CONSTRUCTION 2023 LESSONS LEARNED

PAUL KOZA – ADE-C 11-8-23

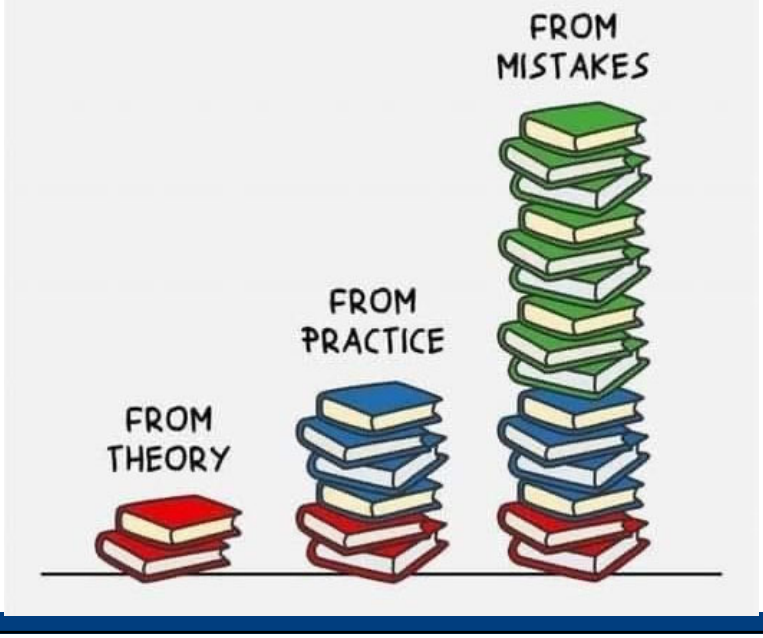
pennsylvania DEPARTMENT OF TRANSPORTATION

1

SAFETY

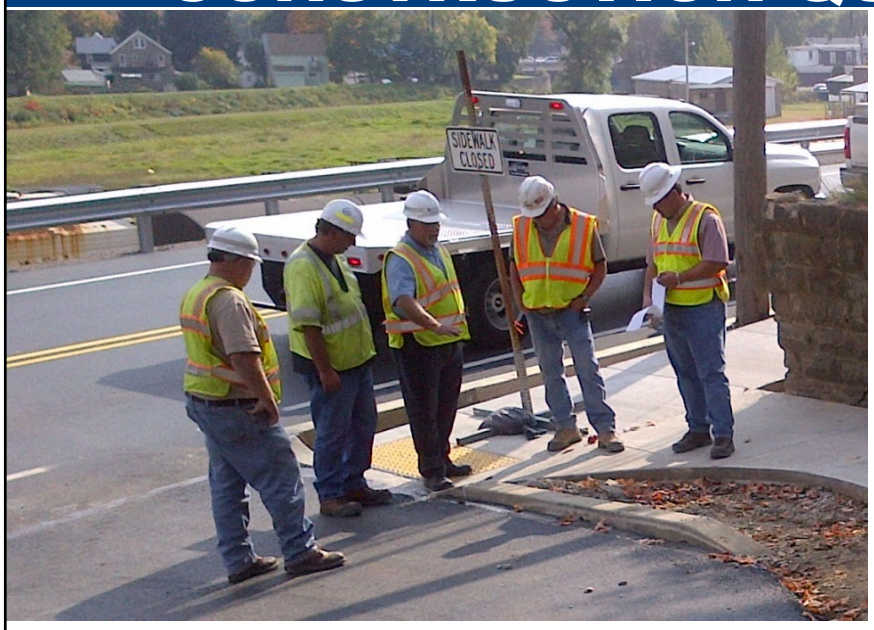
2

BUILDING EXPERIENCE



3

CONSTRUCTION QUALITY



How do you define quality?

Simply - how good or bad something is

Can be recognized, but difficult to actually define

4

PARTNERING FOR QUALITY

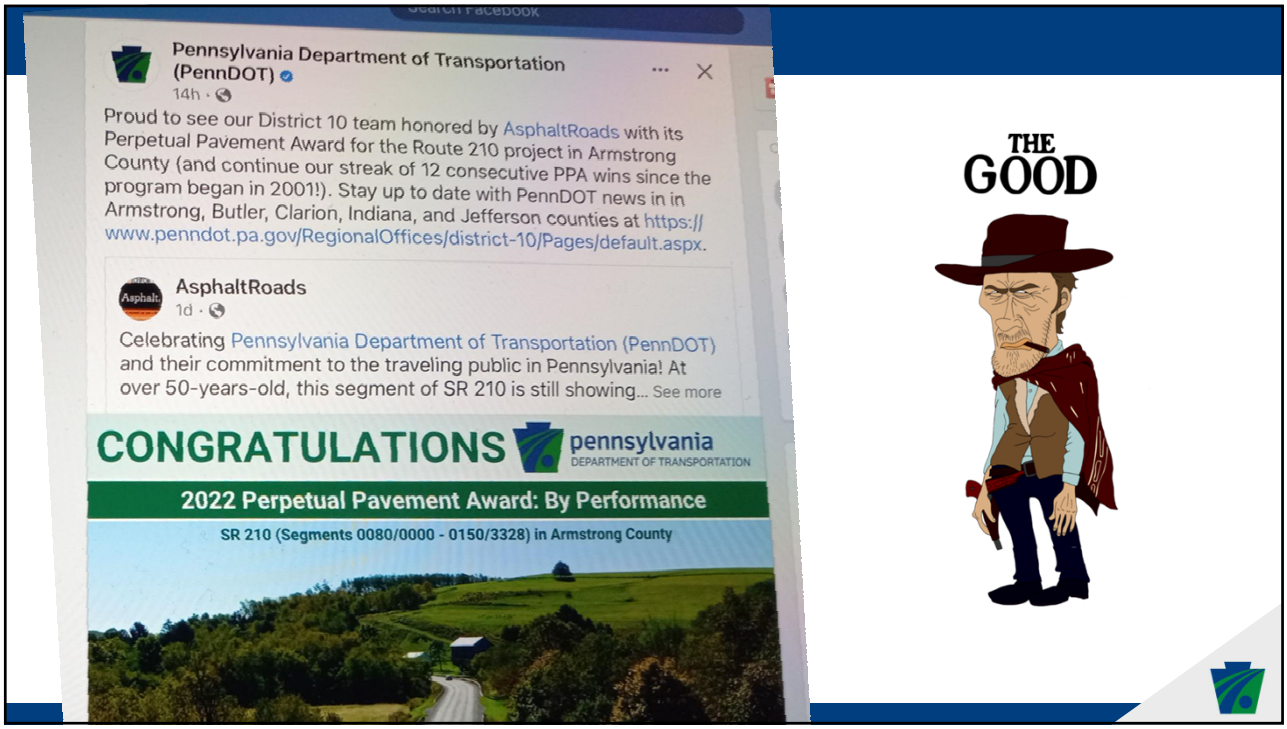
Establishing a long-term, win-win relationship based on mutual trust and teamwork and on sharing of both risks and rewards. The objective is to focus on what each part does best and establishing specific roles for each participant.

Everyone takes responsibility for quality of work

5

PROJECT FIELD VIEWS

6

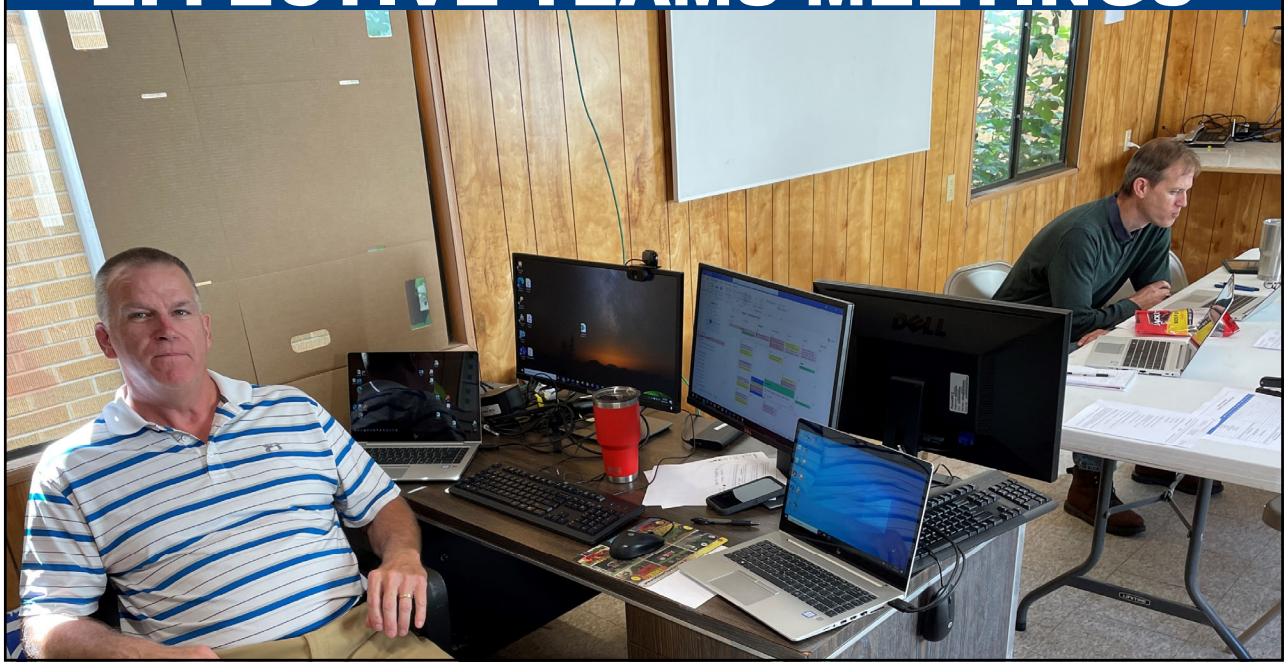

Pennsylvania Department of Transportation (PennDOT)
14h
Proud to see our District 10 team honored by AsphaltRoads with its Perpetual Pavement Award for the Route 210 project in Armstrong County (and continue our streak of 12 consecutive PPA wins since the program began in 2001!). Stay up to date with PennDOT news in in Armstrong, Butler, Clarion, Indiana, and Jefferson counties at https://www.penndot.pa.gov/RegionalOffices/district-10/Pages/default.aspx.
AsphaltRoads
1d
Celebrating Pennsylvania Department of Transportation (PennDOT) and their commitment to the traveling public in Pennsylvania! At over 50-years-old, this segment of SR 210 is still showing... See more
CONGRATULATIONS
pennsylvania
DEPARTMENT OF TRANSPORTATION
2022 Perpetual Pavement Award: By Performance
SR 210 (Segments 0080/0000 - 0150/3328) in Armstrong County
THE GOOD

7

LEAVE

8

EFFECTIVE TEAMS MEETINGS



9

10

11

12

THREE DEGREE ROAD PCSWM

- Bid items allowed for HDPE, CMP or RCP pipe at locations for outlets
- DEP requirements - PVC and other materials requiring gravel enclosures to prevent crushing are not acceptable for use as outlet barrels.

