PPA# 22-0012

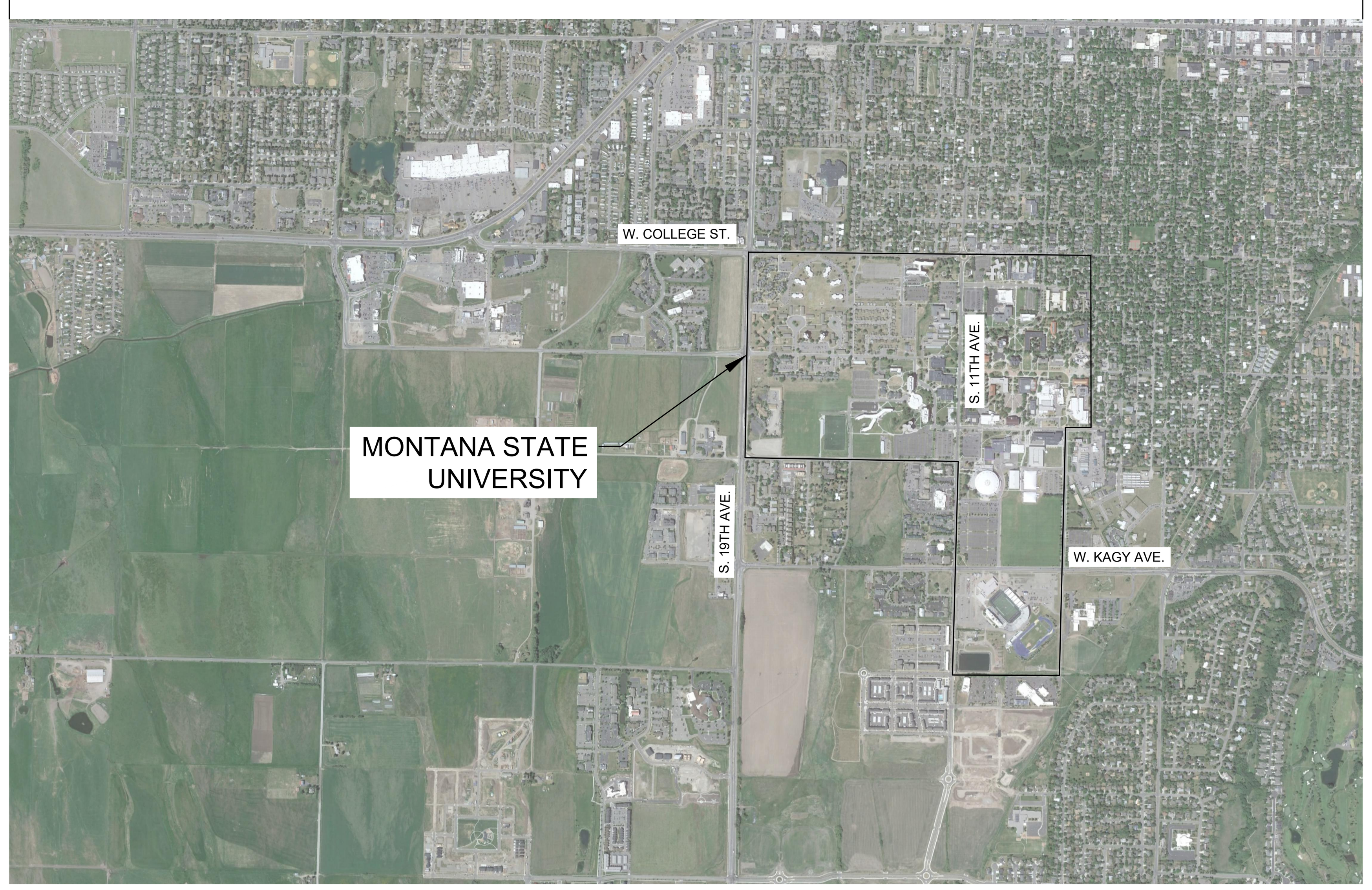
PARKING IMPROVEMENTS 2025

MONTANA STATE UNIVERSITY

BOZEMAN, MT

LOCATION MAP
NTS

BOZEMAN, MT



VICINITY MAP
NTS

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
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MONTANA STATE UNIVERSITY

PREPARED BY:

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

SHEET INDEX:

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PARKING IMPROVEMENTS 2025

DRAWN BY: L. OTTEY
REVIEWED BY: K. GAUTHIER

REV.	DESCRIPTION	DATE
1	GC ADDENDUM ADDITION	05/09/23
2	2025 UPDATE	10.4.24

PPA#22-0012

COVER

SHEET
GI0-1

DATE
05-09-23

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 7TH EDITION OF THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) & MODIFICATIONS THERETO. IN CASE OF A CONFLICT BETWEEN REGULATORY OR STANDARD SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.

5. PERMITS & FEES: ALL PERMITS AND FEES REQUIRED FOR THIS PROJECT SHALL BE OBTAINED & PURCHASED BY THE CONTRACTOR. *PERMITS REQUIRED:* MONTANA DEQ SWPPP. OTHER PERMITS MAY BE REQUIRED AND SHALL BE DISCUSSED WITH THE ENGINEER.

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.

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.

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

11. LOTS & STREET CLOSURES SHALL BE COORDINATED WITH & APPROVED BY MSU PARKING, MSU PLANNING, DESIGN, & CONSTRUCTION (PDC), & MSU FAMILY GRADUATE HOUSING STAFF 72 HOURS PRIOR TO CLOSURE.

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 ITEMS FROM EXISTING CONSTRUCTION & LEGALLY DISPOSE OF THEM OFF-SITE UNLESS INDICATED TO BE REMOVED & SALVAGED OR REMOVED & REINSTALLED.
    - 15.2. REMOVE & SALVAGE: CAREFULLY DETACH FROM EXISTING CONSTRUCTION, IN A MANNER TO PREVENT DAMAGE, & DELIVER TO MSU.
    - 15.3. REMOVE & REINSTALL: DETACH ITEMS FROM EXISTING CONSTRUCTION, PREPARE FOR REUSE, & REINSTALL WHERE INDICATED.

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 ELECTRIC PEDESTAL OR JUNCTION BOX
- EXISTING OVERHEAD UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING MANHOLE COVERS
- EXISTING WATER HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM SUMP OR CATCH BASIN
- EXISTING VEHICLE HEATER BLOCK PLUGINS
- EXISTING TREE
- EXISTING CURB STOPS
- EXISTING MAILBOX LOCATION
- EXISTING PLAYGROUND
- EXISTING PARK BENCH
- EXISTING STORM ROOF DROP INLET/OUTLET - POINT
- EXISTING BIKE RACK
- EXISTING WATER WELL OR PUMPING STATION
- EXISTING IRRIGATION WATER VALVE
- EXISTING DUMPSTER LOCATION
- EXISTING - OVERHEAD POWER
- EXISTING - CONCRETE HATCH & CONCRETE EDGE
- EXISTING - ASPHALT HATCH & ASPHALT EDGE
- PROPOSED - CONCRETE HATCH & CONCRETE EDGE
- PROPOSED - ASPHALT HATCH & ASPHALT EDGE

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REVIEWED BY: K. GAUTHIER

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1	GC ADDENDUM ADDITION	05/09/23
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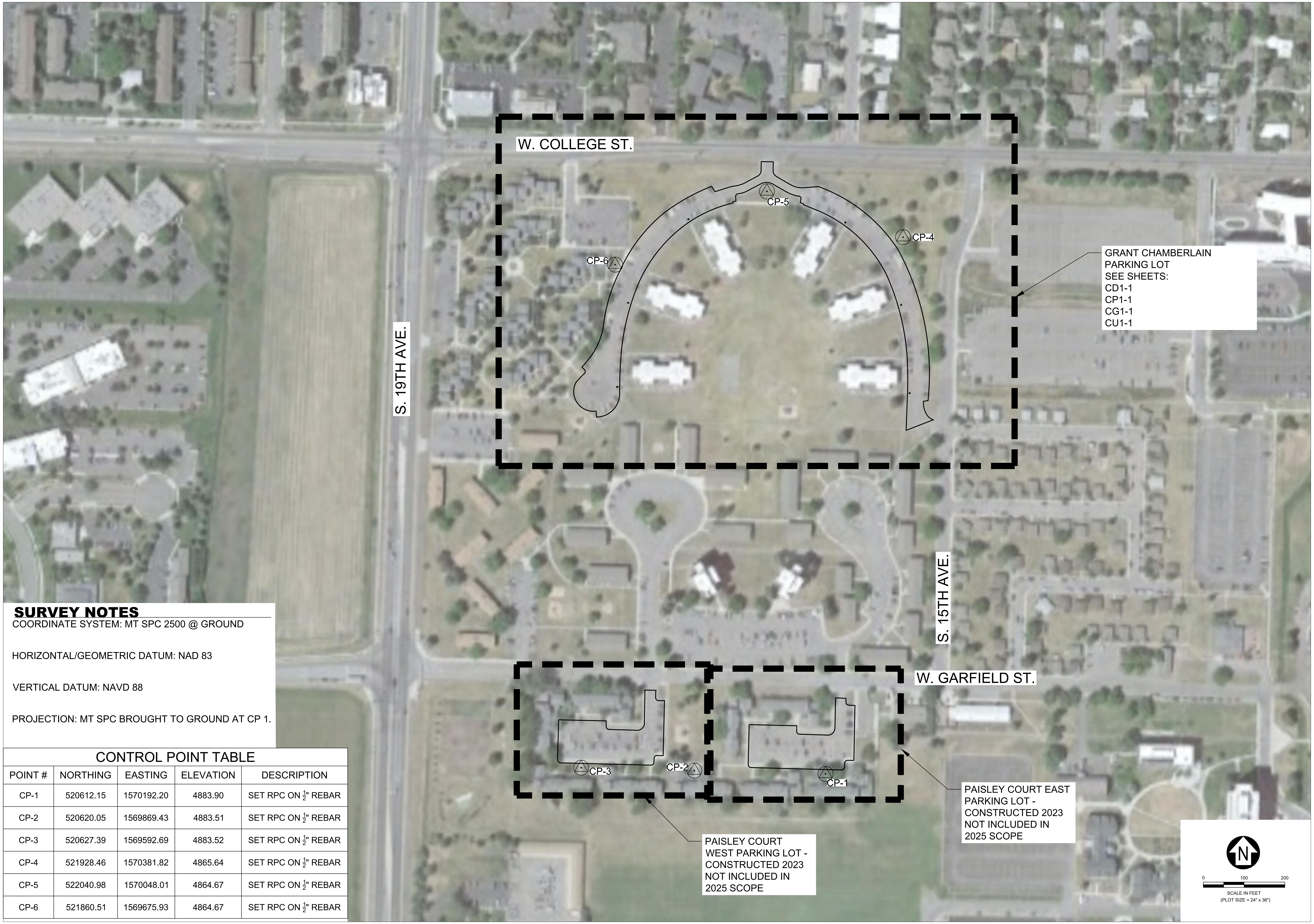
NOTES, LEGEND, & ABBREVIATIONS

SHEET
GI0-2

DATE
05-09-23



SURVEY NOTES

COORDINATE SYSTEM: MT SPC 2500 @ GROUND

HORIZONTAL/GEOMETRIC DATUM: NAD 83

VERTICAL DATUM: NAVD 88

PROJECTION: MT SPC BROUGHT TO GROUND AT CP 1.

CONTROL POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP-1	520612.15	1570192.20	4883.90	SET RPC ON $\frac{1}{2}$" REBAR
CP-2	520620.05	1569869.43	4883.51	SET RPC ON $\frac{1}{2}$" REBAR
CP-3	520627.39	1569592.69	4883.52	SET RPC ON $\frac{1}{2}$" REBAR
CP-4	521928.46	1570381.82	4865.64	SET RPC ON $\frac{1}{2}$" REBAR
CP-5	522040.98	1570048.01	4864.67	SET RPC ON $\frac{1}{2}$" REBAR
CP-6	521860.51	1569675.93	4864.67	SET RPC ON $\frac{1}{2}$" REBAR

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KEY MAP & SURVEY CONTROL

SHEET

GI0-3

DATE

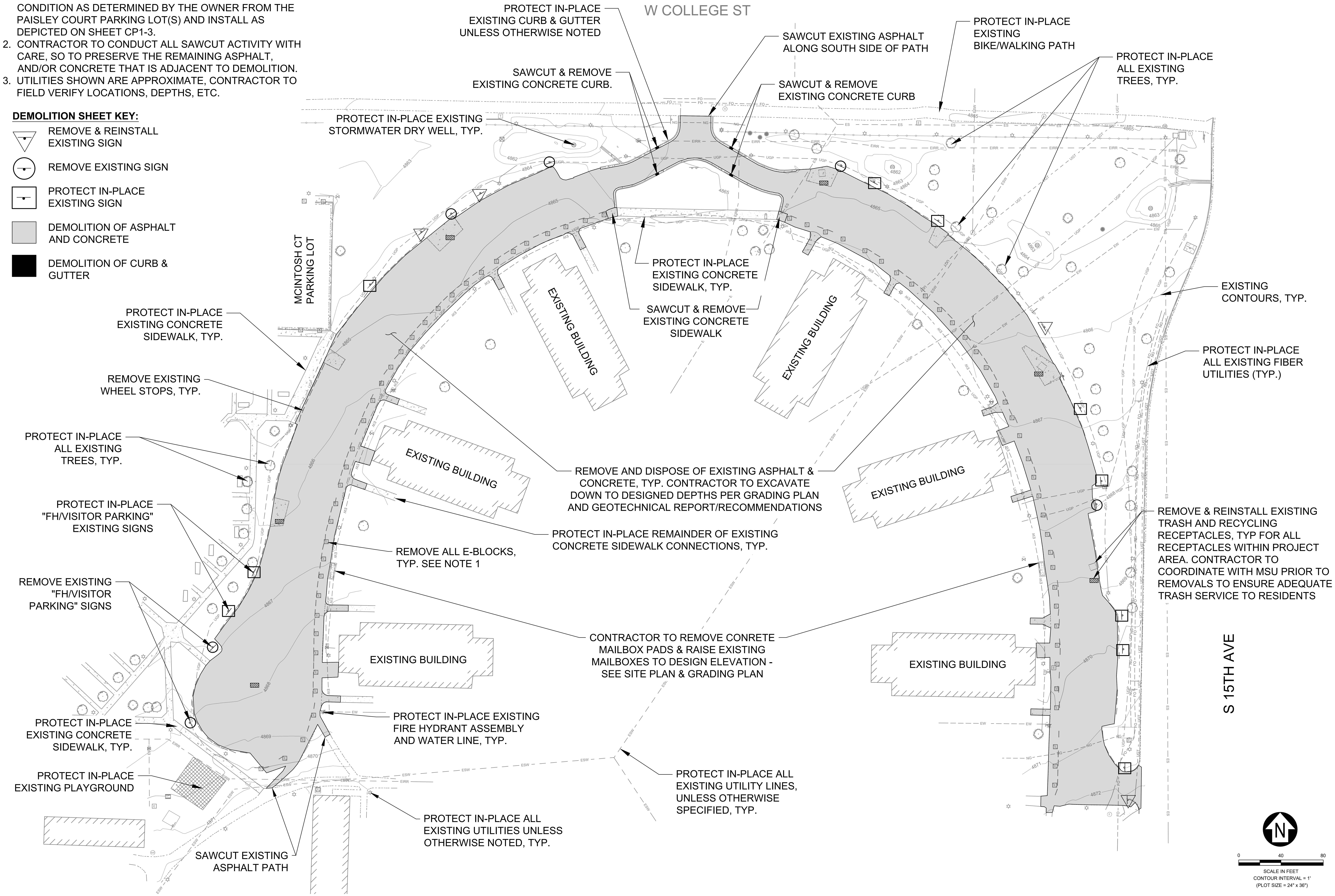
05-09-23

DEMOLITION NOTES:

1. ALL E-BLOCKS IN THE GRANT CHAMBERLAIN PARKING LOT TO BE REMOVED. SELECT FOUR BLOCKS IN GOOD CONDITION AS DETERMINED BY THE OWNER FROM THE PAISLEY COURT PARKING LOT(S) AND INSTALL AS DEPICTED ON SHEET CP1-3.
2. CONTRACTOR TO CONDUCT ALL SAWCUT ACTIVITY WITH CARE, SO TO PRESERVE THE REMAINING ASPHALT, AND/OR CONCRETE THAT IS ADJACENT TO DEMOLITION.
3. UTILITIES SHOWN ARE APPROXIMATE, CONTRACTOR TO FIELD VERIFY LOCATIONS, DEPTHS, ETC.

