK TO CONFORM WITH LOCAL JURISDICTION LAWNS, LOCAL CODES AND REGULATIONS OF PROPOSED IRRIGATION COMPONENTS.
5. DRAWING INFORMATION: THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE OWNER OF ANY DISCREPANCIES BETWEEN THE UTILITY OR PLANTING PLANS AND THE IRRIGATION PLAN. IF CONTRACTOR FAILS TO NOTIFY THE OWNER AND MAKES CHANGES TO THE IRRIGATION SYSTEM DESIGN, CONTRACTOR ASSUMES ALL COSTS AND LIABILITIES ASSOCIATED WITH THOSE FIELD CHANGES. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS.
6. SYSTEM PRESSURE: DJ&A HAS BEEN TOLD THAT THE STATIC WATER PRESSURE AT THE POC WILL BE 77 PSI. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY PRESSURE PRIOR TO COMMENSING ANY CONSTRUCTION AND NOTIFY THE OWNER OF ANY VARIANCE FROM STATED PRESSURE IMMEDIATELY. WRITTEN DOCUMENTATION OF PRESSURE TEST AND RESULTS SHALL BE PROVIDED TO OWNER AT CONSTRUCTION ONSET. VERIFY ALL EXISTING CONDITIONS AND WATER PRESSURE PRIOR TO THE START OF WORK. IF CONTRACTOR FAILS TO FIELD VERIFY PRESSURE AND/OR NOTIFY OWNER OF ANY VARIATIONS FROM THIS PRESSURE, CONTRACTOR ASSUMES ALL CONSTRUCTION AND ENGINEERING COSTS ASSOCIATED WITH SYSTEM MODIFICATIONS REQUIRED TO ACCOMMODATE ACTUAL SITE PRESSURE. THIS SYSTEM HAS BEEN DESIGNED FOR A REQUIRED STATIC PRESSURE OF 65 PSI MINIMUM.
7. EQUIPMENT INSTALLATION: IT IS THE INTENT OF THIS DESIGN THAT ALL IRRIGATION EQUIPMENT BE INSTALLED WITHIN PROPERTY LIMITS AND WITHIN LANDSCAPED AREAS. ANY EQUIPMENT OTHER THAN SLEEVING THAT CONTAINS PIPE OR WIRES SHOWN OUTSIDE OF THESE LIMITS IS SHOWN IN THAT LOCATION FOR GRAPHICAL CLARITY ONLY. LOCATIONS OF MAINS, CONTROL CONDUIT, LATERALS, VALVES AND HEADS ARE DIAGRAMMATIC. INSTALLATION SHALL BE ADJUSTED TO MEET SITE SPECIFIC CONDITIONS.
8. VALVE BOXES: ALL VALVE BOXES SHALL BE INSTALLED A MINIMUM OF 4 FT FROM EDGE OF ANY PAVED SURFACES, WHERE FEASIBLE. VALVE BOXES SHALL BE GROUPED AND INSTALLED IN GREENSPACE LAWN AREAS NOT SUBJECT TO REGULAR FOOT TRAFFIC WHEN POSSIBLE. BOXES INSTALLED IN OPEN TURF AREAS SHALL BE KEPT TO EDGES AND STAKED FOR REVIEW IF ALONG HIGH TRAFFIC AREAS. ALL VALVE BOXES SHALL BE PLACED A MINIMUM OF 3 FT FROM THE CENTERLINE OF ANY DRAINAGE SWALE. ALL VALVE BOXES WITHIN PAVEMENT SHALL BE TIER 15 RATED BOXES FOR HEAVY DUTY NON-DELIBERATE TRAFFIC. BOX LID COLOR SHALL BE AS SPECIFIED. ALL BOXES SHALL BE INSTALLED WITH THE LID TO BE FLUSH WITH GRADE AND IN AN ORDERLY MANNER. PROVIDE SIZE AND BRICK SUPPORTS AS DETAILED.
9. ALL TURF ROTAR AND SPRAY HEADS SHALL BE PLACED TO HAVE HEAD-TO-HEAD COVERAGE.
10. POP UP HEIGHT OF SPRAY HEADS TO BE AS FOLLOWS: 4" IN TURF AND PLANTING ZONES. ROTOR HEIGHT TO BE 4". MPR ROTAR NOZZLE SIZE IS INDICATED ON DRAWING FOR EACH ROTAR.
11. TREE BUBBLERS SHALL BE INSTALLED AT EDGE OF ROOTBALL, AT A MINIMUM OF 1 FT OFF OF THE TRUNK, WHICHEVER IS GREATER, AS INDICATED ON THE PLANS. A MINIMUM OF 2 BUBBLER HEADS MUST BE SET AT EACH TREE. A MINIMUM OF 1 BUBBLER HEAD MUST BE SET AT EACH SHRUB AT THE EDGE OF ROOTBALL. PROVIDE BUBBLER HEADS TO PERENNIALS AS INDICATED ON THE PLANS.
12. UNLABELED PIPING: ALL UNLABELED LATERAL PIPING SHALL BE 1-1/2" MINIMUM, ALL MAINLINE PIPE SHALL BE 2" MINIMUM.
13. SLEEVING: ALL IRRIGATION LINES UNDER PAVING MUST BE INSTALLED IN A PIPE SLEEVE. ALL SLEEVING UNDER PAVED SURFACES SHOWN ON PLANS IS BY CONTRACTOR UNLESS OTHERWISE NOTED. SLEEVING SHALL BE INSTALLED IN THE SIZES AND QUANTITIES SHOWN ON PLANS OR AS INDICATED IN THE SPECIFICATIONS. WHERE SLEEVES ARE SHOWN, BUT NOT LABELED, FOLLOW THE SPECIFICATIONS. ALL MAINLINE, CONTROL WIRES, AND DRIP LINES UNDER PAVED SURFACES ARE TO BE INSTALLED IN SLEEVING. SLEEVING UNDER HARDSCAPE SHALL EXTEND MIN 12" BEYOND BACK OF CURB OR PAVEMENT EDGE. CONTRACTOR SHALL COORDINATE LOCATIONS OF SLEEVING WITH ALL UTILITIES, FOOTINGS, AND ANY OTHER UNDERGROUND CONSTRUCTION.
   - 13.1. COORDINATE SLEEVE PLACEMENT DURING GRADING/PAVING WORK (CIVIL).
   - 13.2. CONTRACTOR SHALL PROVIDE THREE SLEEVES UNDER ALL PAVED CROSSING LOCATIONS: ONE 6-INCH FOR IRRIGATION PIPING, ONE 4-INCH FOR ELECTRICAL POWER, AND ONE ADDITIONAL EMPTY 4-INCH PVC, AS INDICATED ON THE PLANS AND SPECIFICATIONS.
14. ALL PVC MAINLINES PIPES TO HAVE A MINIMUM COVER OF 18"; ALL LATERAL PIPE TO HAVE A MINIMUM OF 12" COVER. WHERE LOCATED IN SLEEVES UNDER PAVEMENT, PROVIDE MINIMUM COVERAGE OF 18". SEE TRENCHING DETAIL FOR ADDITIONAL INFORMATION.
15. ALL MAINLINE PIPES SHALL BE TRACEABLE. PROVIDE TRACER WIRE AS SPECIFIED WHERE MAINLINE NOT LOCATED IN THE SAME TRENCH AS THE CONTROL WIRE.
16. NO ROCKS, BOULDERS, OR OTHER EXTRANEOUS MATERIALS SHALL BE USED IN BACKFILLING TRENCHES.
17. PROVIDE ELECTRICAL HOOK-UP FOR IRRIGATION CONTROLLER. WORK IS TO BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
18. CONTRACTOR SHALL FINE TUNE THE IRRIGATION SYSTEM TO ENSURE THAT ALL IRRIGATION WATER DOES NOT OVERSPRAY ONTO ADJACENT HARDSCAPE, BUILDINGS, OR OTHER NON-PLANTED AREAS BY ADJUSTING NOZZLE DIRECTION AND NOZZLE RADIUS.
19. ALL LINES TO BE THROUGHLY FLUSHED BEFORE INSTALLATION OF SPRINKLER HEADS.
20. IRRIGATION CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS AND PREPARE CONTROLLER CHART TO THE OWNER. DRAWINGS AND CHARTS MUST BE COMPLETED AND APPROVED PRIOR TO FINAL ACCEPTACE OF THE IRRIGATION SYSTEM BY THE OWNER, AS SPECIFIED.
21. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
22. PROVIDE ALL COMPONENTS REQUIRED TO COMPLETELY WINTERIZE THE IRRIGATION SYSTEM, WHETHER OR NOT SPECIFIED HEREIN.



KEY MAP

NTS

REFER TO SHEET

LI0.1	IRRIGATION NOTES & SCHEDULE
LI1.1	IRRIGATION DEMOLITION PLAN
LI2.0	IRRIGATION MAINLINE PLAN
LI2.1 - LI2.7	IRRIGATION PLANS
LI5.1 - LI5.2	IRRIGATION DETAILS

IRRIGATION SCHEDULE WEST SIDE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
Q T H F	RAIN BIRD RD-04-S-P30-F-N 10 SERIES MPR TURF SPRAY, 4IN. POP-UP, WITH 30 PSI IN-STEM PRESSURE REGULATION, SEAL-A-MATIC CHECK VALVE, FLOW-SHIELD TECHNOLOGY, AND NON-POTABLE COVER (PURPLE CAP). 1/2IN. NPT FEMALE THREADED INLET.	61	30
Q T H TQ F	RAIN BIRD RD-04-S-P30-F-N 12 SERIES MPR TURF SPRAY, 4IN. POP-UP, WITH 30 PSI IN-STEM PRESSURE REGULATION, SEAL-A-MATIC CHECK VALVE, FLOW-SHIELD TECHNOLOGY, AND NON-POTABLE COVER (PURPLE CAP). 1/2IN. NPT FEMALE THREADED INLET.	29	30
Q T H TQ F	RAIN BIRD RD-04-S-P30-F-N 15 SERIES MPR TURF SPRAY, 4IN. POP-UP, WITH 30 PSI IN-STEM PRESSURE REGULATION, SEAL-A-MATIC CHECK VALVE, FLOW-SHIELD TECHNOLOGY, AND NON-POTABLE COVER (PURPLE CAP). 1/2IN. NPT FEMALE THREADED INLET.	19	30
1401 1402 1404 1408	RAIN BIRD 1804-PRS-NP-1400 FLOOD FLOOD BUBBLER 4IN. POPUP WITH PRESSURE REGULATING DEVICE AND NON-POTABLE PURPLE CAP.	135	20

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-NP-HAN 1-1/2" 1IN., 1-1/2IN., 2IN., 3IN. DURABLE CHLORINE-RESISTANT REMOTE CONTROL VALVE FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE.	5
	RAIN BIRD PESB-NP-HAN-PRS-D 1-1/2" 1IN., 1-1/2IN., 2IN., 3IN. DURABLE CHLORINE-RESISTANT REMOTE CONTROL VALVE FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, PURPLE FLOW CONTROL HANDLE, AND PRESSURE REGULATOR MODULE.	4
	NIBCO TI-8 GATE VALVE BRASS GATE MANUAL CONTROL VALVE WITH SCREW-IN BONNET, SAME SIZE AS MAINLINE PIPE DIAMETER AT VALVE LOCATION.	4
M01	RAIN BIRD PESB-NP-HAN (MASTER VALVE) 2" 1IN., 1-1/2IN., 2IN., 3IN. DURABLE CHLORINE-RESISTANT MASTER VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE.	1
C1	EXISTING RAINBIRD CONTROLLER EXISTING IRRIGATION CONTROLLER WILL BE USED. CONNECT TO EXISTING CONTROLLER AT THIS APPROXIMATE LOCATION. FIELD VERIFY EQUIPMENT CAPACITY FOR EXPANSION PRIOR TO BEGINNING THE WORK.	1
XX	RAIN BIRD FS-200-P 2IN. FLOW SENSOR, PLASTIC PVC MODEL. SUGGESTED OPERATING RANGE 10.0 GPM TO 200.0 GPM. SIZE FOR FLOW NOT ACCORDING TO PIPE SIZE. COMPATIBLE W/ RAIN BIRD: ESP-LXIVM(P) | LXD | LXME2(P) | ME3, OR CONTROLLERS ACCEPTING CUSTOM K-FACTOR AND OFFSET. INSTALL IN RAIN BIRD VALVE BOX.	1
F	RAIN BIRD LCRBY-S 1.5" 1.5IN., AND 2IN. MODELS: 1.5IN. = LCRBY150S, 2IN. = LCRBY200S. THE 120 MESH (130 MICRON) SCREEN FILTERS ARE EASY TO CLEAN AND PROVIDE RELIABLE FILTRATION.	4
XX	POINT OF CONNECTION 2" TIE ONTO EXISTING 2" MAINLINE STUB, CONNECTED TO 16" HDPE MAINLINE AT THIS APPROXIMATE LOCATION. INSTALL ONE XX VALVE, AND PROVIDE 2" HDPE MAINLINE AND EXTEND AS SHOWN. CONNECT TO CONTROLLER LOCATION IN EXISTING PUMPHOUSE.	1
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 1 1/2"	2,630 L.F.
	IRRIGATION MAINLINE: PVC SCHEDULE 40 2"	1,180 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40 MINIMUM COVER DEPTH OF 18". PROVIDE 3 PVC PIPE SLEEVES AT EACH PAVEMENT CROSSING UNLESS OTHERWISE NOTED. SEE NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION	312.3 L.F.

IRRIGATION SCHEDULE EAST SIDE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
Q T H F	RAIN BIRD RD-04-S-P30-F-N 8 SERIES MPR TURF SPRAY, 4IN. POP-UP, WITH 30 PSI IN-STEM PRESSURE REGULATION, SEAL-A-MATIC CHECK VALVE, FLOW-SHIELD TECHNOLOGY, AND NON-POTABLE COVER (PURPLE CAP). 1/2IN. NPT FEMALE THREADED INLET.	177	30
1401 1402 1404 1408	RAIN BIRD 1804-PRS-NP-1400 FLOOD FLOOD BUBBLER 4IN. POPUP WITH PRESSURE REGULATING DEVICE AND NON-POTABLE PURPLE CAP.	74	20

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	RADIUS
30	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 30 TURF ROTOR, 4IN. POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH CHECK VALVE, IN-STEM PRESSURE REGULATOR, AND NON POTABLE PURPLE CAP.	22	45	30'
35	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 35 TURF ROTOR, 4IN. POP-UP, PLASTIC RISER, WITH FLOW SHUT-OFF DEVICE. MATCHED PRECIPITATION ROTOR (MPR NOZZLE), ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH CHECK VALVE, IN-STEM PRESSURE REGULATOR, AND NON POTABLE PURPLE CAP.	16	45	35'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PESB-NP-HAN 1-1/2" 1IN., 1-1/2IN., 2IN., 3IN. DURABLE CHLORINE-RESISTANT REMOTE CONTROL VALVE FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE.	7
	RAIN BIRD PESB-NP-HAN-PRS-D 1-1/2" 1IN., 1-1/2IN., 2IN., 3IN. DURABLE CHLORINE-RESISTANT REMOTE CONTROL VALVE FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, PURPLE FLOW CONTROL HANDLE, AND PRESSURE REGULATOR MODULE.	3
	NIBCO TI-8 GATE VALVE BRASS GATE MANUAL CONTROL VALVE WITH SCREW-IN BONNET, SAME SIZE AS MAINLINE PIPE DIAMETER AT VALVE LOCATION.	2
M02	RAIN BIRD PESB-NP-HAN (MASTER VALVE) 2" 1IN., 1-1/2IN., 2IN., 3IN. DURABLE CHLORINE-RESISTANT MASTER VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY, AND PURPLE FLOW CONTROL HANDLE.	1
C2	EXISTING RAINBIRD CONTROLLER EXISTING IRRIGATION CONTROLLER WILL BE USED. CONNECT TO EXISTING CONTROLLER AT THIS APPROXIMATE LOCATION. FIELD VERIFY EQUIPMENT CAPACITY FOR EXPANSION PRIOR TO BEGINNING THE WORK.	1
XX	RAIN BIRD FS-200-P 2IN. FLOW SENSOR, PLASTIC PVC MODEL. SUGGESTED OPERATING RANGE 10.0 GPM TO 200.0 GPM. SIZE FOR FLOW NOT ACCORDING TO PIPE SIZE. COMPATIBLE W/ RAIN BIRD: ESP-LXIVM(P) | LXD | LXME2(P) | ME3, OR CONTROLLERS ACCEPTING CUSTOM K-FACTOR AND OFFSET. INSTALL IN RAIN BIRD VALVE BOX.	1
F	RAIN BIRD LCRBY-S 1.5" 1.5IN., AND 2IN. MODELS: 1.5IN. = LCRBY150S, 2IN. = LCRBY200S. THE 120 MESH (130 MICRON) SCREEN FILTERS ARE EASY TO CLEAN AND PROVIDE RELIABLE FILTRATION.	3
XX	POINT OF CONNECTION 4"	1
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40	0.2 L.F.
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 1 1/2"	3,497 L.F.
	IRRIGATION MAINLINE: PVC SCHEDULE 40 2"	932.6 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40 MINIMUM COVER DEPTH OF 18". PROVIDE 3 PVC PIPE SLEEVES AT EACH PAVEMENT CROSSING UNLESS OTHERWISE NOTED. SEE NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION	334.3 L.F.

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DRAWN BY: R.BAKKER
REVIEWED BY: C.BRANDRIET

REV.	DESCRIPTION	DATE

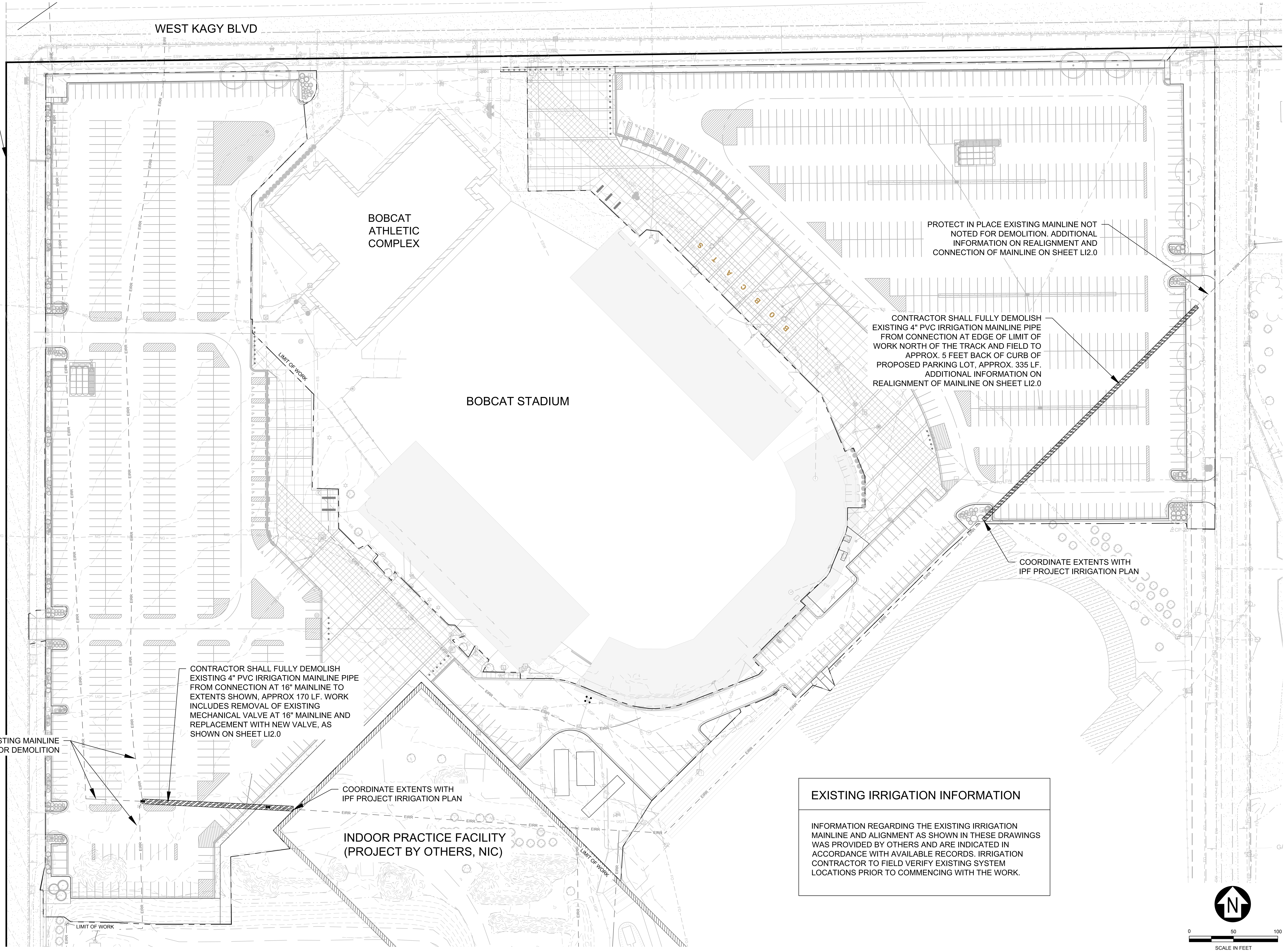
STATE OF MONTANA CHRIS BRANDRIET ARC-LAR-LIC-18448 3.14.24 LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
IRRIGATION NOTES & SCHEDULE

SHEET
LI0.1

DATE
3-27-2024



WEST KAGY BLVD
PROPERTY LINE, TYP.
SOUTH 11TH STREET
BOBCAT ATHLETIC COMPLEX
BOBCAT STADIUM
BOBCATS
LIMIT OF WORK
PROTECT IN PLACE EXISTING MAINLINE NOT NOTED FOR DEMOLITION. ADDITIONAL INFORMATION ON REALIGNMENT AND CONNECTION OF MAINLINE ON SHEET LI2.0
CONTRACTOR SHALL FULLY DEMOLISH EXISTING 4" PVC IRRIGATION MAINLINE PIPE FROM CONNECTION AT EDGE OF LIMIT OF WORK NORTH OF THE TRACK AND FIELD TO APPROX. 5 FEET BACK OF CURB OF PROPOSED PARKING LOT, APPROX. 335 LF. ADDITIONAL INFORMATION ON REALIGNMENT OF MAINLINE ON SHEET LI2.0
COORDINATE EXTENTS WITH IPF PROJECT IRRIGATION PLAN
CONTRACTOR SHALL FULLY DEMOLISH EXISTING 4" PVC IRRIGATION MAINLINE PIPE FROM CONNECTION AT 16" MAINLINE TO EXTENTS SHOWN, APPROX 170 LF. WORK INCLUDES REMOVAL OF EXISTING MECHANICAL VALVE AT 16" MAINLINE AND REPLACEMENT WITH NEW VALVE, AS SHOWN ON SHEET LI2.0
PROTECT IN PLACE EXISTING MAINLINE NOT NOTED FOR DEMOLITION
COORDINATE EXTENTS WITH IPF PROJECT IRRIGATION PLAN
INDOOR PRACTICE FACILITY (PROJECT BY OTHERS, NIC)
N
0 50 100
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

EXISTING IRRIGATION INFORMATION

INFORMATION REGARDING THE EXISTING IRRIGATION MAINLINE AND ALIGNMENT AS SHOWN IN THESE DRAWINGS WAS PROVIDED BY OTHERS AND ARE INDICATED IN ACCORDANCE WITH AVAILABLE RECORDS. IRRIGATION CONTRACTOR TO FIELD VERIFY EXISTING SYSTEM LOCATIONS PRIOR TO COMMENCING WITH THE WORK.