INDEPENDENCE EXCAVATING
A DiGeronimo Company

36 Inch Outlet Pipe at GR7-1

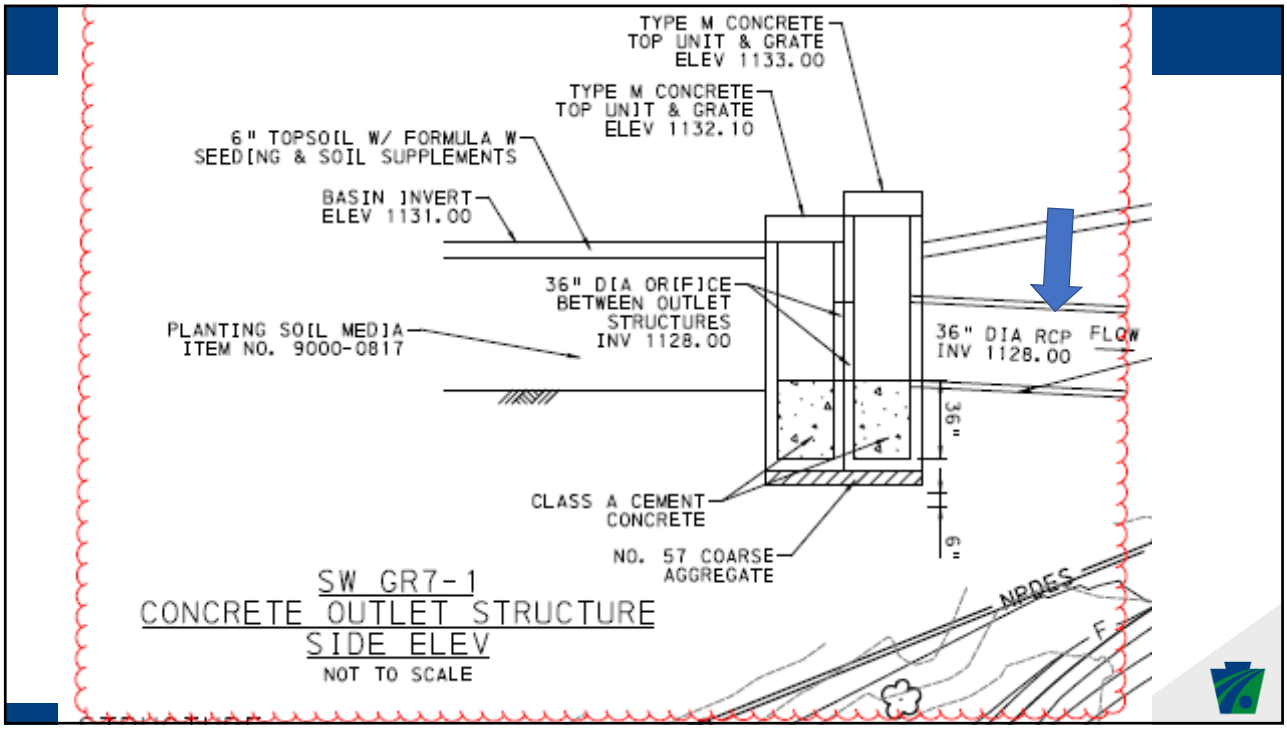
Summary tabs sheet 107 of 307 calls out option of using 36" HDPE or 36" CMP or 36" RCP with regards to pipe design NO 614. Independence Excavating has chose to use 36" HDPE. Penndot field team is indicating giving HDPE as an option may have been a error based on the call out for concrete cradle and the details on sheet 35 of 77 Post Construction Storm-water Management Plan referring to CMP or RCP. If HDPE is acceptable in conjunction with an anti-seep collar in lieu of RCP or CMP with a concrete cradle, please

13

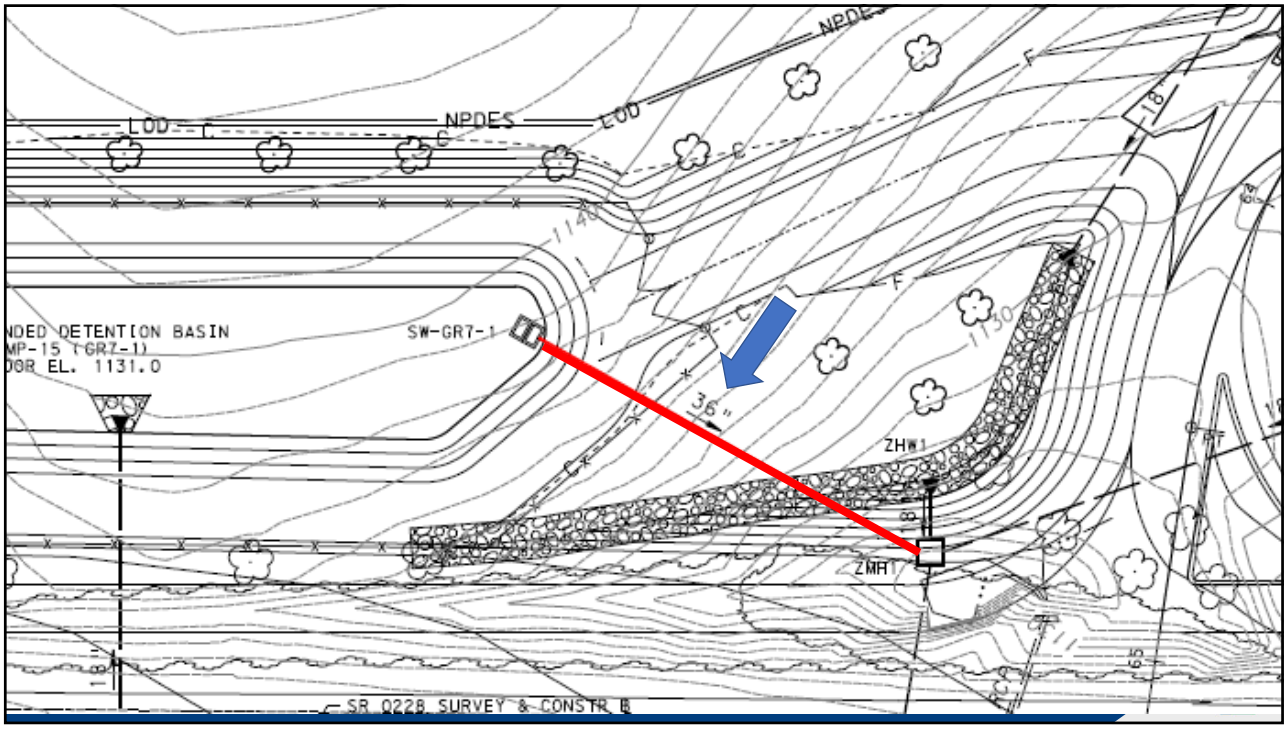
WORK ORDER CHANGE

- This work order created to compensate contractor for installation of pipe that is different from contract tabs. Contractor directed to install RCP pipe at all permanent basin outlets. Some pipe runs at permanent basins were tabbed as types other than RCP. All basin outlet pipes shown in PCSWM typicals indicate RCP as outlet pipes.
- Required contractor to change from Thermo pipe to RCP pipe as shown on approved permit plans.