DEMOLITION SHEET KEY:

- REMOVE & REINSTALL EXISTING SIGN
- REMOVE EXISTING SIGN
- PROTECT IN-PLACE EXISTING SIGN
- DEMOLITION OF ASPHALT AND CONCRETE
- DEMOLITION OF CURB & GUTTER



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REV.	DESCRIPTION	DATE

PPA#22-0012

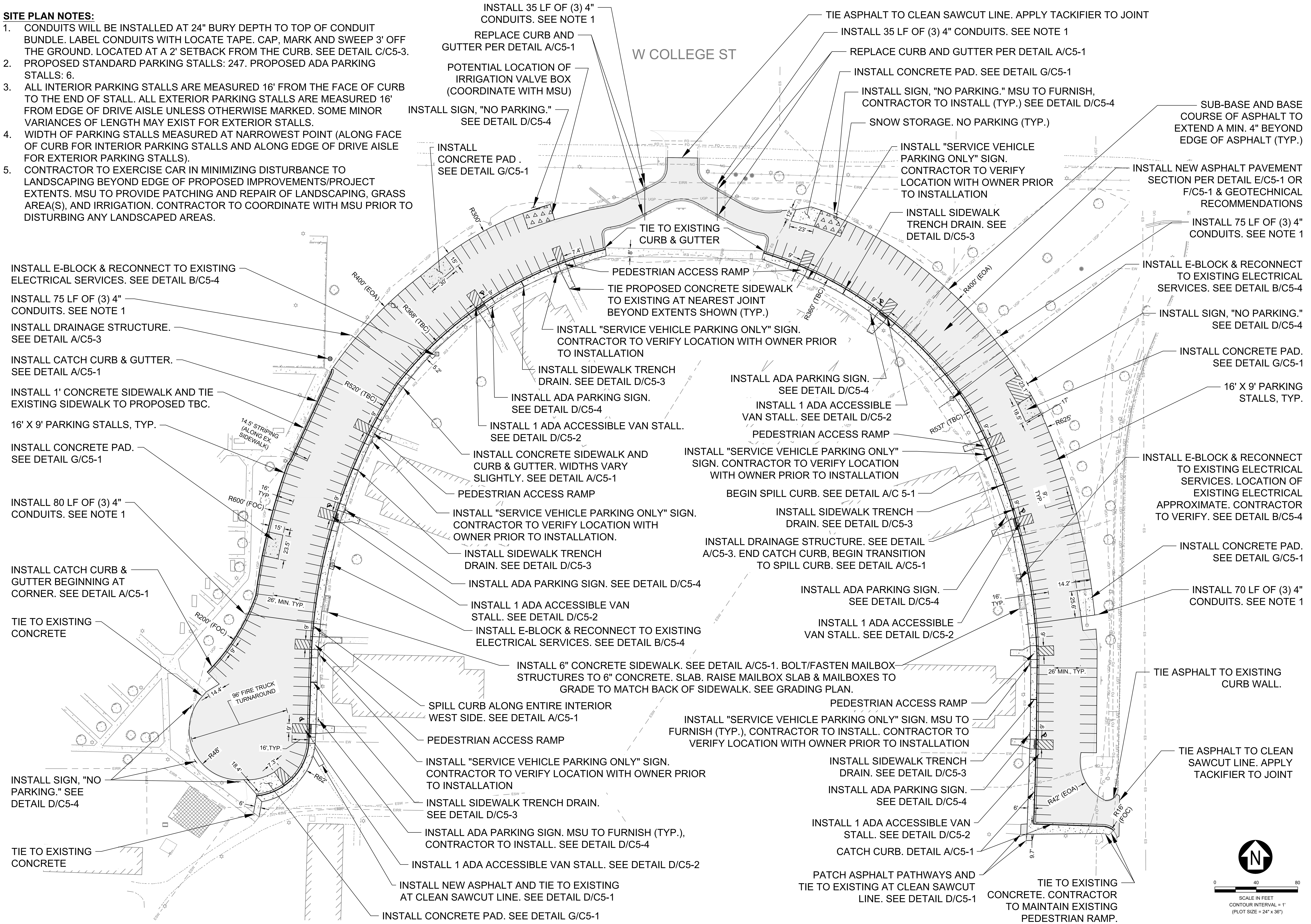
GRANT CHAMBERLAIN - DEMO PLAN

SHEET
CD1-1

DATE
05-09-23

SITE PLAN NOTES:

1. CONDUITS WILL BE INSTALLED AT 24" BURY DEPTH TO TOP OF CONDUIT BUNDLE. LABEL CONDUITS WITH LOCATE TAPE. CAP, MARK AND SWEEP 3' OFF THE GROUND. LOCATED AT A 2' SETBACK FROM THE CURB. SEE DETAIL C/C5-3.
2. PROPOSED STANDARD PARKING STALLS: 247. PROPOSED ADA PARKING STALLS: 6.
3. ALL INTERIOR PARKING STALLS ARE MEASURED 16' FROM THE FACE OF CURB TO THE END OF STALL. ALL EXTERIOR PARKING STALLS ARE MEASURED 16' FROM EDGE OF DRIVE AISLE UNLESS OTHERWISE MARKED. SOME MINOR VARIANCES OF LENGTH MAY EXIST FOR EXTERIOR STALLS.
4. WIDTH OF PARKING STALLS MEASURED AT NARROWEST POINT (ALONG FACE OF CURB FOR INTERIOR PARKING STALLS AND ALONG EDGE OF DRIVE AISLE FOR EXTERIOR PARKING STALLS).
5. CONTRACTOR TO EXERCISE CAR IN MINIMIZING DISTURBANCE TO LANDSCAPING BEYOND EDGE OF PROPOSED IMPROVEMENTS/PROJECT EXTENTS. MSU TO PROVIDE PATCHING AND REPAIR OF LANDSCAPING, GRASS AREA(S), AND IRRIGATION. CONTRACTOR TO COORDINATE WITH MSU PRIOR TO DISTURBING ANY LANDSCAPED AREAS.



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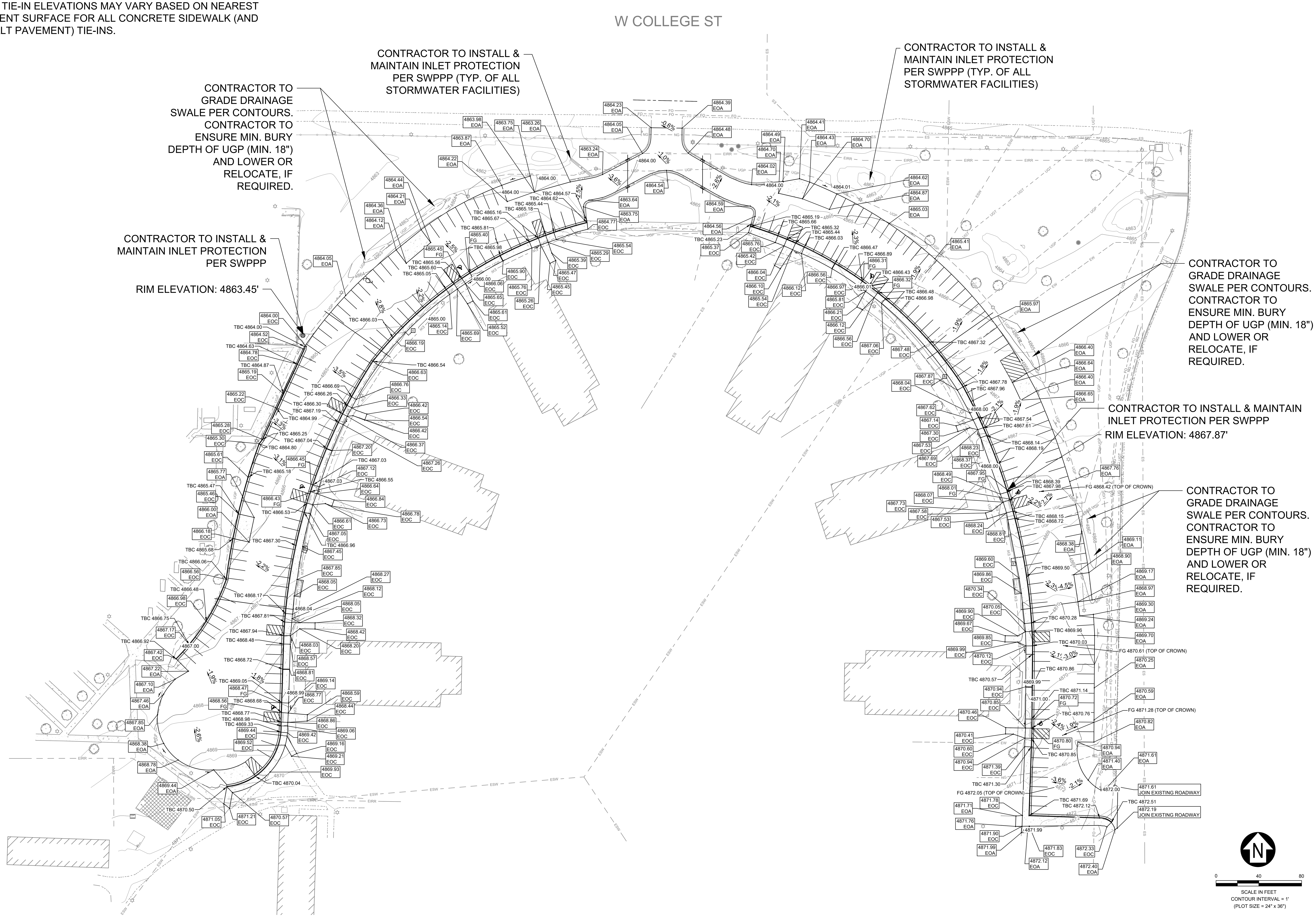
GRANT CHAMBERLAIN - SITE PLAN

SHEET
CP1-1

DATE
05-09-23

GRADING AND DRAINAGE GENERAL NOTE:

EXACT TIE-IN ELEVATIONS MAY VARY BASED ON NEAREST ADJACENT SURFACE FOR ALL CONCRETE SIDEWALK (AND ASPHALT PAVEMENT) TIE-INS.



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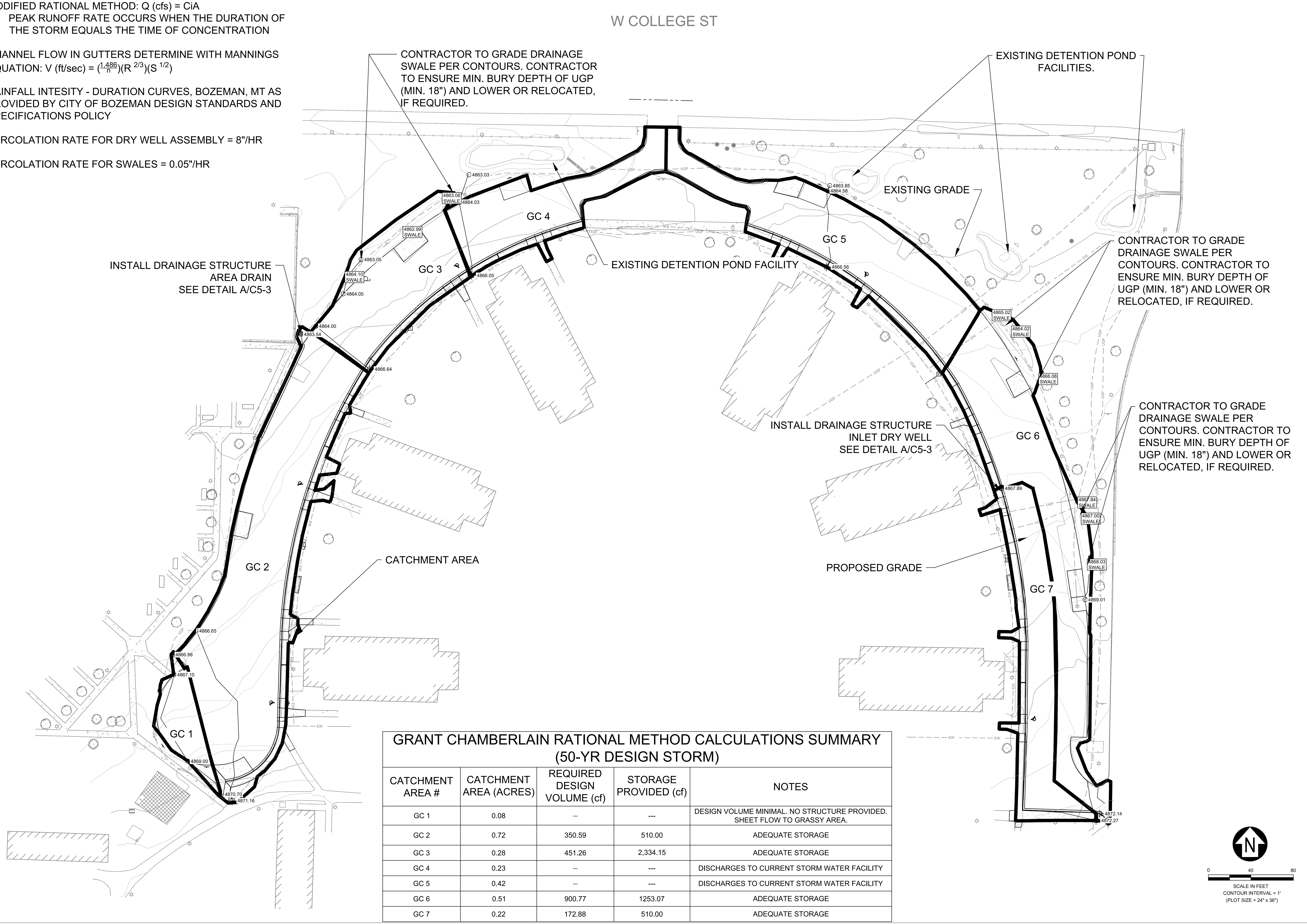
GRANT CHAMBERLAIN - GRADING PLAN