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DRAWN BY: R.BAKKER
REVIEWED BY: C. BRANDRIET

REV.	DESCRIPTION	DATE

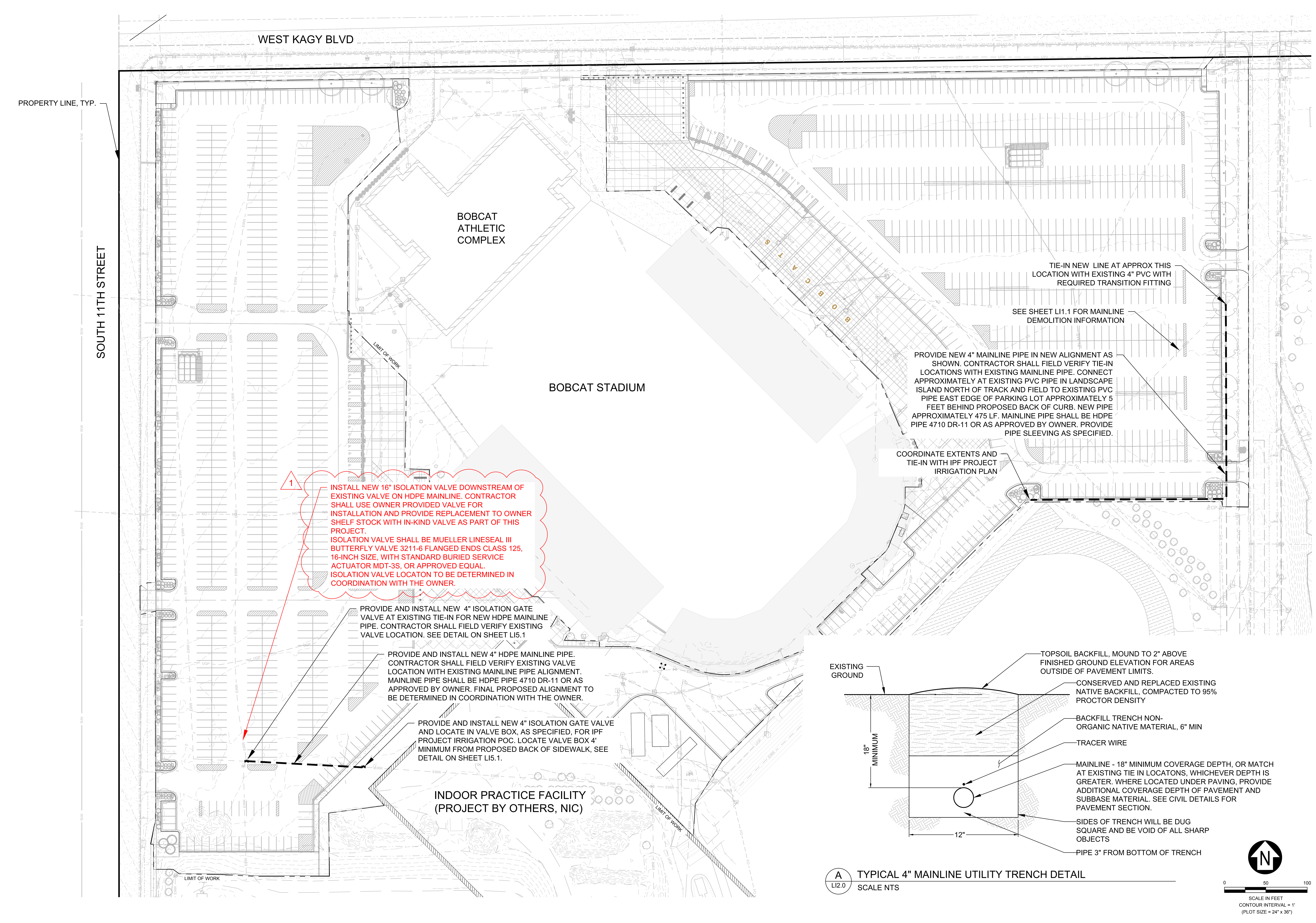
STATE OF MONTANA — CHRIS BRANDRIET — ARC-LAR-LIC-18445 — 3.14.24 — LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
IRRIGATION DEMOLITION PLAN

SHEET
LI1.1

DATE
3-27-2024


WEST KAGY BLVD
PROPERTY LINE, TYP.
SOUTH 11TH STREET
BOBCAT ATHLETIC COMPLEX
BOBCAT STADIUM
LIMIT OF WORK
BOBCATS
TIE-IN NEW LINE AT APPROX THIS LOCATION WITH EXISTING 4" PVC WITH REQUIRED TRANSITION FITTING
SEE SHEET LI1.1 FOR MAINLINE DEMOLITION INFORMATION
PROVIDE NEW 4" MAINLINE PIPE IN NEW ALIGNMENT AS SHOWN. CONTRACTOR SHALL FIELD VERIFY TIE-IN LOCATIONS WITH EXISTING MAINLINE PIPE. CONNECT APPROXIMATELY AT EXISTING PVC PIPE IN LANDSCAPE ISLAND NORTH OF TRACK AND FIELD TO EXISTING PVC PIPE EAST EDGE OF PARKING LOT APPROXIMATELY 5 FEET BEHIND PROPOSED BACK OF CURB. NEW PIPE APPROXIMATELY 475 LF. MAINLINE PIPE SHALL BE HDPE PIPE 4710 DR-11 OR AS APPROVED BY OWNER. PROVIDE PIPE SLEEVING AS SPECIFIED.
COORDINATE EXTENTS AND TIE-IN WITH IPF PROJECT IRRIGATION PLAN
1
INSTALL NEW 16" ISOLATION VALVE DOWNSTREAM OF EXISTING VALVE ON HDPE MAINLINE. CONTRACTOR SHALL USE OWNER PROVIDED VALVE FOR INSTALLATION AND PROVIDE REPLACEMENT TO OWNER SHELF STOCK WITH IN-KIND VALVE AS PART OF THIS PROJECT.
ISOLATION VALVE SHALL BE MUELLER LINESEAL III BUTTERFLY VALVE 3211-6 FLANGED ENDS CLASS 125, 16-INCH SIZE, WITH STANDARD BURIED SERVICE ACTUATOR MDT-3S, OR APPROVED EQUAL.
ISOLATION VALVE LOCATON TO BE DETERMINED IN COORDINATION WITH THE OWNER.
PROVIDE AND INSTALL NEW 4" ISOLATION GATE VALVE AT EXISTING TIE-IN FOR NEW HDPE MAINLINE PIPE. CONTRACTOR SHALL FIELD VERIFY EXISTING VALVE LOCATION. SEE DETAIL ON SHEET LI5.1
PROVIDE AND INSTALL NEW 4" HDPE MAINLINE PIPE. CONTRACTOR SHALL FIELD VERIFY EXISTING VALVE LOCATION WITH EXISTING MAINLINE PIPE ALIGNMENT. MAINLINE PIPE SHALL BE HDPE PIPE 4710 DR-11 OR AS APPROVED BY OWNER. FINAL PROPOSED ALIGNMENT TO BE DETERMINED IN COORDINATION WITH THE OWNER.
PROVIDE AND INSTALL NEW 4" ISOLATION GATE VALVE AND LOCATE IN VALVE BOX, AS SPECIFIED, FOR IPF PROJECT IRRIGATION POC. LOCATE VALVE BOX 4' MINIMUM FROM PROPOSED BACK OF SIDEWALK, SEE DETAIL ON SHEET LI5.1.
INDOOR PRACTICE FACILITY
(PROJECT BY OTHERS, NIC)
EXISTING GROUND
TOPSOIL BACKFILL, MOUND TO 2" ABOVE FINISHED GROUND ELEVATION FOR AREAS OUTSIDE OF PAVEMENT LIMITS.
CONSERVED AND REPLACED EXISTING NATIVE BACKFILL, COMPACTED TO 95% PROCTOR DENSITY
BACKFILL TRENCH NON-ORGANIC NATIVE MATERIAL, 6" MIN
TRACER WIRE
MAINLINE - 18" MINIMUM COVERAGE DEPTH, OR MATCH AT EXISTING TIE IN LOCATONS, WHICHEVER DEPTH IS GREATER. WHERE LOCATED UNDER PAVING, PROVIDE ADDITIONAL COVERAGE DEPTH OF PAVEMENT AND SUBBASE MATERIAL. SEE CIVIL DETAILS FOR PAVEMENT SECTION.
SIDES OF TRENCH WILL BE DUG SQUARE AND BE VOID OF ALL SHARP OBJECTS
PIPE 3" FROM BOTTOM OF TRENCH
18" MINIMUM
12"
A
LI2.0
TYPICAL 4" MAINLINE UTILITY TRENCH DETAIL
SCALE NTS
N
0 50 100
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

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REVIEWED BY: C. BRANDRIET

REV.	DESCRIPTION	DATE
1	ADDENDUM #1	03-27-24

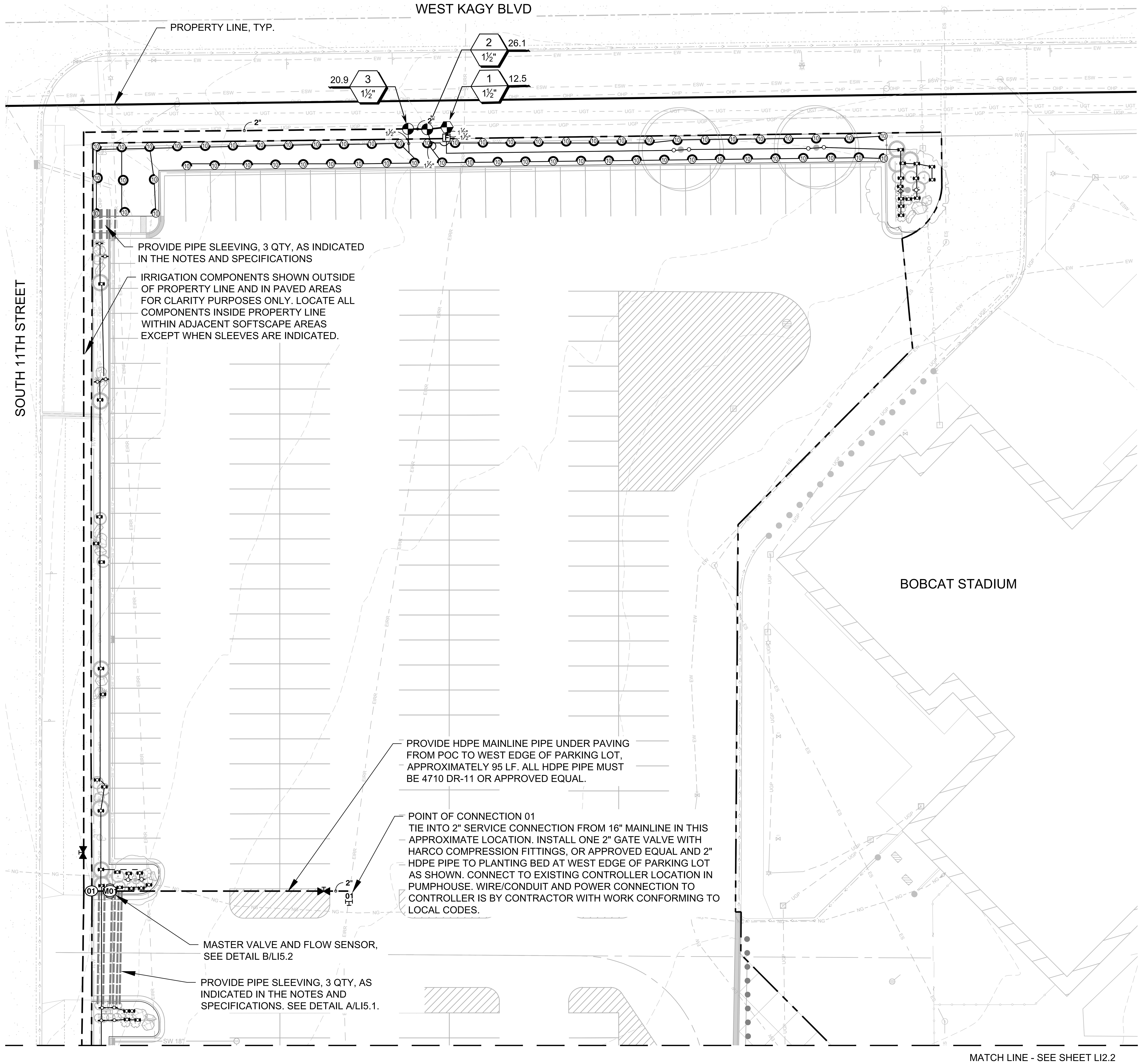
STATE OF MONTANA
CHRIS BRANDRIET
ARC-LAR-LIC-18440
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
IRRIGATION MAINLINE PLAN

SHEET
LI2.0

DATE
3-27-2024



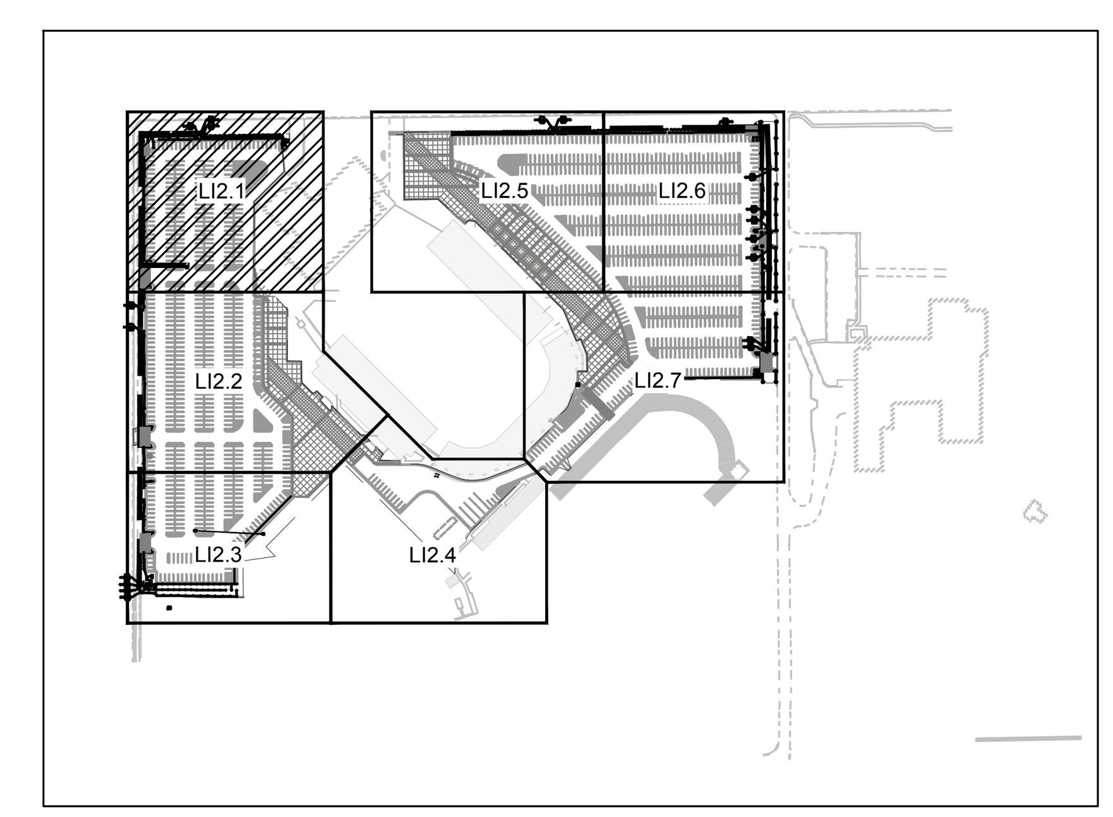
MATCH LINE - SEE SHEET LI2.2

GENERAL NOTES

1. SEE SHEET LI0.1 FOR IRRIGATION NOTES AND SCHEDULE.
2. SEE SHEET LI5.1 FOR IRRIGATION DETAILS.
3. SEE SHEET LP1.1 - LP1.7 FOR PLANTING PLAN.
4. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING.
5. SEE CIVIL SITE PLAN FOR ADDITIONAL SITE LAYOUT AND DIMENSIONING, INCLUDING INFORMATION ON PARKING LOT IMPROVEMENTS, CURB ALIGNMENT, PAVEMENT STRIPING, AND SIGNAGE.
6. INDOOR PRACTICE FACILITY (IPF) PROJECT INFORMATION SHOWN FOR REFERENCE PURSPOSES ONLY, AND IS NOT INCLUDED IN THE CONTRACT (NIC) AS PART OF THIS PROJECT.

N

0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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REV.	DESCRIPTION	DATE

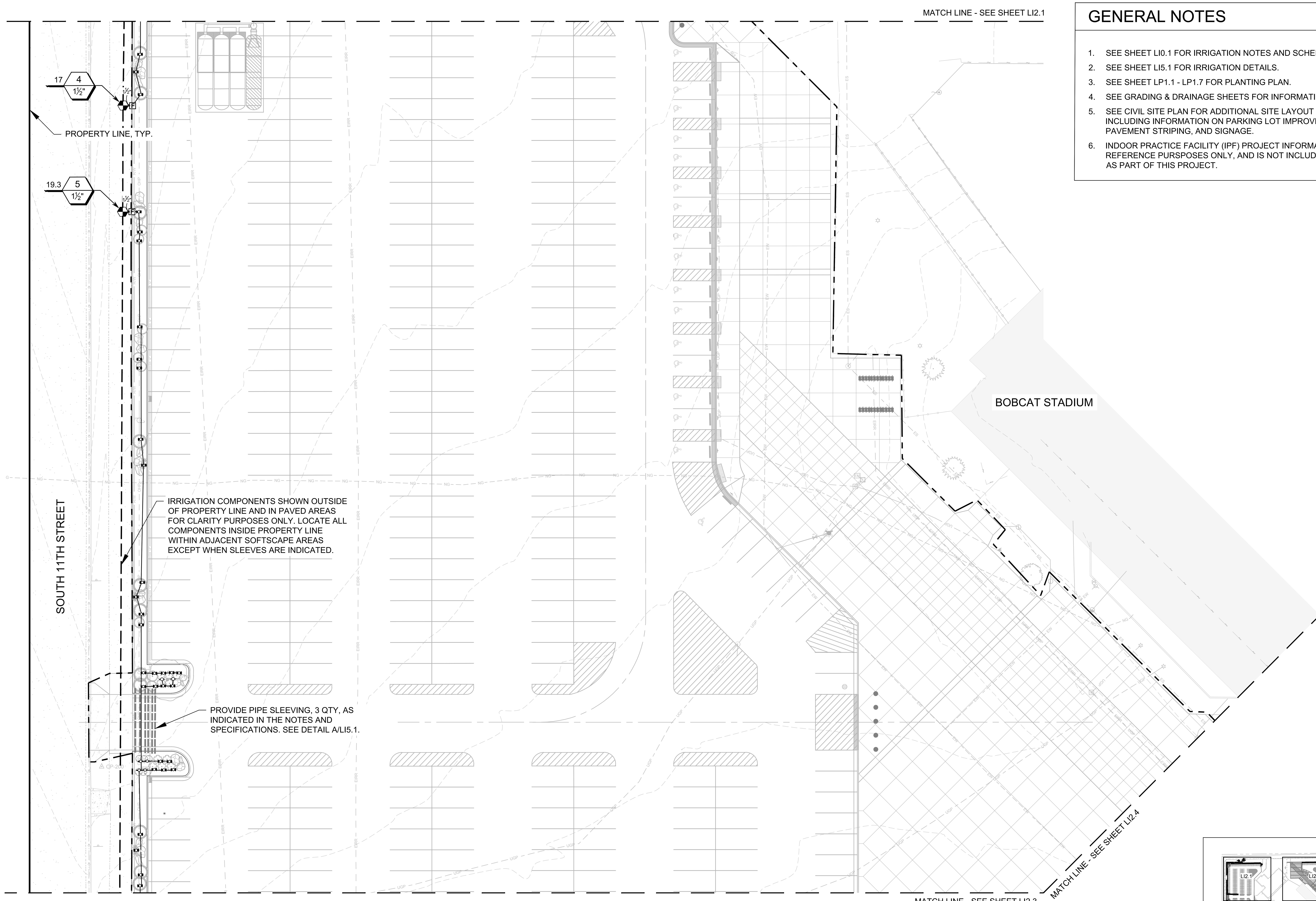
STATE OF MONTANA
CHRIS BRANDRIET
ARC-LAR-LIC-18449
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
IRRIGATION PLAN 1

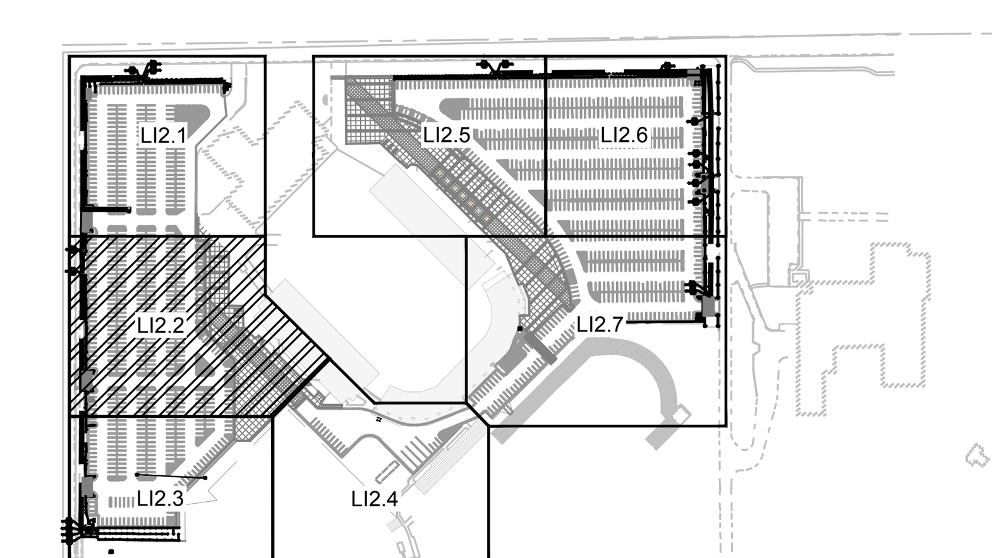
SHEET
LI2.1

DATE
3-27-2024



GENERAL NOTES

1. SEE SHEET LI0.1 FOR IRRIGATION NOTES AND SCHEDULE.
2. SEE SHEET LI5.1 FOR IRRIGATION DETAILS.
3. SEE SHEET LP1.1 - LP1.7 FOR PLANTING PLAN.
4. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING.
5. SEE CIVIL SITE PLAN FOR ADDITIONAL SITE LAYOUT AND DIMENSIONING, INCLUDING INFORMATION ON PARKING LOT IMPROVEMENTS, CURB ALIGNMENT, PAVEMENT STRIPING, AND SIGNAGE.
6. INDOOR PRACTICE FACILITY (IPF) PROJECT INFORMATION SHOWN FOR REFERENCE PURSPOSES ONLY, AND IS NOT INCLUDED IN THE CONTRACT (NIC) AS PART OF THIS PROJECT.



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REV.	DESCRIPTION	DATE

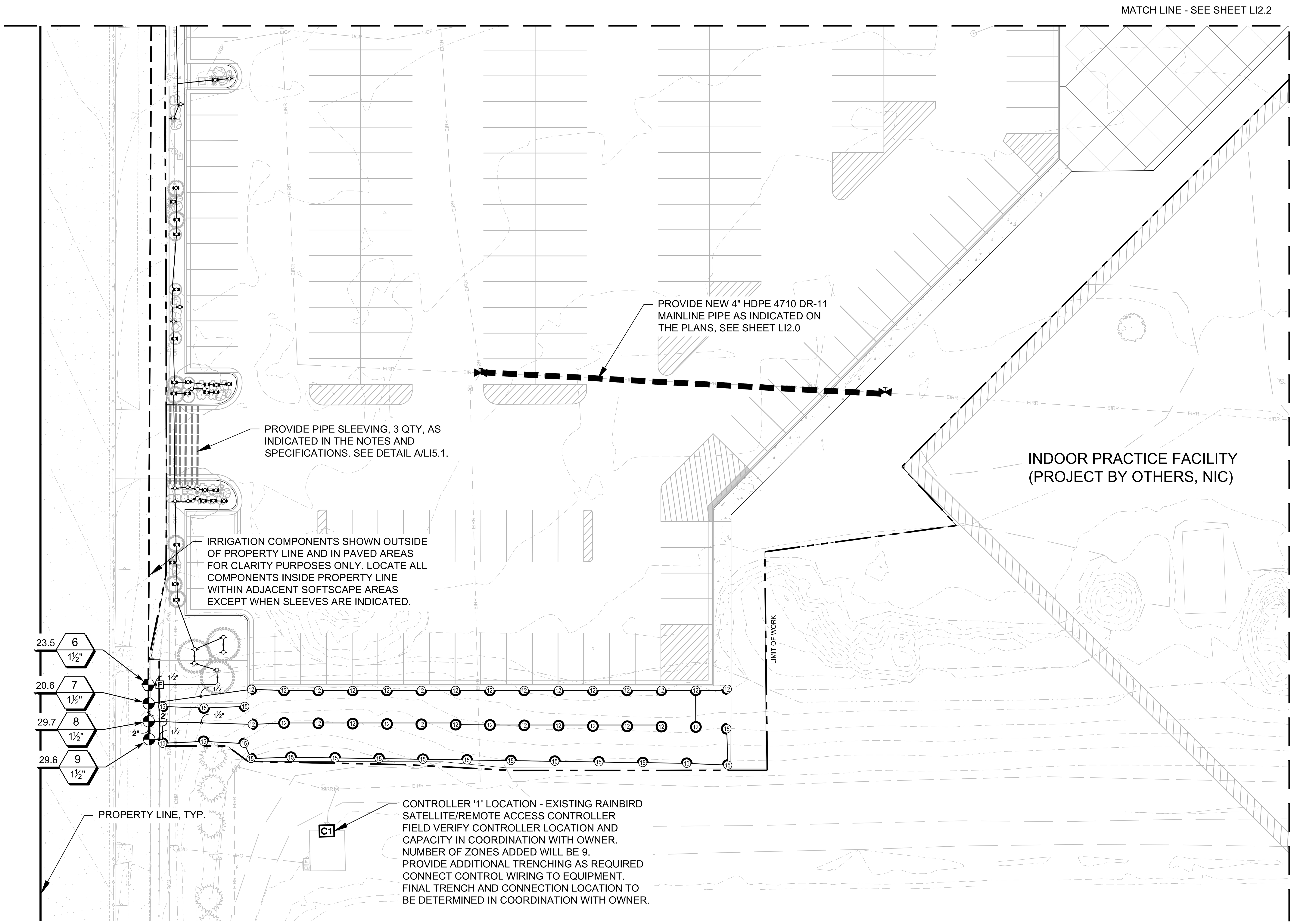
STATE OF MONTANA
CHRIS BRANDRIET
ARC-LAR-LIC-18440
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
IRRIGATION PLAN 2

SHEET
LI2.2

DATE
3-27-2024

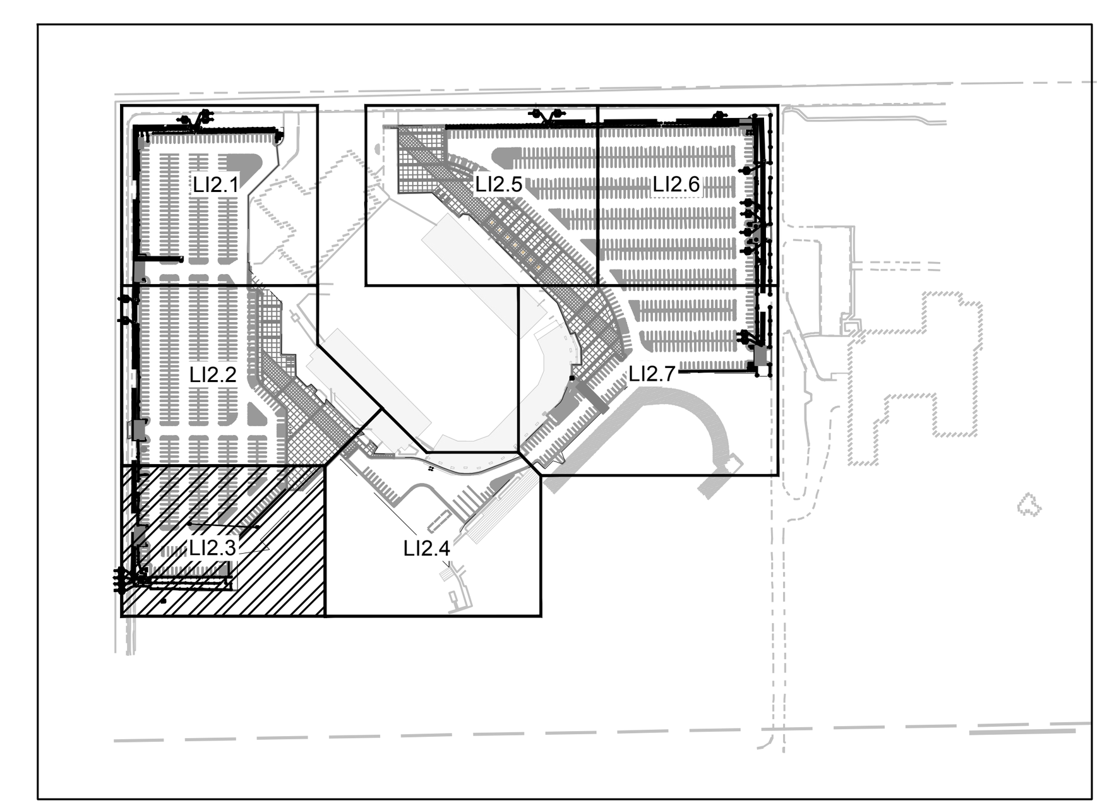


GENERAL NOTES

1. SEE SHEET LI0.1 FOR IRRIGATION NOTES AND SCHEDULE.
2. SEE SHEET LI5.1 FOR IRRIGATION DETAILS.
3. SEE SHEET LP1.1 - LP1.7 FOR PLANTING PLAN.
4. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING.
5. SEE CIVIL SITE PLAN FOR ADDITIONAL SITE LAYOUT AND DIMENSIONING, INCLUDING INFORMATION ON PARKING LOT IMPROVEMENTS, CURB ALIGNMENT, PAVEMENT STRIPING, AND SIGNAGE.
6. INDOOR PRACTICE FACILITY (IPF) PROJECT INFORMATION SHOWN FOR REFERENCE PURSPOSES ONLY, AND IS NOT INCLUDED IN THE CONTRACT (NIC) AS PART OF THIS PROJECT.