14


TYPE M CONCRETE
TOP UNIT & GRATE
ELEV 1133.00
TYPE M CONCRETE
TOP UNIT & GRATE
ELEV 1132.10
6" TOPSOIL W/ FORMULA W
SEEDING & SOIL SUPPLEMENTS
BASIN INVERT
ELEV 1131.00
36" DIA ORIFICE
BETWEEN OUTLET
STRUCTURES
INV 1128.00
PLANTING SOIL MEDIA
ITEM NO. 9000-0817
36" DIA RCP
INV 1128.00
FLOW
36"
CLASS A CEMENT
CONCRETE
NO. 57 COARSE
AGGREGATE
6"
SW GR7-1
CONCRETE OUTLET STRUCTURE
SIDE ELEV
NOT TO SCALE
NPDES

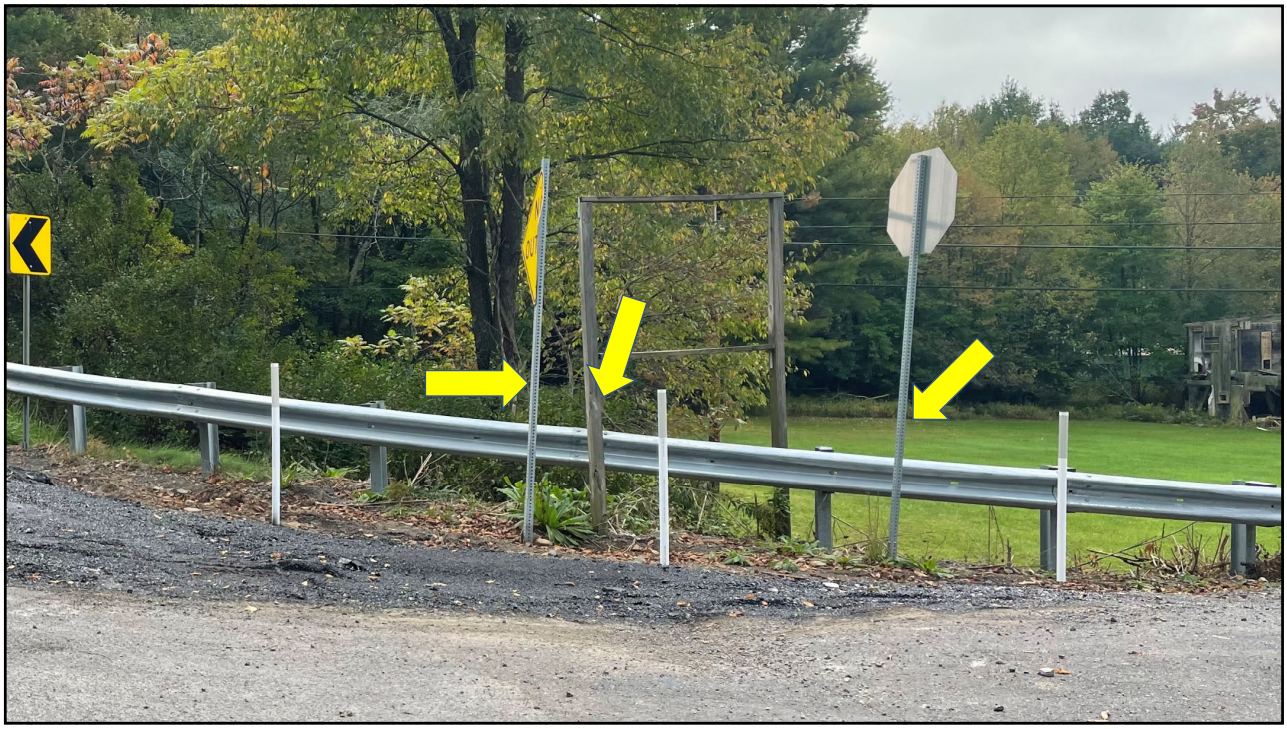
15


NPDES
LOD
NPDES
LOD
SW-GR7-1
36"
ZHW1
ZMH1
SR 0228 SURVEY & CONSTR B

16

17

18



19

20

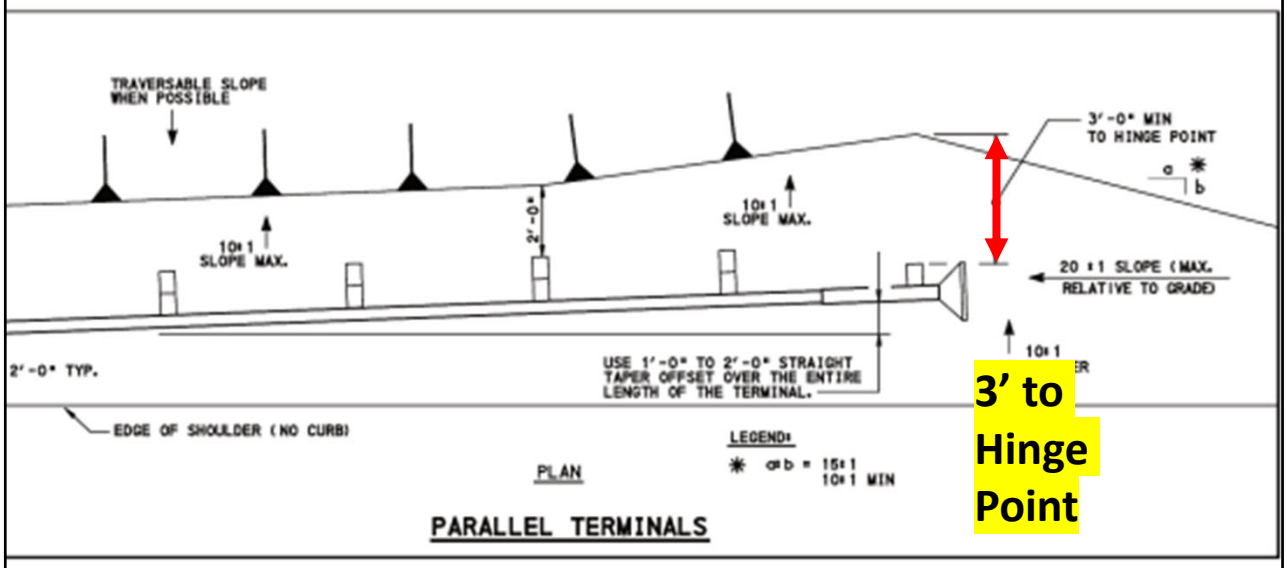
21

22

23

24

Grading Requirements for Terminals



For further details see RC-54M

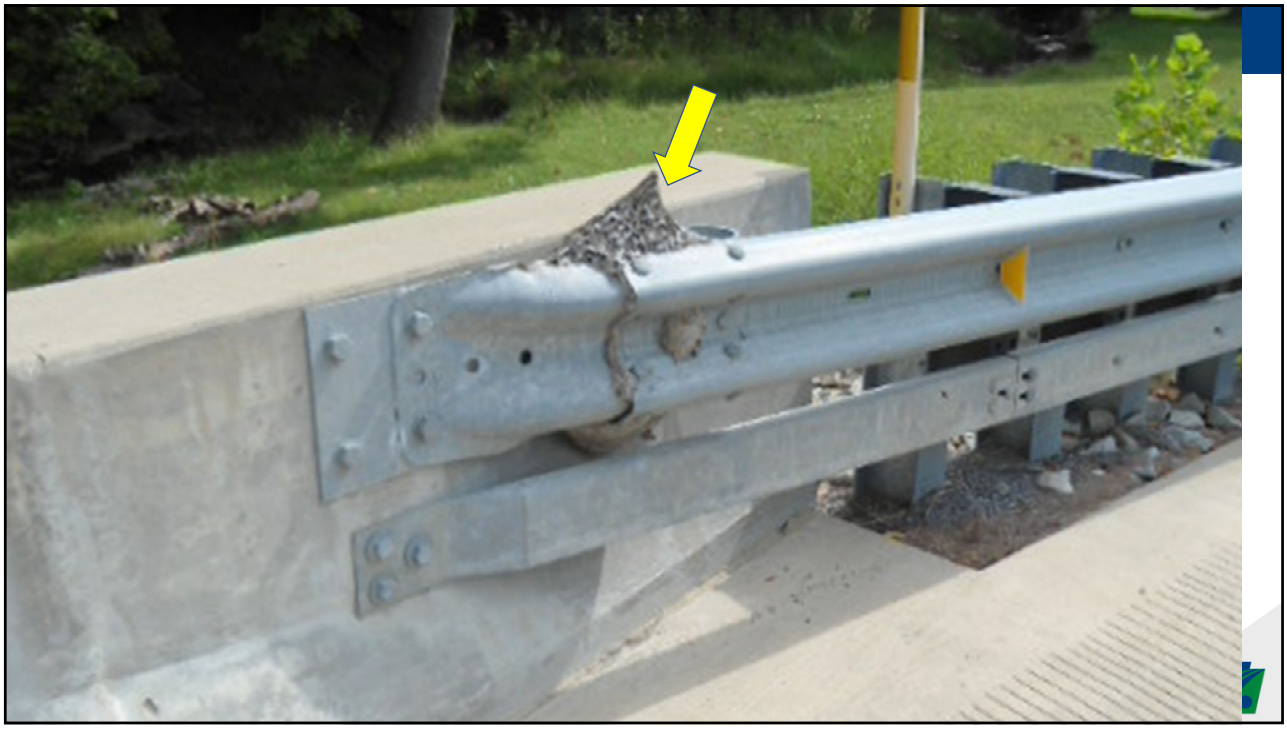
25

26

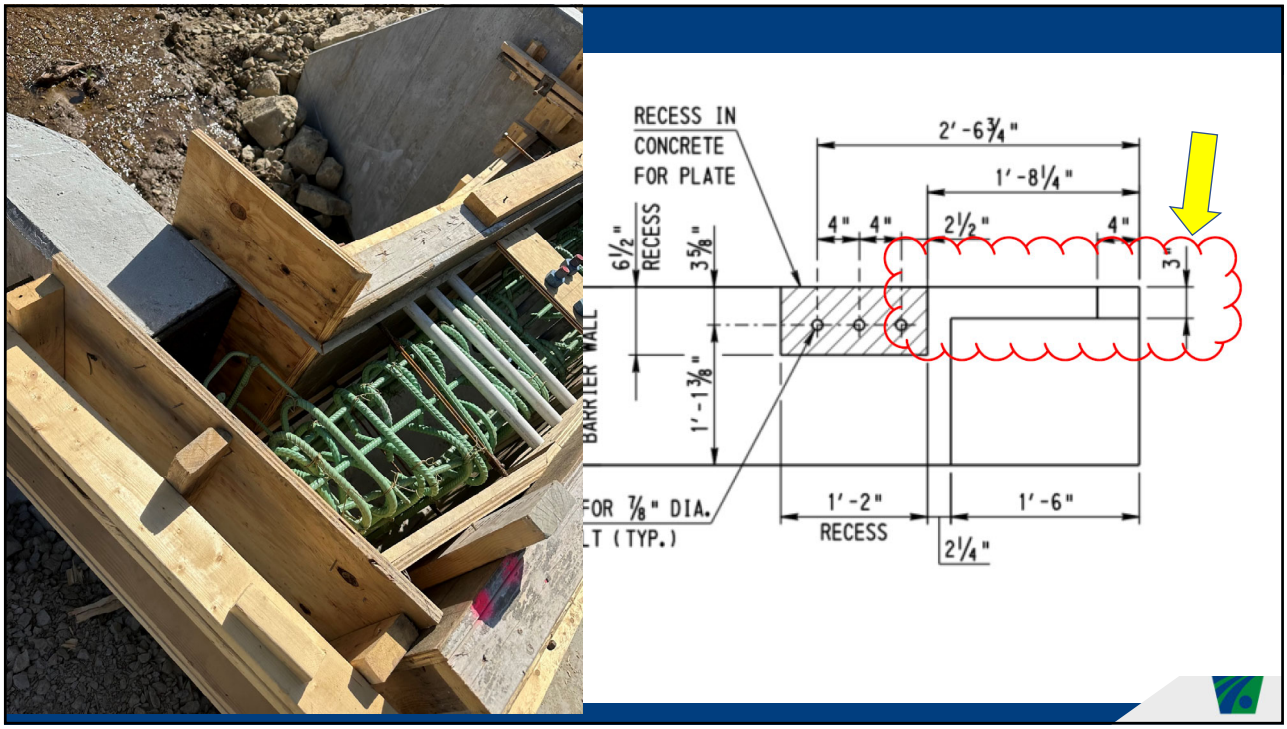
27

28

29



30


RECESS IN
CONCRETE
FOR PLATE
2′-6¾"
1′-8¼"
4"
4"
2½"
4"
3"
6½"
RECESS
3⅝"
1′-1⅜"
BARRIER WALL
FOR ⅞" DIA.
LT (TYP.)
1′-2"
RECESS
1′-6"
2¼"

31

32

33

34

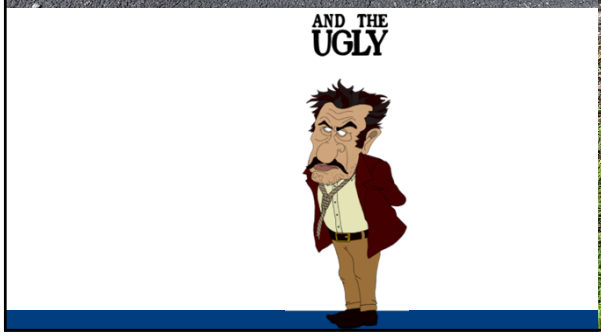
35

36

37

38

7.0%
United States


AND THE
UGLY

210450017
Obstructed
Punxsutawney, PA 15767
United States

39

Ride Quality = Meeting Spec?

40

use emulsified asphalt, consisting of PennDOT Material Class TACK or NTT/CNTT, instead of hot asphalt material. Before sealing, clean and remove harmful material from the area to be sealed. Control the application rate so residual asphalt completely fills surface voids and provides a watertight joint. If necessary, use two or more applications of emulsified asphalt. Remove excess asphalt material and immediately cover the sealed area with a light application of dry sand that is acceptable to the Representative.

(l) Surface Tolerance. Test the finished surface with a 12-foot straightedge at areas the Representative determines may be deficient or irregular, and at transverse joints (including bridge decks and pavement transition) and paving notches. Hold the straightedge in contact with the surface and in successive positions parallel to the road centerline to check the entire width of the pavement. Advance along the pavement in stages of not more than one-half the length of the straightedge until the entire area is tested. The pavement is defective if irregularities are more than 3/16 inch.

