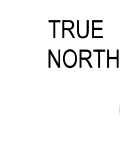


NOT FOR CONSTRUCTION



ISSUE CHART

5	CONSTRUCTION DOCUMENTS	305/2025
1/2025	DATE	3/24/25
Job Number 820937.001		
Drawn NVS		
Checked MDA		
Approved MDA		
TITLE		

EXISTING CONDITIONS

SHEET NUMBER

C-001

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CONTRACTOR	Holder Construction Group 6210 Ardrey Kell Road Suite 400, Charlotte, NC 28277
AUDIT/REVIEW	NVS Engineers and Consultants 4905 Professional Court, Raleigh, NC 27609
LIGHTING	Available Light 5700 Six Forks Road, Suite 203, Raleigh, NC 27609
SUSTAINABILITY	Ecoimpact Consulting 8022 Providence Road Suite 500, Charlotte, NC 28277

Mann Hall Renovation

STATE ID #22-24500-02A
NCSU PROJECT #20220021

North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2601 Wolf Village Way, Suite 331
Raleigh, NC 27695

GENERAL NOTES:
EXISTING CONDITIONS SURVEY PROVIDED BY ESP ASSOCIATES, INC.
DATED APRIL 15TH 2024 AND ENTITLED NORTH CAROLINA STATE
UNIVERSITY - PHASE II.
NO PORTION OF THE SUBJECT PROPERTY IS IN A SPECIAL FLOOD
HAZARD AREA PER MAP NUMBER 3720079400K. MAP EFFECTIVE
DATE JULY 19TH 2022. FLOOD INFORMATION IS BASED ON
INFORMATION GIVEN FROM NC FLOOD RISK INFORMATION
SYSTEM (FRIS).

This note shall apply to each and every sheet in this set.

The Engineer does not guarantee that all existing facilities such as pipelines, electrical lines, conduit, telephone cable, service connections, or other facilities are shown on the Plans. It shall be the Contractor's responsibility to have all utilities located by their respective owners, field mark the utility locations, and protect all such existing facilities prior to beginning construction. The Contractor is fully responsible for notifying all utility owners in accordance with NC General Statute - Chapter 87, Article 8, The Underground Damage Prevention Act.

GRAPHIC SCALE
1 INCH = 10 FT.

- SITE DEMOLITION ITEMS**
- 1 REMOVE WOODEN BENCH
 - 3 REMOVE CONCRETE/BRICK STEPS & HANDRAILS
 - 4 REMOVE CONCRETE RAMP & HANDRAILS
 - 5 REMOVE SIGN & SALVAGE FOR REINSTALL
 - 6 REMOVE BIKE RACK & SALVAGE FOR REINSTALL
 - 7 REMOVE BRICK WALL
 - 8 REMOVE BRICK BORDER
 - 9 REMOVE LANDSCAPING
 - 10 REMOVE TRENCH DRAIN
 - 11 REMOVE DROP INLET
 - 12 REMOVE BOLLARD
 - 13 REMOVE GENERATOR & CONC PAD
 - 14 REMOVE CURB & GUTTER
 - 15 REMOVE CONCRETE
 - 16 REMOVE BRICK WALKWAY & SALVAGE FOR REINSTALL
 - 18 REMOVE CONCRETE RAMP
 - 19 REMOVE ROOF DRAIN
 - 20 REMOVE METAL POST



CONTRACTOR TO REMOVE ALL EXISTING 4" BRICK SIDEWALK WITHIN CONSTRUCTION LIMITS. PLACE BRICKS ON PALLET & RE-USE. RETURN UNUSED BRICKS TO NCSU.

CONTRACTOR TO COORDINATE REROUTING OF PEDESTRIANS AROUND CONSTRUCTION ZONE WITH NC STATE.

CONTRACTOR TO REMOVE ALL EXISTING 4" BRICK SIDEWALK WITHIN CONSTRUCTION LIMITS. PLACE BRICKS ON PALLET & RE-USE. RETURN UNUSED BRICKS TO NCSU.

THIS AREA TO REMAIN INTACT IF ALTERNATE #12 IS NOT SELECTED.

SIDEWALK CLOSED SIGN. ADJUST LOCATION AS NECESSARY BASED ON CONSTRUCTION PHASING. RAMP TO RIDDICK HALL TO REMAIN OPEN AT ALL TIMES.

CONTRACTOR TO REMOVE ALL EXISTING 4" BRICK SIDEWALK WITHIN CONSTRUCTION LIMITS. PLACE BRICKS ON PALLET & RE-USE. RETURN UNUSED BRICKS TO NCSU.

SITE WORK WITHIN BOUNDARY INCLUDED IN ALTERNATE #12. BASE BID: EXISTING TO REMAIN.

NOTES:

1. PER NCSU DESIGN AND CONSTRUCTION GUIDELINES DIVISION 2: 75% OF A PROJECT'S NON-HAZARDOUS WASTE MUST BE DIVERTED FROM LANDFILL DISPOSAL THROUGH REUSE AND RECYCLING. CONTRACTOR TO COORDINATE WITH WRR AS NEEDED.
2. EXISTING WOODEN BENCHES TO BE SALVAGED AND RETURNED TO NCSU DEPENDING ON CONDITION.

NOT FOR CONSTRUCTION



ISSUE CHART

5	CONSTRUCTION DOCUMENTS	3/25/2025
MARK	ISSUE	DATE
Job Number		820937.001
Drawn		NV5
Checked		MDA
Approved		MDA
TITLE		

DEMOLITION PLAN

SHEET NUMBER

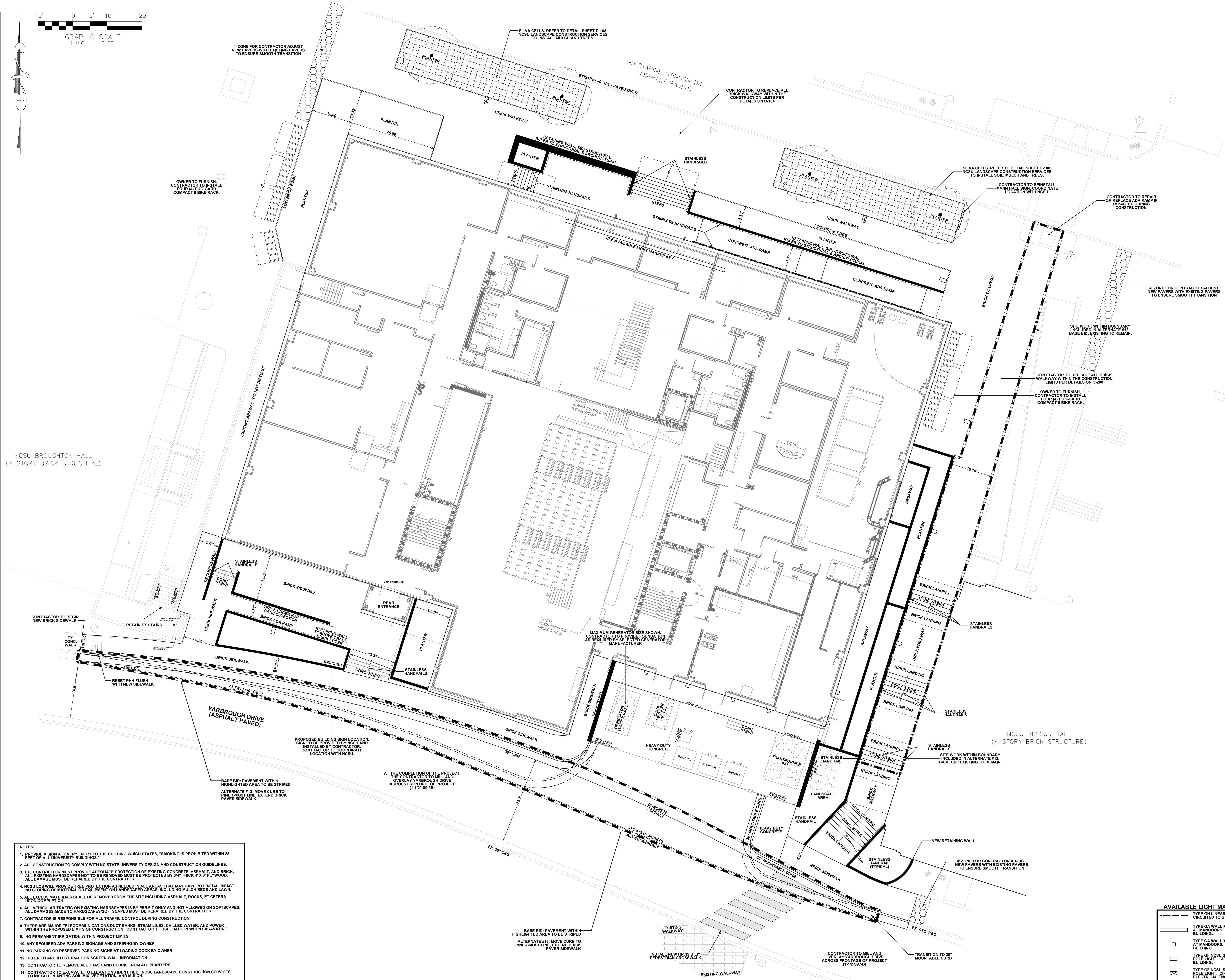
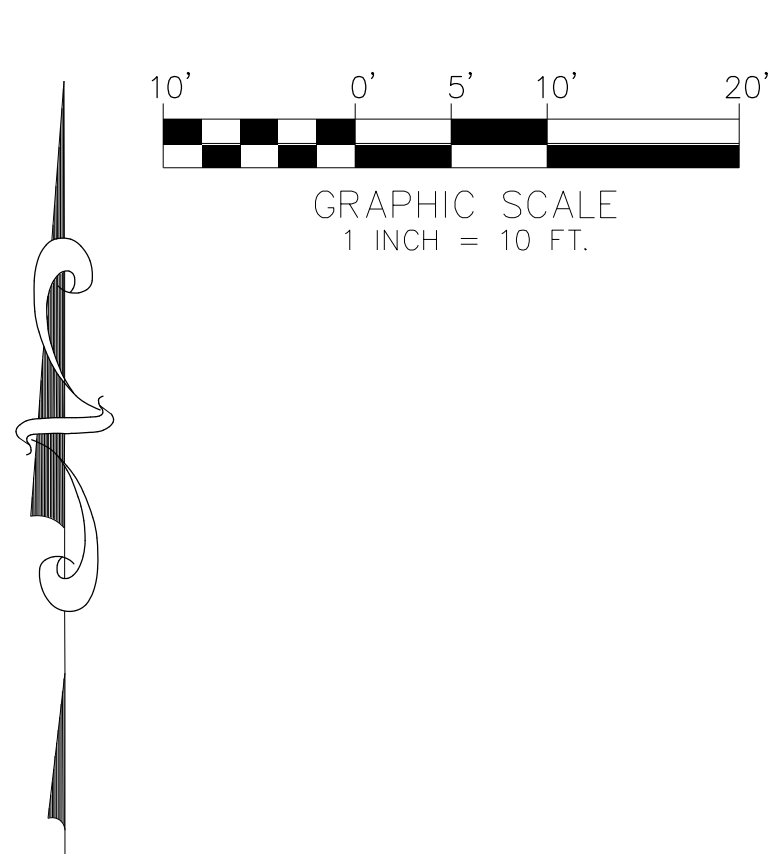
C-002

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CONSULTANTS	
STRUCTURAL	Lynch Mykins Structural Engineers 301 N. West Street Suite 105, Raleigh, NC 27603
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CONTRACTOR	Holder Construction Group 6210 Ardrey Kell Road Suite 400, Charlotte, NC 28277
AUDIOVISUAL	NV5 Engineers and Consultants 4905 Professional Court, Raleigh, NC 27609
LIGHTING	Available Light 5700 Six Forks Road, Suite 203, Raleigh, NC 27609
SUSTAINABILITY	Ecoimpact Consulting 8022 Providence Road Suite 500, Charlotte, NC 28277

Mann Hall Renovation
STATE ID #22-24500-02A
NCSU PROJECT # 20220021

North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2601 Wolf Village Way, Suite 331
Raleigh, NC 27695



- NOTES:
1. PROVIDE A SIGN AT EVERY ENTRY TO THE BUILDING WHICH STATES, "SMOKING IS PROHIBITED WITHIN 25 FEET OF ALL UNIVERSITY BUILDINGS."
 2. ALL CONSTRUCTION TO COMPLY WITH NC STATE UNIVERSITY DESIGN AND CONSTRUCTION GUIDELINES.
 3. THE CONTRACTOR MUST PROVIDE ADEQUATE PROTECTION OF EXISTING CONCRETE, ASPHALT, AND BRICK. ALL EXISTING HARDSCAPES NOT TO BE REMOVED MUST BE PROTECTED BY 3/4" THICK 4' X 8' PLYWOOD. ALL DAMAGES MUST BE REPAIRED BY THE CONTRACTOR.
 4. NCSU LCB WILL PROVIDE TREE PROTECTION AS NEEDED IN ALL AREAS THAT MAY HAVE POTENTIAL IMPACT. NO STORING OF MATERIAL OR EQUIPMENT ON LANDSCAPED AREAS, INCLUDING MULCH BEDS AND LAWN.
 5. ALL EXCESS MATERIALS SHALL BE REMOVED FROM THE SITE INCLUDING ASPHALT, ROCKS, ET CETERA UPON COMPLETION.
 6. ALL VEHICULAR TRAFFIC ON EXISTING HARDSCAPES IS BY PERMIT ONLY AND NOT ALLOWED ON SOFTSCAPES. ALL DAMAGES MADE TO HARDSCAPES/SOFTSCAPES MUST BE REPAIRED BY THE CONTRACTOR.
 7. CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL DURING CONSTRUCTION.
 8. THERE ARE MAJOR TELECOMMUNICATIONS DUCT BANKS, STEAM LINES, CHILLED WATER, AND POWER WITHIN THE PROPOSED LIMITS OF CONSTRUCTION. CONTRACTOR TO USE CAUTION WHEN EXCAVATING.
 9. NO PERMANENT IRRIGATION WITHIN PROJECT LIMITS.
 10. ANY REQUIRED ADA PARKING SIGNAGE AND STRIPING BY OWNER.
 11. NO PARKING OR RESERVED PARKING SIGNS AT LOADING DOCK BY OWNER.
 12. REFER TO ARCHITECTURAL FOR SCREEN WALL INFORMATION.
 13. CONTRACTOR TO REMOVE ALL TRASH AND DEBRIS FROM ALL PLANTERS.
 14. CONTRACTOR TO EXCAVATE TO ELEVATIONS IDENTIFIED. NCSU LANDSCAPE CONSTRUCTION SERVICES TO INSTALL PLANTING SOIL, MULCH, VEGETATION, AND MULCH.

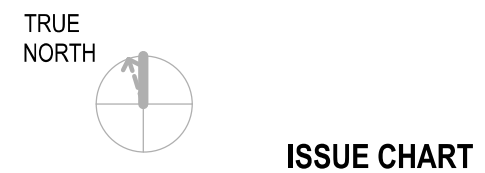
AVAILABLE LIGHT MARKUP KEY		
	TYPE GH LINEAR HANDRAIL LIGHT, CIRCUITED TO BUILDING.	
	TYPE GA WALL MOUNTED LIGHT AT HANDCOURS, CIRCUITED TO BUILDING.	
	TYPE GA WALL MOUNTED LIGHT AT HANDCOURS, CIRCUITED TO BUILDING.	
	TYPE OF NCSU STANDARD 10' POLE LIGHT, CIRCUITED TO BUILDING.	
	TYPE OF NCSU STANDARD 10' POLE LIGHT, CIRCUITED PER ELECTRICAL ENGINEER.	

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Mann Hall Renovation
STATE ID #22-24500-02A
NCSU PROJECT # 202202021

North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
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NOT FOR CONSTRUCTION



ISSUE CHART

5	CONSTRUCTION DOCUMENTS	3/26/2025
DATE	DATE	DATE
Job Number	820937.001	
Drawn	NV5	
Checked	MDA	
Approved	MDA	
TITLE		

SITE PLAN
SHEET NUMBER
C-100

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Mann Hall Renovation

STATE ID #22-24500-02A
NCSU PROJECT # 202220021

North Carolina State University

Facilities Division Design & Construction
Administrative Services Building III
2601 Wolf Village Way, Suite 331
Raleigh, NC 27695

NOT FOR CONSTRUCTION



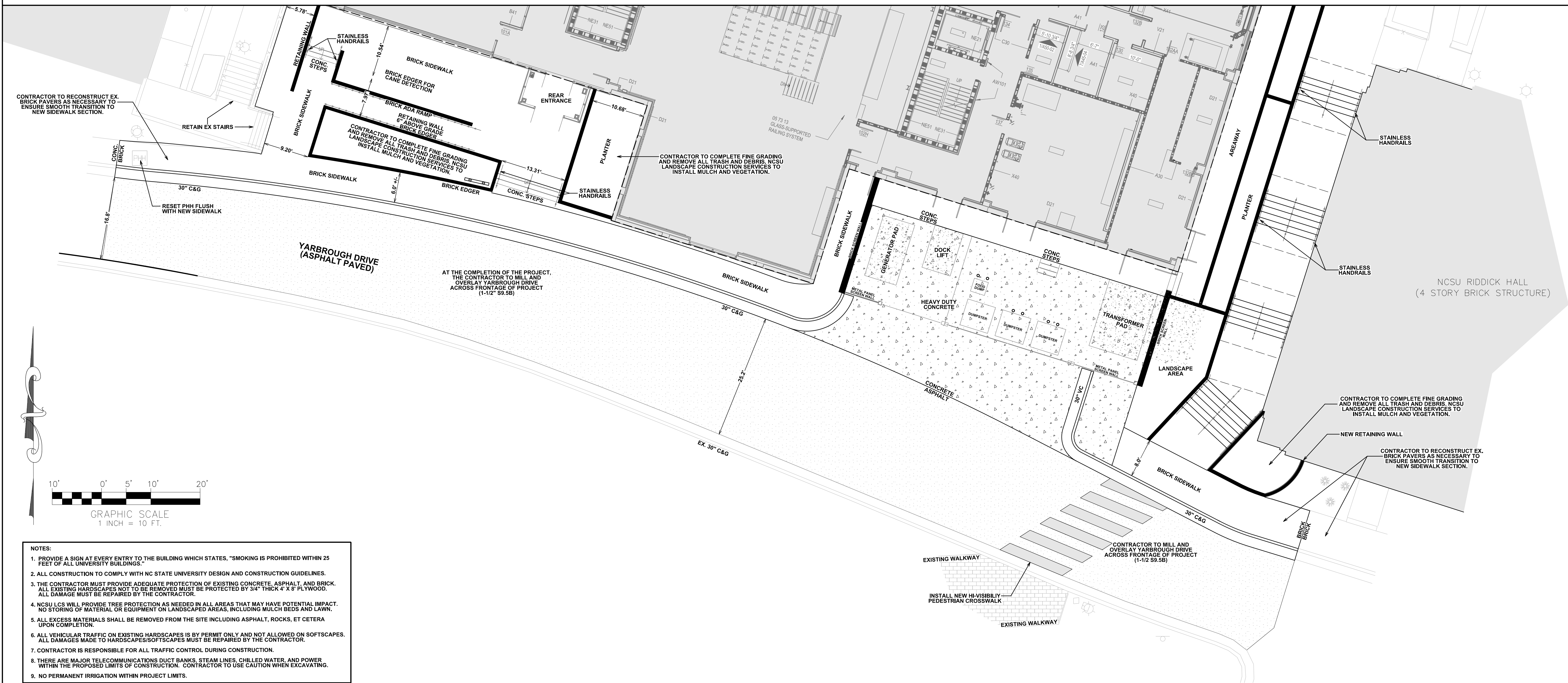
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MARK	ISSUE	DATE
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Drawn	NV5	
Checked	MDA	
Approved	MDA	
		TITLE

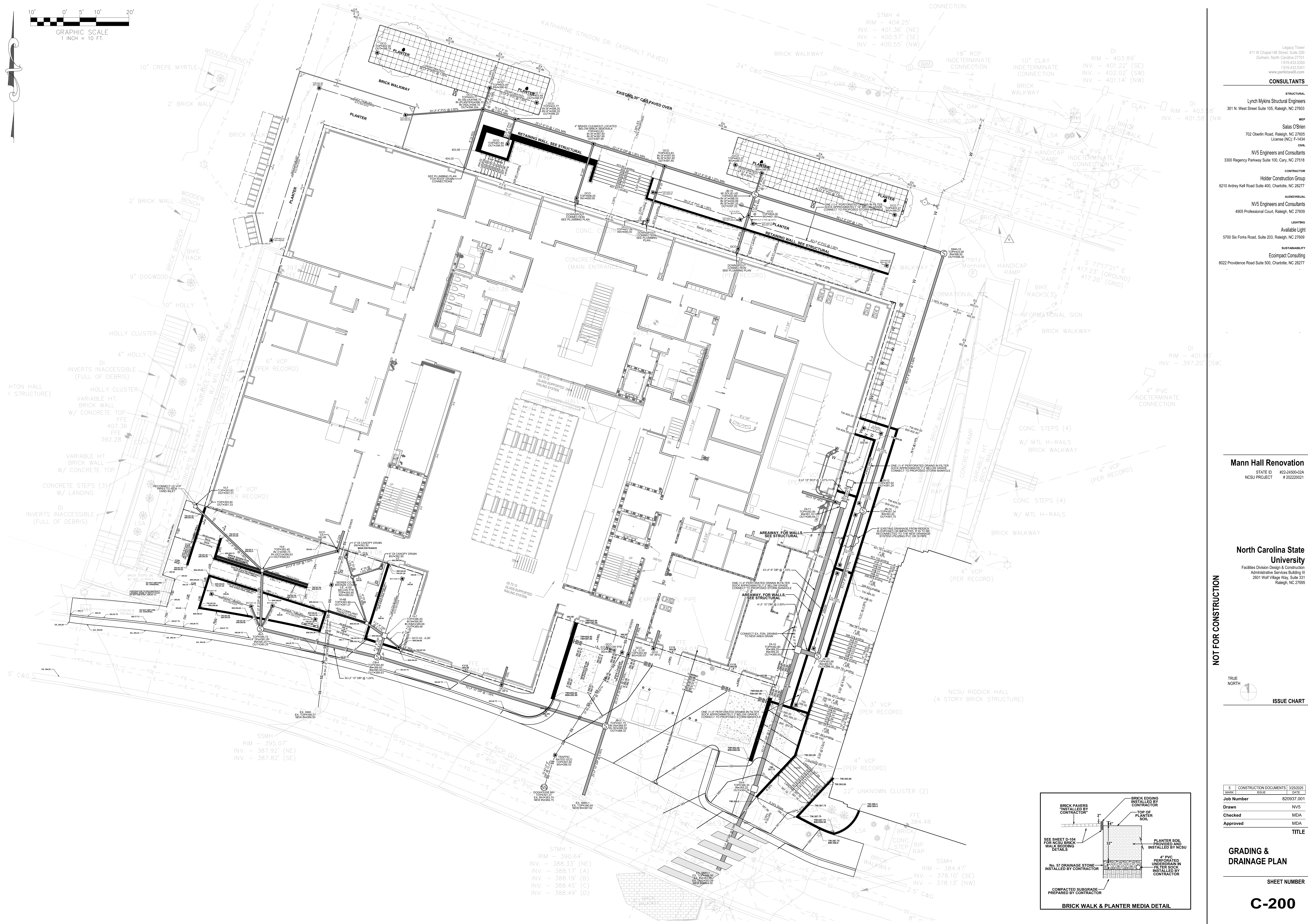
SITE PLAN

SHEET NUMBER

C-101A



- NOTES:
1. PROVIDE A SIGN AT EVERY ENTRY TO THE BUILDING WHICH STATES, "SMOKING IS PROHIBITED WITHIN 25 FEET OF ALL UNIVERSITY BUILDINGS."
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 9. NO PERMANENT IRRIGATION WITHIN PROJECT LIMITS.



LEGEND

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Mann Hall Renovation
STATE ID #22-24500-02A
NCSU PROJECT # 20220021

North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2601 Wolf Village Way, Suite 331
Raleigh, NC 27695

TRUE NORTH

ISSUE CHART

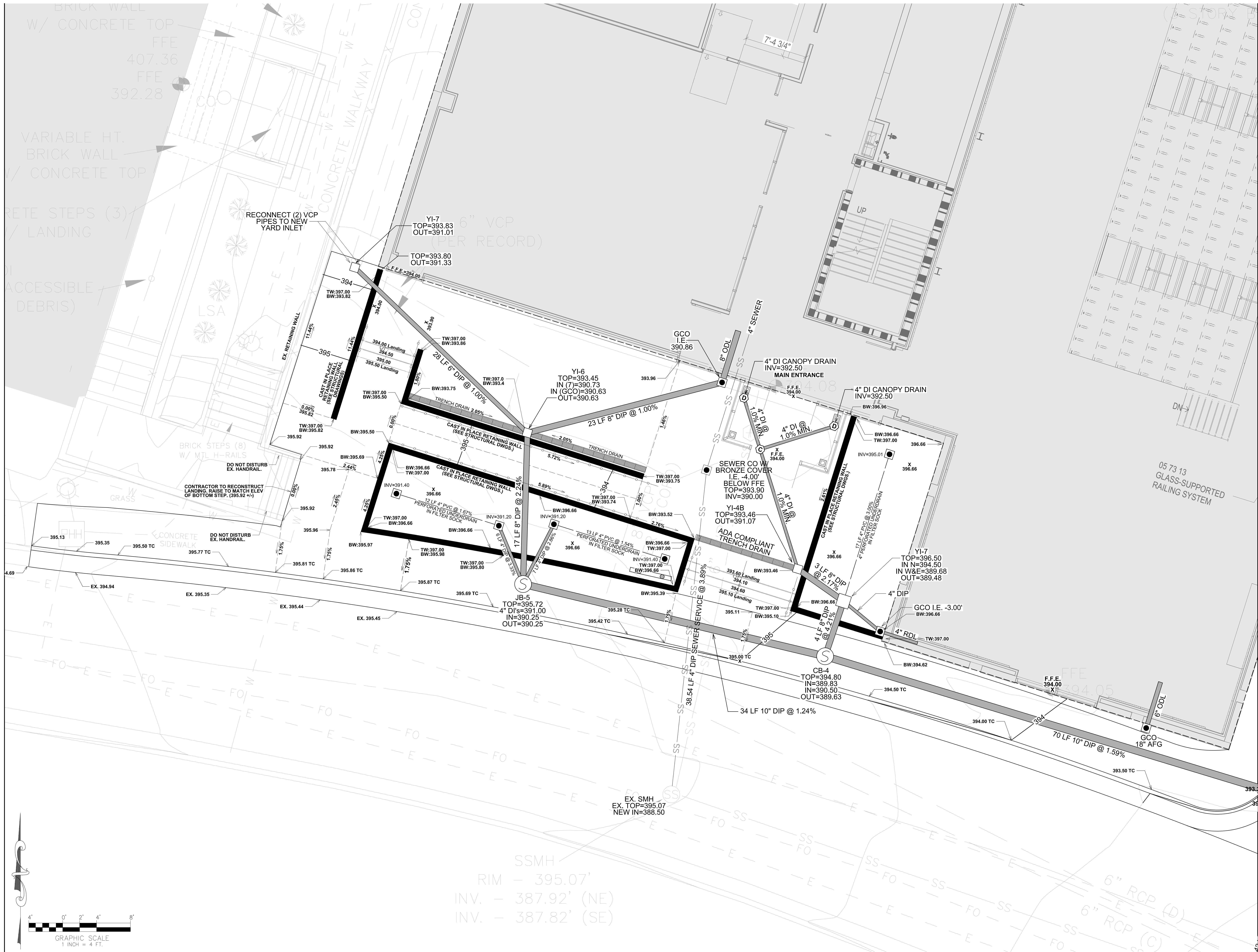
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1	ISSUE	DATE
Job Number		820937.001
Drawn		NV5
Checked		MDA
Approved		MDA
		TITLE

GRADING & DRAINAGE PLAN

SHEET NUMBER

C-200

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Mann Hall Renovation

STATE ID #22-24500-02A
NCSU PROJECT # 202220021

North Carolina State University

Facilities Division Design & Construction
Administrative Services Building III
2601 Wolf Village Way, Suite 331
Raleigh, NC 27695