SHEET
CG1-1

DATE
05-09-23

STORM WATER CALCULATION ASSUMPTIONS:

- MODIFIED RATIONAL METHOD: Q (cfs) = CiA
  - PEAK RUNOFF RATE OCCURS WHEN THE DURATION OF THE STORM EQUALS THE TIME OF CONCENTRATION
- CHANNEL FLOW IN GUTTERS DETERMINE WITH MANNINGS EQUATION: V (ft/sec) = $(\frac{1.486}{n})(R^{2/3})(S^{1/2})$
- RAINFALL INTESITY - DURATION CURVES, BOZEMAN, MT AS PROVIDED BY CITY OF BOZEMAN DESIGN STANDARDS AND SPECIFICATIONS POLICY
- PERCOLATION RATE FOR DRY WELL ASSEMBLY = 8"/HR
- PERCOLATION RATE FOR SWALES = 0.05"/HR



GRANT CHAMBERLAIN RATIONAL METHOD CALCULATIONS SUMMARY (50-YR DESIGN STORM)

CATCHMENT AREA #	CATCHMENT AREA (ACRES)	REQUIRED DESIGN VOLUME (cf)	STORAGE PROVIDED (cf)	NOTES
GC 1	0.08	---	---	DESIGN VOLUME MINIMAL. NO STRUCTURE PROVIDED. SHEET FLOW TO GRASSY AREA.
GC 2	0.72	350.59	510.00	ADEQUATE STORAGE
GC 3	0.28	451.26	2,334.15	ADEQUATE STORAGE
GC 4	0.23	---	---	DISCHARGES TO CURRENT STORM WATER FACILITY
GC 5	0.42	---	---	DISCHARGES TO CURRENT STORM WATER FACILITY
GC 6	0.51	900.77	1253.07	ADEQUATE STORAGE
GC 7	0.22	172.88	510.00	ADEQUATE STORAGE

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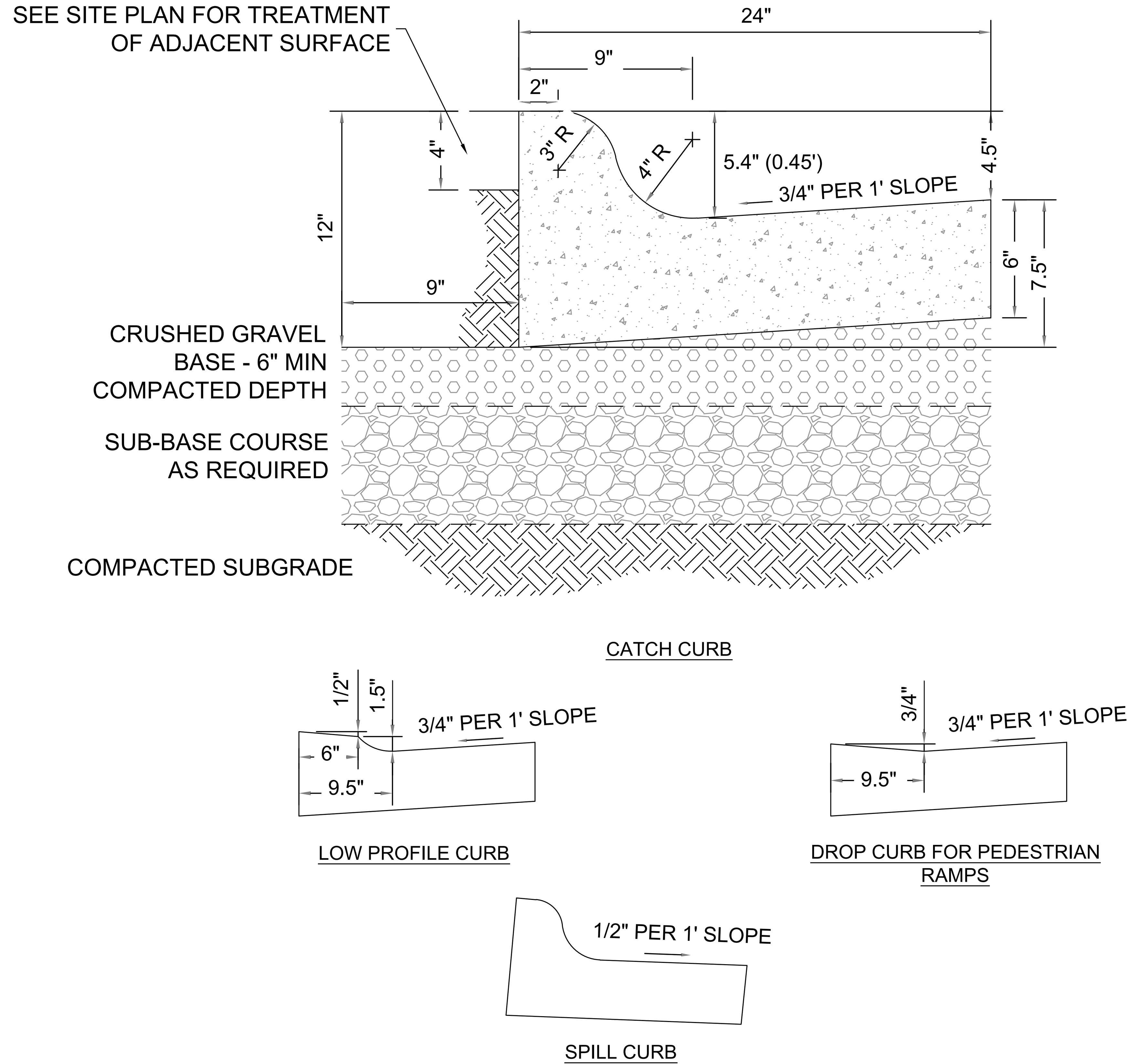
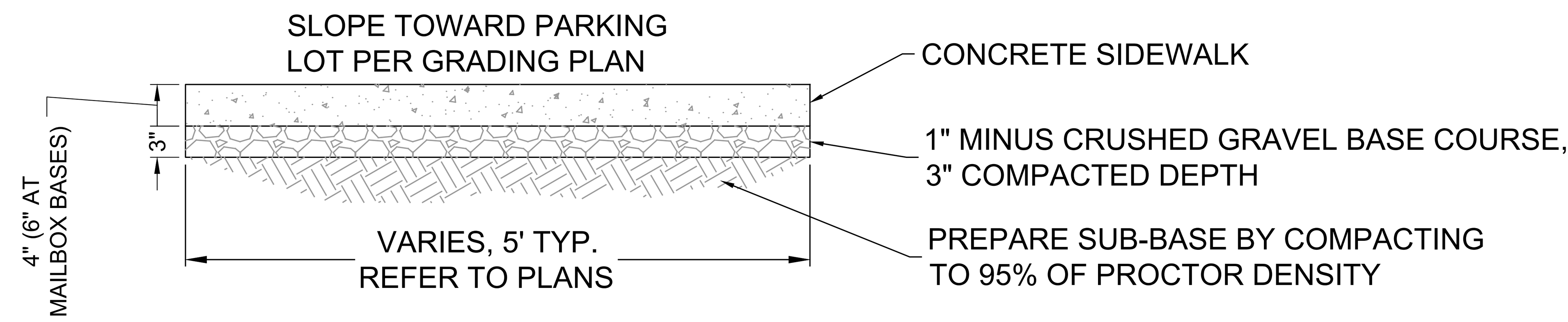
GRANT CHAMBERLAIN - STORM WATER