N

0 20 40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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DRAWN BY: R.BAKKER
REVIEWED BY: C. BRANDRIET

REV.	DESCRIPTION	DATE

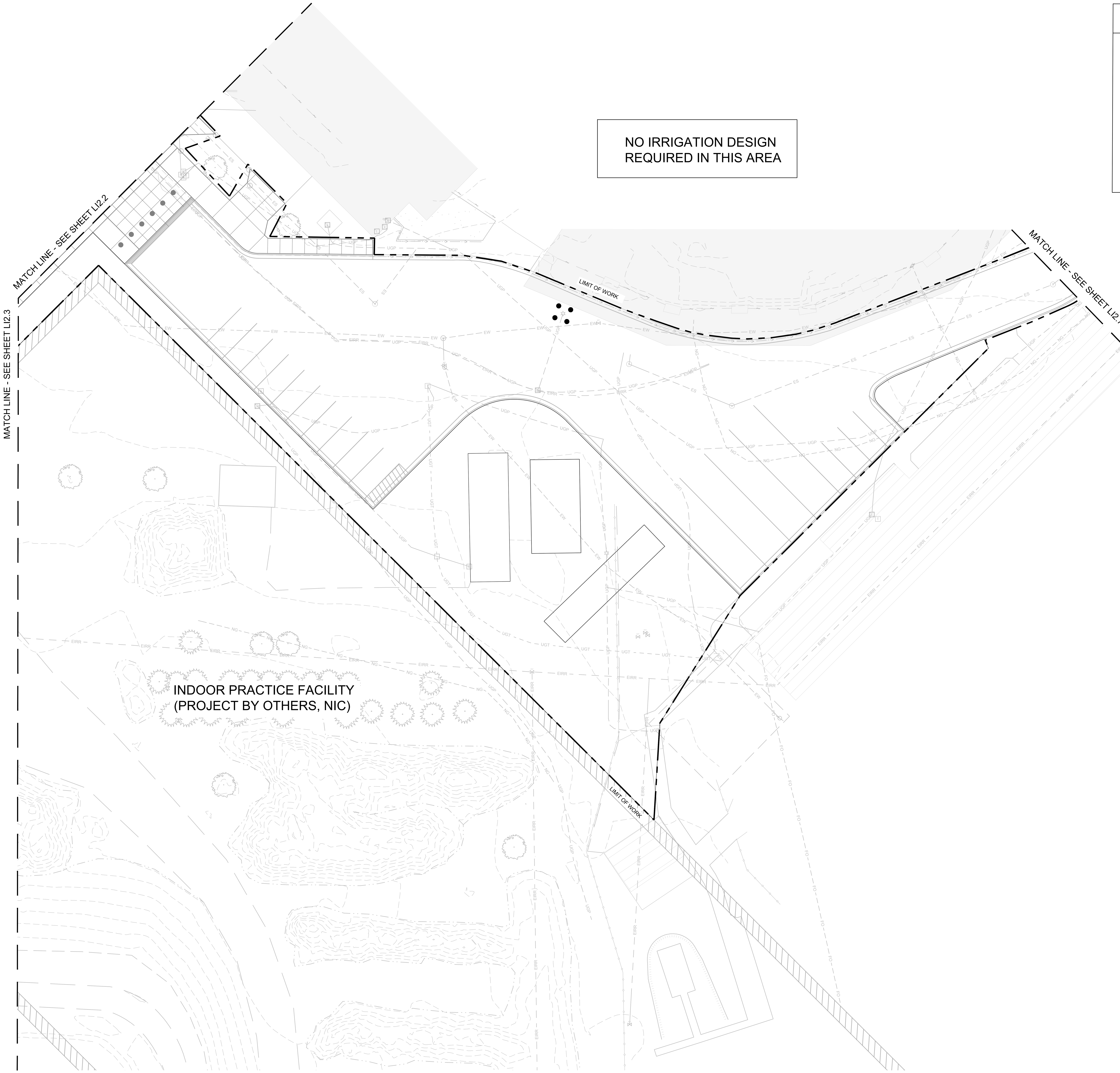
STATE OF MONTANA
CHRIS BRANDRIET
ARC-LAR-LIC-18445
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
IRRIGATION PLAN 3

SHEET
LI2.3

DATE
3-27-2024



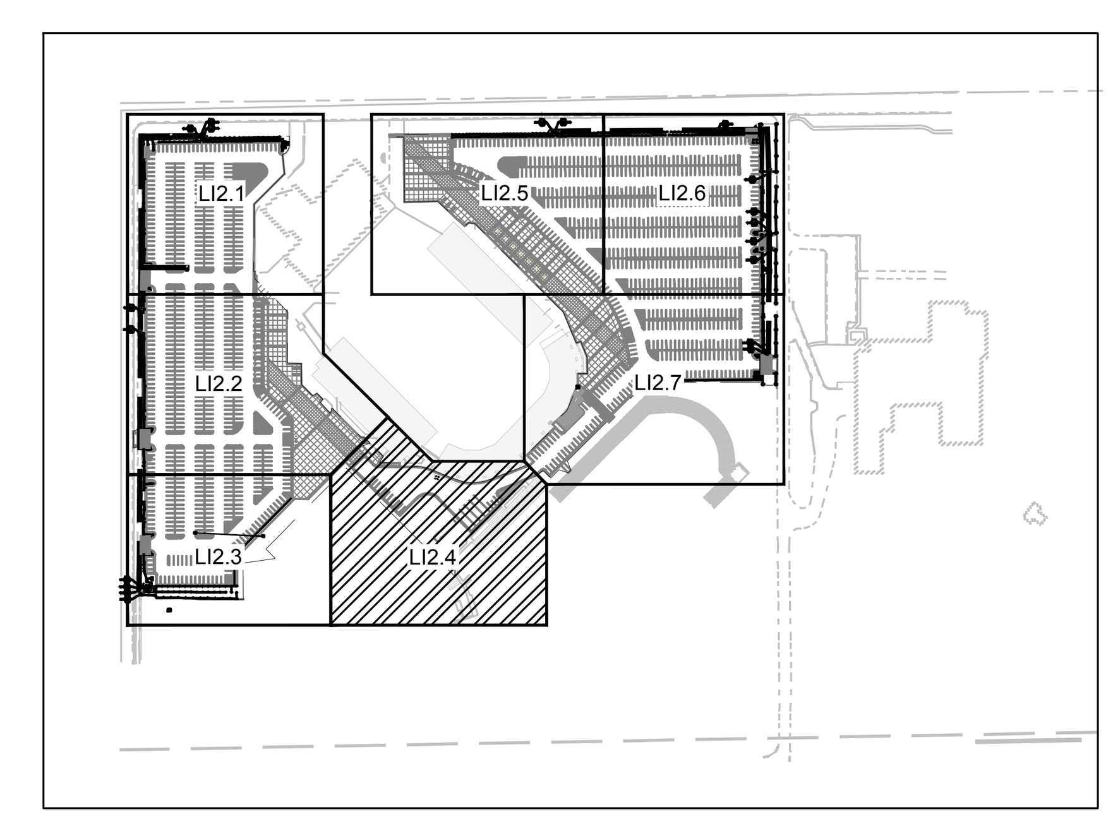
GENERAL NOTES

1. SEE SHEET LI0.1 FOR IRRIGATION NOTES AND SCHEDULE.
2. SEE SHEET LI5.1 FOR IRRIGATION DETAILS.
3. SEE SHEET LP1.1 - LP1.7 FOR PLANTING PLAN.
4. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING.
5. SEE CIVIL SITE PLAN FOR ADDITIONAL SITE LAYOUT AND DIMENSIONING, INCLUDING INFORMATION ON PARKING LOT IMPROVEMENTS, CURB ALIGNMENT, PAVEMENT STRIPING, AND SIGNAGE.
6. INDOOR PRACTICE FACILITY (IPF) PROJECT INFORMATION SHOWN FOR REFERENCE PURSPOSES ONLY, AND IS NOT INCLUDED IN THE CONTRACT (NIC) AS PART OF THIS PROJECT.

N

0 20 40

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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FAX: 406.994.5665

MSU Stadium Lots
Construction Documents

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djanda.com

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REVIEWED BY: C. BRANDRIET

REV.	DESCRIPTION	DATE

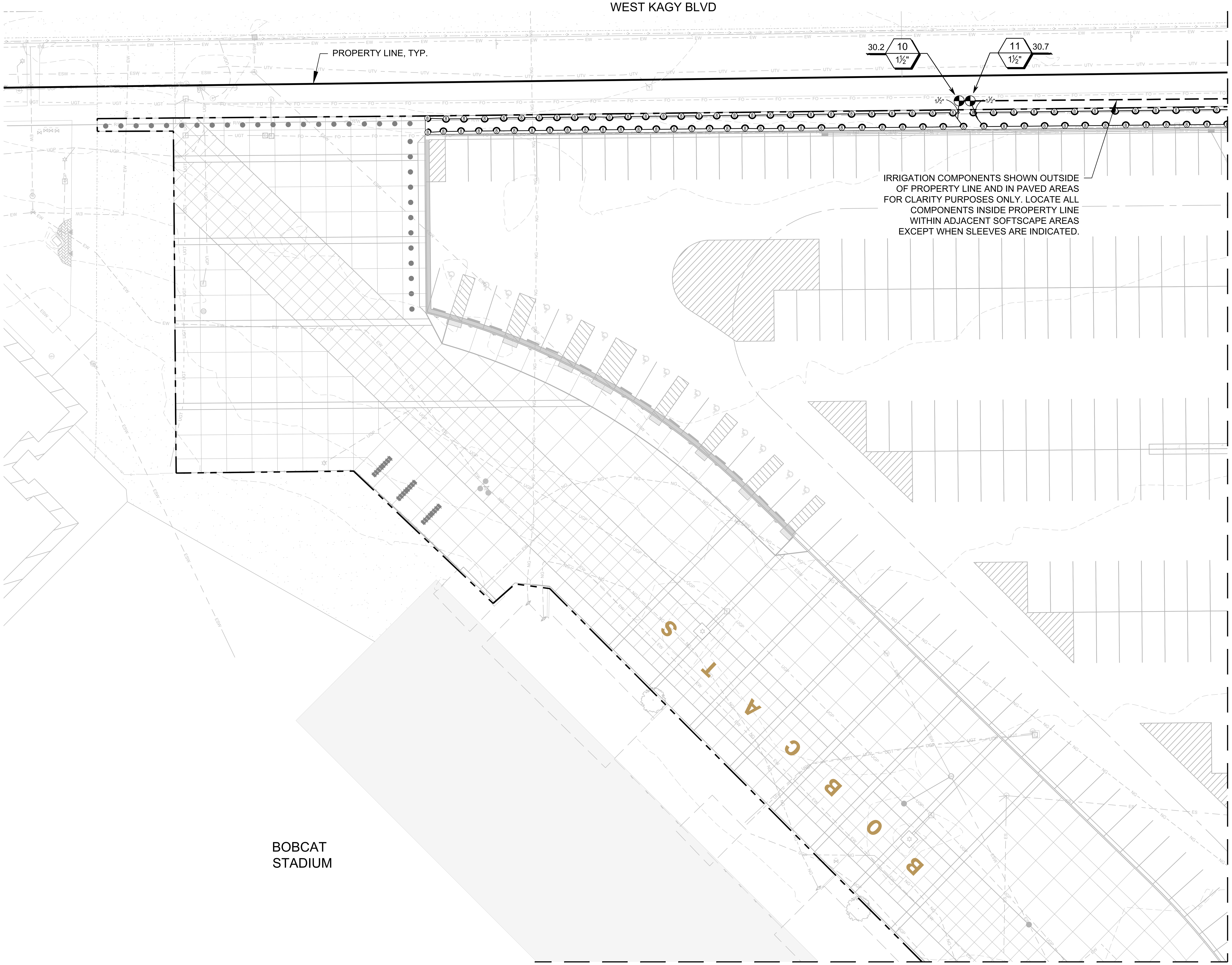
STATE OF MONTANA
CHRIS BRANDRIET
ARC-LAR-LIC-18449
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
IRRIGATION PLAN 4

SHEET
LI2.4

DATE
3-27-2024



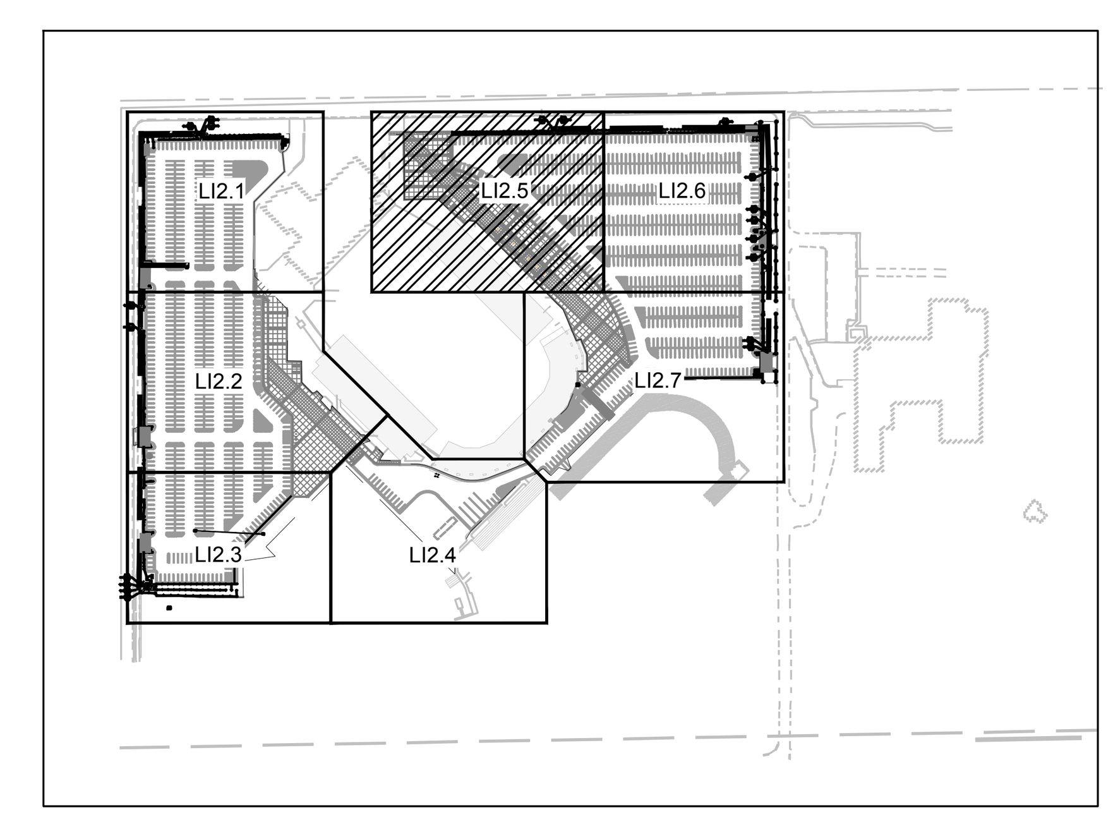
GENERAL NOTES

1. SEE SHEET LI0.1 FOR IRRIGATION NOTES AND SCHEDULE.
2. SEE SHEET LI5.1 FOR IRRIGATION DETAILS.
3. SEE SHEET LP1.1 - LP1.7 FOR PLANTING PLAN.
4. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING.
5. SEE CIVIL SITE PLAN FOR ADDITIONAL SITE LAYOUT AND DIMENSIONING, INCLUDING INFORMATION ON PARKING LOT IMPROVEMENTS, CURB ALIGNMENT, PAVEMENT STRIPING, AND SIGNAGE.
6. INDOOR PRACTICE FACILITY (IPF) PROJECT INFORMATION SHOWN FOR REFERENCE PURSPOSES ONLY, AND IS NOT INCLUDED IN THE CONTRACT (NIC) AS PART OF THIS PROJECT.

N

0 20 40

SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")



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CHRIS BRANDRIET
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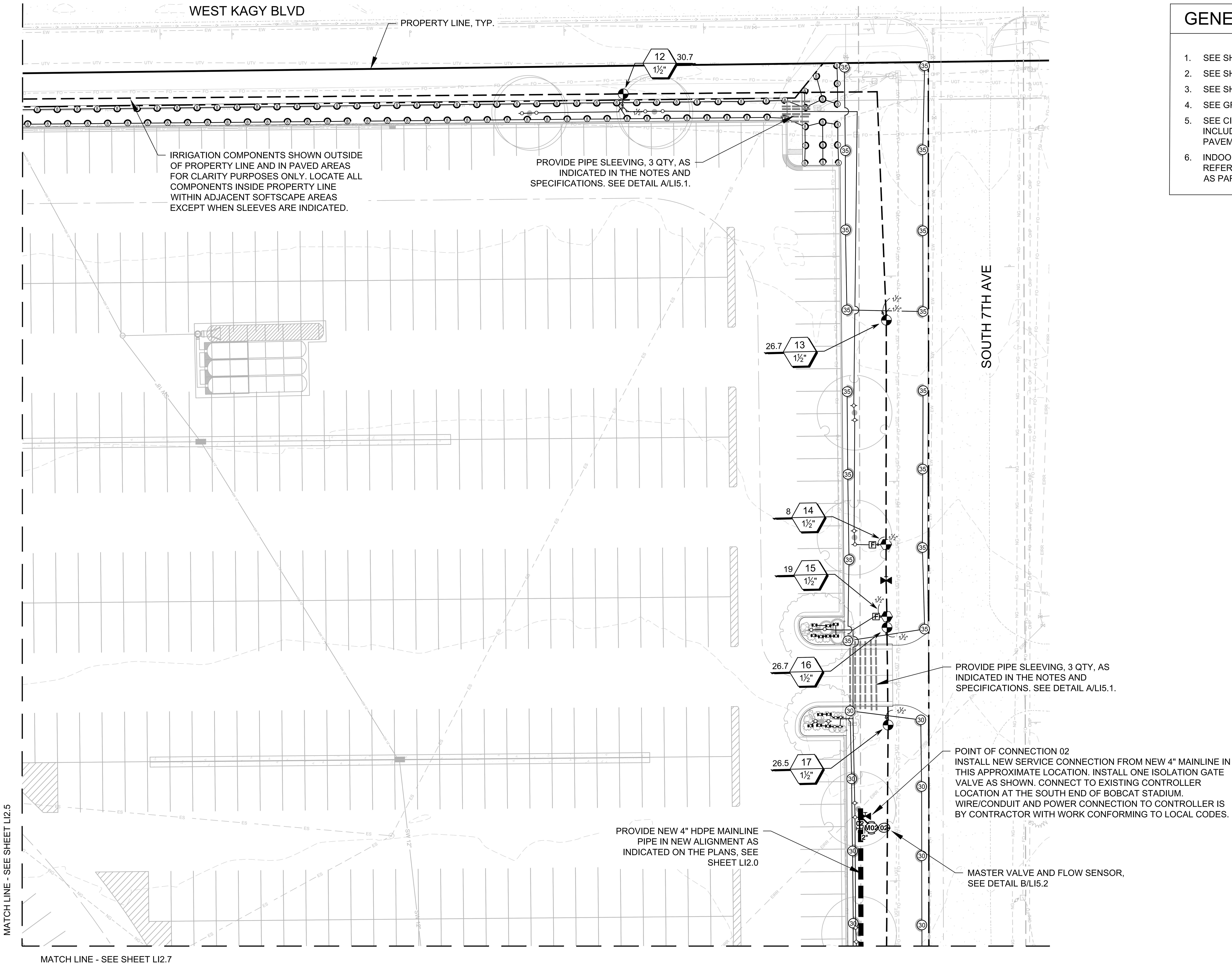
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
IRRIGATION PLAN 5

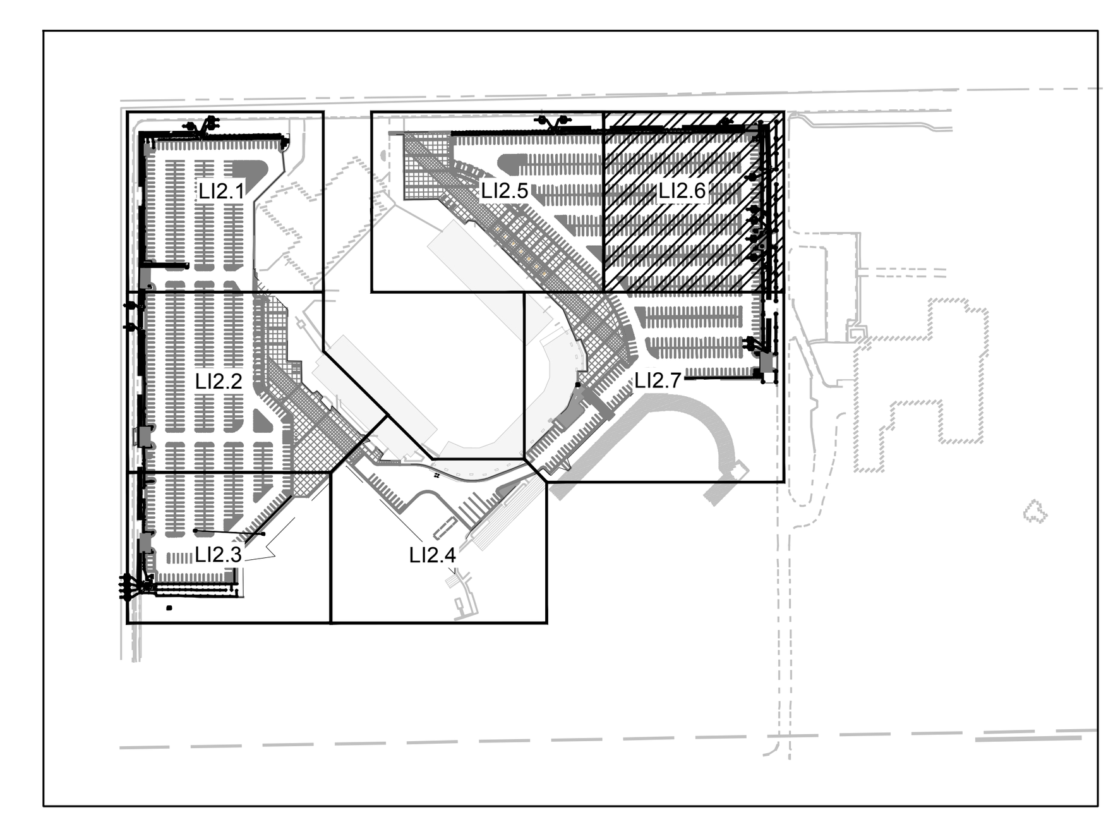
SHEET
LI2.5

DATE
3-27-2024



GENERAL NOTES

1. SEE SHEET LI0.1 FOR IRRIGATION NOTES AND SCHEDULE.
2. SEE SHEET LI5.1 FOR IRRIGATION DETAILS.
3. SEE SHEET LP1.1 - LP1.7 FOR PLANTING PLAN.
4. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING.
5. SEE CIVIL SITE PLAN FOR ADDITIONAL SITE LAYOUT AND DIMENSIONING, INCLUDING INFORMATION ON PARKING LOT IMPROVEMENTS, CURB ALIGNMENT, PAVEMENT STRIPING, AND SIGNAGE.
6. INDOOR PRACTICE FACILITY (IPF) PROJECT INFORMATION SHOWN FOR REFERENCE PURSPOSES ONLY, AND IS NOT INCLUDED IN THE CONTRACT (NIC) AS PART OF THIS PROJECT.