NOT FOR CONSTRUCTION

TRUE NORTH
ISSUE CHART

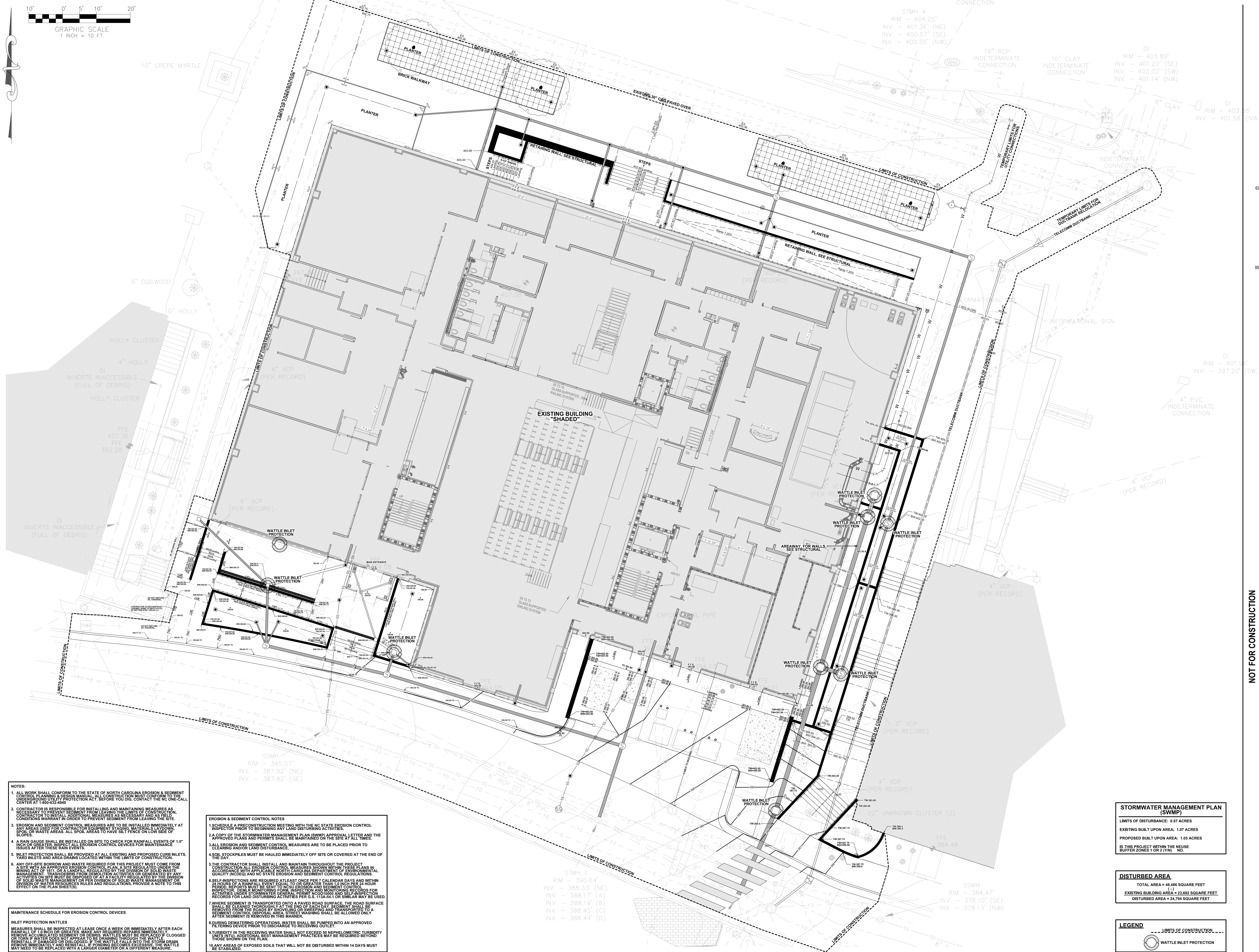
5	CONSTRUCTION DOCUMENTS		3/25/2025
MARK	ISSUE		DATE
Job Number			820937.001
Drawn			NV5
Checked			MDA
Approved			MDA
			TITLE

GRADING
ENLARGEMENT

SHEET NUMBER

C-201

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ISSUE CHART

SHEET NUMBER

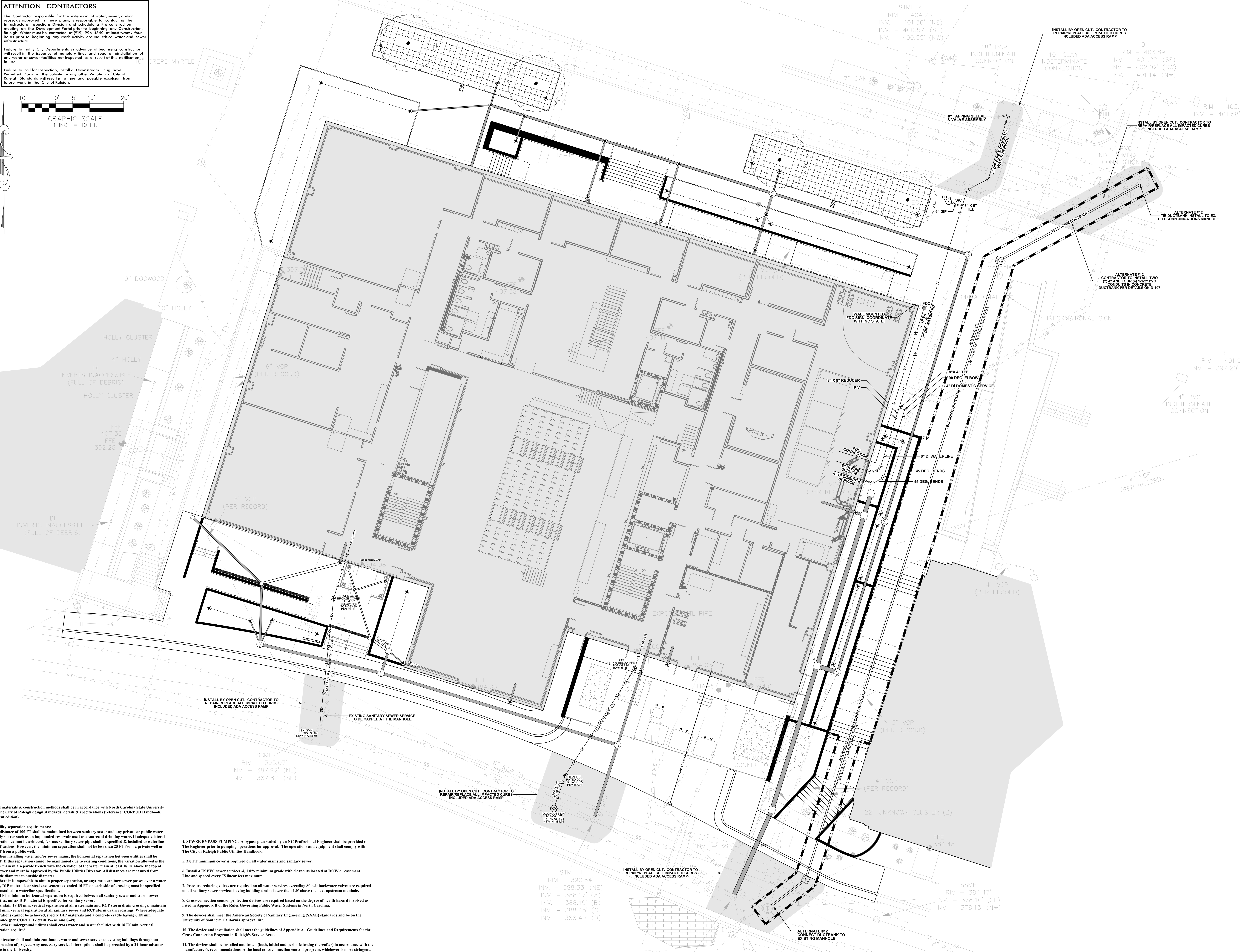
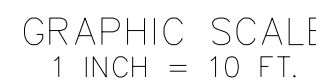
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The Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the Infrastructure Inspections Division and schedule a Pre-construction meeting on the Development Portal prior to beginning any Construction. Raleigh Water must be contacted at (919)-996-4540 at least twenty-four hours prior to beginning any work activity around critical water and sewer infrastructure.

Failure to notify City Departments in advance of beginning construction, will result in the issuance of monetary fines, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

Failure to call for Inspection, Install a Downstream Plug, have Permitted Plans on the Jobsite, or any other Violation of City of Raleigh Standards will result in a fine and possible exculsion from future work in the City of Raleigh.

Failure to call for Inspection, Install a Downstream Plug, have Permitted Plans on the Jobsite, or any other Violation of City of Raleigh Standards will result in a fine and possible exculsion from future work in the City of Raleigh.



1. All materials & construction methods shall be in accordance with North Carolina State University and the City of Raleigh design standards, details & specifications (reference: CORPUD Handbook, current edition).

2. Utility separation requirements:

a) A distance of 100 FT shall be maintained between sanitary sewer and any private or public water supply source such as an impounded reservoir used as a source of drinking water. If adequate lateral separation cannot be achieved, ferrous sanitary sewer pipe shall be specified & installed to waterline specifications. However, the minimum separation shall not be less than 25 FT from a private well or 50 FT from a public well.

b) When installing water and/or sewer mains, the horizontal separation between utilities shall be 10 FT. If this separation cannot be maintained due to existing conditions, the variation allowed is the water main in a separate trench with the elevation of the water main at least 18 IN above the top of the sewer and must be approved by the Public Utilities Director. All distances are measured from outside diameter to outside diameter.

c) Where it is impossible to obtain proper separation, or anytime a sanitary sewer passes over a water main, DIP materials or steel encasement extended 10 FT on each side of crossing must be specified and installed to watertight specifications.

e) Maintain 18 IN min. vertical separation at all watermain and RCP storm drain crossings; maintain 18 IN min. vertical separation at all sanitary sewer and RCP storm drain crossings. Where adequate separations cannot be achieved, specify DIP materials and a concrete cradle having 6 IN min. clearance (per CORPUD details W-41 and S-49).

3. Contractor shall maintain continuous water and sewer service to existing buildings throughout construction of project. Any necessary service interruptions shall be preceded by a 24-hour advance notice to the University.

4. SEWER BYPASS PUMPING. A bypass plan sealed by an NC Professional Engineer shall be provided to The Engineer prior to pumping operations for approval. The operations and equipment shall comply with The City of Raleigh Public Utilities Handbook.

5. 3.0 FT minimum cover is required on all water mains and sanitary sewer.

6. Install 4 IN PVC sewer services @ 1.0% minimum grade with cleanouts located at ROW or easement Line and spaced every 75 linear feet maximum.

7. Pressure reducing valves are required on all water services exceeding 80 psi; backwater valves are required on all sanitary sewer services having building drains lower than 1.0' above the next upstream manhole.

9. The devices shall meet the American Society of Sanitary Engineering (SAAE) standards and be on the University of Southern California approval list.

10. The device and installation shall meet the guidelines of Appendix A - Guidelines and Requirements for the Cross Connection Program in Raleigh's Service Area.

11. The devices shall be installed and tested (both, initial and periodic testing thereafter) in accordance with the manufacturer's recommendations or the local cross connection control program, whichever is more stringent.

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STATE ID #22-24500-02A
NCSU PROJECT # 202220021

North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2601 Wolf Village Way, Suite 331
Raleigh, NC 27695

NOT FOR CONSTRUCTION



ISSUE CHART

5	CONSTRUCTION DOCUMENTS	3/25/2025
MARK	ISSUE	DATE
Job Number		820937.001
Drawn		NV5
Checked		MDA
Approved		MDA
TITLE		

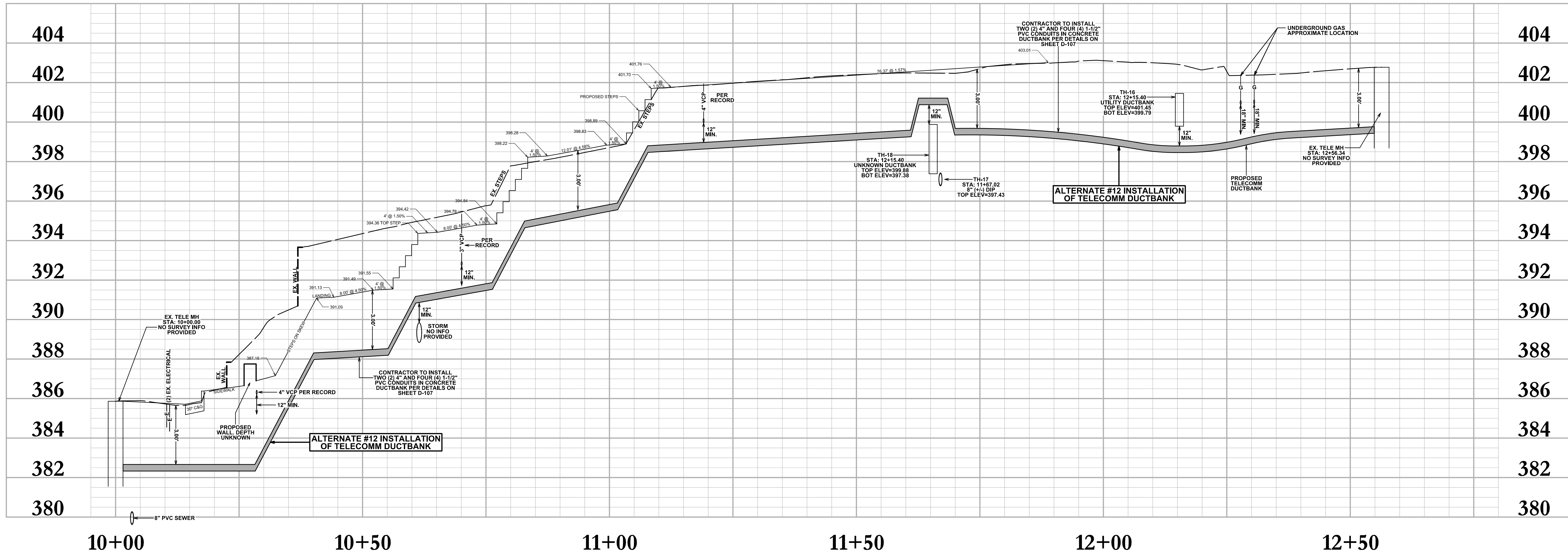
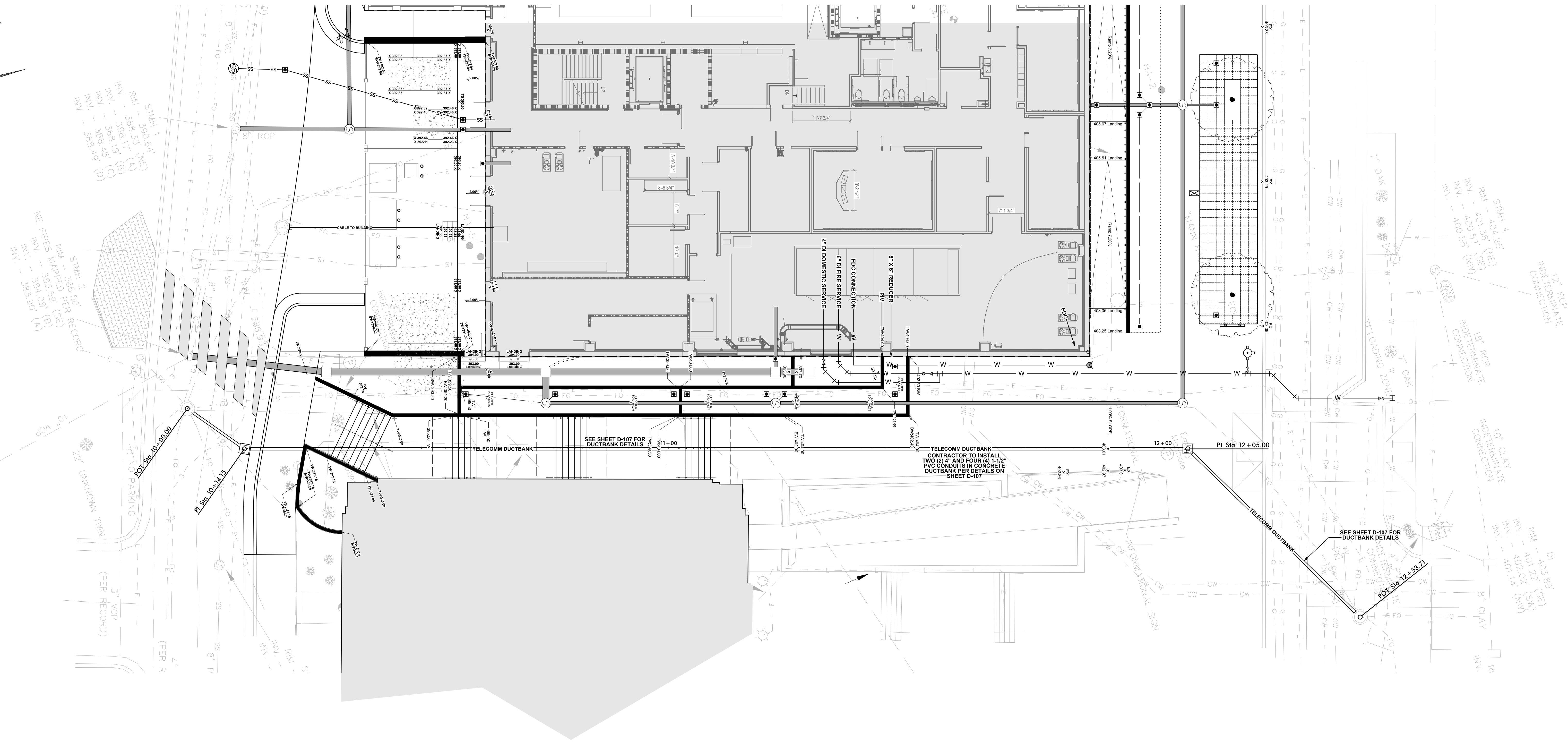
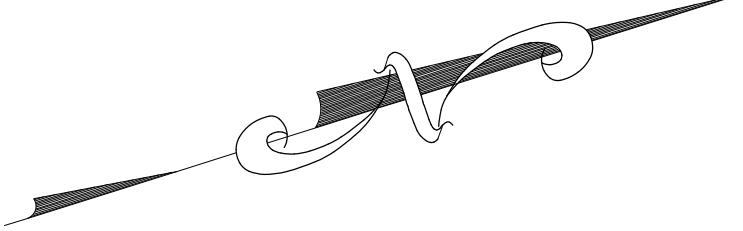
UTILITY PLAN

SHEET NUMBER

C-300



GRAPHIC SCALE
1 INCH = 10 FT.



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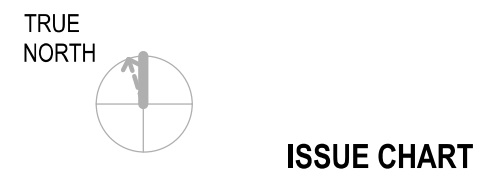
SUSTAINABILITY
Ecoimpact Consulting
8022 Providence Road Suite 500, Charlotte, NC 28277

Mann Hall Renovation

STATE ID #22-24500-02A
NCSU PROJECT # 202202021

North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
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Raleigh, NC 27695

NOT FOR CONSTRUCTION



ISSUE TABLE

5	CONSTRUCTION DOCUMENTS	3/25/2025
MARK	ISSUE	DATE
Job Number	820937.001	
Drawn	NV5	
Checked	MDA	
Approved	MDA	
TITLE		

DUCTBANK PROFILE

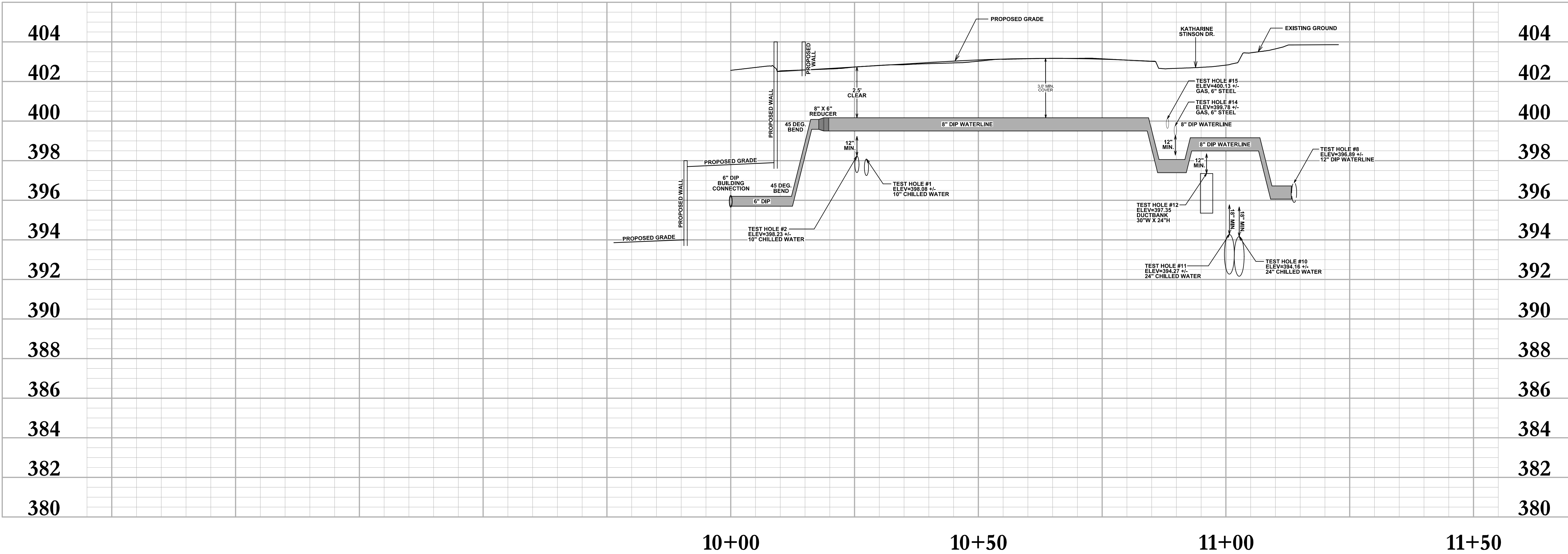
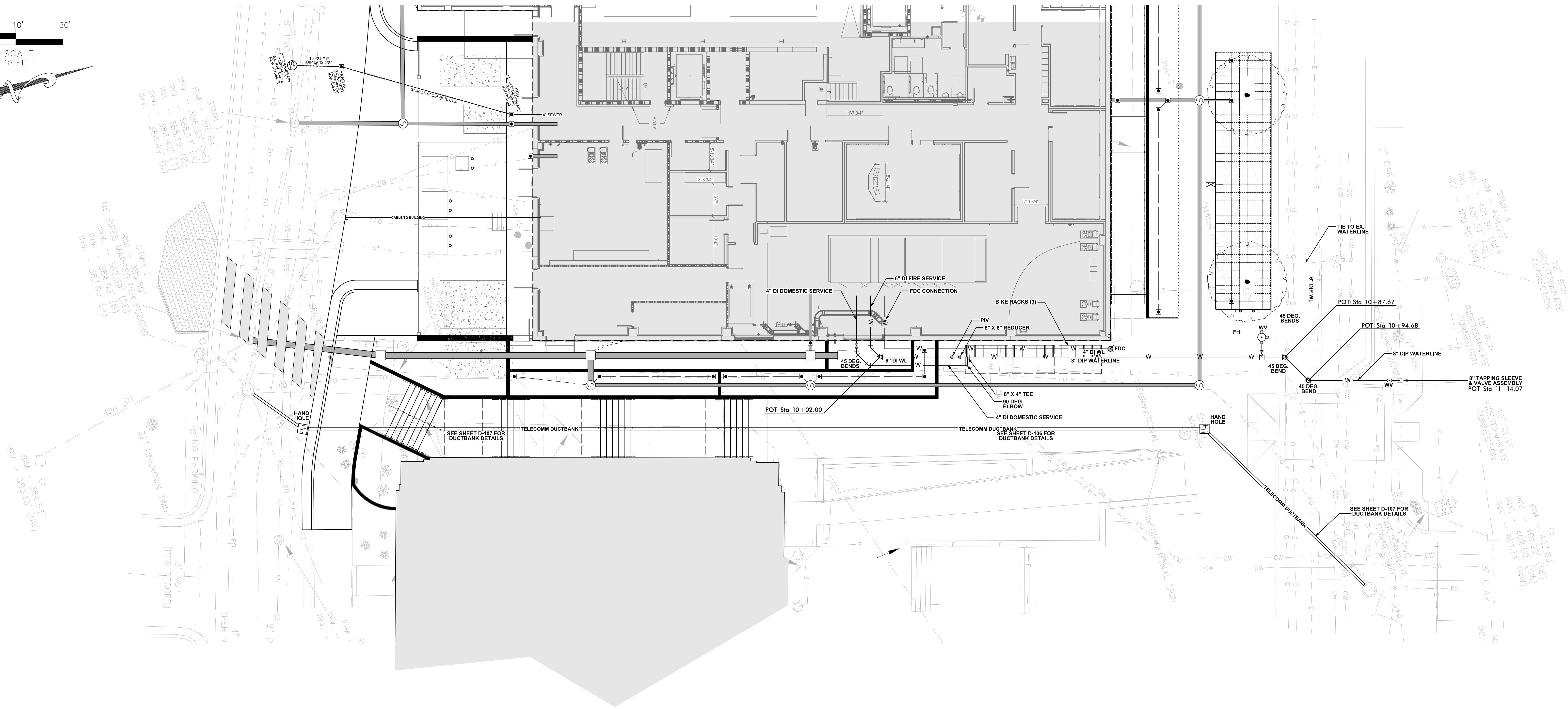
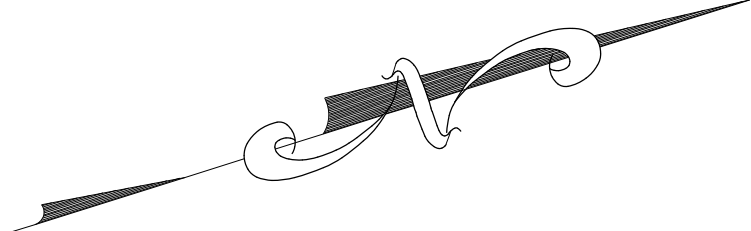
SHEET NUMBER

C-301

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10' 0' 5' 10' 20'

GRAPHIC SCALE
1 INCH = 10 FT.