SHEET
CU1-1

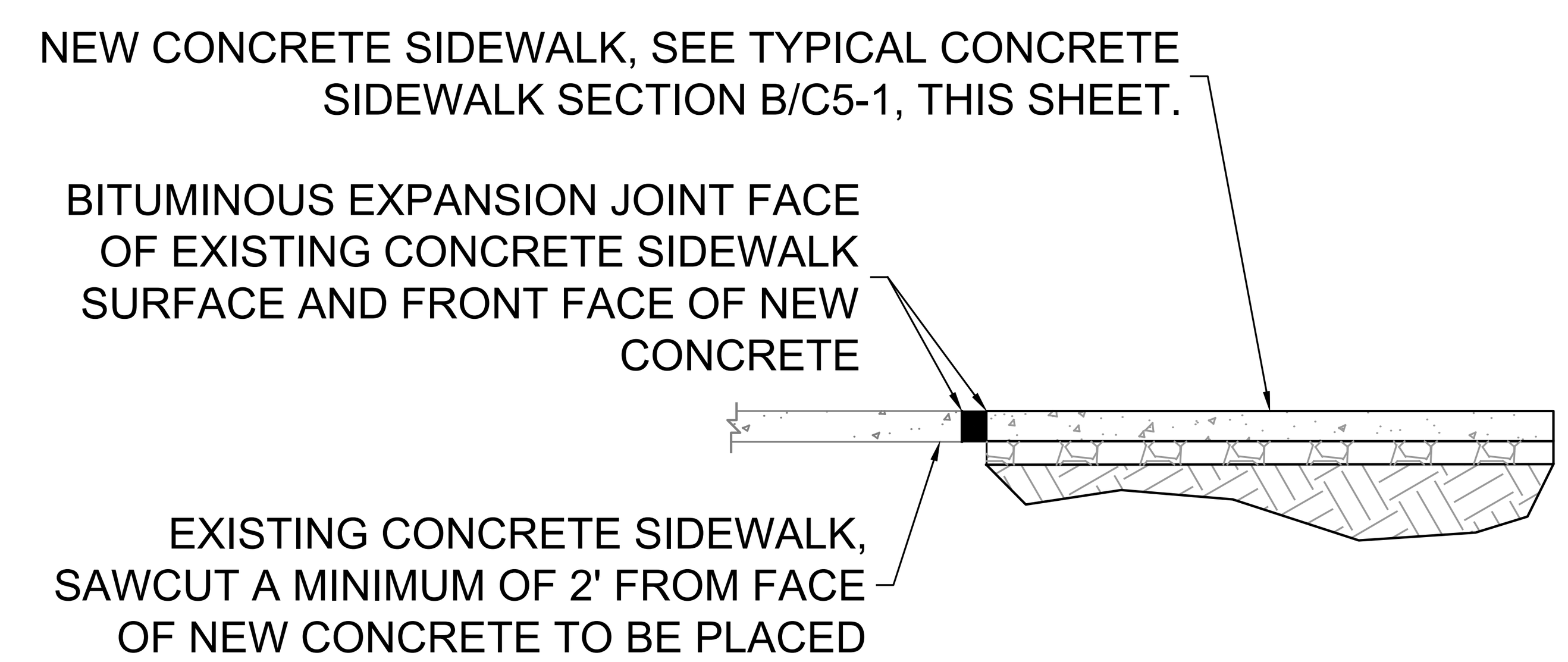
DATE
05-09-23



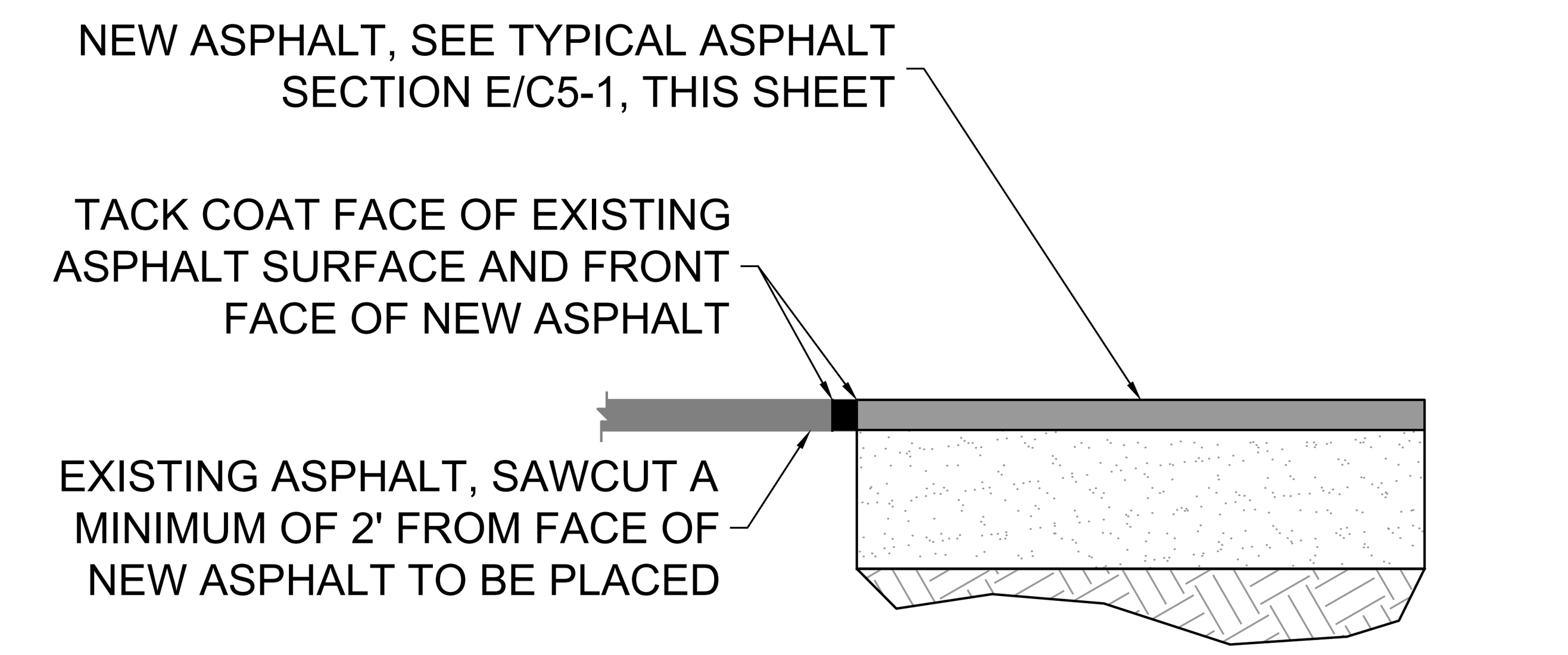
A
C5-1
INTEGRAL CURB & GUTTER
NTS



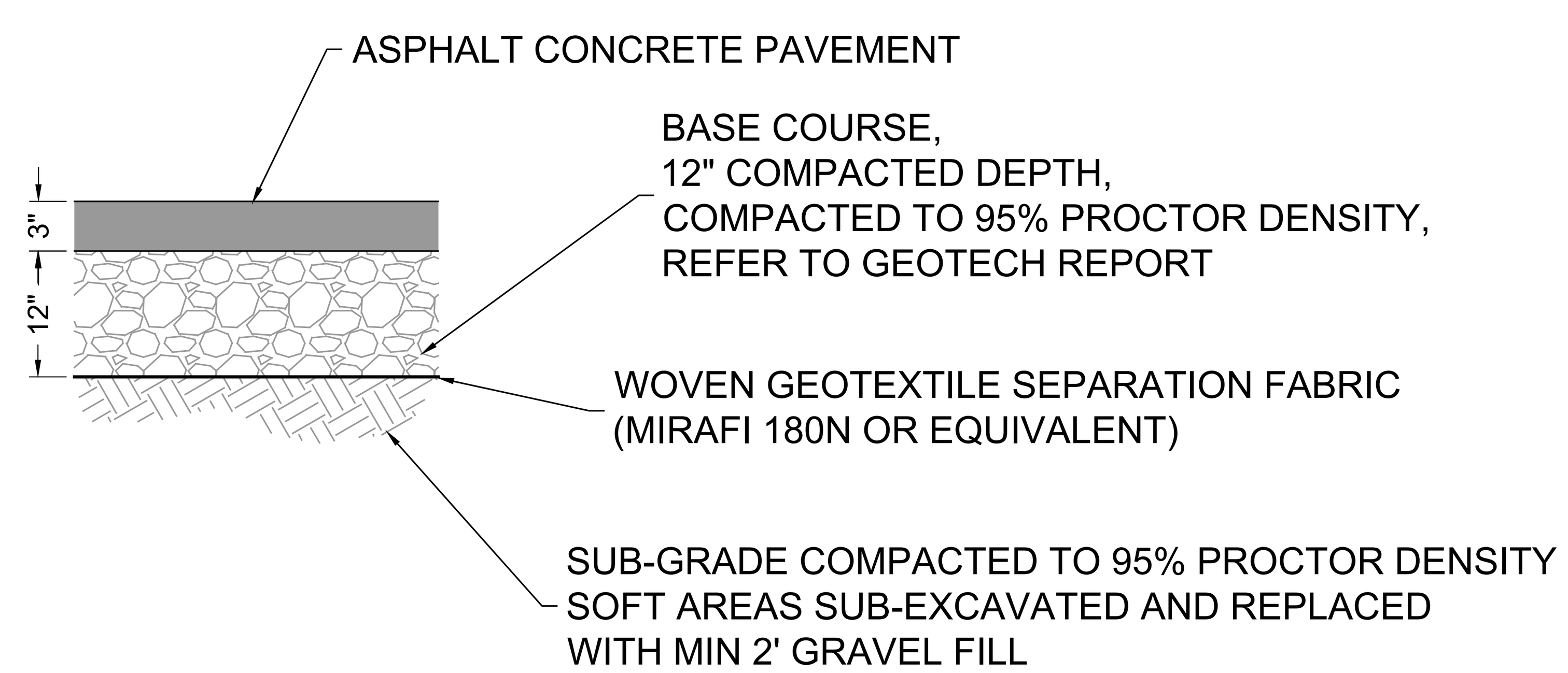
B
C5-1
TYPICAL CONCRETE SIDEWALK SECTION
NTS



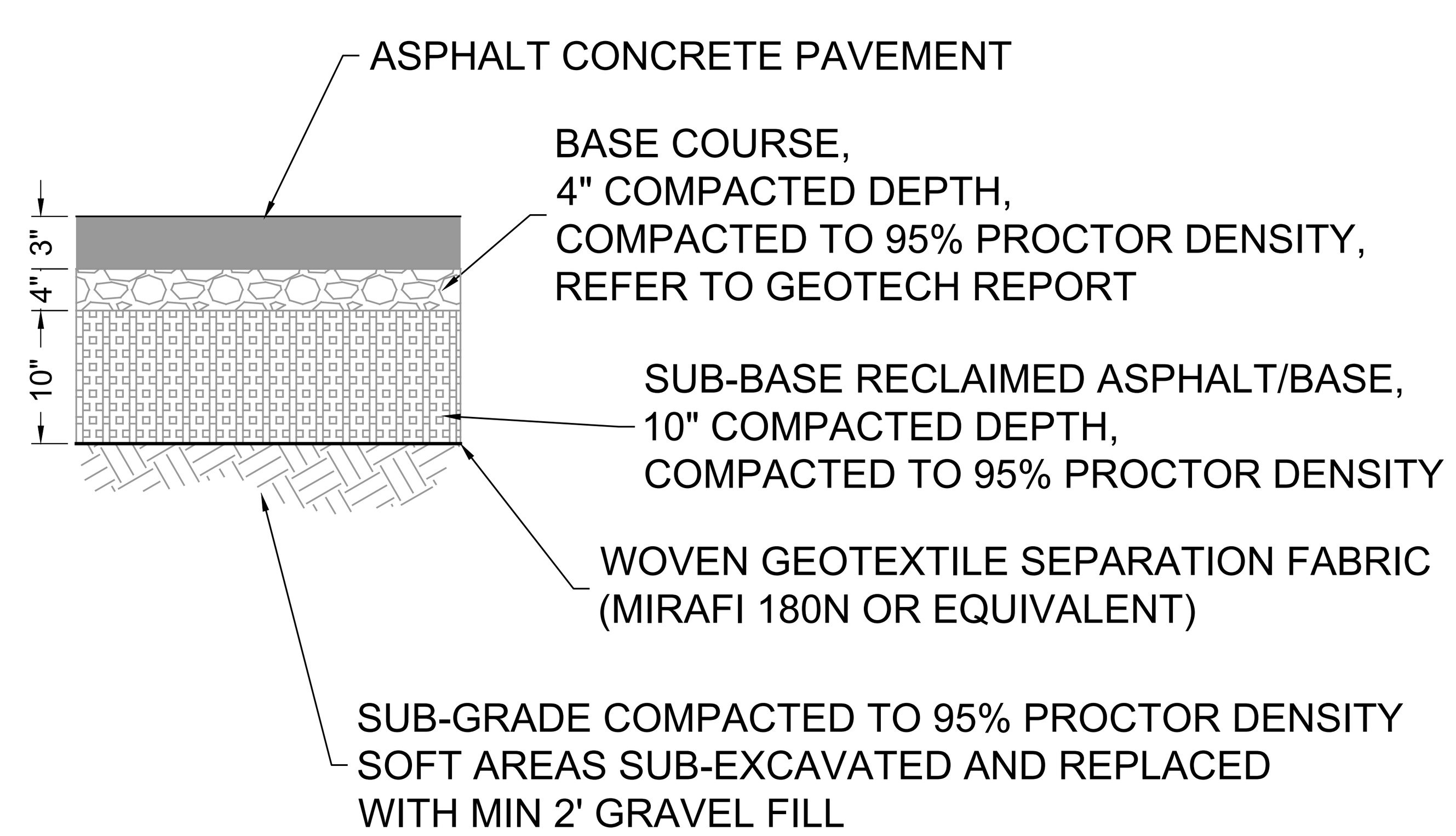
C
C5-1
TYPICAL CONCRETE CUT
NTS



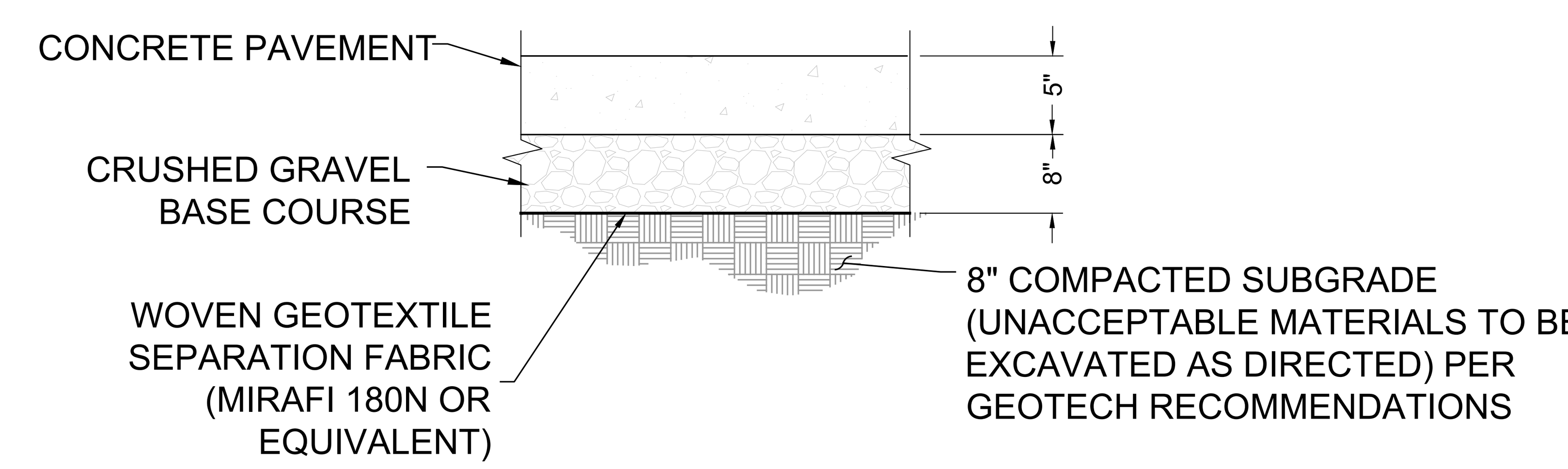
D
C5-1
TYPICAL ASPHALT CUT
NTS



E
C5-1
BID ALTERNATIVE 1 ASPHALT SECTION
NTS



F
C5-1
BID ALTERNATIVE 2 ASPHALT SECTION
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.