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REV.	DESCRIPTION	DATE

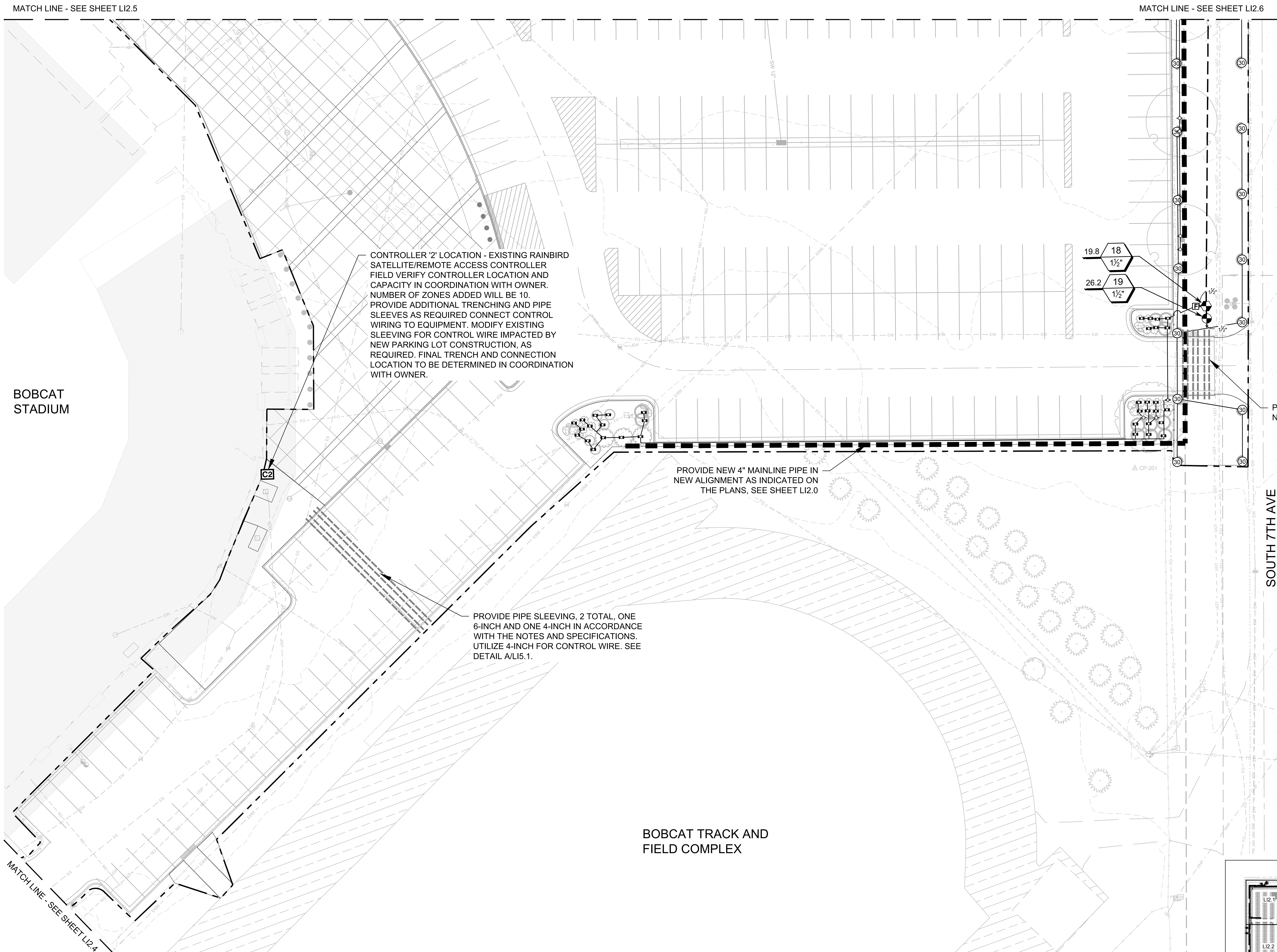
STATE OF MONTANA
CHRIS BRANDRIET
ARC-LAR-LIC-18445
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE
IRRIGATION PLAN 6

SHEET
LI2.6

DATE
3-27-2024



MATCH LINE - SEE SHEET LI2.5
MATCH LINE - SEE SHEET LI2.6
MATCH LINE - SEE SHEET LI2.4
BOBCAT STADIUM
BOBCAT TRACK AND FIELD COMPLEX
SOUTH 7TH AVE
C2
CONTROLLER '2' LOCATION - EXISTING RAINBIRD SATELLITE/REMOTE ACCESS CONTROLLER FIELD VERIFY CONTROLLER LOCATION AND CAPACITY IN COORDINATION WITH OWNER. NUMBER OF ZONES ADDED WILL BE 10. PROVIDE ADDITIONAL TRENCHING AND PIPE SLEEVES AS REQUIRED CONNECT CONTROL WIRING TO EQUIPMENT. MODIFY EXISTING SLEEVING FOR CONTROL WIRE IMPACTED BY NEW PARKING LOT CONSTRUCTION, AS REQUIRED. FINAL TRENCH AND CONNECTION LOCATION TO BE DETERMINED IN COORDINATION WITH OWNER.
PROVIDE PIPE SLEEVING, 2 TOTAL, ONE 6-INCH AND ONE 4-INCH IN ACCORDANCE WITH THE NOTES AND SPECIFICATIONS. UTILIZE 4-INCH FOR CONTROL WIRE. SEE DETAIL A/LI5.1.
PROVIDE NEW 4" MAINLINE PIPE IN NEW ALIGNMENT AS INDICATED ON THE PLANS, SEE SHEET LI2.0
PROVIDE PIPE SLEEVING AS INDICATED IN THE NOTES AND SPECIFICATIONS, TYP
19.8
18
1½"
26.2
19
1½"
0
20
40
SCALE IN FEET
CONTOUR INTERVAL = 1'
(PLOT SIZE = 24" x 36")

GENERAL NOTES

1. SEE SHEET LI0.1 FOR IRRIGATION NOTES AND SCHEDULE.
2. SEE SHEET LI5.1 FOR IRRIGATION DETAILS.
3. SEE SHEET LP1.1 - LP1.7 FOR PLANTING PLAN.
4. SEE GRADING & DRAINAGE SHEETS FOR INFORMATION ON SITE GRADING.
5. SEE CIVIL SITE PLAN FOR ADDITIONAL SITE LAYOUT AND DIMENSIONING, INCLUDING INFORMATION ON PARKING LOT IMPROVEMENTS, CURB ALIGNMENT, PAVEMENT STRIPING, AND SIGNAGE.
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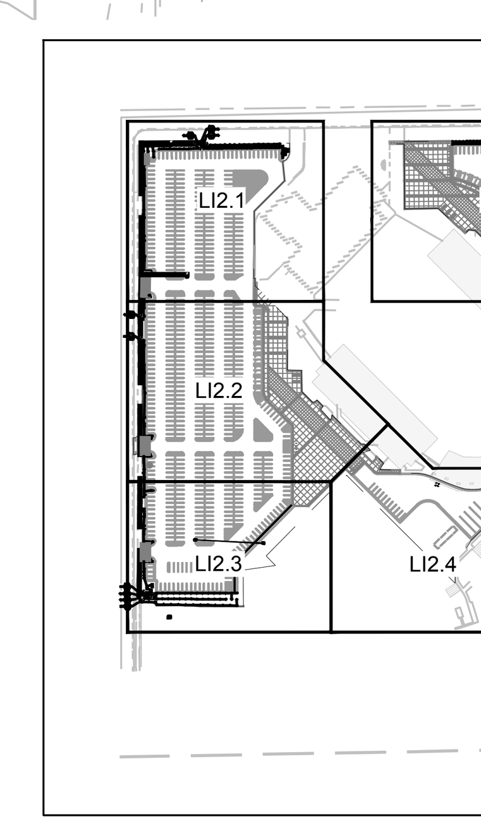

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REV.	DESCRIPTION	DATE

STATE OF MONTANA
CHRIS BRANDRIET
ARC-LAR-LIC-18449
3.14.24
LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE

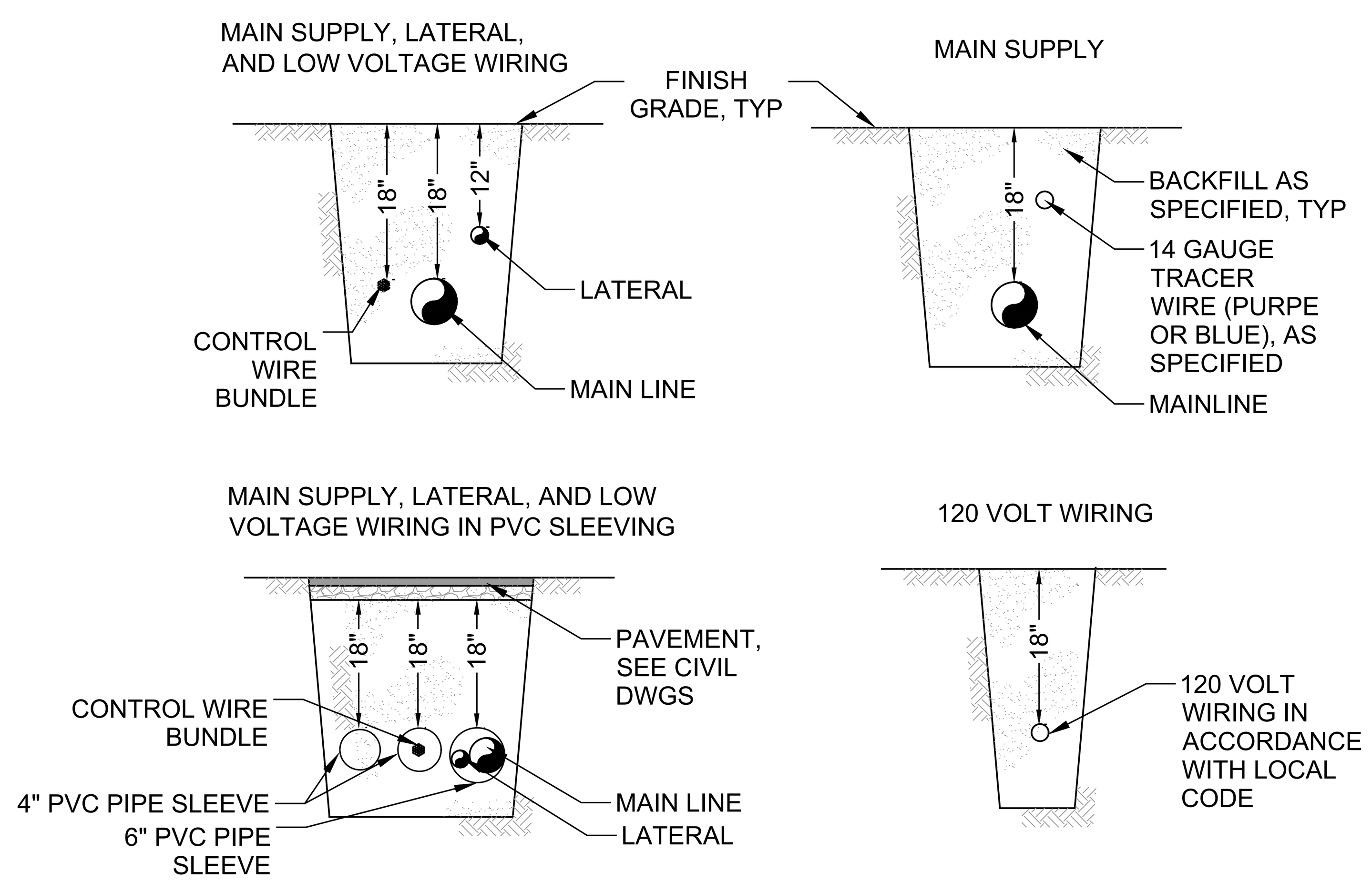
IRRIGATION PLAN 7

SHEET

LI2.7

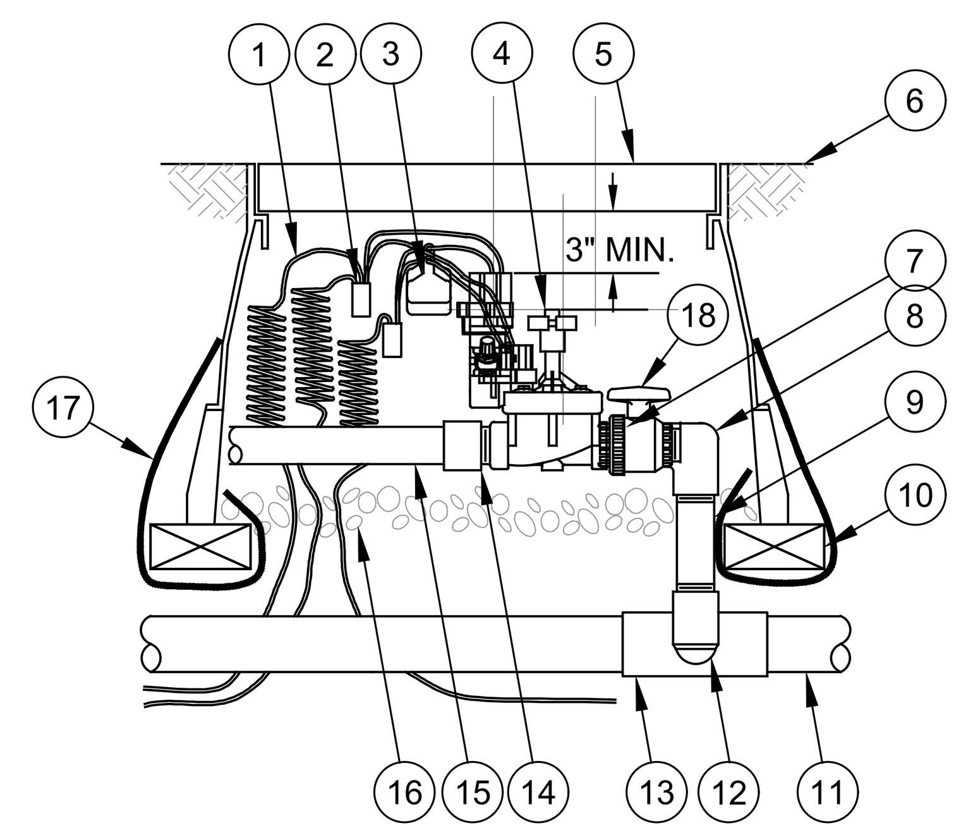
DATE

3-27-2024



NOTES:
1. ALL LINES SHALL HAVE A MINIMUM CLEARANCE OF 4 INCHES FROM EACH OTHER, AND 6" FROM OTHER TRADES, EXCEPT THROUGH PIPE SLEEVES
2. ALL MAINLINE SLEEVE LOCATIONS TO INCLUDE A SEPARATE WIRE SLEEVE.
3. PROVIDE ONE ADDITIONAL EMPTY 4" PIPE SLEEVE UNDER ALL PAVED SURFACES.
4. TAPE AND BUNDLE TUBING OR WIRING AT 10' INTERVALS
5. TIE A LOOSE 20" LOOP IN WIRING AT ALL CHANGES OF DIRECTION GREATER THAN 30". UNTIE ALL LOOPS AFTER CONNECTIONS HAVE BEEN COMPLETED

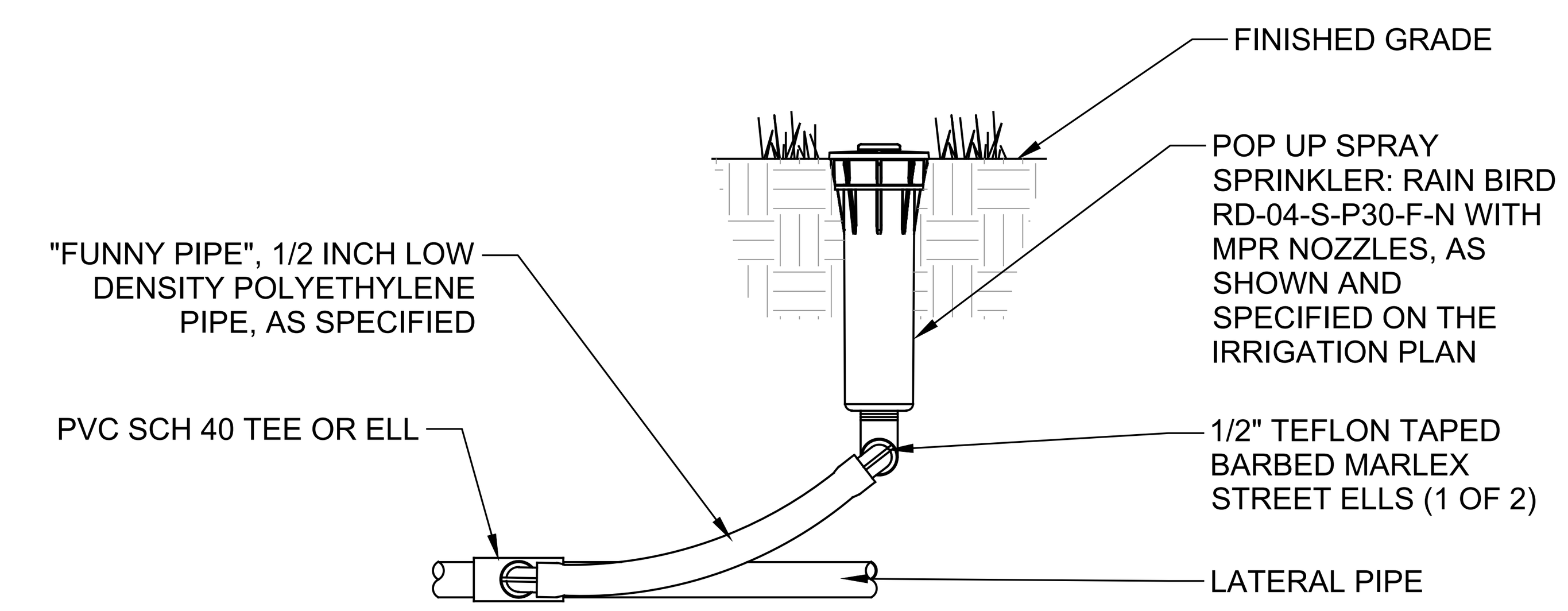
A LI5.1 IRRIGATION TRENCHING AND PIPE DEPTH
SCALE NTS



1. 30-INCH LINEAR LENGTH OF WIRE, COILED
2. WATERPROOF WIRE CONNECTION (1 OF 2)
3. ID TAG: RAIN BIRD VID SERIES, OR APPROVED EQUAL. LABEL TO REFLECT ZONE # FROM CONTROLLER
4. REMOTE CONTROL VALVE: RAIN BIRD PESB-NP-HAN
5. VALVE BOX WITH COVER: 12X20X12 CARSON BRAND
6. FINISH GRADE/ TOP OF MULCH
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 80 ELL
9. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
10. BRICK (1 OF 4)
11. PVC MAINLINE PIPE
12. SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 80 ELL
13. PVC SCH 80 TEE OR ELL
14. PVC SCH 80 MALE ADAPTER
15. PVC LATERAL PIPE
16. 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
17. FILTER FABRIC
18. SCH 80 PVC BALL VALVE

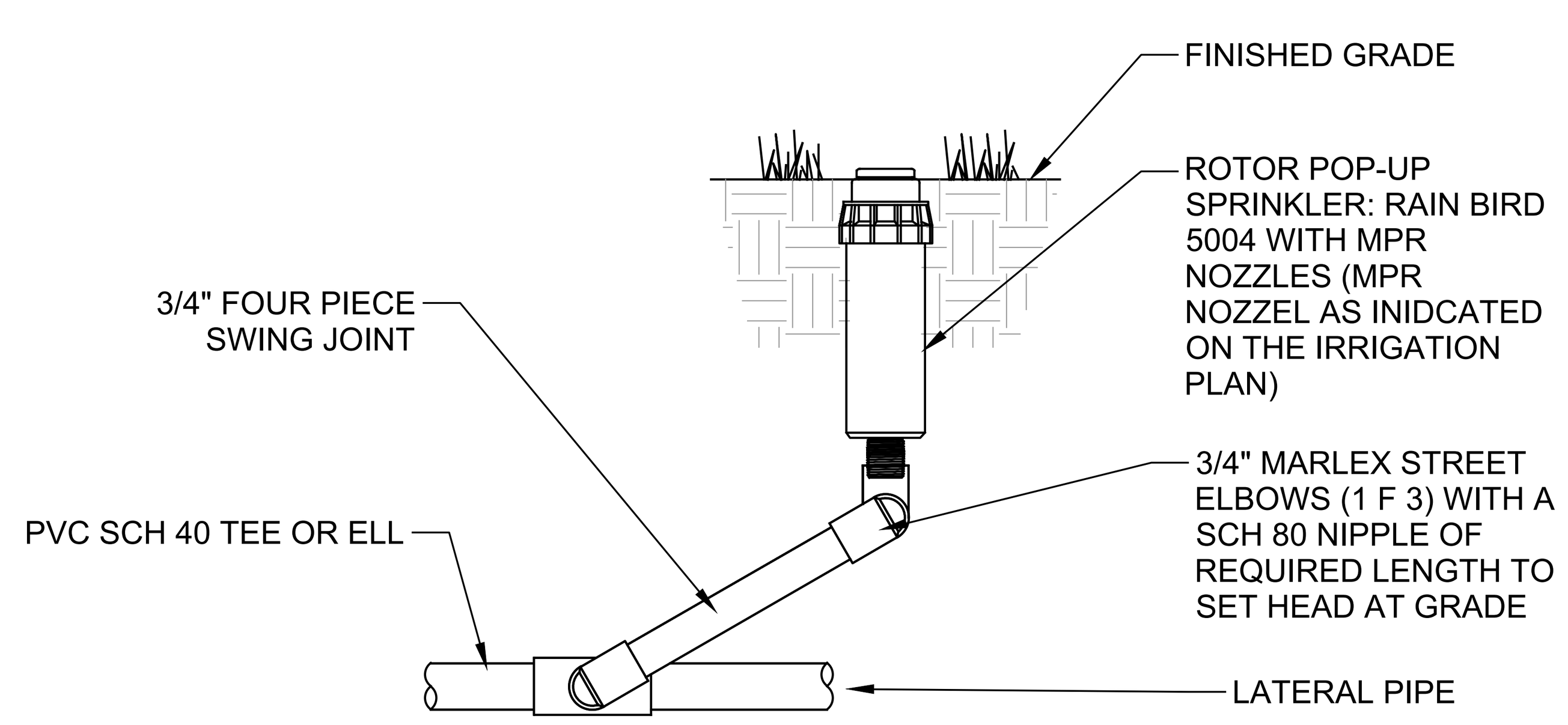
NOTES:
1. USE PRS-D AT ALL BUBBLER ZONES AND AS NOTED ON THE PLANS.
2. USE PESB SERIES VALVES

B LI5.1 REMOTE CONTROL VALVE
SCALE NTS



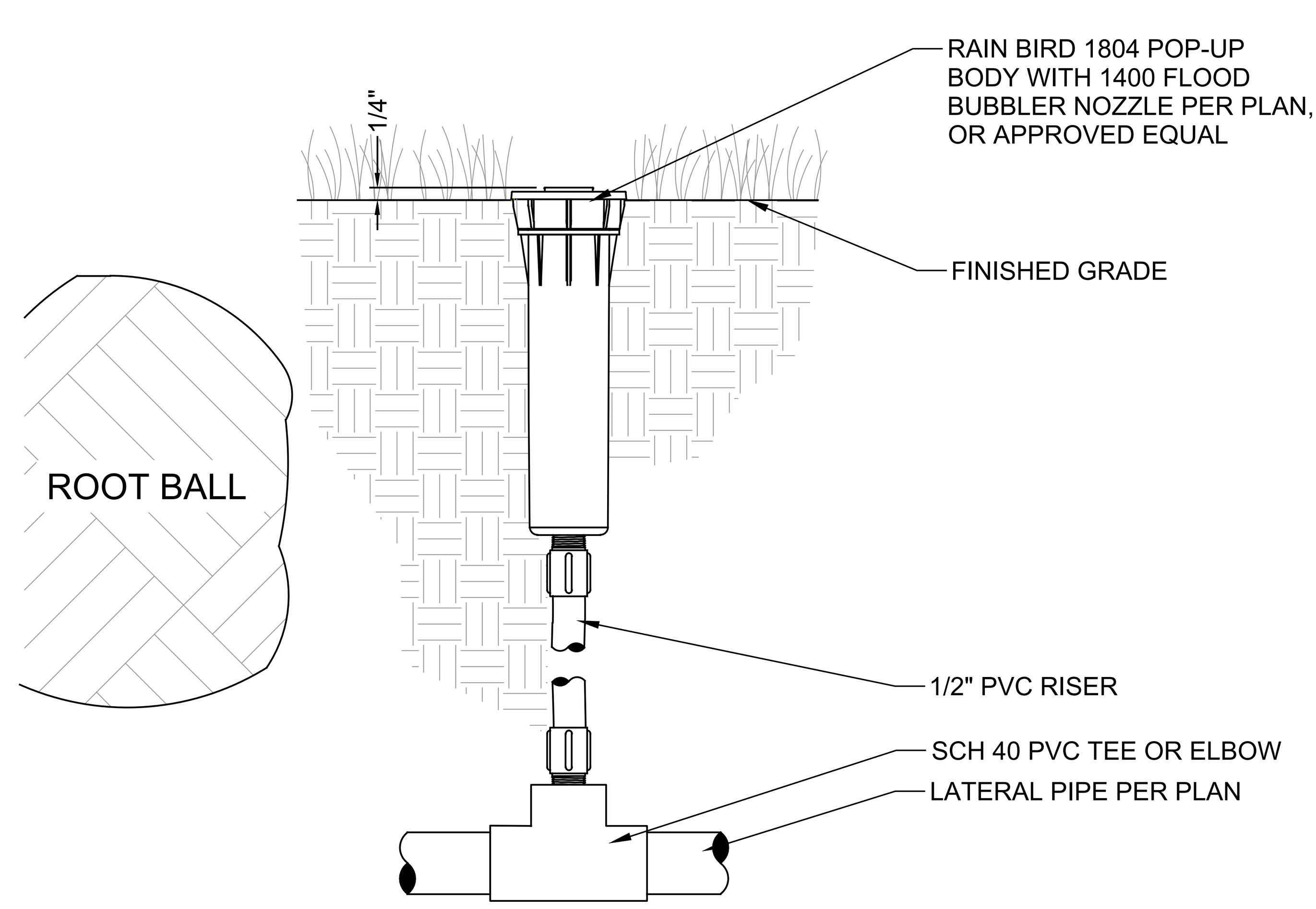
NOTES:
1. SPRINKLER HEADS WITH 1/2 INCH INLETS SHALL CONNECT WITH FUNNY PIPE EXCLUSIVELY, IN LENGTHS NO LONGER THAN 2 FT.
2. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

C LI5.1 POP-UP SPRAY DETAIL: RD1800 SERIES
SCALE NTS



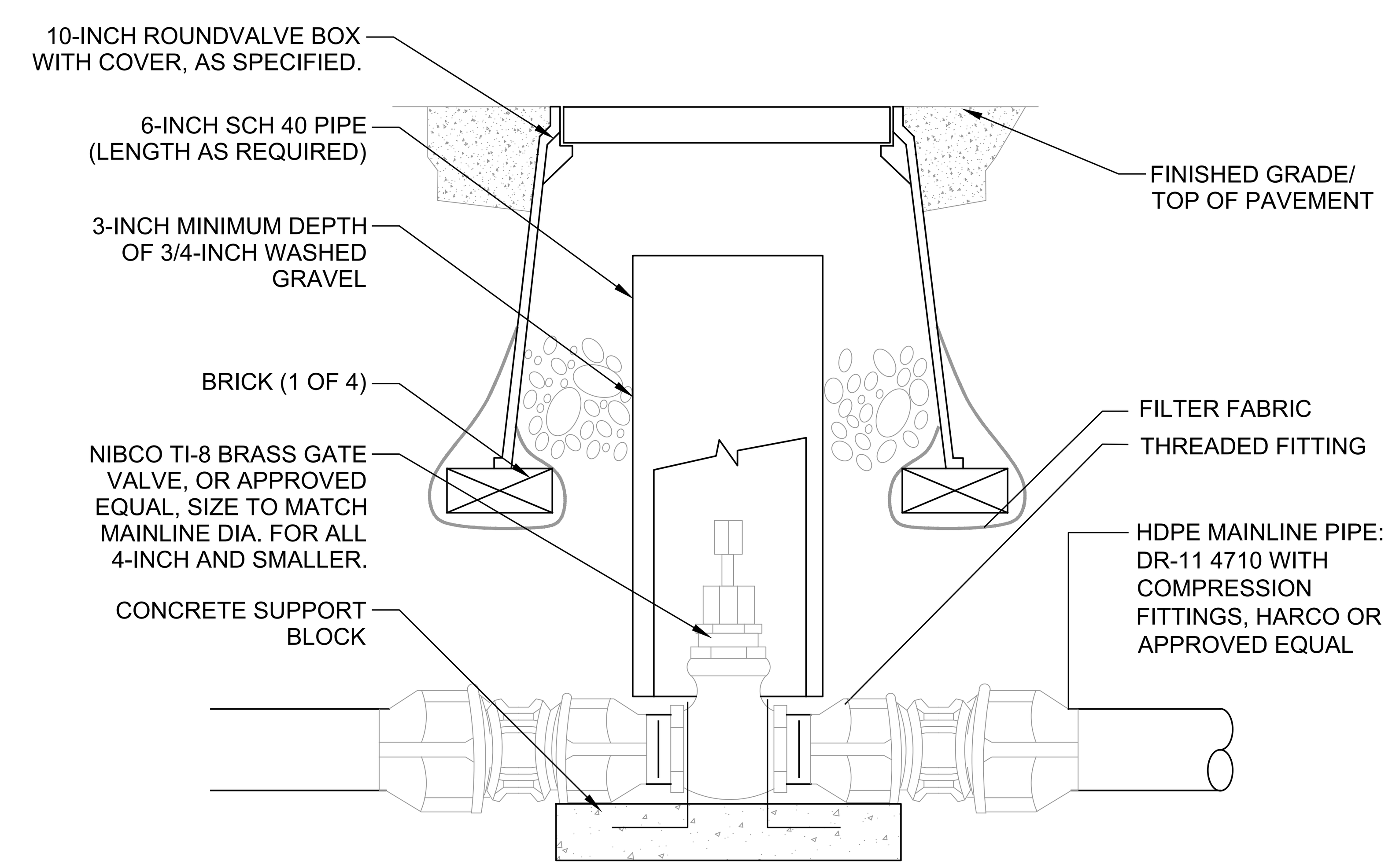
NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

D LI5.1 POP-UP ROTAR: 5004 SERIES WITH MPR NOZZLE
SCALE NTS



NOTES:
1. CONTRACTOR SHALL SETTLE AREA AROUND THE BUBBLER AND ED OF ROOTBALL SO THAT ALL IRRIGATION FLOWS THROUGH THE ROOTBALL.