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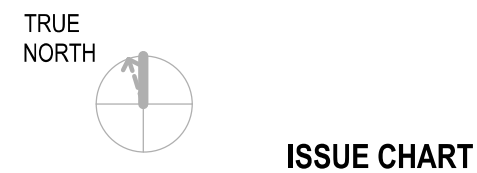
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NOT FOR CONSTRUCTION



ISSUE CHART

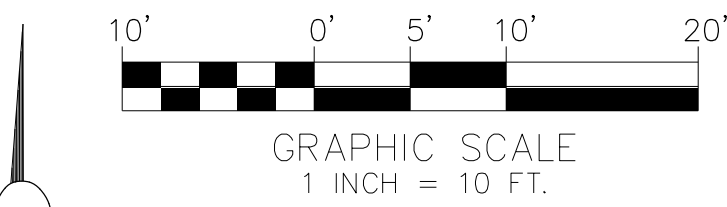
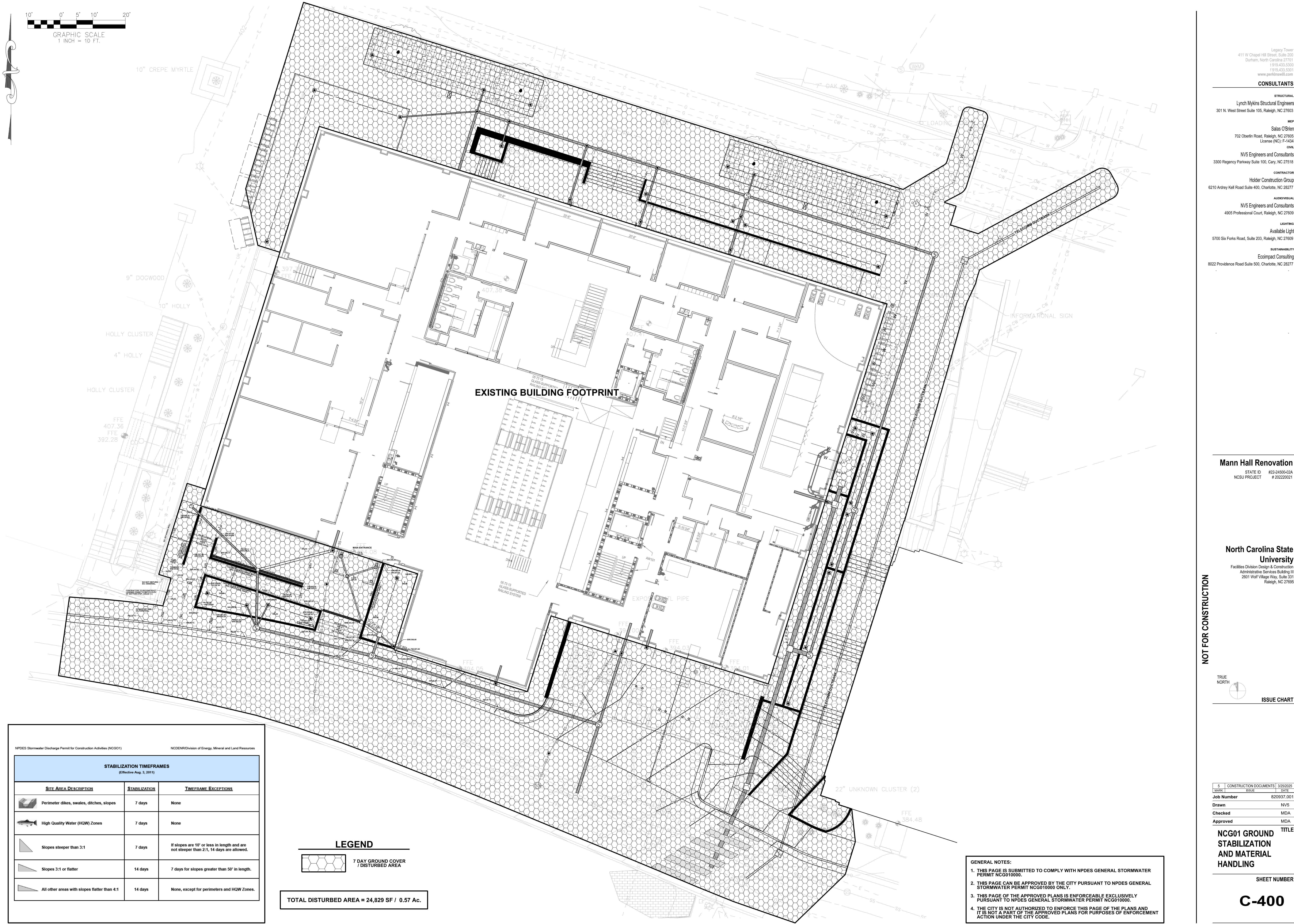
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Approved	MDA	
TITLE		

FIRELINE PROFILE

SHEET NUMBER

C-302

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STABILIZATION TIMEFRAMES (Effective Aug. 3, 2011)		
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

LEGEND

7 DAY GROUND COVER / DISTURBED AREA

TOTAL DISTURBED AREA = 24,829 SF / 0.57 Ac.

- GENERAL NOTES:
- THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCG010000.
 - THIS PAGE CAN BE APPROVED BY THE CITY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000 ONLY.
 - THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000.
 - THE CITY IS NOT AUTHORIZED TO ENFORCE THIS PAGE OF THE PLANS AND IT IS NOT A PART OF THE APPROVED PLANS FOR PURPOSES OF ENFORCEMENT ACTION UNDER THE CITY CODE.

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Mann Hall Renovation

STATE ID #22-24500-02A
NCSU PROJECT # 202202021

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Administrative Services Building III
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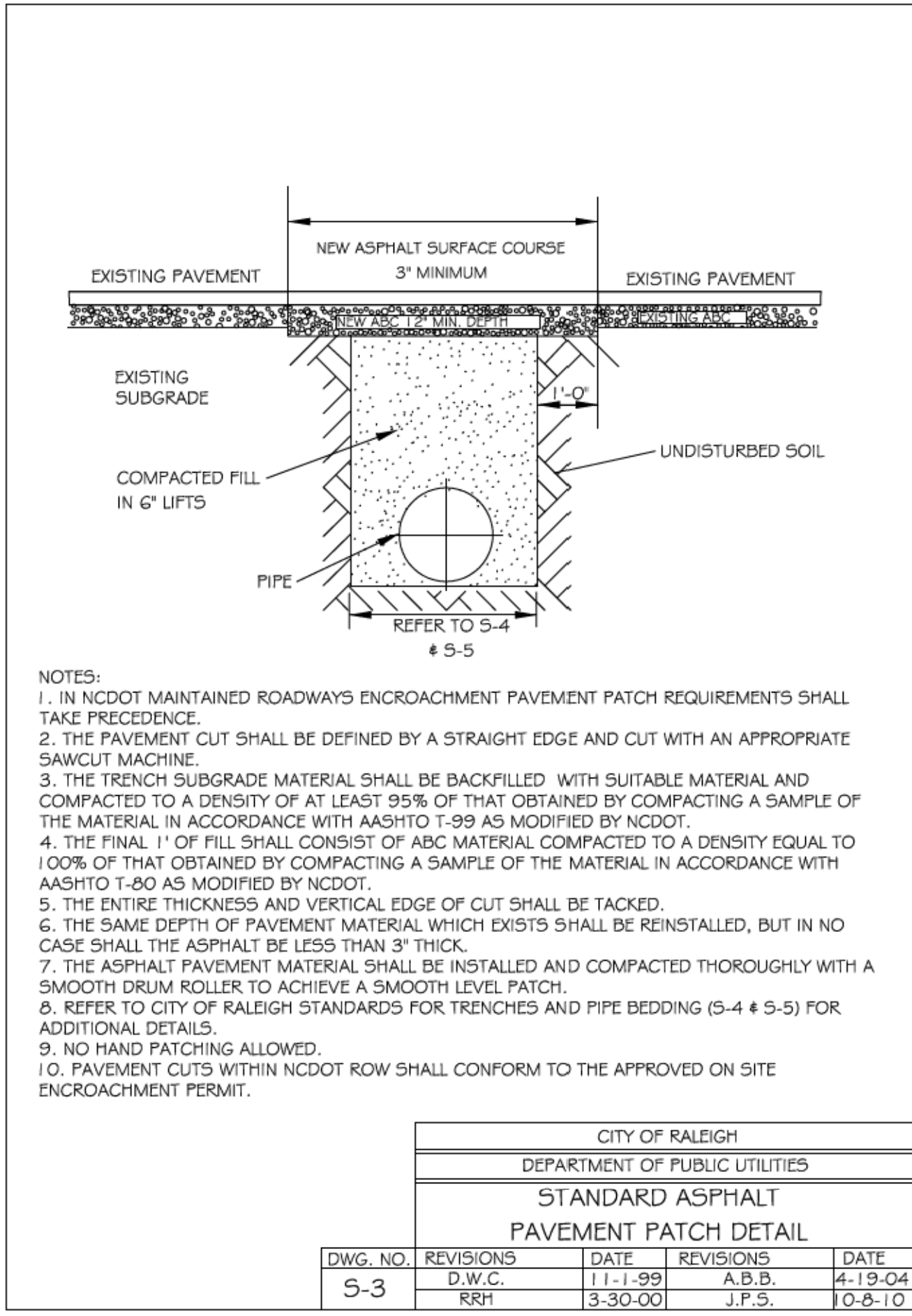
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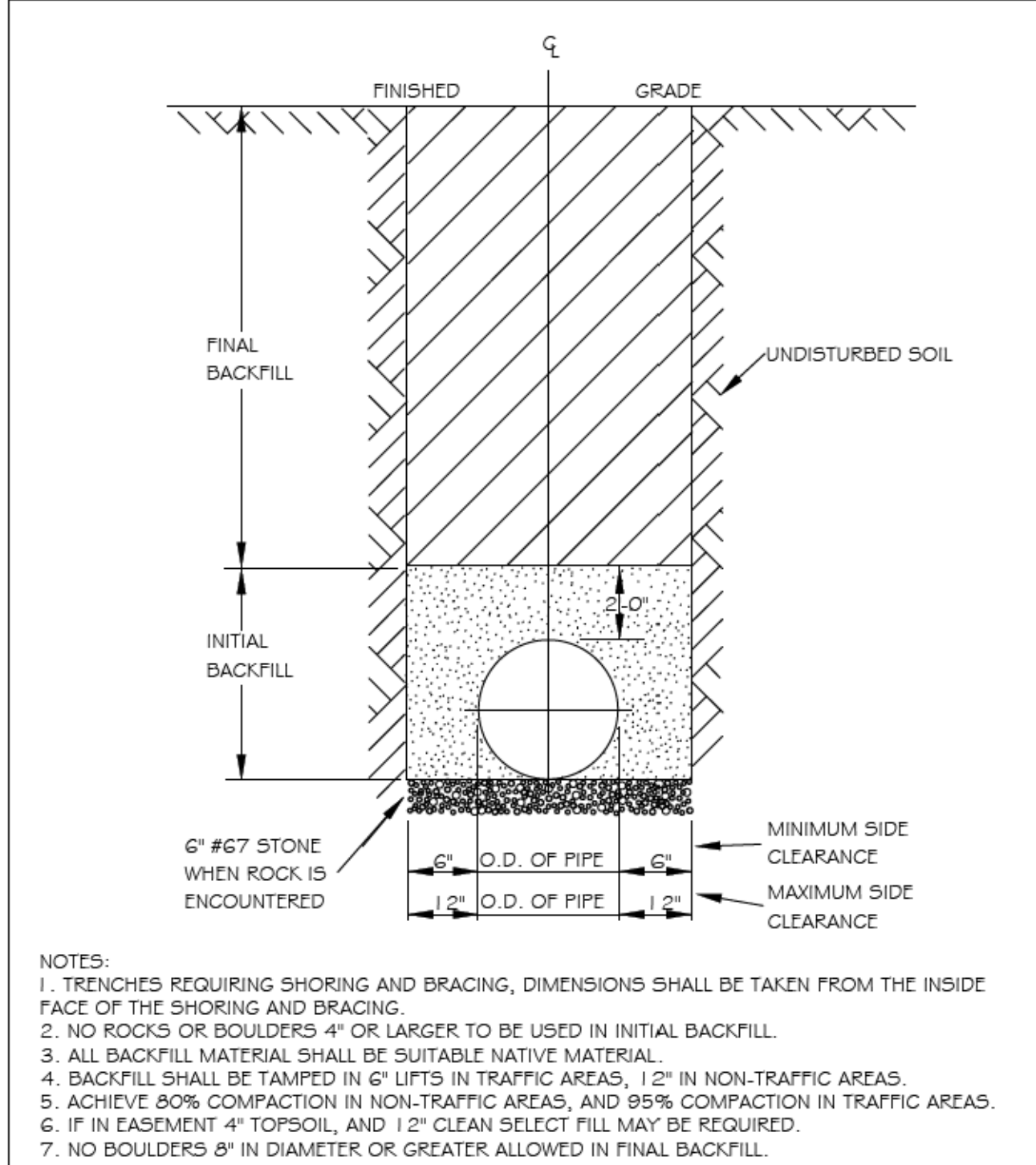
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Drawn		NV5	
Checked		MDA	
Approved		MDA	
NCG01 GROUND STABILIZATION AND MATERIAL HANDLING			TITLE
SHEET NUMBER			

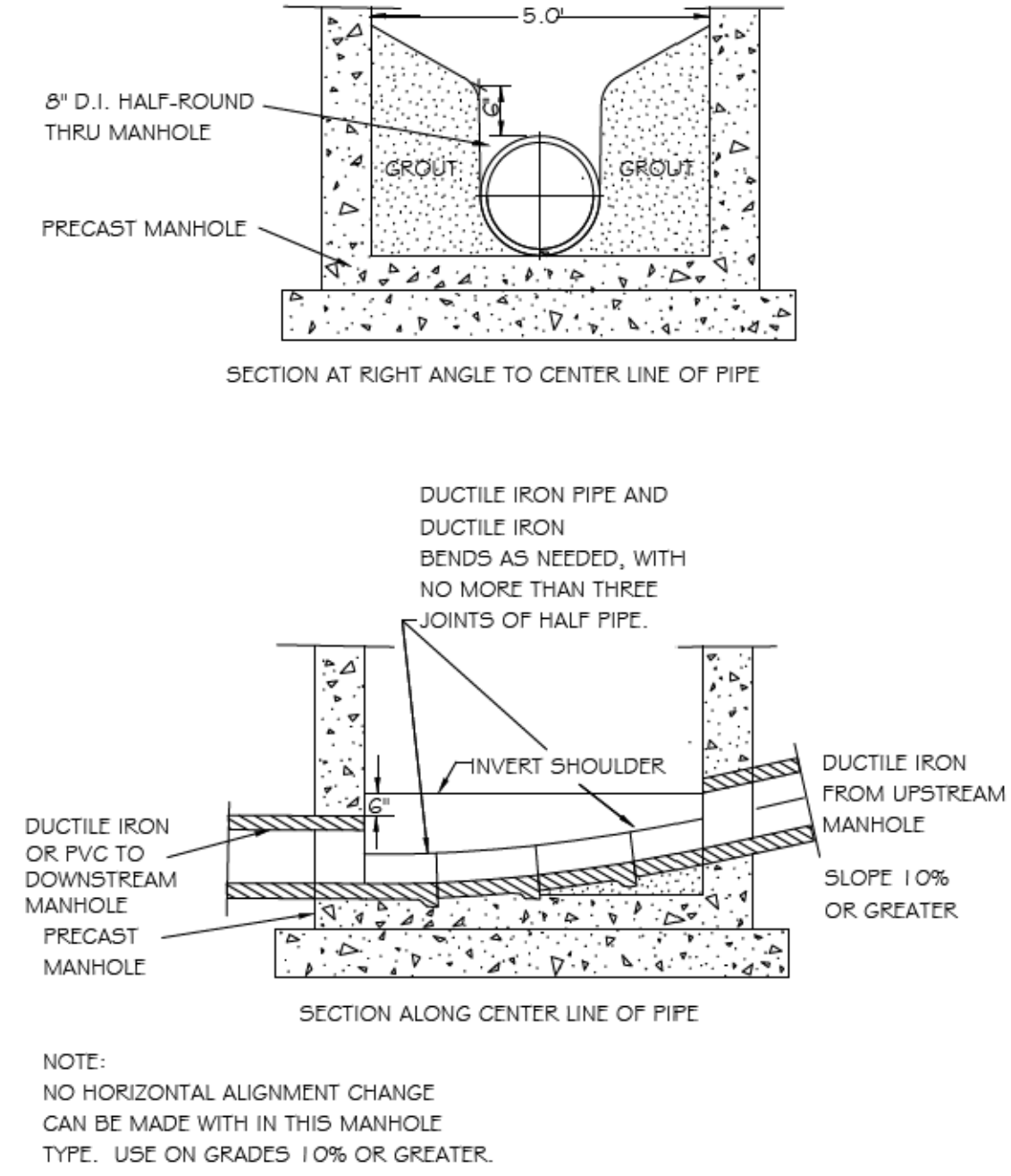
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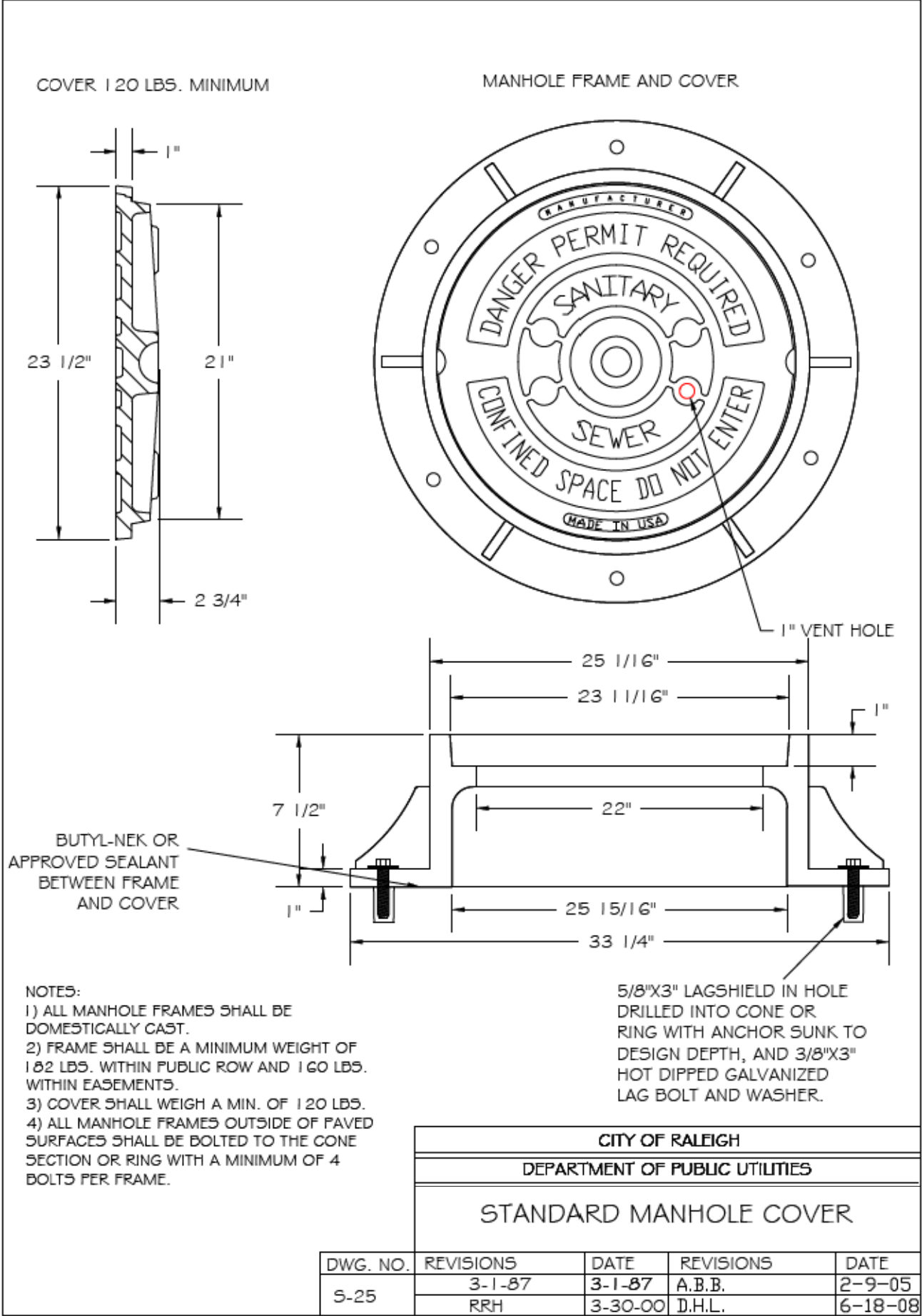
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DEPARTMENT OF PUBLIC UTILITIES					
STANDARD ASPHALT PAVEMENT PATCH DETAIL					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-3	D.W.C.	11-1-99	A.B.B.	4-19-04	
	RRH	3-30-00	J.P.S.	10-6-10	



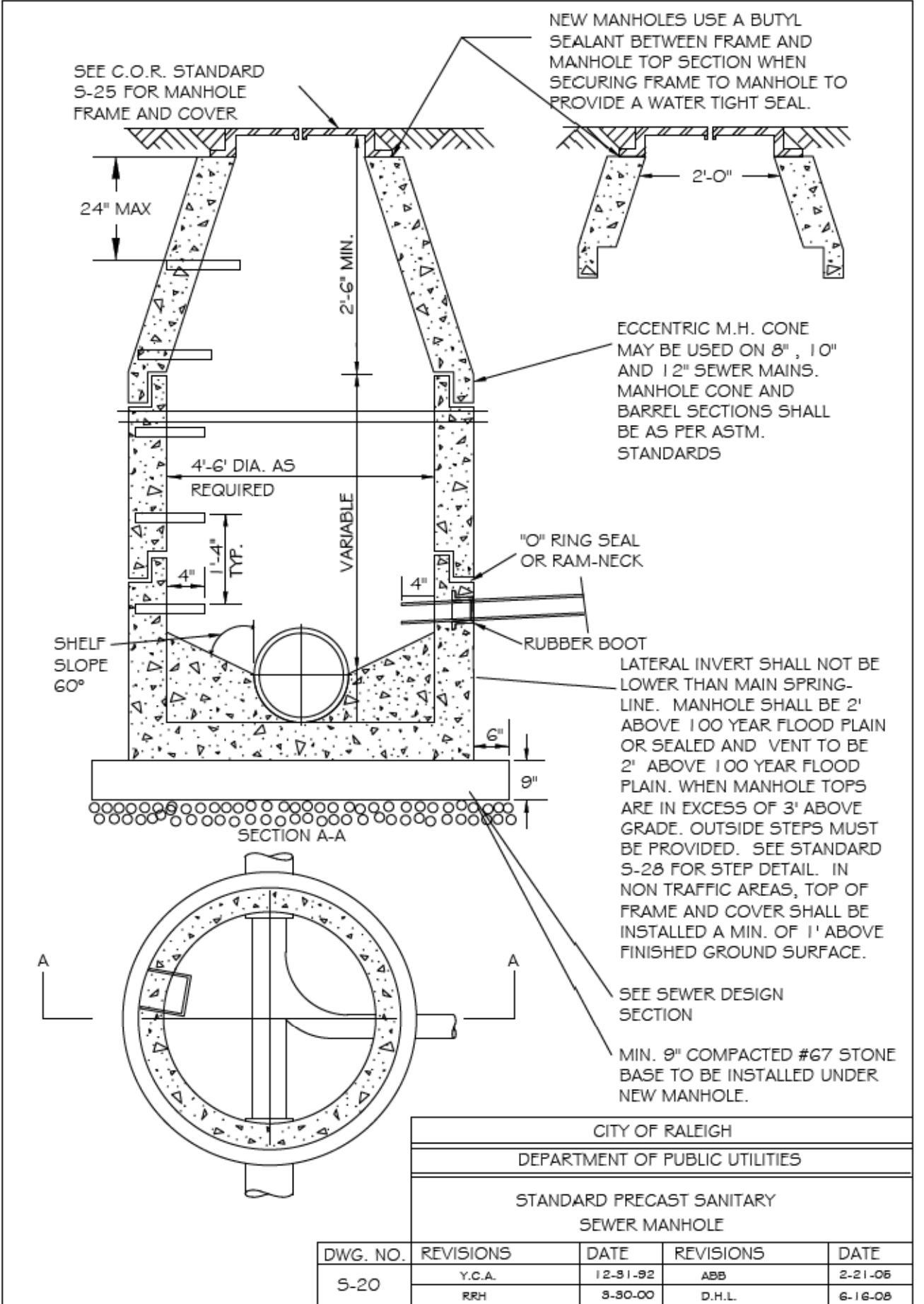
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DEPARTMENT OF PUBLIC UTILITIES					
TRENCH BOTTOM DIMENSIONS & BACKFILL REQUIREMENTS FOR DUCTILE IRON					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-4	D.W.C.	9-3-99			
	RRH	3-30-00			



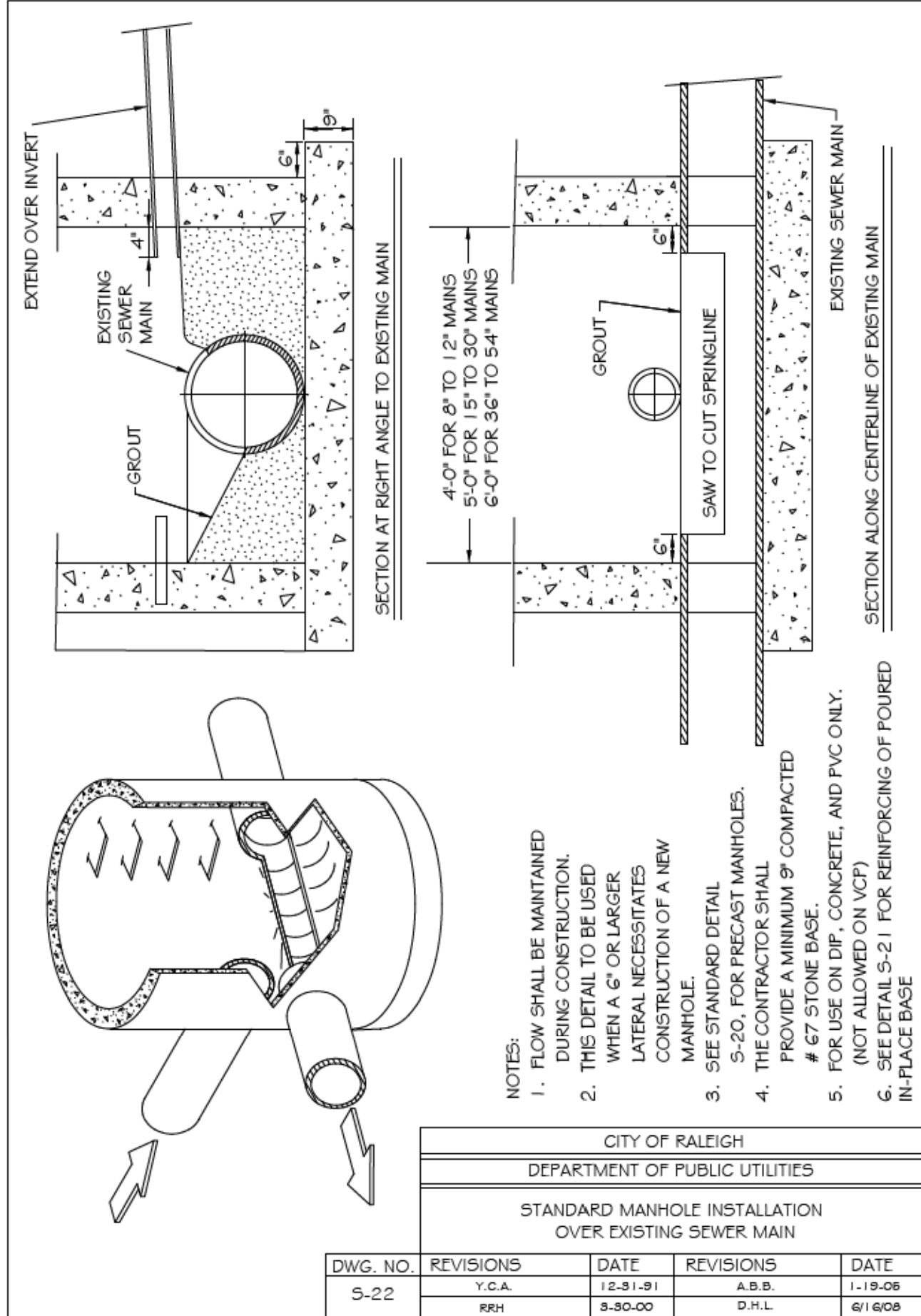
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DEPARTMENT OF PUBLIC UTILITIES					
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DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-23	Y.C.A.	8-1-87	RRH	8-30-00	
		12-8-91			



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE COVER					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-25	Y.C.A.	3-1-87	A.B.B.	2-9-05	
	RRH	3-30-00	J.H.L.	6-18-08	



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD PRECAST SANITARY SEWER MANHOLE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-20	Y.C.A.	12-81-92	ABH	2-21-08	
	RRH	8-30-00	D.H.L.	6-18-08	



CITY OF RALEIGH					
DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE INSTALLATION OVER EXISTING SEWER MAIN					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
S-22	Y.C.A.	12-81-91	A.B.B.	1-19-08	
	RRH	8-30-00	D.H.L.	6-18-08	