G
C5-1
REINFORCED CONCRETE SECTION
NTS

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DETAILS 1

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C5-1

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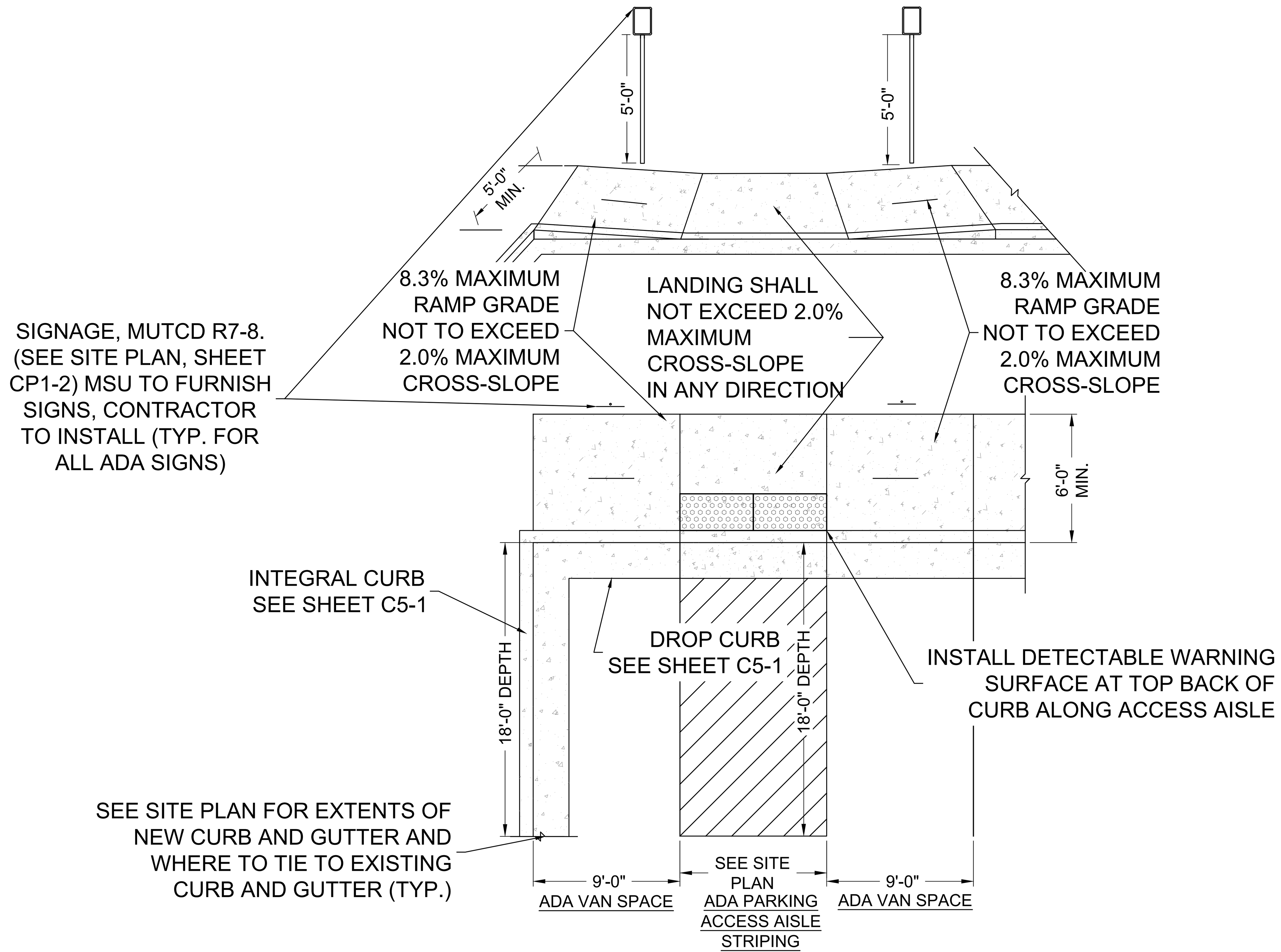
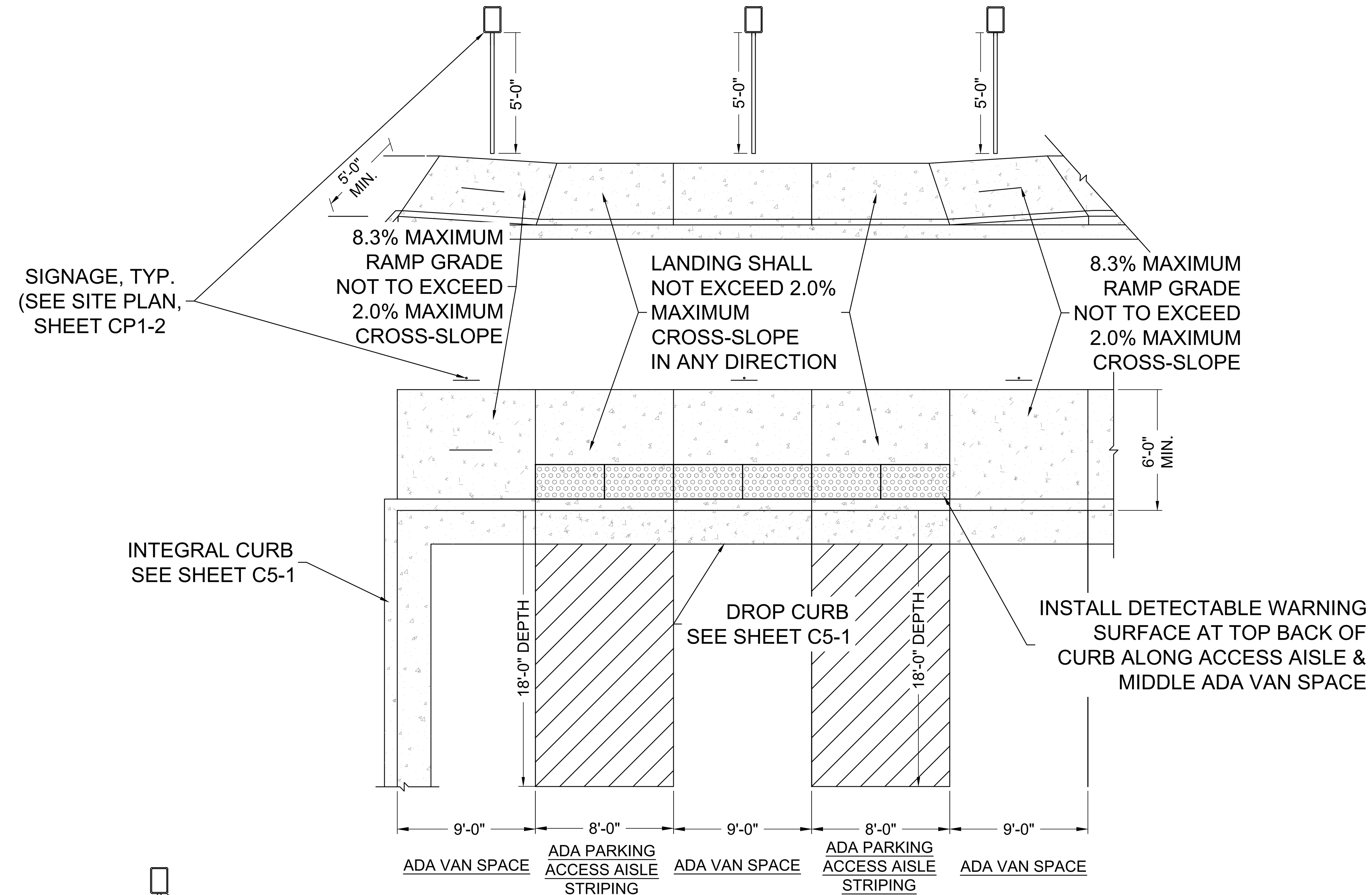
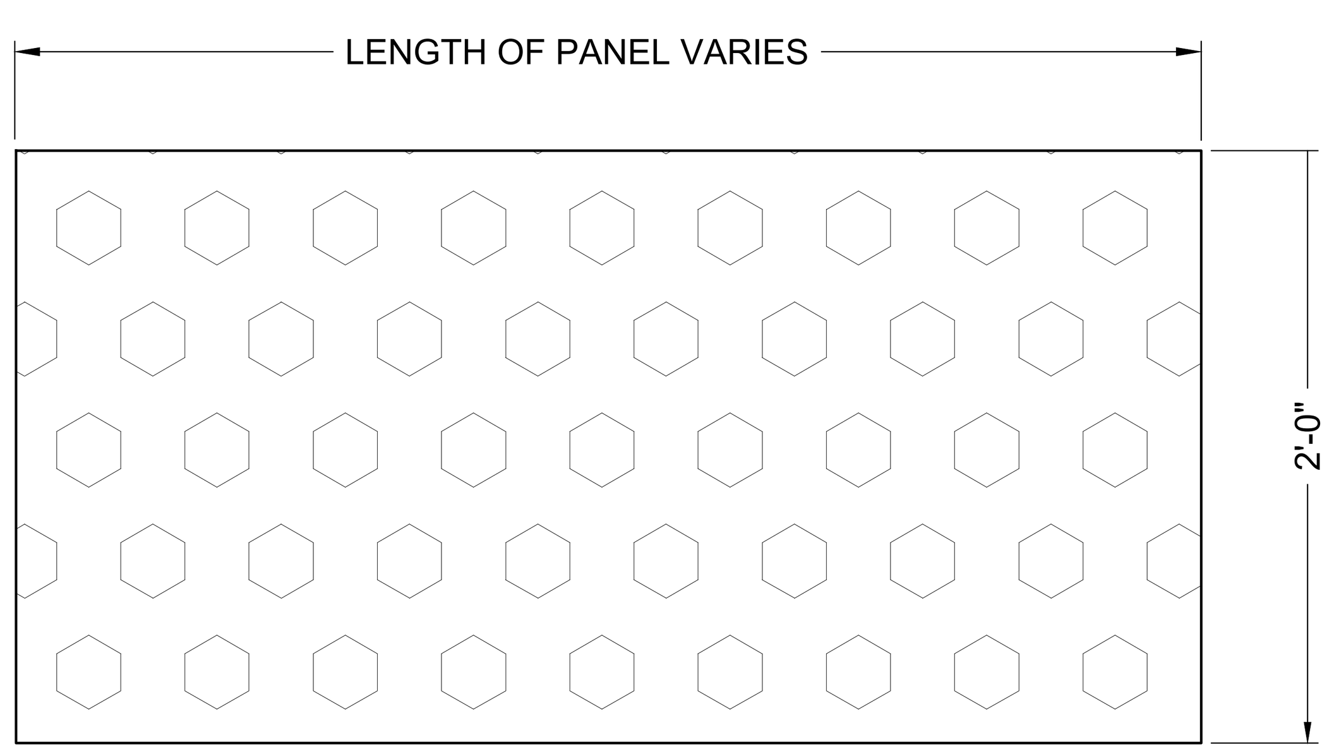


A
C5-2
ADA STALL DETAIL - PAISLEY WEST
NTS

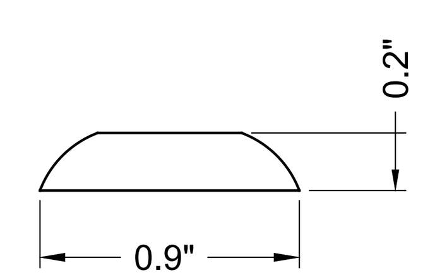


B
C5-2
ADA STALL DETAIL - PAISLEY EAST
NTS



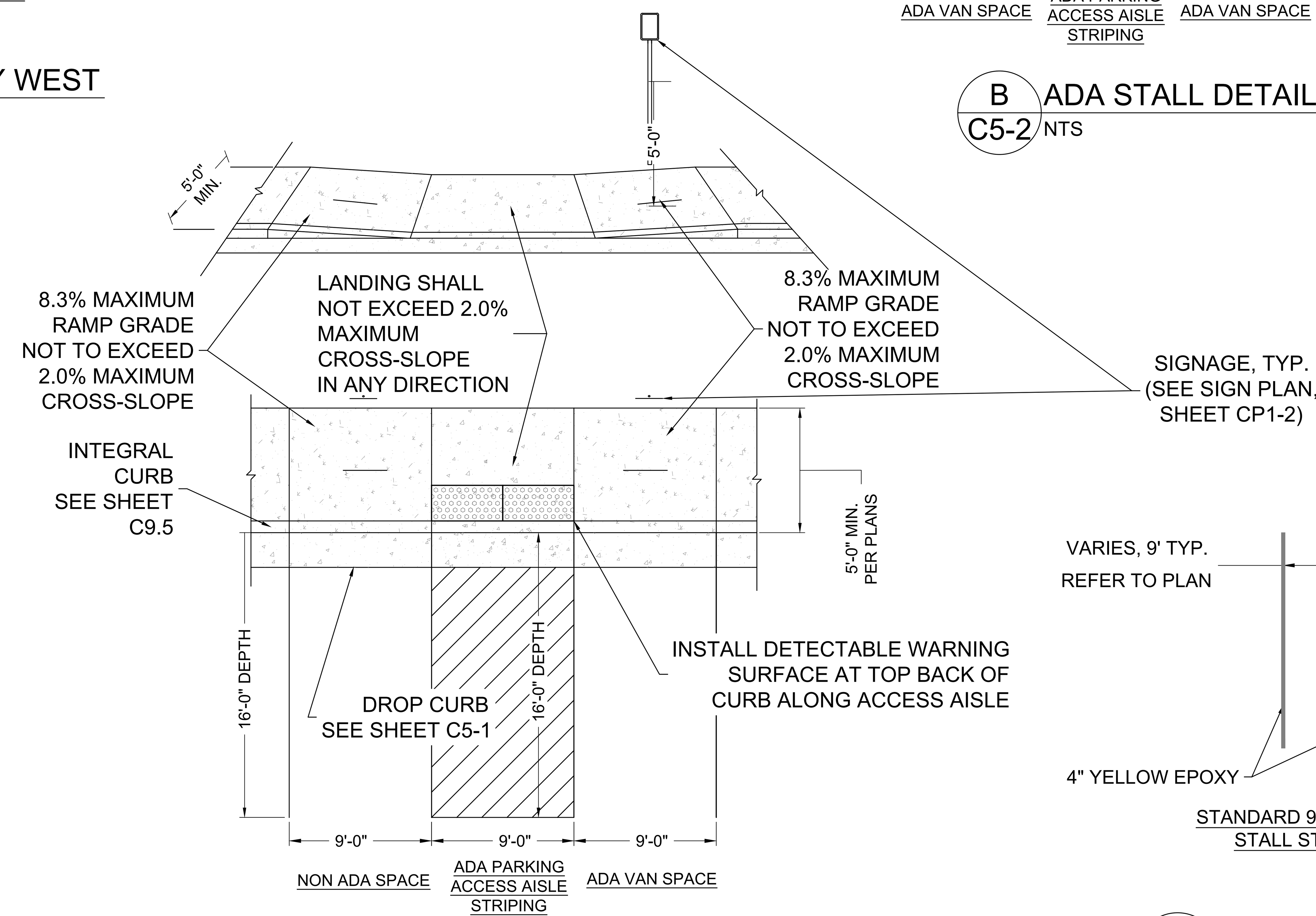
THE DETECTABLE WARNING SURFACE SHALL EXTEND THE FULL LENGTH OF THE CURB PER PLANS. IT SHALL BE A CONTRASTING COLOR AND MEET THE DIMENSIONS SHOWN OF THE TRUNCATED DOME