E LI5.1 POP UP BODY WITH RISER BUBBLER DETAIL
SCALE NTS



NOTES:
1. NOMINAL SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE.
2. INSTALL FILTER FABRIC AROUND EXTERIOR OF VALVE BOX. USE DUCT TAPE TO SECURE FABRIC TO PIPE AND VALVE BOX.
3. INSTALL A 4-INCH THICK CONCRETE PAD BELOW VALVE WITH NO. 4 REBAR WHEN USING PUSH-ON TYPE VALVES. ANCHOR ISOLATION VALVE TO CONCRETE BY BENDING REBAR OVER EACH END OF VALVE AND EXTENDING A MINIMUM OF 6-INCHES INTO CONCRETE SUPPORT BLOCK. WRAP VALVE ENDS AND BODY IN 3 MIL PLASTIC PRIOR TO POURING CONCRETE.
4. CONCRETE SUPPORT BLOCK IS TO BE POURED UNDER ISOLATION GAVE VALVE. ONLY THE BOTTOM OF THE ISOLATION GAVE VALVE TO BE IN CONTACT WITH CONCRETE.

F LI5.1 HDPE MAINLINE ISOLATION VALVE
SCALE NTS

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REVIEWED BY: C. BRANDRIET

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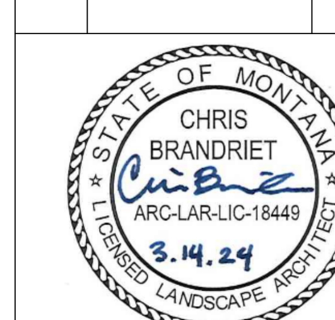


PPA#22-0012

SHEET TITLE
IRRIGATION DETAILS 1

SHEET
LI5.1

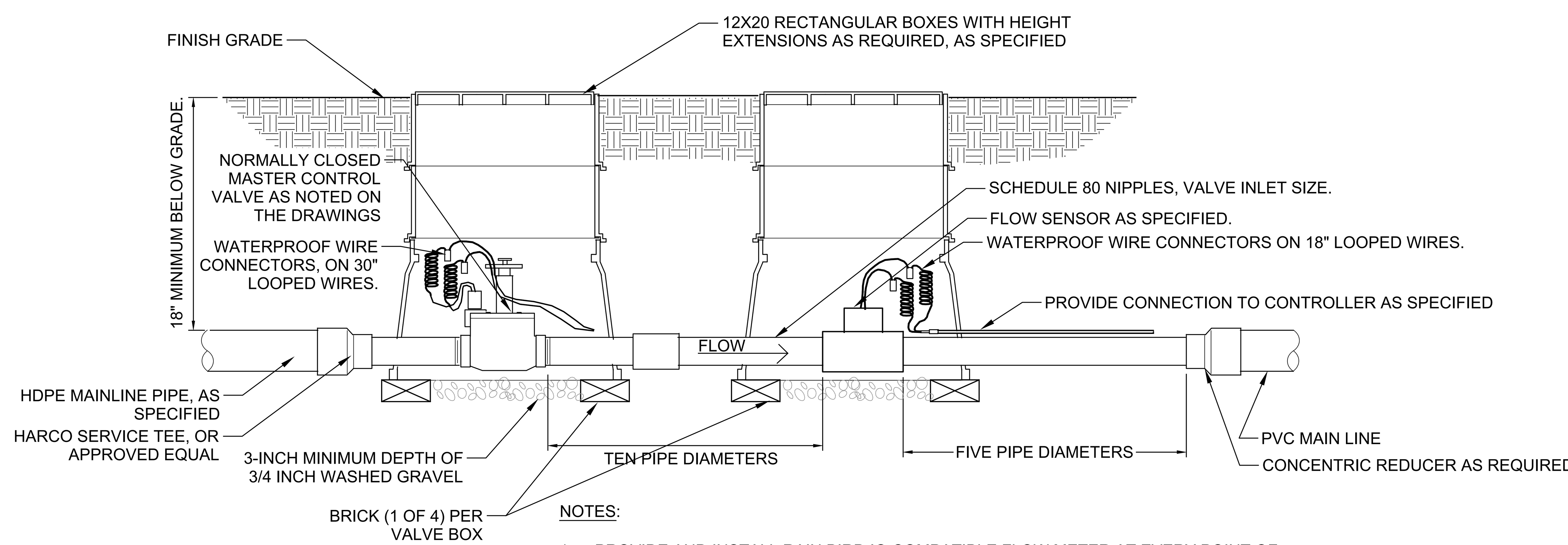
DATE
3-27-2024

VALVE SCHEDULE WEST SIDE

NUMBER	MODEL	SIZE	TYPE	GPM	HEADS	PIPE 1 1/2"	WIRE	DESIGN PSI	FRICTION LOSS	VALVE LOSS	PSI	PSI @ POC	PRECIP
1	RAIN BIRD PESB-NP-HAN-PRS-D	1-1/2"	BUBBLER	12.5	19	229.3		20	0.77	3.5	24.3	28.7	2.89 in/h
2	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF SPRAY	26.06	34	344.3		30	0.5	3.26	33.8	40.4	1.45 in/h
3	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF SPRAY	20.92	27	290.9		30	0.48	3.46	33.9	39.6	1.25 in/h
4	RAIN BIRD PESB-NP-HAN-PRS-D	1-1/2"	BUBBLER	17	36	395.2		20	0.81	3.5	24.3	28.5	1.95 in/h
5	RAIN BIRD PESB-NP-HAN-PRS-D	1-1/2"	BUBBLER	19.25	40	413.7		20	1.84	3.5	25.3	29.8	2.0 in/h
6	RAIN BIRD PESB-NP-HAN-PRS-D	1-1/2"	BUBBLER	23.5	40	289.4		20	1.3	3.36	24.7	32.1	2.52 in/h
7	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF SPRAY	20.57	16	218.2		30	1.34	3.48	34.8	41.5	0.88 in/h
8	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF SPRAY	29.74	13	179.3		30	2.28	3.11	35.4	45.0	0.81 in/h
9	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF SPRAY	29.57	19	269.3		30	1.77	3.12	34.9	44.5	0.93 in/h
	Common Wire						1,180						

VALVE SCHEDULE EAST SIDE

NUMBER	MODEL	SIZE	TYPE	GPM	HEADS	PIPE 1 1/2"	WIRE	DESIGN PSI	FRICTION LOSS	VALVE LOSS	PSI	PSI @ POC	PRECIP
10	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF SPRAY	30.16	59	436.0	1,318	30	0.8	3.09	33.9	43.5	1.75 in/h
11	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF SPRAY	30.68	59	472.8	1,314	30	0.89	3.05	33.9	43.7	1.48 in/h
12	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF SPRAY	30.71	59	477.0	974.1	30	0.37	3.04	33.4	40.5	1.4 in/h
13	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF ROTOR	26.7	8	237.3	780.8	45	0.35	3.23	48.6	53.7	0.65 in/h
14	RAIN BIRD PESB-NP-HAN-PRS-D	1-1/2"	BUBBLER	8	8	320.2	691.0	20	0.24	3.5	23.7	27.5	3.42 in/h
15	RAIN BIRD PESB-NP-HAN-PRS-D	1-1/2"	BUBBLER	19	28	311.9	662.1	20	0.57	3.5	24.1	28.1	3.49 in/h
16	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF ROTOR	26.7	8	235.0	657.7	45	0.41	3.23	48.6	53.0	0.66 in/h
17	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF ROTOR	26.48	10	262.0	618.7	45	0.44	3.24	48.7	52.7	0.65 in/h
18	RAIN BIRD PESB-NP-HAN-PRS-D	1-1/2"	BUBBLER	19.75	38	430.9	407.9	20	1.17	3.5	24.7	29.0	2.32 in/h
19	RAIN BIRD PESB-NP-HAN	1-1/2"	TURF ROTOR	26.16	12	314.5	407.9	45	0.33	3.25	48.6	53.4	0.63 in/h
	Common Wire						932.6						



NOTES:

1. PROVIDE AND INSTALL RAIN BIRD IQ COMPATIBLE FLOW METER AT EVERY POINT OF CONNECTION AS SPECIFIED.
2. FLOW METER MUST BE DIRECTLY CONNECTED TO THE CONTROLLER USING PE43 COMMUNICATION CALBE AND PT322 PULSE TRANSMITTER.
3. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

A LI5.2 MASTER VALVE / FLOW SENSOR ASSEMBLY

SCALE NTS

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REVIEWED BY: C. BRANDRIET

REV.	DESCRIPTION	DATE

STATE OF MONTANA CHRIS BRANDRIET ARC-LAR-LIC-18449 3.14.24 LICENSED LANDSCAPE ARCHITECT

PPA#22-0012

SHEET TITLE

IRRIGATION DETAILS 2

SHEET

LI5.2

DATE

3-27-2024

Project Information

MSU Stadium Lots | Electrical, & Lighting

Montana State University Bozeman, MT

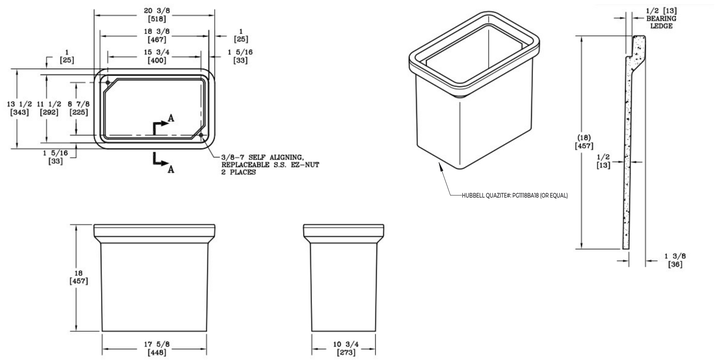
Bid Set Documents

Date Issued | 03-14-2024

Project Engineer | Andrew Moore

REV

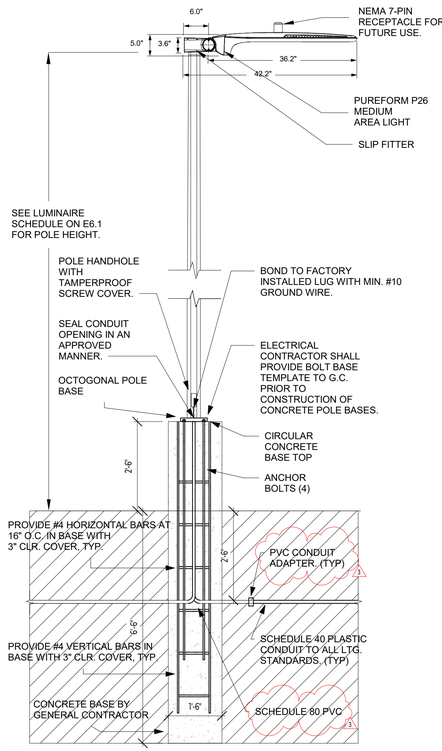
Hubbell Handhole Detail



3 / E10.1 HANDHOLE DETAIL

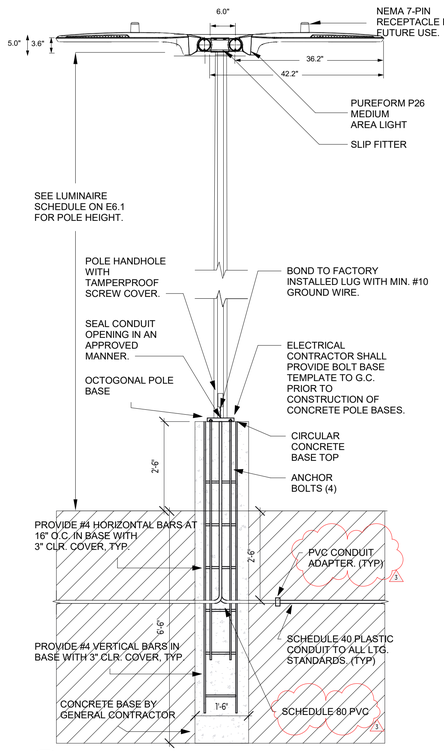
NTS

Ameron Pole Details



2 / E10.1 SINGLE HEAD DETAIL

NTS



1 / E10.1 TWIN HEAD DETAIL

NTS

Abbreviations

A, AMP	Ampere	LV	Low Voltage
AIC	Amps Interrupting Capacity	LVR	Low Voltage Relay
AC	Alternating Current	MCB	Main Circuit Breaker
AFCI	Arc-Fault Circuit Interrupter	MDP	Main Distribution Panel
AFF	Above Finished Floor	MFGR	Manufacturer
AFG	Above Finished Grade	MIN	Minimum
ATS	Automatic Transfer Switch	MLO	Main Lug Only
AV	Audio Visual	MSB	Main Switchboard
AWG	American Wire Gauge	MV	Medium Voltage
BAS	Building Automation System	N	Neutral
BTU	British Thermal Units	(N)	New
C, CDT	Conduit	NA, N/A	Not Applicable
CB	Circuit Breaker	NEMA	National Electrical Manufacturer Association
CKT	Circuit	N.C.	Normally Closed
CL	Centerline	N.O.	Normally Open
CLG	Ceiling	NTS	Not to Scale
CO	Carbon Monoxide	OCPD	Overcurrent Protective Device
C.O.	Conduit Only	P	Poles
CT	Current Transformer	PB	Pullbox
CU	Copper	PH	Phase
DDC	Digital Data Control	PNL	Panelboard
DWG	Drawing	POE	Power Over Ethernet
(E)	Existing	PWR	Power
E.C.	Electrical Contractor	RECPT	Receptacle
ELEC	Electric / Electrical	RS	Rigid Steel
EM	Emergency	SD	Smoke Detector
EMT	Electrical Metallic Tubing	SHT	Sheet
EQ	Equal	SOH	Standard Outlet Height
FA	Fire Alarm	SP	Spare
FACP	Fire Alarm Control Panel	SPEC	Specification
FBO	Furnished by Others	SPD	Surge Protective Device
FLA	Full Load Amps	SS	Surge Suppression
FSD	Fire Smoke Damper	SW	Switch
G, GND	Ground	SWBD	Switchboard
G.C.	General Contractor	SWGR	Switchgear
GEN	Generator	TEMP	Temporary
GFCI	Ground-Fault Circuit Interrupter	TVSS	Transient Voltage Surge Suppressor
HP	Horse Power	TYP	Typical
IBEC	Installed by Electrical Contractor	UG	Underground
IG	Isolated Ground	UON	Unless Otherwise Noted
J, JB	Junction Box	UPS	Uninterruptible Power Supply
KV	Kilovolt	V	Voltage
KVA	Kilovolt Ampere	VA	Volt Amperes
KW	Kilowatt	W	Watt
KWH	Kilowatt Hour	WD	Warm Dim or Water Detector
LCP	Lighting Control Panel	WP	Weatherproof
LTG	Lighting	XFMR	Transformer

Sheet Index & Revision Summary

Sheet #	Sheet Name	Rev.	Description	Date
E1.0.1	ELECTRICAL INDEX		Addendum #3	4.3.2024
ED1.0	ELECTRICAL OVERALL DEMOLITION SITE PLAN			
ED1.1	ELECTRICAL DEMOLITION PLAN -AREA 1		Addendum #3	4.3.2024
ED1.2	ELECTRICAL DEMOLITION PLAN -AREA 2			
ED1.4	ELECTRICAL DEMOLITION PLAN -AREA 4			
ED1.5	ELECTRICAL DEMOLITION PLAN -AREA 5			
ED1.6	ELECTRICAL DEMOLITION PLAN -AREA 6			
ED1.7	ELECTRICAL DEMOLITION PLAN -AREA 7			
EP2.0	ELECTRICAL OVERALL SITE PLAN		Addendum #3	4.3.2024
EP2.1	ELECTRICAL SITE PLAN -AREA 1		Addendum #3	4.3.2024
EP2.2	ELECTRICAL SITE PLAN -AREA 2		Addendum #3	4.3.2024
EP2.3	ELECTRICAL SITE PLAN -AREA 3		Addendum #3	4.3.2024
EP2.4	ELECTRICAL SITE PLAN -AREA 4		Addendum #3	4.3.2024
EP2.5	ELECTRICAL SITE PLAN -AREA 5		Addendum #3	4.3.2024
EP2.6	ELECTRICAL SITE PLAN -AREA 6		Addendum #3	4.3.2024
EP2.7	ELECTRICAL SITE PLAN -AREA 7		Addendum #3	4.3.2024
EP3.0	SITE PHOTOMETRIC PLAN			
E6.1	ELECTRICAL SCHEDULES & DIAGRAMS		Addendum #3	4.3.2024

Project Scope & Executive Summary

Electrical Design

Power design to include the following:

- Plan layouts of electrical circuits, power design support of electrical utilization equipment, equipment connections, and electrical specifications to serve different requirements including lighting and general circuits as well as infrastructure for electric vehicle charging.
- Complete single-line diagram, connection schedules and panel schedules.
- Detail drawings for site electrical infrastructure and new equipment elevations.
- Decision 26 specifications

Lighting Design

Design of exterior environments in accordance with MSU standards, including past experience, engineering guidelines, and campus outdoor lighting master plan.

- Illumination and luminance / contrast levels will meet the recommendations of the IESNA handbook.
- Luminaires shall be LED type, with ability to dim through integral 0-10V dimming (FAWS) and NEMA 7 receptacles for future wireless controls.
  - Centralized to match recent control system work on campus will be integrated and provide controls in accordance with IECC 2021.

Lighting design objectives and deliverables include the following:

- Luminaire selections and schedules
- luminaire layouts and installation details
- site lighting control layouts, zoning, and wiring requirements
- lighting control schedules with comprehensive bill of materials
- Division 26 specifications

Photometric calculations in exterior areas to ensure adherence to IESNA illuminance recommendations and design reviews to ensure the lighting is in conformance with the owners expectations.

General Notes

The symbols and abbreviations list on this sheet is a comprehensive standard guide intended for general use on all projects. Therefore, not all symbols and abbreviations contained in this list are necessarily used on this project and should be used for clarification only.

1. All work shall be installed in accordance with the latest National Electrical Code (NEC) and all local codes having jurisdiction. General work practices for construction shall be in accordance with NECA 1 standard for good workmanship in electrical construction (ANSI).
2. All materials provided by the contractor shall be new and free of defects, listed / labeled for the intended purpose by Underwriters (UL) or other organization that is acceptable to the AHJ.
3. The contractor is responsible for providing all equipment required to complete the project. Any bill of materials referenced in this plan set is for reference only to illustrate design intent.
4. These drawings and accompanying specifications are intended to describe and illustrate systems which will not interfere with the structure of the building, and which will fit into the available spaces. The contractor is responsible for laying out all work to conform to NEC clearances, architectural, structural, mechanical, and site conditions, to avoid obstructions and to allow the proper installation of each item. Coordinate with drawings of other trades to fit the actual space conditions. Headroom and space condition to be maintained.
5. Upon the completion of the work, the entire electrical system shall be tested and shall be shown to be in proper working condition in accordance with the intent of the specifications and drawings. It shall be the responsibility of the contractor to have all systems ready for operation and inspection by AHJ.
6. Electrical contractor to verify actual installed equipment electrical name plate data before energizing the circuit. Confirm electrical design values and actual equipment being installed in compliance with electrical code and manufacturer installation requirements.
7. Conduit runs when shown are diagrammatic. Final location and routing shall be established by the contractor based on the installation conditions and shall be verified in the field. All conduit types and installation requirements shall be in accordance with the specifications. Where conductor and cable routing are not shown on the plans, contractor shall determine routing and lengths required.
8. Provide conduit expansion fittings with bonding jumpers to allow for thermal expansion and contraction where necessary, per NEC 300.7(B).
9. Provide support for conductors in vertical conduits per NEC 300.19. Support conduit using steel pipe straps, lay-in adjustable hangers, clevis hangers, or split hangers. Hanger spacing shall be installed per NEC requirements for the type of conduit being installed.
10. Provide pull or junction boxes where required to facilitate the installation of conductors. Bends in conduit between pull boxes shall not exceed a total of 360-degrees.
11. Provide branch circuit wiring to all items requiring electrical connections. Where branch circuit wiring is not shown, connect items to circuits indicated. Unless indicated otherwise, all branch circuits shall be minimum #12 AWG.
12. Provide independent support for disconnect switches, control stations, boxes, panels, etc. where no walls or other structural surface exists.
13. Provide disconnect switches for HVAC equipment within eyesight of the equipment.
14. Contractor shall provide signage to all electrical boxes, junction boxes, disconnects, conduit runs, subpanels, and main service equipment.
15. Grounding system: Permanently and effectively ground all metallic conduit, supports, cabinets, panelboards, and system neutral conductors. Maintain continuity of equipment ground throughout the system. Ground clamps shall be approved type, specifically designed for grounding. Where grounding conductor is enclosed in conduit, ground clamp shall be of a type which grounds both conductor and conduit. All circuits in flexible metal or plastic conduit shall include a ground wire sized in accordance with NEC.
16. Conductors: Copper with color coding, #10 AWG and smaller to be solid or stranded, #8 AWG and larger to be stranded. Minimum #12 AWG unless otherwise indicated. Aluminum conductors permitted for feeders 100A and larger. Conductors must be installed in accordance with NEC and cannot be supported from ceiling support wires. All power conductors in conduit shall be THWN-2, XHHN-2, RHW-2, PVWIRE, or XLPE.
17. All smoke detectors to be listed and installed in accordance with the latest edition of NFPA 72. Smoke detectors to be wired together and receive primary power from the buildings wiring.
18. The EC may submit substitution requests for prior approval no less than 10 days prior to bid date. Blacksheep separates prior approval packages for luminaires & controls. The EC shall break out separate line items for each to prevent 'lockout' of pricing respective to this project.
19. Submittals shall be provided by the installer for Blacksheep review and approved prior to ordering.

Symbol Legend

Symbols listed below are for reference and for the use in understanding the design intent. Not all symbols listed below are necessarily used elsewhere in the construction documents. Cabling information is reference only; All devices need to be assessed on an individual basis.

Electrical

- NEMA 5-15R / 5-20R, Mounted Vertically, Non-Essential Power
- NEMA 5-15R / 5-20R, Mounted Horizontally, Non-Essential Power
- NEMA 5-15R Quadruplex, '+_' Indicates Height AFF
- NEMA 5-15R / 5-20R, Essential Power
- NEMA 5-15R / 5-20R, Optional Standby Power
- NEMA 5-15R / 5-20R, GFCI-Protected Receptacle
- NEMA 5-15R / 5-20R, GFCI Receptacle
- NEMA 5-15R / 5-20R, Weatherproof Receptacle
- NEMA 5-15R / 5-20R, Weatherproof Receptacle, In-Use
- NEMA 6-X0R, 250V, 2-Pole; Number Indicates Amperage (i.e., 2 = 20A)
- NEMA 14-X0R, 250/125V, 2-Pole w/ Neutral; Number Indicates Amperage
- NEMA 15-X0R, 250V, 3-Pole; Number Indicates Amperage
- NEMA L6-X0R, 250V, 2-Pole; Number Indicates Amperage
- NEMA L14-X0R, 250/125V, 2-Pole w/ Neutral; Number Indicates Amperage
- NEMA L15-X0R, 250V, 3-Pole; Number Indicates Amperage
- Electrical Provision or Equipment Connection Provision
- Electrical Floor Receptacle, Flush Mounted
- Junction Box, Mounted Above Accessible Ceiling
- Junction Box, Recessed Wall Mounted
- Junction Box, Flush Floor Mounted
- Wiremold Power Outlet Strip
- Non-Fused Disconnect Switch, Surface Mounted
- Fused Disconnect Switch, Surface Mounted
- Panelboard, Flush Mounted
- Panelboard, Surface Mounted
- Push Button | EPO = Emergency Power Off
- Solar Photovoltaic Panel / Array
- Inverter

Security | Life Safety | Surveillance | Access

- Security Panel (Requires Dedicated 20A Circuit) | (4) CAT6
- Security Keypad | (1) 22/4, (1) CAT6
- Cellular Communicator | (1) 22/4, (1) 18/4 FPLR, (2) CAT6
- RF Receiver | (1) 22/4
- RF Repeater | (1) 18/4 FPLR
- Door / Window Contact Sensor | (1) 22/4
- Overhead Door Contact | (1) 22/4
- Motion Detector | (1) 22/4
- Glass Break Sensor | (1) 22/4
- Interior Siren | (1) 18/4 FPLR
- Horn / Strobe | (1) 18/4 FPLR
- Sewage Ejector Interface | (1) 22/4
- Surveillance Camera | (2) CAT6
- Water / Flood Sensor | (1) 22/4
- Low Temperature Sensor | (1) 22/4
- Wireless Flood / Low Temp Sensor
- Water Shutoff Valve (Requires Dedicated 20A Circuit) | (1) CAT6
- Carbon Monoxide Sensor | (1) 22/4
- Gas Detector | (1) 22/4
- Heat Detector | (1) 22/4
- Smoke Detector | (1) 18/4_FPLR
- Sprinkler Flow / Tamper Valve | (1) 18/4 FPLR
- Access Control Panel (Requires 20A Dedicated Circuit) | (3) CAT6
- Access Control Interface | (1) CAT6, (1) Access Composite
- Access Control Lock | (1) 22/4, (1) 18/4 FPLR

Communications | Audio | Video

- Cable Enclosure (Requires 1 Dedicated 20A Circuit)
- Data Outlet | (2) CAT6
- Wireless Access Point | (2) CAT6
- Demarcation - Phone / Data Service | (4) CAT6, (1) IPS Provided Fiber
- Satellite Dish Location | (4) RG6QS, (1) 14/4, (1) GND
- Touch Panel | (2) CAT6
- Control RF Gateway | (2) CAT6
- Control System Integration Wiring | (3) CAT6
- Television | (1) RG6QS, (3) CAT6
- Projector | (1) RG6QS, (3) CAT6
- Aux Input Location | (4) CAT6
- Backbox
- Speaker | (2) 16/4 Per Pair
- Subwoofer | (1) 14/4
- Soundbar - LR / LCR / Center | (2) 16/4
- Doorbell | (2) CAT6
- Remote Control
- Equipment Rack

Lighting Control | Shades | Environmental

- Lighting Control Panel (Requires 1 Dedicated 20A Circuit) | (3) CAT6
- Lighting Control Dimming Panel | (1) QSC
- Lighting Repeater | (1) QSC
- Lighting Keypad | (1) QSC
- Occupancy Sensor | (1) QSC
- Thermostat | (1) 18/6, (1) CAT6
- Thermostat Sensor | (1) CAT6
- Oxygen Control | (1) 18/6, (1) CAT6
- Fireplace Control | (1) 18/6, (1) CAT6
- Wireless Hybrid Keypad
- Wireless Keypad
- Wireless Dimmer
- Remote Dimmer - 3-Way
- Wireless Switch
- Remote Switch - 3-Way
- Standard Switch (Provided by the EC)
- Shade Panel (Requires 2 Dedicated 20A Circuits)
- Single Roller Motorized Shade | (1) QSC
- Dual Roller Motorized Shade | (2) QSC
- Motorized Drape | (1) QSC
- Electronic Smart Class | (1) 18/4