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Mann Hall Renovation

STATE ID #22-24500-02A
NCSU PROJECT # 202220021

North Carolina State University

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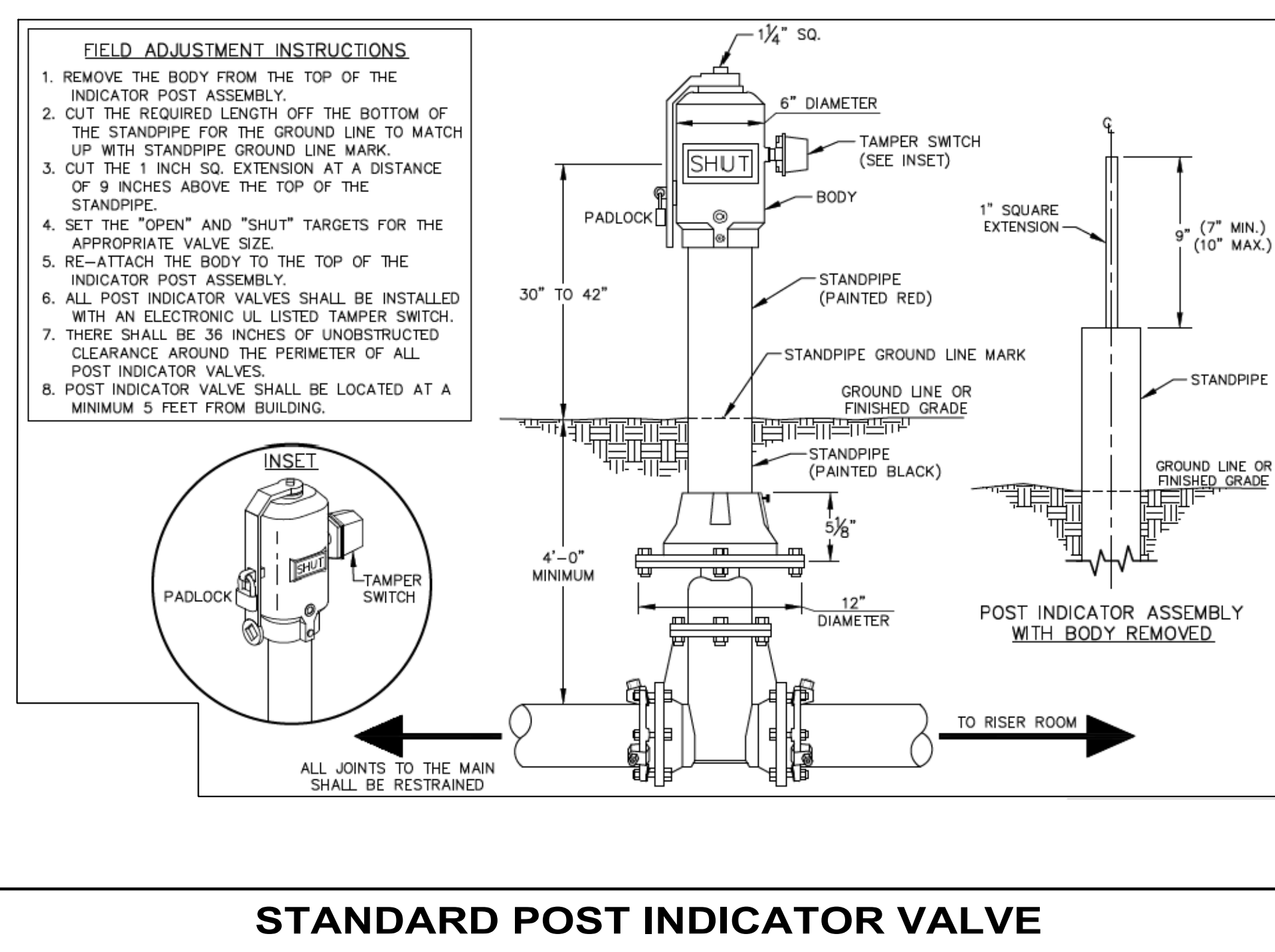
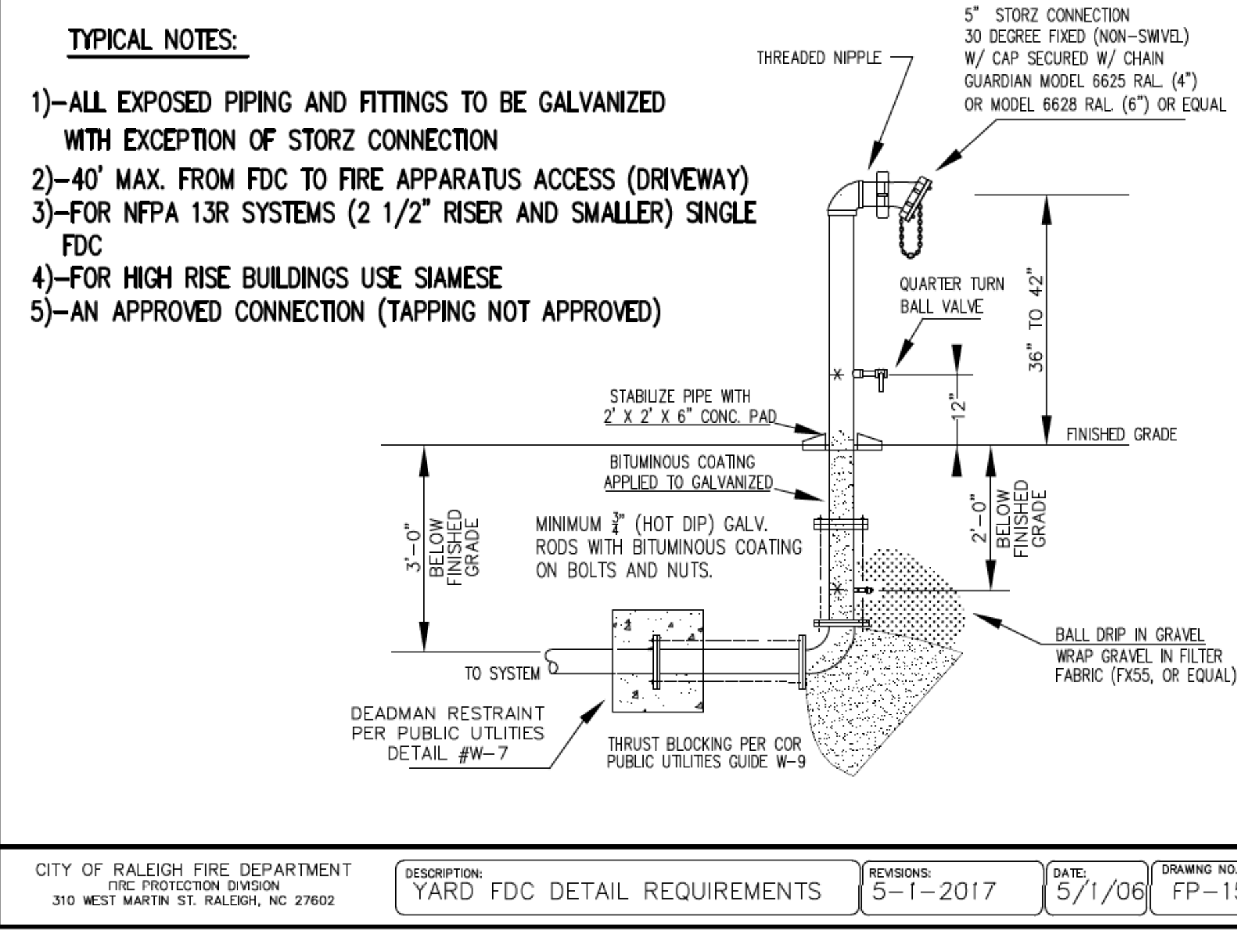
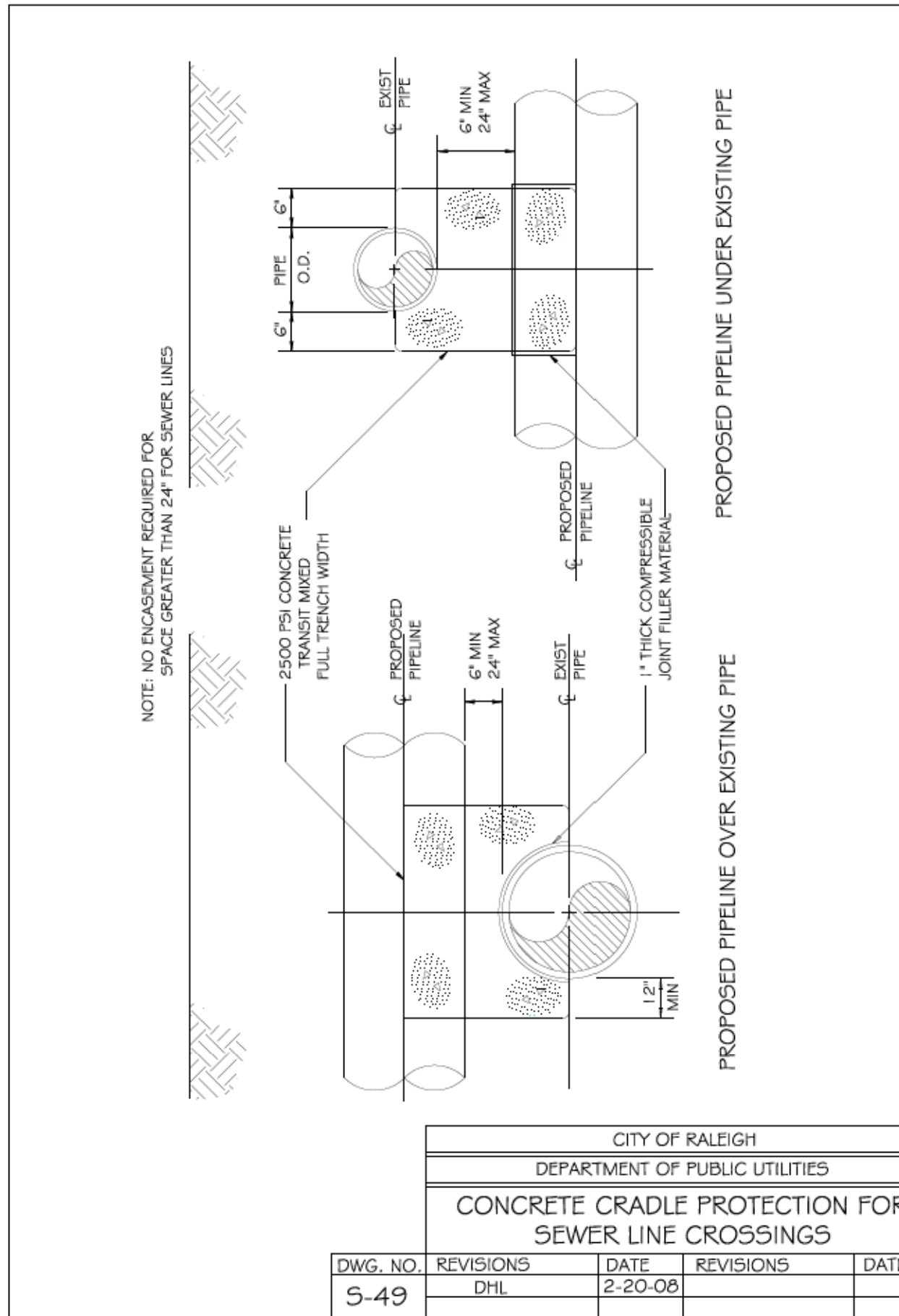
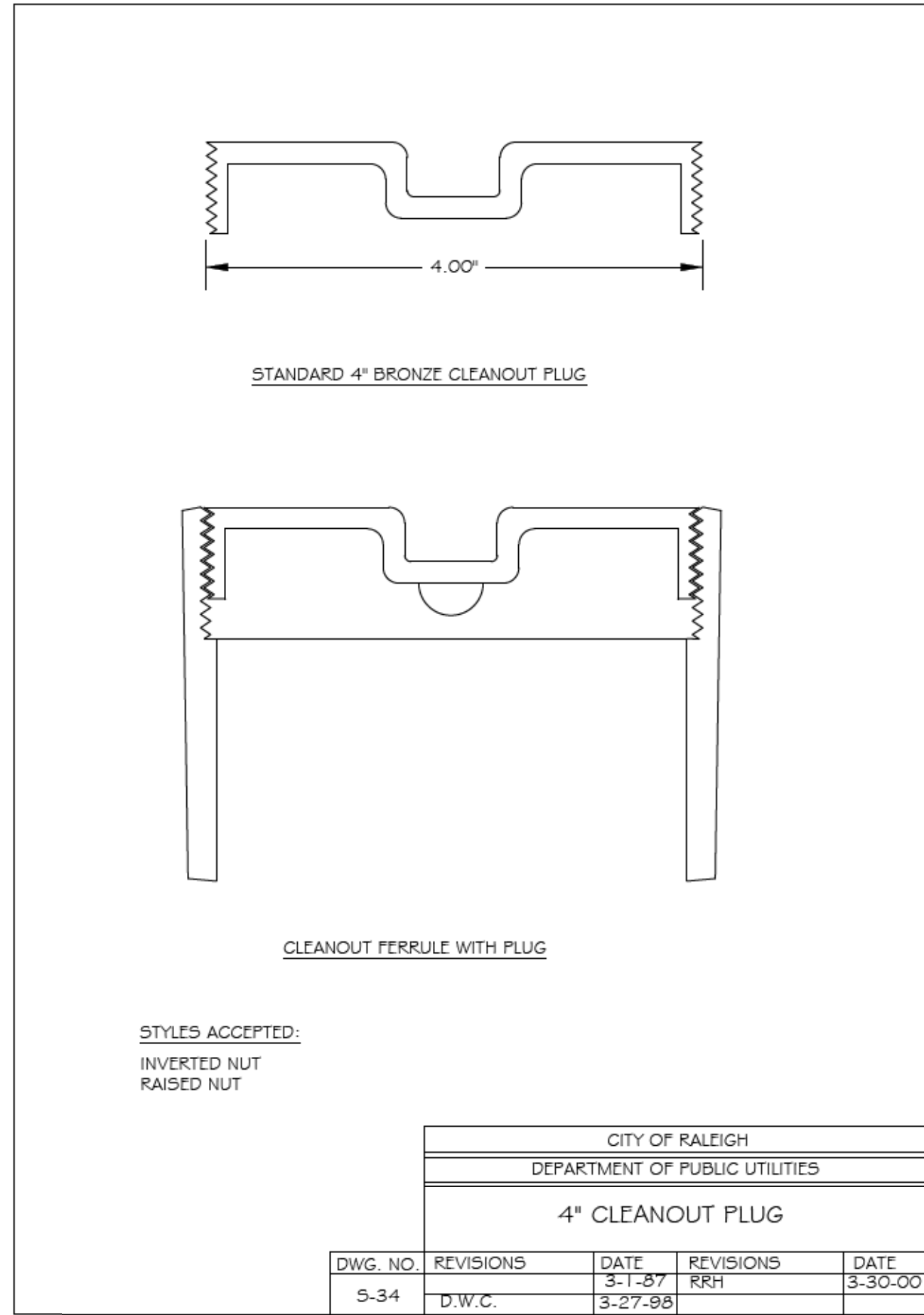
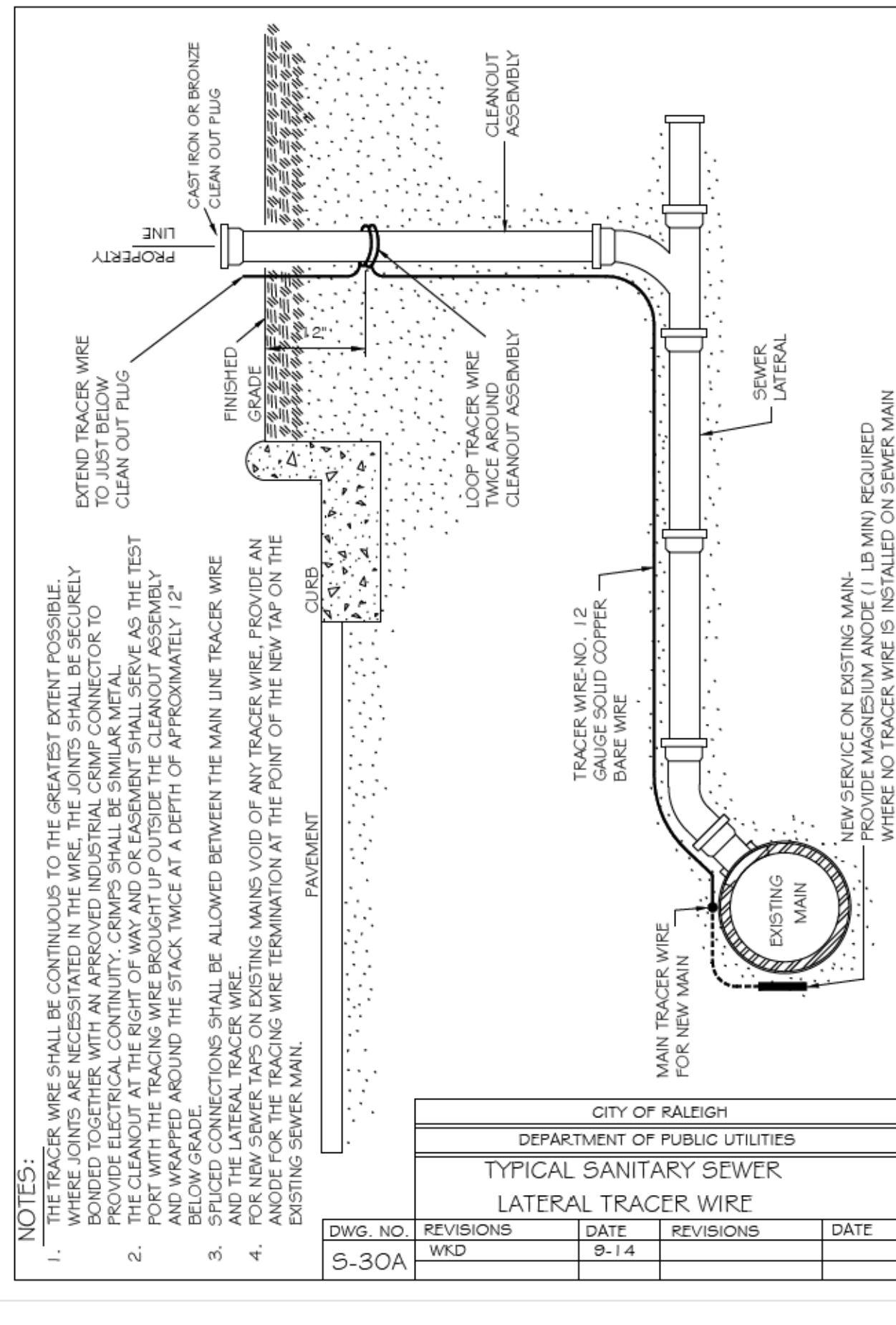
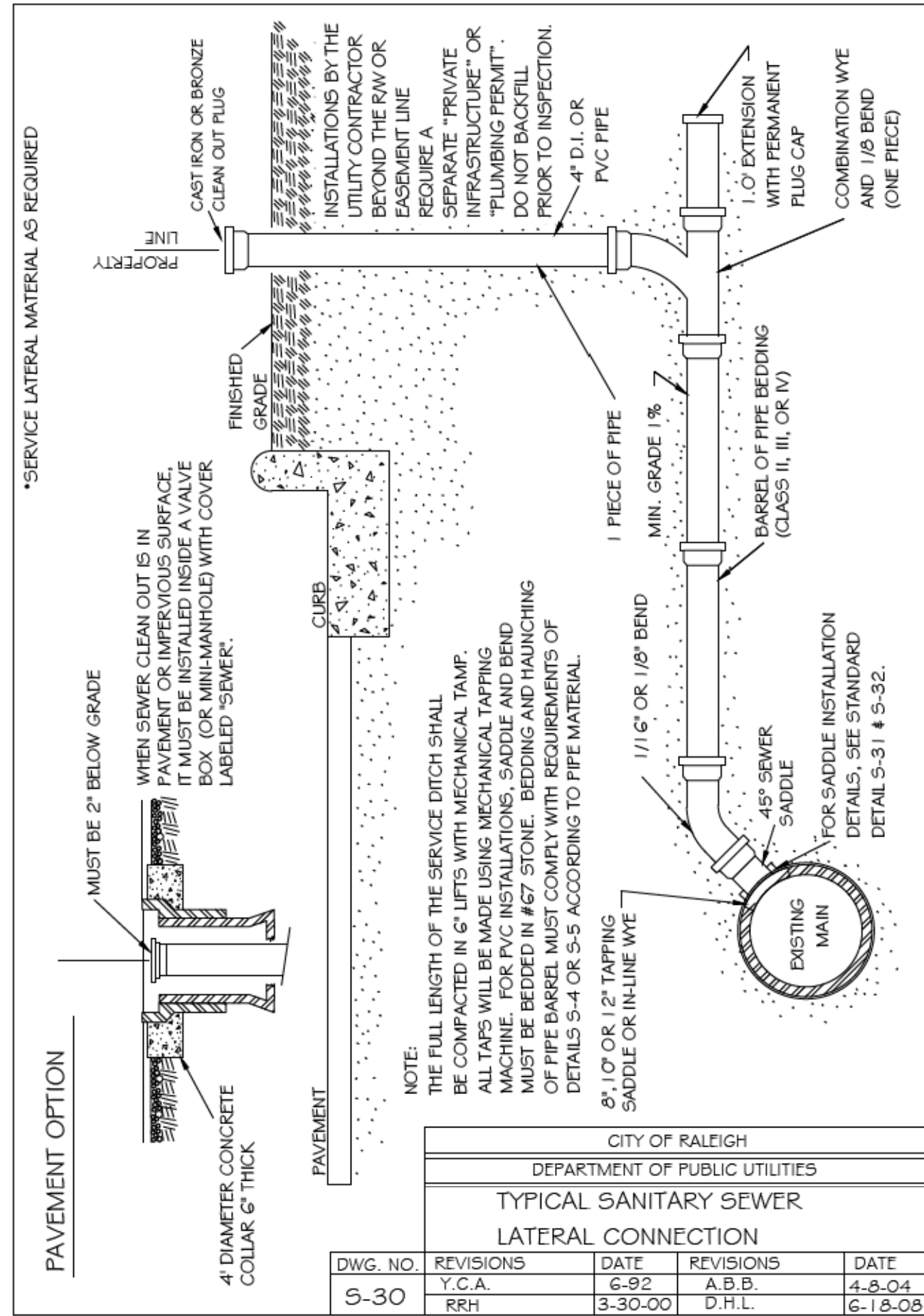
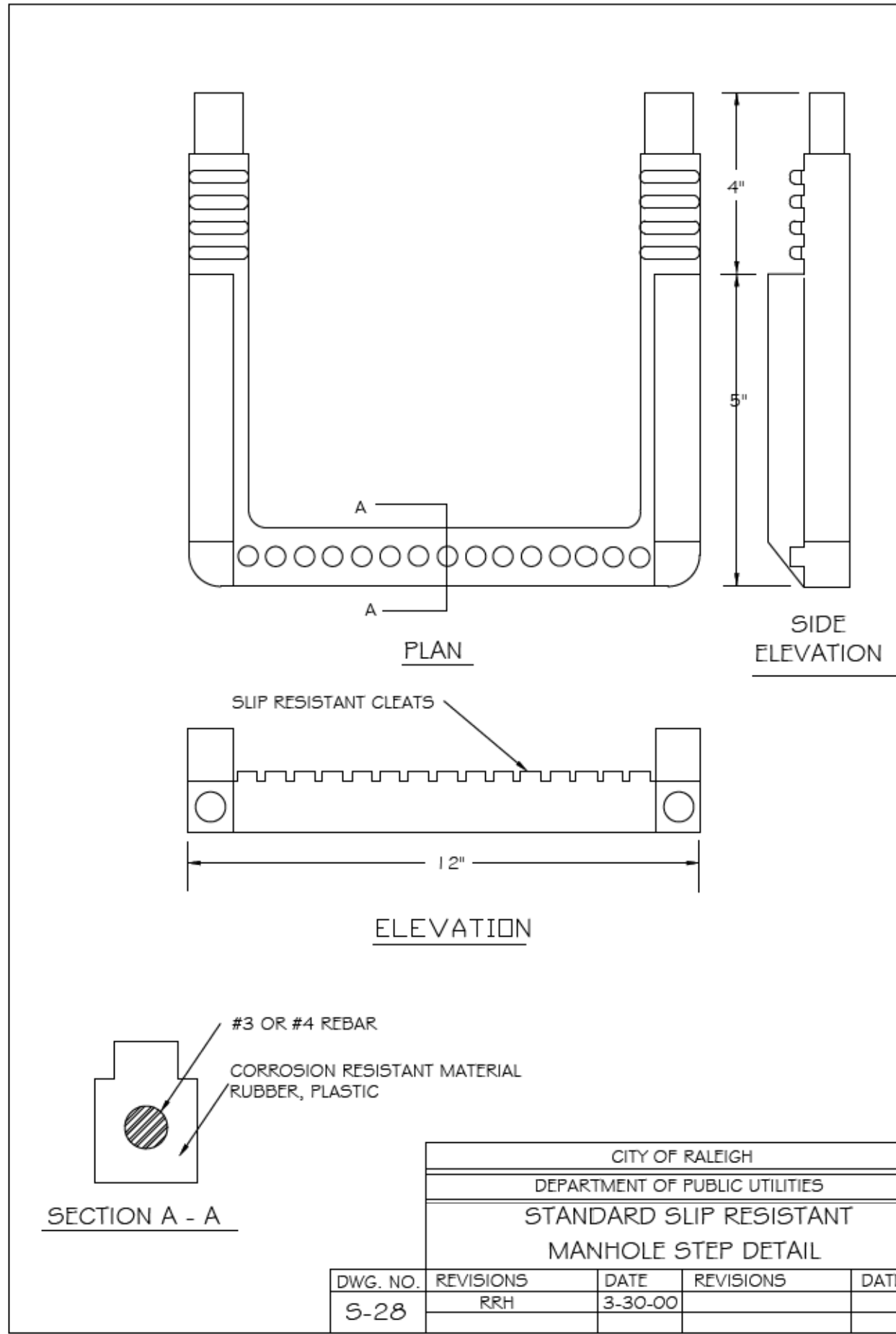
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Job Number 820937.001		
Drawn NV5		
Checked MDA		
Approved MDA		
TITLE		