(m) Tests for Depth: Binder and Wearing Courses. Construct the pavement to the depth indicated and within the specified tolerances.

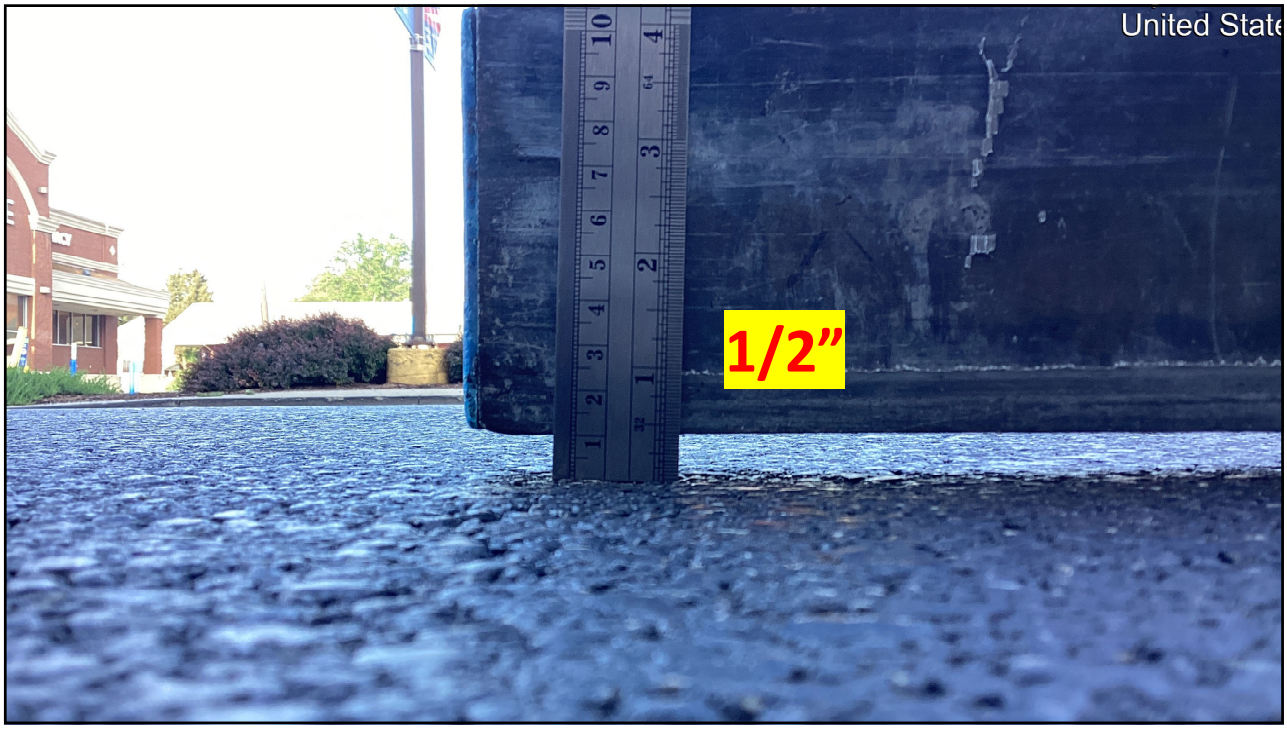
For courses with density acceptance by lots, the Inspector will measure the depth of each sublot according to PTM No. 737 using the density acceptance samples.

For courses with a designed course depth and density acceptance by non-movement or optimum rolling pattern, the I[illegible] of yield. If yield results [illegible]al placed to determine th[illegible] For courses with density acceptance by lots, the inspector will measure the depth of each sublot according to PTM No. 737 using density acceptance samples.

12 Foot Straight Edge – 3/16”

Pavement deficient in depth by more than 1/4 inch is defective work. Pavement deficient in depth by more than 1/8 inch in three or more adjacent core locations is defective work. The extent of the defective work is the entirety of all sublots represented by the adjacent deficient core samples. After the Inspector completes depth measurements, backfill, compact, and seal core holes with the mixture used to construct the course. Immediately start correcting courses or pavement that are deficient in depth at the core location and proceed longitudinally and transversely until the depth is within 1/4 inch of the design depth.

41



42

THE BAD

43

THE BAD

Do not place asphalt paving mixtures when surfaces are wet or when the air or surface temperature is 40F or lower. If work is halted because of weather conditions, the Representative may allow the Contractor to place limited quantities of mixture that are enroute to the project.