Lighting Luminaires

- Bollard
- Ceiling Mounted
- Recessed Downlight | Round or Square
- Recessed Multiple Downlight | 4 Light Sources
- Pendant | Round or Square
- Wall Mounted
- Wall Mounted Exterior
- Pole Mounted Exterior | Line Indicates Direction of Arm
- Linear LED
- Recessed Linear
- Surface Mounted Linear
- Step Light

General Drawing Symbols

- Callout View Tag
- Elevation Tag
- Keynote Tag
- Mechanical Equipment Tag w/ Circuit ID
- Electrical Equipment Tag
- Lighting Tag w/ Circuit ID

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MSU Stadium Lots
Bid Set Documents

CAMPUS PLANNING, DESIGN & CONSTRUCTION
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Checker

REVISIONS

#	DATE	DESCRIPTION
1	3.27.24	Addendum #1
3	4.3.2024	Addendum #3

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blacksheepengineering | 4062198489

MONTANA LICENSED PROFESSIONAL ENGINEER
ANDREW S. MOORE
No. 38404PE

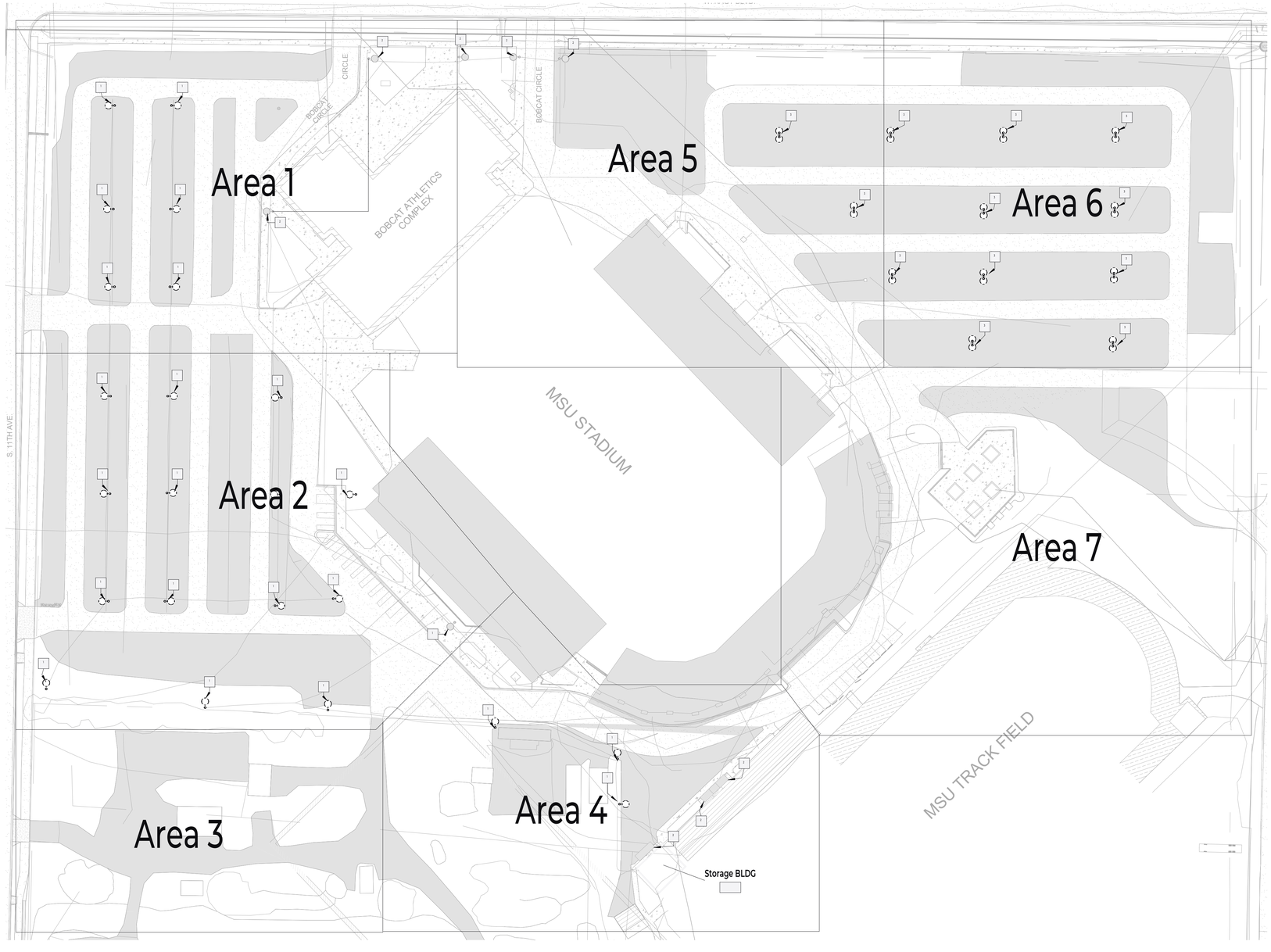
PPA#22-0012

A/E#00-00-00

ELECTRICAL INDEX

E10.1

Date:
03-14-2024



1 ED1.0 — ELECTRICAL OVERALL DEMOLITION SITE PLAN

1" = 60'-0"

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. Luminaire head to be relocated to MSU failities storage. Pole and Base to be demolished.
2. Existing luminaire to remain.
3. luminaire pole, head and base to be relocated to MSU facilities storage.

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MONTANA ANDREW S. MOORE No. 38404PE LICENSED PROFESSIONAL ENGINEER

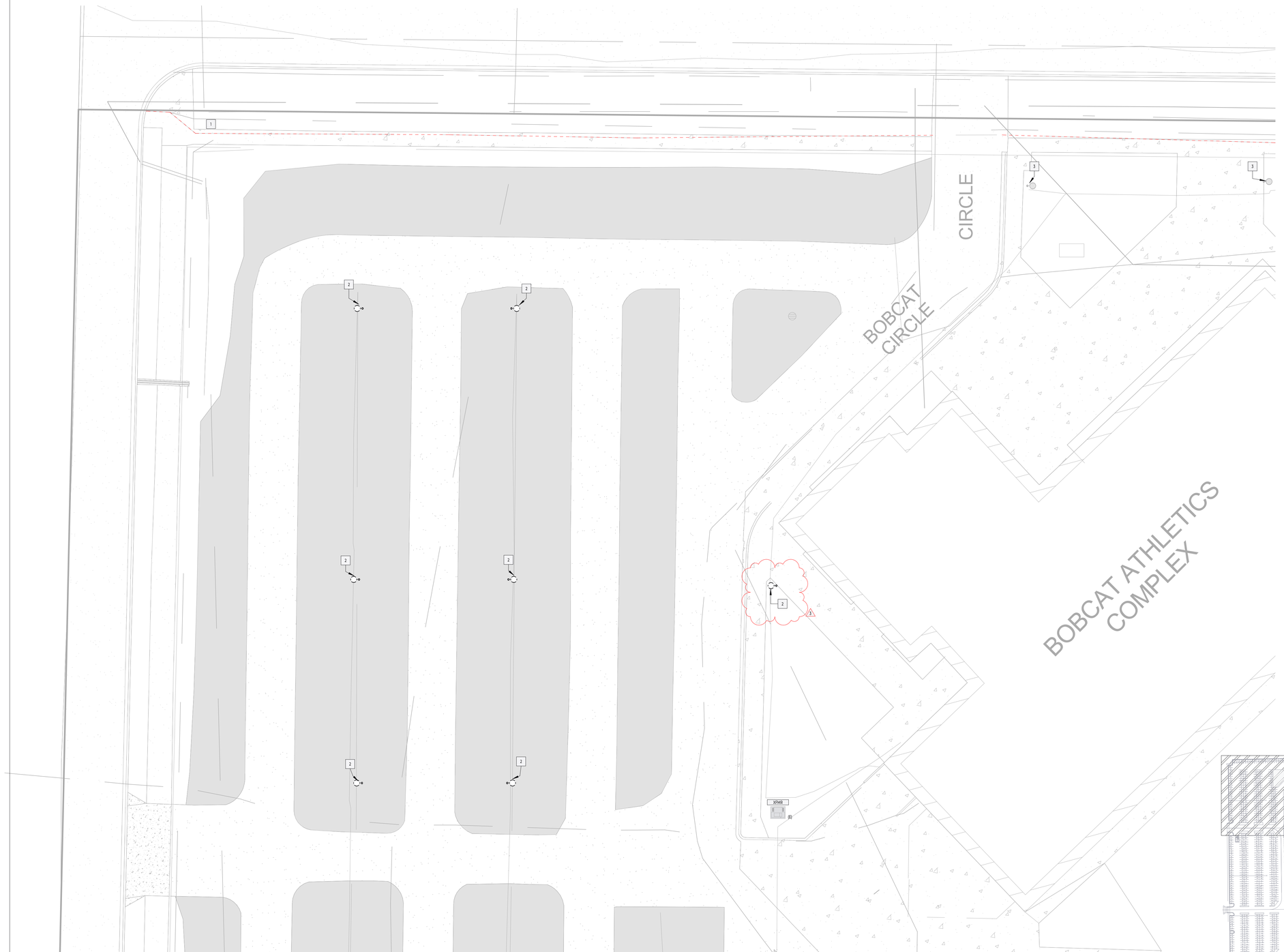
PPA#22-0012

A/E#00-00-00

ELECTRICAL OVERALL DEMOLITION SITE PLAN

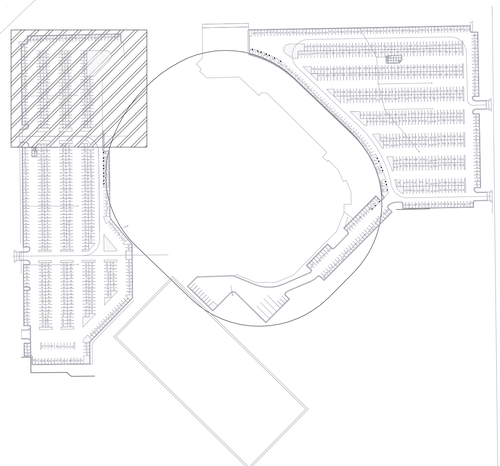
ED1.0

Date: 03-14-2024



1 ED1.1 ELECTRICAL DEMOLITION PLAN -AREA 1

1" = 20'-0"



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4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. Existing power along fence line existing to remain.
2. Luminaire head to be relocated to MSU Facilities storage. Pole and Base to be demolished.
3. Existing luminaire to remain.

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REVISIONS

#	DATE	DESCRIPTION
3	4.3.2024	Addendum #3

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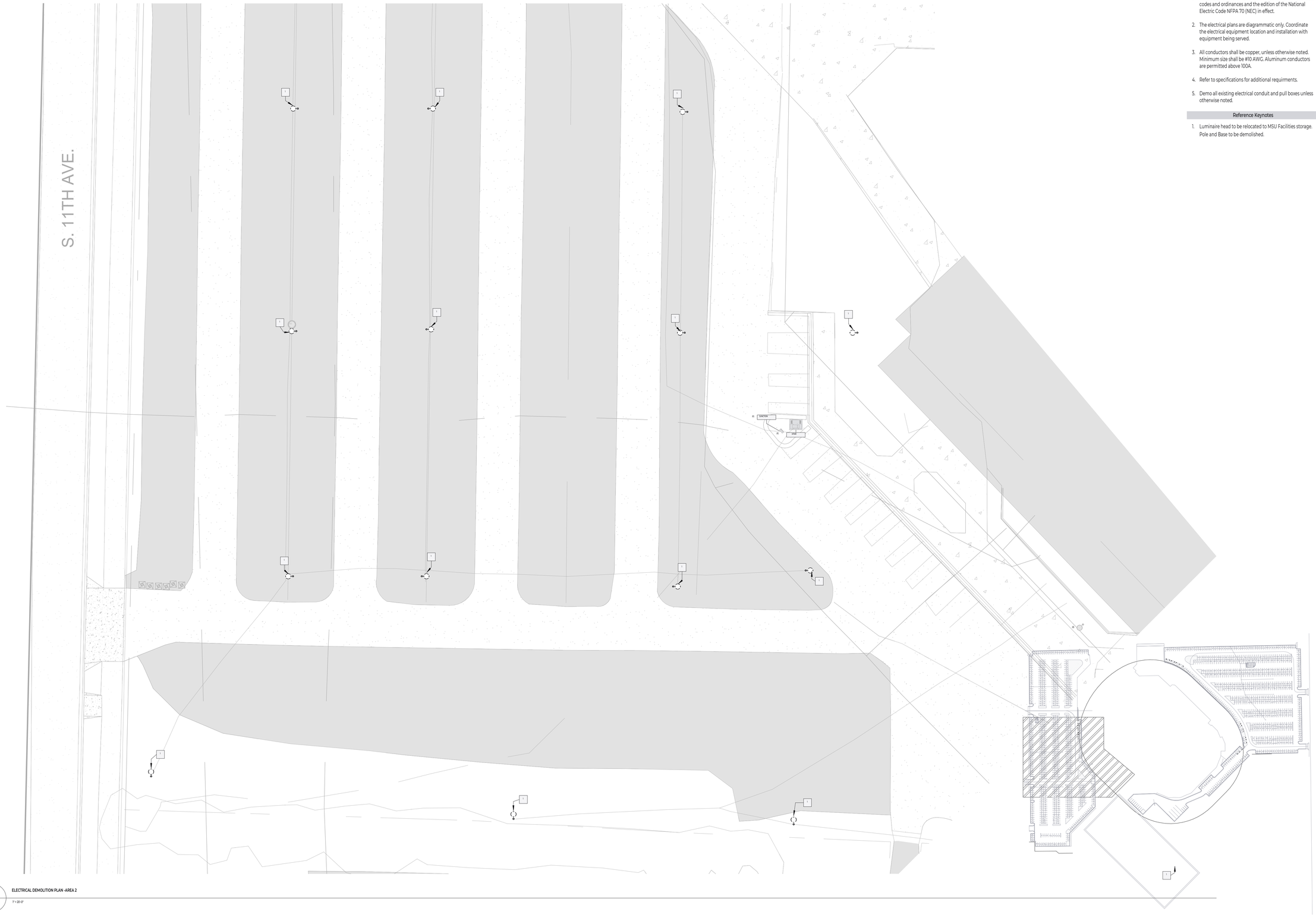
PPA#22-0012

A/E#00-00-00

ELECTRICAL DEMOLITION PLAN -AREA 1

ED1.1

Date: 03-14-2024



1 ED1.2 — ELECTRICAL DEMOLITION PLAN -AREA 2

1" = 20'-0"

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
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3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. Luminaire head to be relocated to MSU Facilities storage. Pole and Base to be demolished.

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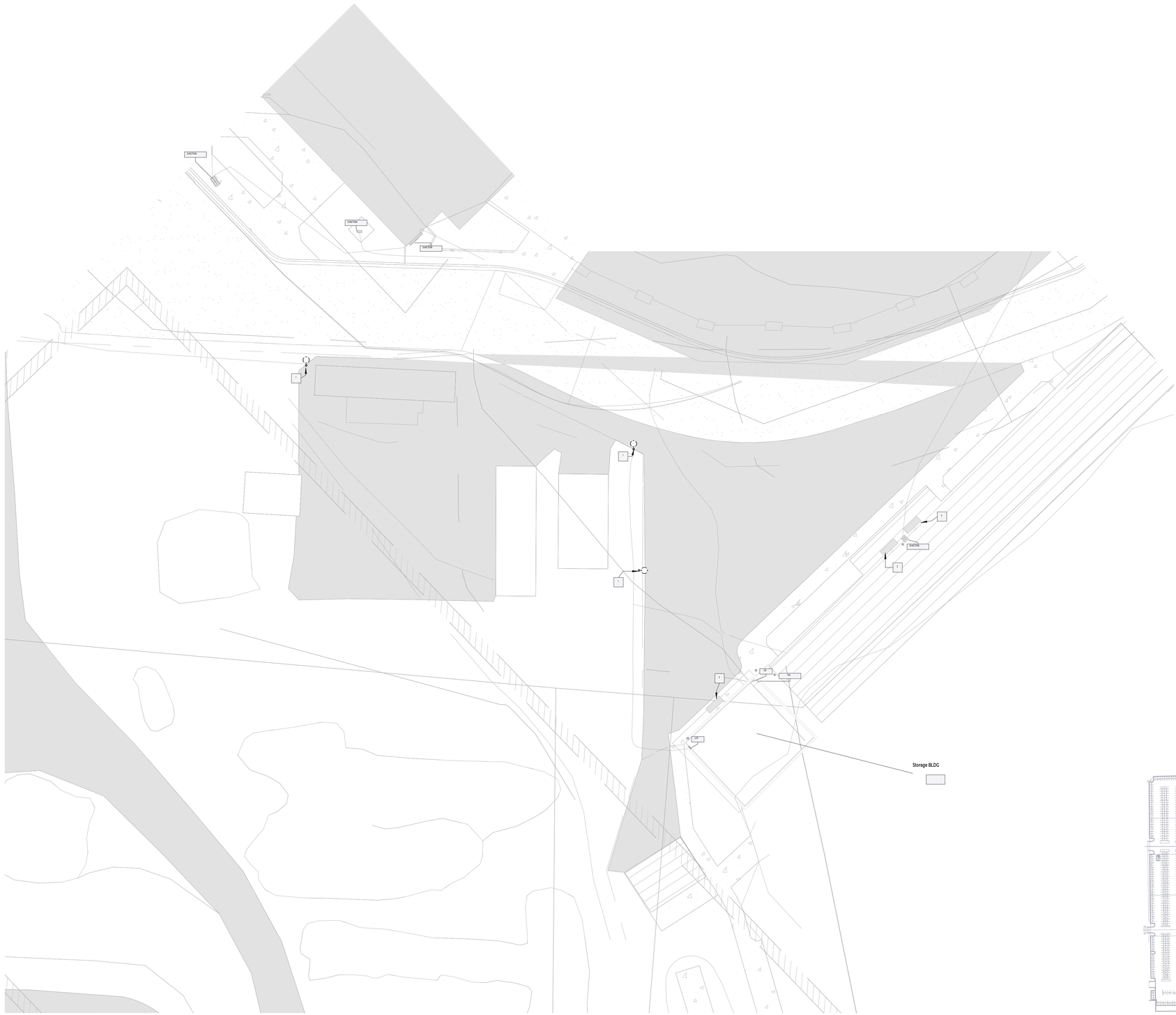
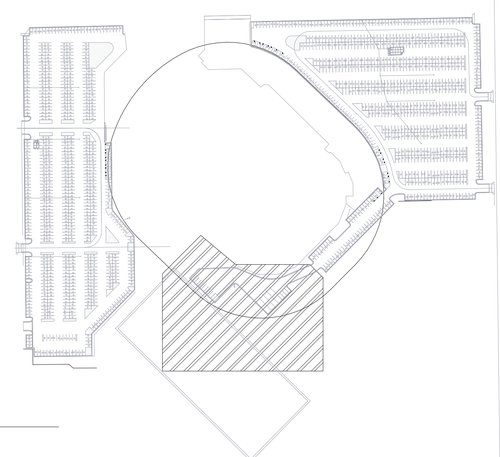
A/E#00-00-00

ELECTRICAL DEMOLITION PLAN -AREA 2

ED1.2

Date: 03-14-2024





1 ED1.4 ELECTRICAL DEMOLITION PLAN -AREA 4

1" = 20'-0"

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. Luminaire head to be relocated to MSU Facilities storage. Pole and Base to be demolished.
2. Existing luminaire to remain.

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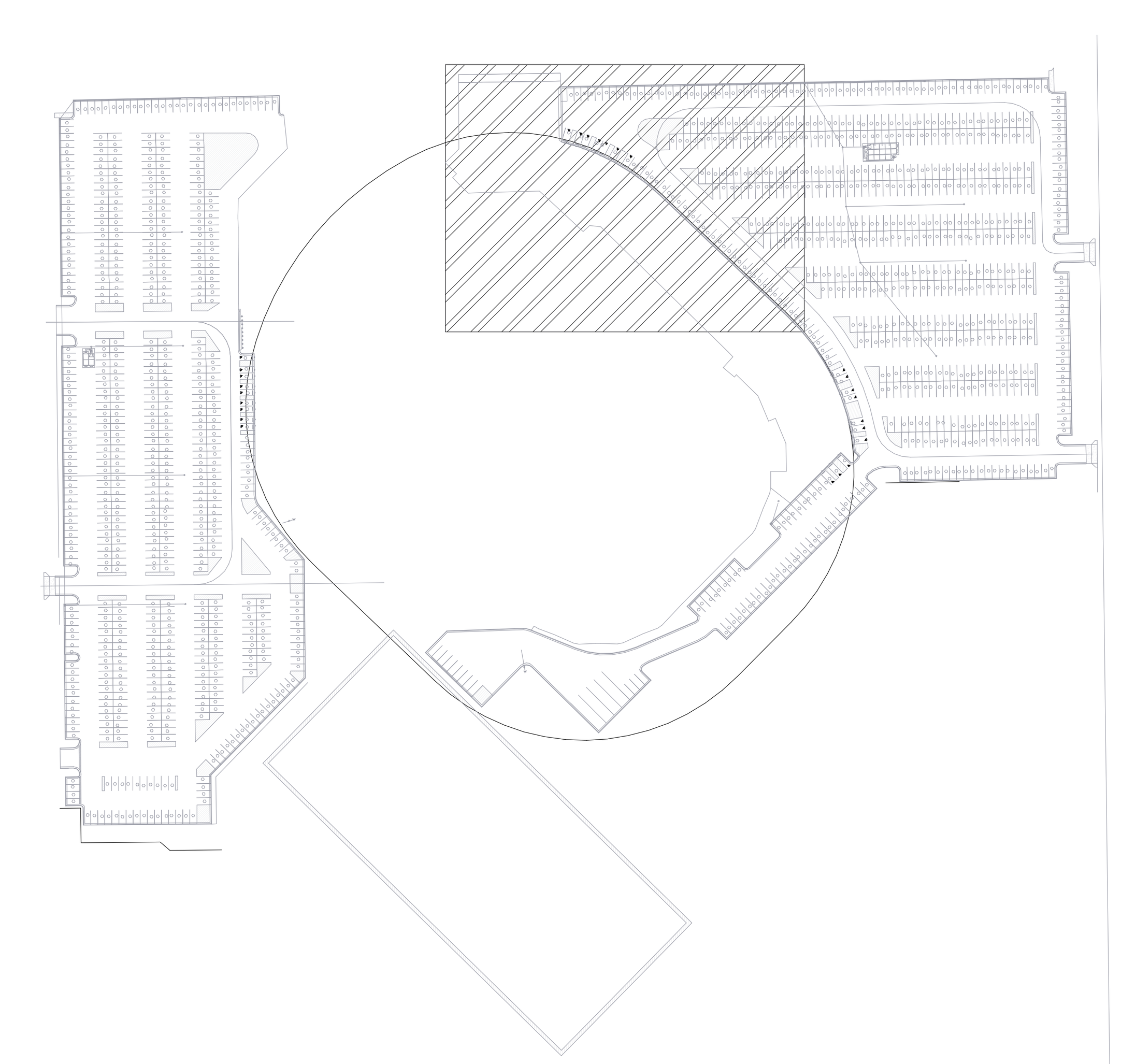
A/E#00-00-00

ELECTRICAL
DEMOLITION PLAN
-AREA 4

ED1.4

Date:
03-14-2024



1 ED1.5 ELECTRICAL DEMOLITION PLAN -AREA 5
1" = 20'-0"

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. Existing power along fence line existing to remain.
2. Coordinate relocation of existing solar powered area luminaire & base to facilities storage with MSU facilities.
3. Existing luminaire to remain.

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PROFESSIONAL ENGINEER

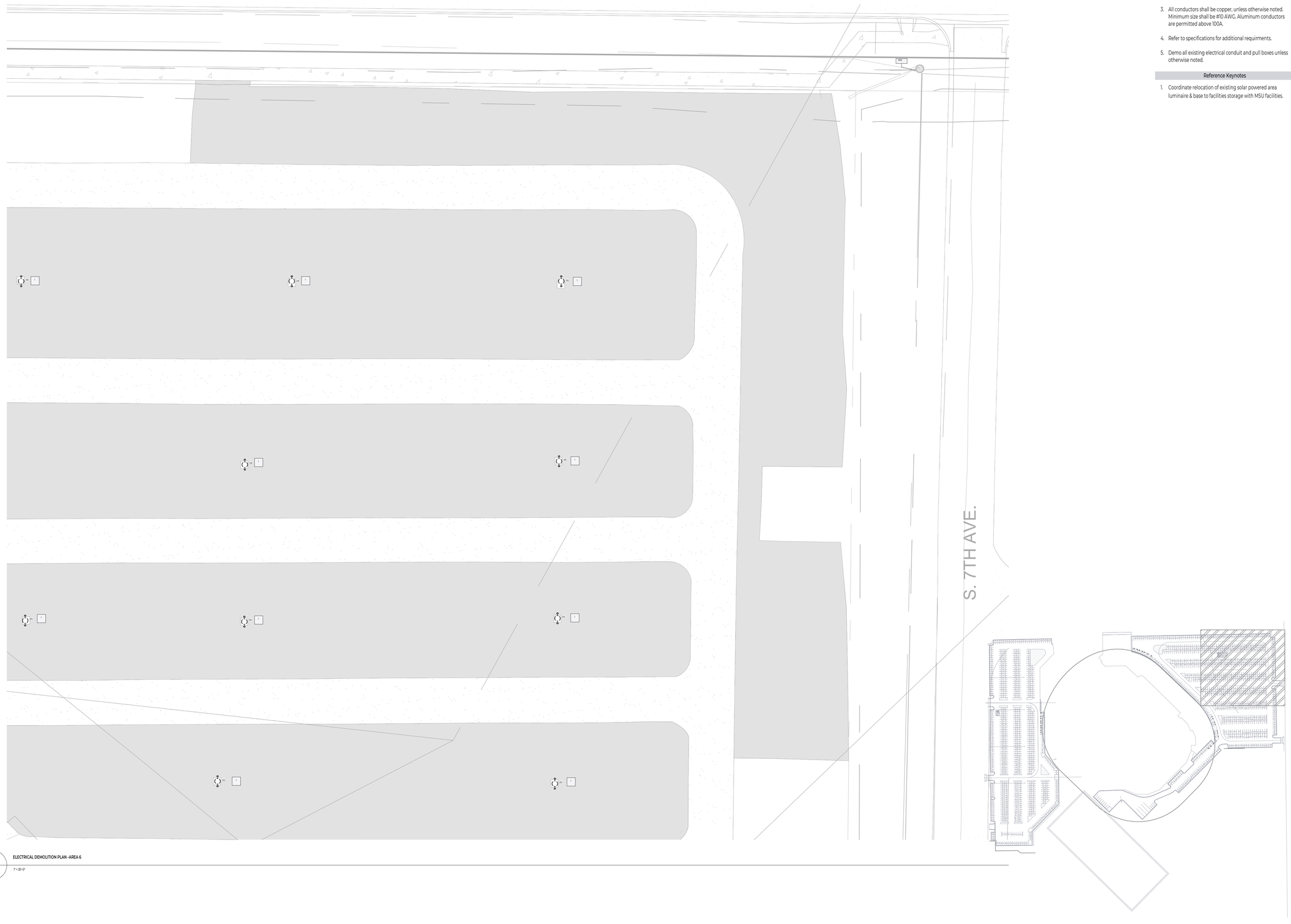
PPA#22-0012

A/E#00-00-00

ELECTRICAL DEMOLITION PLAN -AREA 5

ED1.5

Date:
03-14-2024



1 ED1.6 ELECTRICAL DEMOLITION PLAN -AREA 6

1" = 30'-0"

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. Coordinate relocation of existing solar powered area luminaire & base to facilities storage with MSU facilities.