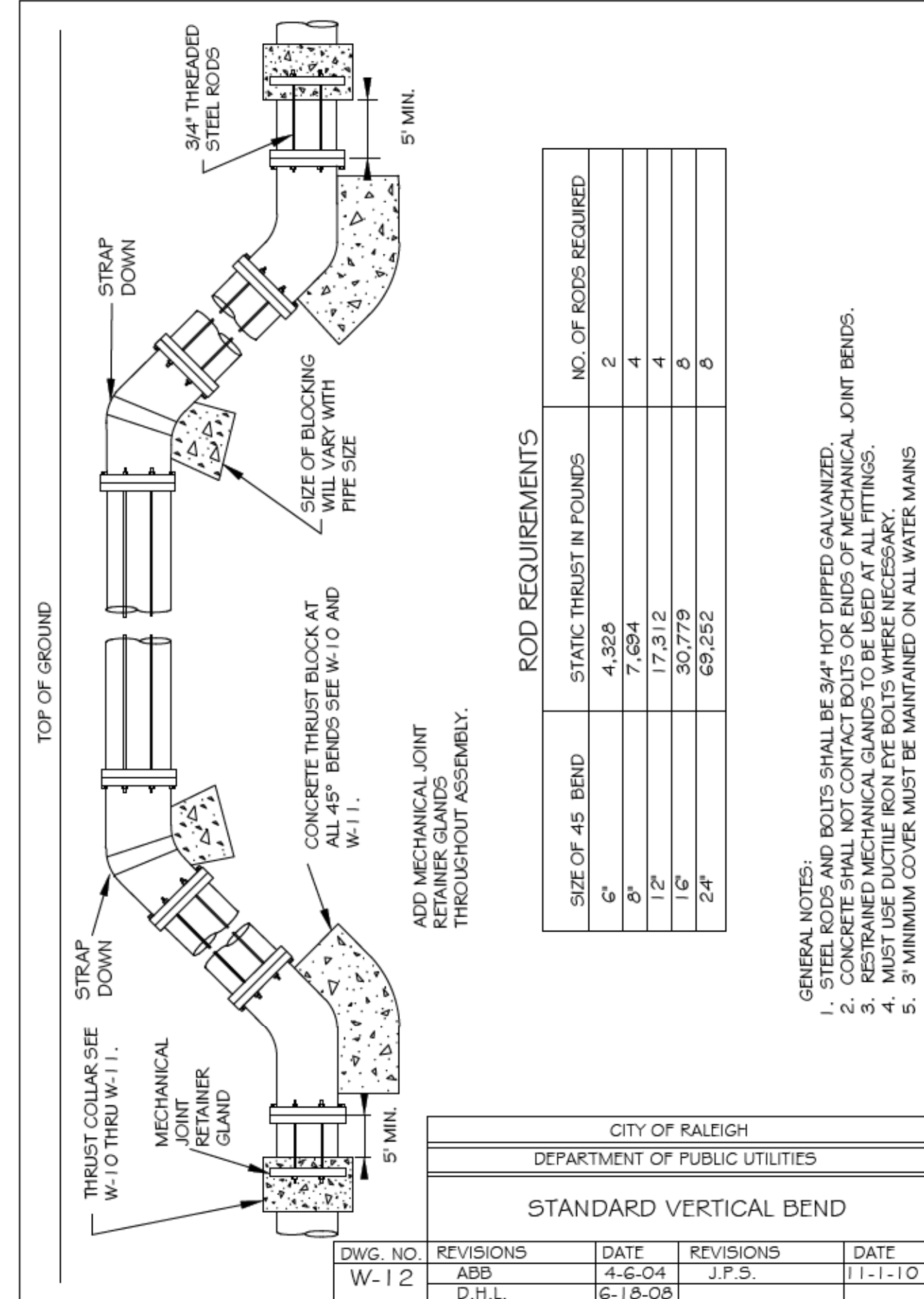
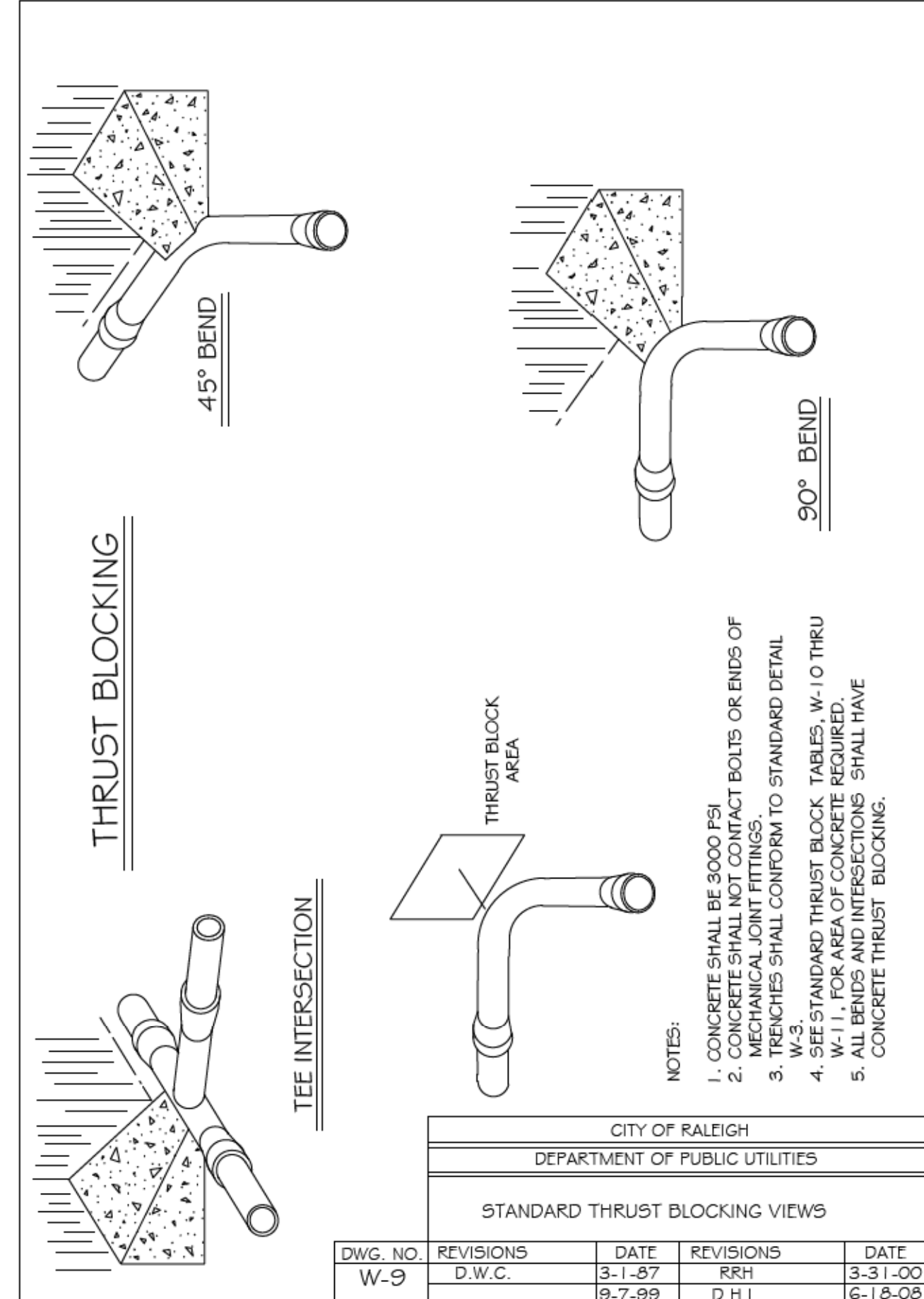
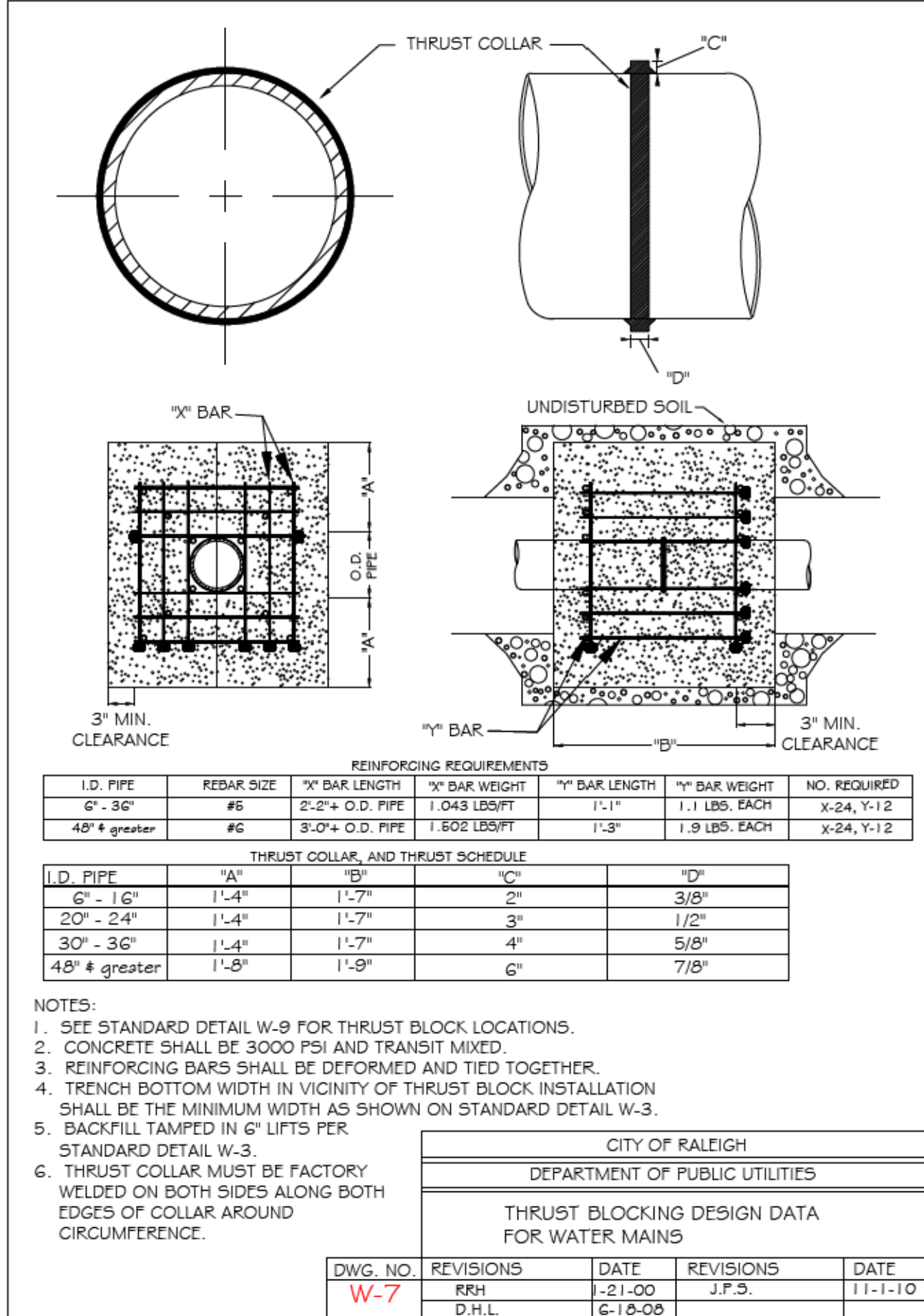
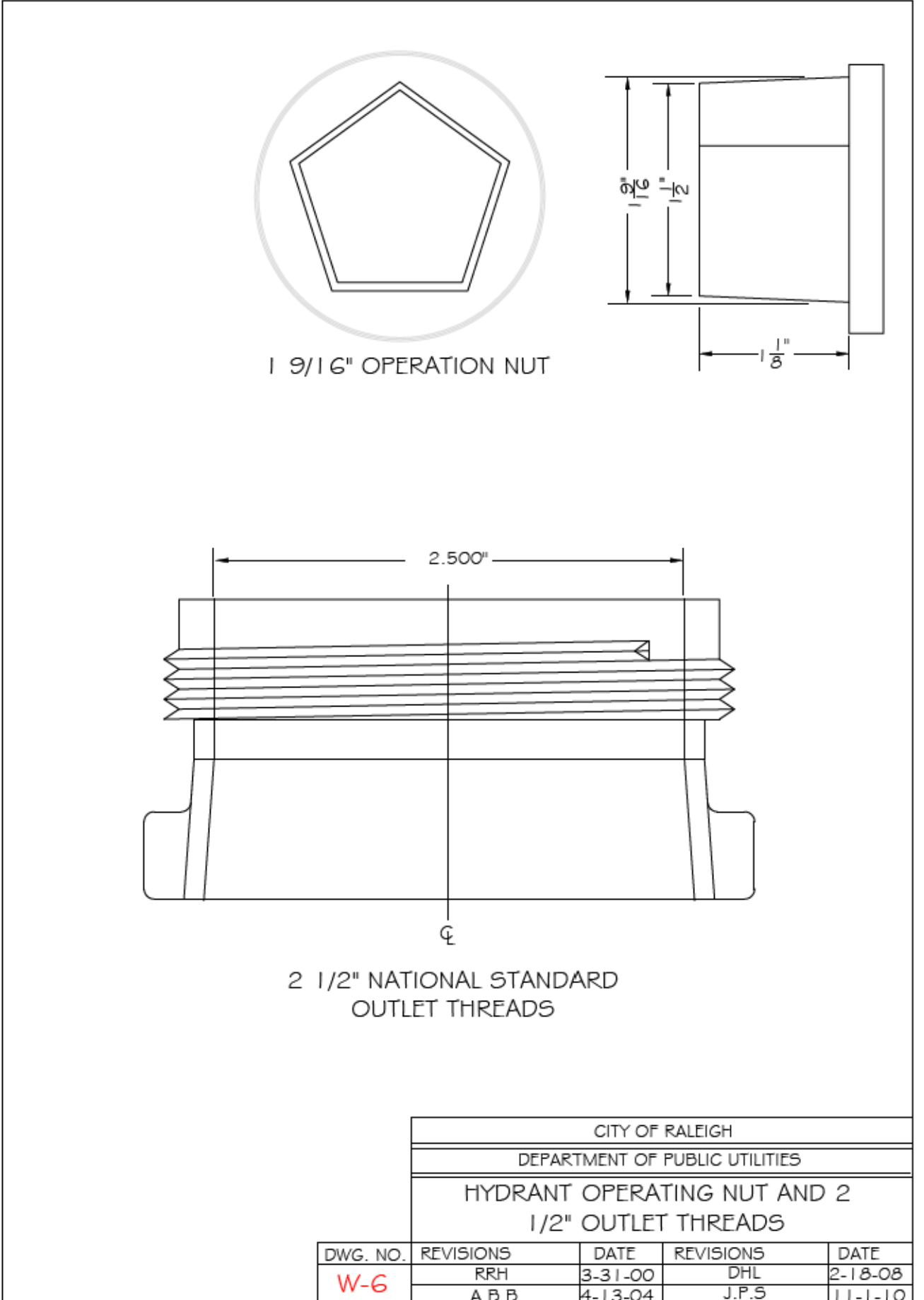
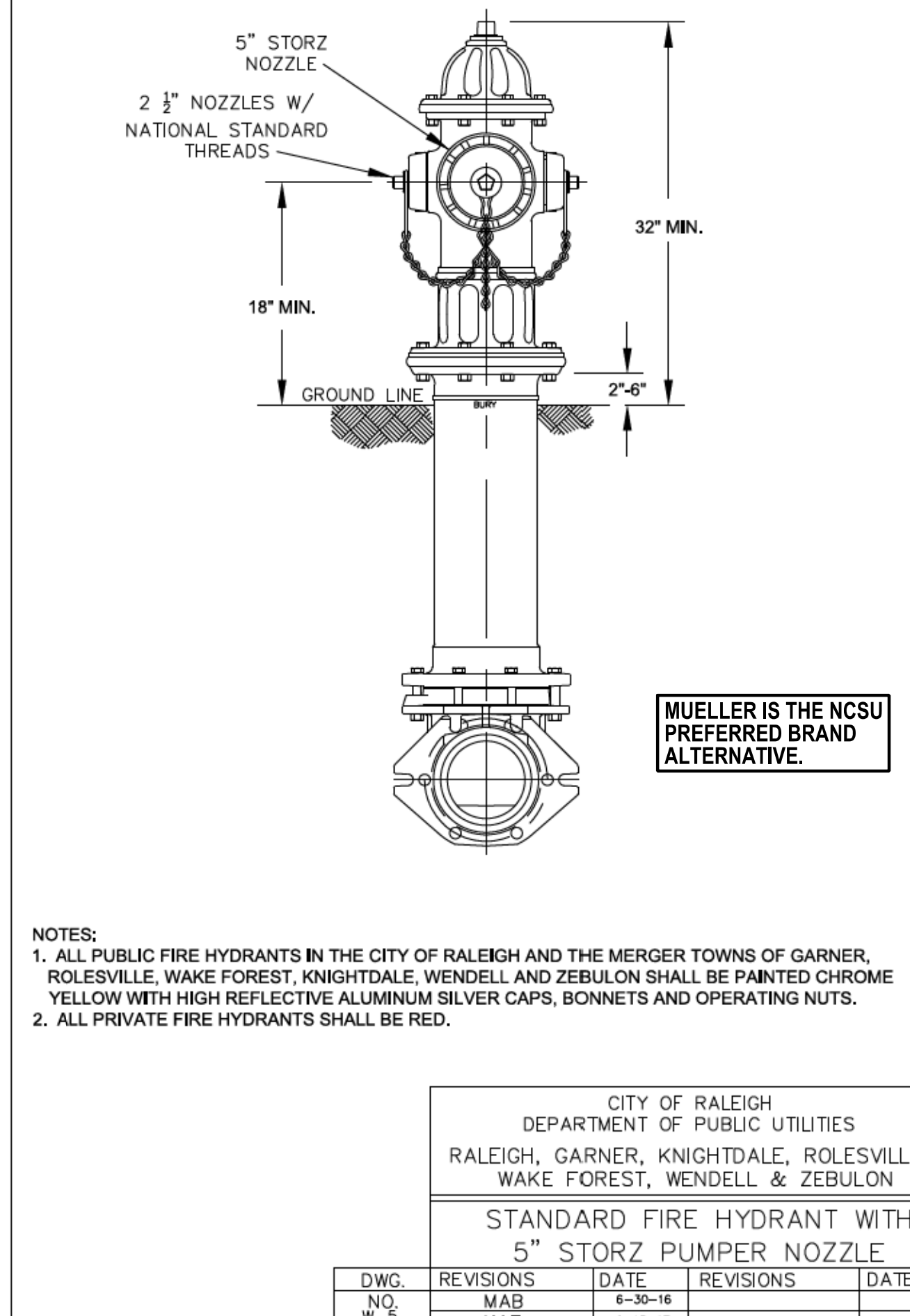
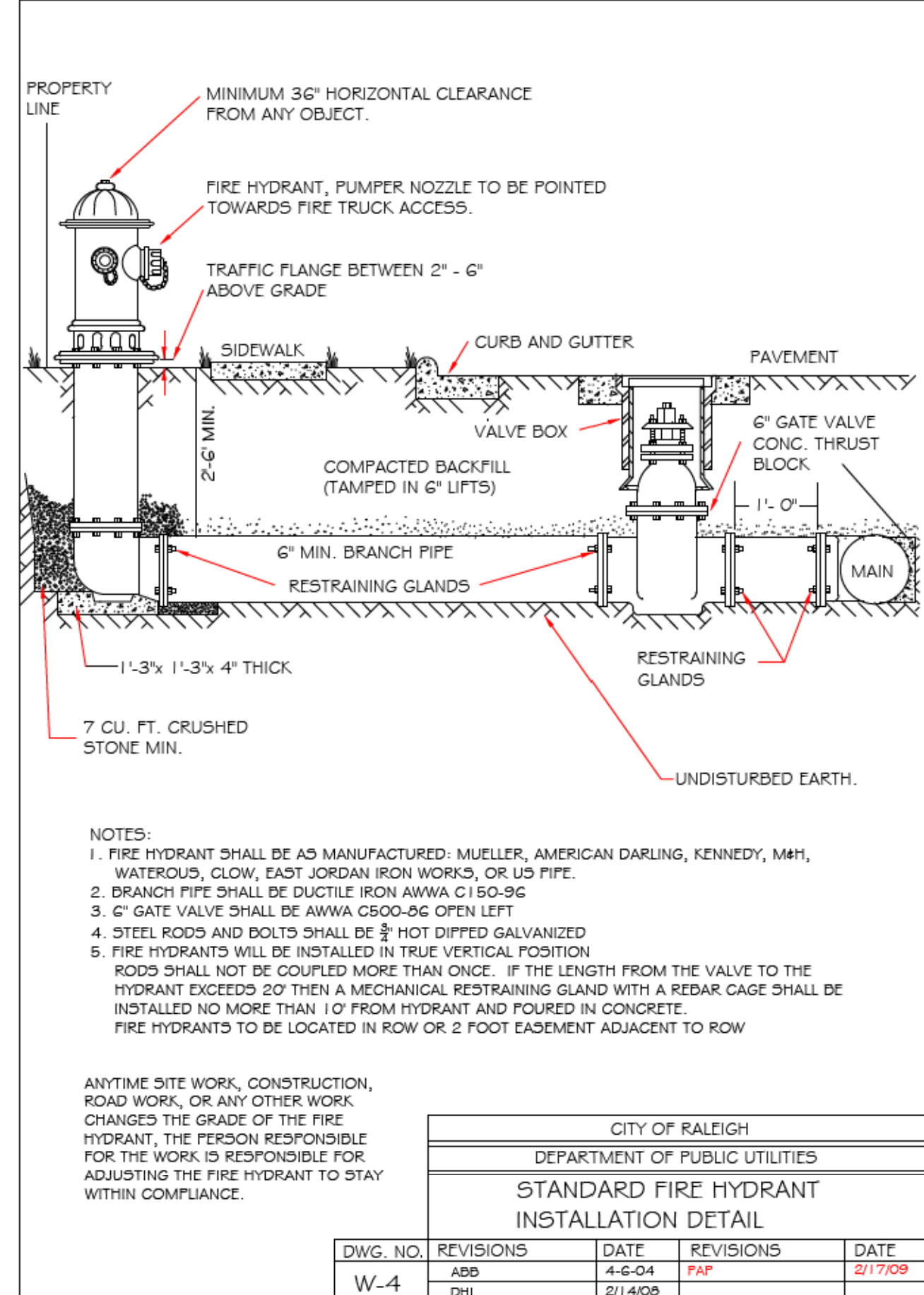
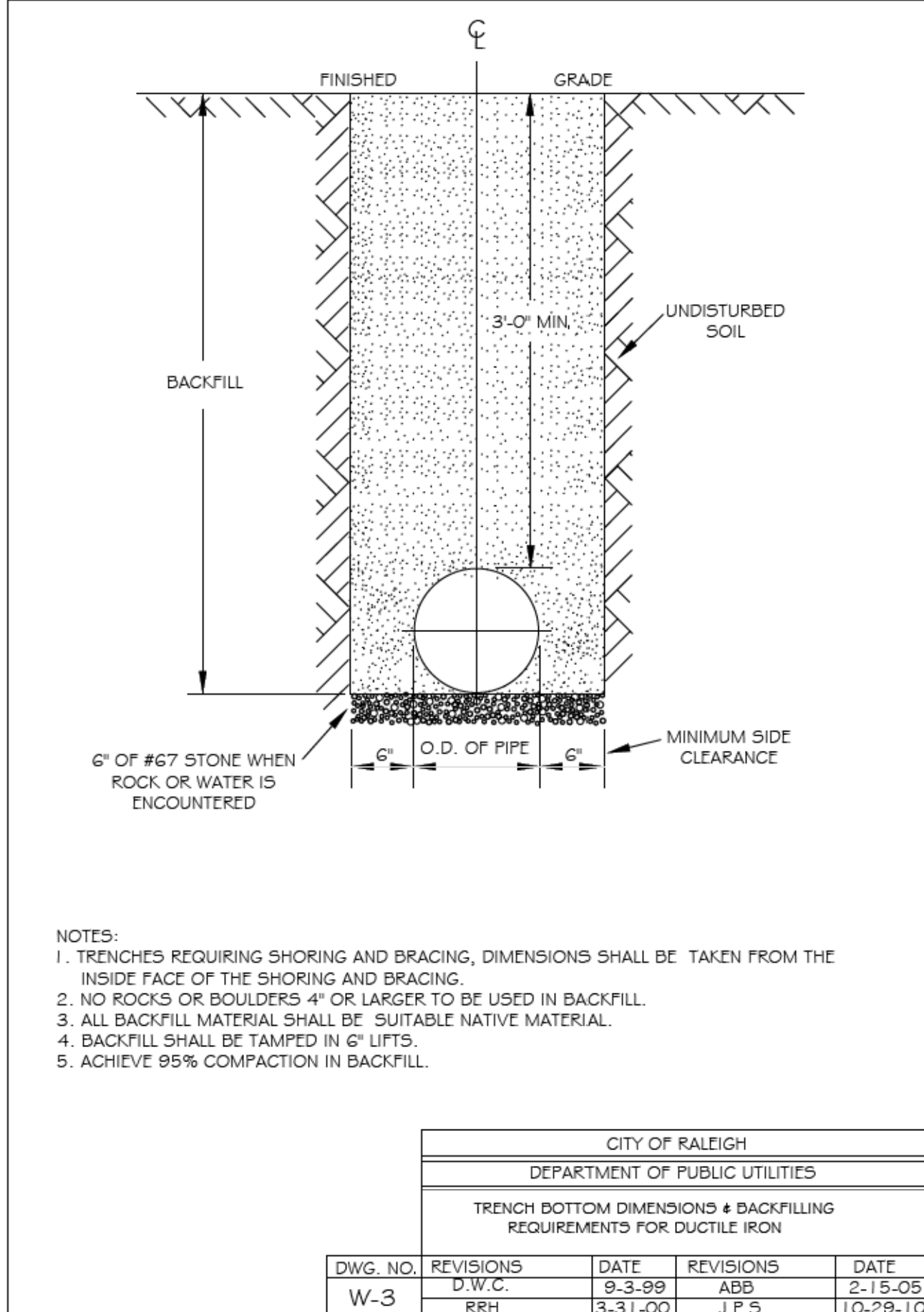
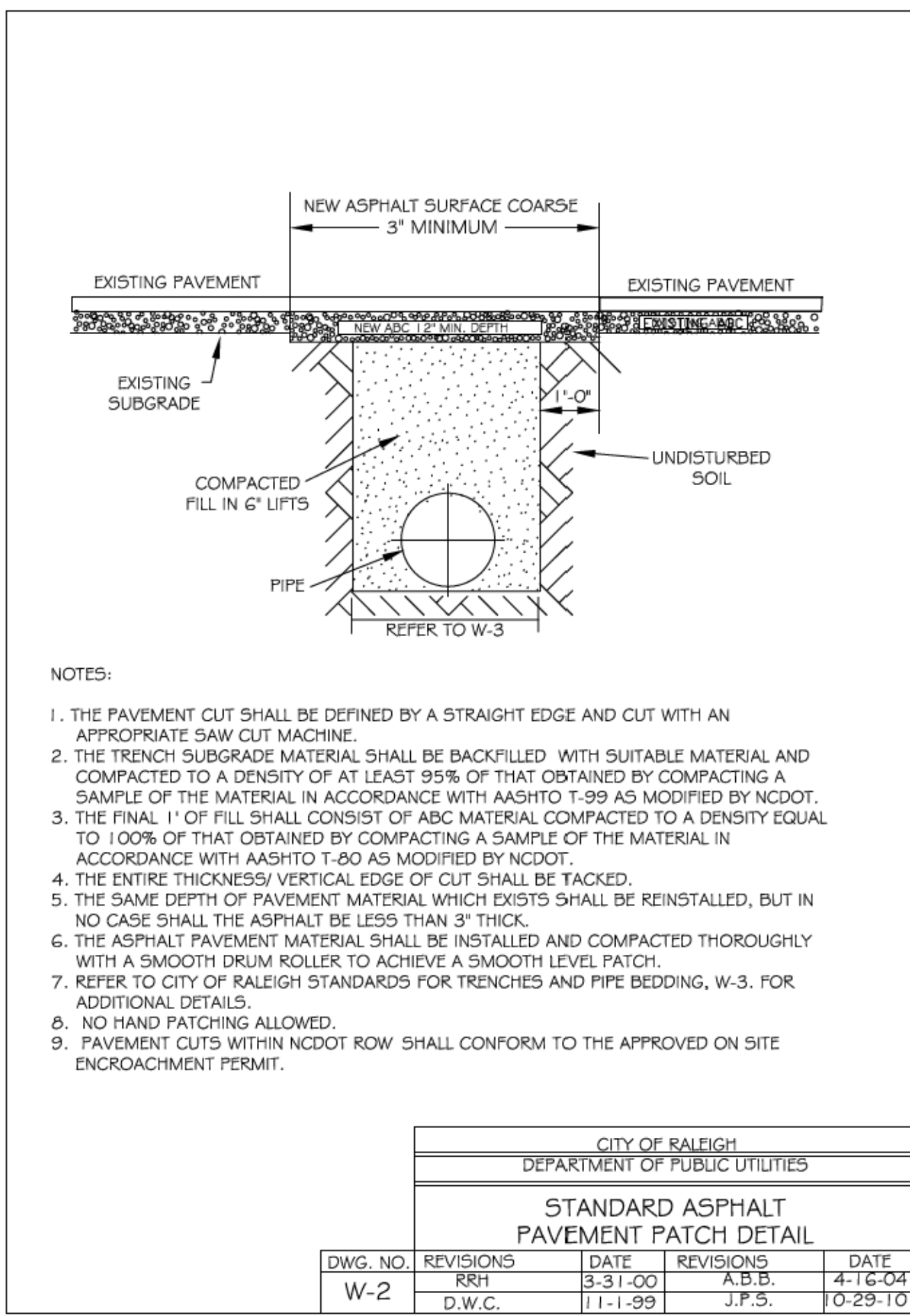
UTILITY DETAILS