44

45

46

47

48

49

50

51

52

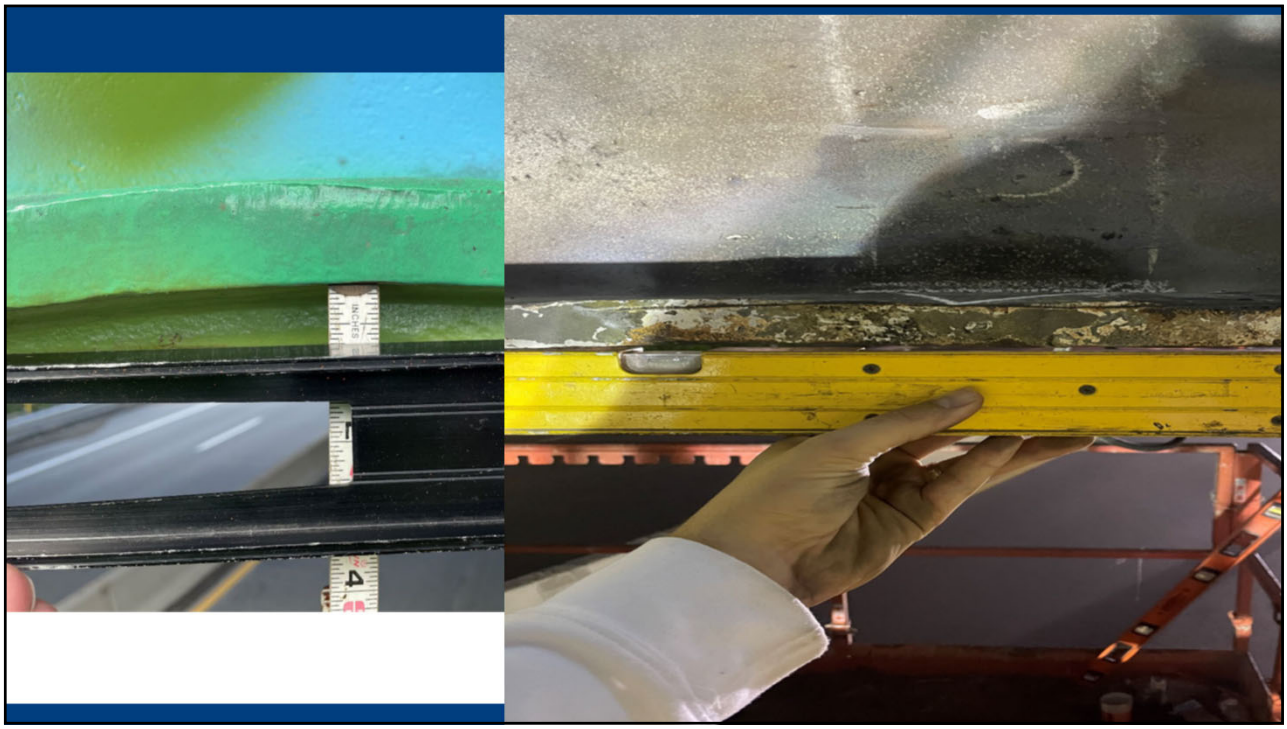
Utilities and Drainage

53

54

55

56



57

Closing 22 WB
22 WB TRAFFIC
TURN LEFT
DETOUR
WEST
22
DO NOT
ENTER

58

59

60

61

62

63

64

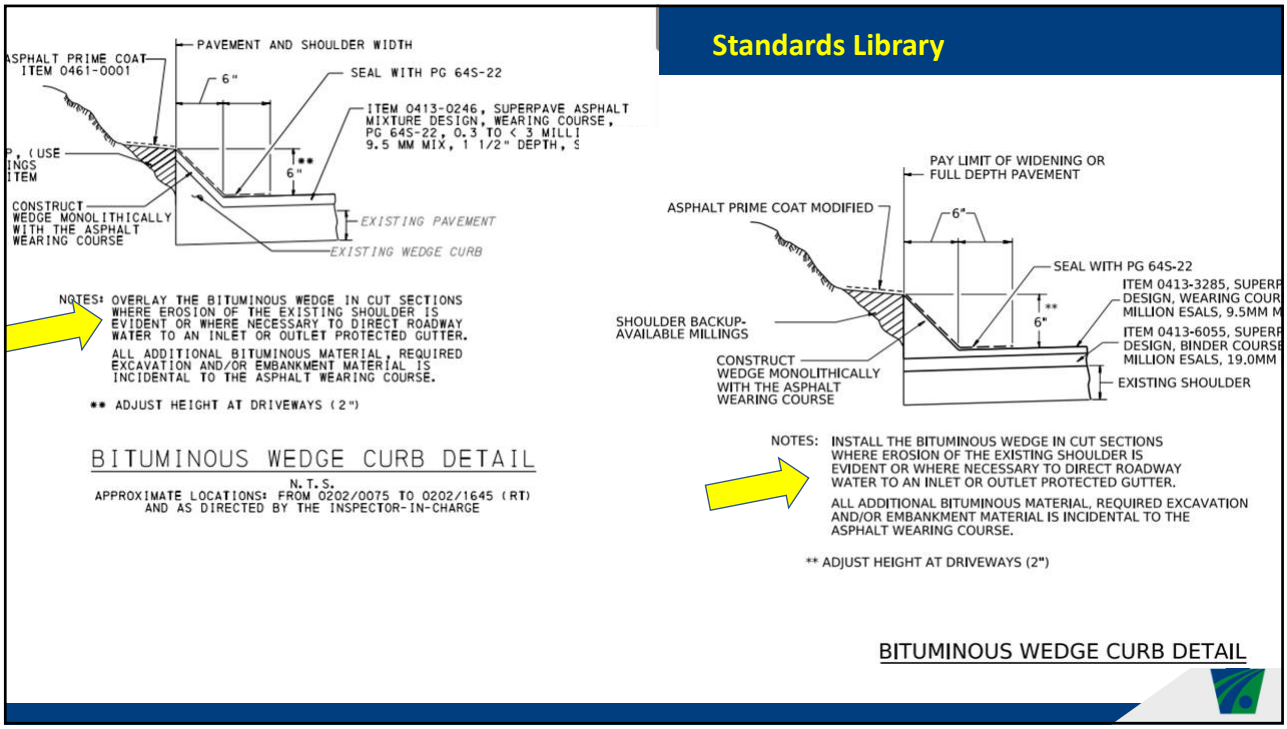
E&S ISSUE – CLEARING AND ACCESS FOR UTILITIES
HANNA