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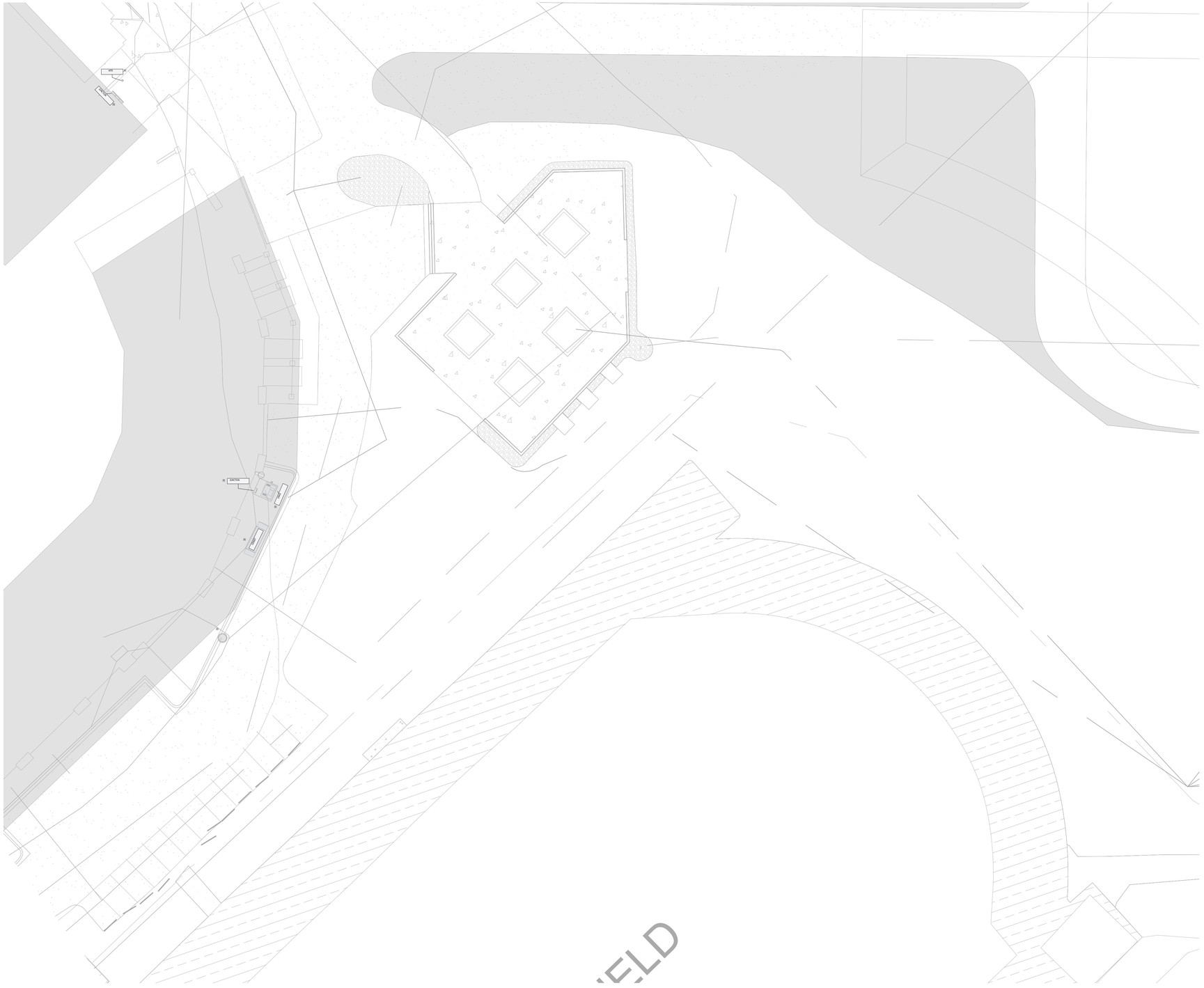
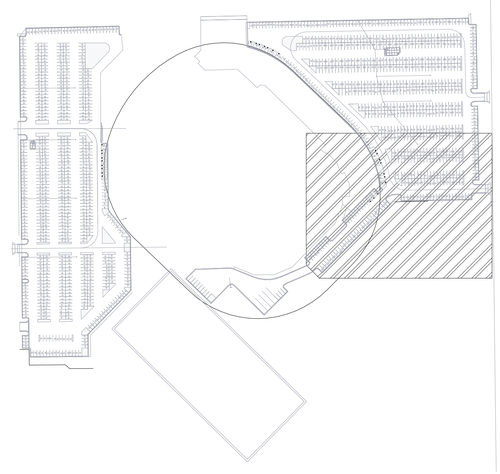
A/E#00-00-00

ELECTRICAL DEMOLITION PLAN -AREA 6

ED1.6

Date:
03-14-2024





1 ELECTRICAL DEMOLITION PLAN -AREA 7
ED1.7 1" = 20'-0"

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

MONTANA STATE UNIVERSITY

MSU Stadium Lots

Bid Set Documents

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REVISIONS

#	DATE	DESCRIPTION

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LICENSED PROFESSIONAL ENGINEER

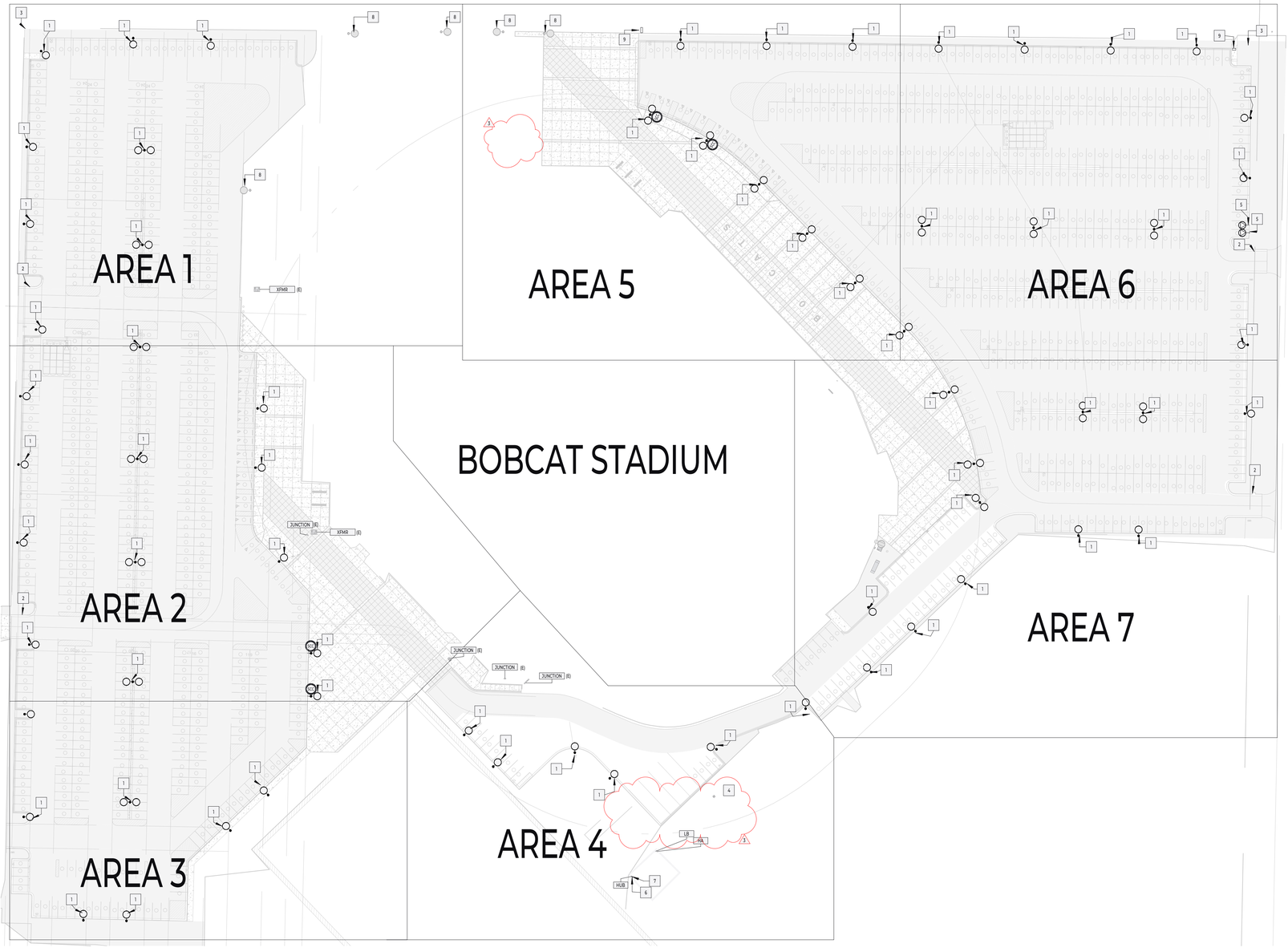
PPA#22-0012

A/E#00-00-00

ELECTRICAL DEMOLITION PLAN -AREA 7

ED1.7

Date: 03-14-2024



1 EP2.0 ELECTRICAL OVERALL SITE PLAN

1" = 60'-0"

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. New luminaire, pole and base.
2. Provide one 2" PVC conduit sleeve under roadway for future use.
3. Provide 2" conduit under sidewalk for future use.
4. EC to utilize existing spare 2"C & pull string from Track Storage buidling to existing pullbox underneath bleachers.
5. Provide 2" conduit and pull string back to panel LB for future EV charging. Provide handholes as required by article 100 of the NEC.
6. Lutron Vive hub and power packs to be mounted in storage building where existing Wattstopper lighting panel is located.
7. Provide and install new lighting control hub per lighting control equipment schedule. Provide connection to unswitched 120V, 20A circuit existing at this location.
8. Existing luminaire is outside of project limits and will remain.
9. Provide Hubbell underground enclosure assembly for future access in case of rework. See E10.1 for details.

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REVISIONS

#	DATE	DESCRIPTION
1	3.27.24	Addendum #1
3	4.3.2024	Addendum #3

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blacksheepengineering | 406.219.8489

MONTANA
ANDREW S. MOORE
No. 38404PE
LICENSED PROFESSIONAL ENGINEER

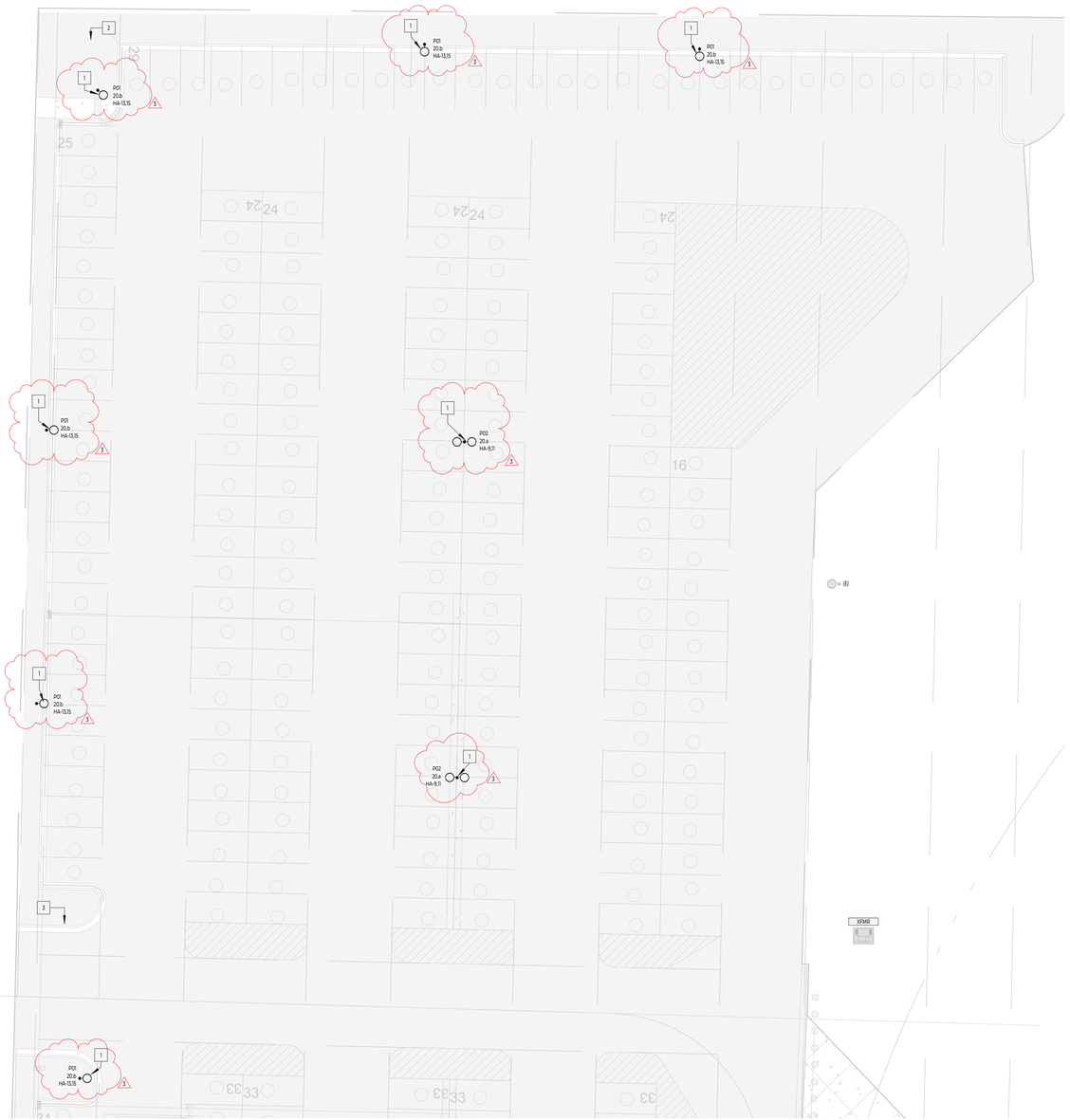
PPA#22-0012

A/E#00-00-00

ELECTRICAL OVERALL SITE PLAN

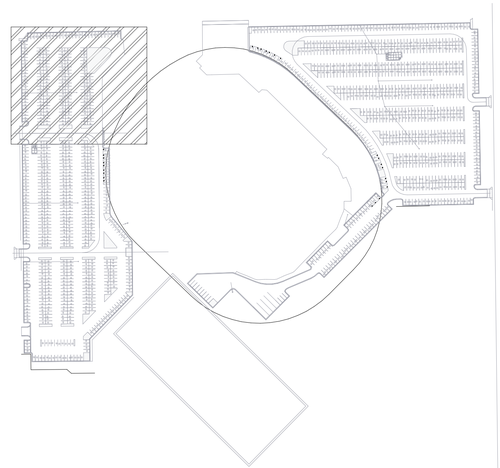
EP2.0

Date:
03-14-2024



1 EP2.1 **SITE PLAN AREA 1**

1" = 20'-0"



General Sheet Notes

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2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. New luminaire, pole and base.
2. Provide 2" conduit under sidewalk for future use.
3. Provide one 2" PVC conduit sleeve under roadway for future use.

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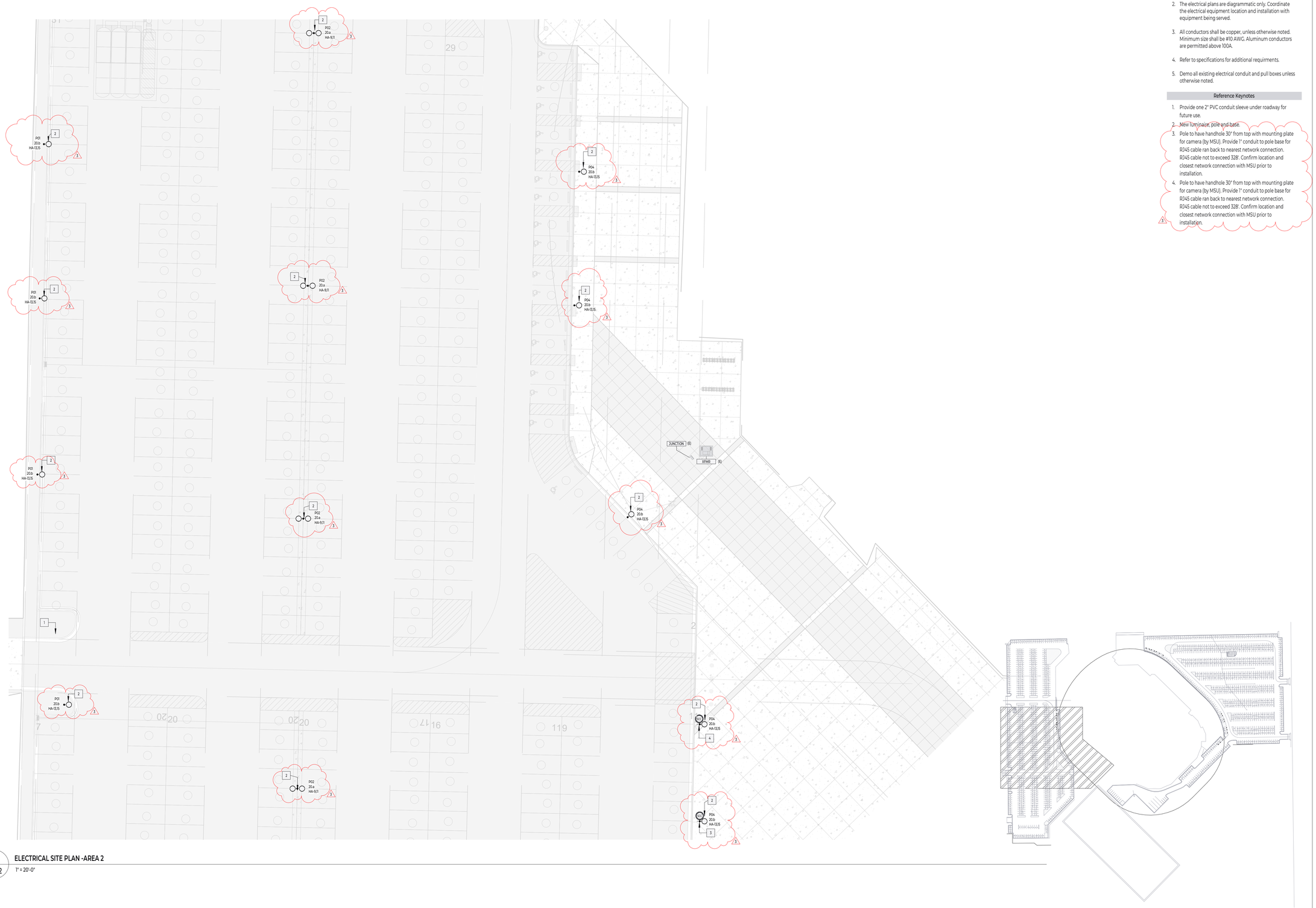
PPA#22-0012

A/E#00-00-00

ELECTRICAL SITE PLAN -AREA 1

EP2.1

Date:
03-14-2024



1 EP2.2 **ELECTRICAL SITE PLAN -AREA 2**

1" = 20'-0"

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. Provide one 2" PVC conduit sleeve under roadway for future use.
2. New luminaire, pole and base.
3. Pole to have handhole 30" from top with mounting plate for camera (by MSU). Provide 1" conduit to pole base for RJ45 cable ran back to nearest network connection. RJ45 cable not to exceed 328'. Confirm location and closest network connection with MSU prior to installation.
4. Pole to have handhole 30" from top with mounting plate for camera (by MSU). Provide 1" conduit to pole base for RJ45 cable ran back to nearest network connection. RJ45 cable not to exceed 328'. Confirm location and closest network connection with MSU prior to installation.

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ELECTRICAL SITE PLAN -AREA 2

EP2.2

Date: 03-14-2024

General Sheet Notes

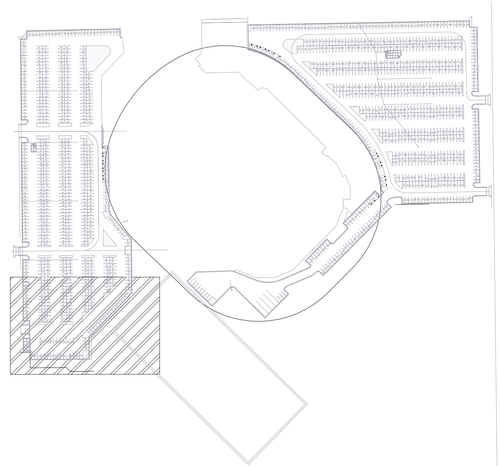
1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. New luminaire, pole and base.
2. Provide one 2" PVC conduit sleeve under roadway for future use.

1 EP2.3 **ELECTRICAL SITE PLAN -AREA 3**

1" = 20'-0"



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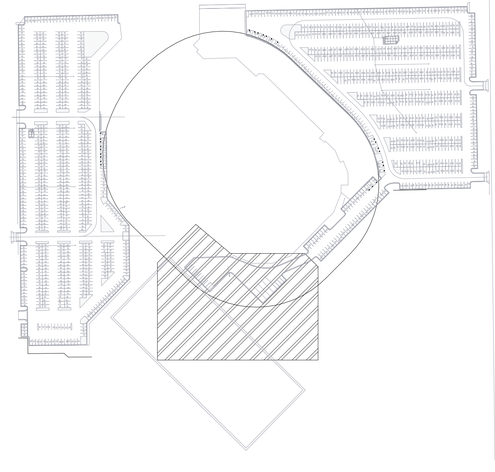
ELECTRICAL SITE PLAN -AREA 3

EP2.3

Date: 03-14-2024

1 EP2.4 ELECTRICAL SITE PLAN -AREA 4

1" = 20'-0"



General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. New luminaire, pole and base.
2. Provide and install new lighting control hub per lighting control equipment schedule. Provide connection to unswitched 120V, 20A circuit existing at this location.
3. Lutron Vive hub and power packs to be mounted in storage building where existing Wattstopper lighting panel is located.

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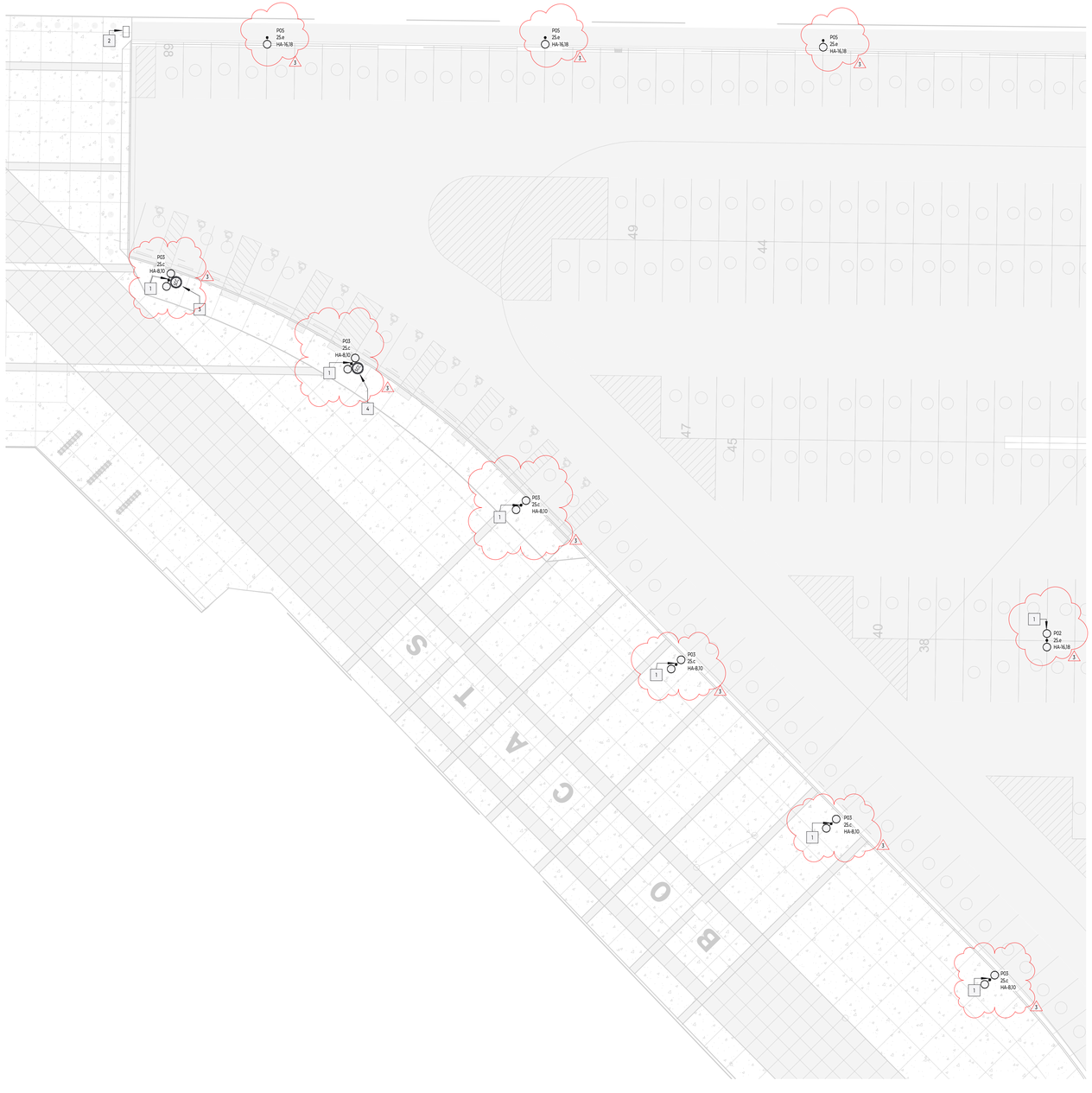
ELECTRICAL SITE PLAN -AREA 4

EP2.4

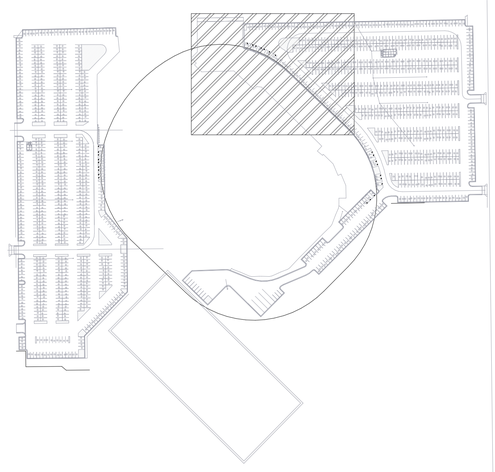
Date:
03-14-2024



1 EP2.5 **ELECTRICAL SITE PLAN -AREA 5**

1" = 20'-0"

(E)



General Sheet Notes

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3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. New luminaire, pole and base.
2. Provide Hubbell underground enclosure assembly for future access in case of rework. See E10.1 for details.
3. Pole to have handhole 30" from top with mounting plate for camera (by MSU). Provide 1" conduit to pole base for RJ45 cable ran back to nearest network connection. RJ45 cable not to exceed 328'. Confirm location and closest network connection with MSU prior to installation.
4. Pole to have handhole 30" from top with mounting plate for camera (by MSU). Provide 1" conduit to pole base for RJ45 cable ran back to nearest network connection. RJ45 cable not to exceed 328'. Confirm location and closest network connection with MSU prior to installation.