SHEET NUMBER

D-100

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NCSU PROJECT # 20220021

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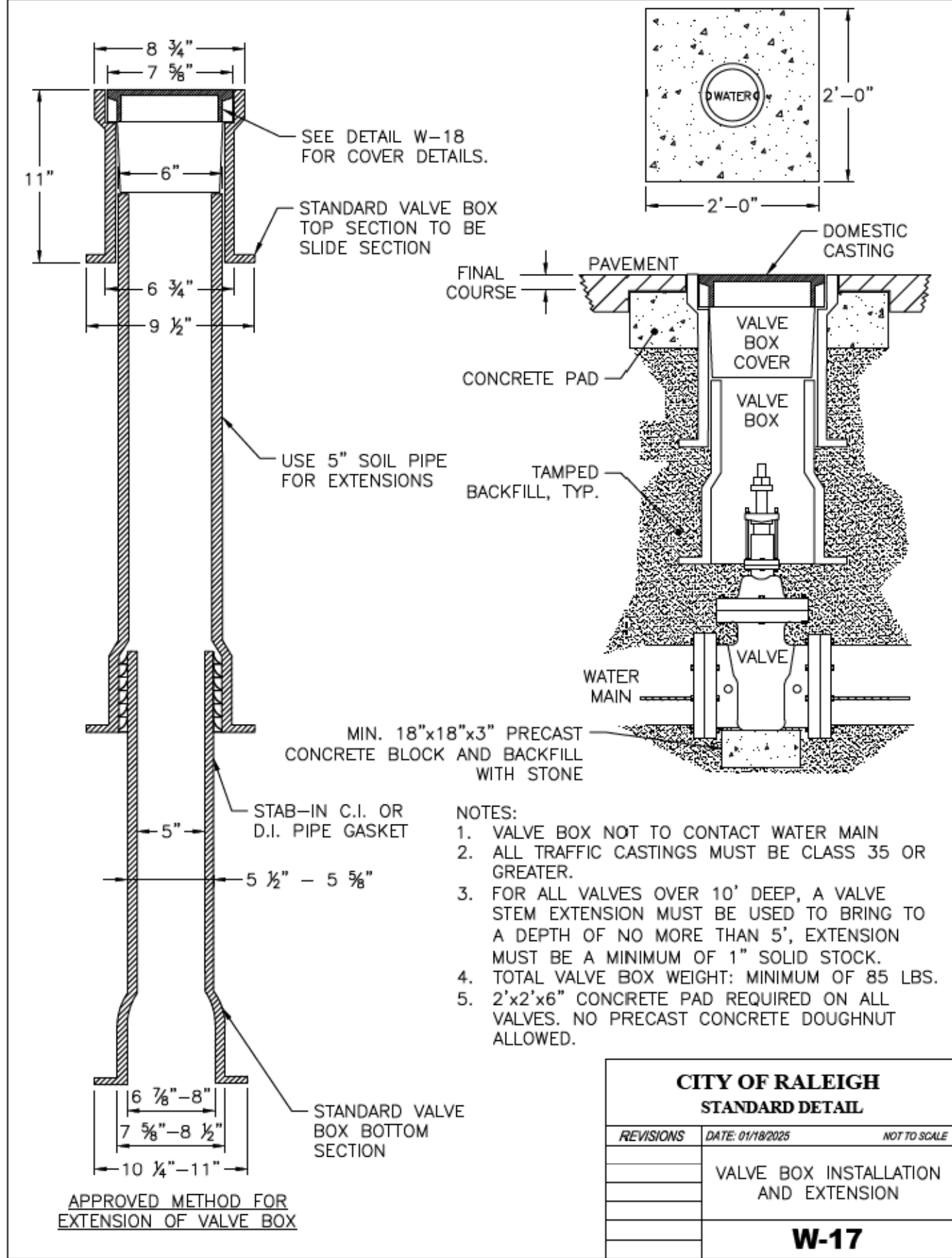
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10/20/25
Job Number 820937.001
Drawn NVS
Checked MDA
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TITLE

UTILITY DETAILS

SHEET NUMBER

D-102

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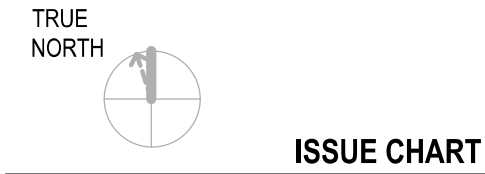
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Mann Hall Renovation

STATE ID #22-24500-02A
NCSU PROJECT # 202220021

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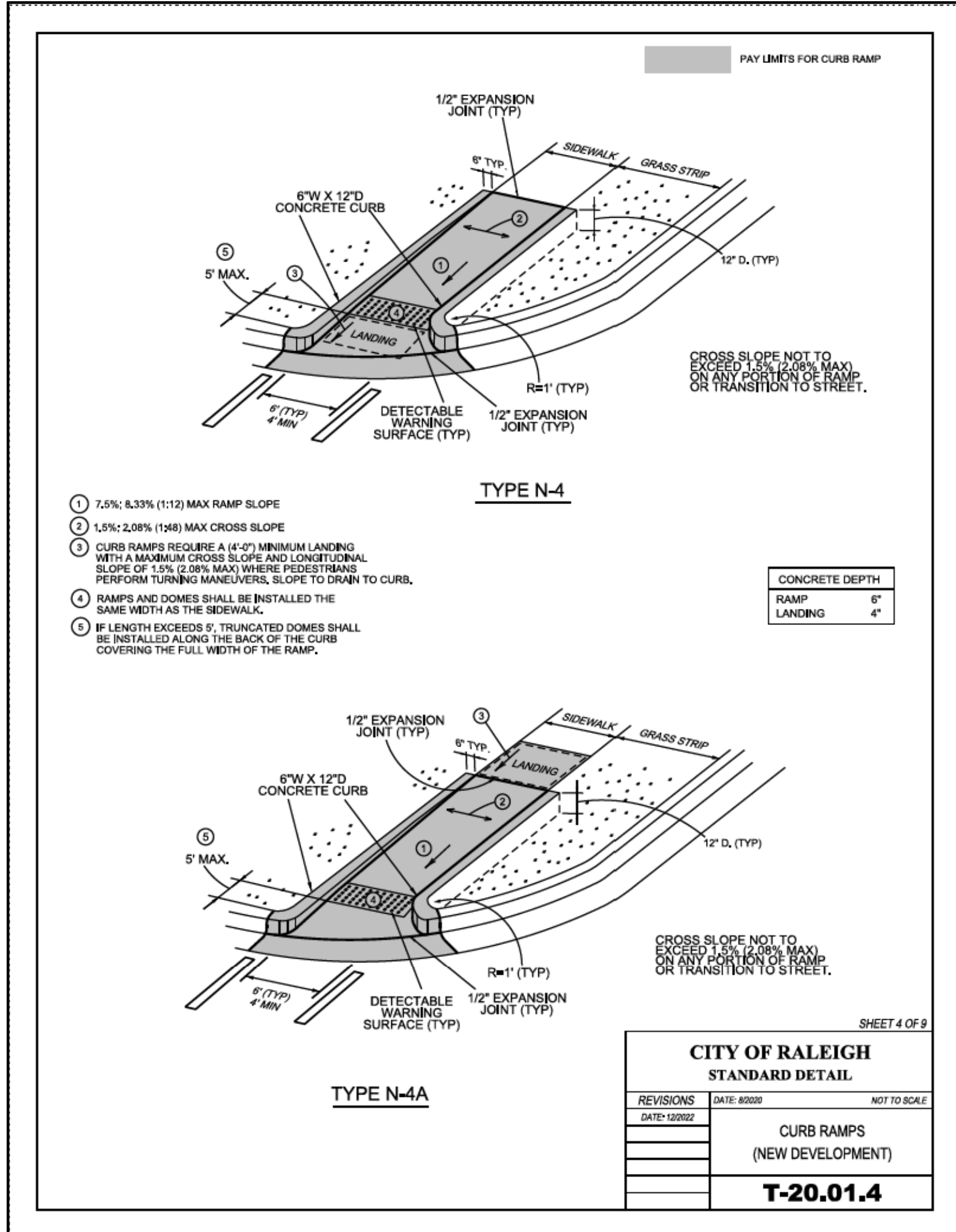
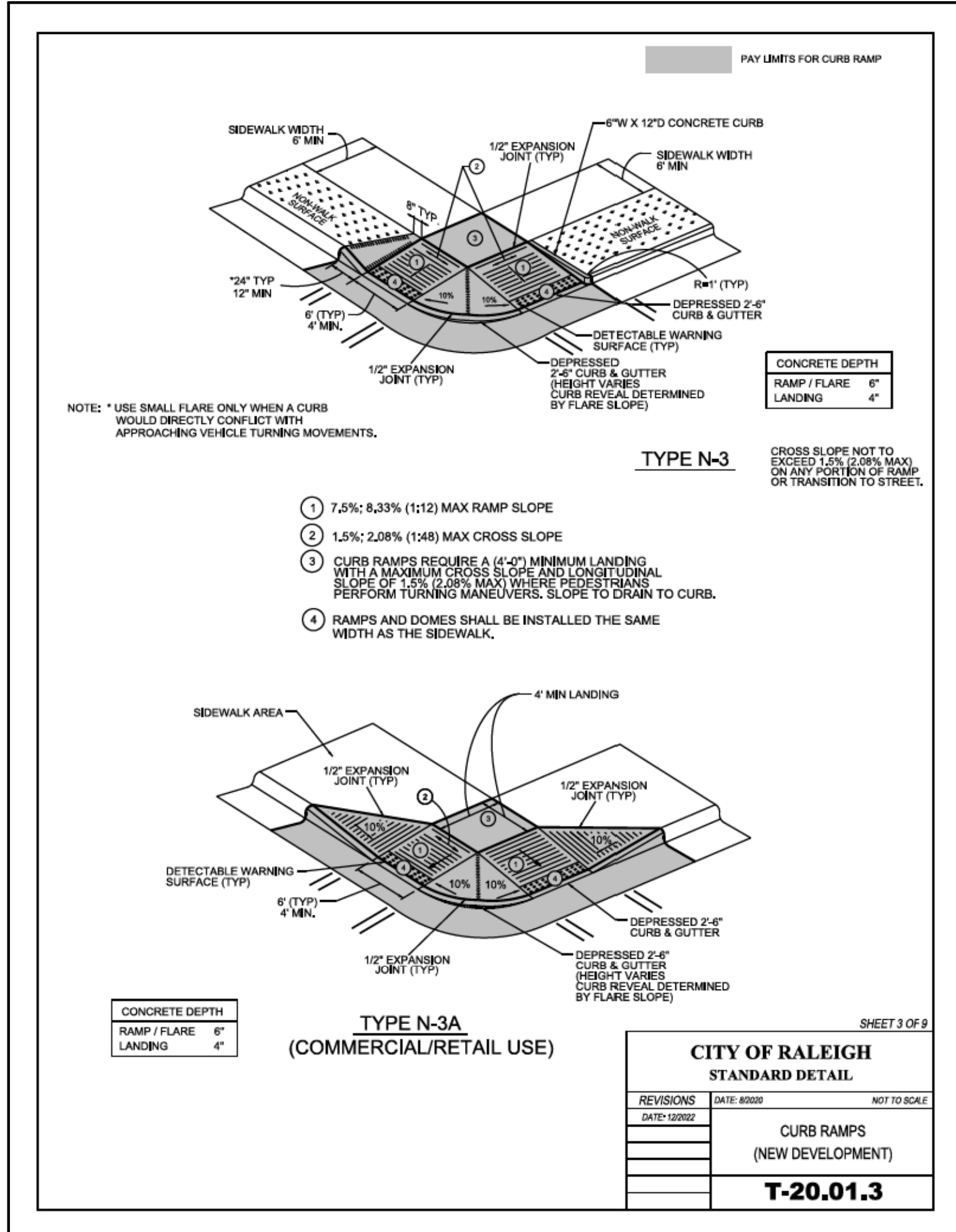
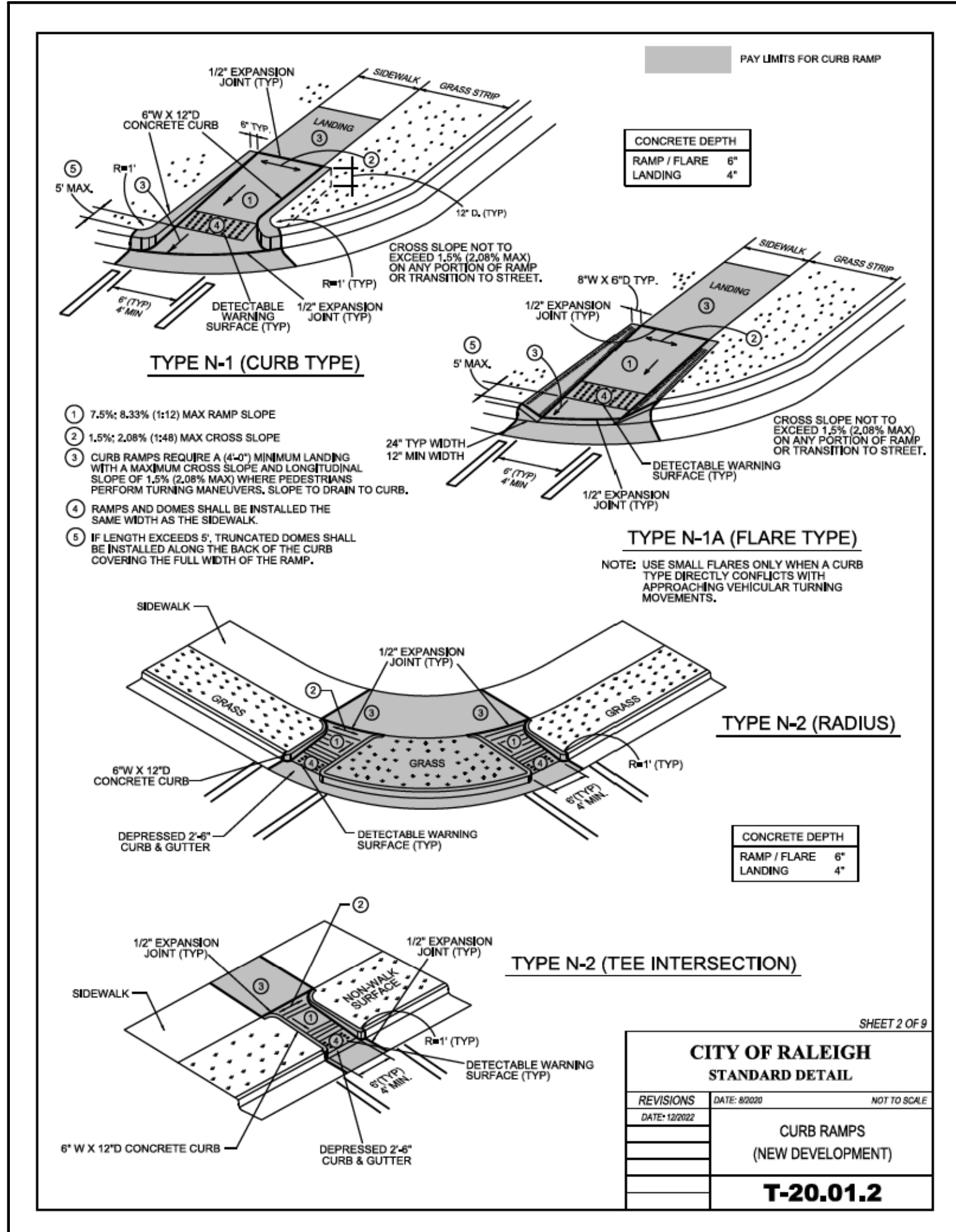
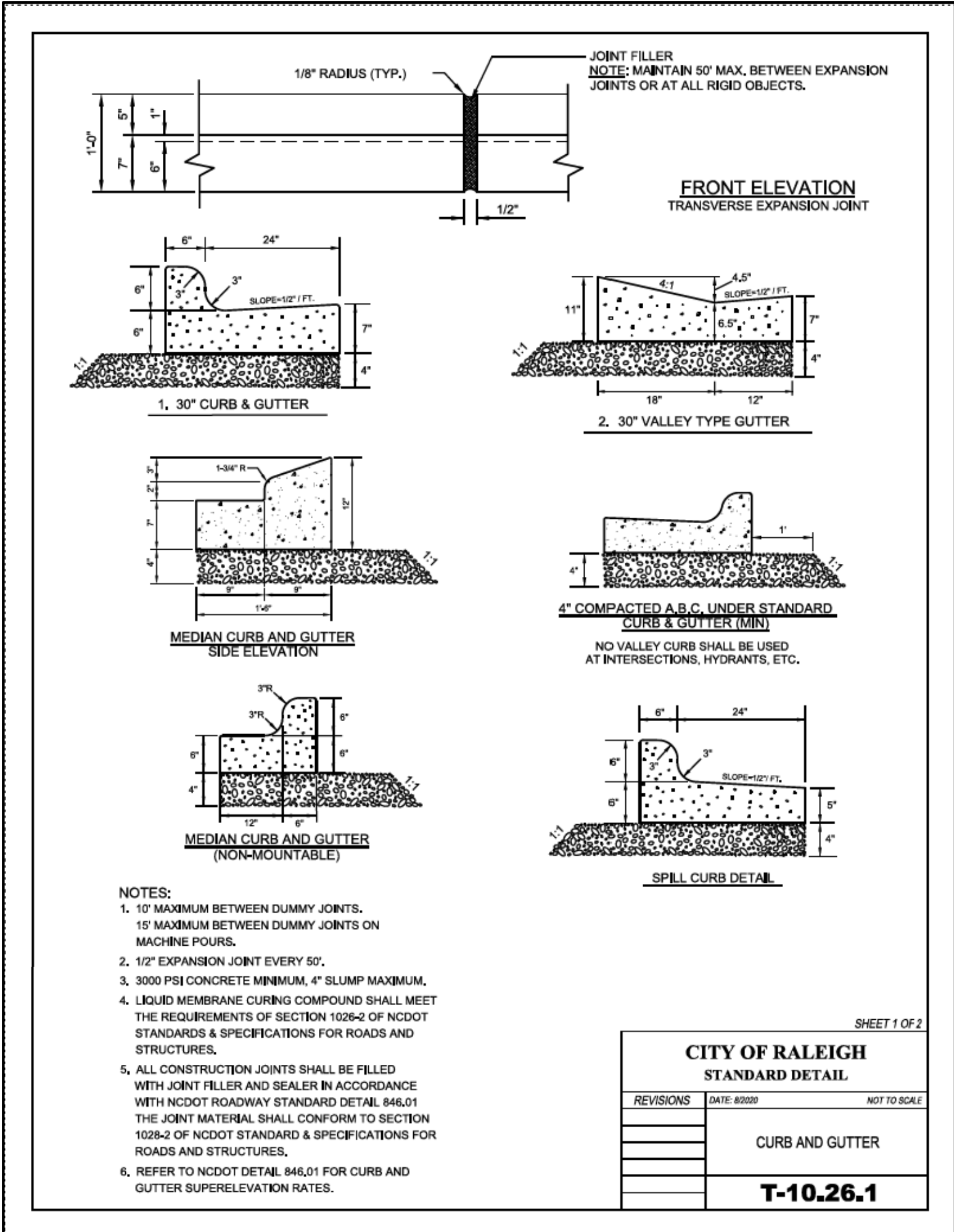
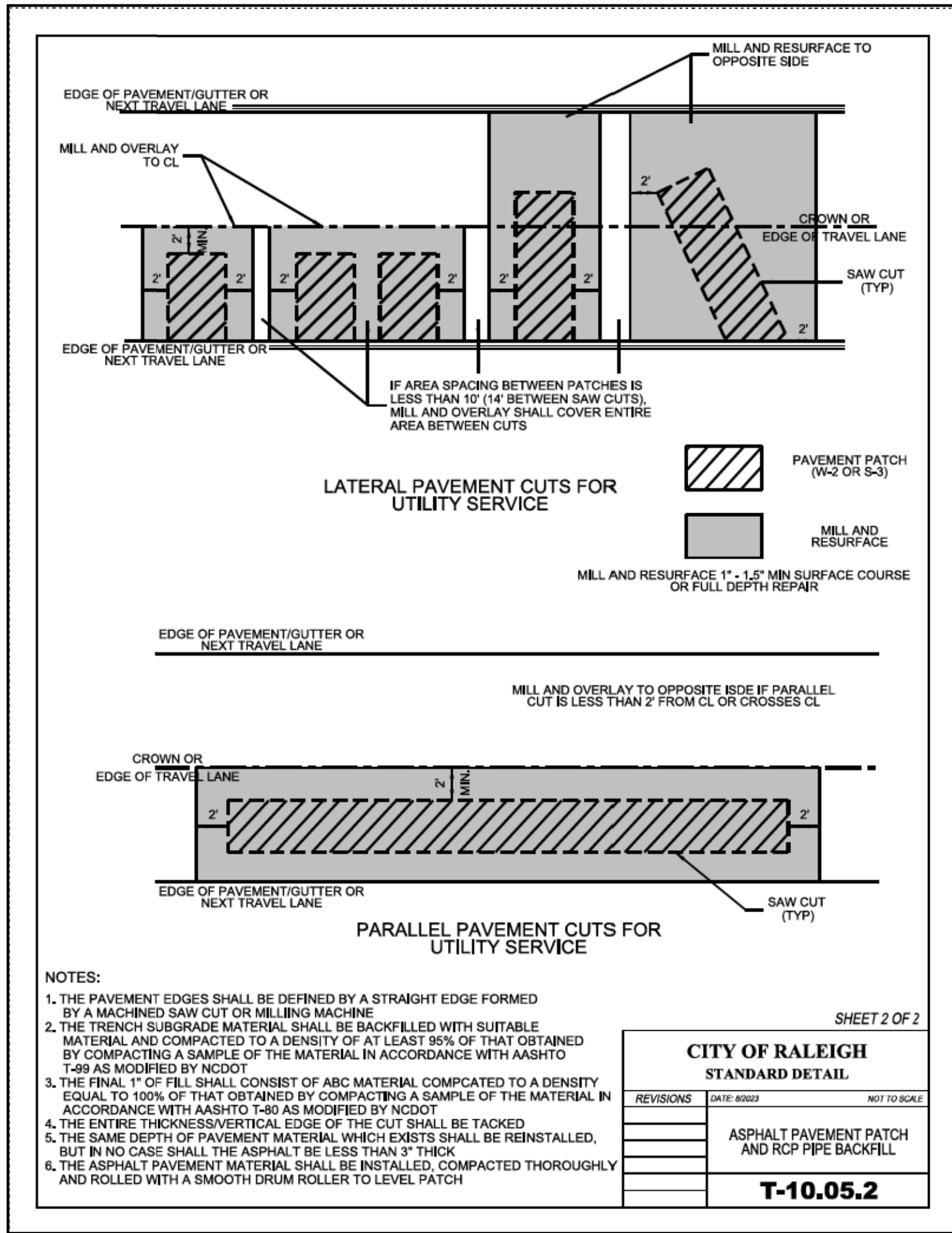
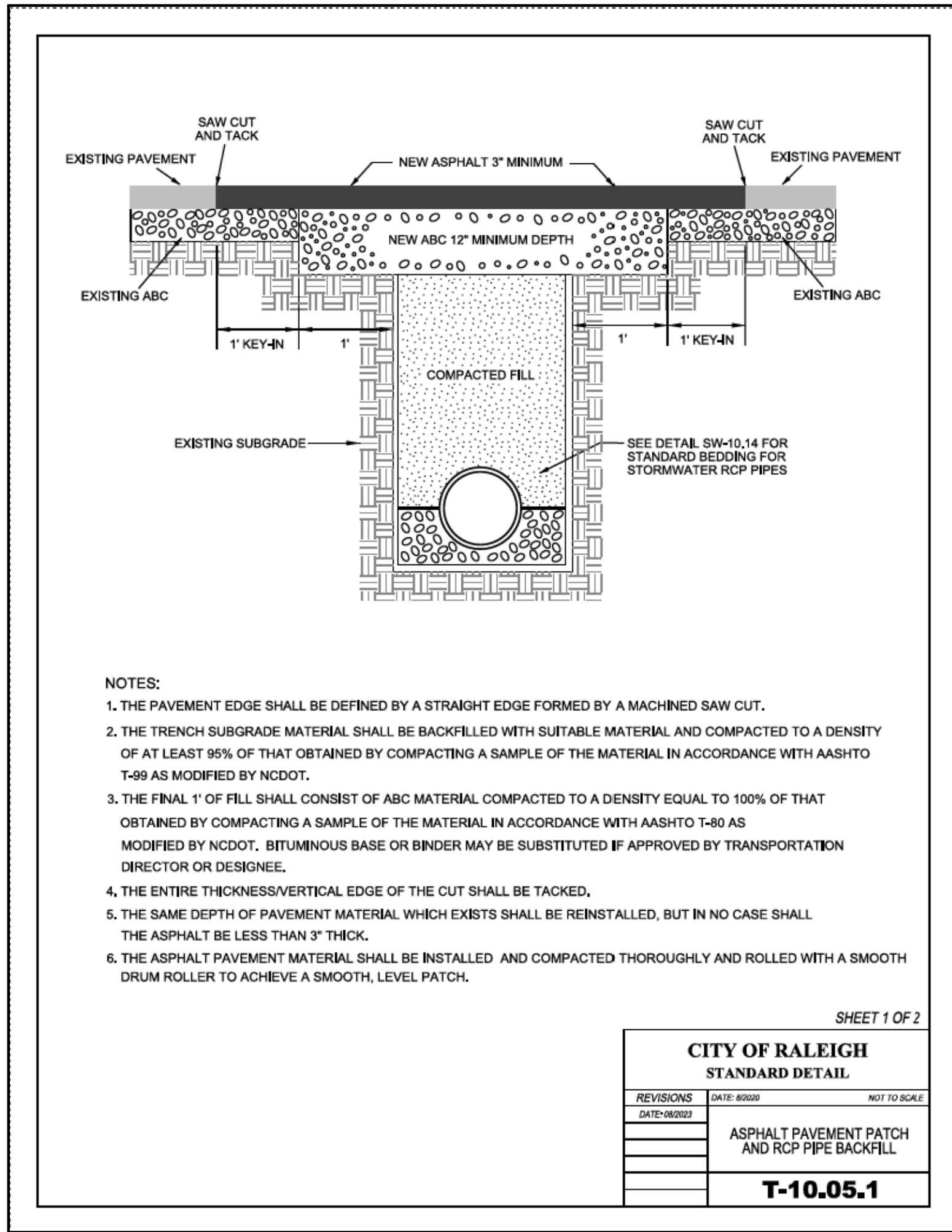
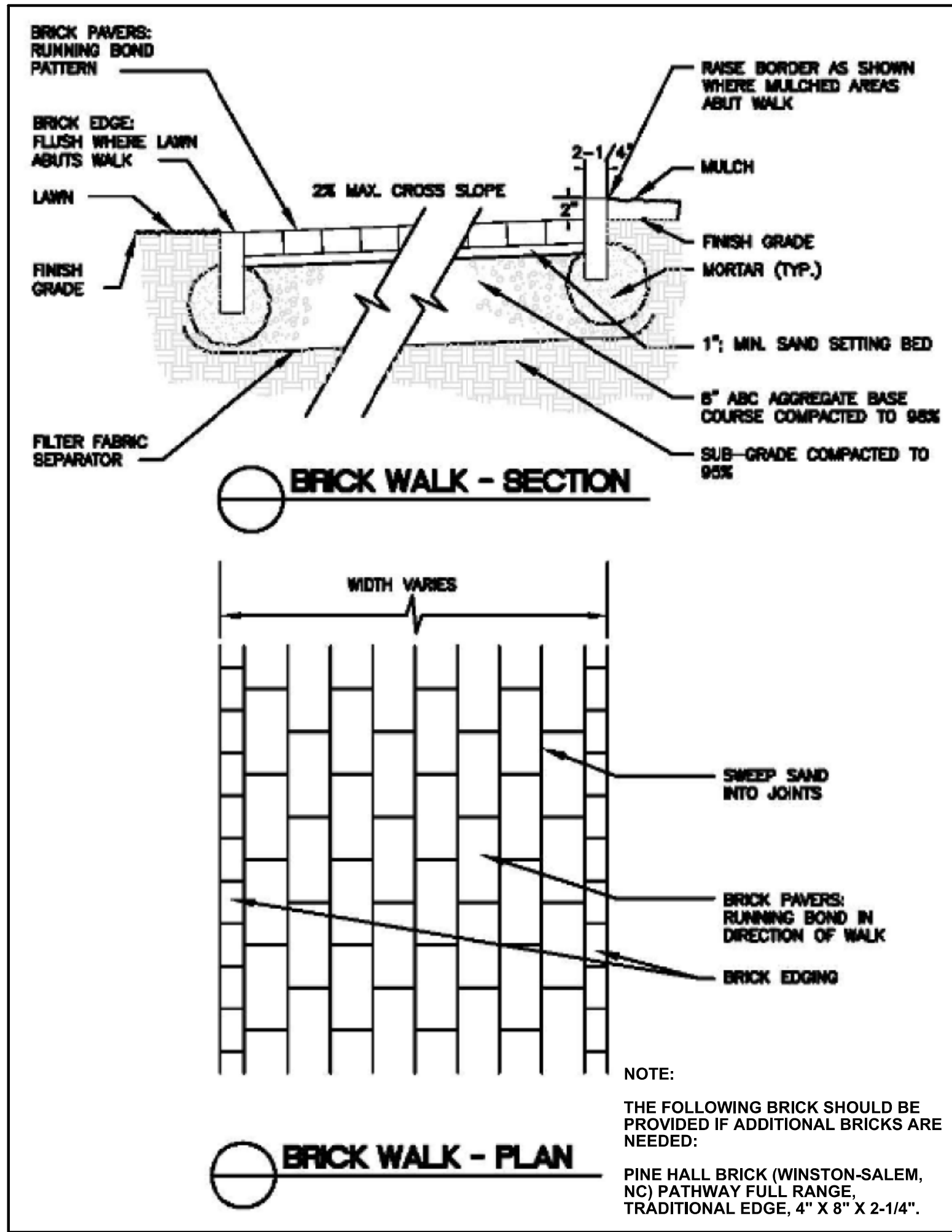
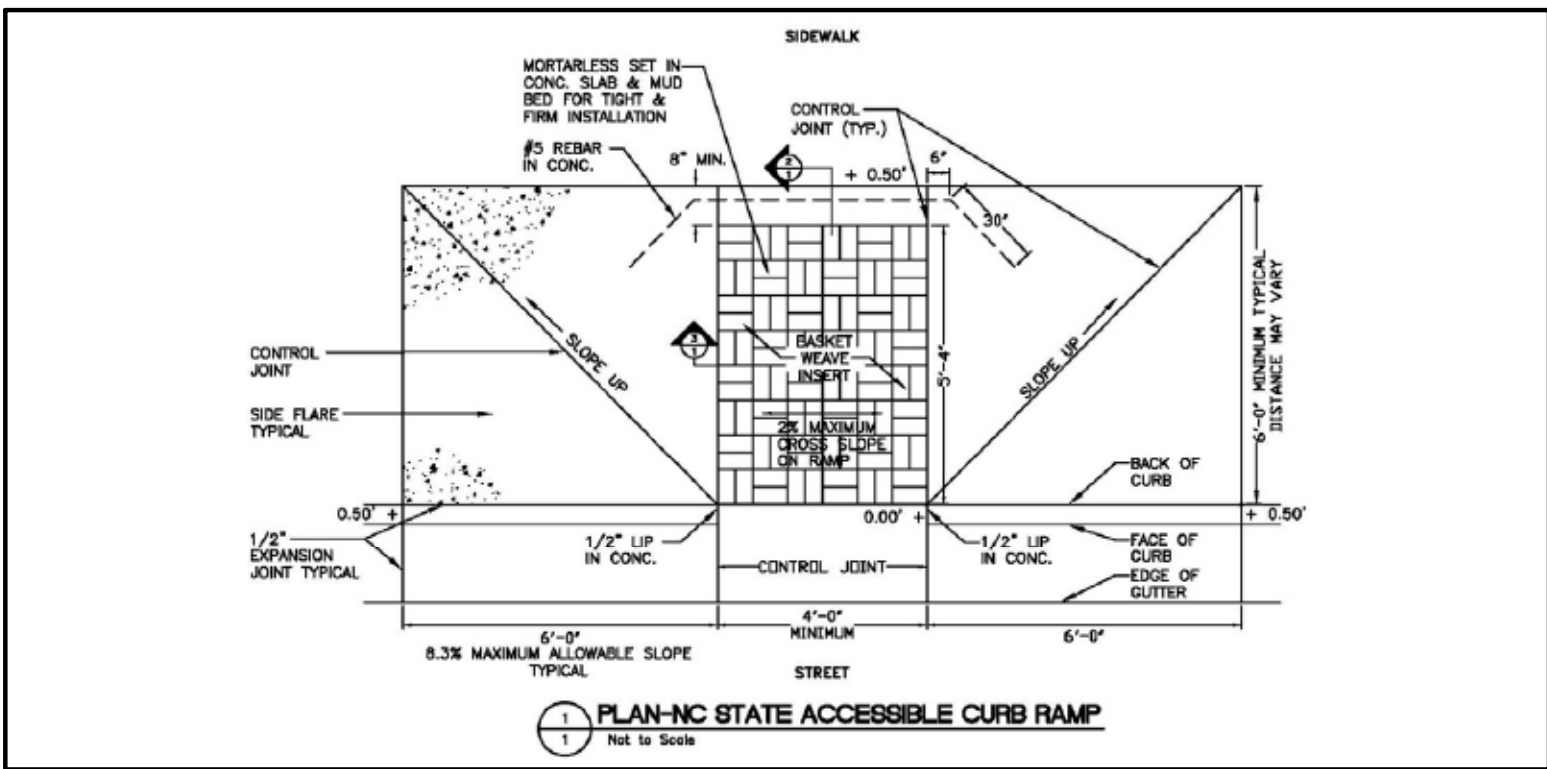
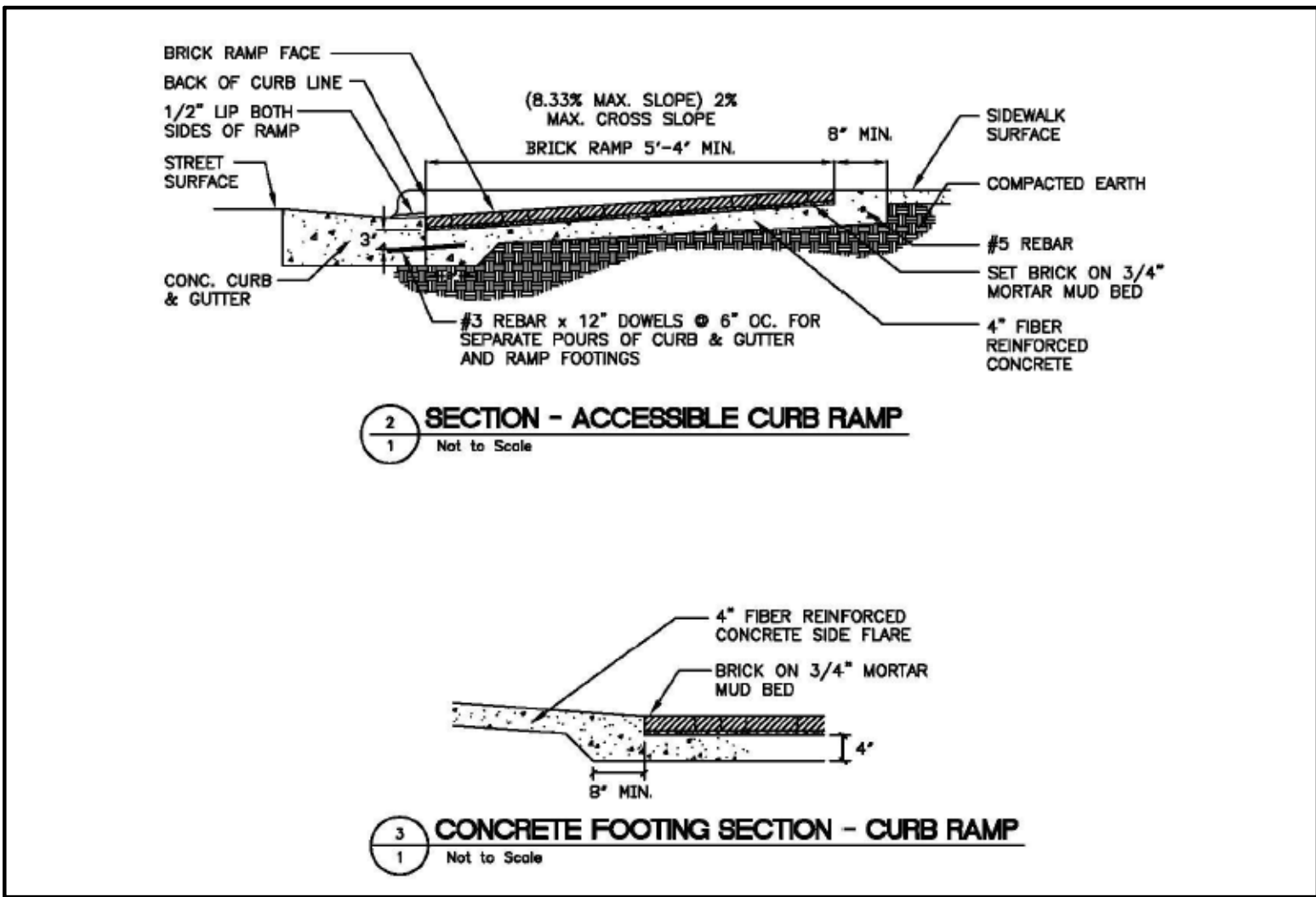
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MARK	ISSUE	DATE
Job Number	820937.001	
Drawn	NV5	
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UTILITY DETAILS