65

Pennsylvania
CARL RAY

66

Standards Library



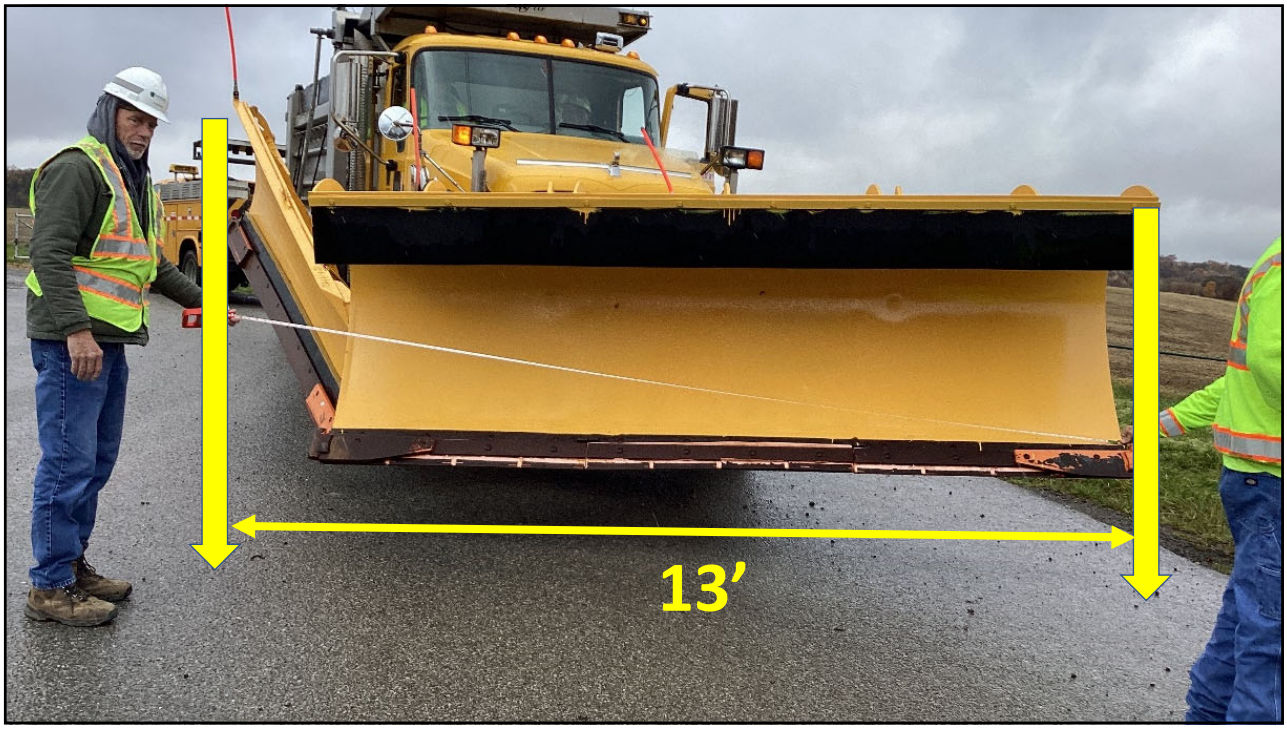
67

68

69

70

71



72

73

74

New Bethlehem PA 16242
United States
Optical Illusion

75

ADA RAMPS

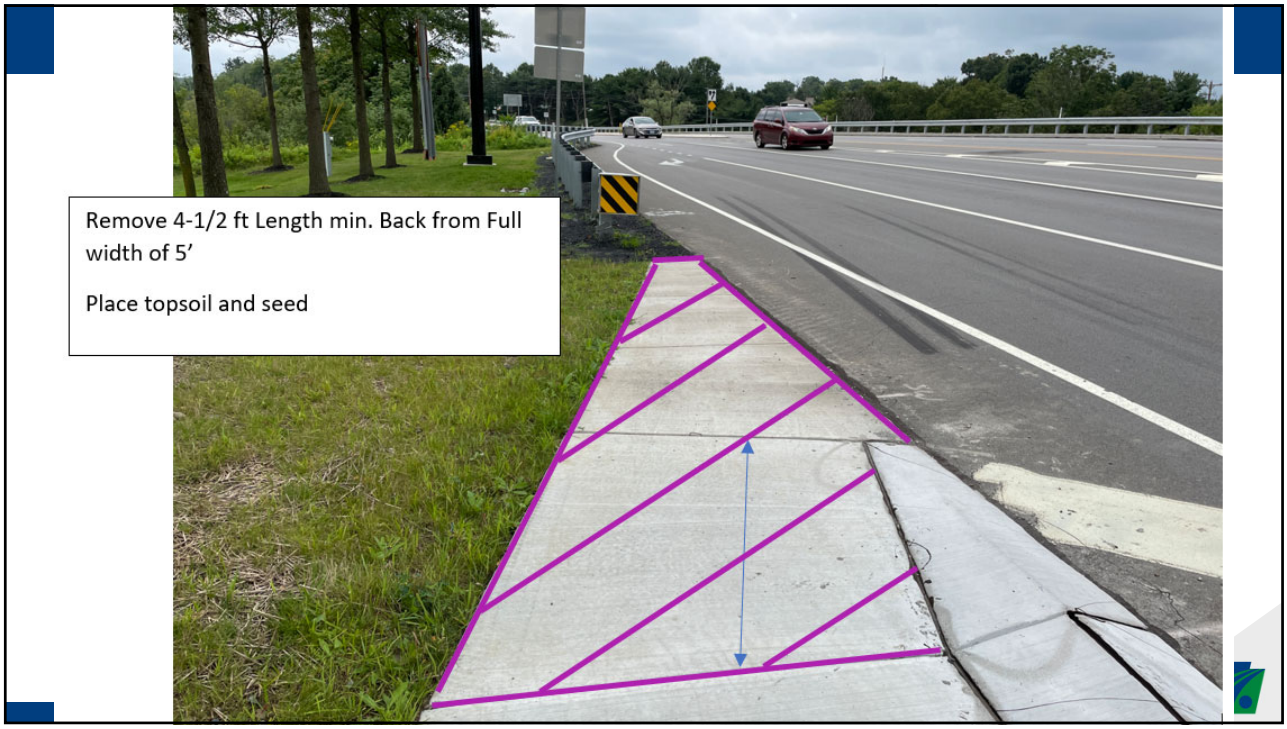
76

77

78

S&T Commons
LIBERTY
VA
avon Chai

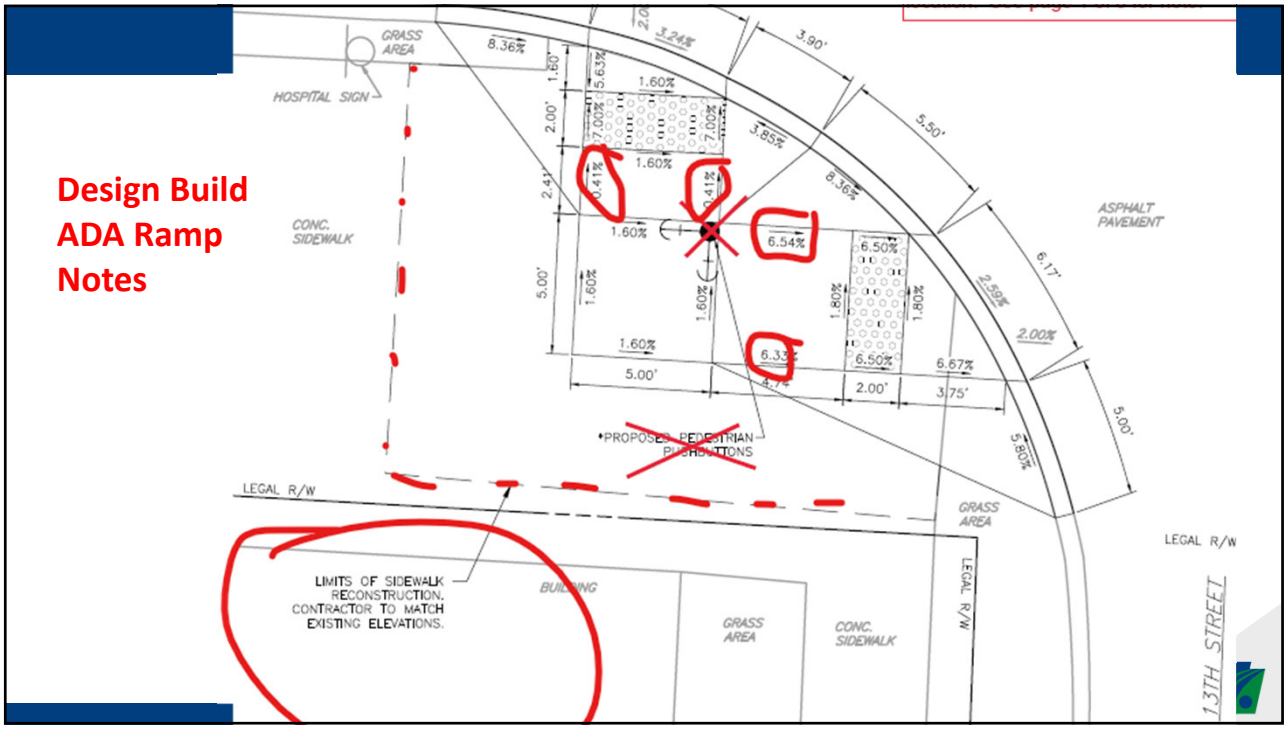
79


Remove 4-1/2 ft Length min. Back from Full width of 5'
Place topsoil and seed

80

81

82



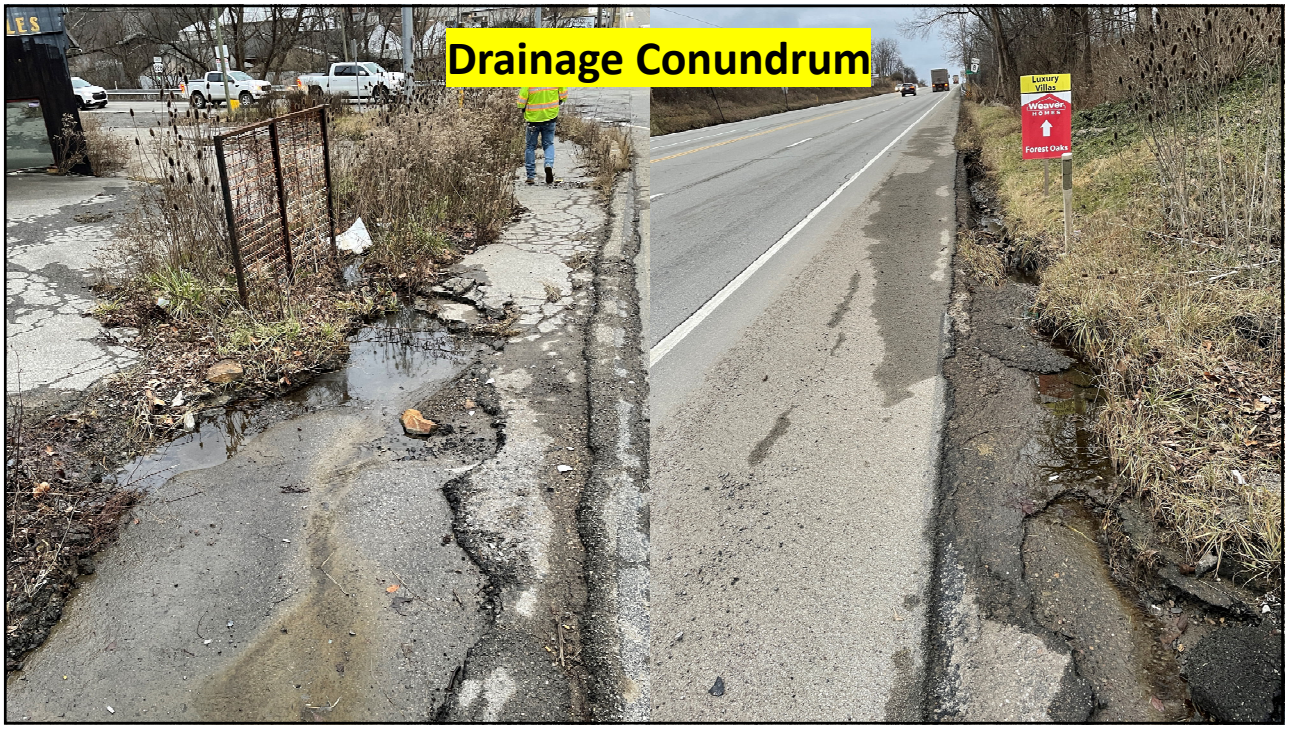
83

AND THE
UGLY

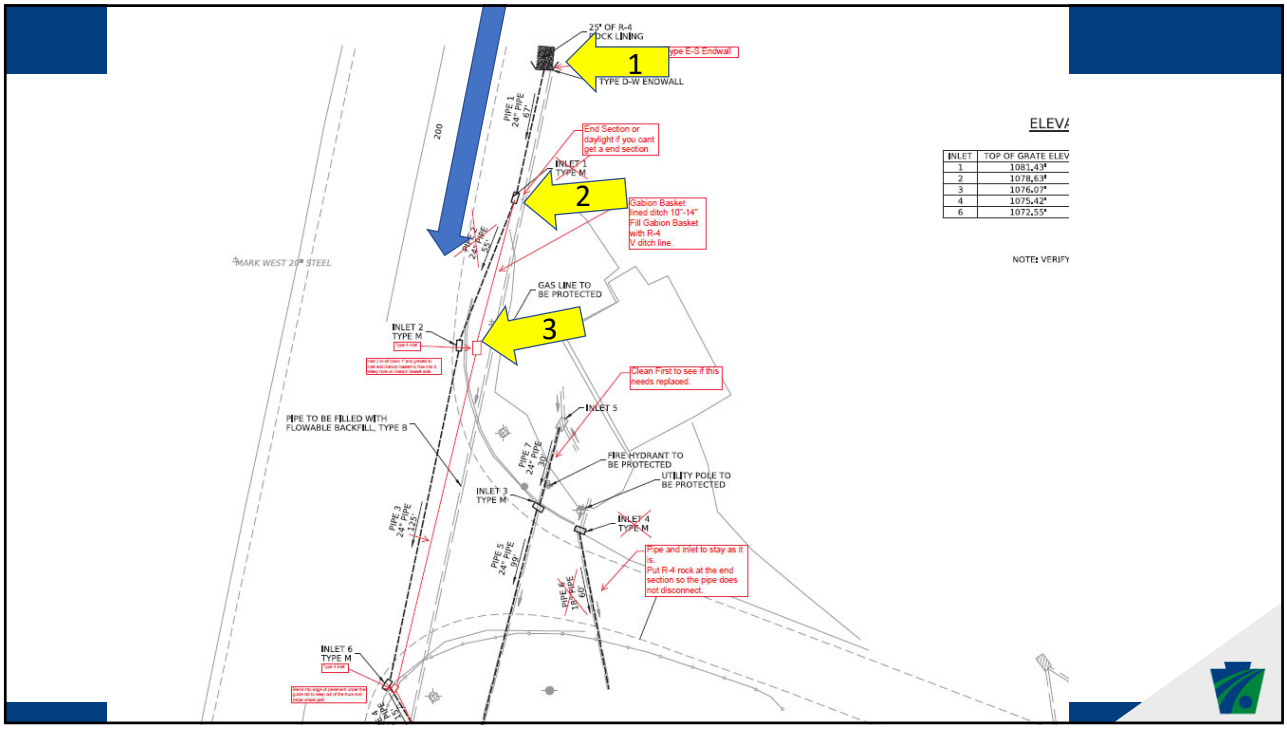
84

85

86


Drainage Conundrum
Luxury Villas
Weaver Homes
Forest Oaks

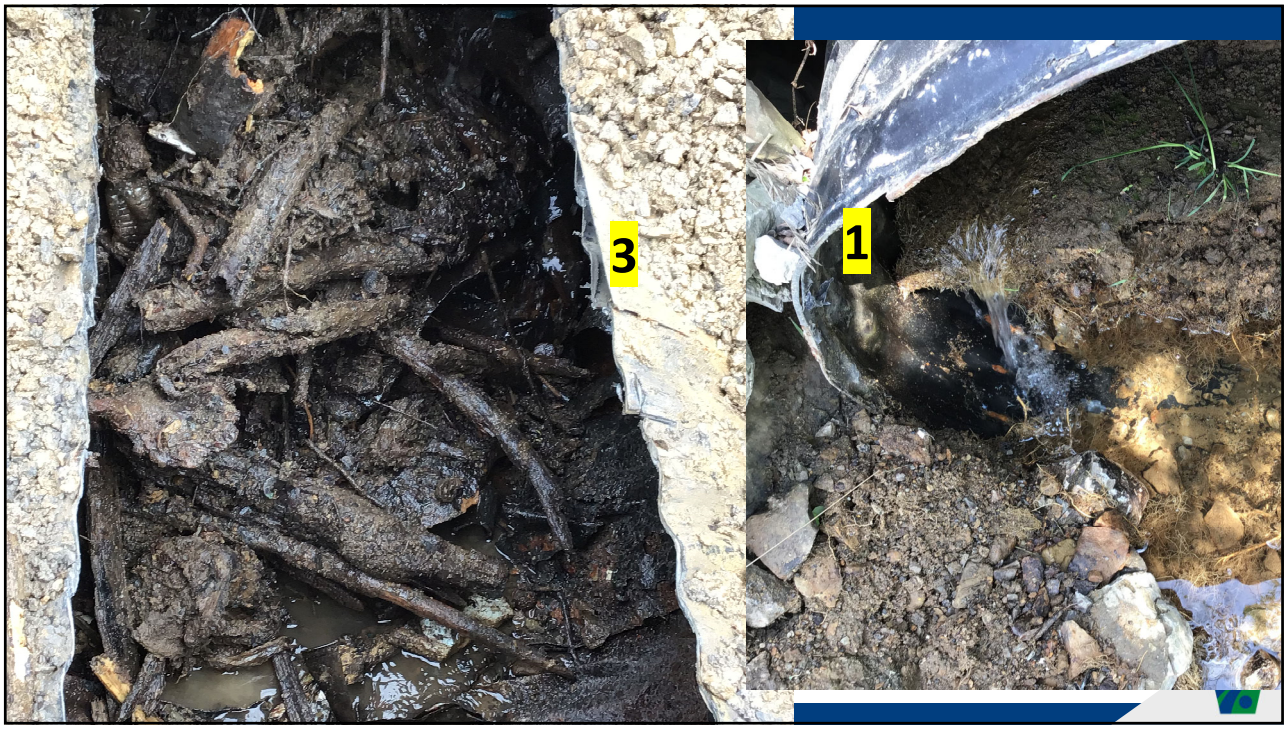
87


25' OF R-4 ROCK LINING
1
TYPE D-W ENDWALL
End Section or daylight if you cant get a end section
INLET 1 TYPE M
2
Gabion Basket lined ditch 10'-14' Fill Gabion Basket with R-4 V ditch line.
MARK WEST 24" STEEL
GAS LINE TO BE PROTECTED
INLET 2 TYPE M
3
Clean First to see if this needs replaced.
INLET 5
PIPE TO BE FILLED WITH FLOWABLE BACKFILL, TYPE B
FIRE HYDRANT TO BE PROTECTED
UTILITY POLE TO BE PROTECTED
INLET 3 TYPE M
INLET 4 TYPE M
Pipe and inlet to stay as it is. Put R-4 rock at the end section so the pipe does not disconnect.
INLET 6 TYPE M
ELEVA
INLET
TOP OF GRATE ELEV
1 1081.43'
2 1078.63'
3 1076.07'
4 1075.42'
6 1072.55'
NOTE: VERIFY