DETECTABLE WARNING SURFACE

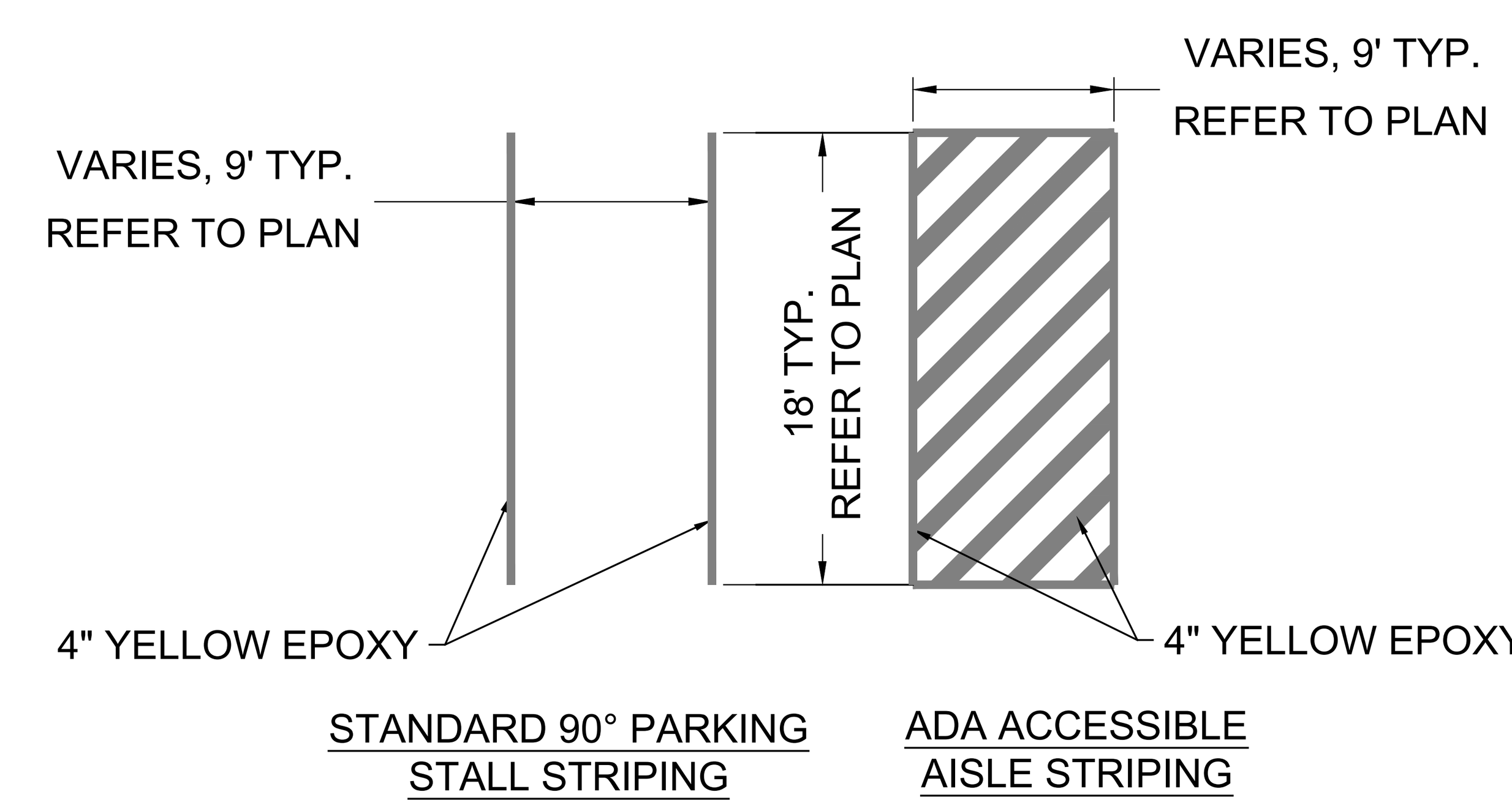


TRUNCATED DOME

C
C5-2
DETECTABLE WARNING DETAIL
NTS



D
C5-2
ADA STALL DETAIL - GRANT CHAMBERLAIN
NTS



E
C5-2
TYPICAL PAVEMENT MARKINGS
NTS

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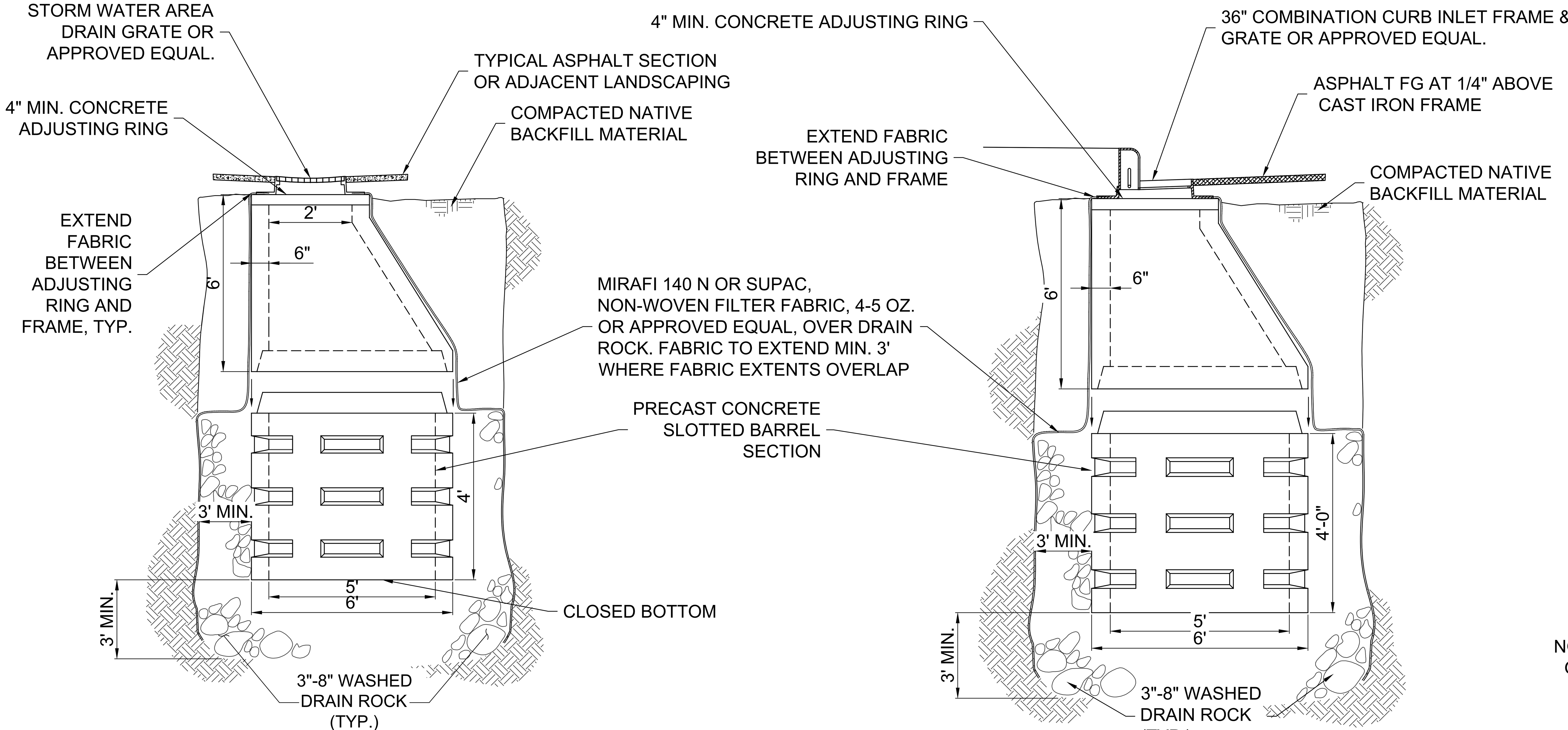
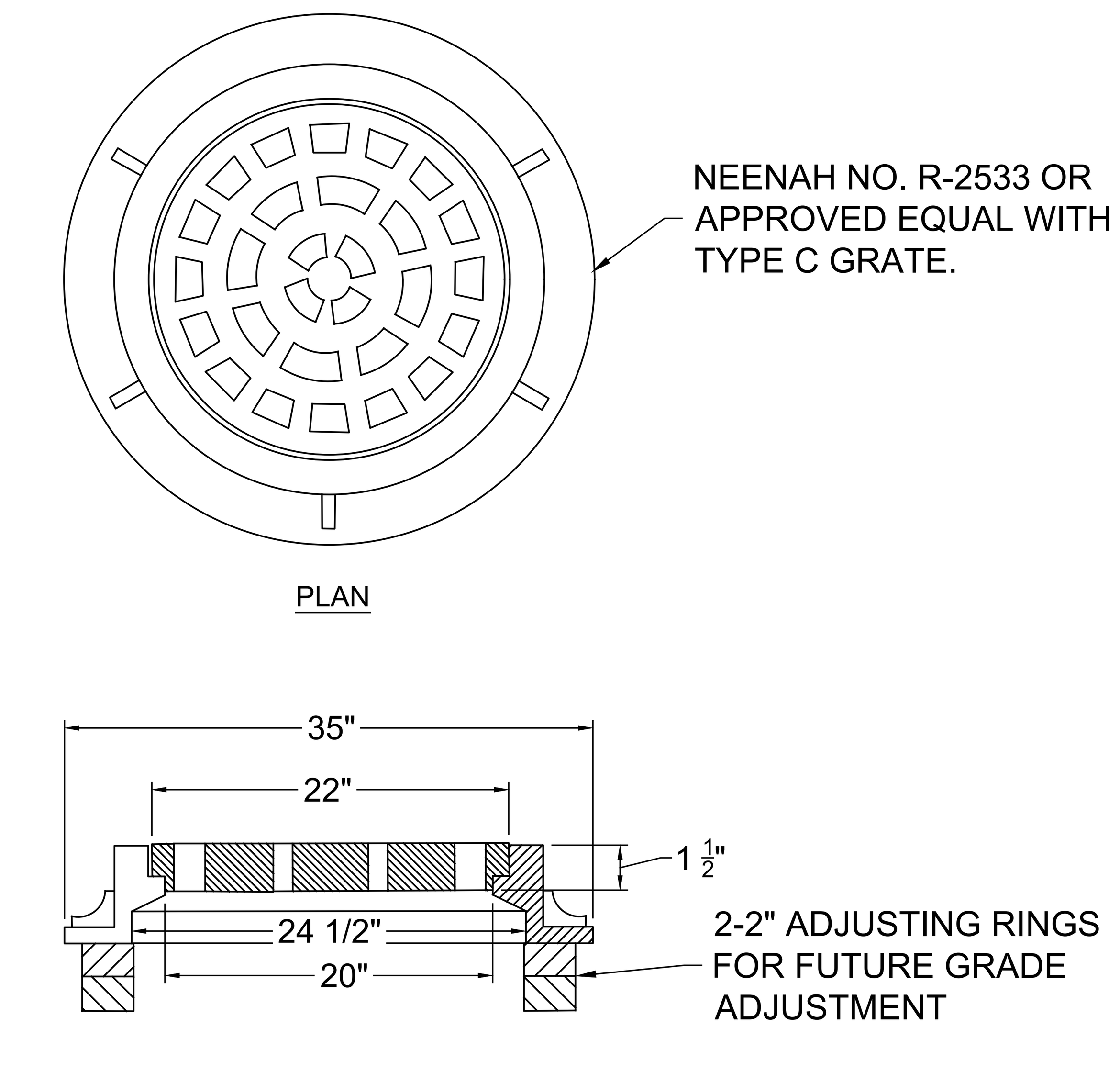
DETAILS 2

SHEET
C5-2

DATE
05-09-23

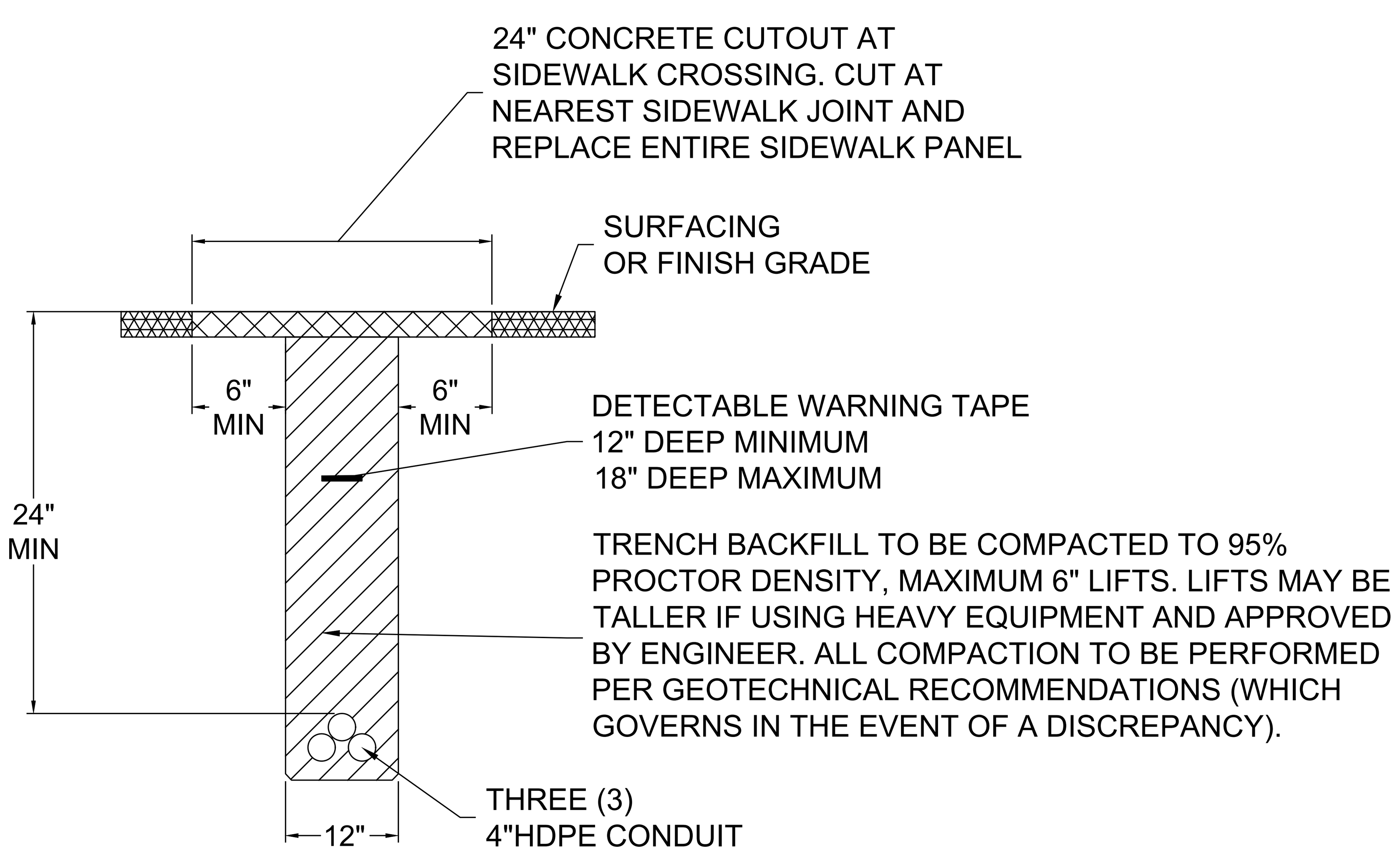


A PRECAST DRY WELL (W/ AREA DRAIN OR CURB INLET) DETAIL
C5-3 NTS



NOTE: CONTRACTOR MAY USE APPROVED EQUIVALENT, TRAFFIC-RATED GRATED MANHOLE THROUGH SUBMITTAL PROCESS.

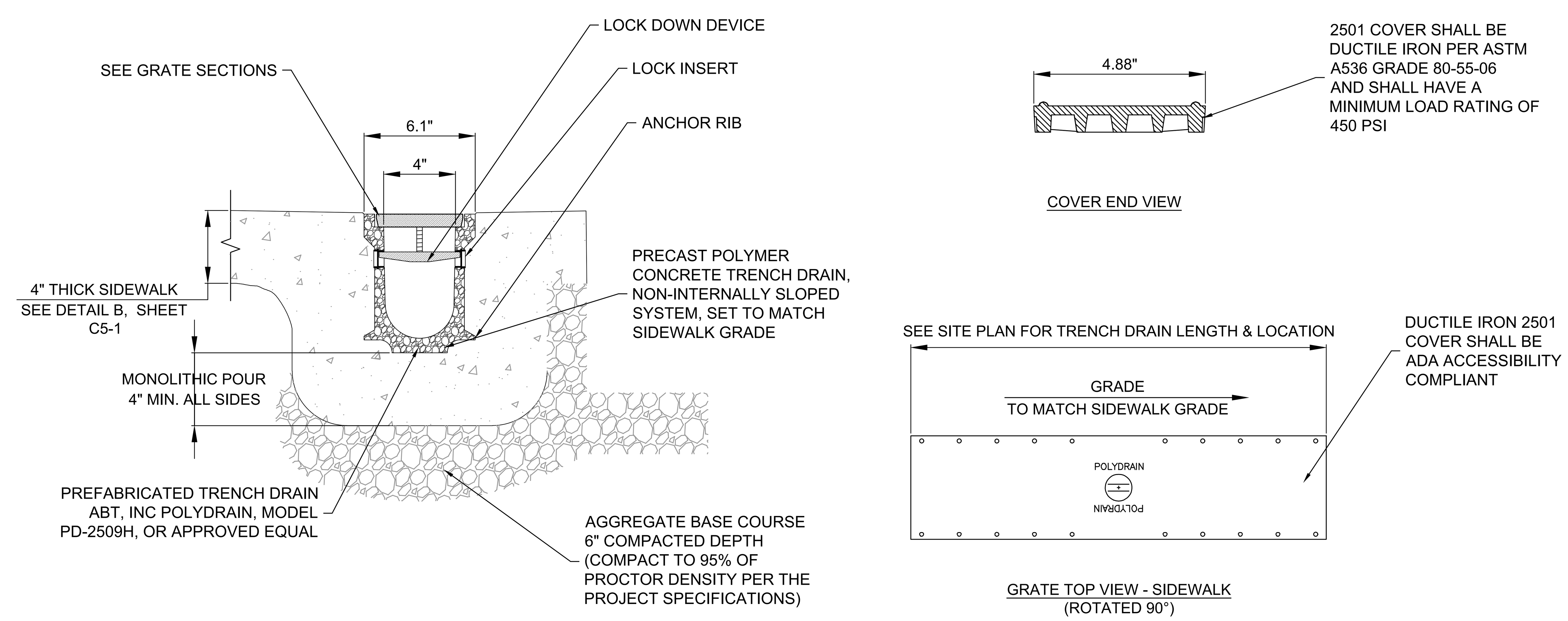
B STORM DRAIN GRATE
C5-3 NTS



DETAIL NOTES:

1. CONTRACTOR SHALL COORDINATE TRENCHING WITH OTHER UNDERGROUND UTILITIES. CONTRACTOR SHALL USE COMMON TRENCHES AT ALL CROSSING WHENEVER POSSIBLE.
2. 1-#12 AWG LOCATE WIRE AND A NYLON OR POLYESTER PULL TAPE WITH 1,250 LBS TEST STRENGTH AND FOOTAGE MARKINGS IN ALL EMPTY CONDUITS.
3. CUT WIDTH VARIES OUTSIDE OF SIDEWALK. REFER TO SITE PLAN AND GRADING PLAN FOR CUT WIDTH AND PROPOSED FINISH SURFACE GRADE

C CONDUIT TRENCH DETAIL
C5-3 NTS



D TRENCH DRAIN DETAIL
C5-3 NTS

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PARKING IMPROVEMENTS
2025

DJ&A

DRAWN BY: L. OTTEY
REVIEWED BY: K. GAUTHIER

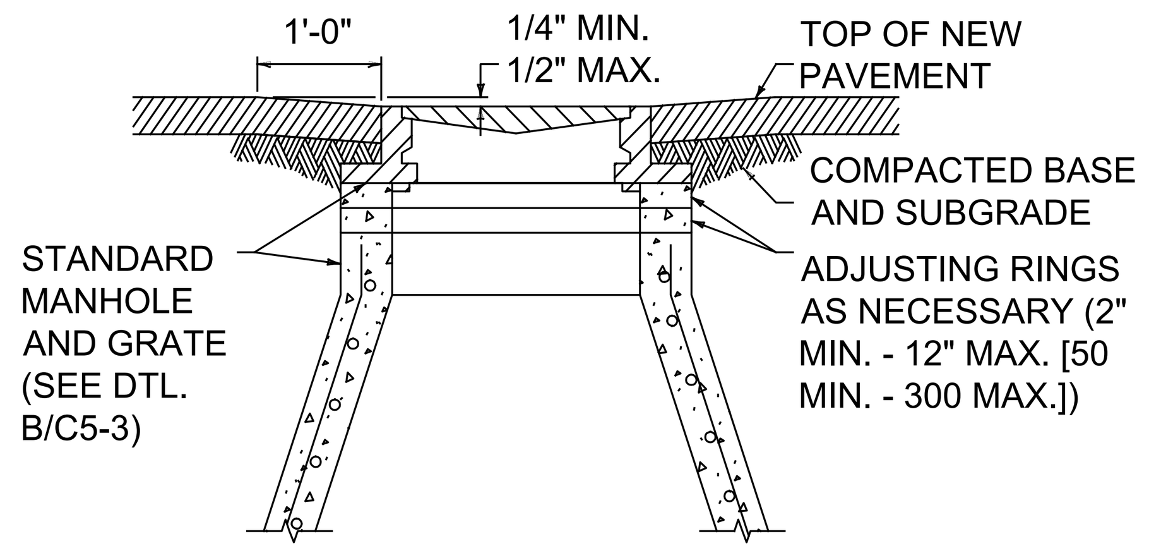
REV.	DESCRIPTION	DATE

PPA#22-0012

DETAILS 3

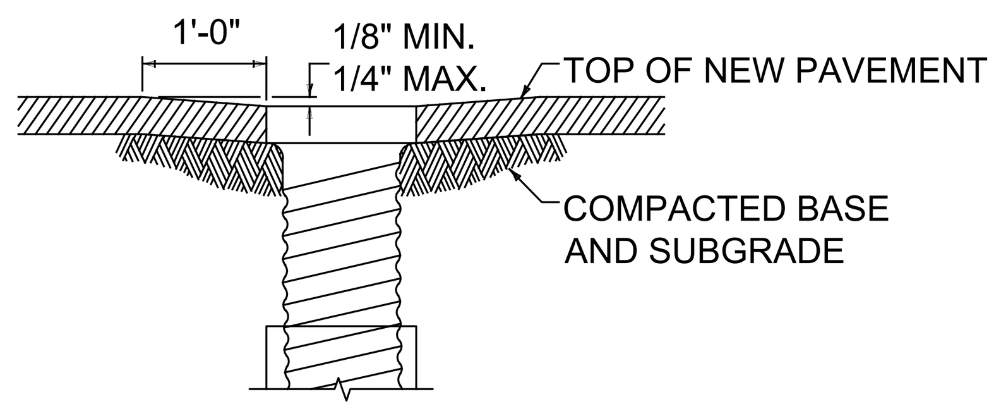
SHEET
C5-3

DATE
05-09-23



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



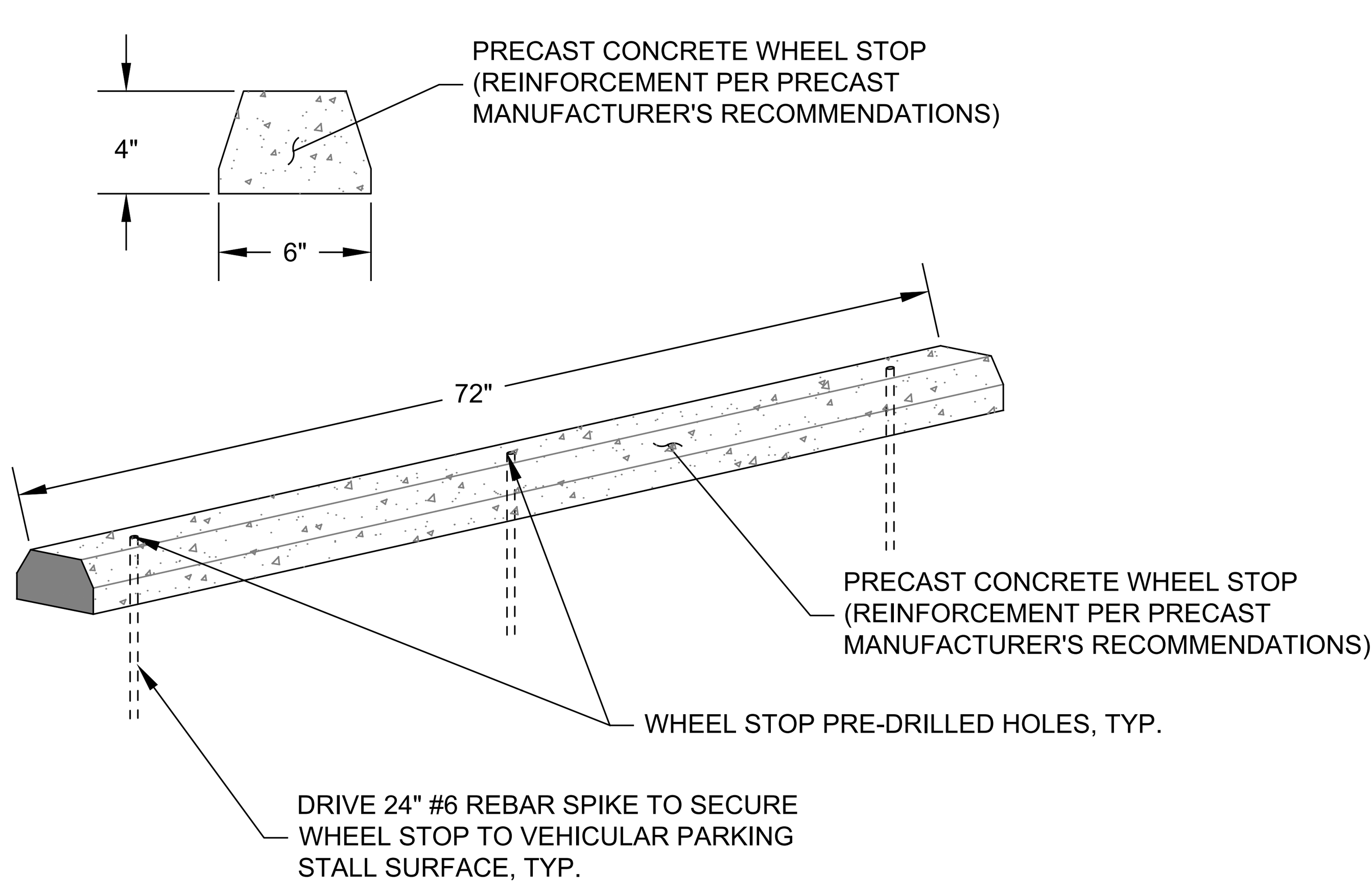
NOTES:
1. ADJUST WATER VALVES UPWARD OR DOWNWARD AS REQUIRED.
2. MAKE FINAL ADJUSTMENTS BEFORE PAVING.

VALVE BOX ADJUSTMENT DETAIL

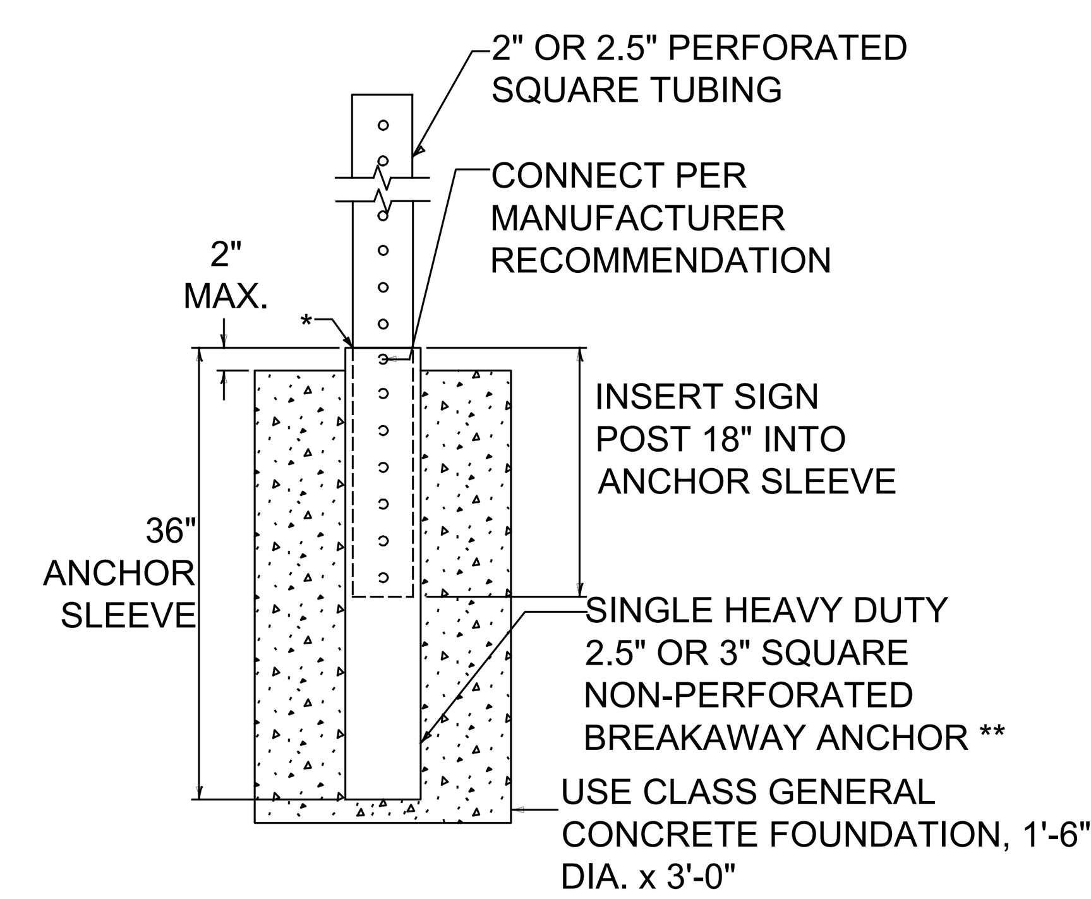
A C5-4 MANHOLE AND VALVE BOX ADJUSTMENT DETAILS
NTS

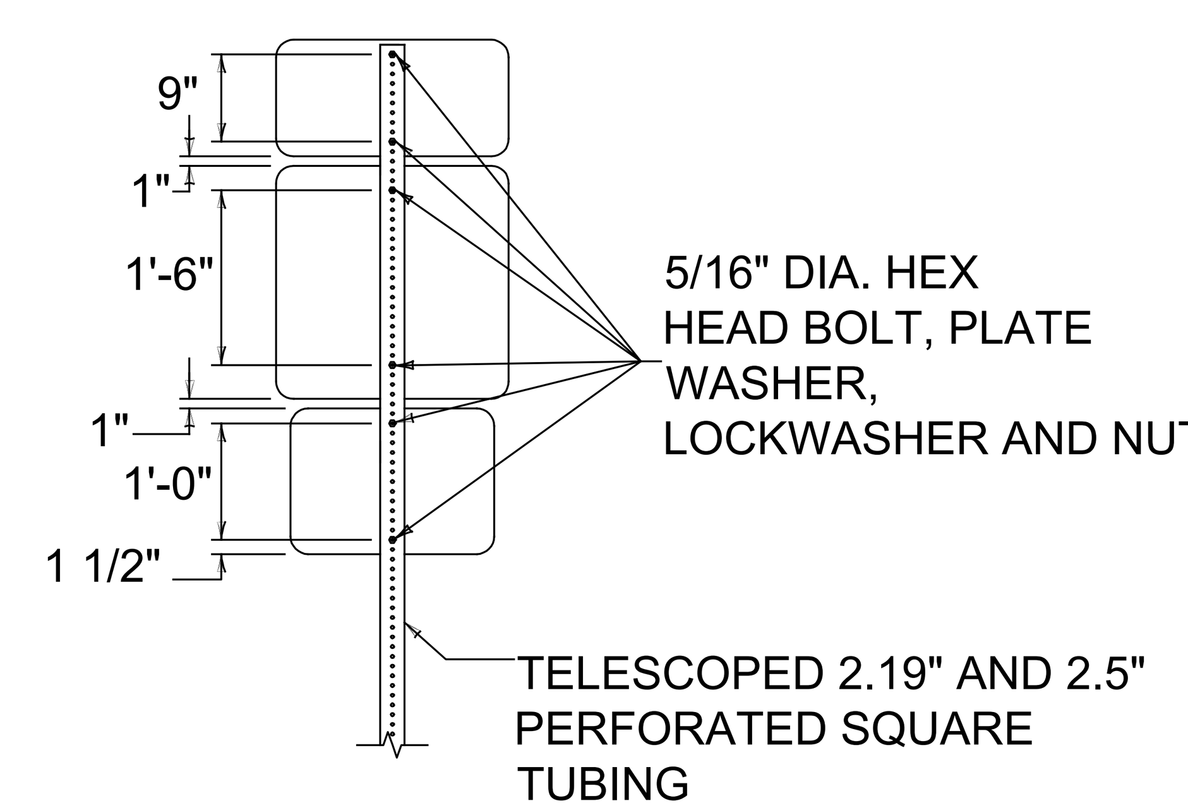
NOTE: CONTRACTOR TO VERIFY WITH MSU THE 8 E-BLOCKS IN BEST CONDITION TO REINSTALL.