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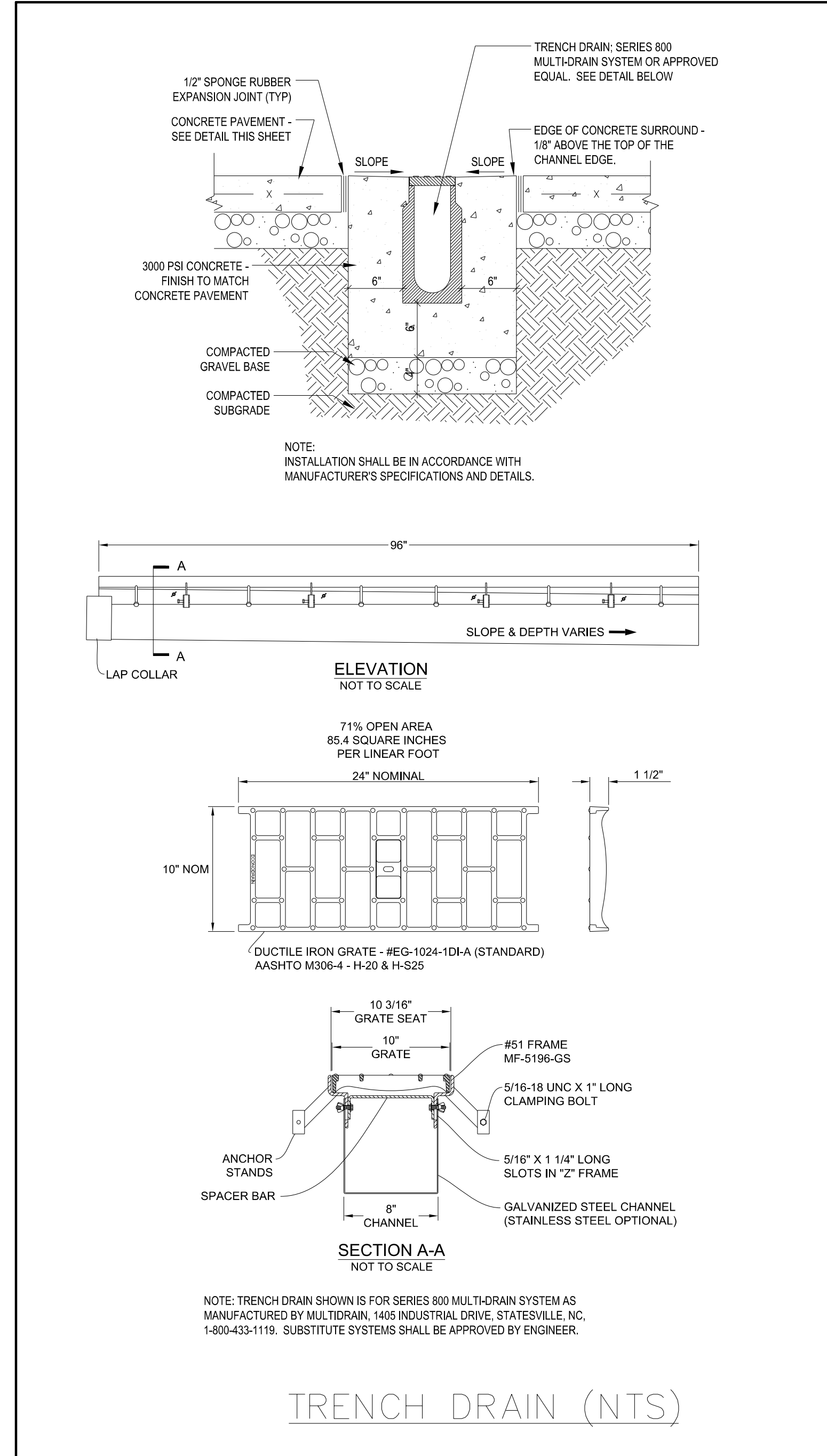
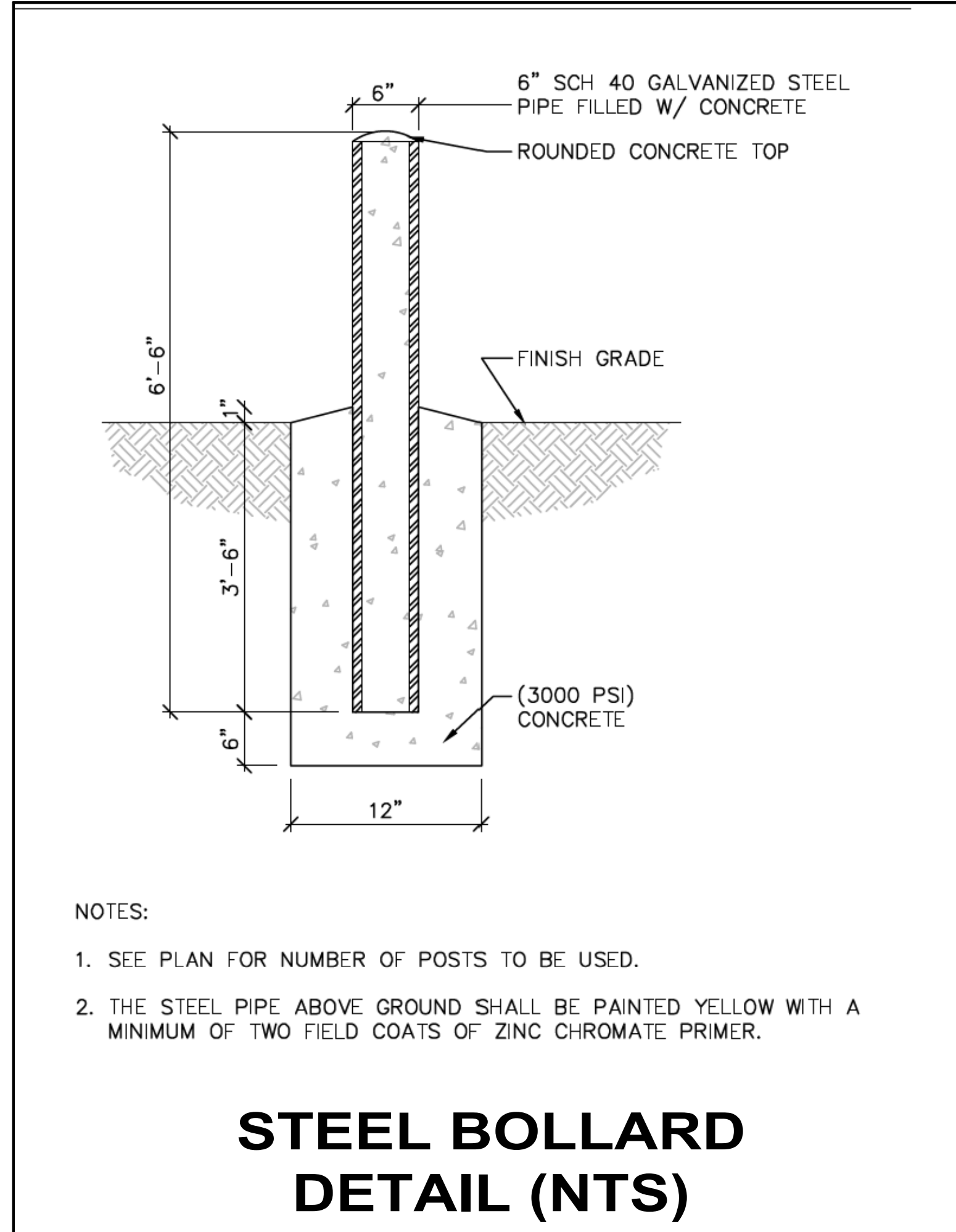
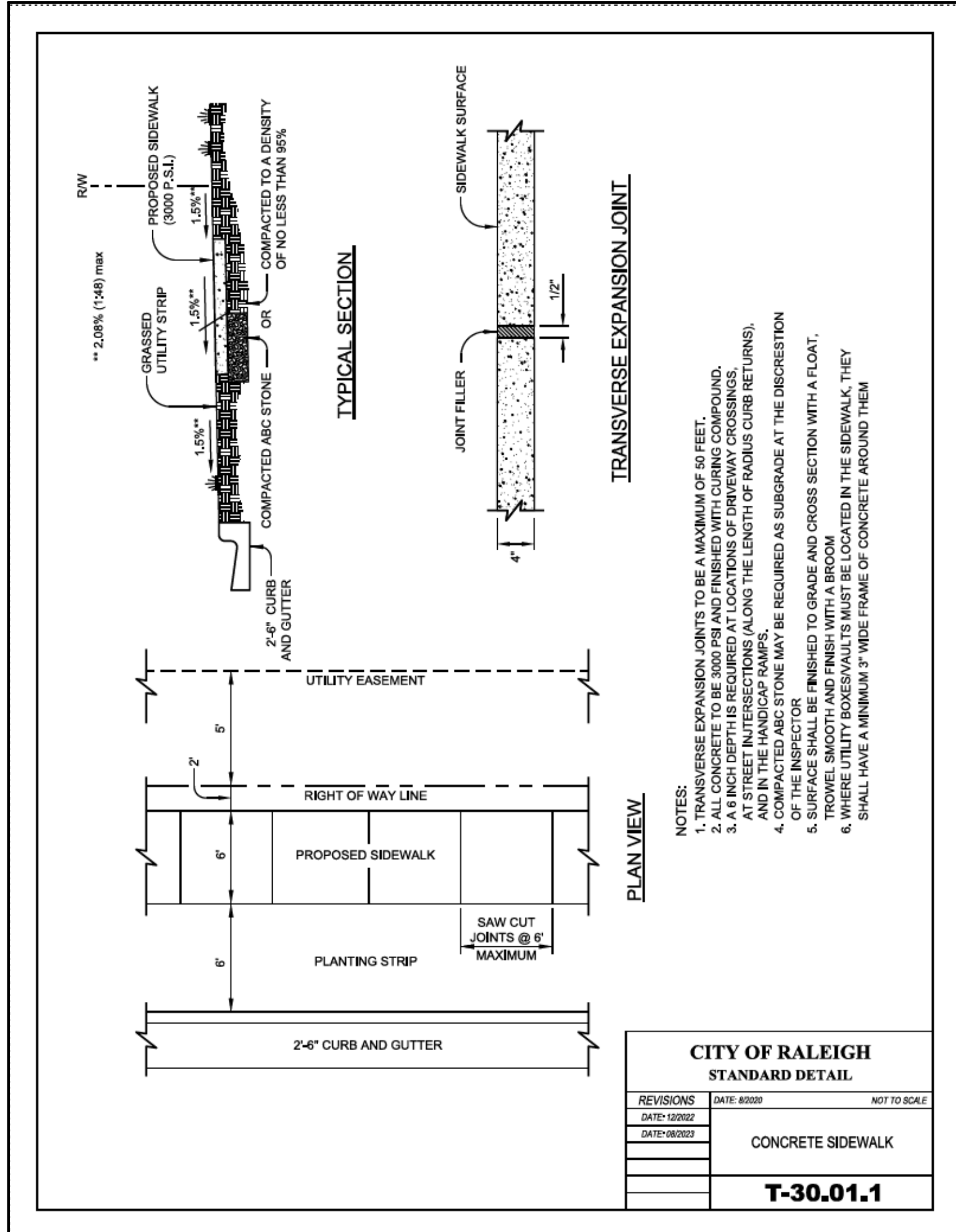
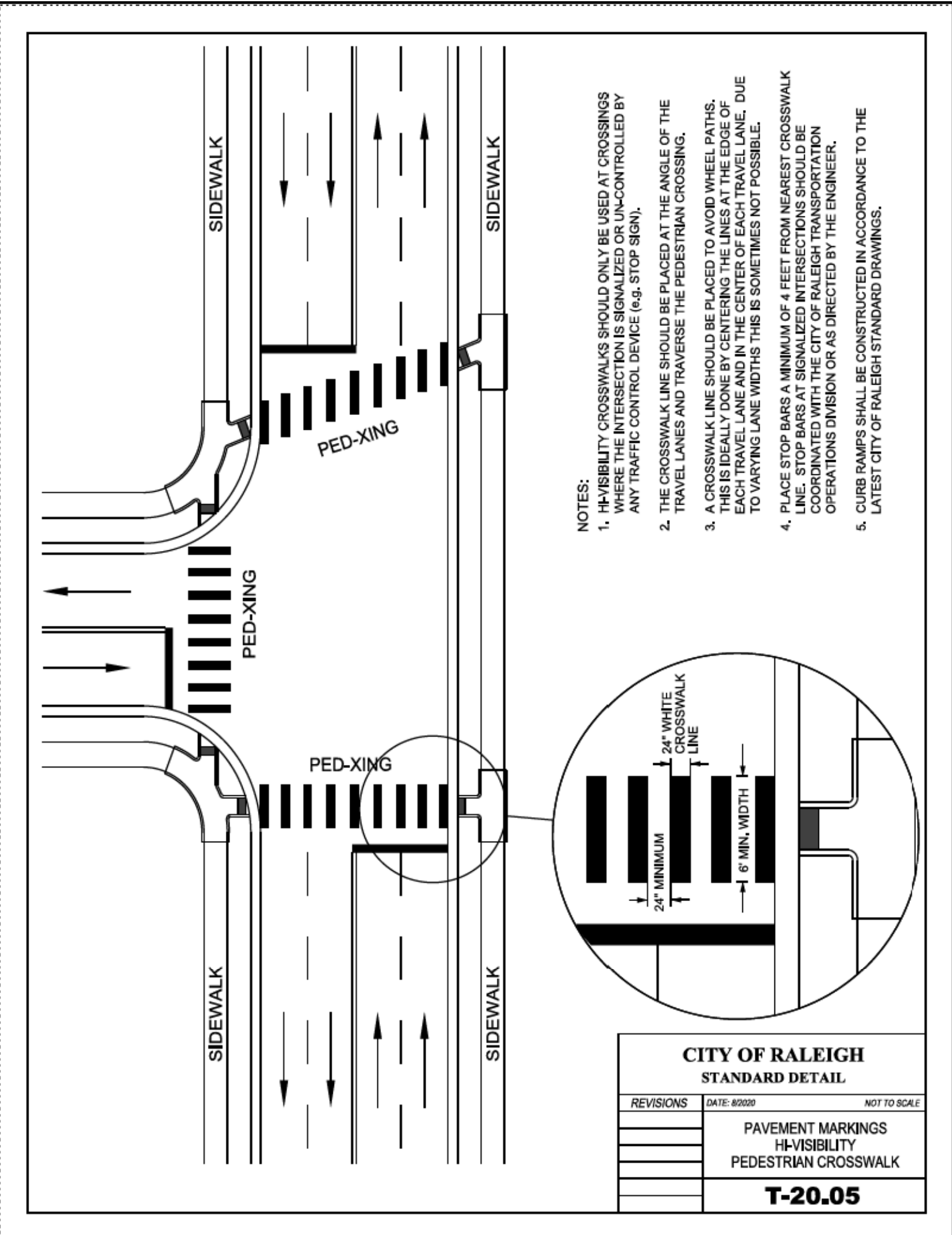
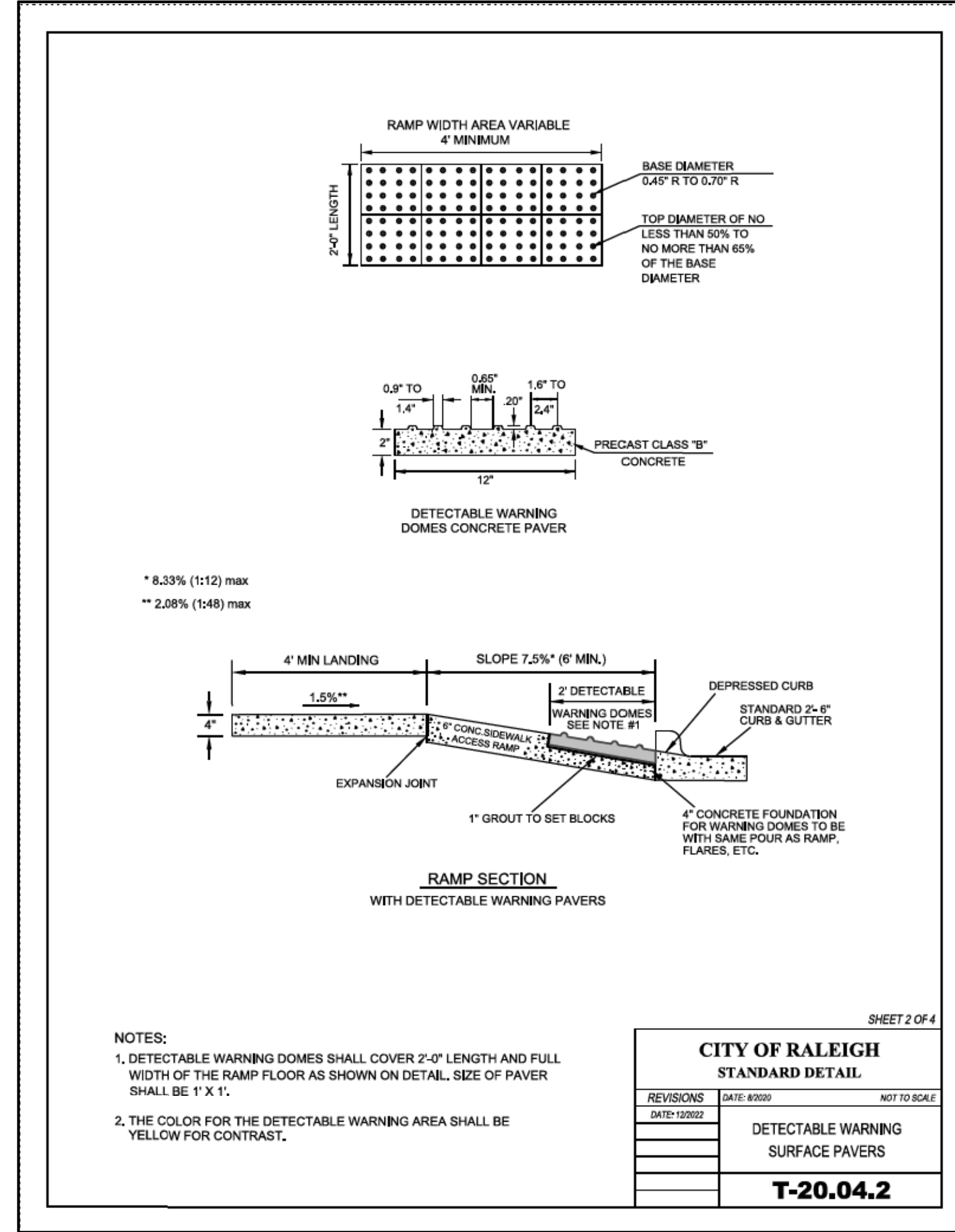
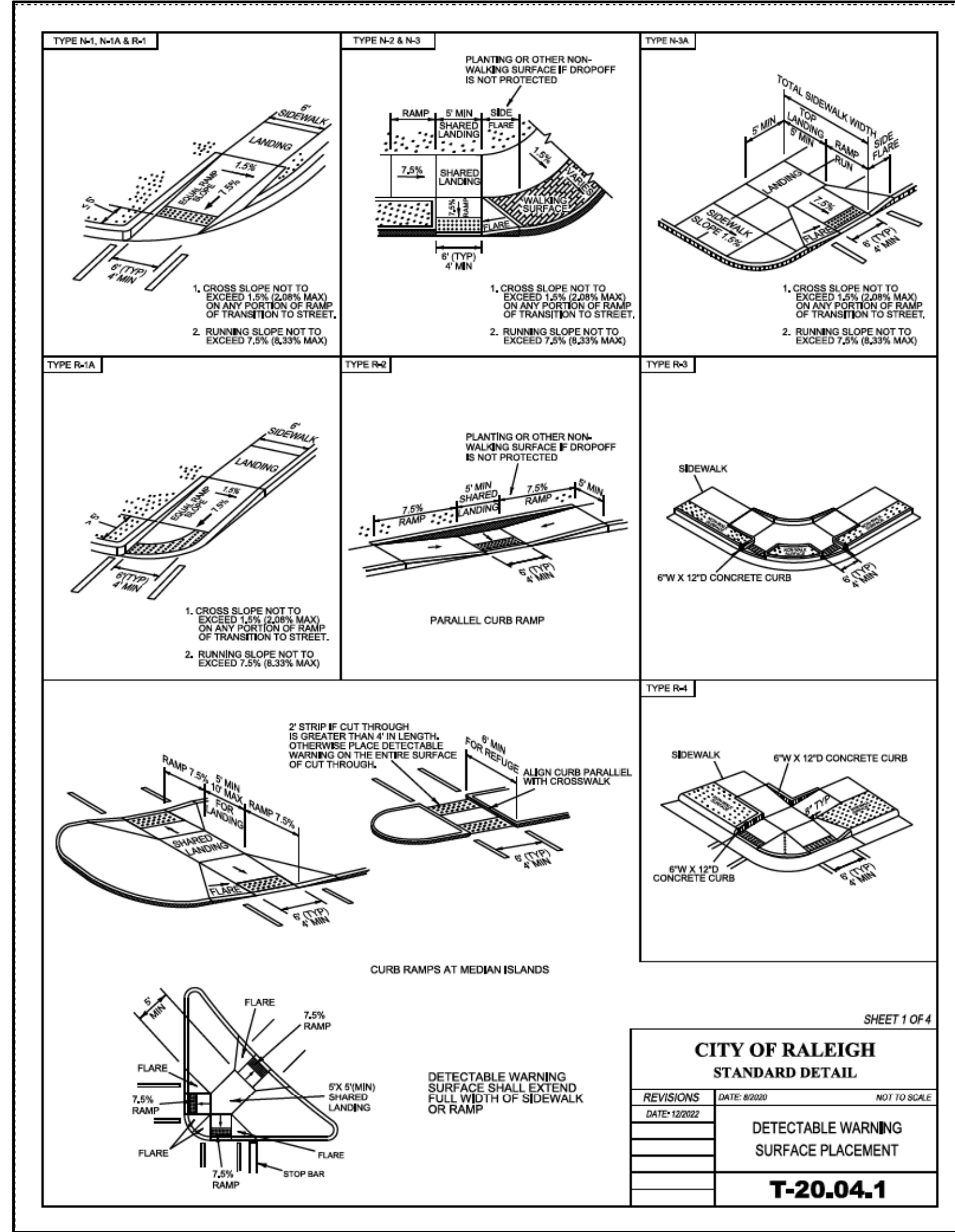
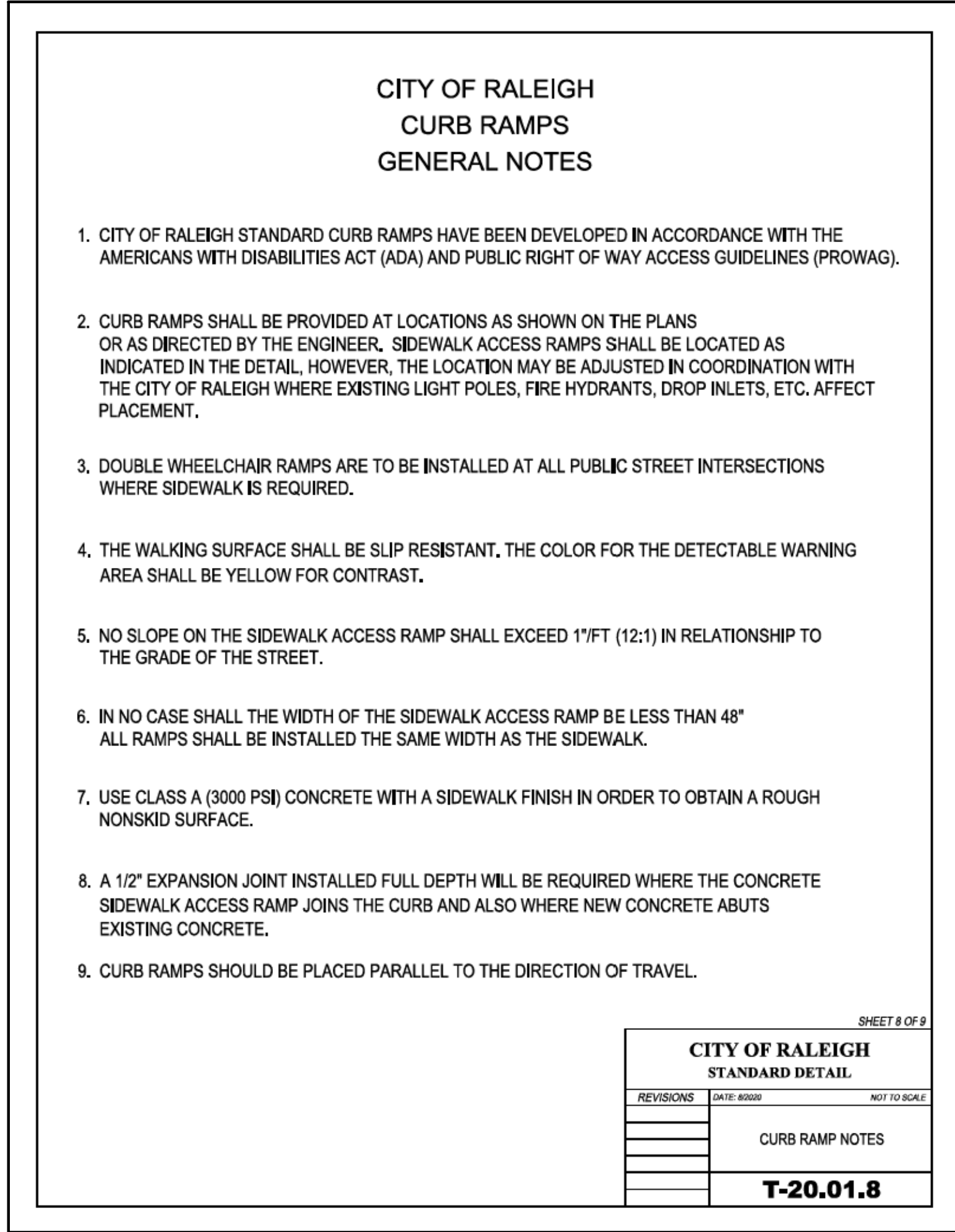
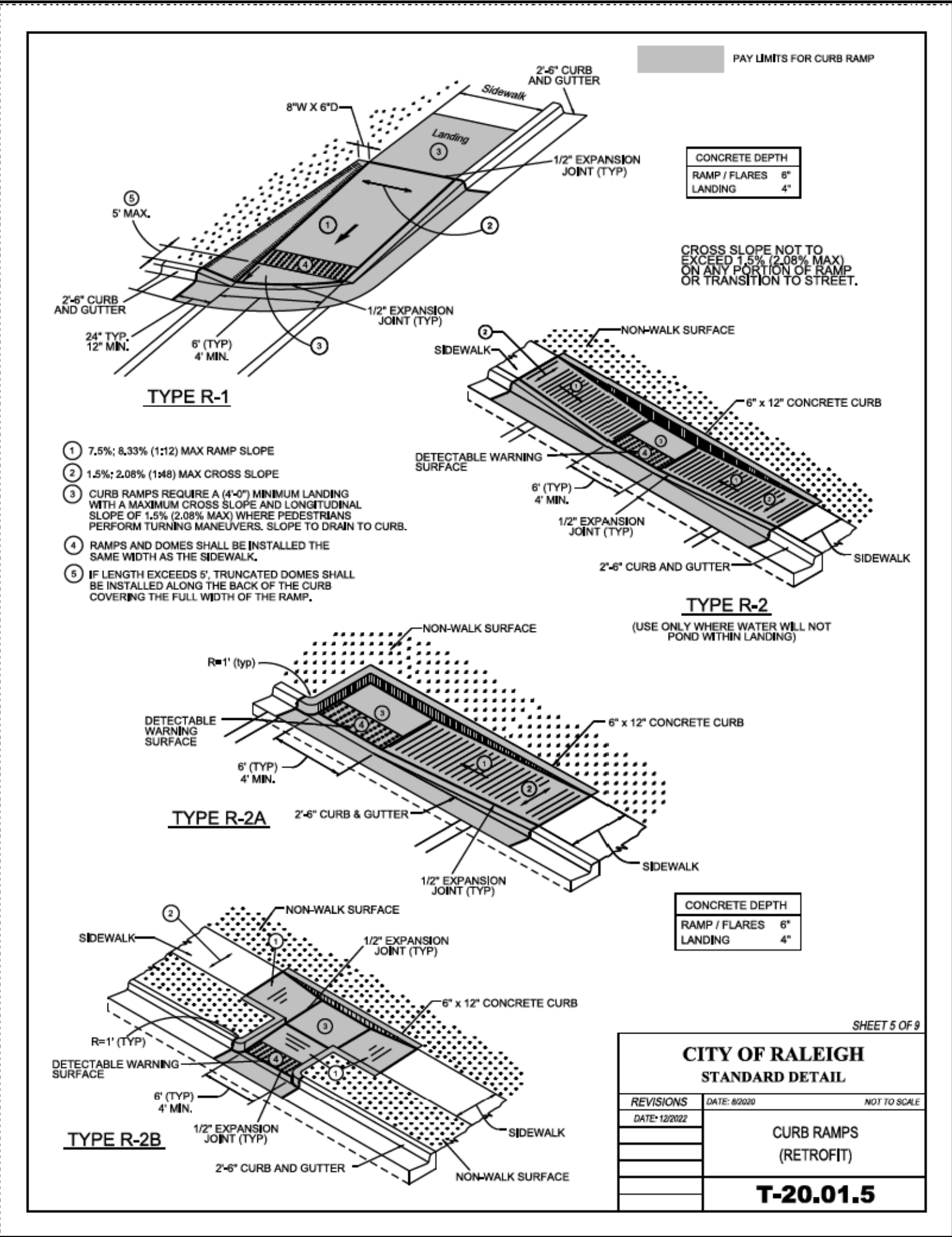
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Job Number	820937.001	
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TITLE		