88

89

90



91

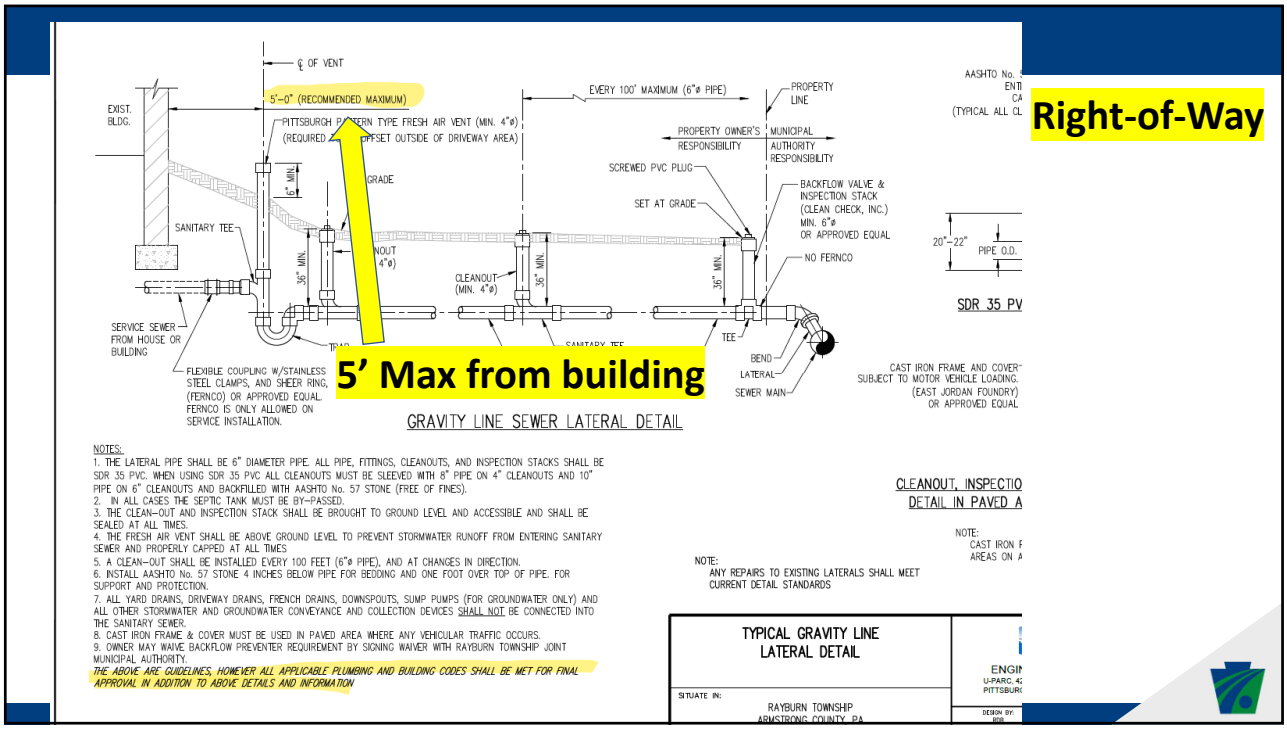
92

93

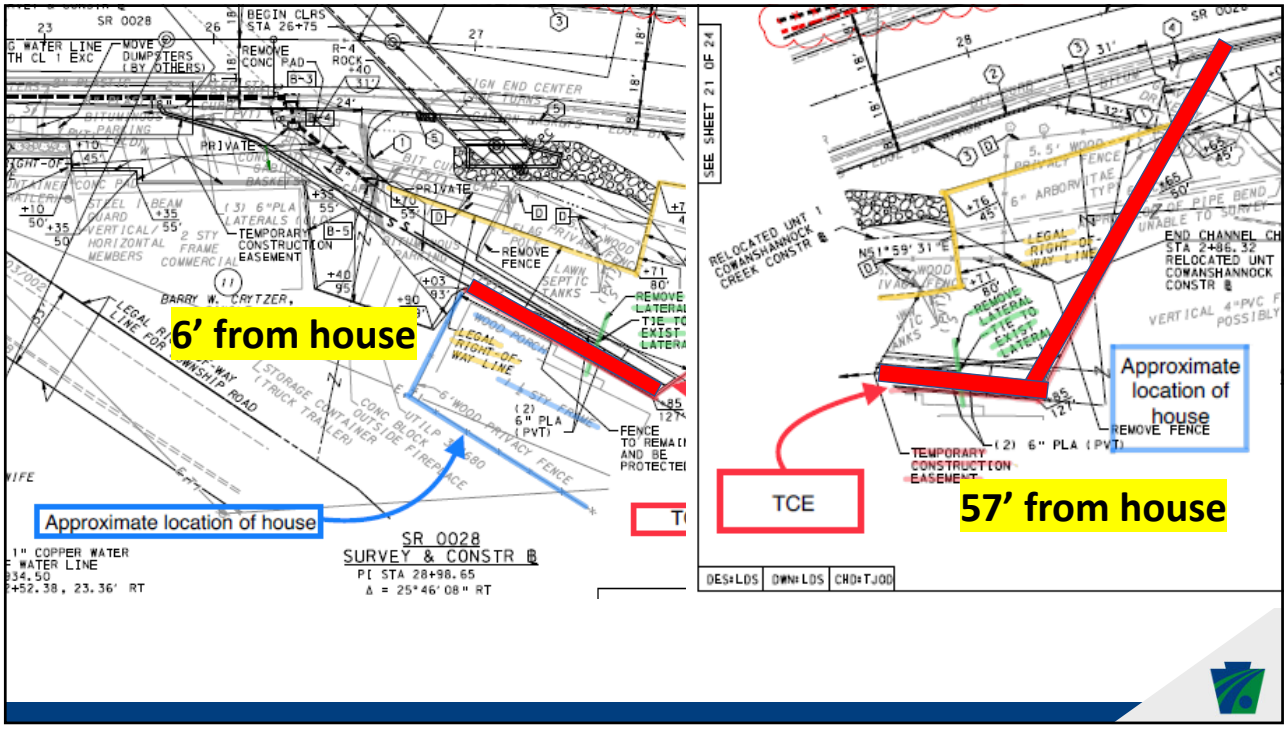
94

95

96


Right-of-Way
5' Max from building
GRAVITY LINE SEWER LATERAL DETAIL
TYPICAL GRAVITY LINE LATERAL DETAIL
RAYBURN TOWNSHIP
ARMSTRONG COUNTY, PA
NOTES:
1. THE LATERAL PIPE SHALL BE 6" DIAMETER PIPE. ALL PIPE, FITTINGS, CLEANOUTS, AND INSPECTION STACKS SHALL BE SDR 35 PVC. WHEN USING SDR 35 PVC ALL CLEANOUTS MUST BE SLEEVED WITH 8" PIPE ON 4" CLEANOUTS AND 10" PIPE ON 6" CLEANOUTS AND BACKFILLED WITH AASHTO No. 57 STONE (FREE OF FINES).
2. IN ALL CASES THE SEPTIC TANK MUST BE BY-PASSED.
3. THE CLEAN-OUT AND INSPECTION STACK SHALL BE BROUGHT TO GROUND LEVEL AND ACCESSIBLE AND SHALL BE SEALED AT ALL TIMES.
4. THE FRESH AIR VENT SHALL BE ABOVE GROUND LEVEL TO PREVENT STORMWATER RUNOFF FROM ENTERING SANITARY SEWER AND PROPERLY CAPPED AT ALL TIMES
5. A CLEAN-OUT SHALL BE INSTALLED EVERY 100 FEET (6"ø PIPE), AND AT CHANGES IN DIRECTION.
6. INSTALL AASHTO No. 57 STONE 4 INCHES BELOW PIPE FOR BEDDING AND ONE FOOT OVER TOP OF PIPE. FOR SUPPORT AND PROTECTION.
7. ALL YARD DRAINS, DRIVEWAY DRAINS, FRENCH DRAINS, DOWNSPOUTS, SUMP PUMPS (FOR GROUNDWATER ONLY) AND ALL OTHER STORMWATER AND GROUNDWATER CONVEYANCE AND COLLECTION DEVICES SHALL NOT BE CONNECTED INTO THE SANITARY SEWER.
8. CAST IRON FRAME & COVER MUST BE USED IN PAVED AREA WHERE ANY VEHICULAR TRAFFIC OCCURS.
9. OWNER MAY WAIVE BACKFLOW PREVENTER REQUIREMENT BY SIGNING WAIVER WITH RAYBURN TOWNSHIP JOINT MUNICIPAL AUTHORITY.
THE ABOVE ARE GUIDELINES, HOWEVER ALL APPLICABLE PLUMBING AND BUILDING CODES SHALL BE MET FOR FINAL APPROVAL IN ADDITION TO ABOVE DETAILS AND INFORMATION
NOTE:
ANY REPAIRS TO EXISTING LATERALS SHALL MEET CURRENT DETAIL STANDARDS
CLEANOUT, INSPECTIO
DETAIL IN PAVED A
SDR 35 PV
EXIST. BLDG.
SANITARY TEE
SERVICE SEWER FROM HOUSE OR BUILDING
FLEXIBLE COUPLING W/STAINLESS STEEL CLAMPS, AND SHEER RING, (FERNCO) OR APPROVED EQUAL. FERNCO IS ONLY ALLOWED ON SERVICE INSTALLATION.
EVERY 100' MAXIMUM (6"ø PIPE)
PROPERTY LINE
PROPERTY OWNER'S RESPONSIBILITY
MUNICIPAL AUTHORITY RESPONSIBILITY
SCREWED PVC PLUG
SET AT GRADE
BACKFLOW VALVE & INSPECTION STACK (CLEAN CHECK, INC.) MIN. 6"ø OR APPROVED EQUAL
NO FERNCO
CLEANOUT (MIN. 4"ø)
36" MIN.
TEE
BEND
LATERAL
SEWER MAIN
CAST IRON FRAME AND COVER SUBJECT TO MOTOR VEHICLE LOADING. (EAST JORDAN FOUNDRY) OR APPROVED EQUAL
20"-22"
PIPE O.D.

97


6' from house
57' from house
Approximate location of house
Approximate location of house
TCE
SR 0028
SURVEY & CONSTR
PI STA 28+98.65
Δ = 25°46'08" RT
TEMPORARY CONSTRUCTION EASEMENT
REMOVE FENCE
(2) 6" PLA (PVT)
SEE SHEET 21 OF 24
DES: LDS
DWN: LDS
CHD: TJOD

98

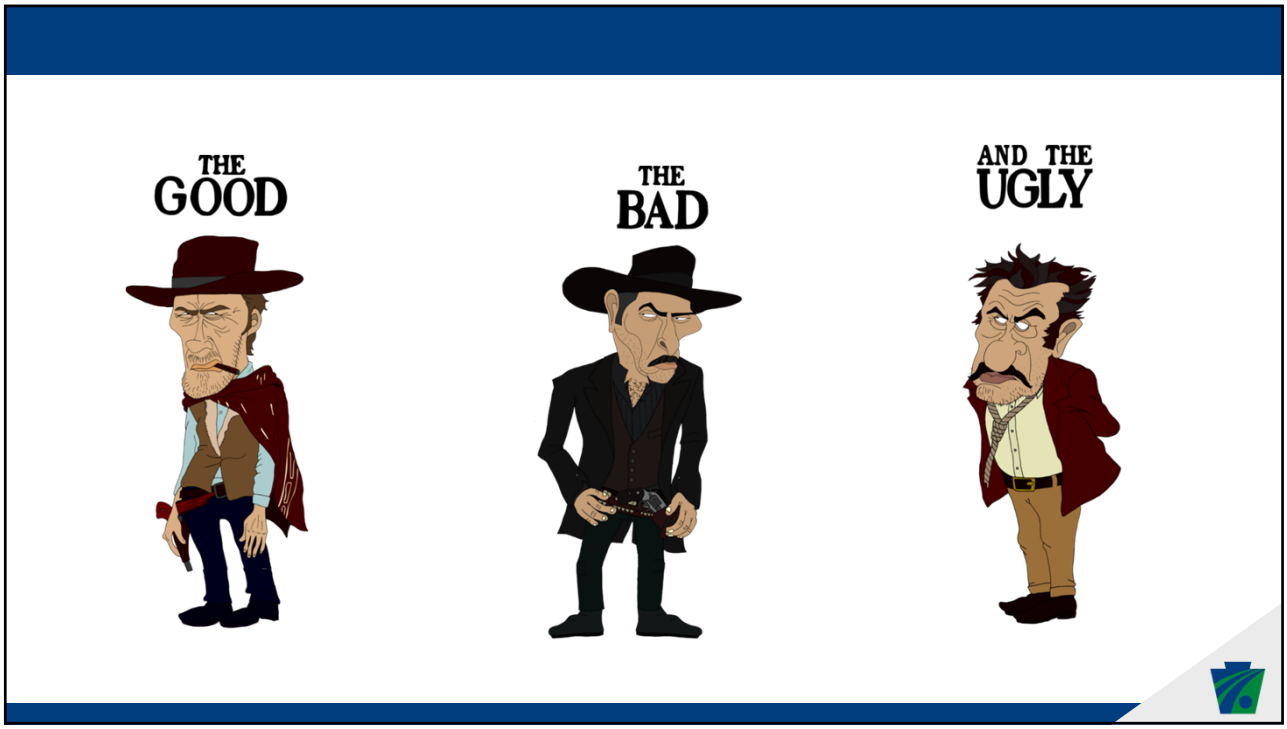
99

100

101

THANK YOU

102



103