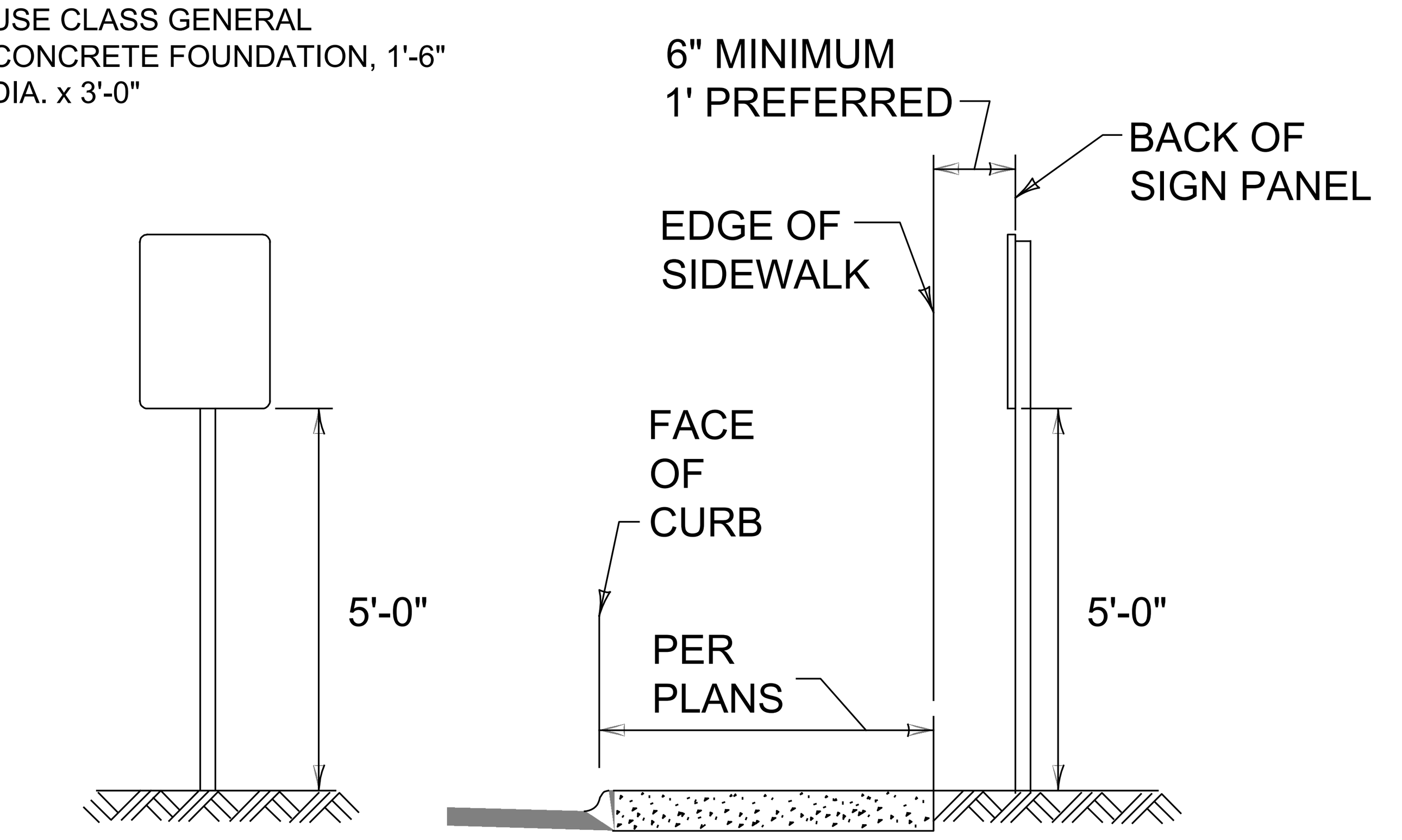
B C5-4 E-BLOCK
NTS



C C5-4 CONCRETE WHEEL STOP DETAIL
NTS







D C5-4 SIGN INSTALATION DETAIL
NTS

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DETAILS 4

SHEET
C5-4

DATE
05-09-23

PROJECT INFORMATION

MSU - PAISLEY COURT || LIGHTING PLAN
BOZEMAN, MONTANA

CONSTRUCTION DOCUMENTS

DATE ISSUED | 03/01/2023
PROJECT ENGINEER | ANDY MOORE

Issue
100%

LIGHTING

B01 IDENTIFICATION
B01: LUMINAIRE TYPE
a: SWITCH/ZONE
1: CIRCUIT NUMBER
FILLED LUMINAIRE INDICATED EMERGENCY OPERATION
SURFACE MOUNTED LUMINAIRE
RECESSED LUMINAIRE
WALL WASH LUMINAIRE
ARROW INDICATED ORIENTATION
WALL MOUNTED LUMINAIRE
+XX" INDICATES MOUNTING HEIGHT TO CENTER
SUSPENDED LUMINAIRE
POLE MOUNTED LUMINAIRE WITH ARM
POST MOUNTED LUMINAIRE
GROUND/FLOOR MOUNTED LUMINAIRE
TRACK LUMINAIRE SYSTEM (LENGTH, HEAD TYPES, & QUANTITIES AS INDICATED ON PLANS & SCHEDULES)
EXIT SIGN - ARROWS & FACES AS INDICATED ON PLANS

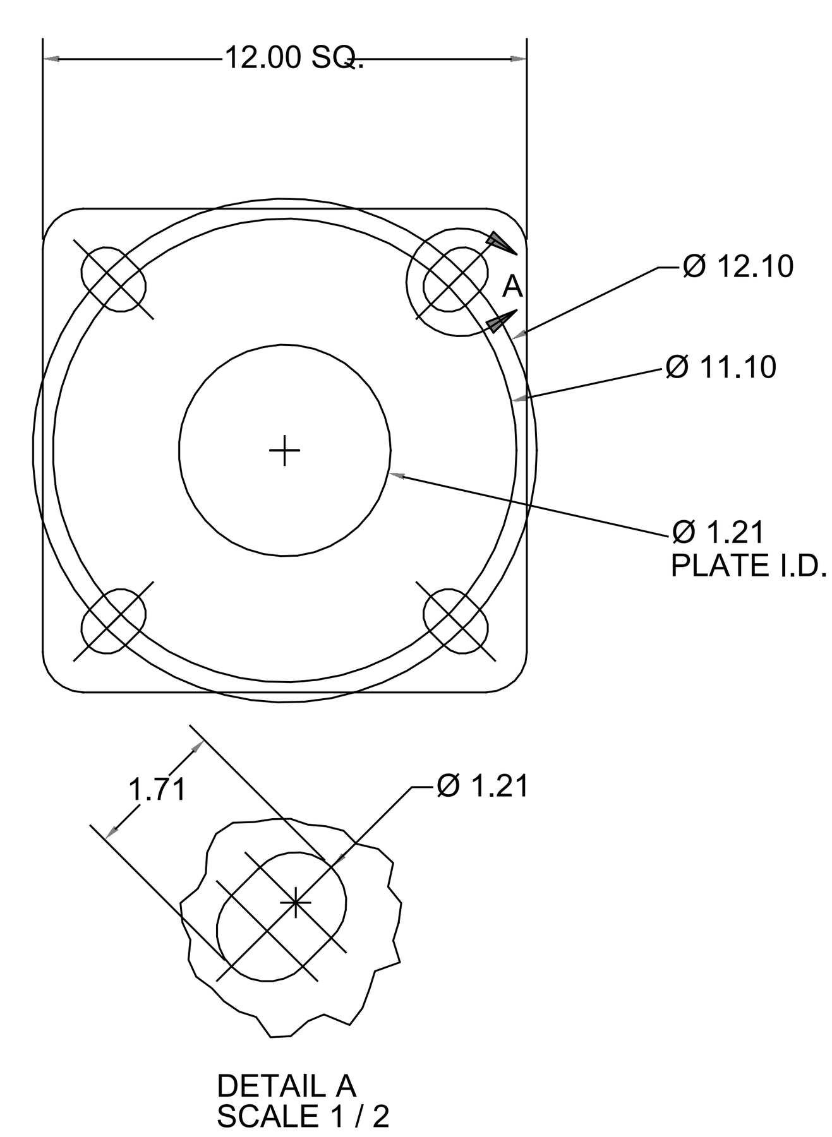
ORIENTATION

HORIZONTAL ZERO LINE INDICATED HOTLINE ZERO DRAWN FROM CENTER
DIRECTIONAL ARROW INDICATED PRIMARY LUMEN ORIENTATION
DIRECTIONAL AIMING LINE

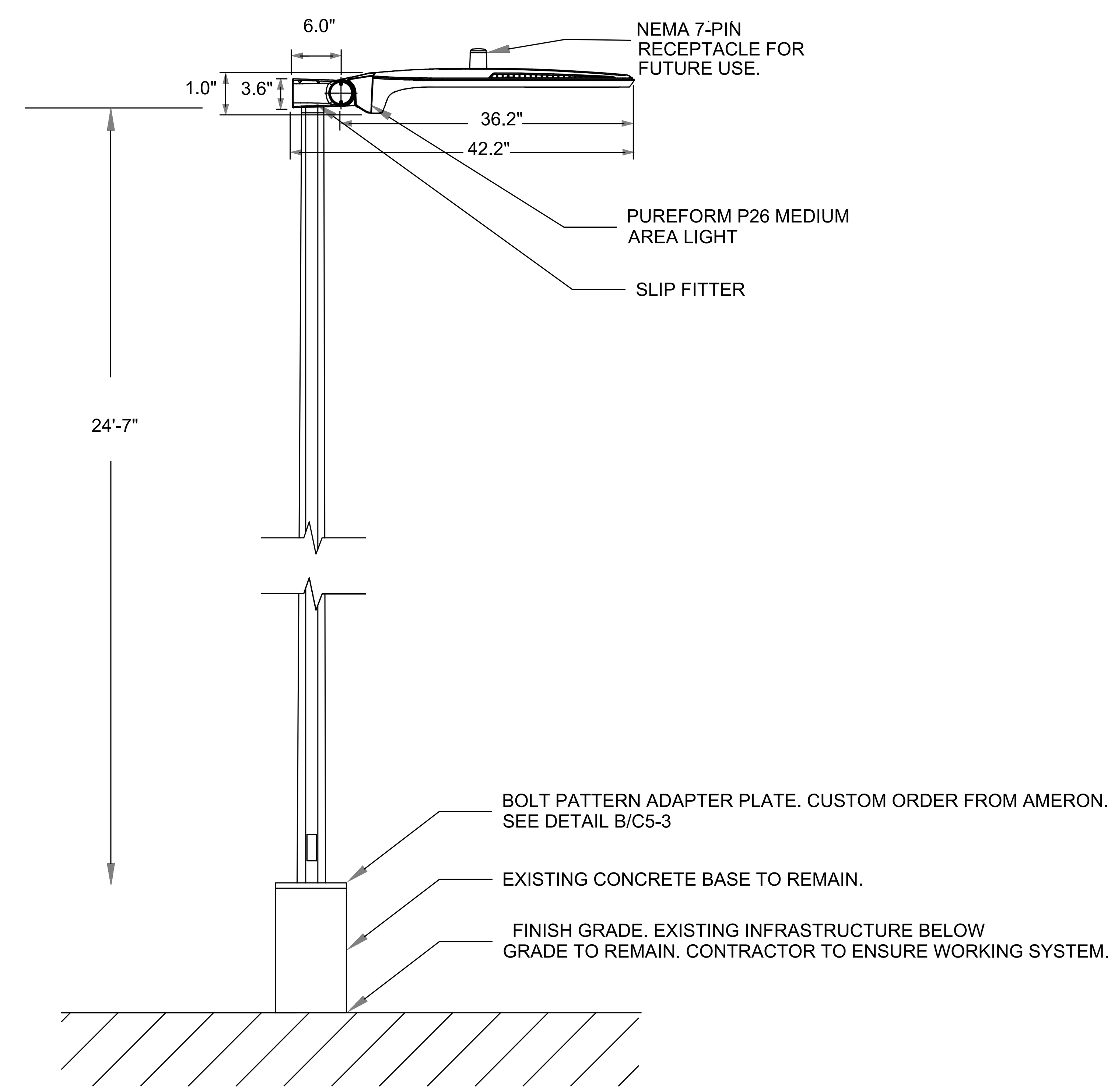
LUMINAIRE SCHEDULE

Type	Description	Manufacturer	Catalog Number	Source	CRI	CCT	Voltage	Load	Luminous Flux	Efficacy	Dim	Life Expectancy	Mounting	Finish	Notes
B01	STREET/PARKING ENTRY LUMINIARE	GARDCO	P26-64L-600-WW(80CRI)-G2-SF-2-277-FAWS-TLRD7-F1-BZ // PTF2-P26/34-1-90-(F)	LED	80	3000K	277 V	167 VA	14493 lm	127 lm/W	FAWS	100,000	EXISTING POLE W/ SLIPFITTER	BRONZE	2
B02	PARKING LOT LUMINIARE	GARDCO	P26-80L-700-WW(80CRI)-G2-SF-5W-277-FAWS-TLRD7-F1 // PTF2-P26/34-1-90-(F)	LED	80	3000K	277 V	169 VA	21363 lm	127 lm/W	FAWS	100,000	25' NEW POLE	BRONZE	1

NOTES:
1.PROVIDE & INSTALL NEW AMERON #MEO-7.5 POLE AND CUSTOM BOLT PATTERN ADAPTER PROVIDED BY AMERON. REFER TO DETAIL 1/EL0.01
2. EXISTING POLE TO REMAIN.



1 EL0.01 AMERON CUSTOM BOLT PATTERN ADAPTER
NTS



2 EL0.01 AMERON POLE MOUNTING DETAIL
NTS

A C5-5 MODULUS LIGHT POLE DETAIL
NTS

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DETAILS 5

SHEET
C5-5

DATE
05-09-23