SITE DETAILS

SHEET NUMBER

D-104



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Job Number 820937.001
Drawn NV5
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TITLE

SITE DETAILS
SHEET NUMBER
D-105

DATE:

FLOW

3"

SILT SOCK/ WATTLE

AREA TO BE PROTECTED

12" MIN.

2" x 2" STAKES

SECTION

FLOW

3"

SILT SOCK/ WATTLE

AREA TO BE PROTECTED

12" MIN.

2" x 2" STAKES

SECTION

FLOW

4" MAX.

WOOD MULCH OR COMPOST TO 1/2 HEIGHT OF LOG

ISOMETRIC VIEW

FLOW

8" MAX.

TRENCH INTO GROUND 4" MIN.

UNTRENCHED INSTALLATION

ENTRENCHED INSTALLATION*

*THIS APPLICATION MAY NOT BE USED WITH COMPOST SOCKS SMALLER THAN 12".

MULCH OR COMPOST FOR UNTRENCHED SOCKS

SHEET FLOW

WORK AREA

AREA TO BE PROTECTED

SILT SOCK/ WATTLE

COMPOST SOCK INITIAL FLOW RATES					
Compost Sock Design Diameter	8 Inch (200 nm)	12 Inch (300 nm)	18 Inch (450 nm)	24 Inch (600 nm)	32 Inch (750 nm)
Maximum Slope Length (<2%)	600 Feet (183 m)	750 Feet (229 m)	1,000 Feet (305 m)	1,300 Feet (396 m)	1,650 Feet (500 m)
Hydraulic Flow Through Rate	7.5 gpm/ft (94 l/m/m)	11.3 gpm/ft (141 l/m/m)	15.0 gpm/ft (188 l/m/m)	22.5 gpm/ft (281 l/m/m)	30.0 gpm/ft (374 l/m/m)

NOTE:

1. Other materials providing equivalent protection against erosive velocities may be substituted for compost use in silt socks or wattles.

2. Fill silt sock/wattle netting uniformly with compost to the desired length such that logs do not deform. Silt sock/Wattle(s) should be installed parallel to and a minimum of 10 feet beyond the toe of a graded slope. Silt Sock/Wattle(s) located below flat areas should be located at the edge of the land disturbance. The ends of the silt sock/wattle(s) should be turned slightly upslope to prevent runoff from going around the end of the silt sock/wattle(s).

3. Oak or other durable hardwood stakes with a 2 inch x 2 inch cross section should be driven vertically plumb, through the center of the silt sock/wattle. Stakes should be placed at a maximum interval of 4 feet or a maximum interval of 8 feet if the silt sock/wattle is placed in a 4 inch trench.

4. In the event staking is not possible (ie. when socks/wattles are used on pavement) heavy concrete blocks shall be used behind the silt sock/wattle to hold it in place during runoff events.

MAINTENANCE:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater.

2. Remove accumulated sediment and any debris as needed to allow for adequate flow.

3. Silt sock/Wattle must be replaced if clogged or torn.

4. If ponding becomes excessive, the silt sock/wattle may need to be replaced with a larger diameter or a different measure.

5. Reinstall if damaged or dislodged.

6. Silt socks/wattles shall be inspected until land disturbance is compete and the area above the measure has been permanently stabilized.

Effective Date: 9/1/2023

In accordance with the 2013

Design Manual Updates

DEQ

SILT SOCK / WATTLE FOR PERIMETER AND INLET PROTECTION

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.

2. CONCRETE WASHOUT SOCKS SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY

3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL

4. THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED AND

5. MUST BE LOCATED AT LEAST 50 FEET FROM INLET/STORMWATERWAYS UNLESS THERE IS NO

6. OTHER PRACTICAL ALTERNATIVE.

1. REPAIRS SHALL BE MADE AT THE CLOSEST AVAILABLE OPPORTUNITY

2. REPAIRS SHALL BE MADE AT THE CLOSEST AVAILABLE OPPORTUNITY

3. REPAIRS SHALL BE MADE AT THE CLOSEST AVAILABLE OPPORTUNITY

4. REPAIRS SHALL BE MADE AT THE CLOSEST AVAILABLE OPPORTUNITY

5. REPAIRS SHALL BE MADE AT THE CLOSEST AVAILABLE OPPORTUNITY

6. REPAIRS SHALL BE MADE AT THE CLOSEST AVAILABLE OPPORTUNITY

REVISIONS

DATE

BY

NOT TO SCALE

CITY OF RALEIGH

STANDARD DETAIL

CONCRETE WASHOUT

SW-20.27

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.

2. CONCRETE WASHOUT SOCKS SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY

3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL

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STANDARD DETAIL

CONCRETE WASHOUT

SW-20.27

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ISSUE CHART

5	CONSTRUCTION DOCUMENTS	3/25/2025
1	ISSUE	DATE
Job Number	820937.001	
Drawn	NVS	
Checked	MDA	
Approved	MDA	
TITLE		

EROSION CONTROL
DETAILS

SHEET NUMBER

D-108

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Mann Hall Renovation
STATE ID #22-24500-02A
NCSU PROJECT # 202220021

North Carolina State
University
Facilities Division Design & Construction
Administrative Services Building III
2601 Wolf Village Way, Suite 331
Raleigh, NC 27695

Legacy Tower
411 W Chapel Hill Street, Suite 200
Durham, North Carolina 27701
1919.433.5300
1919.433.5301
www.perkinswill.com

STRUCTURAL

Lynch Mykins Structural Engineers
301 N. West Street Suite 105, Raleigh, NC 27603

MEP

Salas O'Brien
702 Oberlin Road, Raleigh, NC 27605
License (NC): F-1434

CIVIL

NV5 Engineers and Consultants
3300 Regency Parkway Suite 100, Cary, NC 27518

CONTRACTOR

Holder Construction Group
6210 Ardrey Kell Road Suite 400, Charlotte, NC 28277

AUDITOR/ISSUAL

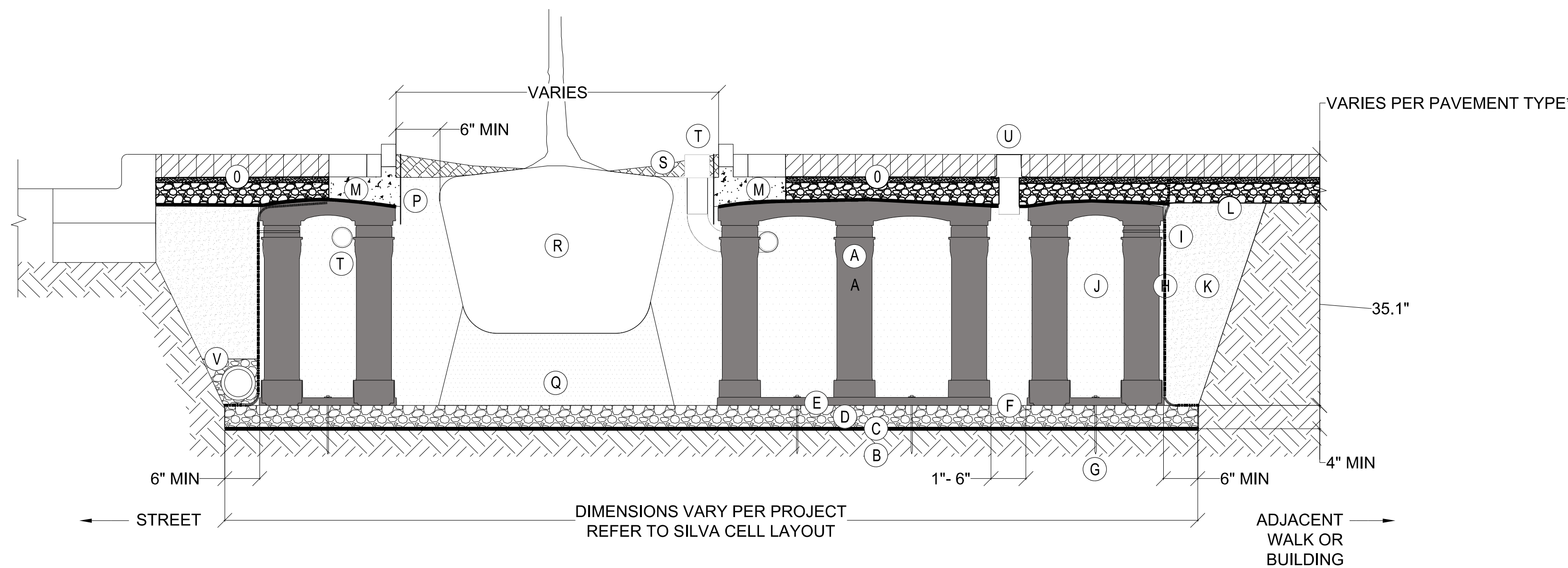
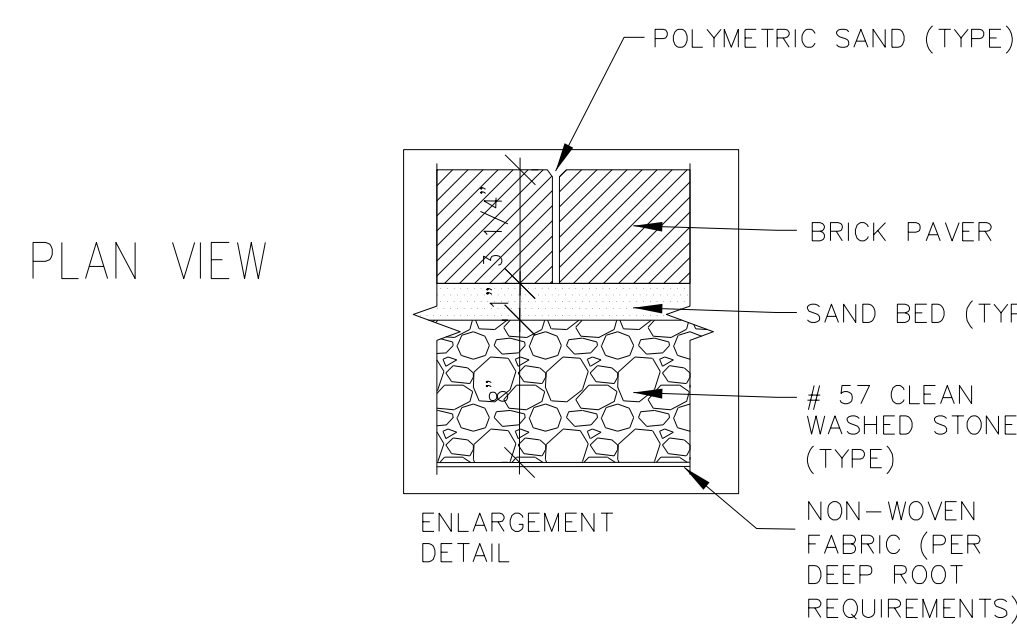
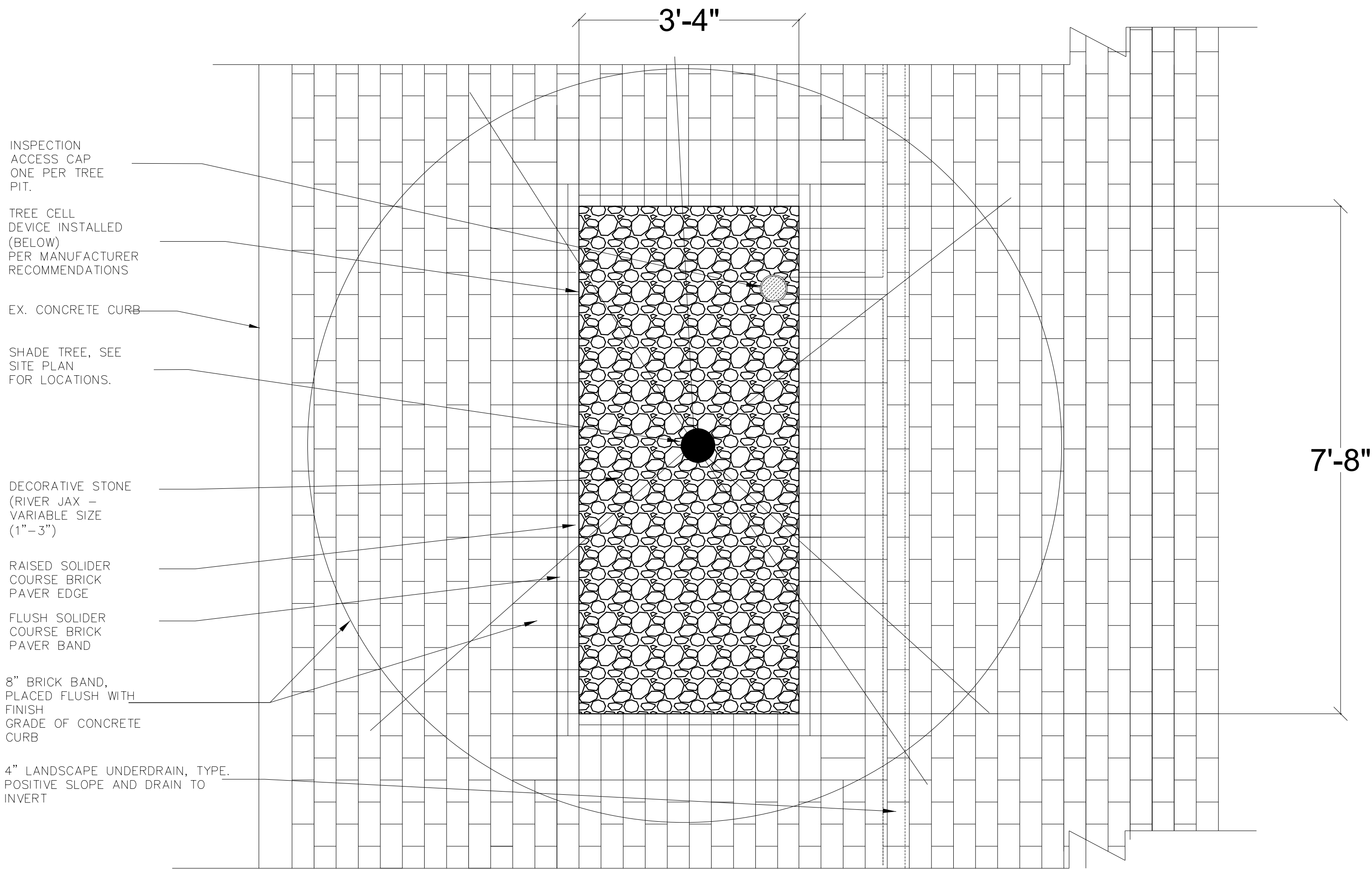
NV5 Engineers and Consultants
4905 Professional Court, Raleigh, NC 27609

LIGHTING

Available Light
5700 Six Forks Road, Suite 203, Raleigh, NC 27609

SUSTAINABILITY

Ecoimpact Consulting
8022 Providence Road Suite 500, Charlotte, NC 28277



SILVA CELL SYSTEM 2.5X

NOT TO SCALE

INDICATES THE RESPONSIBILITY OF NCSU LANDSCAPE SERVICES. ALL REMAINING ITEMS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

KEY PLAN

- A** SILVA CELL SYSTEM (DECK, BASE, AND POSTS)
- B** SUBGRADE, COMPACTED
- C** GEOTEXTILE FABRIC, PLACED ABOVE SUBGRADE
- D** 4" MIN AGGREGATE SUB BASE, COMPACTED TO 95% PROCTOR
- E** SILVA CELL BASE SLOPE, 10% MAX
- F** 1" TO 6" SPACING BETWEEN SILVA CELLS AT BASE
- G** ANCHORING SPIKES, CONTACT DEEPROOT FOR ALTERNATIVE
- H** GEOGRID, WRAPPED AROUND PERIMETER OF SYSTEM, WITH 6" TOE (OUTWARD FROM BASE) AND 12" EXCESS (OVER TOP OF DECK)
- I** CABLE TIE, ATTACHING GEOGRID TO SILVA CELL AT BASE OF UPPER LEG FLARE, AS NEEDED

- J** PLANTING SOIL, PER PROJECT SPECIFICATIONS. PLACED IN LIFTS AND WALK-IN COMPACTED TO 75-85% PROCTOR
- K** COMPACTED BACKFILL, PER PROJECT SPECIFICATIONS
- L** GEOTEXTILE FABRIC TO EDGE OF EXCAVATION
- M** RIBBON CURB AT TREE OPENING (TO BE USED WITH PAVERS)
- N** THICKENED EDGE AT TREE OPENING (TO BE USED WITH CONCRETE)
- O** PAVEMENT AND AGGREGATE BASE PER PROJECT *

*MINIMUM PAVEMENT PROFILE OPTIONS TO MEET H-20 LOADING	
PAVEMENT	+ AGGREGATE BASE COURSE
4" CONCRETE	+ 4" AGGREGATE
3" PAVER	+ 12" AGGREGATE
4" ASPHALT	+ 12" AGGREGATE
2.6" PAVER	+ 5" CONCRETE

- P** DEEPROOT ROOT BARRIER, 12" OR 18", DEPTH DETERMINED BY THICKNESS OF PAVEMENT SECTION. INSTALL DIRECTLY ADJACENT TO CONCRETE EDGE RESTRAINT
- Q** PLANTING SOIL BELOW ROOT BALL, COMPACTED WELL TO PREVENT SETTLING
- R** ROOT BALL
- S** TREE OPENING TREATMENT, PER PROJECT SPECIFICATIONS
- T** DEEPROOT WATER AND AIR VENT, ROOTBALL, WHEN REQUIRED
- U** DEEPROOT WATER AND AIR VENT, WHEN REQUIRED
- V** UNDERDRAIN SYSTEM, WHEN REQUIRED (LOCATION AND DETAILS BY OTHERS)

- NOTES**
- EXCAVATION SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE HEALTH AND SAFETY REGULATIONS
 - INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
 - PROVIDE SUPPLEMENTAL IRRIGATION
 - DO NOT SCALE DRAWINGS

<https://www.deeproot.com/products/silva-cell/resources/>

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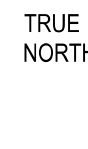
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NOT FOR CONSTRUCTION



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STORMWATER DETAILS

SHEET NUMBER

D-109