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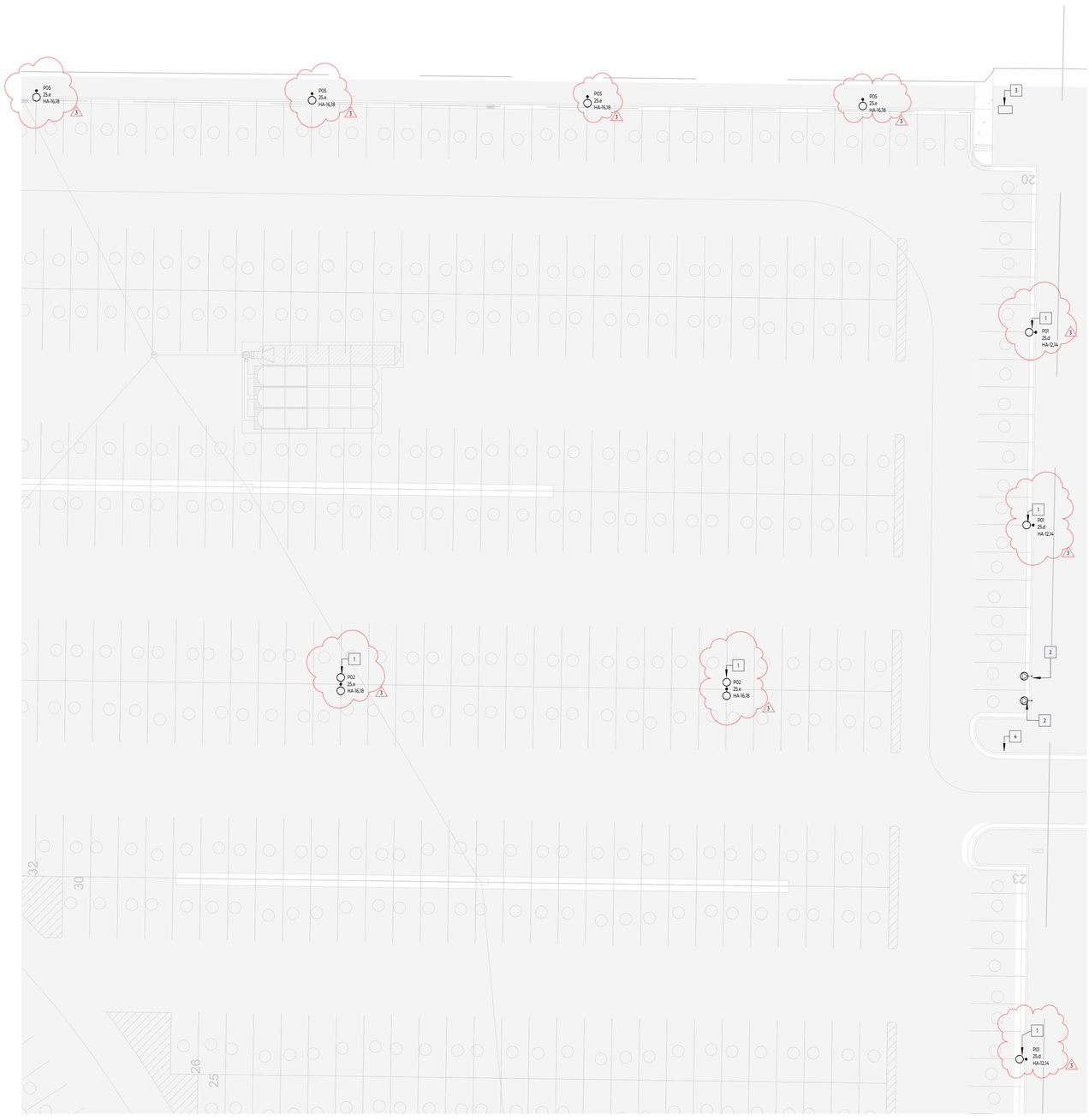
ELECTRICAL SITE PLAN -AREA 5

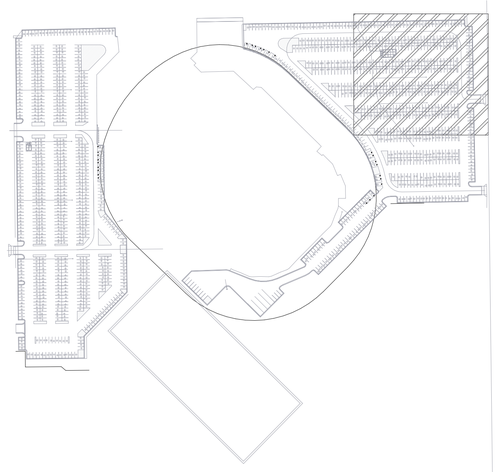
EP2.5

Date:
03-14-2024



1 EP2.6 **ELECTRICAL SITE PLAN -AREA 6**

1" = 20'-0"



General Sheet Notes

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2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. New luminaire, pole and base.
2. Provide 2" conduit and pull string back to panel LB for future EV charging. Provide handholes as required by article 100 of the NEC.
3. Provide Hubbell underground enclosure assembly for future access in case of rework. See E10.1 for details.
4. Provide 2" conduit under sidewalk for future use.

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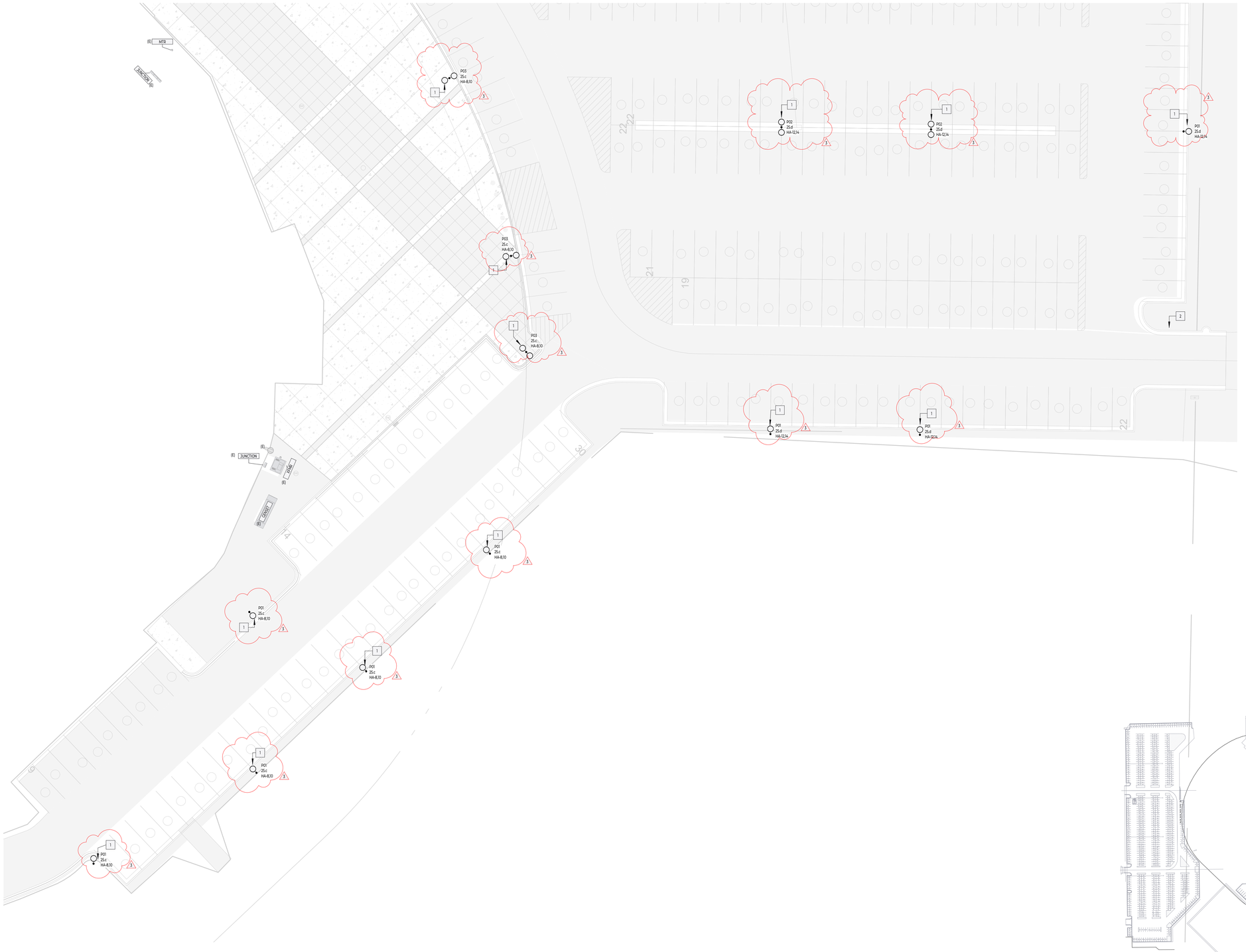
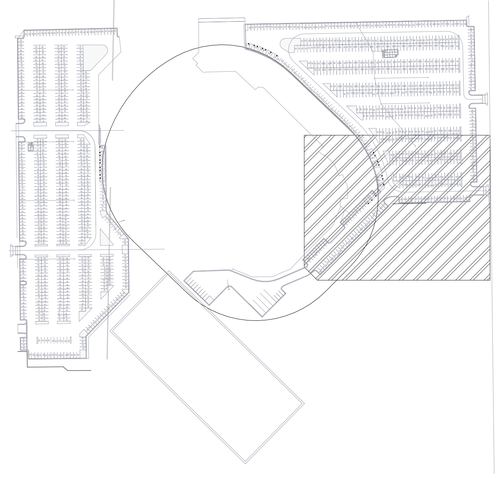
ELECTRICAL SITE PLAN -AREA 6

EP2.6

Date:
03-14-2024





1 EP2.7 ELECTRICAL SITE PLAN -AREA 7

1" = 20'-0"

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
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3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. New luminaire, pole and base.
2. Provide one 2" PVC conduit sleeve under roadway for future use.

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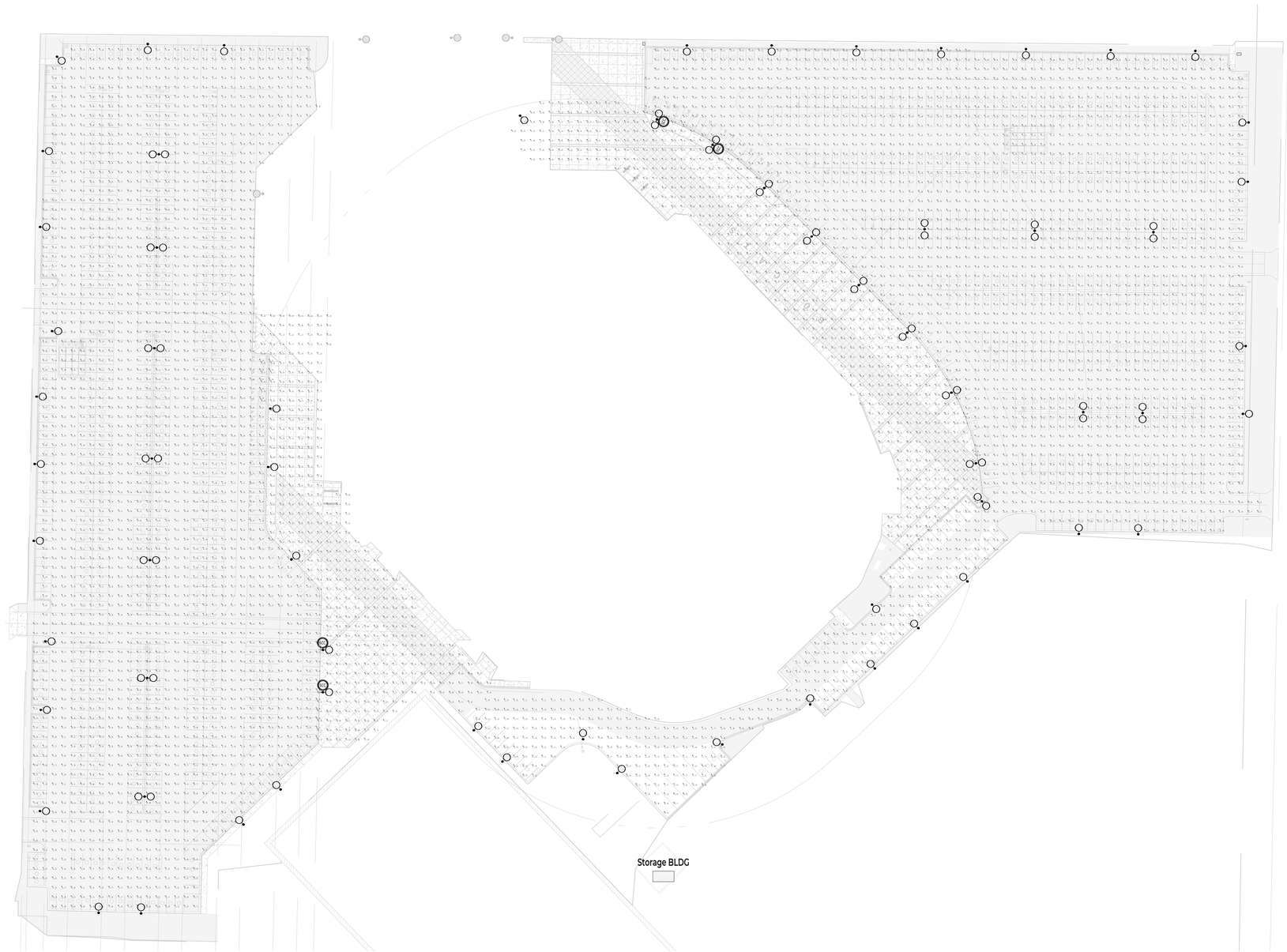
ELECTRICAL SITE PLAN -AREA 7

EP2.7

Date: 03-14-2024



1 EP3.0 Site Photometrics

1" = 60'-0"

General Sheet Notes

1. Calculations performed in AGI32 software with reflectance and light loss factor assumptions. Additional information can be provided upon request.
2. Design criteria are provided from the IESNA handbook, 10th edition, or IESNA recommended practices (RPs) unless otherwise noted.

Design Criteria

1. Parking Lot:
   A. Average illuminance of at least 1 fc.
   B. AVG / MIN maximum of 15:1.
2. Plaza Area
   A. Average illuminance of at least 1 fc.
   B. Max / Min maximum of 20:1.

Calculation Results

1. Parking Lot:
   A. Average illuminance: 2.31 fc.
   B. Max / MIN: 7.1
2. Plaza Area
   A. Average illuminance: 2.1 fc
   B. Max / Min: 12.1

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A/E#00-00-00

SITE PHOTOMETRIC PLAN

EP3.0

Date:
03-14-2024

Luminaires

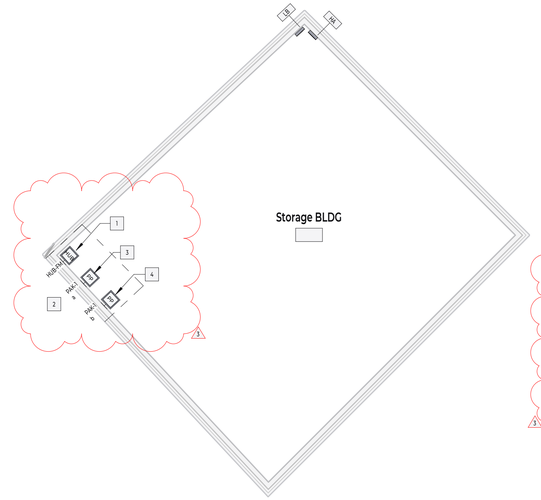
Type	Description	Manufacturer	Model	No. of Heads	No. of Poles	CCT	CRI	Dimming	Wattage	Lumens	Remarks
P01	Pole Head - Type 4 Distribution, Single Luminaire Assembly	Cardco	P26-64L-800-WW-G2-SF-4-480-FAWS-TLRD7-FP2-BZ & PTF2-P26/34-1-90(F)	32	32	3000	80+	FAWS	92 VA	8854 lm	1,2,3,4,7
P02	Pole Head - Type 4 Distribution, Twin Luminaire Assembly	Cardco	P34-96L-800-WW-G2-SF-4-480-FAWS-TLRD7-FP2-BZ / PTF34-2-180-(F)	24	12	3000	80+	FAWS	92 VA	8854 lm	1,2,3,4,7
P03	Pole Head - Type 4 Distribution, Twin Luminaire Assembly	Cardco	P26-64L-800-WW-G2-SF-4-480-FAWS-TLRD7-FP2-BZ & PTF2-P26/34-2-180(F)	18	9	3000	80+	FAWS	92 VA	8854 lm	1,2,3,5,7
P04	Pole Head - Type 4 Distribution, Single Luminaire Assembly	Cardco	P34-96L-800-WW-G2-SF-4-480-FAWS-TLRD7-FP2-BZ & PTF26/34-1-90(F)	5	5	3000	80+	FAWS	232 VA	26591 lm	1,2,3,6,7
P05	Pole Head - Type 4 Distribution, Single Luminaire Assembly	Cardco	P34-96L-800-WW-G2-SF-4-480-FAWS-TLRD7-FP2-BZ & PTF26/34-1-90(F)	7	7	3000	80+	FAWS	232 VA	26591 lm	1,2,3,4,7

NOTES:
1. Luminaire model number, mounting accessories, and pole model number inidcated in schedule model number seperated by '&'.
2. Pole to have a concrete base for all locations with parking surface and within 5' of driving surfaces.
3. Refer to 1/E10.1 and 2/E10.1 for installation requirments.
4. Provide luminaire with Ameron MBO08.5 and a 2" Tenon for slip fitter.
5. Provide luminaire with Ameron MBO06 and a 2" Tenon for slip fitter.
6. Provide luminaire with Ameron MBO07 and a 2" Tenon for slip fitter.
7. Provide luminaire NEMA 7 pin with shorting cap for future photocell addition.

Lighting Control Devices

Type Mark	Manufacturer	Model	Description	Count	Notes
H-MOUNT	Lutron	H-MOUNT_SM	Vive Surface Mount Kit	1	1,2,3
HUB-FM	Lutron	HJS-0-FM	Vive Wireless HUB Without BACNET, Up to 75 Devices, Flush Mount	1	1,2,3
LSC	Lutron	LSC-B2	Commercial system 2-year warranty	1	1,2,3
LSC-OS	Lutron	LSC-OS-VU-VIVE	Vive system onsite full-scope startup	1	1,2,3
PAK-1	Lutron	RMJS-5R-DV-B	Vive PowPak Relay Module	5	1,2,3,4
VIVE-VUE	Lutron	VIVE-VUE	Vive Software License	1	1,2,3

NOTES:
1. EC to install a complete working system.
2. EC to provide startup, commissioning, and training services for lighting control system.
3. Refer to spcifications for additional control system requirments.
4. EC to include an additional PowPak (RMJS-5R-DV-B) to cover unforseen existing zoning.



1 E6.1 **Storage Building Electrical Plan**
NTS

General Sheet Notes

1. Installation of all work shall be in accordance with all local codes and ordinances and the edition of the National Electric Code NFPA 70 (NEC) in effect.
2. The electrical plans are diagrammatic only. Coordinate the electrical equipment location and installation with equipment being served.
3. All conductors shall be copper, unless otherwise noted. Minimum size shall be #10 AWG. Aluminum conductors are permitted above 100A.
4. Refer to specifications for additional requirments.
5. Demo all existing electrical conduit and pull boxes unless otherwise noted.

Reference Keynotes

1. Provide and install new lighting control hub per lighting control equipment schedule. Provide connection to unswitched 120V, 20A circuit existing at this location.
2. Lutron Vive hub and power packs to be mounted in storage building where existing Wattstopper lighting panel is located.
3. Provide & install new 40A/6P mechanically held contactor with 120V coil. Route 120V circuit in this location (also used for hub) through power pack 'a' to contactor coil for control input. Lighting circuits HA-9,11,13,15 shall be routed through contactor for on/off control.
4. Provide & install new 60A/6P mechanically held contactor with 120V coil. Route 120V circuit in this location (also used for hub) through power pack 'b' to contactor coil for control input. Lighting circuits HA-8,10,12,14,16,18 shall be routed through contactor for on/off control.

Schedule || HA

Project	MSU Stadium Lots	**Mounting**	Placeholder	**Bussing**	225	**Voltage**	480/277 Wye
Panel ID	HA	**KAIC Rating**	10kA	**Mains**	225 A	**Phases**	3
Location	Storage BLDG	**Feeder**		**Type**	MCB	**Wires**	4

Details:
Circuit Breaker Protection Types |
A = Arc-Fault Protection
G = Ground-Fault Personnel
D = Dual Arc-Fault and Ground-Fault Protection
E = Ground-Fault Equipment
L = Breaker Lock-Off Device
S = Furnish with Standard Breaker
ST = Shunt Trip Device

Notes:
Connect new lighting circuits to existing panel 'HA' in the garage space. Provide new circuits 20A/2P circuit breakers for new 480V lighting circuits.

CKT	Circuit Description	Wire	Type	Trip	Poles	A		B		C		Poles	Trip	Type	Wire	Circuit Description	CKT
1	(D)Lighting Panel Controller	--	--	20 A	3	0 VA	0 VA					3	20 A	--	--	Transformer	2
3	--	--	--	--	--			0 VA	0 VA			--	--	--	--	--	4
5	--	--	--	--	--					0 VA	0 VA	--	--	--	--	--	6
7	(D) Parking Lights	--	--	20 A	1	0 VA	1288 VA					2	20 A		3/4"C, 2#10, #10G	South / East Lot	8
9	West Lot | Interior Lot Lighting	3/4"C, 2#10, #10G		20 A	2			644 VA	1288 VA			--	--	--	--	--	10
11	--	--	--	--	--					644 VA	460 VA	2	20 A		3/4"C, 2#10, #10G	East Lot	12
13	West Lot | Exterior Lot Lighting	3/4"C, 2#10, #10G		20 A	2	1316 VA	460 VA					--	--	--	--	--	14
15	--	--	--	--	--			1316 VA	1088 VA			2	20 A		3/4"C, 2#10, #10G	East Lot	16
17	Spare 1" Conduit	--	--	20 A	1					0 VA	1088 VA	--	--	--	--	--	18
			Total Apparent Power Phase Loads:			3064 VA		4336 VA		2192 VA							
			Total Current Phase Loads:			12 A		16 A		8 A							

Connected Loads:		Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
Phase A:	3064 VA	Lighting	9592 VA	100.00%	9592 VA	Total Connected Load:	9592 VA
Phase B:	4336 VA					Total Estimated Demand:	9592 VA
Phase C:	2192 VA					Total Connected Current:	12 A
Total:	**9592 VA**					Total Estimated Demand Current:	12 A

Schedule || LB

Project	MSU Stadium Lots	**Mounting**	Placeholder	**Bussing**	125 A	**Voltage**	120/208 Wye
Panel ID	LB	**KAIC Rating**	10kA	**Mains**	125 A	**Phases**	3
Location		**Feeder**		**Type**	MCB	**Wires**	4

Details:
Circuit Breaker Protection Types |
A = Arc-Fault Protection
G = Ground-Fault Personnel
D = Dual Arc-Fault and Ground-Fault Protection
E = Ground-Fault Equipment
L = Breaker Lock-Off Device
S = Furnish with Standard Breaker
ST = Shunt Trip Device

Notes:

CKT	Circuit Description	Wire	Type	Trip	Poles	A		B		C		Poles	Trip	Type	Wire	Circuit Description	CKT
1	Space	--	--	--	1	--	--					1	--	--	--	Space	2
3	(E) Track Score Board	--	--	20 A	2			0 VA	0 VA			2	20 A	--	--	(E) Track Scoreboard	4
5	--	--	--	--	--					0 VA	0 VA	--	--	--	--	--	6
7	(E) Track Scoreboard Outlet	--	--	20 A	2	0 VA	0 VA					2	20 A	--	--	(E) Track Scoreboard	8
9	--	--	--	--	--			0 VA	0 VA			--	--	--	--	--	10
11	(E) Track Scoreboard Outlet	--	--	20 A	2					0 VA	0 VA	2	20 A	--	--	(E) Track Scoreboard	12
13	--	--	--	--	--	0 VA	0 VA					--	--	--	--	--	14
15	(E) Phone Board	--	--	20 A	1			0 VA	0 VA			1	20 A	--	--	(E) Receptacle / Hammerthrow	16
17	(E) Interior Bldg Lights	--	--	20 A	1					0 VA	0 VA	1	20 A	--	--	(E) Receptacle	18
19	Space	--	--	--	1	--	0 VA					3	20 A	--	--	(E) Feed to Pressbox Panel	20
21	Space	--	--	--	1			--	0 VA			--	--	--	--	--	22
23	(E) West Receptacle	--	--	20 A	1					0 VA	0 VA	--	--	--	--	--	24
25	Space	--	--	--	1	--	--					1	--	--	--	Space	26
27	Space	--	--	--	1			--	--			1	--	--	--	Space	28
29	Space	--	--	--	1					--	--	1	--	--	--	Space	30
			Total Apparent Power Phase Loads:			0 VA		0 VA		0 VA							
			Total Current Phase Loads:			0 A		0 A		0 A							

Connected Loads:		Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
Phase A:	0 VA					Total Connected Load:	0 VA
Phase B:	0 VA					Total Estimated Demand:	0 VA
Phase C:	0 VA					Total Connected Current:	0 A
Total:	**0 VA**					Total Estimated Demand Current:	0 A

MONTANA STATE UNIVERSITY

MSU Stadium Lots
Bid Set Documents

CAMPUS PLANNING, DESIGN & CONSTRUCTION
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE 406.994.5413 FAX 406.994.5665

Checker

REVISIONS

#	DATE	DESCRIPTION
1	3.27.24	Addendum #1
3	4.3.2024	Addendum #3

BLACKSHEEP ENGINEERING
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ANDREW S. MOORE
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PROFESSIONAL ENGINEER
LICENSED

PPA#22-0012

A/E#00-00-00

ELECTRICAL SCHEDULES & DIAGRAMS

E6.1

Date:
03-14-2024